

F I A T B R A V O



D U A L O G I C

This Supplement describes the procedure for using the Fiat Bravo Dualogic electronically controlled manual gearbox.

For the correct use of the gearbox, it is essential to read this Supplement in full to find out at the outset which operations are correct and permissible.

For additional information, consult the Owner Handbook to which this Supplement is attached.

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The car is equipped with an electronically controlled manual gearbox known as “Dualogic” that has two operating modes: **MANUAL** and **AUTO**.

The gearbox consists of a conventional manual transmission to which an electronically-controlled electrohydraulic device that controls the clutch and gear shifts automatically has been added.

## READY TO START

### MANUAL MODE

**IMPORTANT** For the correct use of the system, only use your right foot to operate the pedals.

- Press the brake pedal
- Start the engine
- Push the gear lever **A-fig.1** towards (+) to engage first gear (if starting from **N** or **R** simply move the lever to the central position) or **R** to engage reverse.
- Release the brake pedal and press the accelerator pedal
- When driving, push the gear lever **A** towards (+) to engage a higher gear or towards (-) to engage a lower gear.

### AUTOMATIC MODE

**IMPORTANT** For the correct use of the system, only use your right foot to operate the pedals.

- Press the brake pedal
- Start the engine

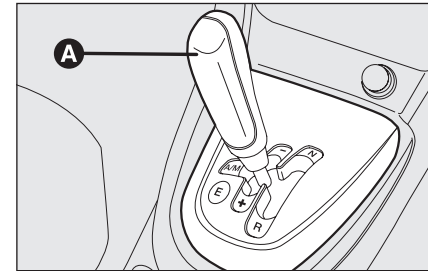


fig. 1

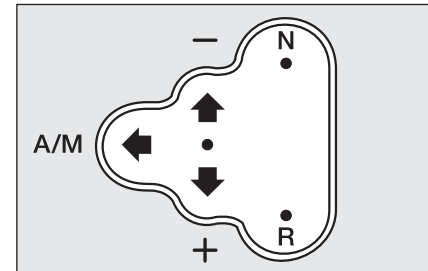


fig. 2

- Push the gear lever **A-fig. 1** in **A/M** to engage the automatic mode or in **R** to engage reverse
- Release the brake pedal and press the accelerator pedal.

## OPERATING MODE

The gearbox can work in two operating modes:

- the first is manual (**MANUAL**), where the driver decides directly when to shift gear;
- the second fully automatic (**AUTO**), where the system decides when to shift gear. **ECO** function (Economy) can be used with this mode reducing fuel consumption. To turn this function on, press button **E**-fig. 3 located on the gearbox trim.

The selection of the gear and the operating mode (**MANUAL** or **AUTO**) is made using the control lever **A**-fig. 1 in the centre console.



**Avoid keeping your hand on the lever when you are not requesting a gear shift or an Auto/Manual mode change.**

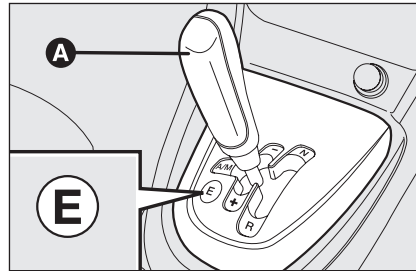


fig. 3

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## CONTROL LEVER

The control lever **A**, located in the dashboard, is the floating multistable type, i.e. it can take up three stable positions and three unstable positions.

The three stable positions correspond to neutral (**N**), reverse (**R**) and the middle position between the unstable positions (**+**) and (**-**).

The unstable positions, in other words those which are abandoned as soon as the lever is released, are the position requesting a higher gear (**+**), the position requesting a lower gear (**-**) and the position requesting the automatic operating mode (**A/M**).

The system returns to the manual mode by returning the lever to the **A/M** position.

With the car at a standstill and the key removed, the lever may be moved with/without the brake pedal pressed. The system does not carry out any action after the lever has been moved and remains in the gear memorized before the key was removed.

**IMPORTANT** After starting, if there is an error between the position of the lever and the gear actually engaged, this will be signalled, when the brake pedal is released, by a buzzer and by the letter N flashing in the display until the inconsistency no longer exists.

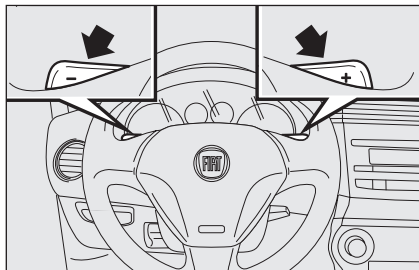


fig. 4

F0Q0777m

## MANUAL OPERATION (MANUAL)

In this operating mode, the driver is responsible for choosing the best gear ratio to engage, depending on the car operating conditions.

Proceed as follows to shift gear:

- move the lever to (+) position to engage a higher gear;

or

- move the lever to (−) position to engage a lower gear.

If the gear change request may adversely affect the correct operation of the engine and the gearbox, the system does not allow the gear change but automatically changes down if the engine is idling (e.g. during deceleration).

In such cases the system warns the driver of the impossibility of changing gear by means of a buzzer.



fig. 5

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## STEERING WHEEL CONTROLS (where provided) fig. 4

On certain versions the change can be managed sequentially using (optional) controls on the steering wheel.

To use the controls on the steering wheel, the gear lever should be in the middle position between + and −:

- moving the lever on the steering wheel +: engagement of higher ratio;
- moving the lever on the steering wheel −: engagement of lower ratio.

The engagement of a lower (or higher) gear ratio is only permitted if the engine speed allows

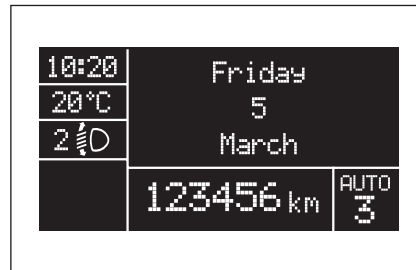


fig. 6

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## AUTOMATIC OPERATION (AUTO)

To switch the automatic operation (AUTO) on/off, push lever **A** to the **A/M** position; activation will be signalled by the display of the word **AUTO** and the gear engaged **fig. 5-6**. In **AUTO** mode the system will change gear depending on the speed of the car, the engine speed and the intensity with which the accelerator pedal is pressed. A gear shift may be requested by operating the gear lever, but without necessarily switching this mode off: this function, known as 'gear suggestion', suspends the automatic mode for the time required to select the ratio requested by the driver.

## Automatic operation (AUTO - ECO)

The **ECO** can only be activated with the automatic mode engaged.

The **ECO** function is turned on by pressing button **E**-fig. 6 located on the trim next to the gear lever. After this function has been activated, the display will show the gear engaged and the words **AUTO** and **E**.

The **ECO** function activates the system selecting the most suitable gear depending on the speed of the car, the engine speed and the intensity with which the accelerator is pressed with fuel economy being the main objective.

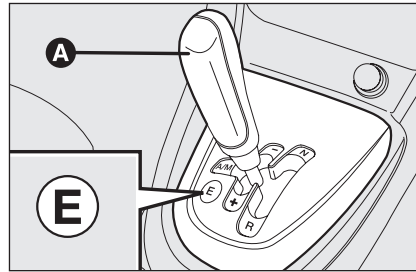


fig. 7

If necessary (e.g. when overtaking) the system changes down a gear or more in order to provide appropriate power and torque for the acceleration requested by the driver (this all takes place in automatic mode irrespective of whether or not the **ECO** function is activated).

## INFORMATION ON DISPLAY

When the ignition key is turned to **MAR**, after around one second, display shows the gear engaged and the last mode used (**AUTO** or **MANUAL**):

- N** = neutral;
- 1** = first gear;
- 2** = second gear
- 3** = third gear;
- 4** = fourth gear;
- 5** = fifth gear;
- 6** = sixth gear;
- R** = reverse.

If the **ECO** function is used the display will show the letter **E** (Economy) next the gear engaged **fig. 8-9**.

**IMPORTANT** If the display does not show the gear engaged after 10 seconds with the ignition key in **MAR**, turn the ignition to **STOP**, wait for the display to turn off and then repeat the manoeuvre. If the problem persists, contact the **Fiat Dealership**.



fig. 8

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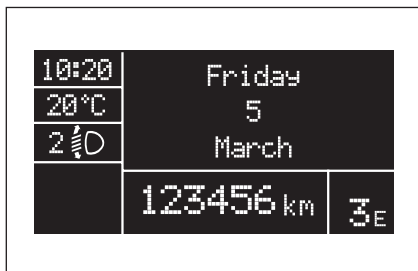


fig. 9

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## ENGINE STARTING

The system permits engine start-up with a gear engaged and also with the gearbox in neutral (N); the brake pedal must always be pressed first.

It is advisable to place the gear lever in neutral (N) before starting the engine.

After start-up:

- the gearbox automatically engages neutral (N)
- the lever remains in the same position as the last time the engine was turned off
- the display will show the letter (N) and, when the brake pedal is released, a buzzer together with the flashing of the letter (N), will signal any inconsistency between the position of the lever and the gear engaged
- the gears that can be engaged are 1<sup>st</sup>, 2<sup>nd</sup> or reverse (R).

**IMPORTANT** If start-up is requested with the gearbox in a position other than N and without the brake pedal pressed, the display shows a dedicated message see (“Warning lights and messages” paragraph). In this case, repeat the start-up manoeuvre, pressing the brake pedal.

**IMPORTANT** If start-up is requested with the gearbox faulty, run the “Delayed start-up” procedure (see associated messages): turn the key to the **AVV** position for at least 7 seconds with the brake depressed and the engine will start. The system will be in recovery mode (highest gear permitted 3<sup>rd</sup>, automatic mode not available). If the engine does not start, contact the **Fiat Dealership**.

**IMPORTANT** When the driver’s door is opened, the system activates the hydraulic system so that it is prepared for the subsequent starting of the engine.



### WARNING

*If the engine does not start with the gear engaged, a potentially hazardous situation because the gearbox has automatically shifted to neutral is indicated by a buzzer.*



## DRIVING OFF IN THE CAR

Driving off in the car, take-off, is permitted in 1<sup>st</sup> gear and 2<sup>nd</sup> gear (recommended on road surfaces with poor grip) and reverse (**R**).

### To engage 1<sup>st</sup> gear

- press the brake pedal;
- with the lever in (**N**) or (**R**) move the lever to the middle position;
- with the lever already in the middle position, move the lever toward (+);
- release the brake pedal and press the accelerator pedal (pressing the pedal quickly so that it reaches the end of travel and turning off the ASR function, if present, allow a responsive take off).

It is possible to engage 1<sup>st</sup> or 2<sup>nd</sup> gear with the lever in the middle position and the brake pedal pressed using the lever (+) located behind the steering wheel (where present).

For departures on a hill with a medium-steep gradient, it is advisable to use the handbrake.

### To engage 2<sup>nd</sup> gear

- press the brake pedal;
- with the lever in (**N**) or (**R**) move the lever to the middle position and then toward (+)
- with the lever already in the middle position, move the lever twice toward (+)
- release the brake pedal and press the accelerator pedal.

It is possible to engage 1st or 2nd gear with the lever in the middle position and the brake pedal pressed using the lever (+) located behind the steering wheel (where present). For departures on a hill with a medium-steep gradient, it is advisable to use the handbrake.

### To engage reverse (**R**)

- press the brake pedal (car completely stationary)

**IMPORTANT** If the car is moving, the request is accepted and carried out if the car speed is less than 3 km/h within 1.5 seconds of the request: if the request is not implemented, the system will maintain the gear engaged or if car speed drops below 10 km/h it will put the gearbox in neutral (**N**) and the manoeuvre must then be repeated.

- move the lever to (**R**)
- release the brake pedal and press the accelerator pedal.

## BUZZER WARNING

For safety reasons, a buzzer warning sounds when the car is parked with the gearbox in neutral (**N**) (the warning sounds when the ignition key is turned to **STOP**);

With the car at a standstill, engine running and (**1**), (**2**) or (**R**) gear engaged, the system turns on the buzzer and automatically shifts the gearbox to neutral (**N**) when:

- the accelerator and/or brake pedals are not operated for at least 3 minutes;
- the brake pedal is pressed for longer than 10 minutes;
- the driver's door is opened and the accelerator and brake are not operated for at least 1.5 seconds;
- a fault has been detected in the gearbox.

## PARKING THE CAR

To park safely, it is essential to engage 1<sup>st</sup> gear or reverse (**R**) gear with your foot on the brake pedal. If parking on a slope, operate the brake pedal. It is also essential to wait until the gear engaged disappears from the reconfigurable multifunction display before releasing the brake pedal.

**IMPORTANT NEVER** leave your car with the gearbox in neutral (**N**).

## GENERAL WARNINGS

- With the car at a standstill and a gear engaged, keep the brake pedal pressed until you decide to set off. Then release the brake and accelerate gradually;
- when parked for long periods with the engine running, it is advisable to keep the gearbox in (**N**);

- in order to safeguard the efficiency of the clutch, do not use the accelerator to keep the car still (e.g.: stopped on a hill); if the clutch overheats it could damage it so use the brake pedal or the handbrake and only use the accelerator pedal when setting off;
- use second gear only when you need more control of take-off during manoeuvres on surfaces with poor grip;
- if, with reverse (**R**) engaged, you need to engage first speed or vice versa, only change gear when the car has come to a stop and the brake pedal is pressed;
- although very inadvisable, if the car is unexpectedly allowed to roll downhill with the gearbox in neutral (**N**) the system will automatically engage the gear best suited to car speed when a gear shift is requested to allow drive to be correctly transmitted to the wheels;

- ❑ if necessary, with the engine off it is possible to engage 1<sup>st</sup> gear or reverse (R) with the ignition **ON** and the brake pressed. In this case, gear shifts must be made allowing at least 5 minutes to elapse between one gear shift and the next to safeguard the operation of the hydraulic system and the pump in particular;
- ❑ pressing the accelerator pedal quickly until it is in the end of travel position and switchin off the ASR function, if present, using the button in the dashboard allows for a responsive take off.
- ❑ during hill starts, accelerate gradually but fully immediately after releasing the handbrake or brake pedal to allow the engine to increase its rpm to a greater extent and overcome higher gradients with more torque.

## WARNING LIGHTS AND MESSAGES



### DUALOGIC GEARBOX FAILURE (red)

When the ignition key is turned to **MAR**, the warning light turns on and should go off after a few seconds.

The warning light on the dial comes on flashing (together with a message in the display and a buzzer) to indicate that the gearbox is faulty.



***If a fault is present, contact a Fiat Dealership as soon as possible to check the system.***

## REDUCE GEAR CHANGES

The message appears in the display to indicate that the driver is using the gearbox incorrectly.

Incorrect use (by the driver) could automatically activate a procedure for protecting the system.



***Contact a Fiat Dealership if the message remains in the display.***

## MANUAL MODE NOT AVAILABLE

The message appears in the display when it is not possible to select **MANUAL** mode with the engine running.



*Contact a Fiat Dealership if the message remains in the display.*

## AUTOMATIC MODE NOT AVAILABLE

The message appears in the display when it is not possible to select **AUTO** mode with the engine running.



*Contact a Fiat Dealership if the message remains in the display.*

## CLUTCH OVERHEATING - SEE MANUAL

The message appears in the display together with a buzzer when the clutch overheats.

In this situation, limit take-off and gear shifts or if necessary park (turning off the engine) until conditions are optimum.



*If the message still appears in the display, contact a Fiat Dealership.*



*To safeguard clutch efficiency, do not use the accelerator to keep the car at a standstill (e.g.: parking on a hill); the clutch could be damaged by overheating. Use the brake pedal instead and operate the accelerator only when you are ready to set off.*

## PRESS BRAKE PEDAL

The message is shown in the display together with a buzzer during an attempt at starting when the brake pedal is not pressed.

## PRESS BRAKE PEDAL - DELAYED START-UP

The display shows these messages alternately and in sequence together with an warning buzzer when the system does not recognise the brake pedal to be operational during a starting attempt.

In this situation, keep the key on **AVV** for at least 7 seconds with the brake pressed: the engine will start. The system will be in recovery mode (maximum speed permitted: 3<sup>rd</sup>).

**IMPORTANT** If start-up is requested with the gearbox faulty, run the “Delayed start-up” procedure (see associated messages): turn the key to the **AVV** position for at least 7 seconds with the brake depressed and the engine will start. The system will be in recovery mode (highest gear permitted 3<sup>rd</sup>, automatic mode not available). If the engine does not start, contact a Fiat Dealership.

**IMPORTANT** The messages are only displayed if the engine is started with a gear other than neutral (**N**) engaged.



**Contact a Fiat Dealership if the messages remain in the display.**

## **GEAR NOT AVAILABLE**

This message appears in the display together with a warning buzzer in the following cases:

- when it is not possible to change gear due to a fault in the system;
- or
- when, due a fault in the system, it is only possible to engage 1<sup>st</sup> (1), 2<sup>nd</sup> (2), 3<sup>rd</sup> (3) or reverse (**R**).



**Contact a Fiat Dealership if the message remains in the display.**

## **MANOEUVRE NOT PERMITTED**

The message appears in the display together with a warning buzzer when the system will not accept a gear change via the control lever because certain conditions required for acceptance of the gear change are missing.

## **PRESS BRAKE AND REPEAT MANOEUVRE**

The message appears in the display accompanied, in some cases, by a warning buzzer for safety reasons if you attempt to change gear without previously pressing the brake pedal.



**Contact a Fiat Dealership if the message remains in the display.**

## **PLACE GEAR LEVER IN N (neutral)**

This message appears in the display together with a warning buzzer when the system asks the driver to perform the manoeuvre.

When the gearbox is shifted to (**N**) the message in the display should go off.



**Contact a Fiat Dealership if the message remains in the display.**

## TOWING THE CAR

Ensure the gearbox is in neutral (**N**) (by checking that the car moves when pushed) and tow in the same way as a normal car with a manual gearbox (see instructions in Owner Handbook).

If it is not possible to place the gearbox in neutral, do not tow the car and contact a **Fiat Dealership**.

## FUSE REPLACEMENT

For the location of the fuses, see the illustrations in the “Fuse replacement” paragraph in the “In an emergency” section of the Owner’s Handbook.

	FUSE	AMPS
Dualogic gearbox control unit power supply (+ ignition)	F16	7.5
Dualogic gearbox control unit power supply (+ battery)	F18	10
ECO button and Dualogic gearbox control light guide	F51	5

## SERVICE SCHEDULE

	<b>1.4 T-JET 120 HP</b>	<b>1.6 Multijet 120 HP</b>
Check the transmission control oil level	Every 30.000 km	Every 35.000 km
Check level for the clutch actuation hydraulic system	Every 30.000 km	Every 35.000 km
Replace oil for the clutch actuation hydraulic system	Every 60.000 km (or every 2 years)	Every 70.000 km (or every 2 years)

## CHECKING FLUID LEVELS

### DUALOGIC GEARBOX HYDRAULIC OPERATING SYSTEM FLUID

For checking the oil level, go exclusively to a **Fiat Dealership**.



*Used gearbox oil contains substances that are hazardous for the environment. It is advisable to have the oil changed by a Fiat Dealership where used oil will be disposed of according to the law.*

## ENGINE CODES - BODYWORK VERSIONS

Versions	Engine code	Bodywork versions
<b>1.4 T-JET 120 HP</b>	198A4000	198AXG11 10 198AXG11 10B (▲)
<b>1.6 Multijet 120 HP</b>	198A2000	198AXL11 11 (□) 198AXL11 11B (▲) (□) 198AXL11 11C (■) 198AXL11 11D (▲) (■)

(▲) Versions with option of 18" tyres

(□) EURO 4 with DPF versions

(■) EURO 5 versions

## TRANSMISSION

	<b>1.4 T-JET 120 HP - 1.6 Multijet 120 HP</b>
Gearbox	Six forward speeds plus reverse with electronically-controlled hydraulic system
Clutch	Electronically controlled electrohydraulic
Drive	Front

## PERFORMANCE

The top speed after the car has been run in is:

**1.4 T-JET 120 HP:** 197 km/h

**1.6 Multijet 120 HP:** 195 km/h



## CAPACITIES

	1.4 T-JET 120 HP - 1.6 Multijet 120 HP		Recommended fuels Recommended products
	litres	kg	
Dualogic gearbox hydraulic activation system	0.505	0.43	<b>TUTELA CAR CS SPEED</b>
Clutch hydraulic operating system	0.038	0.040	<b>TUTELA TOP4</b>

## FLUIDS AND LUBRICANTS

### RECOMMENDED PRODUCTS AND SPECIFICATIONS

Use	Specifications of fluids and lubricants for the correct operation of the vehicle	Genuine fluids and lubricants	Applications
Lubricants for transmission of drive	Special fluid for electrohydraulic actuators ratio selector. Qualification <b>FIAT 9.55550-SA I</b>	<b>TUTELA CAR CS SPEED</b> Contractual Technical Reference N° F005.F98	Dualogic electrically operated electrohydraulic actuator
	Synthetic-based oil, grade SAE 75W-85 that passes API GL-4 specifications. Qualification <b>FIAT 9.55550-MZI</b>	<b>TUTELA CAR MATRYX</b> Contractual Technical Reference N° F108.F02	Gearbox oil (1.6 Multijet versions)
Brake Fluid	Synthetic fluid for brake and clutch system. Exceeds specifications: FMVSS no. 116 DOT 4, ISO 4925, SAE J 1704. Qualification <b>FIAT 9.55597</b>	<b>TUTELA TOP 4</b> Contractual Technical Reference N° F001.A93	Hydraulic brakes and clutch hydraulic controls

# FUEL CONSUMPTION

## FUEL CONSUMPTION ACCORDING TO 2004/3/EC DIRECTIVE (litres x 100 km)

	Urban	Extraurban	Combined
<b>I.4 T-JET 120 HP</b>	8.5	5.4	6.5
<b>I.6 Multijet 120 HP</b>	5.9	3.8	4.6

The fuel consumption figures in the table refer to the AUTO-ECO mode.

# CO<sub>2</sub> EMISSIONS

## CO<sub>2</sub> EMISSIONS ACCORDING TO 2004/3/EC DIRECTIVE

**I.4 T-JET 120 HP:** 154 g/km

**I.6 Multijet 120 HP:** 120 g/km





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If you have any further questions please consult your FIAT dealer.

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