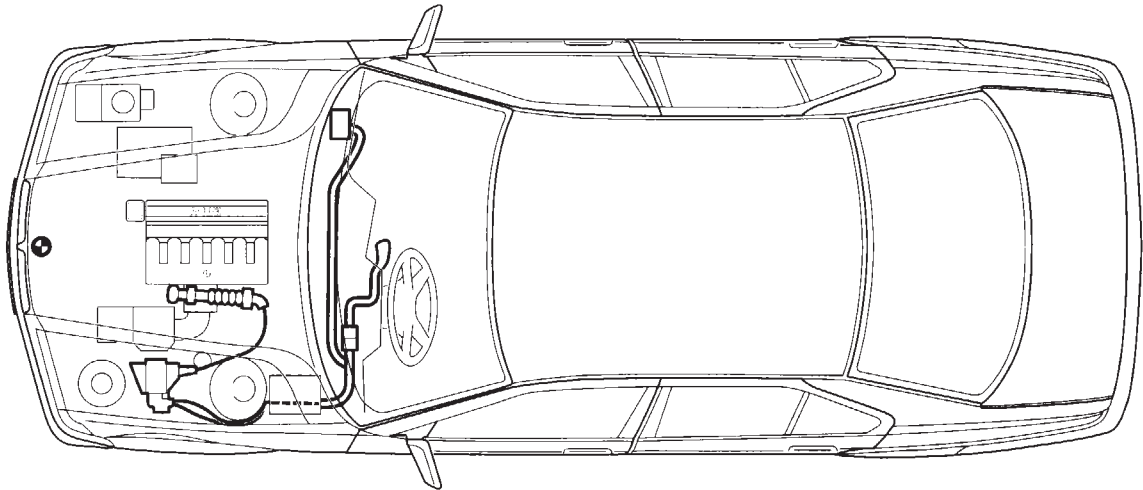




Teile und Zubehör - Einbauanleitung



F 36 62 106

Installation Instructions

Electronic Cruise Control

BMW 3 Series E36 Petrol Engine as from 9/94 and as from 1/95 with EWS II

Electronic Cruise Control

BMW 3 Series E36 Petrol Engine as from 9/94 and as from 1/95 with EWS II

(Intended for use in BMW dealer organisation only)
Installation time approx. 3.5 hours which can vary depending on the condition and equipment of the vehicle.
Knowledge of the electrical system is required.

Note

On vehicles equipped with a complete wiring harness, the plug connectors for the control unit, operating switch, clutch switch and actuator are tied back on the wiring harness.

No auxiliary wiring harness needs be installed.

All illustrations show the installation procedure on a left-hand drive model. Follow the same procedure for right-hand drive models.

Required tools and other equipment

Screwdriver for slotted head screws

Screwdriver for recessed cross head screws

Socket wrench, WAF 8 mm

Torx wrench T10

Cranked ring spanner WAF 13 mm

Cranked ring spanner WAF 10 mm

Drilling machine

Twist drills dia. 3 mm, 7 mm

Compass saw

Round file

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1. Vehicle Preparation - Removal

Print out fault code memory.

Disconnect battery.

Remove glovebox.

Remove trim panel for A-pillar in left-hand footwell.

Remove steering column trim panel at bottom.

Remove left and right footwell trim panels.

2. Overview of Auxiliary Wiring Harness

F 36 65 742 M

Connection diagram

| Item | Version/description | Wire colour | Connection in vehicle | Designation/ plug-in slot |
|-----------|----------------------------|---------------|---|------------------------------|
| A | Black 7-pin socket housing | - | Actuator in engine compartment | X70 |
| A1 | Socket contact | yellow/violet | Black 7-pin socket housing | X70/1 |
| A2 | Socket contact | brown/orange | Black 7-pin socket housing | X70/2 |
| A3 | Socket contact | red/brown | Black 7-pin socket housing | X70/3 |
| A4 | Socket contact | yellow/white | Black 7-pin socket housing | X70/4 |
| A5 | Socket contact | black/brown | Black 7-pin socket housing | X70/5 |
| A6 | Socket contact | black/green | Black 7-pin socket housing | X70/6 |
| A7 | Socket contact | black/blue | Black 7-pin socket housing | X70/7 |
| B | Pin contact | yellow/brown | Only on vehicles with automatic transmission: Engine plug connector colour coded grey Only on vehicles with manual transmission: Insulate and tie back in power distribution box | 69/14 |
| C | Comb connector contact | violet/yellow | Comb connector next to steering column | X1182 |
| D | Comb connector contact | black/white | Comb connector next to steering column | X188 |
| E | Comb connector contact | white/violet | Comb connector next to steering column | X183 |
| F | Comb connector contact | blue/red | Comb connector next to steering column | X181 |

| Item | Version/description | Wire colour | Connection in vehicle | Designation/ plug-in slot |
|----------|----------------------------|--------------|--|------------------------------|
| G | Comb connector contact | black | Only on vehicles with manual transmission: Comb connector next to steering column Only on vehicles with automatic transmission: Insulate and tie back on wiring harness | X1047 |
| H | Comb connector contact | brown/black | Only on vehicles with manual transmission: Insulate and tie back on wiring harness Only on vehicles with automatic transmission: Comb connector next to steering column | X191 |
| I | White 6-pin pin housing | - | Under steering column at drop arm switch | X72 |
| J | White 2-pin socket housing | - | Only on vehicles with manual transmission: Clutch switch S32 Only on vehicles with automatic transmission: Tied-back 2-pin pin housing K | X121 |
| K | White 2-pin pin housing | - | Only on vehicles with manual transmission: Insulate and tie back on wiring harness Only on vehicles with automatic transmission: Branch J | X144 |
| L | Comb connector contact | brown/orange | Comb connector behind glovebox | X10009 |
| M | Blue 26-pin socket housing | - | Control unit behind glovebox | X22 |

3. Installing Operating Switch

F 36 62 126

Slide operating switch (1) in direction indicated by arrow into guide (2) on steering column.
Fit operating knob (3) on operating lever (4).

F 36 65 760 M

Route cable of operating switch (1) along main wiring harness to connector station (2) on steering column.

F 36 62 108

Cut out pre-punched section (arrow) on bottom steering column trim panel.

4. Installing Auxiliary Wiring Harness

F 36 65 743 M

Route auxiliary wiring harness with the branches **A1** to **A7** and **B** from vehicle interior through the power distribution box to the engine compartment.
Route branches **A1** to **A7** to installation location of actuator ahead of power distribution box.
Route branch **B** to engine plug connector next to power distribution box.
Route branches **C** to **H** to comb connector box next to steering column.
Route branch **J** to pedal mounting bracket.
Route branch **I** to connector station at steering column.
Route branch **L** to comb connector box behind glovebox.
Route branch **M** to control unit carrier behind glovebox.

F 36 65 761 M

Remove cap (2). Unscrew recessed cross-head screws (1). Pull trim panel (3) in direction indicated by arrow and remove.

F 36 51 128 M

Remove comb connector box and unscrew hexagon screws (1) in footwell.

F 36 63 068

Remove cover. Unscrew Torx screws (1) and fold back top section of power distribution box (2).

F 36 65 762 M

Note

Do not use branch **B**, yellow/brown wire, on vehicles with manual transmission. Insulate and tie back in power distribution box.

Remove guide (1) in direction indicated by arrow.
Route branches **A1 - A7** and **B** from vehicle interior through power distribution box to engine compartment. Then connect branches **A1 - A7** in socket housing as follows:

| Wire colour | Pin |
|---------------|-----|
| yellow/violet | 1 |
| brown/orange | 2 |
| red/brown | 3 |
| yellow/white | 4 |
| black/brown | 5 |
| black/green | 6 |
| black/blue | 7 |

F 36 65 763 M

Only on vehicles with automatic transmission

Disconnect engine plug connector X69 (1) from support bracket on power distribution box. Connect branch **B**, yellow/brown wire, at plug-in slot 14.

F 36 65 741 M

Route black 7-pin socket housing **A** X70 of auxiliary wiring harness (1) from power distribution box along wiring harness (2) into front left of engine compartment to installation location of actuator.

F 36 65 773 M

Note

If there are no more plug-in slots available on the required comb connector, the branch should be connected to the cable with the largest cross section in the comb connector.

On vehicles with manual transmission

Insulate branch **H**, brown/black wire, and tie back.
Plug in branch **G**, black wire, at comb connector X1047 of the same colour.

On vehicles with automatic transmission

Insulate branch **G**, black wire, and tie back.
Plug in branch **H**, brown/black wire, at comb connector X191 of the same colour.

Route branches **C**, **D**, **E** and **F** to plug connector box on left next to steering column.
Plug in branches **C**, violet/yellow wire, at comb connector X1182 of the same colour.
Plug in branch **D**, black/white wire, at comb connector X188 of the same colour.
Plug in branch **E**, white/violet wire, at comb connector X183 of the same colour.
Plug in branch **F**, blue/red wire, at comb connector X181 of the same colour.

F 36 65 764 M**Only on vehicles with manual transmission**

Fit clutch switch S32 (1) in aperture (2) of support bracket on pedal mounting bracket.
Plug in branch **J**, white 2-pin socket housing X121, of auxiliary wiring harness.

F 35 65 774 M**Only on vehicles with automatic transmission**

Connect branch **J**, white 2-pin socket housing X121, to tied-back white 2-pin pin housing **K**.

F 36 65 765 M**All vehicles**

Route branch **I**, white 6-pin pin housing X72, under steering column and connect to white 6-pin socket housing (1) of operating switch.

F 36 65 744 M

Route auxiliary wiring harness (1) behind the heater/air conditioner along the bulkhead to the glovebox.
Route branch **L**, brown/orange wire, to comb connector box (2) and plug in at comb connector X10009 of the same colour.
Route branch **M**, blue 26-pin socket housing X22, behind control unit carrier (3).

F 36 65 766 M

Connect branch **M**, blue 26-pin socket housing X22, to the cruise control unit A8 (1) provided and secure in control unit carrier (2).

5. Installing Actuator

F 36 65 775 M

Fit support bracket (1) on actuator (2) and secure with hexagon nuts (3).

F 36 65 767 M**Only on vehicles with four-cylinder engine****Note**

Support bracket (1) is only required on M43 engine.

Fit support bracket (1) in holder (2) and secure with hexagon nut (3). Ensure lug (4) is fitted in correct position.

F 36 65 779 M**All vehicles**

Attach bowden operating cable (1) to pull strap (2) of actuator (3) and slide cap (4) into position.

F 36 65 781 M**Note**

Do not yet install actuator at this point on vehicles with M52 engine.

Release hexagon nut (1) and fit actuator (2).
Turn black 7-pin socket housing **A** X70 in direction indicated by arrow and secure actuator (2). Release hexagon nut (3) and secure support bracket (4). Fit bowden operating cable assy (5) in support bracket (4). Fit protective cap provided with installation kit on black 7-pin socket housing X70.

F 36 65 780 M**Only vehicles with S50 engine****Note**

On vehicles with dome strut, remove lead (3) from support bracket (4) and connect bowden operating cable (1). Secure lead (3) with cable tie on bowden operating cable assy (1).

Fit bowden operating cable assy (1) in existing support bracket (2).

6. Installing Bowden Operating Cable Assy

F 36 65 782 M**Note**

The illustration shows the arrangement of the bowden operating cable assy on the M52 engine. Proceed in the same way for all other engine variants.

Install bowden operating cable (1) free of kinks and bends.

6.1 Only Vehicles with M42 Engine

F 36 62 134

Route bowden operating cable (4) free of kinks to support bracket (1) on intake pipe.
Pass bowden operating cable (4) through hole in support bracket (1).
Fit rubber retainer (2) in hole.
Press adjusting screw (3) in rubber retainer (2).

F 32 65 276

Fit retaining clip (1) on bowden operating cable assy (2).

F 36 62 136

Install bowden operating cable assy with retaining clip (1) in aperture (2) of cruise control lever for throttle valve (3).
Adjust bowden operating cable assy in accordance with instructions.

6.2 Only Vehicles with M43 Engine

F 36 65 771 M

Remove slotted head screws (2) and detach cover (1).

F 36 65 768 M

Route bowden operating cable assy (4) free of kinks to support bracket (1) on intake pipe.
Pass bowden operating cable (4) through hole in support bracket (1).
Fit rubber retainer (2) in hole. Press adjusting screw (3) into rubber retainer (2). Install bowden operating cable assy (4) with retaining clip in aperture (5) of cruise control lever (6) for throttle valve.
Adjust bowden operating cable assy in accordance with instructions.

6.3 Only Vehicles with M44 Engine

F 36 65 696 M

Release slotted head screw (2) and detach cover (1).

F 36 65 697 M

Route bowden operating cable assy (4) free of kinks to support bracket (1) on intake pipe.

Pass bowden operating cable assy (4) through hole in support bracket (1) and fit rubber retainer (2) in hole.

Press adjusting screw (3) into rubber retainer (2).

Fit retaining clip (5) on nipple of bowden operating cable assy (4).

Fit bowden operating cable assy (4) with retaining clip (5) in aperture of operating lever (6) for throttle valve.

Adjust bowden operating cable assy in accordance with instructions.

6.4 Only Vehicles with M52 Engine

F 36 65 772 M

Release hexagon nut (1) and detach clip (2). Release intake air duct (3) and remove air cleaner (4).

F 36 65 776 M

Release plug connector (1). Press down clip (2) and detach plug connector (3). Undo hose clip (4) and raise intake air duct (5).

F 36 65 769 M

Detach hose (1) from intake air duct (2) and remove intake air duct (2).

F 36 65 777 M

Note

Collect coolant in a suitable container.

Detach bowden operating cable assy (1) for throttle control and remove. Undo hose clips (2) and remove hoses (3). Release hexagon nuts (4) and remove throttle body (5).

F 36 65 770 M

Note

Check coolant level and bleed vehicle cooling system.

In the throttle body (1) supplied separately, press bowden operating cable assy (2) with rubber retainer (3) into hole of support bracket (4). Secure bowden operating cable assy to plate (5) of cruise control. Install operating cable assy (6) of throttle plate. Reinstall throttle body (1) and attachment parts in the reverse order of removal. Install actuator for cruise control system.

6.5 Only Vehicles with S50 Engine

F 36 65 778 M

Fit bowden operating cable assy (1) with retaining clip in cruise control lever (4). Press bowden operating cable assy (1) with rubber grommet (2) into retaining bracket (3).

7. Adjusting Bowden Operating Cable Assy

F 36 62 138

Run engine up to operating temperature. With the throttle valve closed and the actuator in neutral position (no set speed), adjust knurled nut (1) and adjusting screw (2) of bowden operating cable assy (3) such that the stop of throttle valve (4) rests on the stop of adjusting screw (5).

8. Encoding

This system requires encoding to ensure that

- the retrofit system is operable to its full extent.
- This system and, if necessary, other vehicle control units must be encoded in order to avoid malfunctions and faults in conjunction with other electrical vehicle systems.

It is stored additionally in the central encoding code of the instrument cluster.

This encoding procedure is carried out automatically with the currently valid coding program in the „Retrofit“ path. The procedure is user-prompted, the relevant text notes must be observed when carrying out the individual steps. This retrofit encoding procedure for this product is included in the encoding diskette as from 15.0.

Procedure:

- Connect DIS/MoDiC to vehicle
- Ignition „ON“
- Select „**Encoding ZCS**“
- Enter date, confirm with „Y“ (for MoDiC only)
- Series: „**E36**“
- Path: „**2 Retrofit**“
- System: „**6 Cruise control II**“
- Start automatic encoding (confirm with „Y“)
- Ignition „OFF“, wait at least 10 seconds and then switch ignition „ON“ again
- Have coding label printed out and adhere in vehicle interior under bench seat next to old coding label.

Print out fault code memory.

Check functions.

9. Function

F 36 62 139

As of approx. 40 km/h, a required driving speed can be maintained and stored automatically. The stored speed value is deleted when the engine is turned off.

1 ACCELERATE

Press lever in position 1:

The current speed is maintained and stored. The speed is increased by approx. 1 km/h every time the lever is pressed.

Hold lever in position 1:

The vehicle accelerates without pressing the accelerator pedal. On release, the speed reached is maintained and stored.

2 DECELERATE

Press lever in position 2:

Once cruise control has been activated, the speed is reduced by approx. 1 km/h every time the lever is pressed. On release, the speed reached is maintained and stored.

Hold lever in position 2:

Once cruise control has been activated, the vehicle decelerates automatically. On release, the speed reached is maintained and stored.

3 RETRIEVE

Press lever in position 3:

The speed last stored is reached again and maintained.

4 OFF

Press lever in position 4:

Cruise control is switched off irrespective of the driving or traffic situation.

In addition, cruise control switches off automatically:

- After exceeding the set speed by approx. 16 km/h.
- After dropping below the set speed by 8 km/h.
- When braking and pressing the clutch or shifting the automatic transmission selector lever from D to N.
- In the event of substantial deceleration ($>1.5 \text{ m/s}^2$), e.g. on gradients.

When the ignition key is turned to position 0, the system is switched off and the stored speed is deleted.

Caution!

Do not use automatic cruise control on winding roads, where heavy traffic does not permit a constant driving speed, on slippery road surfaces (snow, rain, ice) and where the road surface is loose (stones, sand).

