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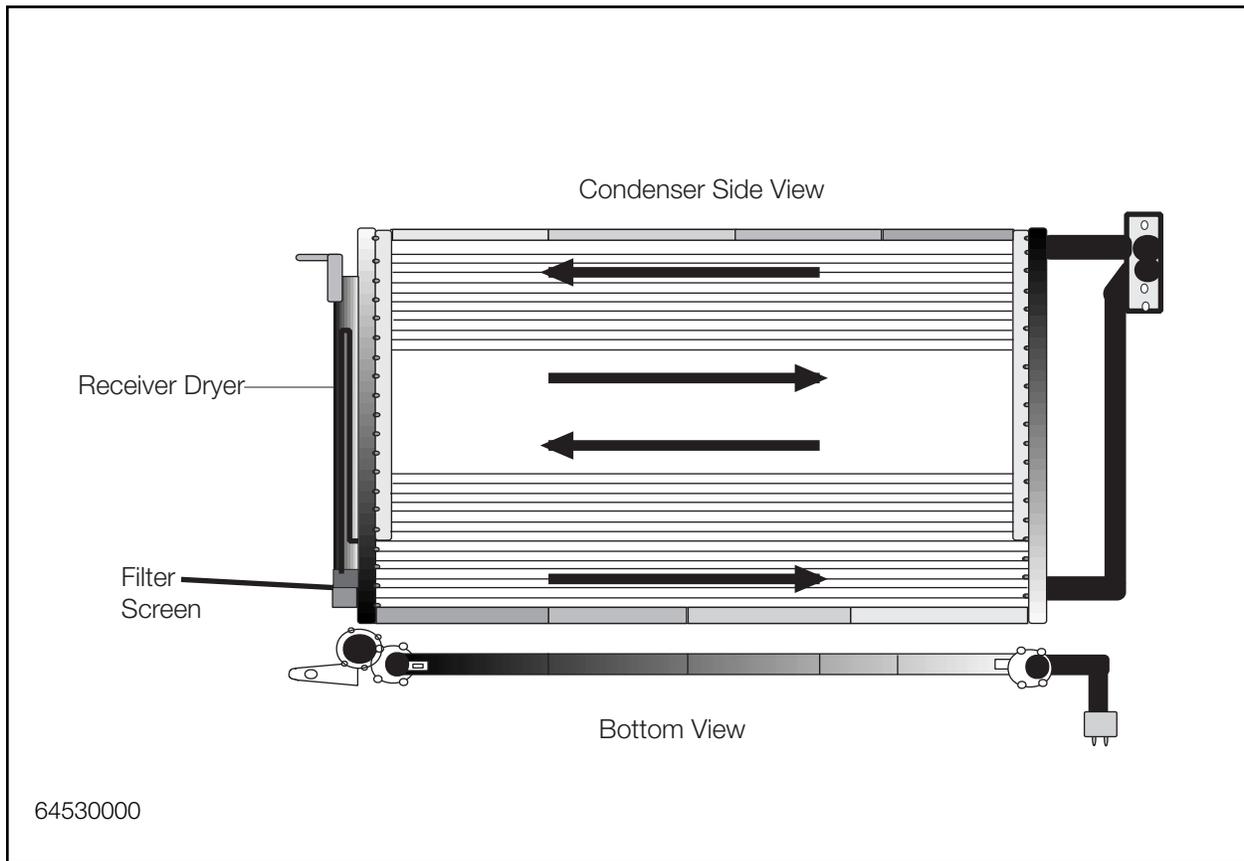
Climate Control Systems (IHKR/IHKA)

Two climate control systems are offered on the X5, the manual IHKR system is standard equipment on the 3 liter X5 and the IHKA system is available as an option. The IHKR is a new system for US production and the IHKA is taken from the E39 vehicles.

Condenser/Receiver Dryer

The X5 incorporates a new design air conditioning condenser/receiver dryer for both the manual (IHKR) and the automatic (IHKA) systems. The dryer cartridge and condenser are one component with the dryer integrated on the left side. The dryer cartridge contains a replaceable filter screen and dryer unit.

The condenser is partitioned which divides the condenser into cooling sections. The hot refrigerant flows across the condenser and into the dryer through inlet holes at the lower 1/3 section of the cooling fins. After the refrigerant passes through the dryer it returns to the evaporator through the outlet hole and bottom 1/3 section of the condenser.



Climate Control System (IHKR)

The manual system is controlled through the use of bowden cables for air distribution and electronic control for temperature regulation and blower speed. One stepper motor is used for the fresh/recirculated air intake.

The IHKR incorporates the following features:

- Fresh air intake grilles integrated into the hood - the fresh air passes through the single micro filter installed in the center of front bulkhead.

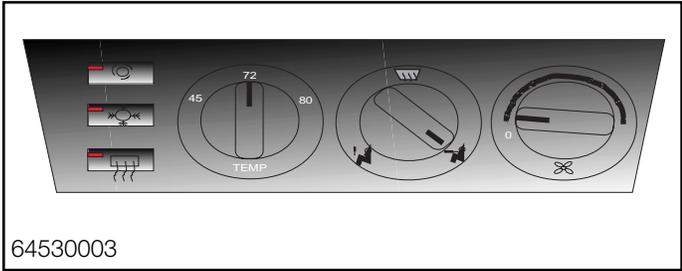


The air then passes through the air duct, which is bolted to the bulkhead, and enters the heater - A/C unit through the non-return flaps.

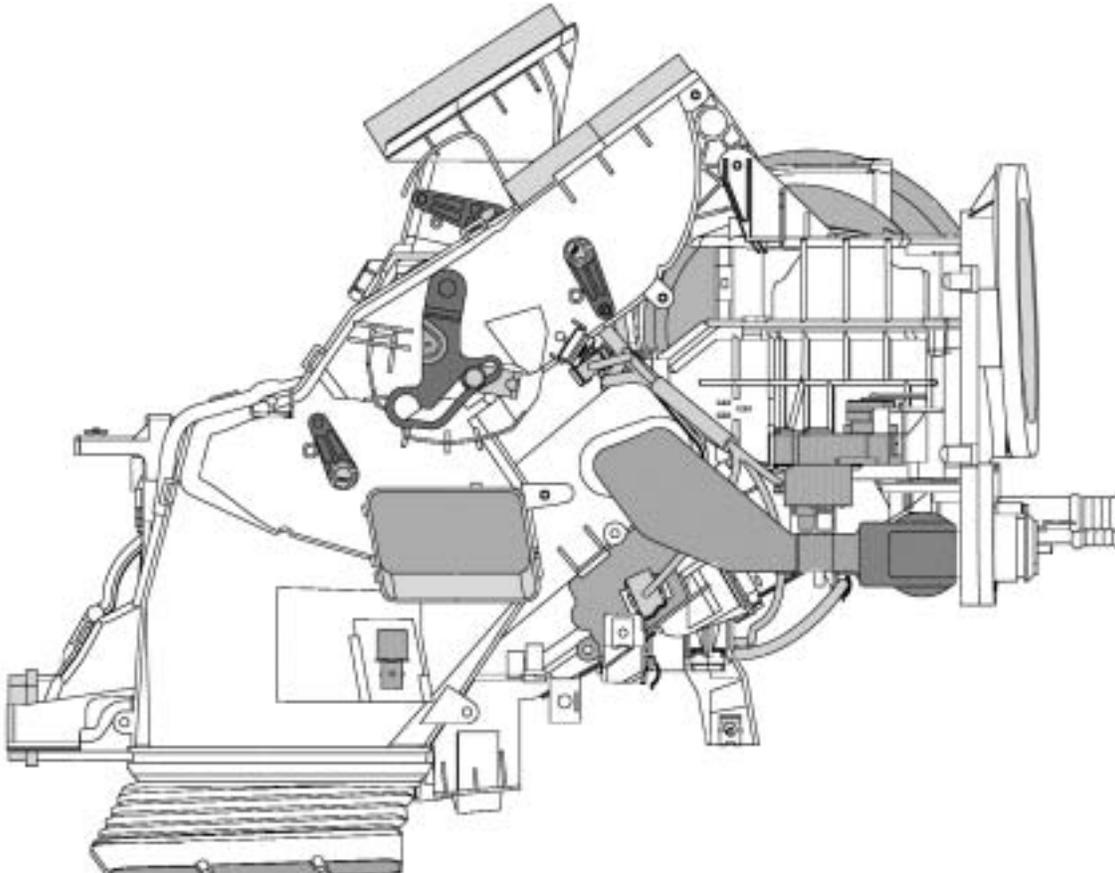


IHKR Control Unit

- Integrated control module with operating panel.



- IHKR heater/air conditioner unit with
 - 1 heat exchanger temperature sensor
 - 1 evaporator temperature sensor
 - 1 footwell temperature sensor
 - Blower motor
 - 1 stepper motor (high speed fresh/rcirc air)



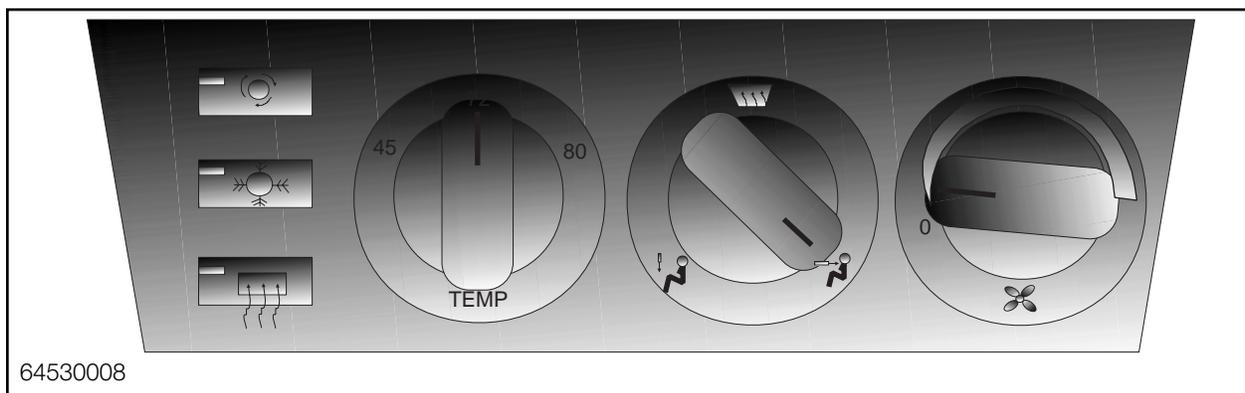
IHKR Operation

IHKR system operation is as follows:

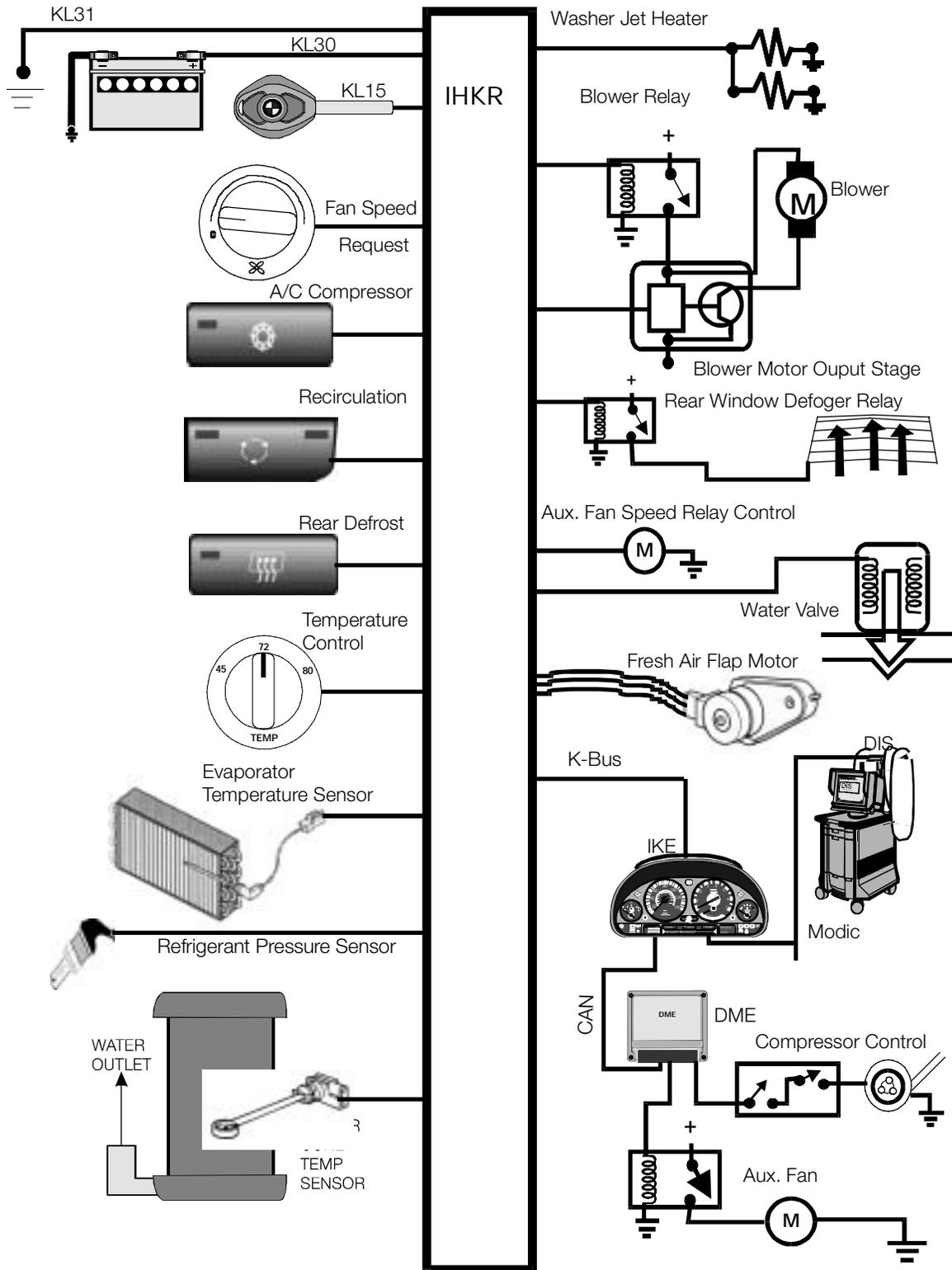
- Temperature Control - The desired interior temperature is set with the rotary knob on the control panel. Control of the interior temperature is carried out electronically by the control module's cycling of the water valve to regulate coolant flow through the heat exchanger.
- Air Distribution - Air distribution is set mechanically through the use of gear linkages and bowden cables. The air can be set for:
 - Footwell or blended between footwell/face vent or footwell and defrost
 - Defrost or blended between footwell/defrost or defrost/face vent
 - Face vent or blended between face vent/footwell or face vent/defrost
- Blower Control - Blower fan speed is controlled through a final stage with infinitely variable speed control.

The push buttons on the control panel are used to:

- Switch between fresh air and recirculating air inlet modes
- Request for A/C activation
- Activation of the rear window defogger



IHKR IPO

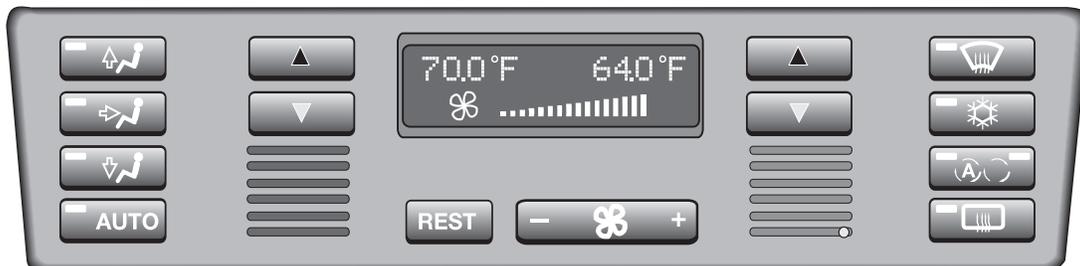


Climate Control System (IHKA)

The IHKA is standard equipment on the X5 with the M62 engine and optional equipment on the M54 version. The IHKA system is taken from the E39 sedan and includes all functions and features of the IHKA currently installed in the E39.

Features of the IHKA system include:

- Integrated control panel/module.
- Separate temperature control for the driver and front passenger.
- Air flap control through the use of bussed stepper motors.
- Automatic Recirculation Control (AUC).
- Recirculation air flap control from the MFL.
- “REST” function for residual heat when vehicle is stopped.
- Service station feature that closes the water valves when stopped to prevent hot water circulating into the heater cores.
- A/C compressor clutch activation through a final stage control.
- Center face vent stratification control through a bowden cable.
- Separate blower motor for rear passenger compartment



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The rear blower motor is located below the center storage box behind the center air outlet grilles. The blower speed control is mounted in the panel below the outlets. Cool or stratified air is available at the center outlets.

IHKA Air Flow

The micro filter for the IHKA system is installed in the engine compartment in the center of the fire wall.

