Bosch: bringing you the workshop of the future

For over 125 years, Bosch innovations have been keeping vehicles on the road and getting people to and from their destinations while improving safety and peace of mind along the way.

Bosch Automotive Aftermarket offers workshops and retailers a comprehensive portfolio of products that is unmatched worldwide:

- Efficient diagnostics
- Innovative workshop equipment
- Quick, reliable delivery
- The world's most comprehensive range of spare parts – including both new and remanufactured
- Workshop concepts to meet every requirement
- Comprehensive training
- Targeted sales and marketing support
- A competent service hotline
- 24-hour online workshop services
- Affordable leasing services for workshop equipment and software

From parts to scheduling, organization and results, our solutions are combined with additional services to ensure your needs will be perfectly met, helping you to maximize your potential.

Workshop tip:
When servicing an air conditioning system, think about changing the cabin filter, because the service is only complete – and noticeable to your customers – with a new filter.

Robert Bosch GmbH
Automotive Aftermarket
Business Unit Diagnostics

73201 Plochingen
Germany
www.bosch-diagnostics.com

AA-DG/MKC 07.2012 X XXX XXX XXX

Perfect: The cabin filter program from Bosch for almost all vehicle types provides more comfort, safety and health protection:

- Reliable filtration of dirt particles, exhaust gases and ozone
- Fewer deposits in the fan or on the front windscreen

Perfection for Professionals: Air Conditioner Service with Bosch ACS 751 and 651

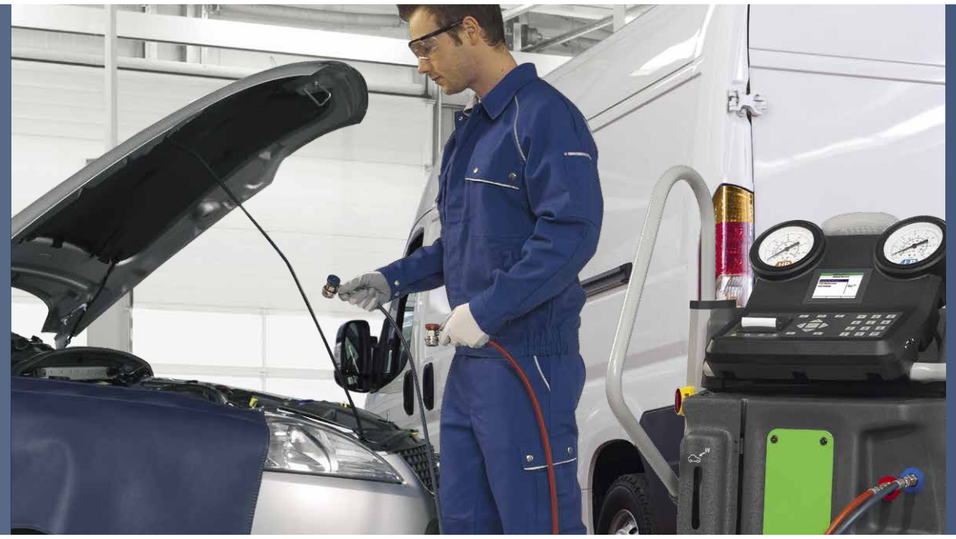
BOSCH
Invented for life

BOSCH
Invented for life

ACS 751 and 651
A/C service unit from Bosch for R134a

- ACS 751 – fully automatic: Air conditioning system service for cars and commercial vehicles (certified according to SAE J2788, CE and PED)
- ACS 651 – fully automatic: Air conditioning system service for cars and commercial vehicles (certified according to CE and PED)

Bring on summer! Sweltering temperatures are easily handled with Bosch ACS



Stay cool with our air conditioning service: With the new ACS units from Bosch, you can take advantage of comfort, precision, and fully-automated operations.

Air conditioning systems in vehicles require regular maintenance. The market potential for intelligent air conditioning service is therefore increasing all of the time. When it comes to these services, it is the workshops with expertise and the right equipment that come out trumps.

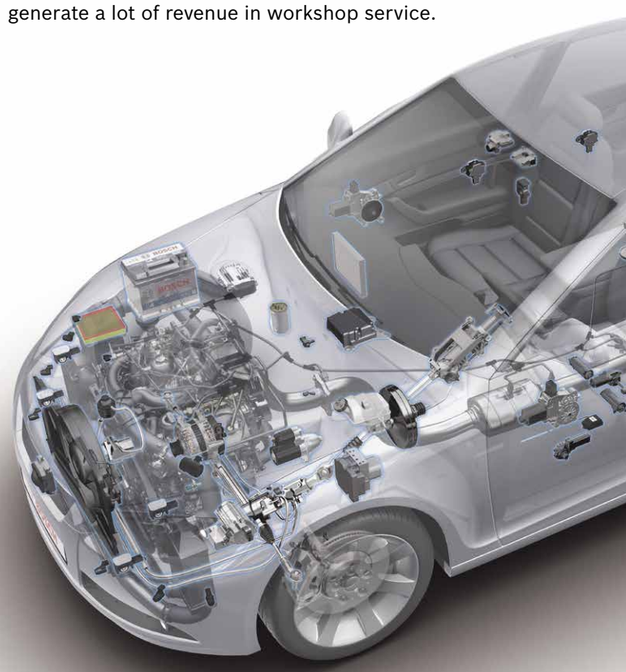
Driving comfort and safety through air conditioners
Air conditioners are standard a vehicle equipment: Nowadays, over 60 percent of small cars and over 90 percent of middle class and premium range models are fitted with air conditioners and the share increases every day.

- For most small cars, an air conditioner can at least be ordered as an option.
- The trend is increasing, both for passenger cars and commercial vehicles.
- Sooner or later, there will be very few vehicles without an air conditioner.

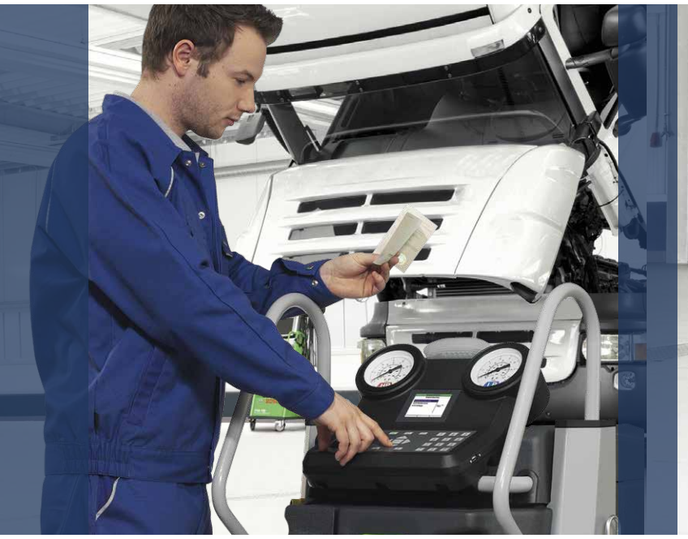
The new ACS A/C service unit from Bosch:
2 models for every workshop profile

- ACS 751: Meets even the most specific requirements of air conditioner services for cars and commercial vehicles from certified pursuant to SAE J2788.
- ACS 651: Robust and modern for air-conditioning systems in cars and commercial vehicles.

Service work on air conditioning systems with R134a is an everyday workshop task that will continue for the next few years.
Despite the introduction of the new refrigerant R1234yf, vehicle manufacturers are still permitted to supply new vehicles with R134a refrigerant in their air conditioning systems until 2016. With an average vehicle service life of 20 years, R134a air conditioning service units will generate a lot of revenue in workshop service.



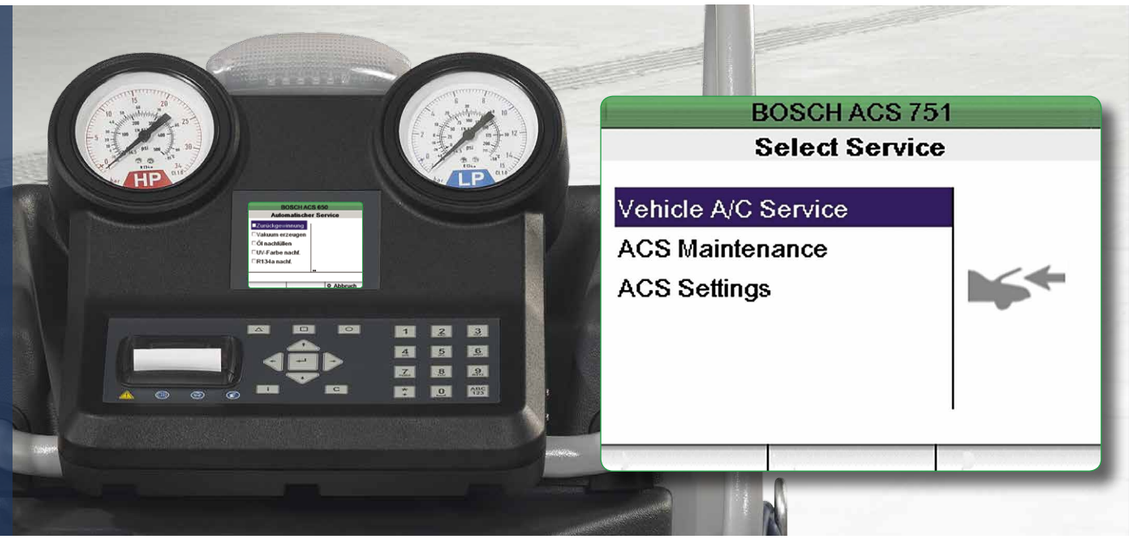
ACS 751 with complete equipment: Perfect service for cars and commercial vehicles



Intelligent operating concept: ACS 751

ACS 751

Precise, practical, powerful: Detailed-focused solutions for the highest standards



The color display provides a clear overview

The advantages of the ACS 751 at a glance

Professional and comfortable

- SAE J-2788 certification guarantees professional and environmentally friendly handling of refrigerant
- Fully automatic service process or individually selectable manual service steps
- Self-test before every initial start-up
- Fault prevention; fault message appears for any negative result of a system component test
- Information provided on pending unit maintenance
- Integrated database for car and commercial vehicles set values plus individual user database
- Shock resistant scale of the internal refrigerant cylinder for precise measurement of the amount of refrigerant
- Easy-to-maneuver trolley with easy accessible service hatches
- Printer

ACS 751: Safe and efficient, for professional and commercial air conditioner service

Thanks to high-precision measuring technology and fully automatic service process, the new ACS 751 A/C service unit from Bosch ensures that service work on cars and commercial vehicles air conditioning systems are environmentally friendly. The ACS 751 fulfills all of the requirements of the demanding SAE J-2788 standard; the definitive US standard for A/C service units and the award for the relevant certification.

Fully automatic operations process

The unit performs all of the following tasks without the need for manual intervention: Refrigerant extraction, refrigerant recycling, used oil draining, evacuation with the associated leak testing, refilling of new oil with UV additives, and precise refrigerant filling.

Perfect air conditioner service for cars and comm. veh.

The ACS 751 is suitable for fully automatic maintenance and repair work on most car and commercial vehicle air conditioning system.

Service for hybrid and electric vehicles

Two separate fresh oil circuits make service possible on vehicles with combustion engines as well as hybrid and electric vehicles.

Fully equipped for the ultimate service

The top-of-the-range ACS 751 has all the equipment you need for service work even on large air-conditioning systems:

- Log printer integrated as standard
- Large internal refrigerant tank (22 l)
- High-performance vacuum pump (7.9 m³/h)
- Valve for automatically venting non-condensable gases from the refrigerant tank
- 1 expert bottle and 3 HDPE bottles
- Two cleaning programs
- Automatic filling of contrast agent
- Refrigerant recovery > 95 %

Order number

ACS 751	F 002 DG0 4AA

Clear and precise!

Navigation made easy

- Color display
- Comprehensible menu structure and intelligent operation

Speaks your language

- Menu navigation in 29 languages

A reliable vehicle database

- Completely integrated vehicle database
- Regular updates for all new possible models
- Quick selection for the last 10 vehicles serviced
- Own vehicle database (e.g. regular customers)
- Quick-start function

The ACS 651 has what you need: Top-class equipment for cars and commercial vehicles

Practical: All functions accessible at a glance

ACS 651

The advantages of the ACS 651 at a glance

Professional equipment as standard

- 1 expert bottle and 3 HDPE bottles
- Fully automatic
- Two cleaning programs
- Refrigerant can be re-filled
- Integrated vehicle database for cars and commercial vehicles
- Automatic filling of contrast agent
- Vacuum pump output 7.9 m³/h
- Refrigerant recovery 94 %
- 4 integrated weighing devices (used oil, new oil, contrast agent, and refrigerant)
- 22 l refrigerant tank

ACS 651: Top-class equipment for professional air conditioning service

The ACS 651 is well-suited for workshops with a medium to high workload in air conditioning service. High-precision measuring technology and the fully automatic process enable environmentally friendly service work on car and commercial vehicle air conditioning system.

Fully automatic operation process

The elite ACS 751 unit performs all the following tasks without the need for manual intervention: Refrigerant extraction, refrigerant recycling, used oil draining, evacuation with the associated leak testing, refilling of new oil with UV additives, and precise refrigerant filling.

Service for hybrid and electric vehicles

Two separate fresh oil circuits makes service possible on vehicles with combustion engines as well as hybrid and electric vehicles.

Order number

ACS 651	F 002 DG0 4DA

ACS 751, 651 Technical data

Technical data	ACS 751	ACS 651
Operation		
Pressure gauge for HP / LP	100 mm	100 mm
Indication of internal bottle pressure	on display	on display
Record print out on printer	yes	yes
Status display	optical / acoustic	optical / acoustic
Integrated vehicle database	Pass. cars / Comm. veh.	Pass. cars / Comm. veh.
Recovery / Recycling / Filling		
Refrigerant	R134a	R134a
Internal supply tank	22 l, PED-certified	22 l, PED-certified
Recovery rate	> 95 %	94 %
Extraction capacity	18 kg / h	18 kg / h
Vacuum pump capacity	7.9 m³ / h	7.9 m³ / h
Filter dryer capacity	75 kg	75 kg
Filling accuracy	+/- 10 g	+/- 10 g
Oil / UV dye / used oil		
Oil	PAG / POE *	PAG / POE *
Bottle (size 250 ml)	1 expert bottle, 3 HDPE bottles	1 expert bottle, 3 HDPE bottles
General device data		
Weight	110 kg	110 kg
Dimensions (L x W x H)	725 x 652 x 1277 mm	725 x 652 x 1277 mm
Current supply	230 V	230 V
Operating temperature	5 – 50 °C	5 – 50 °C
USB port	yes	yes
Service hatches	2 hatches (one left, one right)	2 hatches (one left, one right)
Vibration-resistant scales	yes	yes
Certification	**CE / PED / SAE J-2788**	**CE / PED**

* separate circuits

ACS 751, 651
Special accessories

	Designation	Order number	Description
	UV leak detector kit	1 687 001 591	Professional tool set for injection of an UV contrast agent and identification of leakage in the refrigerant circuit. **Equipment supply:** Injector gun, 1 x UV cartridge, UV leak detection lamp, service hose, and rapid coupling
	Electronic leak detector	1 687 234 012	The electronic leak detector indicates the refrigerant concentration with a loud audible signal. The brightness of the LED also visualizes the size of the leak. Its features include simple handling and two sensitivity levels.
	UV lamp (internal battery)	1 687 550 014	Powerful 1-Watt leak detection lamp with 3 integrated (AA) batteries.
	Flex scope	F 002 DG1 438	The Flex scope makes it possible to detect leaks in concealed areas. Leakages in the air conditioner are visible with a flexible endoscope. For this purpose, a UV lamp can be adapted directly on the ocular.
	Flushing adapter kit system (bypass)	F 002 DG1 451	Special accessories kit for direct connection of air conditioning service hoses to the compressor's suction and pressure hoses. The kit can also be used for bypassing expansion valves, compressors, and drivers with different hose connectivity options. Usage mostly with VW and Audi cars, also suitable for some other vehicles as well.
	Air conditioner flushing connection	F 002 DG1 427	Specifically tuned accessory for bypassing expansion valves, compressors, and driers. Usage with most of the vehicle air conditioning systems possible. The equipment supply includes special clamps with brass connectors and connectors for 3/8″ service hoses. One hose provided with kit, extra hoses may be needed.

For your Service
The right equipment

	Designation	Order number	Description
	Service hoses 6m	F 002 DG1 458	Mostly suitable for large commercial vehicles. The equipment supply includes red and blue service hoses with a length of 6 m.
	Cylinder adapter	1 687 010 148	Necessary for filling the internal refrigerant bottle. Adaptable to all conventional R134a refrigerant bottles.
	Service connections Renault	F 002 DG1 433	Special service for connection to Renault vehicles.
	Service connections for BMW E60, Ford, Volvo	F 002 DG1 432	Special service for connection in difficult-to-access areas in certain BMW 5 series models.
	Digital thermometer	1 687 230 062	Records temperature directly at the ventilation shaft – before and after air conditioning service. Temperature range from -50 °C to 150 °C.

Air conditioning service:
Good reasons for your customers

Driving comfort and safety
Very high and low temperatures in the vehicle interior put a strain on the driver and negatively effect his reactions and ability to respond. With regular air conditioning checks, the temperature is always perfectly regulated and you are free to concentrate on your driving.

Protecting the environment
Through regular checks of the air conditioning system, faults can be detected early. Thus preventing the leakage of cooling agents which are harmful to the environment.

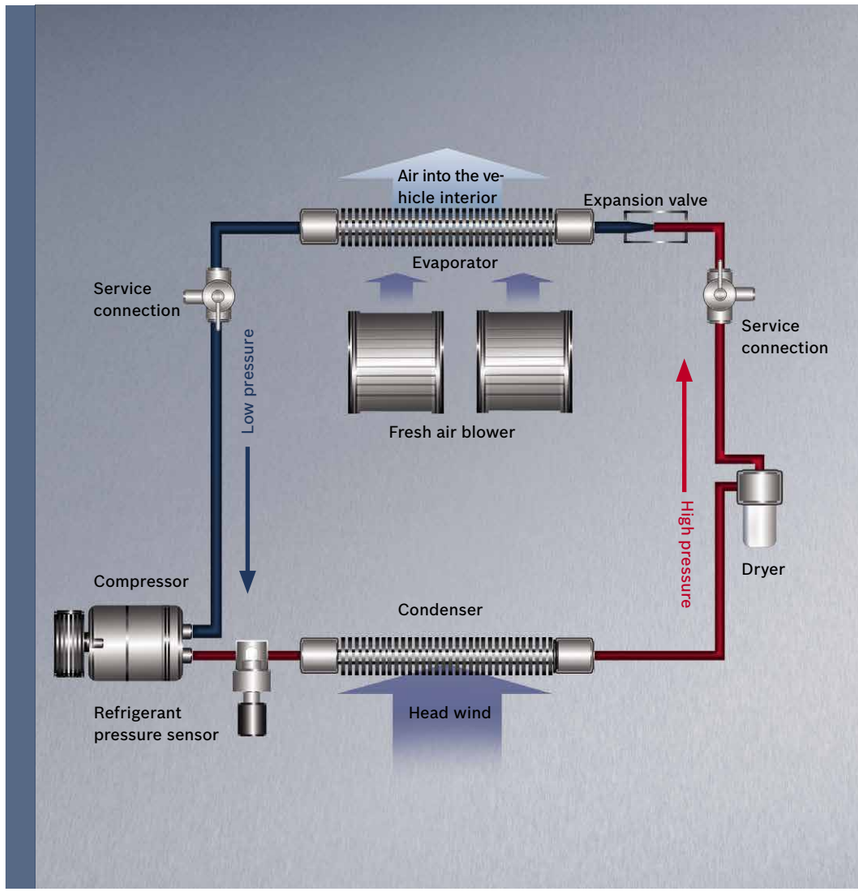
Saving costs
High repair costs for the air conditioning system are usually the result of irregular or non-existent maintenance. Regular air conditioning checks rule out the need for expensive repairs, saving you money.

Clean air
With the change of the cabin filter, the air conditioning check is complete. The driver and his passengers can now benefit from even more comfort and safety:

- The reliable filtration of soot, pollen, dirt particles and pollutants prevents damage to the health of the vehicle's occupants
- Activated charcoal filters from Bosch filter the smallest of particles, such as damaging fumes and ozone
- A clear reduction of deposits, e.g. in the fan or on the windscreen

It is important to replace the cabin filter when getting your air conditioning system serviced. Because the service is only complete with a new filter.

How the air conditioner works
Functions for comfort and safety



The compressor
Draws cold, gaseous refrigerant from the evaporator and forces it into the condenser.

In the condenser
The gas is cooled under pressure by the head wind and is then liquefied (condensed).

In the dryer and collector
Cleaning and drying of the refrigerant occurs.

The expansion valve
Injects the cleaned refrigerant into the evaporator.

The evaporator
Removes the evaporation heat from the circulating air. As it flows through, the air cools down and is directed into the vehicle interior.

The air conditioner in the vehicle and its components

The air conditioner: The working principle
When the air conditioner is switched on with the engine running, the compressor draws cold, gaseous refrigerant out of the evaporator and forces it into the condenser. When compressed, the refrigerant heats up to approximately 60 – 100 °C. The hot gas, which is now highly compressed, is cooled down in the condenser by the external air (head wind or additional blower) that flows past. When the pressure-dependent dew point is reached, the refrigerant condenses and liquifies.

Coming from the condenser, the completely liquefied refrigerant enters the fluid tank where it is collected.

The refrigerant flows through the dryer where any existing moisture and contaminants are filtered out.

From the fluid tank, the refrigerant flows on to the expansion valve. Here, the highly pressurized, liquefied refrigerant is injected into the evaporator. In the evaporator, the liquefied refrigerant pressure drops and it evaporates. The evaporation heat is drawn from the air flowing past the evaporator fins, causing it to cool. The refrigerant, which is now completely gaseous again, is drawn by the compressor and compressed.