

Technical training.
Product information.
G01 Climate Control



BMW Service

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Technical Training

ST1701

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General information

Symbols used

The following symbol is used in this document to facilitate better comprehension or to draw attention to very important information:



Contains important safety information and information that needs to be observed strictly in order to guarantee the smooth operation of the system.

Information status and national-market versions

BMW Group vehicles meet the requirements of the highest safety and quality standards. Changes in requirements for environmental protection, customer benefits and design render necessary continuous development of systems and components. Consequently, there may be discrepancies between the contents of this document and the vehicles available in the training course.

This document basically relates to the European version of left hand drive vehicles. Some operating elements or components are arranged differently in right-hand drive vehicles than shown in the graphics in this document. Further differences may arise as the result of the equipment specification in specific markets or countries.

Additional sources of information

Further information on the individual topics can be found in the following:

- Owner's Handbook
- Integrated Service Technical Application.

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The information contained in this document forms an integral part of the BMW Group Technical Qualification and is intended for the trainer and participants in the seminar. Refer to the latest relevant information systems of the BMW Group for any changes/additions to the technical data.

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G01 Climate Control

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G01 Climate Control

1. Introduction

1.1. General information

The new BMW X3 with development code G01 features a more advanced and optimized air conditioning compared to its predecessor F25. The refrigerant R1234yf is used for the US models.

A brushless blower motor integrated in the heating and air-conditioning unit provides the supply of fresh air to the vehicle interior via the microfilter. The microfilters can be replaced in the footwell on the passenger's side.

The IHKA control unit is fastened to the side of the heating and air-conditioning unit.

1.2. Overview

Automatic climate control (IHKA) is standard for the G01.

- 3/1-zone air conditioning.

From a technical perspective the climate control is divided into zones (e.g. driver, front passenger, rear passenger compartment, temperature...). The first digit represents the individually adjustable temperature settings, whilst the second digit represents the zones in which the amount of air can be individually adjusted.

The air conditioning in BMW X3 is based partially on the technology of G12 and G30. The topics listed below are described in the product information **ST1604 G30 Climate Control** or **ST1501 G12 Climate Control**.

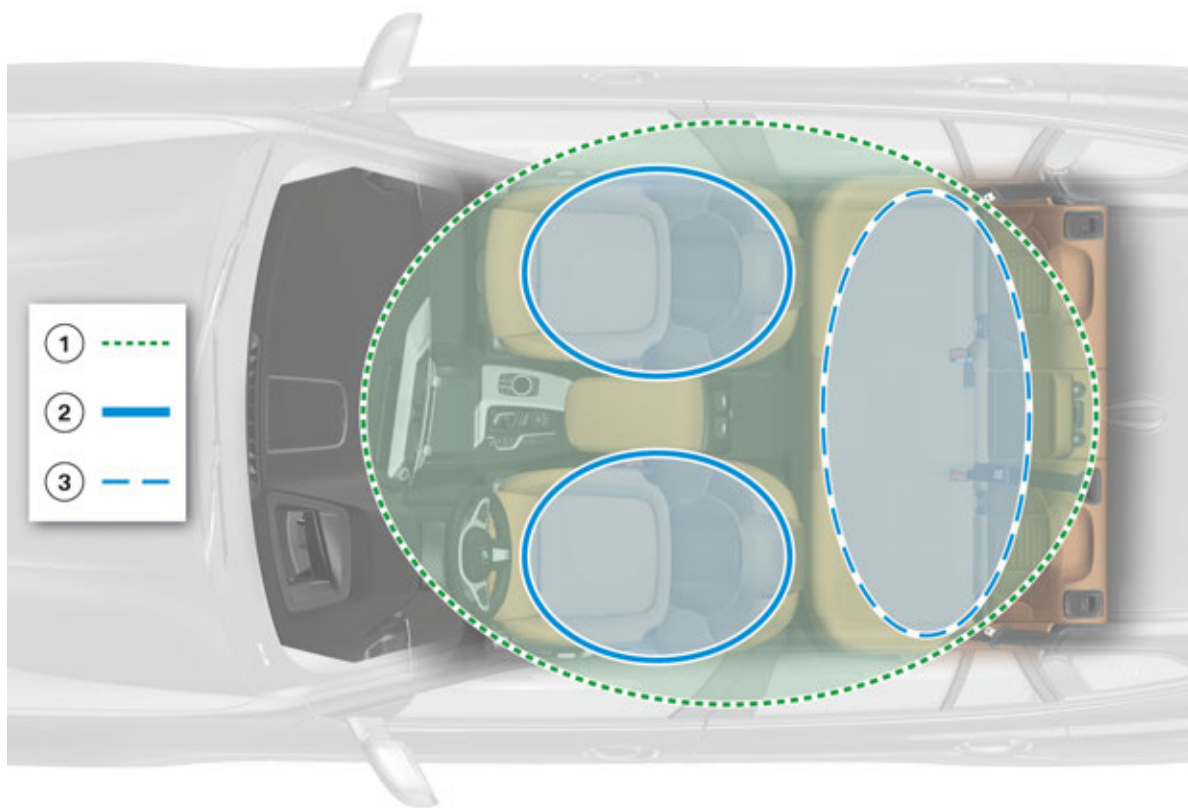
Topic	Product information
Refrigerant line (inner heat exchanger IWT)	ST1501 G12 Climate Control
Coolant-cooled air conditioning condenser	ST1501 G12 Climate Control
Refrigerant R1234yf	ST1501 G12 Climate Control
Air treatment (air freshener, ioniser)	ST1501 G12 Climate Control
Refrigerant circuit	ST1501 G12 Climate Control
Cooling system	ST1501 G12 Climate Control
Layering	ST1604 G30 Climate Control

G01 Climate Control

2. System Overview

2.1. IHKA, 3/1-zone

In the G01, a 3/1-zone air conditioning system is installed. Three different temperature zones can be set. The temperatures on the driver's and front passenger's side as well as in the rear passenger compartment can be set separately. The amount of air can only be regulated by the driver and front passenger. As of the 3/1-zone air conditioning, an automatic air recirculation control sensor is installed for the automatic recirculated air flap control. The solar sensor is installed on the windshield behind the trim of the mirror base. Under strong sunlight it controls the temperature, amount of air and air distribution accordingly for the air conditioning so that the selected temperature for the vehicle interior is maintained.



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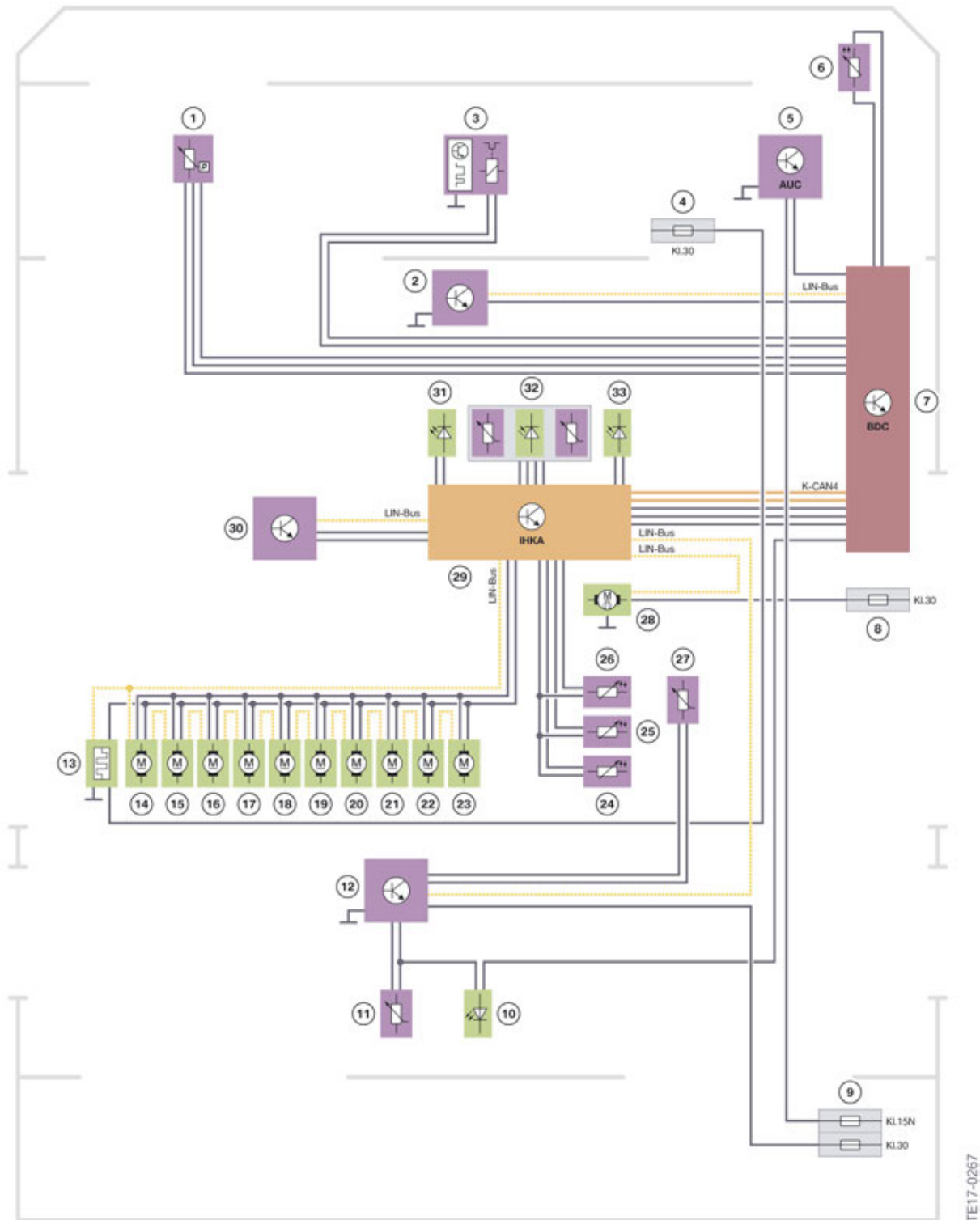
3/1-zone IHKA – overview

Index	Explanation
1	Joint control of the amount of air for driver/front passenger/rear passenger compartment
2	Separate temperature control for driver/front passenger
3	Rear temperature control via an air conditioning control panel

G01 Climate Control

2. System Overview

2.1.1. Wiring diagram



G01 3/1-zone IHKA wiring diagram

G01 Climate Control

2. System Overview

Index	Explanation
1	Refrigerant pressure sensor
2	Rain-light-solar-condensation sensor
3	Air conditioning compressor
4	Fuse in the power distribution box, engine compartment
5	Automatic air recirculation control sensor
6	Outside temperature sensor
7	Body Domain Controller (BDC)
8	Fuses in the power distribution box, front right
9	Fuses in the power distribution box of the luggage compartment
10	Lighting, rear ventilation outlet
11	Temperature sensor, middle ventilation outlet
12	Air conditioning control panel for rear passenger compartment
13	Electric auxiliary heater (diesel vehicles only) (Not for US)
14	Stepper motor, fresh air/air recirculation function
15	Stepper motor, defrost
16	Stepper motor, air distribution, right
17	Stepper motor for stratification, right
18	Stepper motor for mixed air, right
19	Stepper motor for temperature, rear passenger compartment
20	Stepper motor for mixed air, left
21	Stepper motor for stratification, left
22	Stepper motor for air distribution, left
23	Stepper motor for ventilation, rear passenger compartment
24	Temperature sensor for footwell, right
25	Temperature sensor for footwell, left
26	Temperature sensor for evaporator
27	Temperature sensor for footwell, rear passenger compartment
28	Blower motor, integrated automatic heating/air conditioning IHKA
29	IHKA control unit
30	Air conditioning control panel for driver/front passenger
31	Lighting for ventilation outlet, driver, left
32	Center grill temperature sensors with lighting
33	Lighting for ventilation outlet, front passenger, right

G01 Climate Control

2. System Overview

2.1.2. 3/1-zone air conditioning control panel

The operating concept of the 3/1-zone air conditioning uses the familiar operating concept from the current BMW models. It provides the driver and front passenger with individual and separate left/right temperature control and individual selection of an automatic program. All functions on this control panel are controlled using buttons. Depending on the equipment installed, the amount of air and air distribution for the driver/front passenger, seat heating and active seat ventilation can be controlled using the IHKA control panel. In the 3/1-zone air conditioning, the current settings of the driver for temperature, amount of air and air distribution can be transferred to the front passenger's side and the rear passenger compartment by pressing the SYNC button. The IHKA menu is opened in the Central Information Display via the menu button. Depending on the equipment, the stratification for driver/front passenger can be separately adjusted in this menu. A detailed explanation of this topic can be found in Product Information G30 Air Conditioning.



G01 3/1-zone air conditioning control panel without touch operation

2.1.3. 3/1-zone air conditioning control panel, rear passenger compartment

With the 3/1-zone air conditioning, the temperature in the rear passenger compartment is adjusted via a separate air conditioning control panel. The amount of air can only be regulated by the driver and front passenger. Warm or cold air is supplied by the air conditioning from the front and passed through the air ducts under the center console to the rear ventilation outlets and to the footwell.

A seat heating for the rear passenger compartment can only be ordered in combination with the 3/1-zone air conditioning.



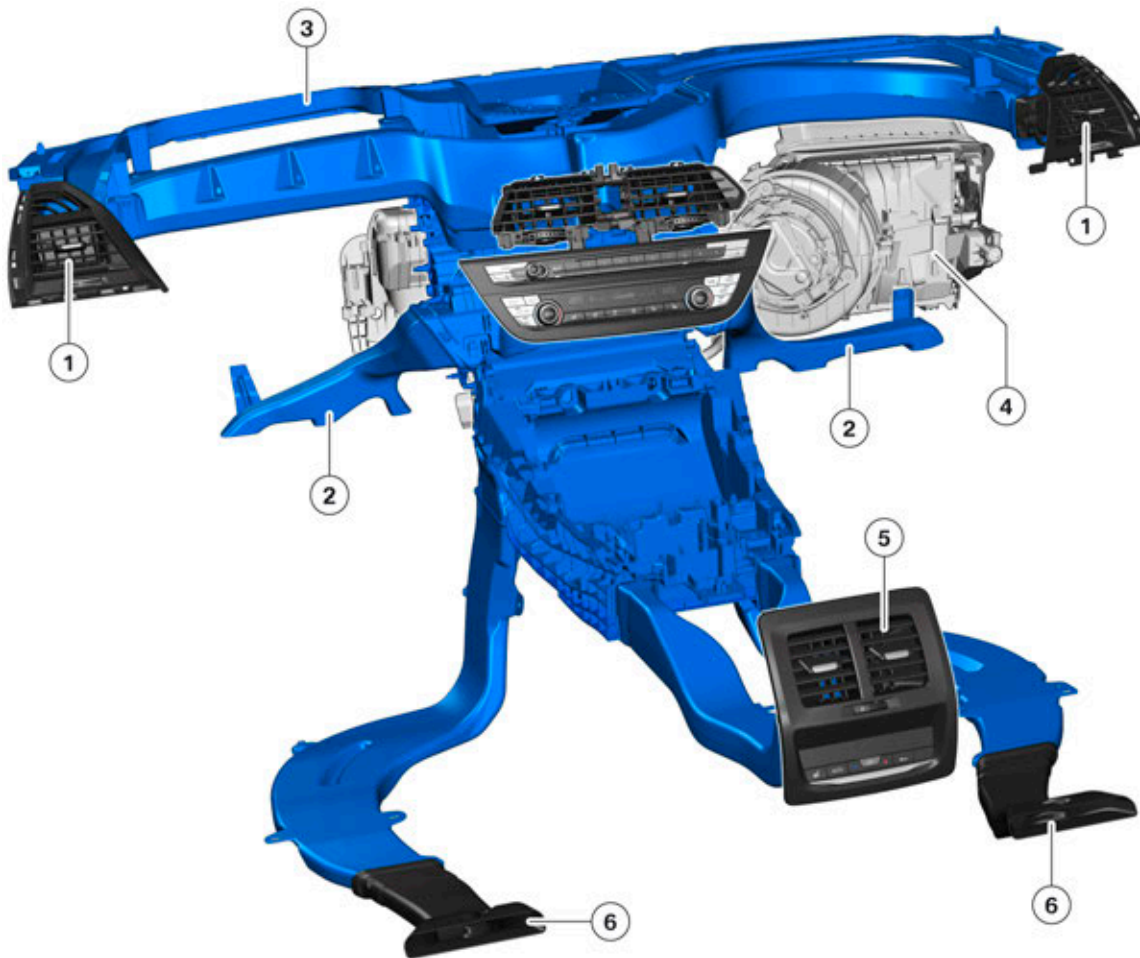
G01 3/1-zone air conditioning control panel for the rear passenger compartment

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2. System Overview

2.1.4. 3/1-zone air conditioning air ducts

The 3/1-zone air conditioning continuously supplies the rear passenger compartment via air ducts that pass under the center console. It is only possible to set the temperature from the rear passenger compartment since there is no additional auxiliary blower under the center console.



Air ducts, rear passenger compartment, 3/1-zone air conditioning

Index	Explanation
1	Ventilation outlet, right/left
2	Ventilation outlet, footwell, driver, right/left
3	Ventilation outlet, windshield
4	Blower
5	Ventilation outlet, rear passenger compartment, Center console
6	Ventilation outlet, footwell, rear passenger compartment

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3. Stratification

In the G01, the stratification for the driver/front passenger is not adjusted in the usual manner via the knurled wheels in the instrument panel. There is now a MENU button on the IHKA control panel that when pressed, opens a menu in the CID to make the stratification air adjustments.

For more information, refer to Product Information **ST1604 G30 Climate Control**.



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