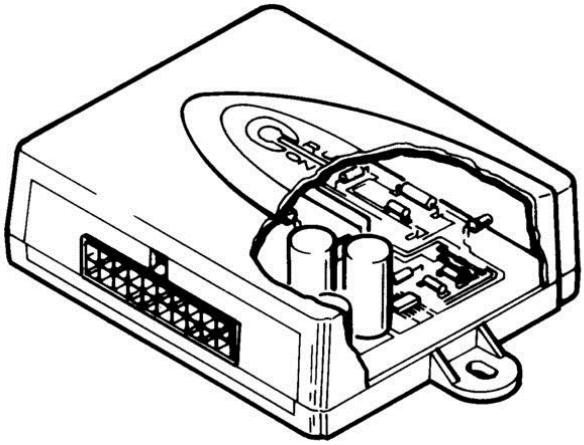
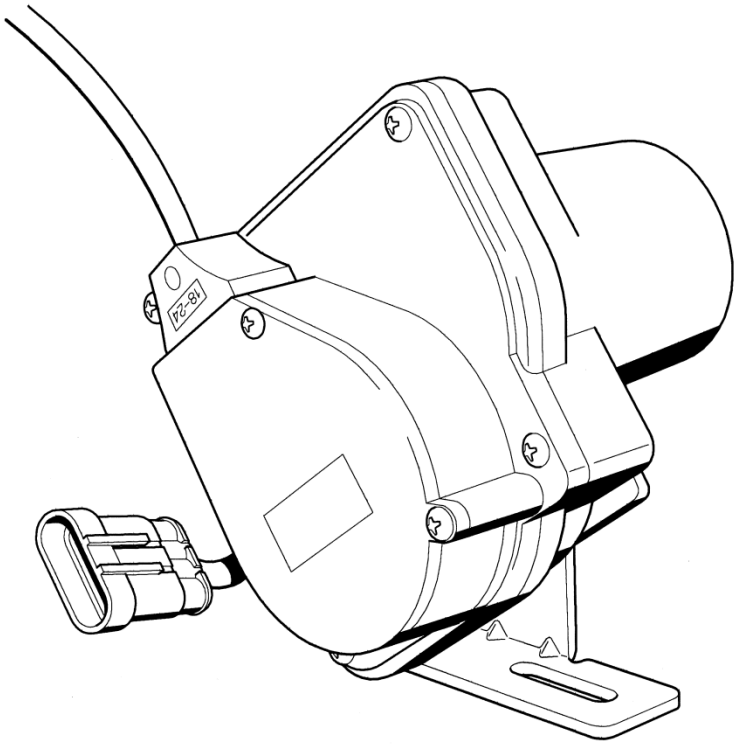
GoldCruise
THE ORIGINAL BY JOHN GOLD

Cruisecontrol GC55

Installation manual



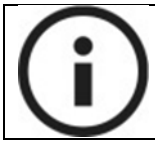


JOHN GOLD INTERNATIONAL BV

Foreword

This installation manual was written for installers with knowledge of modern vehicle technology and experience in working on these vehicles.
The GC55 GoldCruise is a modular product of John Gold International BV, that has been designed and produced with great care and precision.
Read the installation and user manuals of all applied modules carefully. Always leave the user manual (supplied separately with the command module) in the vehicle for the end user after completing the installation.
In the text boxes the following safety instructions are printed:

	**Tip:** This symbol is used to make suggestions or advises in order to make certain tasks easier to perform.

	**Note:** This symbol is used for an installation advise. Failing to comply with this advice may cause damage to the vehicle or product.

	**Warning:** This symbol is used in a potentially dangerous situation. In a dangerous situation there is potential for unsafe traffic situations, heavy or light injuries or damage to product, vehicle or environment.

Contents

1 Purpose, construction and operation of the GC55

1.1 Purpose of the GC55

The purpose of the GC55 is to automate your speed management.

1.2 Construction

The GC55 is part of a Cruisecontrol-kit that consists of the following universal and specific components:

universal components:

- electronic module (EM);
- electric servo
- command module (CM) (order separately);
- universal wiring harness;
- general installation manual;
- user manual CM (included with CM);
- installation manual CM (included with CM);
- clutch switch (optional)

specific components:

- servo cable
- pulley
- installation materials

Depending on the modular supplies or the vehicle, more or less components are applicable. Contact your supplier for more information.

1.3 Operation

The GC55 GoldCruise consists of an electric servo and a compact EM. The EM receives and handles the signals from the command module and the speed signal. With these signals the EM controls the servo. The servo pulls the throttle by means of a (steel) cable that controls the throttle valve position to maintain the set speed.

2 Safety directions

To ensure safety the GC55 complies with the following labels.

For the GC55 the following safety instructions apply, also printed in the item it concerns:

	Only use the GC55 for the purpose as described in this installation manual.
	The installer of the GC55 should have technical knowledge of modern cars and be experienced in working on them.
	Incorrect and/or ignorant installation, connection, adjustments and/or diagnostics can lead to vehicle and/or GC55 malfunctions and indirectly affect road safety.
	Never alter or manipulate a GC55. Alterations or technical manipulations made to the GoldCruise products can affect its safety adversely.
	Inform the customer whenever no clutch protection is installed. Point out that the GC55 will not disengage when depressing the clutch pedal. John Gold advises always to install a clutch protection (if applicable).
	Connect the twin cable with brown and brown/white wires in such a way that, with the brake pedal released, one wire has +12V from the brake light fuse and the other has ground through the brake lights.
	Always check for a smooth operation of the throttle valve, throttle cable and servo cable by operating the throttle by hand and by foot. Make sure that they cannot jam in any way..
	The servo cable has to point straight from the adjuster and pull in a straight line.
	Some cars hardly decelerate when the throttle valve remains slightly open. Always allow for some free play in throttle released position.
	Always solder the connections and insulate them with vulcanizing tape.

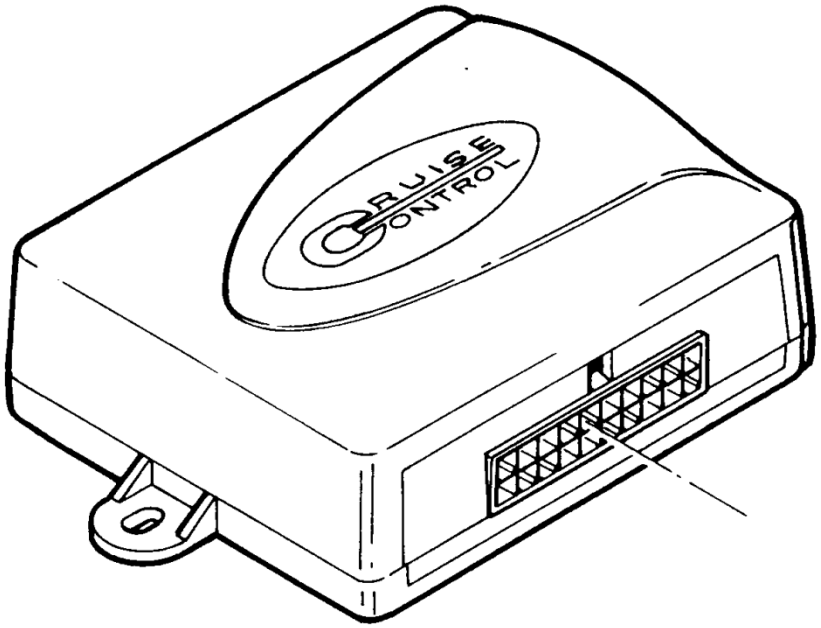
	Always install the EM in a position where heat, vibration and moisture are minimized, such as underneath the dashboard.
	Undo the negative battery terminal before working on the vehicle. Loss of volatile data is possible (audio, board computer, clock, etcetera).
	Always use a multimeter when measuring on the vehicle.
	Cut wires to size, keep them as short as possible.
	Use a fuse of up to 10 Amps.
	The servo can be installed in both engine bay to the body, and underneath the dashboard. Never mount the servo to the engine.
	Mount the servo at least 30cm from sources of electrical interference and heat sources.
	The bends in the servo cable have to be at least 40 cm in diameter.
	In case a stationary switch or kick-down switch is present on the accelerator pedal, the cable linkage should be connected directly to the accelerator pedal.
	Possible travel for the cable linkage (see pictures § 3.5.1) depending on the chosen pulley: red pulley = 31-38mm – yellow pulley = 18-24mm.
	Adjust the servo cable with a warm engine, because of a possible cold-start device.

3 Installation and connections

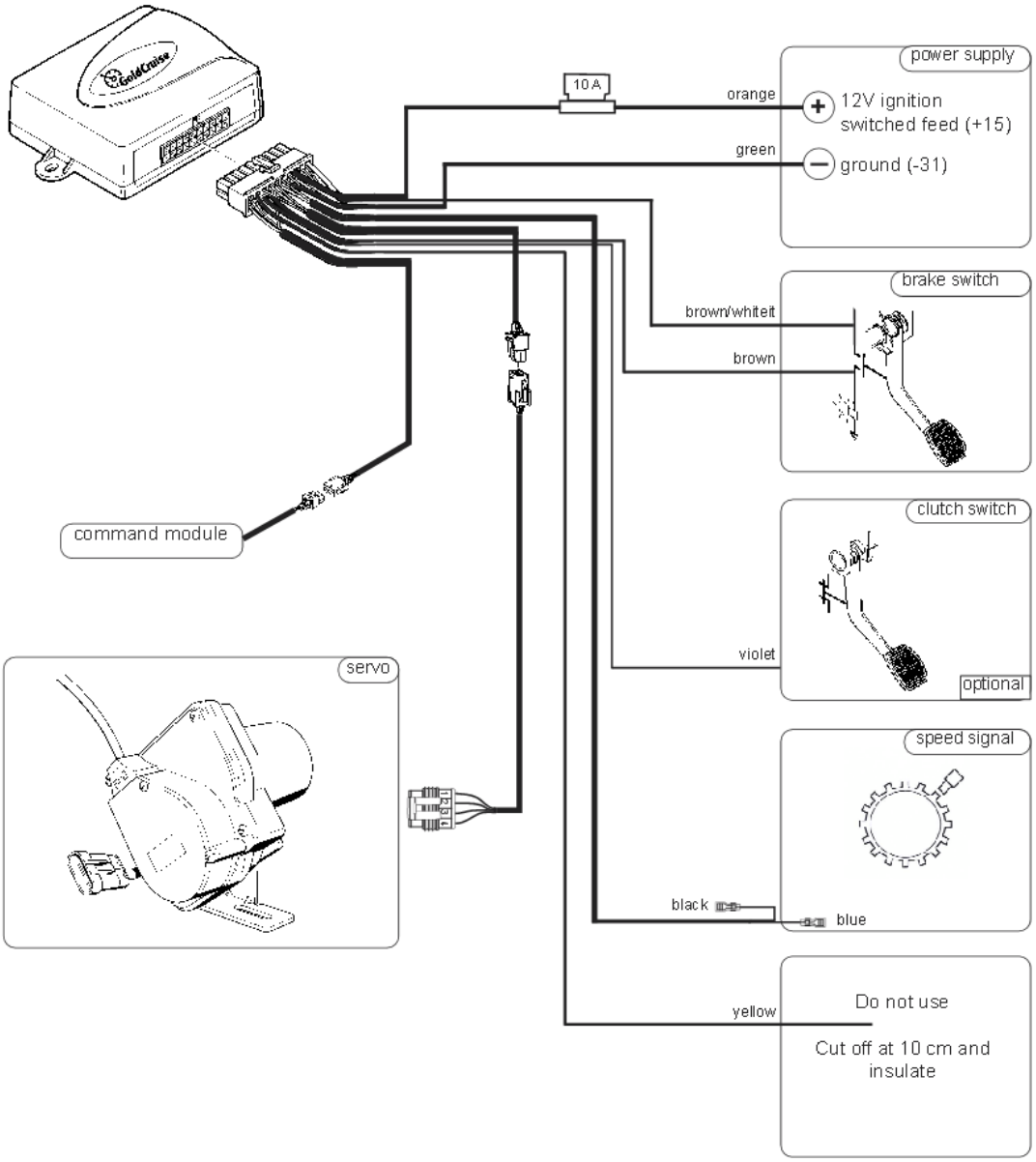
3.1 Installation electronic module (EM)

Always install the EM in a position where heat, vibration and moisture are minimized, such as underneath the dashboard, never in the engine compartment.
The installation kit contains tie-wraps, double-sided tape and screws that can be used to install the EM.

	Always install the EM in a position where heat, vibration and moisture are minimized, such as underneath the dashboard.



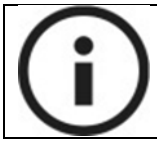
3.2 Wiring Diagram



3.3 Wiring harness connections

	Undo the negative battery terminal before working on the vehicle. Loss of volatile data is possible (audio, board computer, clock, etcetera).

	Always use a multimeter when measuring on the vehicle.

	Cut wires to size, keep them as short as possible.

Connect the universal wiring harness as follows:

orange wire	connect to an ignition switched feed (+15), preferably directly after the ignition switch; Insert the fuse in the fuse holder of the orange wire

i	For many European car-makes it is possible to connect the orange wire to the feed wire of the brake lights (along with the brown/white wire). This is only possible in case the brake lights only operate when the ignition is switched ON.

green wire	connect to a solid ground;
brown wire	connect to the wire that is connected to ground via the brake lights, this becomes 12V when the brake pedal is depressed. In case a relay is used in the brake light system, connect to the wire that is connected to the brake lights directly;
brown/ white wire	connect to the fused feed wire of the brake lights, before the brake light switch;
violet wire	connect to the wire of the original clutch switch that switched to or away from ground when depressing the clutch pedal *or* connect to one of the two wires of the optional clutch switch and connect the other wire of the optional clutch switch to ground;
yellow wire	do not use. Cut off at 10 cm from the connector and insulate, unless indicated otherwise;

	Connect the twin cable with brown and brown/white wires in such a way that, with the brake pedal released, one wire has +12V from the brake light fuse and the other has ground through the brake lights.

2-pin wire lint (blue and black)	*option 1*: connect the blue wire to the vehicle speed signal wire. Refer to the wiring diagrams of the vehicle. Do not connect the black wire. *option 2*: connect to an (optional) *speed pulse generator on the drive shaft* or between the *speedometer cable* – connect the blue wire to the pulse signal, connect the black wire to the speed pulse generator ground;
4-pin wire lint	connect the waterproof connector to the servo, feed the wire lint through the firewall to the EM, fit the 4 pins to colour (pink, blue, black, green) to the supplied connector and connect to the EM;
8-pin connector	connect to the 8-pin connector of the CM, also refer to the installation manual CM
3-pin connector	connect to the optional 3-speed memory CM (CM8).

i	Re-connect the negative battery terminal and remember to set the lost volatile data (audio, board computer, clock, etcetera).

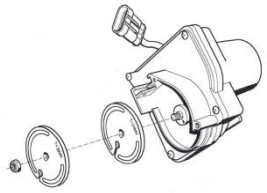
3.4 Electric servo

	The servo can be installed in both engine bay to the body, and underneath the dashboard. Never mount the servo to the engine.

	Mount the servo at least 30cm from sources of electrical interference and heat sources.

Before the servo can be installed, it has to be assembled first.

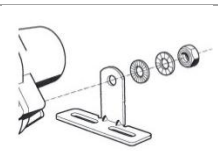
3.4.1 Assembly electric servo

Step	Action	Picture
1	Remove the red protection cap from the servo cam	
2	Mount the appropriate pulley to the servo The different travels are marked on the pulleys. The visible text indicates the applicable travel. Red pulley = 31-38mm Yellow pulley = 18-24mm	
3	Secure the pulley with the M6 locking nut	
4	Remove the servo inner cable	
5	Shorten the servo outer cable if necessary by cutting it with sharp pliers on the servo side of the cable	
6	Place the outer cable in the ‘slope’ The colour of the pulley has to match the colour of the dot on the slope. Also check the printed travel on the slope, this has to match the travel printed on the pulley	
7	Guide the servo inner cable through the outer cable and fit the end clamp into the gap of the pulley	
8	Fit the slope with the servo cable to the servo	
9	Check that the servo cable runs between the edges of the pulley	
10	Slide the cover over the servo and secure it with the 2 screws. Insert the long screw on the outside edge. Fit the spring washer to the short screw	

3.4.2 Mounting electric servo

The servo can be mounted in both engine bay to the body, and underneath the dashboard. To be able to mount the servo properly 2 mounting brackets are supplied with the universal set. In specific sets a selection has been made.

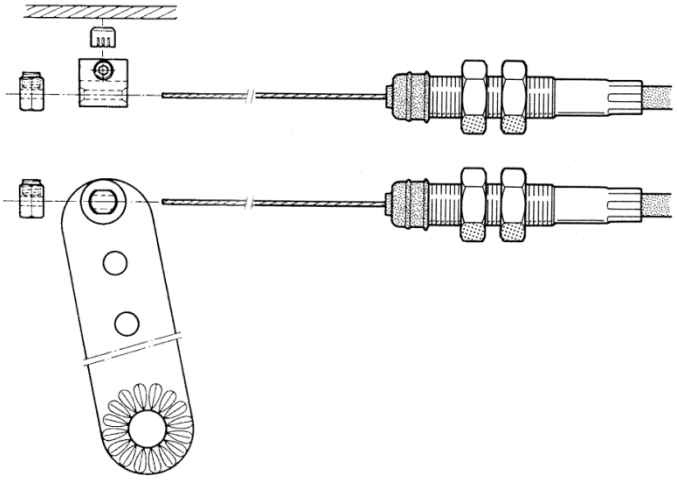
Mount the servo as follows:

Step	Action	Picture
1	Fit the mounting bracket to the servo in the desired position.	
2	Secure the bracket by placing both locking washers between the bracket and the M10-nut, with the serrated sides facing each other.	

3.5 Servo cable linkage

	The bends in the servo cable have to be at least 40 cm in diameter.
	The minimal distance between the servo cable and moving parts and the exhaust system is 30cm.
	The servo cable has to point straight from the adjuster and pull in a straight line.
	Possible travel for the cable linkage (see pictures § 3.5.1) depending on the chosen pulley: red pulley = 31-38mm – yellow pulley = 18-24mm.
	Adjust the servo cable with a warm engine, because of a possible cold-start device.
	Some cars hardly decelerate when the throttle valve remains slightly open. Always allow for some free play in throttle released position.
	Always check for a smooth operation of the throttle valve, throttle cable and servo cable by operating the throttle by hand and by foot. Make sure that they cannot jam in any way.

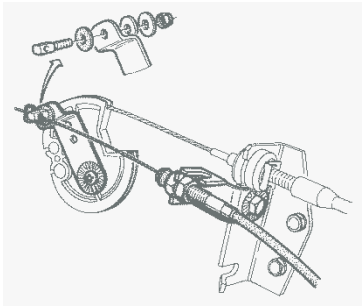
The throttle linkage can be made with the following parts:



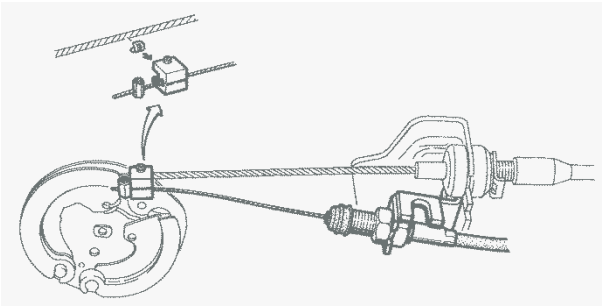
In case a stationary switch or kick-down switch is present on the accelerator pedal, the cable linkage has to be connected directly to the accelerator pedal. (refer to Picture C).

Examples of throttle linkages:

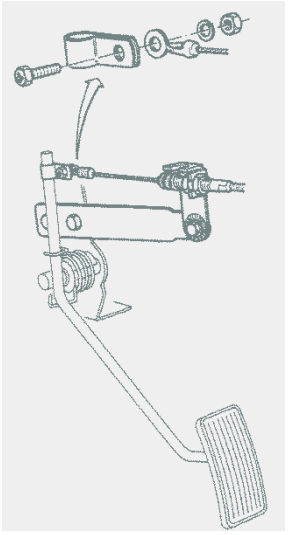
Pic.A



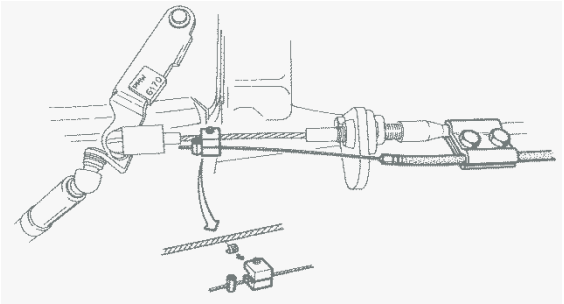
Pic.B



Pic.C

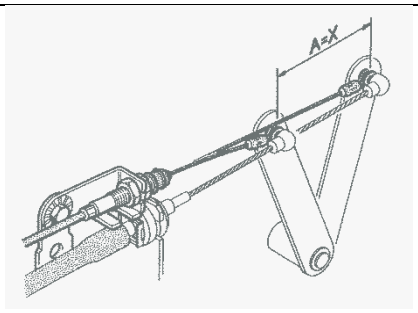
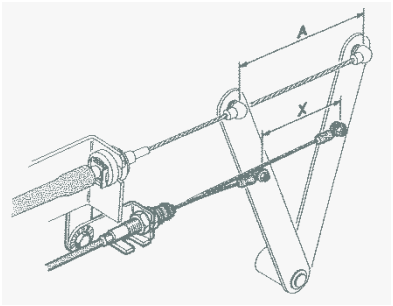
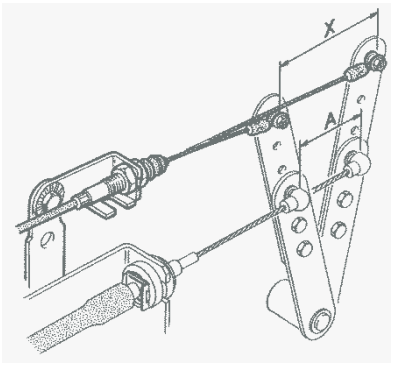


Pic.D



3.5.1 Adjusting servo cable travel

	Possible travel for the cable linkage (see pictures § 3.5.1) depending on the chosen pulley: red pulley = 31-38mm – yellow pulley = 18-24mm.

The actual travel of the servo, travel X, is visibly printed on the pulley. Travel A, the travel of the connection to the throttle, has to be equal to or 2-3 mm longer than the travel of the chosen pulley.	
In case travel A is longer than travel X +3mm, adjust the cable linkage as displayed. Alternatively apply a pulley with a longer travel § 3.4.1 (if applicable).	
In case travel A is shorter than travel X, adjust the cable linkage as displayed. Alternatively apply a pulley with a shorter travel § 3.4.1 (if applicable).	

	Always check for a smooth operation of the throttle valve, throttle cable and servo cable by operating the throttle by hand and by foot. Make sure that they cannot jam in any way.

First learn the GC55 to the speed signal, before using the cruisecontrol. Refer to chapter 4.0 Set-up.

4 Set-up

4.1 Introduction set-up

These symbols are used for the command module:			
	action	**Zeichen**	**function**
i	up		SET /ACC
	down		RES/DEC
	push		ON/OFF
	pull		CANCEL

First learn the GC55 to the speed signal, before using the Cruisecontrol:
refer to § 4.3 Vehicle speed signal set-up.

Check during the test drive (§ 4.3) the response time and sensitivity of the cruise control.

Only adjust the response time if the Cruisecontrol engages too slowly or too aggressively:

- refer to § 4.4 Increase response time;
- refer to § 4.5 Reduce response time.

Only adjust the sensitivity if the Cruisecontrol reacts too forcefully or too slowly while cruising:

- refer to § 4.6 Increase sensitivity;
- refer to § 4.7 Reduce sensitivity.

4.2 Vehicle speed signal set-up GC55

Perform the following to learn the GC55 to the vehicle speed signal.

Step	Action	Confirmation
1	Switch the ignition OFF and ON.	
2	Start the engine.	
3	Switch the Cruisecontrol ON ⏻	
4	Press and hold the brake pedal during the next 2 steps.	
5	Operate + 4 times	4 beeps
6	Operate − once	1 beep
7	Release the brake pedal.	1 beep
8	Drive 70 km/h and operate + once	Cruisecontrol engages
9	Press the brake pedal once.	2 beeps, Cruisecontrol releases
10	Stop in a safe place.	
11	Press and hold the brake pedal and operate + 4 times	1 long beep
12	Release the brake pedal.	

i	Perform diagnostics if the Cruisecontrol does not engage at step 8. Refer to chapter 5.0 Diagnostics and trouble shoot.

4.3 Test drive

Step	Action	Confirmation
1	Switch the ignition OFF and ON.	
2	Start the engine.	
3	Switch the Cruisecontrol ON ⏻	CM-LED turns green
4	Drive 90 km/h (55 mph) on the highway and operate ⇧+ and release the accelerator pedal	CM-LED turns orange Cruise control engage and maintains the speed
5	Press the brake pedal (brake lights light up)	CM-LED turns green Cruise control instantly releases
6	Drive 90 km/h (55 mph) on the highway and operate ⇧+ once	CM-LED turns orange Cruise control engage and maintains the speed
7	Depress the clutch pedal briefly	CM-LED turns green Cruise control instantly releases
8	Drive 75 km/h (45 mph) and operate ⇩− once	Cruise control engages and accelerate *exactly* to last set cruise speed (90 km/h(55 mph))
9	Operate ⇧+ long while cruising until the speed reaches about 100 km/h (65 mph)	CM-LED turns orange Vehicle accelerates
10	Operate ⇩− long while cruising until the speed reduces to about 95 km/h (60 mph)	CM-LED turns orange Vehicle decelerates
11	Operate ⇧+ 5x brief while cruising	CM-LED turns orange Vehicle accelerates 5 km/h (3 mph)
12	Operate ⇩− 5x brief while cruising	CM-LED turns orange Vehicle decelerates 5 km/h (3 mph)

Only adjust the response time if the Cruisecontrol engages too slowly or too aggressively:

- refer to § 4.4 Increase response time;
- refer to § 4.5 Reduce response time.

Only adjust the sensitivity if the Cruisecontrol reacts too forcefully or too slowly while cruising:

- refer to § 4.6 Increase sensitivity;
- refer to § 4.7 Reduce sensitivity.

4.4 Increase response time

Perform the following steps to increase the response time.
Perform step 1-7 within 1 minute!

Step	Action	Confirmation
1	Switch the ignition OFF and ON.	
2	Start the engine.	
3	Switch the Cruisecontrol ON ⏻	
4	Press and hold the brake pedal during the next 2 steps	
5	Operate + 4 times	4 beeps
6	Operate − 3 times	3 beeps
7	Release the brake pedal	3 beeps
8	Drive at least 40 km/h (25 mph) and operate + once	Cruisecontrol engages
9	Operate +	1 beep per step
10	Press the brake pedal once.	2 beeps, Cruisecontrol releases
11	Drive at least 40 km/h (25 mph) and operate + once	Cruisecontrol engages
(determine the result. If necessary, repeat from step 8.)		
12	Stop in a safe place.	
13	Press and hold the brake pedal and operate + 4 times	1 long beep
14	Release the brake pedal.	

4.5 Reduce response time

Perform the following steps to reduce the response time.
Perform step 1-7 within 1 minute!

Step	Action	Confirmation
1	Switch the ignition OFF and ON.	
2	Start the engine.	
3	Switch the Cruisecontrol ON ⏻	
4	Press and hold the brake pedal during the next 2 steps	
5	Operate + 4 times	4 beeps
6	Operate − 3 times	3 beeps
7	Release the brake pedal	3 beeps
8	Drive at least 40 km/h (25 mph) and operate + once	Cruisecontrol engages
9	Operate −	1 beep per step
10	Press the brake pedal once.	2 beeps, Cruisecontrol releases
11	Drive at least 40 km/h (25 mph) and operate + once	Cruisecontrol engages
(determine the result. If necessary, repeat from step 8.)		
12	Stop in a safe place.	
13	Press and hold the brake pedal and operate + 4 times	1 long beep
14	Release the brake pedal.	

4.6 Increase sensitivity

Perform the following steps to increase the sensitivity.
Perform step 1-7 within 1 minute!

Step	Action	Confirmation
1	Switch the ignition OFF and ON.	
2	Start the engine.	
3	Switch the Cruisecontrol ON ⏻	
4	Press and hold the brake pedal during the next 2 steps	
5	Operate + 4 times	4 beeps
6	Operate − 4 times	4 beeps
7	Release the brake pedal	4 beeps
8	Drive at least 40 km/h (25 mph) and operate + once	Cruisecontrol engages
9	Operate +	1 beep per step
10	Press the brake pedal once.	2 beeps, Cruisecontrol releases
11	Drive at least 40 km/h (25 mph) and operate + once	Cruisecontrol engages
(determine the result. If necessary, repeat from step 8.)		
12	Stop in a safe place.	
13	Press and hold the brake pedal and operate + 4 times	1 long beep
14	Release the brake pedal.	

4.7 Reduce sensitivity

Perform the following steps to increase the sensitivity.
Perform step 1-7 within 1 minute!

Step	Action	Confirmation
1	Switch the ignition OFF and ON.	
2	Start the engine.	
3	Switch the Cruisecontrol ON ⏻	
4	Press and hold the brake pedal during the next 2 steps	
5	Operate + 4 times	4 beeps
6	Operate − 4 times	4 beeps
7	Release the brake pedal	4 beeps
8	Drive at least 40 km/h (25 mph) and operate + once	Cruisecontrol engages
9	Operate −	1 beep per step
10	Press the brake pedal once.	2 beeps, Cruisecontrol releases
11	Drive at least 40 km/h (25 mph) and operate + once	Cruisecontrol engages
(determine the result. If necessary, repeat from step 8.)		
12	Stop in a safe place.	
13	Press and hold the brake pedal and operate + 4 times	1 long beep
14	Release the brake pedal.	

5 Diagnostics and trouble shoot

5.1 Diagnostics 1: CM and clutch switch connection

Step	Action	Confirmation
1	Switch the ignition completely OFF	
2	Operate and hold +	
3	Switch the ignition ON and wait for beep	1 long beep
(Does not operate: refer to § 5.3 trouble shoot 1).		
4	Release +	
5	Switch the cruisecontrol ON ⏻	CM-LED turns green
6	Operate +	1 beep, CM-LED turns orange Servo clicks once
(Does not operate: refer to § 5.3 trouble shoot 1).		
7	Press the brake pedal briefly.	1 beep, CM-LED turns green Servo clicks once
(Does not operate: refer to § 5.7 trouble shoot 5)		
8	Operate −	1 beep, CM-LED turns orange Servo clicks once
(Does not operate: refer to § 5.3 trouble shoot 1).		
9	press the clutch pedal (only if a clutch protection is installed)(does not operate: Refer to § 3.3 Wiring harness connections) òr operate **II** (does not operate: refer to § 5.3 trouble shoot 1) òr press the brake pedal briefly (does not operate: refer to § 5.7 trouble shoot 5)	1 beep, CM-LED turns green Servo clicks once
10	if all operates well, refer to: § 5.2 Diagnostics 2: servo, vehicle speed signal.	
11	Switch the ignition completely OFF to exit Diagnostics.	

5.2 Diagnostics 2: Servo, vehicle speed signal

Step	Action	Confirmation
1	Lock the handbrake and put the gear in neutral.	
2	Switch the ignition completely OFF.	
3	Operate and hold +	
4	Start the engine and wait for beep	1 long beep
5	Release +	
6	Switch the Cruisecontrol ON ⏻	CM-LED turns green
7	Operate and hold + and wait until the engine speed increases. Release + and wait briefly: The engine speed should now remain at a constant level.	1 long beep and CM-LED turns orange
(Does not operate: refer to § 5.5 trouble shoot 3).		
8	operate − and hold until the engine speed reduces.	1 long beep
(Does not operate: refer to § 5.5 trouble shoot 3).		
9	Press the brake pedal briefly.	CM-LED turns green engine speed drops to idle
(Does not operate: refer to § 5.5 trouble shoot 3).		
10	Drive at least 30 km/h (20 mph) in Diagnostics.	Beeps pulsating EM-LED flashes red
	(Does not operate: check the speed signal and connections. Refer to §3.3 Wiring harness connections)	
11	Switch the ignition completely OFF to exit Diagnostics.	

5.3 Trouble shoot 1

Step	Action	Confirmation
1	Operate + (Does not operate: Refer to § 5.4 Trouble shoot 2)	beep and EM-LED turns red
2	Operate - (Does not operate: Refer to § 5.4 Trouble shoot 2)	beep and EM-LED turns red
3	Check that the power supply +12V is connected correctly. Refer to § 3.3 Wiring harness connections	
4	Carry on with § 5.5 Trouble shoot 3	

5.4 Trouble shoot 2

Step	Action	Confirmation
1	Check that the wires of the CM are inserted in the correct location of the 8-pin connector (colour to colour) and locked properly.	
2	check that the CM is switched **ON**	CM-LED is green
3	Check the power supply- and ground connections.	
4	Press the brake pedal.	EM-LED turns red, Beep
(Does not operate: refer to § 5.7 Trouble shoot 5)		

5.5 Trouble shoot 3

Step	Action	Confirmation
1	Switch the ignition completely OFF.	
2	Undo the connector of the servo and connect one of the black wires from the servo to ground; connect the other black wire to +12V	Servo clicks once
	(does not operate: servo faulty)	
3	Leave these wires connected. Connect the blue wire to ground and connect the blue/red wire to 12V	Servo cable is pulled in completely
(Does not operate: refer to § 5.6 Trouble shoot 4)		
4	Check the connections between the EM and the servo	
	(in order: EM faulty)	

5.6 Trouble shoot 4

Step	Action
1	Check if the inner cable is inserted correctly in the pulley, refer to § 3.4.1 Assembly electric servo

5.7 Trouble shoot 5

Step	Action
1	check that the brown wires are connected in parallel on the brake light switch. Refer to § 3.3 Wiring harness connections
2	check that one of these wires has +12V and the other has ground through the brake lights (with brake pedal released). Refer to § 3.4 Wiring harness connections (If not: check the brake lights, fuse and connections of the brown wires)
3	Contact your supplier if this does not solve the malfunction.

6 Frequently Asked Questions (FAQ)

	Questions	Answers
1	**The vehicle speed signal setup does not operate.**	1. Check if the beeps are audible. 2. Execute the diagnostics mode. 3. Check if the blue wire is connected to a vehicle speed signal, refer to § 3.3 wiring harness connections.
2	**The cruisecontrol cannot maintain the set speed.**	1. Check the bends of the servo cable (minimal diameter of 40cm). Refer to § 3.5 Servo cable linkage. 2. Check if the travel of the cable linkage matches the chosen pulley. Refer to § 3.5.1 Adjusting servo cable travel. 3. The sensitivity is set too low. Increase the sensitivity. Refer to § 4.6 Increase sensitivity.
3	**The cruisecontrol cannot maintain a steady speed**	1. Check if the travel of the cable linkage matches the chosen pulley. Refer to § 3.5.1 Adjusting servo cable travel. 2. Check the bends of the servo cable (minimal diameter of 40cm). Refer to § 3.5 Servo cable linkage. 3. Check if the servo cable pulls straight from the adjuster. Refer to § 3.5 Servo cable linkage. 4. Check if the cable bracket is fitted fixed (not flexible). Refer to § 3.5 Servo cable linkage. 5. The sensitivity is set incorrect. Adjust the sensitivity. Refer to § 4.6 Increase sensitivity and § 4.7 Reduce sensitivity.
4	**The cruisecontrol does not operate at all**	1. Check if the fuse has been inserted into the fuse holder of the orange wire. 2. Execute the diagnostics mode 3. Check if the pins of the CM were inserted properly. Refer to the Installation manual CM. 4. Check if the cruisecontrol was switched ON ⏻ after starting.
5	**The cruisecontrol disengages when a power consuming device is switched on**	1. Check if the orange wire was connected directly behind the ignition switch. Refer to § 3.3 Wiring harness connections. 2. Check the ground connection. Refer to § 3.3 Wiring harness connections. 3. Check if the blue wire is connected free of interference, connect in another position if necessary.
6	**The cruisecontrol does not operate over a certain speed.**	1. Check if the travel of the cable linkage matches the chosen pulley. Refer to § 3.5.1 Adjusting servo cable travel. 2. Increase the cruisecontrol speed by learning the speed signal at a higher speed (>70 km/h).
7	**The cruisecontrol does not operate under a certain speed.**	1. Reduce the cruisecontrol speed by learning the speed signal at a lower speed (<70 km/h). 2. Check if the cruisecontrol has enough free play. Refer to § 3.5 Servo cable linkage.
8	**When engaging the cruisecontrol the speed rises over the set speed.**	1. Check if the cruisecontrol has enough free play. Refer to § 3.5 Servo cable linkage.

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