

# AIR CONDITIONING WORKSHOP EQUIPMENT 2014 / 2015

**ECO**  
ecologically friendly

**LOW  
EMISSION**

FAST, ECONOMICAL,  
ECO-FRIENDLY



A/C service units



Refrigerants and oils



A/C flushing



Recovery/leak detection



Air conditioner cleaning



Tools and accessories



Accessories for R 1234yf

**A/C SERVICE UNITS**  
FOR R 134A AND R 1234YF

# THE NUMBER ONE IN A/C SERVICE

## LEADERSHIP IN ALL ASPECTS OF TECHNOLOGY

Business as usual? Even after 40 years in the A/C business our R&D department is not stuck in a routine. Working closely with the automotive industry we recognise A/C service trends earlier than others, and we use our inside knowledge to create product innovations that make an impact in the market. The new ASC 2500 Low Emission, featuring a refrigerant loss rate of close to zero, has proven a highly profitable service tool. A/C service on hybrid vehicles, too, is ensured in the long run – thanks to our tried

and tested automatic ASC service units, which are compatible with all hybrids produced in Germany. An upgrade kit for service work on vehicles made in Japan and Korean is also available.

Automotive manufacturers	Approved by automotive manufacturers			
	A/C service units	Leak detection equipment	Air conditioner cleaning	UV additives (e.g. for UV leak detection)
Mercedes-Benz	●	●	–	●
BMW Group	●	●	–	●
Nissan Germany	●	●	●	●
Renault Germany	●	●	●	●
Volkswagen Group	●	●	–	●
Fiat Germany	●	●	●	●
Ford Europe	●	●	●	●
Volvo Germany	●	●	●	●
Jaguar Europe	●	●	●	●
Landrover Europe	●	●	●	●
Aston Martin Europe	●	●	●	●
Mazda	●	●	●	●
Hyundai	●	–	–	–
Opel / GM Europe	●	●	–	–
MAN	●	●	–	●
DAF	●	●	–	●
Scania	●	●	●	●

## WE ARE GLAD TO HELP!



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## WHAT WAECO AIRCONSERVICE OFFERS

- | Products approved by major vehicle manufacturers
- | Original replacement parts
- | Universal components
- | Components for special A/C applications
- | A/C workshop equipment
- | Consumables
- | Technical advice and support
- | Tailor-made training concepts
- | Proof of competence according to the German Chemicals Climate Protection Ordinance
- | A/C service units and consumables for the new R1234yf refrigerant
- | F-Gas certification



## PROFESSIONAL STANDARD:

### THE ASC SERVICE UNIT GENERATION

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ASC by WAECO is, and has been for years, the abbreviation for excellent quality and cutting-edge technology in A/C service equipment. The series is constantly improved and complemented to meet future requirements. All ASC service units are state of the art and fully automatic.

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## 40 years WAECO

Join the party!

.....

In spring 2014 we are going to celebrate the 40th anniversary of our WAECO brand. Join us for the party and look forward to many attractive offers. Just check our website [www.dometic-waeco.com](http://www.dometic-waeco.com) to keep informed of the birthday celebrations.

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Electronic leak detector	Service filter
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Service coupler	Special oil

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Overview of consumables
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# HOW TO BE A SUCCESSFUL A/C PROFESSIONAL

**Polar bear Eddie has got a new face to mark the WAECO anniversary celebrations.** But, of course, he has retained his lovely nature. He stands for a unique and complete air conditioning concept that gives your business an edge on efficiency and success. Benefit from a comprehensive scope of services and stay an Eddie nose length ahead of your competitors!



# ASC A/C SERVICE UNITS

## NOW WITH SWIVEL AND TILT DISPLAY



**ASC A/C service units have, over the years, gained a firm place in motor garages and air conditioning workshops.** This is because they have the right quality and all it takes to make service work on automotive air conditioners a profitable and safe business.

**With this philosophy in mind we have created the 2014 facelift series, which is now even more user-friendly.** All R134a service units in our ASC series were fitted with a new, swivel and tilt manometer display panel that makes sure important measurements are easy to read from every angle in the workshop.



Custom versions to meet specific customer requirements – no problem for Europe's largest manufacturer!





## Environment and efficiency

### ASC 2500 Low Emission

All the benefits of the ASC series combined with eco-friendly Low Emission technology for close to 100% refrigerant recovery. Outstanding efficiency, ideal for professional A/C service.



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Pages 14 – 15

## Universal entry-level model

### ASC 1000

Professional, fully automatic unit with quick-start function. Inexpensive entry-level model with all functions included. Ideal for “all-round workshops”.



Pages 16 – 17

## Classic model for pros

### ASC 2000

High-performance high-end unit with extra-large charging cylinder capacity. For professional A/C service with little operator effort and extremely fast throughput.



Pages 18 – 19



**Designed for extra safety  
ASC 2000RPA**

High-performance unit with additional gas analysis function. Recognises R 134a as well as R 12, R 22, HC and air. Nitrogen connection for leak check.



Pages 20 – 21

**High-volume version  
ASC 3000**

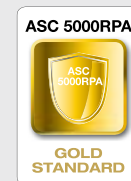
Extra-high performance, ideal for A/C service on buses, rail cars, etc. The 2-stage vacuum pump evacuates 132 litres per minute.



Pages 22 – 23

**Newcomers to the range  
ASC 5000 / ASC 5000RPA**

For safe maintenance of air conditioners with R 1234yf refrigerant. The ASC 5000RPA comes with an integrated gas analysis tool. Can be retrofitted for use with R 134a.



Pages 26 – 29



## PATENTED FEEDING SYSTEM FOR FRESH OIL AND UV ADDITIVE

Plastic containers let moisture in, which may lead to acid or ice formation in the A/C system. Therefore, ASC A/C service units use aluminium laminated bags contained in protective metal cylinders for moisture-free storage

of fresh oil and UV additive. No blockage of valves, no solvent penetration and the full approval of many automotive manufacturers.



Laminate bags



Included as standard with models ASC 1000, ASC 2000, ASC 2500 and ASC 2000RPA

## ASC SERIES MEETS SAE J 2788 AND 2099

The standard developed by the Society of Automotive Engineers (SAE) is valid for the USA, while it can also be found in the factory specifications of several German automotive manufacturers.

**What are the most significant requirements and what do they mean for daily workshop operation?**

Requirements for SAE J 2788 approval:

- The unit must be able to recover 95% of the refrigerant contained in the automotive air conditioner within 30 minutes, at ambient temperatures between 20 and 24°C. In other words, no more than 5% of the refrigerant may be left in the air conditioner.
- Refrigerant must be charged with an accuracy of +/- 15 g.
- Refrigerant recovery must be made and displayed with an accuracy of +/- 30 g.

To comply with these requirements we modified the hardware and software of the ASC-series units. Among other things, we integrated a new weighing platform. The special **weighing technology requires no transport lock.**



# LOW LIFECYCLE COSTS

## ASC – THE MOST PROFITABLE SOLUTION IN THE LONG RUN

You certainly know the tale about those “super-low-cost” printers where the cartridge will in the end cost you more than the unit did. When considering the investment in an A/C service unit you will naturally have an eye on the costs – upcoming maintenance costs included. This is where fully automatic ASC A/C service units offer many plus factors: **low costs**

**for spares and consumables, considerably longer service and maintenance intervals**, plus a full 24 months of warranty coverage! Projected to the entire lifecycle of an A/C service unit (8 years and beyond), ASC-series units are a very profitable choice.

### Maintenance-friendly vacuum pump



Oil change only after every 60 operating hours

### High-capacity filter drier



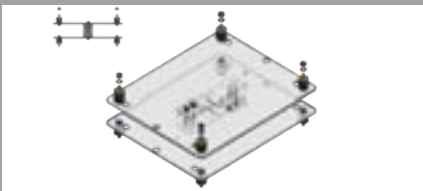
Needs to be replaced less often (after 150 kg of recovered refrigerant)

### Valve block



Fully electronic control of all processes, reduces service times.

### High-capacity weighing cell



All refrigerant carrying components are placed on the main scales, which prevents measuring errors and thus saves time.

### Heating tape



Helps charge the required amount of refrigerant into the vehicle even when ambient temperature are high and the engine is hot. No need to manually interfere into the process.





## ASC BENEFITS AT A GLANCE

### 1 TRULY AUTOMATIC UNITS – OFTEN COPIED, NEVER MATCHED!

Units with manual control valves involve the risk of erroneously charging the air conditioner from the low pressure side. Automatic units are safer, they have no control valves.

### 2 PATENTED FEEDING SYSTEM FOR FRESH OIL AND UV ADDITIVE

Fresh oil and UV additive are stored in aluminium laminated bags contained in protective metal cylinders. This keeps moisture out.

### 3 INTEGRATED CHARGING AMOUNT DATABASE

The database contains vehicle-specific data such as the oil type and the amount of oil and refrigerant. It provides the option to create a personalised charging amount database for up to 100 vehicles. Updates can be made with the flash memory card or via the service unit's USB interface (ASC 5000).

### 4 INTEGRATED REFRIGERANT CHARGING / RECOVERY AMOUNT MANAGEMENT

The total amount of refrigerant charged or recovered per month can be displayed on the service unit or printed out with the thermal printer. Alternatively, it can be exported to a USB stick or laptop via the USB interface (ASC 5000 only).

### 5 ALSO SUITABLE FOR MODERN-DAY HYBRID VEHICLES



Thanks to the optional hybrid flushing kit the unit can be used for service work on hybrid vehicles of all makes. Dangerous oil cross contamination is impossible.

### 6 ECONOMICAL DIAGNOSIS TOOL

Low-emission ASC service units have a refrigerant recovery rate of about 99.8%. This saves on expensive refrigerant, and it also helps detect leaks.

### 7 CUSTOMISED FLUSHING PROCESS AND FLUSH BOTTLE

The efficient and safe flushing process was developed in consultation with the automotive industry.

### 8 TÜV-APPROVED REFRIGERANT PURITY

TÜV Rheinland confirmed that the effectiveness of the refrigerant cleaning function of ASC A/C service units complies with SAE J 2099 / J 2210.

### 9 PROTECTED ACCESS WITH INDIVIDUAL USER CODES

Up to 10 user names can be programmed in combination with individual PIN codes.

### 10 OPERATIONAL SOFTWARE IN MORE THAN 20 LANGUAGES

DE, EN, FR, IT, SR, HR, SL, TR, NL, DA, NO, SV, PT, GL, CA, ES, EU, FI, ET, CS, RO, PL

### 11 COMPETITIVE LIFECYCLE COSTS

The operational costs are significantly lower than with comparable units. Service intervals and warranty periods are considerably longer.

### 12 DESIGNED FOR WORLDWIDE USE

The ASC range includes service units ready for connection to 230 volts or 110 volts. Models with country-specific mains plugs are also available.

### 13 USER-FRIENDLY DISPLAY UNITS

The swivel and tilt manometer unit is easy to read from every angle.

# "ENGINEERED IN GERMANY"

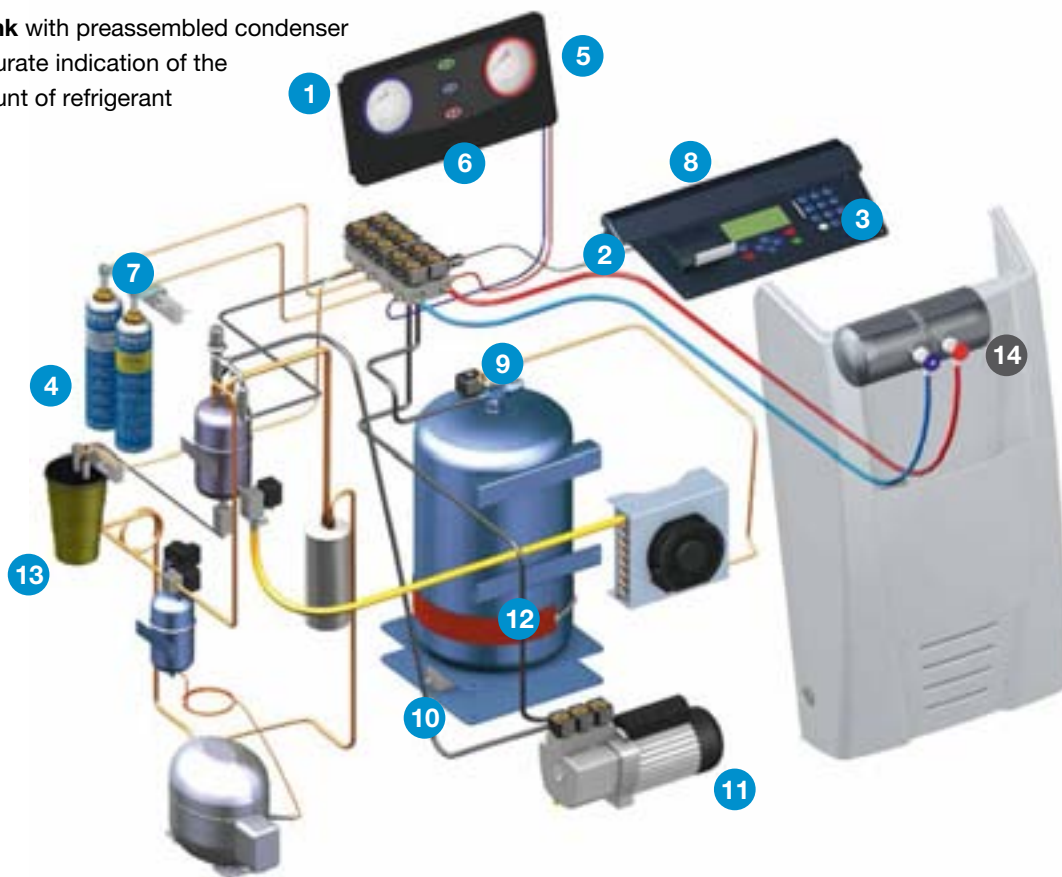
## ASC 2500 LOW EMISSION FEATURES



**ASC service stations are perfectly geared to the needs of daily workshop routine.** Easy to use and maintain, they work fully automatic – no need to keep a constant eye on them. Add to this the convincing cost/benefit ratio and you'll agree that all the

conditions for profitable A/C service are met. Approvals from automotive manufacturers are a recommendation in itself. The ASC 2500 offers the following distinctive features:

- 1 NEW: swivel and tilt manometer panel – easy to read from every angle**
- 2 Data printer** to be activated as required, with multiple print-out and paper feed options
- 3 Large, high-quality membrane keypad** for reliable data entry
- 4 Patented, professional feeding system** for fresh oil and UV additive
- 5 Illuminated manometer** with 100 mm diameter
- 6 High-contrast LED display** for process supervision from a long distance
- 7 3 separate weighing cells** for oil management (used oil / fresh oil / UV additive) are a distinctive feature of the fully automatic unit
- 8 Large display** for easy readability and reliable data entry
- 9 Refrigerant tank** with preassembled condenser and fan for accurate indication of the recovered amount of refrigerant
- 10 Special, 8-bearing weighing platform** with high-capacity weighing cell (100 kg load capacity)
- 11 Service-friendly low-emission vacuum pump** with 60-hour oil change interval
- 12 Increased pressure due to heating band on the refrigerant tank;** for complete charging of the A/C system even at high ambient temperature
- 13 Patented, low-emission used oil container** prevents refrigerant loss during used oil purging; the refrigerant recovered with the used oil is supplied to the refrigerant tank and included in the weighing.
- 14 Optional accessory: flushing kit for the internal circuit of the ASC.** Especially recommendable where the ASC is also used on Asian-make hybrid vehicles.





## ASC2500 Low Emission – ENVIRONMENTALLY SOUND AND PROFITABLE

New technology for use with an “old” refrigerant. **How does the ASC 2500 manage to recover almost 100% of the R 134a refrigerant from the A/C system?** Refrigerant loss mainly occurs in the phase when the refrigerator oil is forced out from the **used oil container**. The ASC 2500 uses a **pressure-tight container**. The system was modified so as to allow it to extract and recover the refrigerant escaping during used oil discharging and

return it to the refrigerant tank. Moreover, it returns the residual refrigerant to the tank in the vacuum phase. The result is a refrigerant loss rate of close to zero percent! This saves refrigerant and money. And above all, it protects the environment

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## ASC 2500 Low Emission

- **Sturdy metal housing**
- **Charging cylinder storage capacity: 16 kg, vacuum pump capacity: 5 cars/h**
- **Patented feeding system for fresh oil and UV additive including test bottles**
- **Print-out of important service data, several print-outs possible**
- Fully automatic refrigerant recycling, oil and additive management
- Automatic vacuum check
- Automatic charging of leak detection additive
- **Integrated refrigerant charging and recovery amount management**
- Integrated charging amount database
- Complies with SAE J 2099 and SAE J 2788
- **Close to 100% refrigerant recovery**
- **Virtually 0% service emission thanks to patented used oil container**
- Personalised charging amount database
- Operator guidance via large display and illuminated manometer
- **NEW: swivel and tilt manometer panel (patented)**
- Swivel-mount display and information unit (patented)
- Heated charging cylinder for high-speed charging, heat-up also possible during the charging process
- **Special, 8-bearing weighing platform**
- Special air conditioner flush function
- Large recessed tray for tools
- **Also suitable for German-make hybrid vehicles**
- **Service on Asian-make hybrid vehicles is possible if the optional flushing kit for the ASC's internal circuit was installed (see page 54)**
- **Patented used oil container**



### Ref. No.

- 8885200095** (See pages 30/31 for specifications)
- 8889900001** (Instruction package for A/C service units)
- 8885400035** (Adapter for non-returnable bottles, 1/4" HP)

## ALSO GREAT AS DIAGNOSIS TOOL

The ASC 2500 Low Emission integrates all refrigerant bearing components on the weighing platform. That means the complete amount of refrigerant contained in the unit can be recorded and the amount of the recovered refrigerant can be exactly determined. This in turn will tell the operator about potential leaks in the A/C system. The accurate diagnosis function of the ASC 2500 is also very useful with regard to decreasing refrigerant charging amounts on modern-day vehicles. In the compact car segment we already see models with charging amounts of less than 300 g (e.g. Daihatsu Cuore). Older A/C service units won't be able to charge these systems with the required accuracy. Excessive or insufficient charging, though, would entail major problems.



**Well engineered:**  
Patented used oil container



**Practical:**  
Easy-to-maintain special filter



**NEW**  
**Swivel and tilt manometer panel:**  
Easy to read from every angle in the workshop



### Optional

hybrid 

**Safe and secure:**  
Accessory kit for service on hybrid vehicles



With special software for A/C flushing to vehicle manufacturer's specifications

## ASC 1000 – FULLY AUTOMATIC A/C SERVICE UNIT

**Fully automatic AirCon Service Centre for all A/C specialists.** This unit has all it takes to perform standard service work on automotive air conditioners. With **quick-start function:** simply enter the amount of refrigerant to be charged, make a total of three input instructions, and the unit will automatically do all the required functions:

- › **Refrigerant recovery and recycling**
- › **Residual pressure measurement**
- › **Used oil drainage**

- › **Evacuation**
- › **Leak check**
- › **Charging of fresh oil and UV additive**
- › **Refrigerant charging with charging amount compensation of the service hoses**

All process steps are fully automatic and self-monitored by the system. Errors are indicated by acoustic and visual signals from the swivel-mount display unit.

# ASC1000 – FULLY AUTOMATIC AIRCON SERVICE CENTRE

- **Sturdy metal housing**
- **Charging cylinder storage capacity: 10 kg, vacuum pump capacity: 4 cars/h**
- **Patented feeding system for fresh oil and UV additive**
- **Print-out of important service data, several print-outs possible**
- Fully automatic refrigerant recycling, oil and additive management
- Automatic vacuum check
- Automatic charging of leak detection additive
- **Integrated refrigerant charging and recovery amount management**
- Integrated charging amount database
- Complies with SAE J 2099 and SAE J 2788
- **Personalised charging amount database**
- Operator guidance via large display and manometer
- **NEW: swivel and tilt manometer panel (patented)**
- Heated charging cylinder for high-speed charging, heat-up also possible during the charging process
- **Special, 8-bearing weighing platform**
- Special air conditioner flush function
- Large recessed tray for tools
- 500 ml used oil container for longer change intervals
- **Also suitable for German-make hybrid vehicles**
- **Suitable for Asian-make hybrid vehicles when optional flushing kit 8885200105 is installed (see page 54)**



#### Ref. No.

- 9103301826** (See pages 30/31 for specifications)
- 8889900001** (Instruction package for A/C service units)
- 8885400035** (Adapter for non-returnable bottles, 1/4" HP)

## ASC 1000 FEATURES:

#### Individual user code:

To prevent unauthorised use of WAECO A/C service units, up to 10 user names can be programmed in combination with individual PIN codes.

#### Personalised charging amount database:

ASC-series units give you the option to create a personalised charging amount database for 100 different vehicles.

**A/C service worldwide: the ASC 1000 is also available in a 110 V – 50/60 Hz version.**



**Standard on ASC 1000 units:**  
Patented feeding system for fresh oil and UV additive



**Data printer:** Print-out of important service data, as many copies as required



**Swivel and tilt manometer panel:**  
Easy to read from every angle in the workshop





With special software for A/C flushing to vehicle manufacturer's specifications

## ASC 2000 – WITH PATENTED FEEDING SYSTEM FOR FRESH OIL AND UV ADDITIVE

Ease of use at its best. Designed for professional A/C service on trucks and cars, the ASC 2000 minimises operator effort and throughput time. Prior to system start the operator can read the oil level from the display. **Afterwards, the following processes are performed fully automatic:**

- › Refrigerant recovery and recycling
- › Residual pressure measurement
- › Used oil drainage
- › Evacuation
- › Leak check

- › Fresh oil and UV additive charging
- › Refrigerant charging with charging amount compensation of the service hoses

Additional ASC 2000 benefits:

- › Large charging cylinder storage capacity (21 kg)
- › Dust cover included as standard
- › Accurate oil management with 3 separate micro scales



## ASC 2000 – FULLY AUTOMATIC A/C SERVICE UNIT

- **Charging cylinder storage capacity: 21 kg, vacuum pump capacity: 5 cars/h**
- **Patented feeding system for fresh oil and UV additive incl. test bottles**
- **Print-out of important service data, several print-outs possible**
- **Dust cover included**
- **Fully automatic** refrigerant recycling, oil and additive management
- **Automatic** vacuum check
- **Automatic** charging of leak detection additive
- **Integrated refrigerant charging and recovery amount management**
- Integrated charging amount database
- Complies with SAE J 2099 and SAE J 2788
- **Personalised charging amount database**
- Operator guidance via large display and manometer
- **NEW: swivel and tilt manometer panel (patented)**
- Heated charging cylinder for high-speed charging, heat-up also possible during the charging process
- **Special, 8-bearing weighing platform**
- Special air conditioner flush function
- 500 ml used oil container for longer change intervals
- **Also suitable for German-make hybrid vehicles**
- **Suitable for Asian-make hybrid vehicles when optional flushing kit 8885200105 is installed (see page 54)**



### Ref. No.

- 9103301815** (See pages 30/31 for specifications)
- 8889900001** (Instruction package for A/C service units)
- 8885400035** (Adapter for non-returnable bottles, 1/4" HP)

## ASC 2000 FEATURES:

### Individual user code:

To prevent unauthorised use of WAECO A/C service units, up to 10 user names can be programmed in combination with individual PIN codes.

### Personalised charging amount database:

ASC-series units give you the option to create a personalised charging amount database for 100 different vehicles.

### Built-in data printer:

Measurements can be printed out as often as desired once the service process has been completed. The amount of recovered refrigerant can be blanked out if required.

**A/C service worldwide: the ASC 2000 is also available in a 110 V – 50/60 Hz version.**



**Standard on ASC 2000 units:**  
Patented feeding system for fresh oil and UV additive



**Swivel and tilt manometer panel:**  
Easy to read from every angle in the workshop



**Safe and secure:**  
Accessory kit for service on hybrid vehicles



## ASC 2000RPA – WITH FULLY AUTOMATIC REFRIGERANT ANALYSIS

**The unnoticed presence of contaminated refrigerant in a vehicle A/C system or refrigerant bottle runs the risk of contaminating all the vehicles serviced afterwards. Workshop owner may face substantial damage claims as a result. A refrigerant analysis tool prevents the trouble.**

RPA stands for **R**efrigerant **P**urity **A**nalysers – a system which checks whether the vehicle A/C system and A/C service unit really contain pure R 134a and nothing else. The most frequent reasons for refrigerants contamination are **refrigerants imported from the Far East or the presence of air in the vehicle A/C system.**

A vehicle A/C system can only operate successfully when filled with pure R 134a. Air entering the system means a serious problem.

### **Possible consequences:**

- › Increased operating pressure and functional problems of the A/C system
- › Corrosion caused by the humidity admitted with the air
- › Substantial reduction of the refrigeration performance

- › Substantial strain on the compressor suction and pressure valves caused by increased pressure in the system
- › Besides R 134a, the ASC 2000RPA also recognises R 12, R 22, HC and air.

### **Nitrogen leak check**

In order to meet our commitment to protect our environment it is necessary to release as little refrigerant as possible into the atmosphere. **In addition to the existing, fully automatic vacuum leak test function integrated in the service unit it is possible to admit nitrogen to the system.**

This method eliminates the drawback of leak tests solely by vacuum (components such as A/C tubes might contract and thus close a leak). **Exposure to pressurised nitrogen during A/C service tells you immediately whether the system is tight.**

The test is carried out fully automatic by the ASC 2000RPA.





## ASC 2000RPA – FULLY AUTOMATIC A/C SERVICE UNIT

- **Sturdy metal housing**
- **Fully automatic gas analysis (R 134a, R 12, R 22, HC, air)**
- **Charging cylinder storage capacity: 21 kg, vacuum pump capacity: 5 cars/h**
- **Optional: patented feeding system for fresh oil and UV additive incl. test bottles**
- **Print-out of important service data, several print-outs possible**
- **Fully automatic refrigerant recycling, oil and additive management**
- **Automatic vacuum check**
- **Fully automatic nitrogen leak check**
- **Automatic charging of leak detection additive**
- **Integrated refrigerant charging and recovery amount management**
- **Integrated charging amount database**
- **Complies with SAE J 2099 and SAE J 2788**
- **Personalised charging amount database**
- **Operator guidance via large display and manometer**
- **NEW: swivel and tilt manometer panel (patented)**
- **Heated charging cylinder for high-speed charging, heat-up also possible during the charging process**
- **Robust weighing technology for the refrigerant tank allows service work also in mobile applications**
- **Special air conditioner flush function**
- **Large recessed tray for tools**
- **500 ml used oil container for longer change intervals**
- **Dust cover included in the delivery kit**



With automatic refrigerant analysis and fully automatic nitrogen leak check

(Picture similar to product)

### Ref. No.

- 8885200087** (See pages 30/31 for specifications)
- 8889900001** (Instruction package for A/C service units)
- 8885400035** (Adapter for non-returnable bottles, 1/4" HP)

## ASC 2000RPA FEATURES:

### Fully automatic testing of refrigerant purity

The ASC2000RPA A/C service unit ensures that the A/C system only contains pure R 134a, neither contaminated with banned refrigerants nor mixed with air.

Prior to the actual recycling process the service unit automatically removes and analyses a small refrigerant sample (9.5 g). The results are shown on the unit display. The operator receives a significant, qualified assessment of the refrigerant in the A/C system connected to the service station and can exactly determine what repairs or maintenance may be required.

If the refrigerant is fine, the ASC2000RPA continues its fully automatic programme in the same manner as the WAECO ASC2000 system.



**Reliable:**  
Information displayed after refrigerant analysis



**User-friendly:**  
Intake filter of the analysis unit is easy to access



**Fully automatic:**  
Nitrogen leak check



**Optional:**  
Gas cylinder trolley



## ASC 3000 – HIGH-VOLUME AIRCON SERVICE CENTRE FOR BUSES, TRAINS, HELICOPTERS AND CUSTOM APPLICATIONS

Time is valuable, especially when it comes to air conditioning service on large vehicles such as **buses and trains** where downtimes are extremely costly for the operators. Speed and reliability are vital. Key service tasks such as refrigerant recovery, evacuation and refrigerant recharging need to be performed within a tight timeframe. The ASC 3000 perfectly meets these requirements. Its **2-stage vacuum pump** evacuates **132 litres per minute**. An additional fluid pump ensures fast refrigerant recharging.

Using the optional flush kit (p. 41) the A/C service unit can be cleaned inside after use to remove residual oil and UV additive and avoid cross contamination.

The following processes are performed fully automatic:

- › **Refrigerant recovery and recycling**
- › **Residual pressure measurement**
- › **Used oil drainage**
- › **Evacuation**

- › **Leak check**
- › **Fresh oil and UV additive charging**
- › **Refrigerant charging with charging amount compensation of the service hoses**

**The ASC 3000 offers:**

- › **Patented fresh oil and UV additive feeding system** (allows moisture-free and clean storage of refrigerant oils even over longer periods of time, which cuts A/C service costs)
- › **Integrated printer** for service data documentation

## ASC 3000 – FULLY AUTOMATIC A/C SERVICE UNIT

- **Charging cylinder storage capacity: 30 kg, vacuum pump capacity: 132 l/min**
- **Integrated fluid pump for high-volume refrigerant charging**
- **2-stage vacuum pump designed in cooperation with utility vehicle manufacturers**
- **Print-out of important service data, several print-outs possible**
- **Optional: patented feeding system for fresh oil and UV additive**
- Dustcover included in the delivery kit
- **Fully automatic** refrigerant recycling, oil and additive management
- Automatic vacuum check and charging of leak detection additive
- Complies with SAE J 2099 and SAE J 2788
- **Integrated refrigerant charging and recovery amount management**
- Integrated charging amount database
- **Personalised charging amount database**
- Operator guidance via large display and manometer, large recessed tray for tools
- **NEW: swivel and tilt manometer panel (patented)**
- Heated charging cylinder for high-speed charging, heat-up also possible during the charging process
- Special, 8-bearing weighing platform
- Special air conditioner flush function
- 500 ml used oil container for longer change intervals
- Service hoses 8 m
- Also suitable for German-make hybrid vehicles
- **Suitable for Asian-make hybrid vehicles when optional flushing kit 8885200263 is installed (see page 54).**

### Ref. No.

**9103301819** (See pages 30/31 for specifications)  
**8889900001** (Instruction package for A/C service units)  
**8885400035** (Adapter for non-returnable bottles, 1/4" HP)



## ASC 3000 FEATURES:

### Individual user code:

To prevent unauthorised use of WAECO A/C service units, up to 10 user names can be programmed in combination with individual PIN codes.

### Personalised charging amount database:

ASC-series units give you the option to create a personalised charging amount database for 100 different vehicles.

### Simply perfect:

Easy-to-read manometer, patented feeding system for fresh oil and UV additive. The unit is suitable for mobile use and complies with automotive manufacturers' requirements.



**Optional:**  
Patented feeding system for fresh oil and UV additive



**Swivel and tilt manometer panel:**  
Easy to read from every angle in the workshop



**Integrated fluid pump:**  
For charging high-volume A/C systems



**Included:**  
Can of professional SE 55 oil



# 12 THINGS – YOU OUGHT TO KNOW ABOUT R 1234YF SERVICE UNITS

## 1 Fully automatic self-test

R 1234yf service units are subject to special safety regulations. The refrigerant must not escape into the atmosphere. Therefore, the ASC 5000RPA from WAECO automatically performs a leak check in regular intervals. This ensures that potential minor leaks in the system will not remain undetected.

## 2 Service couplers with clearance ventilation

The service connections on R 1234yf air conditioners are different from those on R 134a systems. This eliminates the risk of confusion when connecting the service equipment. Service couplers on R 1234yf systems must have what is called a “ventilated clearance” to ensure that no refrigerant escapes from the air conditioner even when you have a defective Schrader valve.

## 3 Clearly recognisable service equipment

A/C workshops are most likely to have two different A/C service units in the future, because R 134a and R 1234yf are not compatible with each other. To avoid confusion right from the start, the differences between the units should be clearly visible.

## 4 Separate manometers for R 1234yf

R 1234yf and R 134a have different chemical properties and must not be mixed. Accordingly, pressurised containers, hoses, gaskets and manometers all have to be adapted to the specific refrigerant. Universal service units used for both refrigerants must have separate circuits and separate components wherever they get in touch with the substances.

## 5 Integrated refrigerant analysis / safe and smooth process flow

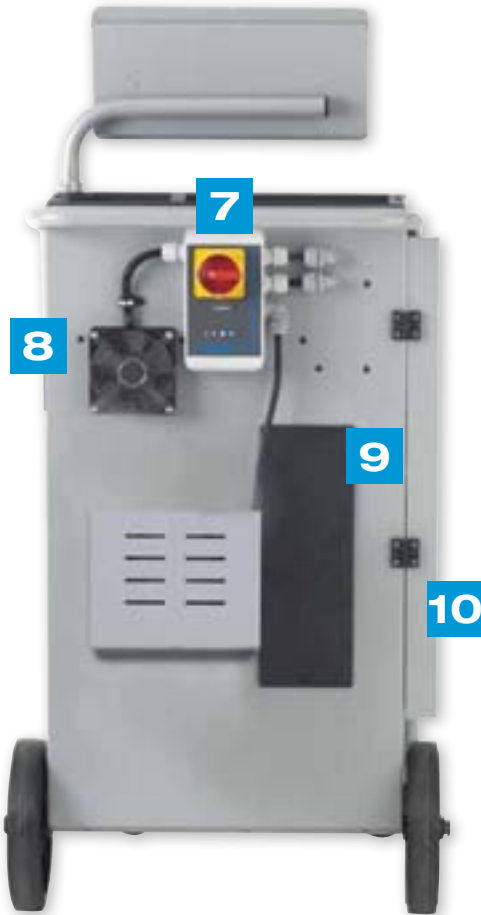
R 1234yf is very sensitive to cross contamination with other refrigerants. Therefore, it is mandatory to use analysis equipment to check the refrigerant purity. You can save time if the analysis tool is already integrated in the service unit. Also, it is safer because the analysis is always done automatically.

## 6 Low Emission

The low-emission technology prevents workshop staff are exposed to illegally high concentrations of R 1234yf.



Time and again we see A/C service units being offered in the marketplace that do not meet the technical requirements for use with R 1234yf. Here are some things for you to consider, just to be “on the safe side”:



### 7 External switch-on delay

R 1234yf is inflammable under certain conditions. Therefore, the system start will only activate the external fan at first. After the fan has been running for 35 seconds, the voltage is passed on to the system. This guarantees there's no inflammable mixture contained in the system when the electrical components are enabled.

### 8 External ventilation

Prior to system start-up, the service unit is ventilated upon pressing the ON button. For the purpose the ASC 5000RPA features large ventilation holes in the base. It only makes sense to use an external fan that draws fresh air in. A fan fitted inside the unit might lead to an inflammable mixture.

### 9 Easy-to-maintain special filter

Electronic change-filter indicator: After a certain amount of refrigerant recovered the system automatically tells you it's time to replace the filter. The filter is accessible from the outside for easy maintenance.

### 10 Get everything from one source

It's not enough to have an A/C service unit and maintain a stock of refrigerant. A good supplier will also provide all the consumables required for A/C service, such as oils and leak detection additives. Please bear in mind that PAG oils and ester oils for R 134a are not suitable for use in R 1234yf A/C systems!

### 11 Avoid costly refrigerant loss

It can be expected that the price for R 1234yf will be considerably higher than that for R 134a – another reason why refrigerant loss should be avoided. Conventional A/C service units may lose up to 100 kilograms of refrigerant per use through the vacuum pump and during oil recovery. This is all different with the ASC 5000RPA from WAECO. Based on the low-emission principle, it has a refrigerant loss rate of close to zero %.

### 12 Connection for external refrigerant recovery (not illustrated)





# ASC 5000RPA

## FOR THE NEW REFRIGERANT R 1234YF

They may be only a few, but they are there – the first new vehicle models with A/C systems prepared for the use of R1234yf refrigerant. Brand-bound motor garages, in particular, are obliged to get prepared for servicing these systems. Against this backdrop WAECO's AirCon professionals have designed, in close cooperation with the automotive industry, the ASC 5000RPA service unit.

As R 1234yf is very sensitive to contamination with other refrigerants, **the ASC 5000RPA was fitted with an integrated analysis tool that checks the refrigerant purity.**

Designed inside out for use with R1234yf refrigerant, the ASC 5000RPA meets fire regulations and, of course, offers all the benefits known from the "classic" models in the ASC series.

### A/C service units approved/ recommended for R 1234yf

Vehicle manufacturer	Approval for R 1234yf
BMW Group	●
Fisker (in various countries)	●
Ford Europe	●
Hyundai (in various countries)	●
Kia (in various countries)	●
Mazda (in various countries)	●
Nissan (in various countries)	●
Opel Group	●
Subaru (in various countries)	●
Suzuki (in various countries)	●
Toyota Motor Europe	●
Volkswagen Group	●

### A/C service cost savings with low-emission concept

#### A/C service R 1234yf without low-emission concept

Average amount of refrigerant charged into the A/C system	600 g	
Average market price for R1234yf refrigerant	179.00 € / kg	
Refrigerant lost during used oil purging	25 g	4.48 €
Refrigerant recovered from the A/C system	95 %	5.37 €
<b>Refrigerant lost per service</b>		<b>9.85 €</b>
For 3 x A/C service per week, the annual loss on refrigerant is		<b>1,536.60 €</b>

#### A/C service R 1234yf with low-emission concept

Average amount of refrigerant charged into the A/C system	600 g	
Average market price for R1234yf refrigerant	179.00 € / kg	
Refrigerant lost during used oil purging	0 g	0.00 €
Refrigerant recovered from the A/C system	99.9 %	0.11 €
<b>Refrigerant lost per service</b>		<b>0.11 €</b>
For 3 x A/C service per week, the annual loss on refrigerant is		<b>17.11 €</b>

<b>Annual savings per year with low-emission concept</b>	<b>1,519.44 €</b>
<b>Annual savings in 8 years with low-emission concept</b>	<b>12,155.52 €</b>



## ASC 5000RPA Low Emission

- **Sturdy metal housing**
- **Charging cylinder storage capacity: 16 kg, vacuum pump capacity: 5 cars/h**
- **Optional:** patented feeding system for fresh oil and UV additive
- **Integrated fully automatic refrigerant analysis function**
- **Fully automatic** refrigerant recycling, oil and additive management
- Automatic vacuum check
- Automatic leak check prior to service start
- Automatic charging of leak detection additive
- **Integrated refrigerant charging and recovery amount management**
- Integrated charging amount database
- Complies with SAE J 2099, 2788 and 2843
- **Close to 100% refrigerant recovery**
- **Personalised charging amount database**
- Operator guidance via large display and illuminated manometer
- Heated charging cylinder for high-speed charging, heat-up also possible during the charging process
- Special, 8-bearing weighing platform
- Special air conditioner flush function
- Large recessed tray for tools
- **Also suitable for German-make hybrid vehicles**
- **Patented used oil container**



### Ref. No.

**8885200102** (See pages 30/31 for specifications)

**8889900001** (Instruction package for A/C service units)

## ASC 5000RPA FEATURES:

### Extra safety:

The service unit comes with integrated refrigerant analysis function.

Explosion protection: hazard analysis performed by an **independent test institute**.

### Automatic, regular leak check:

Service couplers with clearance ventilation prevent refrigerant leakage.

### Switch-on delay and external ventilation:

R 1234yf is inflammable under certain conditions. Therefore, the system start will only activate the external fan. After the fan has been running for 35 seconds, the voltage is passed on to the system.

**Low-emission concept:** close to 100% refrigerant recovery.



#### Practical:

Innovative used oil container with refrigerant return system



#### Illuminated:

Easy-to-read manometer display with R 1234yf scale



#### Rear side:

Filter is easy to access from the outside (as required by TÜV)



#### Safe and secure:

Electronic, dual fan control





## ASC 5000

### LOW-COST ENTRY-LEVEL SERVICE UNIT FOR R 1234YF

Are you in the market for an A/C service unit for the new R1234yf refrigerant? And do you want one from a renowned manufacturer – without spending more money than necessary, though? Then this **simple basic version** of the ASC 5000 could be just the right thing for you. The unit integrates a wealth of WAECO know-how and experience. Professional A/C service work is performed fully automatic, with little

operator effort. All standard ASC-series features are provided, including refrigerant charging and recovery management, personalised charging amount database and automatic vacuum check. The ASC 5000 can be upgraded with an external refrigerant analysis tool. Thus equipped you will always know which refrigerant you are dealing with.

## ASC 5000 FEATURES:

### Air flow:

Controlled air flow and a high-performance fan with **special electronics** guarantee adequate ventilation.

### Personalised charging amount database:

ASC-series units give you the option to create a personalised charging amount database for 100 different vehicles.

### **NEW** Soft graphic display:

The soft graphic display can also display special characters such as Cyrillic or Chinese script.

### **NEW** Improved manometer unit:

The manometers for high and low pressure are now integrated in a **swivel and tilt panel** that flexibly adjusts to the situation at hand.

### **NEW** USB interface:

The new ASC 5000 comes with a USB interface that can be used to update the software and the integrated charging amount database. Important service data (e.g. refrigerant amounts) can simply be exported to a USB stick or laptop for documentation.



**Optional for all ASC 5000:**  
Patented feeding system for fresh oil and UV additive



**NEW: USB interface**  
for software and database updates as well as for service data documentation;  
**soft graphic display** will also display special characters



**Safe and secure:**  
electronic, dual fan control

## ASC 5000

- **Sturdy metal housing**
  - **Charging cylinder storage capacity: 16 kg, vacuum pump capacity: 5 cars/h**
  - **Optional: patented feeding system for fresh oil and UV additive**
  - **Print-out of important service data, several print-outs possible**
  - **Fully automatic** refrigerant recycling, oil and additive management
  - Automatic vacuum check
  - Automatic charging of leak detection additive
  - **Integrated refrigerant charging and recovery amount management**
  - Integrated charging amount database
  - Complies with SAE J 2099, 2788 and 2843
- **Personalised charging amount database**
  - Operator guidance via large display
  - **NEW: swivel and tilt manometer panel (patented)**
  - Heated charging cylinder for high-speed charging, heat-up also possible during the charging process
  - Special, 8-bearing weighing platform
  - Special air conditioner flush function
  - Large recessed tray for tools
  - **Also suitable for German-make hybrid vehicles**
  - **NEW: USB interface**
  - **NEW: soft graphic display**



### Ref. No.

**8885200104** (See pages 30/31 for specifications)  
**8889900001** (Instruction package for A/C service units)

## External refrigerant analysis tools

### R 1234yf



### External R 1234yf gas analysis tool with USB connection

Complies with the specifications of the task force of German vehicle manufacturers

- For ASC 5000
- Reliable analysis with service coupler with clearance ventilation
- Easy handling
- **Not including printer**
- Simple indication of the refrigerant purity

### Ref. No.

**8885100106** (external refrigerant analysis tool)



### External R 1234yf gas analysis SAE with USB connection

- For ASC 5000
- Analysis tool complies with SAE J 2912
- With USB connection
- **Including printer**
- **Indicates the specific gases on the display, e.g. R 1234yf, R 134a, R 22, HC and air**

### Ref. No.

**8885100107** (external refrigerant analysis tool)



	ASC 1000	ASC 2000	ASC 2000RPA
Power supply	220/240 V – 50/60 Hz *	220/240 V – 50/60 Hz *	220/240 V – 50/60 Hz
Suitable for refrigerant	R 134a	R 134a	R 134a
Ref. No.	9103301826	9103301815	8885200087
<b>Recovery / recycling</b>			
Manufactured to UL standards of the USA	●	●	●
Purity of recovered refrigerant according to SAE J 2099	●	●	●
Refrigerant recovery rate in kg/h	30	30	30
Vacuum pump capacity	4 Cars/h	5 Cars/h	4 Cars/h
Capacity of the hermetic compressor in kW	0.32	0.32	0.32
Dry filter capacity in kg	150	150	150
Refrigerant recycling rate	min 95 %	min 95 %	min 95 %
Can be used as diagnosis tool	-	-	-
<b>Charging</b>			
Charging cylinder/useful capacity in kg	10 kg	21 kg	21 kg
Charging amount indicated by	Display	Display	Display
<b>Processes</b>			
Refrigerant analysis	-	-	automatic
Recovery/recycling	automatic	automatic	automatic
Purging of non-condensable gases	automatic	automatic	fully automatic
Purging of used oil	automatic	automatic	automatic
Evacuation	automatic	automatic	automatic
Vacuum check	automatic	automatic	automatic
Nitrogen leak check	-	-	automatic
Injection of leak detection additive	automatic	automatic	automatic
Injection of oil into the A/C system	automatic	automatic	automatic
Refrigerant charging	automatic	automatic	automatic
<b>Control panel</b>			
High/low pressure indicated by	Manometer	Manometer	Manometer
Vacuum indicated on	Display	Display	Display
Total process control via display	●	●	●
Option to set the evacuation time	●	●	●
Protocol print-out with printer	●	●	●
USB connection for software- und database updates	-	-	-
<b>Scope of delivery</b>			
Printer	●	●	●
Service hoses (SAE standard), 3 m	●	●	●
Service hoses (SAE standard), 8 m	-	-	-
Valve adapter for WAECO refrigerant bottles	●	●	●
Operating instructions	●	●	●
Adapter for 500 ml fresh oil and UV tracer dye bottle	●	●	●
Used oil container (500 ml)	●	●	●
Hermetically closed used oil container	-	-	-
Charging device for A/C compressor oil	●	●	●
Injection device for UV additive	●	●	●
Heated refrigerant tank / fluid pump (F)	●	●	●
Dust cover	-	●	●
Goggles / safety gloves	●	●	●
Test bottles UV additive for approx. 10 applications	-	●	●
Bottle of fresh PAG oil ISO 46, 500 ml		8887200013	-
Bottle of fresh PAG oil ISO 100, 500 ml		8887200014	-
<b>Accessories/consumables</b>			
Conversion to R 1234yf possible	-	-	-
Adapter for 500 ml bottle of fresh oil and UV tracer dye	4440600026	4440600026	4440600026
Used oil container, 500 ml	4440600033	4440600033	4440600033
Spare filter for service work	4440400008	4440400008	4440400008
Dust cover	4445900081	4445900081	4445900081
Universal flush container R 134a	8885200088	8885200088	8885200088
Spare roll of thermal paper for printer (sales pack 4 pcs.)	4445900088	4445900088	4445900088
Service hose for high-pressure side (SAE standard), 5 m	8885100026	8885100026	8885100026
Service hose for low-pressure side (SAE standard), 5 m	8885100025	8885100025	8885100025
Service adapter high pressure	8885400027	8885400027	8885400027
Service adapter low pressure	8885400026	8885400026	8885400026
<b>Dimensions</b>			
W x H x D in mm	560 x 1300 x 650	560 x 1300 x 650	560 x 1300 x 650
Weight in kg	95	100	100

\* auch als 110 Volt-Version erhältlich

ASC 2500	ASC 3000	ASC 5000RPA	ASC 5000
220/240 V – 50/60 Hz	220/240 V – 50/60 Hz	220/240 V – 50/60 Hz	220/240 V – 50/60 Hz
R 134a	R 134a	R 1234yf	R 1234yf
8885200095	9103301819	8885200102	8885200104
●	●	●	●
●	●	●	●
30	30	30	30
5 Cars/h	132 l/min.	5 Cars/h	5 Cars/h
0.32	0.32	0.32	0.32
150	150	150	150
close to 100 %	min 95 %	close to 100 %	min 95 %
●	-	●	-
16 kg	30 kg	16 kg	16 kg
Display	Display	Display	Display
-	-	integrated/automatic	external/optional
automatic	automatic	automatic	automatic
fully automatic	automatic	fully automatic	automatic
automatic	automatic	automatic	automatic
automatic	automatic	automatic	automatic
automatic	automatic	automatic	automatic
-	-	-	-
automatic	automatic	automatic	automatic
automatic	automatic	automatic	automatic
automatic	automatic	automatic	automatic
Manometer	Manometer	Manometer	Manometer
Display	Display	Display	Display
●	●	●	●
●	●	-	-
●	●	●	●
-	-	-	●
●	●	●	●
●	●	●	●
●	●	●	●
-	●	-	-
●	-	●	-
●	●	●	●
●	●	●	●
●	● / F	●	●
●	●	●	●
●	●	●	●
●	-	-	-
8887200013	-	-	-
8887200014	-	-	-
●	-	-	-
4440600026	4440600026	4440600026	4440600026
-	4440600033	-	-
4440400009	4440400008	4445900221	4445900221
4445900081	4445900081	4445900081	4445900081
8885200088	8885200088	-	-
4445900088	4445900088	4445900088	4445900088
8885100026	8885100026	8885100109	8885100109
8885100025	8885100025	8885100108	8885100108
8885400027	8885400027	with clearance ventilation: 8885400171	with clearance ventilation: 8885400171 Standard: 8885400164
8885400026	8885400026	with clearance ventilation: 8885400170	with clearance ventilation: 8885400170 Standard: 8885400163
560 x 1300 x 650	560 x 1300 x 650	560 x 1300 x 650	560 x 1300 x 650
100	110	110	100

## Charging and vacuum hoses

R 134a



## Service hoses in various colours for all A/C technology applications

- Suitable for all standard refrigerants
- Highly flexible material allows use even in hard-to-access areas of automotive A/C systems
- Connection thread as per SAE standard

## Ref. No.

8885100065 (hose colour: red, length: 3000 mm)

8885100064 (hose colour: blue, length: 3000 mm)

## Universal flush container

R 134a



## For easy fitting on A/C service units

- Integrated into the flushing circuit to speed up the process to the required level

## Accessory:

Replacement filter, Ref. No. 8880700246

## Ref. No.

8885200088 (universal flush container)

8880700246 (Replacement filter)

## Flash-Memory-Card



## The 2014 update comprises further new vehicle models

- Charging amount data also for truck air conditioners
- Flash memory card – just slot in and play!
- 6.000 vehicle data

**ASC 3000 card on request.****Please specify serial number and software version used.**

## Ref. No.

4441000041 (ASC 1000 up to serial number 109999)

4441000042 (ASC 2000 up to serial number 209999)

4441000090 (ASC 1000 from serial number 110000)

4441000091 (ASC 2000 from serial number 210000)

## Bottle set for ASC series



## Bottle set for ASC series

- 250 ml capacity

## Ref. No.

4440600110 (sales pack: 2 pieces)



**Spare rolls for printer****Special printer paper for ASC-series thermal printers****Ref. No.**

**4445900088** (sales pack: 4 pieces)

**Service quick couplers****R 134a****For fast connection of A/C service units to automotive air conditioners**

- > Suitable for use on all WAECO A/C service units
- > High-quality special couplers for long-term use

**Ref. No.**

**8885400026** (low-pressure coupler for R 134a with M14 x 1.5" inside thread)  
**8885400027** (high-pressure coupler for R 134a with M14 x 1.5" inside thread)  
**8885400024** (low-pressure coupler for R 134a with 3/8" SAE outside thread)  
**8885400025** (high-pressure coupler for R 134a with 3/8" SAE outside thread)  
**8885400089** (low-pressure coupler for R 134a with 1/4" SAE outside thread)  
**8885400090** (high-pressure coupler for R 134a with 1/4" SAE outside thread)

**Used oil container****R 1234yf****Patented used oil container for ASC 2500 and ASC 5000RPA**

- > Specially designed for the low-emission concept

**Ref. No.**

**4440600131** (used oil container)  
**4440600133** (lid)  
**4443300097** (O-ring)  
**4442500710** (metal strip used oil bottle)

**1 Service filter    2 Vacuum pump oil****1 High-performance filter for ASC series**

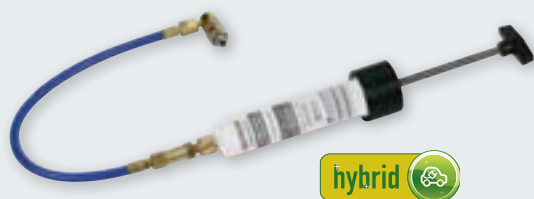
- Special connector for easy installation

**2 Vacuum pump oil**

- Contains 1 litre; HT 32

**Ref. No.**

**4440400009** (Drier for ASC 2500, models built in 2013 or later)  
**4445900221** (Drier for ASC 5000)  
**4440400008** (Drier for ASC models built before 2013)  
**8887200018** (Vacuum pump oil, 1 litre, HT 32)

**Starter kit hybrid oil****R 134a****Starter-Kit hybrid oil**

Content 120 ml

- > Safe and approved charging of the special POE (polyolester) oil with well proven spindle technology
- > No accidental confusion of oil types
- > Safe and clean oil storage
- > No mixing with other compressor oils

**Ref. No.****TP-9772** (Starter kit hybrid oil, 120 ml)**TP-9775-0104** (spare cartridge)**Type-tested refillable steel bottle for extraction in gas or liquid form****R 134a****Reusable system with refill safety device**

Capacity: 12 kg of R 134a refrigerant

- > Sturdy design, good stability, stand-up collar and practical extraction valve, bottle without riser tube
- > Suitable for all charging units in mobile or stationary use

**Ref. No.****8887100007** (fill of WAECO refillable bottle)**8887100008** (purchase of bottle\*)**8885400129** (bottle adapter)

\* Purchase price is refunded if bottle is returned within 2 years

**Type-tested refillable steel bottle for extraction in gas or liquid form****R 1234yf**

Picture similar to product



4440600148

8885400238

**Reusable system with refill safety device**

Capacity: 5 kg of R 1234yf refrigerant

- Sturdy design, good stability, stand-up collar and practical extraction valve, bottle without riser tube
- Suitable for all charging units in mobile or stationary use

**Ref. No.****8887100016** (5 kg fill)**8887100017** (returnable bottle)**4440600148** (bottle adapter, for large bottle valves -> HP)**8885400238** (bottle adapter, 1/2" ACME left-> HP)**① Universal PAO compressor oil ② Universal compressor oil with UV additive R 134a**

①

②

**① Synthetic multi-grade A/C compressor oil for universal use on all car and truck air conditioners****② Universal compressor oil with UV additive****Ref. No.****8887200009** (Universal oil, viscosity 68, 1 litre)**8887200036** (Universal oil with UV additive, 1 litre)

**PAG compressor oil****R 134a****The right oil for all currently available A/C compressors**

- PAG oil (R 134a), 0.25 litres

**Ref. No.****8887200001** (low viscosity, ISO 46)**8887200002** (high viscosity, ISO 100)**8887200008** (ultrahigh viscosity, ISO 150)**PAG compressor oil****R 134a**

Accessory: Adapter (4440600026)

**Unique oil charging system for professional use**

- Moisture-free and clean storage
- Prevents penetration of contaminants into the A/C service unit
- Long shelf life without quality loss
- High-capacity containers, need to be replaced less often

**Ref. No.****8887200013** (low viscosity, ISO 46, 500 ml)**8887200014** (high viscosity, ISO 100, 500 ml)**8887200019** (ultra-high viscosity, ISO 150, 500 ml)**8887200017** (universal oil, 500 ml)**8887200028** (ester oil SE 55, 500 ml, **not for hybrids**)**Compressor oil Denso ND 8 and Denso ND 11 (hybrid)****R 134a****ND 8:****Special compressor oil for factory-fitted Denso compressors****ND 11:****Special compressor oil for high-voltage hybrid applications**

Accessory: adapter, Ref. No. 4440600026

**Ref. No.****8887200021** (compressor oil Denso ND 8, 500 ml)**8887200035** (compressor oil Denso ND 11, 100 ml)**Ester oil Triton SE 55****R 134a****Special oil for bus air conditioners**

- Polyol ester lubricant, for use on bus air conditioners
- Original Fuchs oil

**Ref. No.****8887200029** (ester oil Triton, 1 litre, **not for hybrids**)**① Vacuum pump oil / ② Ester Compressor oil****R 134a****Ref. No.****8887200018** (Vacuum pump oil, HT 32, 1 litre)**8887200006** (for R 134a and R 404, contains 1 litre)



## CLEAN WORKING –

### IT PAYS TO FLUSH!

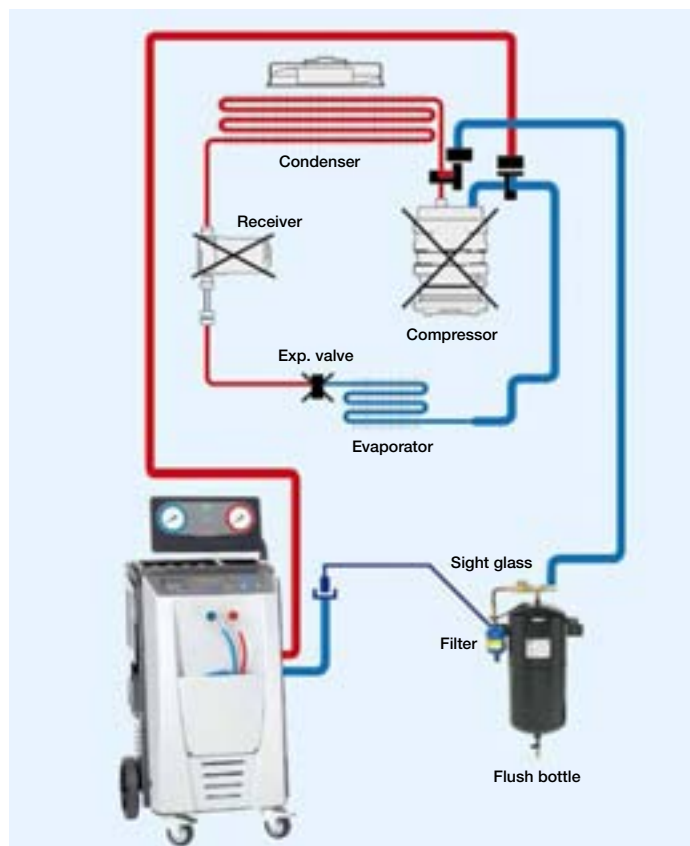
Professional service on automotive A/C systems naturally also includes flushing the system to clear away aggressive substances and contaminants from the refrigerant circuit. Flushing protects all parts of the air conditioner from damage, especially the compressor being its core component.

You will never get a hundred per cent clean refrigerant circuit, though. This is because of the parallel flow evaporator technology commonly used these days. **We strictly recommend you** to add a **chip filter** to the suction line when you flush the system. This will **protect the compressor** and is

especially advisable when you've replaced the compressor, as it will keep the remaining particles away from the newly fitted unit.

**Important note: The chip filter (Ref. No. 8880700246) should be replaced after every flushing process (for each vehicle)!**

This flushing process was developed directly with major automotive manufacturers. Experts say it is a sensible and necessary measure to take.



#### The benefits of air conditioner flushing

- > Prevents costly and annoying repeat repairs
- > Reduces subsequent costs for the workshop
- > Prevents problems with guarantee claims
- > Enhances the workshop's A/C service package
- > Recommendation for the workshop

## SAVE ON REPAIR COSTS – FLUSH A/C COMPONENTS INSTEAD OF REPLACING THEM

**A defective A/C compressor** can have serious consequences. It often occurs that **abrasion particles from the compressor** enter the A/C system. The abrasion particles then circulate within the refrigerant circuit and build up over time. This can lead to time consuming and costly repairs, because all components in contact with refrigerant usually need to be replaced. The universal flush container as well as the flush adapter kit provide a cost-effective solution in such cases. Using this equipment, which is approved by major vehicle manufacturers, you can flush the entire A/C circuit without having to remove a single component. Just fit a new refrigerant compressor and the A/C system is ready for use again.

The universal flush container can also be used with other manufacturers' A/C service units. In this case the flush process needs to be controlled manually, though. **The following service units already come with a software for automatic flush control: AirCon Service Centre series ASC 1000, ASC 2000, ASC 2000RPA, ASC 2500, ASC 3000, ASC 5000 and ASC 5000RPA.**

To use the flush function of these A/C service units, just retrofit the universal flush container (Ref. No. 8885200088).



With special software for A/C flushing to vehicle manufacturer's specifications

## Universal flush container

**R 134a**


### To be fitted on A/C service units

Integrated into the flushing circuit to speed up the process to the required level

#### Scope of delivery:

Pressurised container with 2-way extraction valve, universal mounting bracket for pressurised container, purifier Filter, sight glass, hose to connect the container to the air conditioner and the A/C service unit connected

#### Ref. No.

**8885200088** (universal flush container)

**8880700246** (spare filter)

## A/C flush adapter kit, 17 items



### For bypassing expansion valves and dryers

- For direct connection of A/C service hoses to the compressor's suction and pressure hoses
- Made of high-quality brass-aluminium materials to withstand the rigours of workshop use
- Supplied in sturdy workshop case

#### Scope of delivery:

Universal flush adapter kit for many Audi and VW models as well as for other makes

#### Ref. No.

**8885300089** (A/C flush adapter kit)

**8885400104** (Adapter 3/8" on high-pressure side)

## A/C flush adapter kit II, 18 items



### A/C flush adapter set for removal of harmful substances from the refrigerant circuit

- Set includes a variety of adapters, e.g. for expansion valves and compressors
- Air conditioner is flushed with refrigerants, no need to dispose of cleaning agents
- Ideal for removing oil from the system
- Flexible use with various adapter options
- Refrigerant is recycled by the A/C service unit and can then be reused
- Causes no damage to gaskets and components

#### Ref. No.

**8885300125** (SK43, universal A/C flush adapter set)

**8885300090** (repair set of 6 gaskets)

## A/C flush adapter kit III, 5 items



### For targeted flushing of condensers and evaporators

- For bypassing expansion valves and dryers
- Special clamps with brass connectors
- Connectors for 3/8" service hoses

#### Spares:

Repair set of gaskets, Ref. No. 8881500878

#### Ref. No.

**8885300127** (SK46, A/C flush connector)

**8881500878** (repair set of 4 gaskets)



**A/C flush adapter kit IV, 65 items****A/C flush adapter set for removal of harmful substances from the refrigerant circuit**

- Set includes a variety of adapters, e.g. for expansion valves and compressors
- Air conditioner is flushed with refrigerants, no need to dispose cleaning agents
- Ideal for removing oil from the system
- Flexible use with various hose connection options
- Refrigerant is recycled by the A/C service unit and can then be reused
- Causes no damage to gaskets and components

**Ref. No.**

8885300080 (A/C flush adapter set)

**Flush adapter set V, 143 items****For use with O-ring and taper connections**

- Universal flush adapter set
- The variable connectors can be adapted, which allows the use on flange connections
- Multiple connections possible
- Supplied in sturdy plastic case
- Suitable for workshop use

**Scope of delivery:**

Sturdy service case, brief application instructions with illustrations, 12 gaskets, fixing material, various adapters

**Ref. No.**

8885300104 (flush adapter set)

**Set of chip filters, 60 items****Filter catches contaminants coming from the system to protect the compressor**

- Keeps a newly installed compressor free from chips
- Easy to fit; no need to cut pipes or insert fittings
- Choice of sizes to suit different A/C systems

**Scope of delivery:**

60 filters in 20 different sizes, SK 47 including set of tools

**Ref. No.**

8885300128 (SK47, set of chip filters with tools)

8885300129 (SK48, set of chip filters without tools)

8887300038 (filter for Audi A3, VW Golf V and VW Touran)

8887300019 (chip filter 22 mm)

8887300020 (chip filter 23 mm)

## Recycle Guard

R 134a

## Separates and removes sealants from A/C systems

During refrigerant recovery the Recycle Guard is connected between the A/C service unit and the air conditioning system.

The unit reliably separates sealants before they can enter and cause damage to the service unit.

The integrated filter insert can be used several times.



Suitable for  
A/C service  
units of all  
makes

Universal mounting bracket,  
fits all A/C service units



Sealant contamination in the  
A/C service unit without the use of the  
Recycle Guard



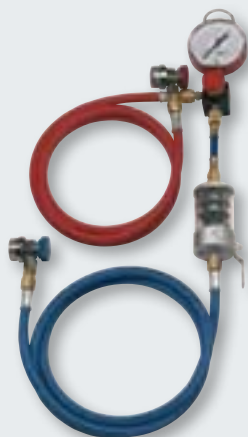
Watch the Recycle Guard instructions  
video at  
[www.airconservice.eu/recycleguard](http://www.airconservice.eu/recycleguard)




## Ref. No.

**8885200060** (Recycle Guard)  
**8880600008** (Universal mounting bracket)  
**8885200061** (Spare filter)

## Oil Checker

R 134a



- 1  **Dark red/black**  
Overheated oil: check the condition of the compressor,  
oil flush required
- 2  **Orange/yellow**  
Oil starts to overheat: check the condition of the compressor,  
oil flush required
- 3  **Pale yellow/white**  
Oil OK



Watch the Oil Checker instructions video at  
[www.airconservice.eu/oilchecker](http://www.airconservice.eu/oilchecker)

## Scope of delivery

Oil checker, one-way manifold, blue service hoses, red service hoses,  
red service coupler

## Ref. No.

**8885100086** (Oil Checker)



## Hybrid flush kit



### Special flush container for ASC-series service units

- Approved according to SAE J 2843/2788/2843H
- Suitable for use with ASC 1000, ASC 2000, ASC 2500 and ASC 3000
- Simple, fully automatic cleaning and flushing of the service unit for application on hybrid vehicles
- For service on all hybrid vehicles

### Scope of delivery

Flush container, special software, operating instructions



Watch the Hybrid flush kit instructions video at [www.airconservice.eu/hybridkit](http://www.airconservice.eu/hybridkit)

### Ref. No.

- 8885200260** (hybrid flush kit for ASC 1000)
- 8885200261** (hybrid flush kit for ASC 2000)
- 8885200262** (hybrid flush kit for ASC 2500)
- 8885200263** (USB and flush kit for ASC 3000)



# WAECO AIRCON SERVICE –

## EVACUATION OF AUTOMOTIVE AIR CONDITIONERS

**Evacuation of automotive A/C systems has to be done with vacuum pumps designed for the purpose.** Too fast an evacuation by means of over-dimensioned vacuum pumps will lead to icing of residual moisture in the air conditioning system and consequently to system malfunctions.

**Today's automotive A/C systems only have a maximum volume of 3 litres of air.**

Therefore, only 3 litres of air per minute will flow through the service coupler during the evacuation process. The vacuum pumps shown below have been exactly designed to match the specific capacity requirements of automotive A/C systems.

### 4-way manifold

**R 134a**


#### Universal 4-way manifold for mobile use

- Universal unit designed for mobile use
- High quality connection for 3/8" SAE
- Can be used for: R 134a, R 404a, R 407c, R 22
- Manometer class 1
- Not damped
- Can be adjusted by the operator
- Includes safety sight glass and suspension
- Supplied without hoses

#### Ref. No.

**8885100115** (4-way manifold)

### Vacuum pump, 42 l/min

**R 134a**


#### Vacuum pump for use on passenger car and utility vehicle air conditioners

##### Specifications

Rated flow	42 l/min	Power input	125 W
End vacuum	0.5 mbar	Supply voltage	230 V/50 Hz
Speed	2.850 <sup>1</sup> / <sub>min</sub>	Dimensions	95 x 184 x 279 mm
Oil capacity	227 ml	Weight	4.5 kg

#### Ref. No.

**8885200005** (Vacuum pump)

### Vacuum pump, 132 l/min

**R 134a**


#### High-performance vacuum pump for use on automotive air conditioners with a refrigerant charging amount of more than 2 kg.

- Especially suitable for use on bus air conditioners

##### Specifications

Rated flow	132 l/min	Power input	330 W
End vacuum	0.02 mbar	Supply voltage	230 V/50 Hz
Speed	2.800 <sup>1</sup> / <sub>min</sub>	Dimensions	350 x 143 x 265 mm
Oil capacity	400 ml	Weight	11.2 kg

#### Ref. No.

**8885200256** (Vacuum pump)

## Refrigerant recovery unit



(Picture similar to product)

### Automatic recovery of refrigerants (R 12, R 22, R 134a, R 404a, R 413a (Isceon 49), R 410a)

- Recovery of refrigerant from A/C systems, transfer from one refrigerant bottle to another, disposal in a special R-bottle
- Automatic self-emptying – several recovery processes can be performed in quick sticks

#### Specifications

Recovery rate	gases: 16 kg/h; liquids: 22 kg/h
Supply voltage	230 volts/50 Hz
Power input	350 watts
Audits	TÜV/GS
Weight	12.6 kg

**Scope of delivery** Recovery unit, red and blue service hoses with ball valves

#### Ref. No.

**8885200059** (refrigerant recovery unit)

## 4.0 kg charging cylinder for R 134a, R 404a and R 407c



### For stationary use in A/C workshops

- Sturdy construction
- Refrigerant can be extracted in liquid or gas form

**Scope of delivery** Charging cylinder, safety valve, manometer

#### Ref. No.

**8885200101** (Charging cylinder)

## Refrigerant scales



### Heavy-duty weighing platform with separate display unit in sturdy plastic case

- Large LCD display with setting option for kg – lb – oz
- Solenoid valve control for accurate charging
- 100 kg weighing platform
- Recovery and charging possible via solenoid valve control system
- Charging process can be repeated
- 220-volt solenoid valve control
- Mains-independent 9-volt LCD control system

#### Specifications

Voltage supply	9-volt block battery / 220 volts
Maximum weight	110 kg
Dimensions (platform)	220 x 220 mm

#### Ref. No.

**8885100099** (refrigerant scales)

# LEAK DETECTION: SIX METHODS TO TRACE LEAKS

## UV LEAK DETECTION

- A special, fluorescent additive is injected into the refrigerant circuit – either via the A/C service unit or manually. Some new drier models are already fitted in the factory with such additives.
- When the A/C components are illuminated with a UV lamp and viewed through yellow UV protection goggles, the leak appears brightly lit up. Visibility is ensured even where oil-covered engines are concerned and even at some distance.
- Unlike the forming gas method, UV leak detection is also suitable for tracing ultra-fine leaks. Where vibration leaks are concerned it is the only method available.
- UV leak detection is already approved for use on R 1234yf systems. Matching leak detection additives are ready to be shipped.

## NITROGEN

- This method involves the production of positive pressure through nitrogen or negative pressure through vacuum by the A/C service unit.
- Leak detection through differential pressure is mainly suitable for the initial testing of strongly leaking or even empty systems. It only indicates that the system is leaking – not where the leak is.
- Testing is only possible with A/C service units that automatically stop when it is impossible to generate vacuum (e.g. all WAECO ASC service units). If the process continues without fault warning, you can be certain that the system has no leak and may be charged with refrigerant. The requirements of the Chemicals Climate Protection Ordinance are met.
- The WAECO ASC 2000RPA allows application of both methods (positive pressure through nitrogen or negative pressure through vacuum).



## TRACER OR FORMING GAS

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- Forming gas consists of 95% nitrogen and 5% hydrogen. The operating principle is similar to that of electronic leak detection. The difference is that the operator has to fill the system with test gas when the refrigerant has been removed.
- The drawback of this method is the length of time required (after 15 minutes the hydrogen has almost completely diffused and must be replaced).
- Another disadvantage is the fact that testing takes place when the system is not operating. “Vibration leaks” which occur while the engine is running can therefore not be detected. (The system needs refrigerant to operate, but it cannot be recharged yet because of the leak!) Moreover, leak detection with forming gas requires clean and constant ambient conditions (for example no draughts in the workshop).



## ELECTRONIC LEAK DETECTION

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- Finding very small leaks is no problem for electronic leak detection systems. In some sections of the A/C system it is difficult though to apply the probe correctly, or at least very time-consuming.

## VACUUM CHECK

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- Fully automatic with advanced A/C service units

## SIMPLE BUBBLE TEST

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- Looking for a leak with lather, the so-called “bubble test”, belongs to the oldest methods of leak detection. It has become almost insignificant, however, as it is impossible to find very small leaks using this method.



# LEAKAGE CONTROL – AN ABSOLUTE MUST

**The utopia of a maintenance-free A/C system has been abandoned long ago. These days, A/C experts accept the fact that refrigerant losses occur with virtually every system.** These losses do not always result from torn ducting or damages through accidents. Even totally intact systems lose some refrigerant – through the ducting and piping system, screw connections, sealing rings, etc. Such losses particularly affect modern systems containing

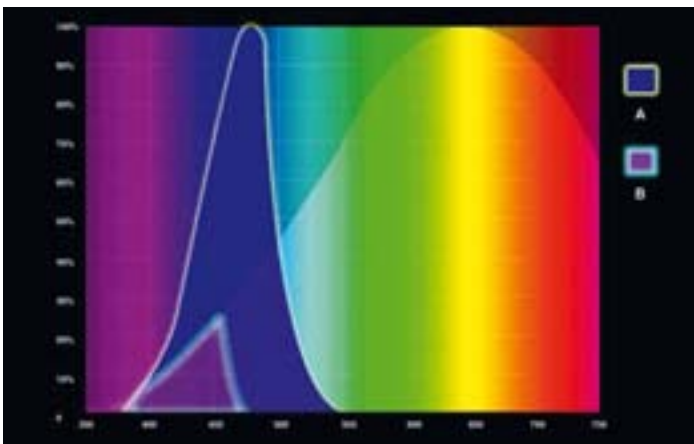
far less refrigerant than former system generations.

The law forbids recharging defect A/C systems – after all, R134a is regarded as an environmental hazard and climate killer. Regular leakage checks are in the interest of the vehicle owner, too, to prevent compressor damage. What's the best way to detect a leak though?



**When buying a UV additive, make sure you get a quality one!** Poor quality additives may cause wear on the seals in the air conditioner as well as in the A/C service unit. Moreover, some UV additives contain solvents which may impair the refrigerant oil's lubricating ability and in the worst case, damage the compressor. Additives containing naphthalene are also dangerous because they let the seals swell. **Currently, there is only one UV additive available that**

**was specially formulated for use with refrigerant oils and is therefore absolutely solvent-free: TRACERLINE®.** When applied properly, this additive is absolutely safe for use in vehicle air conditioners or A/C service equipment. Many automotive manufactures stipulate that leak detection additives of a certain quality must be used.



Decreasing refrigerant charging amounts in automotive air conditioners call for more sensitive UV leak detection equipment. TRACER® has introduced a new TRACERLINE® LED technology with its TP-8690 lamp series. The advantage about the new technology is the improved fluorescent reflection of the UV additive in the colour spectrum visible to the human eye. This colour spectrum covers the entire blue range (A) of the diagram shown above. Conventional leak detection lamps usually come with halogen lights, which are unable to show the complete reflection range visible to the human eye (see diagram range B). The new LED leak detection technology cuts the time of inspection and increases the sensitivity of detection.

**UV leak detection kit****R 134a**

(Picture similar to product)

**For leak detection on automotive air conditioners with R 134a in combination with PAG oil**

- Sturdy case in PAG oil resistant plastic
- Hand pump and cartridges can be stored mounted ready for use

**Scope of delivery:** hand pump incl. 2 cartridges of leak dye, low-side service hose and valve adapter, UV leak detection lamp with cigarette lighter plug, vehicle battery adapter, UV glasses, GLO-AWAY (225 ml), TRACER® under-hood labels (50 pcs.)

**Ref. No.****8885300072** ((UV leak detection kit)**Blue light UV leak detection kit****R 134a****Specially designed for all A/C service units with integrated tracer dye injection device**

- Powerful UV lamp (50 watts, 12 volts)
- UV intensity: 5000  $\mu\text{W}/\text{cm}^2$

**Scope of delivery**

50-watt UV leak detection lamp with battery clamps, 236 ml refill bottle for all recycling units with integrated UV additive management. Contents sufficient for approx. 24 car applications. UV glasses, TRACER® under-hood labels (24 pcs.)

**Ref. No.****TP-1151** (Blue light UV leak detection kit)**LED leak detection kit****R 134a****Specially designed for all A/C service units with integrated tracer dye injection device**

- Powerful UV LED lamp (50 watts, 12 volts)
- UV intensity: 5000  $\mu\text{W}/\text{cm}^2$

**Scope of delivery**

50-watt UV LED leak detection lamp with battery clamps, 236 ml refill bottle for all recycling units with integrated UV additive management. Contents sufficient for approx. 24 car applications. UV glasses, TRACER® under-hood labels (24 pcs.)

**Ref. No.****TP-8651** (LED leak detection kit)

## LED blue light UV leak detection lamp

### LED blue light UV leak detection lamp

- 12 volts operating voltage, for direct connection to cigarette lighter plug
- Adapter for direct connection to vehicle battery
- High light output for high-performance leak detection
- No preheating required – ready for use straight away!
- 5.5 m connection cable

#### Scope of delivery

UV lamp, UV glasses, connection adapter

**SK18/2:** Supplied in a sturdy plastic case

#### Ref. No.

**TP-8690X** (LED blue-light UV leak detection lamp)

**8885300115** (SK18/2, set of leak detection lamps)

SK18/2

## LED blue light UV leak detection lamp

### LED blue light UV leak detection lamp

- Cordless design
- Powered by rechargeable NiMh battery
- Extremely high light output
- Special LED technology, 10 times brighter than standard LED lights
- Extra large inspection range (up to 6 m)
- Up to 6 hours of operation between charges
- Compatible with all leak detection dyes

#### Scope of delivery

Battery powered UV lamp, UV glasses, charger

#### Ref. No.

**TP-8690/F** (LED blue light UV leak detection lamp)

## LED blue light UV leak detection flashlight

### Ideal for initial inspection on automotive reception

- Compact, cordless design
- Super lightweight
- High light output
- Powered by 3 AA batteries
- Easy to use
- 100,000-hour LED bulb

#### Scope of delivery

UV lamp, UV glasses

#### Ref. No.

**TP-8640CS** (UV lamp and UV glasses)

# PROTECT YOUR A/C SERVICE UNIT – AND YOUR CUSTOMERS' A/C SYSTEMS!

UV leak detection additives are well proven worldwide, because they are fast and easy to use providing high leak detection accuracy at competitive costs. Caution is advised, though, because poor quality products can cause wear on the seals in the air conditioner as well as in the A/C service unit.

Moreover, leak detection additives can contain solvents that impair the refrigerant oil's lubricating ability. **Therefore, when buying a leak detection additive, make sure you get a quality one!**

For use with refrigerant oils (PAG, mineral oil, ester), there's currently only one UV additive available that contains no solvents whatsoever. Its name: TRACER®. When properly applied, this additive is absolutely safe for use in all types of automotive air conditioners and A/C service units.

Special TRACER® leak detection additives have already been approved for use with new refrigerants, such as CO<sub>2</sub> and R 1234yf.

TRACER® products contain **10 times more dye** than other UV additives, which makes them more much more effective when it comes to tracing smaller leaks.



TRACER® additives (right) contain 10 times more dye than other UV additives(left)



## TRACER® bottles

R 134a



### For refrigeration and air conditioning systems (R 134a/PAG oil)

- Refill bottle for all recycling units with integrated UV additive management
- Individual quantities can be used as and when required
- Once the system is empty the additive (TP-3820-0301) is simply fed into the component to be replaced – e.g. the dryer
- Individual quantities can be used as and when required

#### Ref. No.

**TP-3820-0016** (refill bottle 475 ml, for approx. 50 car applications)

**TP-3820-0008** (refill bottle 236 ml, for approx. 25 car applications)

**TP-3820-0301** (sales pack: 3 bottles, for 4 car applications)

## TRACER® UV additive (in patented container)

R 134a



### For ASC series and other manufacturers' service units

- TRACER® UV additive for approx. 71 applications when used in combination with ASC A/C service units
- Approved by major automotive manufacturers

#### Accessory

4440600026 (adapter)

#### Ref. No.

**TP-3820-500** (TRACER® UV additive, contains 500 ml)



## TRACER® sticks

R 134a



Approved by  
automotive  
manufacturers

## For refrigerating and air conditioning systems

- When recharging with refrigerant after a normal repair, the contents of the TRACER® stick is simply added to the refrigerant
- Each stick contains exactly the right quantity for the refrigerant volume of an automotive A/C system

## Ref. No.

## TP-3860-0601

(for use with R 134a in combination with PAG oil, sales pack: 6 pcs.)

## TP-3870-0601

(for use with R 134a in combination with ester oil, sales pack: 6 pcs.)

## TRACER® cartridge for approx. 14 car applications

R 134a



Approved by  
automotive  
manufacturers

## For refrigerating and air conditioning systems

- For adding to the system **when already charged** using the TP-9848 hand pump
- In preparation for a repair when the customer cannot leave the car in the workshop straight away
- For use with R 134a refrigerant in combination with PAG oil

Type of vehicle	Refrigerant charging amount	Applications
Passenger cars	up to 0.9 kg	14
Vans/small trucks	0.9 to 2.2 kg	7

## Ref. No.

TP-9860-0301 (sales pack: 3 pcs.)

## TRACER® cartridge for approx. 34 car applications

R 134a



## For refrigerating and air conditioning systems

- For adding to the system **when already charged** using the TP-9741 hand pump
- In preparation for a repair when the customer cannot leave the car in the workshop straight away
- For use with R 134a refrigerant in combination with PAG oil

Type of vehicle	Refrigerant charging amount	Applications
Passenger cars	up to 0.9 kg	34
Vans/small trucks	0.9 to 2.2 kg	17

## Ref. No.

TP-9760-0304 (sales pack: 3 pcs.)

## TRACER® Dyes

R 134a



## For engine, gearbox and power steering oil, fuel, cooling water

- Possible applications: cooling water loss, oil leaks or smell of petrol
- Simply add to the liquid circuit concerned. The necessary quantity can be taken from the resealable bottles as and when required

## Ref. No.

TP-3400-0601 (sales pack: 6 pcs., for oils and fuels)

TP-3900-0601 (sales pack: 6 pcs., for cooling water)

**TRACER® GLO-AWAY****Dye cleaner/remover**

- For leak clean-up after repairs
- Removes traces of additive in the engine compartment/at the service ports
- Suitable for use with all TRACER® leak detection additives

**Ref. No.**

**TP-9000-0008** (225 ml spray bottle)

**TP-9000-0016** (450 ml spray bottle)

**Hand pump for adding leak detection additives****R 134a****For adding TRACER® leak detection additives to the suction side of charged R 134a air conditioners**

- Accurate dosing via spindle adjustment
- Integrated non-return valve protects against over-pressure
- For cartridge Ref. No. TP-9860-0301

**Scope of delivery**

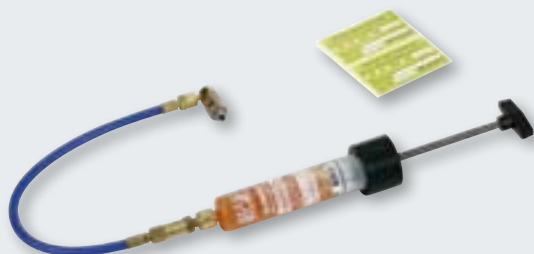
Low-pressure service hose with quick coupler for R 134a A/C systems, 2 cartridges of additive, vent adapter, hand spindle, label with instructions

**Ref. No.**

**TP-9848** (hand pump)

**9103500683** (Spare spindle)

**Accessory:** Spare spindle, Ref. No. 9103500683

**Hand pump for injection of leak detection additives****R 134a****For adding TRACER® leak detection additives to the suction side of charged R 134a A/C systems**

- Accurate dosing via spindle adjustment
- Integrated non-return valve protects against over-pressure
- For cartridge Ref. No. TP-9760-0304

**Scope of delivery**

Low-pressure service hose with quick coupler for R 134a A/C systems, 1 cartridge of additive, vent adapter, hand spindle, label with instructions

**Ref. No.**

**TP-9741** (hand pump)

**Safety gloves / Standard full-view goggles / UV glasses**

**Safety gloves for working with refrigerants and UV additives**  
**Standard full-view goggles for working with refrigerants**  
**UV glasses for leak detection**

**Ref. No.**

**8885400065** (safety gloves)

**8885400066** (standard full-view goggles)

**TP-9940** (UV glasses for leak detection)

## Nitrogen pressure gauge and leak detector R 134a

R 134a



Approved by  
automotive  
manufacturers

**For inspections on A/C evaporators and complete A/C systems in installed condition**

- Manometer block with vent valve and safety valves, 36 bar opening pressure
- Nitrogen pressure reducer, adjustable from 0 to 35 bar
- Test manometer 0 to 40 bar, calibration: 1 bar, class 1.0

**Scope of delivery:** pressure reducer, service quick coupler, 1.8 m service hose for low side, 1/4" SAE x 1/2" ACME adapter, cylinder trolley with manometer block

**Ref. No.**

**8885400092** (pressure gauge and leak detector)

**8885400124** (extension kit for high side)

**8885400165** (extension kit for R 1234yf)

## Portable nitrogen tester

R 134a



**NEW**

**Compact, portable unit – designed for nitrogen measurements in mobile use**

- Firmly installed in a sturdy steel frame
- Ideal for external service work on construction and mining machinery, and other special vehicles

**Scope of delivery**

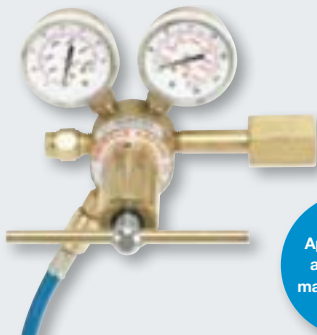
Large manometer class 1.0, aluminium block incl. safety valve, 1.8 m service hose with low side coupler, WITHOUT pressure reducer

**Ref. No.**

**8885400297** (portable nitrogen tester)

## Nitrogen pressure reducer

R 134a



Approved by  
automotive  
manufacturers

**For controlled and safe admission of nitrogen to A/C systems (pressure test)**

- Adjustment range from **0 to 35 bar**, so also suitable for flushing
- High quality design

**Scope of delivery**

Pressure reducer, service quick coupler, 1.8 m service hose for low-pressure side, 1/4" SAE x 1/2" ACME adapter

**Ref. No.**

**8885400058** (nitrogen pressure reducer)

## Nitrogen pressure reducer

R 134a



Hose set

**For controlled and safe admission of nitrogen to A/C systems (pressure test)**

- Adjustment range from 0 to 20 bar, ideal for air conditioner inspections (§ 5 of the German Chemicals Climate Protection Ordinance)

**Hose set for safe connection to vehicle A/C system**

**Scope of delivery:** service quick coupler, 1.8 m service hose for low-pressure side, 1/4" SAE x 1/2" ACME adapter

**Ref. No.**

**8885400135** (Nitrogen pressure reducer)

**8885400136** (Hose set for nitrogen pressure reducer)

## Electronic R 134a leak detector // R 134a reference leak



### Senses refrigerant concentrations in the ambient air

- Responds to R 134a refrigerant only, therefore no interference by other gases (plastic emissions) or air movement
- Measuring head on flexible neck to reach hard-to-access places
- Sensitivity: up to 5 g/year

#### Specifications

Operating voltage	3 volts
Sensor service time approx.	100 hours
Length of neck	420 mm
Dimensions / weight	270 x 65 x 65 mm / 580 g (incl. battery)
Battery	2 x D

#### Ref. No.

**TP-9360** (R 134a leak detector)  
**9103500684** (sensor)  
**9103500685** (filter, sales pack: 20 pcs.)



### R 134a reference leak – for checking the functioning and sensitivity of electronic leakdetectors

- Constant R 134a leak source
- Suitable for all electronic refrigerant leak detectors

#### Specifications

Release rate	5 g/year
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#### Ref. No.

**8885100095** (reference leak)

## Multi-gas leak detector



### Microprocessor controlled sensor electronics with multi-channel signal recognition

- Consistent sensitivity throughout the sensor's lifetime
- Can also be set for heavily contaminated environments (e.g. engine compartment)
- Complies with all international standards relevant for vehicle applications: SAE J2913 for R 1234yf, SAE J2791 for R 134a, EN14624:2005. Identifies all FC- and CFC-based refrigerants and blends as well as SF6.

#### Ref. No.

**8885100124** (Multi-gas leak detector)

## Cylinder trolley



### For safe transport and storage of 10-litre cylinders

- Handy and sturdy cylinder trolley
- With hose suspension
- Integrated storage box for accessories

#### Ref. No.

**8885400057** (Cylinder trolley)

## Leak detection spray



### Leak detection by formation of foam on leaky spots in the refrigerant circuit

- Suitable for fast detection of larger leaks (e.g. on threaded joints or press fits), easy to use

#### Ref. No.

**8887300018** (500 ml)

106 10,90



## SERVICE ON HYBRID VEHICLES –

100 % CLEAN AND SAFE



### No problem with German makes!

The market offers many A/C service units with a hybrid option, but not all of them are efficient. The industry agrees that thorough flushing of the complete system is required when changing from one refrigerant to another.

But what does “thorough flushing” actually mean? SAE J2843 H stipulates a maximum permissible oil cross contamination of 0.1% on the total oil volume. For 150 ml of PAG oil this translates to a mere 0.15 ml. (For comparison: one drop of oil is about 1 ml in volume.) That said, it won't be enough to just hook on the service hoses and flood the system with refrigerant, as is common practice with some service units available in the market. Refrigerant lines, magnetic valves and service hoses will always contain residual oil, which can

lead to cross contamination and dangerous high-voltage exposure.

It is pretty much the same as if you would try to clean a greasy glass just by filling it up with water. Things are quite different, though, if you force a large amount of water through the glass – about the same way a high-pressure cleaner would. Dometic WAECO's hybrid concept is based on a similar principle: An additional flush container is installed and put under vacuum. The refrigerant required for cleaning the unit's internal components is forced through the system several times, under high pressure and in changing directions. The result: service hoses, magnetic valves and the likes are almost 100% clean.

#### Hybrid flush kit

R 134a



#### Special flush container for ASC-series service units

■ see page 41

Ref. No.

**8885200260** (hybrid flush kit for ASC1000)  
**8885200261** (hybrid flush kit for ASC2000)  
**8885200262** (hybrid flush kit for ASC2500)  
**8885200263** (USB- and flush kit for ASC3000)

#### High-voltage gloves

R 134a



#### High-voltage-resistant safety gloves

- Comply with EN 60903 and CE 0333
- For professional and safe work on hybrid vehicles
- Supplied in light-proof safety packaging

Ref. No.

**8885400173** (High-voltage gloves)

**TRACER® hybrid application**

**R 134a**



**UV additive injection kit for hybrid vehicles**

- Insulation resistance of the compressor oil won't drop
- Light-proof storage of the POE special oils in aluminium laminated bags

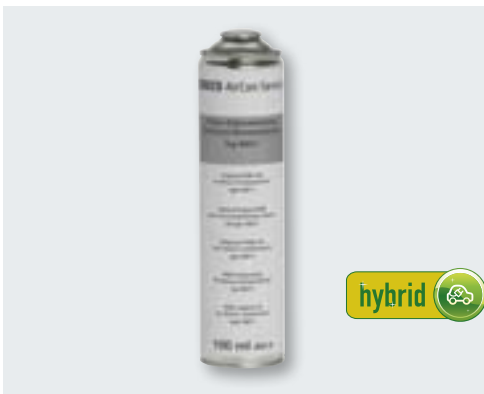
**Scope of delivery:** 3 sticks, hose, coupler, valve, charging adapter

Ref. No.

**TP-3812** (UV additive injection kit for hybrid vehicles)

**Compressor oil**

**R 134a**



**Denso ND 11 compressor oil**

- Special compressor oil for high-voltage hybrid applications

Ref. No.

**8887200035** (Denso ND 11 compressor oil, 100 ml)

**Oil injector**

**R 134a**



**Injector for manual injection of oils and/or UV additives**

- Injector for manual injection of oils and/or UV additives
- Easy-to-use, sturdy design, ideal for workshop use
- With ml and oz scales for oil and an extra scale for additive
- Supplied with hose and couplers (R 134a and R 1234yf) for use with different refrigerants and oils
- Sight glass with crash protection device for enhanced safety
- Ideal for hybrid applications, where cross-contamination of oils is not allowed (SAE J2843H)

Ref. No.

**8885300132** (Oil injector)

**Starter kit hybrid oil**

**R 134a**



**Starter-Kit hybrid oil**

Content 120 ml

- Safe and approved charging of the special POE (polyolester) oil with well proven spindle technology
- No accidental confusion of oil types
- Safe and clean oil storage
- No mixing with other compressor oils

Ref. No.

**TP-9772** (Starter kit hybrid oil, 120 ml)

**TP-9775-0104** (spare cartridge)

# AIR CONDITIONER CLEANING

## FRESH AND HEALTHY AIR IN THE CAR



It only takes minimal effort to effectively remove harmful micro-organisms from automotive A/C systems. **WAECO's ultrasonic atomiser Refresh-o-mat HD** takes care of that service. The high performance, professional unit has been **designed inside out for workshop use**: robust stainless steel housing, power supply with IEC input filter, microprocessor controlled

programme code. The unit has the capacity to atomise up to 400 ml of cleaner fluid, which makes it suitable for disinfecting larger A/C systems on buses or trucks. Using the optional adapter kit, the atomiser can even be connected to the vehicle's air ducts to give them a thorough clean-up.

## Refresh-o-mat HD ultrasonic atomiser



### For professional use in workshops: Ultrasonic technology eliminates bacteria and smells

- Robust stainless steel housing
- Integrated power transformer
- Atomises up to 400 ml of cleaner fluid (also suitable for large vehicles such as buses)

#### Specifications

Power supply:	230 volts AC/50 Hz
Atomiser capacity:	approx. 383 l/h
Dimensions (WxHxD):	150 x 280 x 400 mm (incl. outlet tube)

**Optional extra:**  
Adapter kit for treatment of air ducts



#### Ref. No.

**8885300096** (Refresh-o-mat HD)  
**8885300097** (Hose set)

## AirCon Refresh air conditioner cleaner



### AirCon Refresh air conditioner cleaner

- Ideal for air conditioner cleaning and maintenance
- Eliminates mould, bacteria and other harmful micro-organisms from evaporators, air-vent channels and condensation drains
- Effectively prevents odour
- **Can also be used with other manufacturers' equipment**
- **Also available in practical single-portion bottle.**  
**This ensures that only the required quantity is applied.**  
**Saves material and hence costs!**

\* Certification to the EN 1040 standard means that the product has a bactericide effect on a strictly defined type of test bacteria when applied undiluted at a certain product concentration over a certain period of time.



Effectiveness approved according to EN 1040\*

#### Ref. No.

**8887400008** (1 litre capacity, sufficient for approx. 10 applications)  
**8887400016** (100 ml capacity, sales pack: 20 pcs.)

## Air conditioner spray can in 12-unit display



Effectiveness approved according to EN 1040

### For do-it-yourself use

Attract new customer groups with this easy-to-use spray cleaner. For everybody who don't have or don't take the time for a proper A/C clean-up. Handy do-it-yourself product in sales promoting counter display (12 cans per display). Placed in a prominent place, it can be a useful in-shop marketing tool.

- Spray cans of air conditioner cleaner
- For air conditioner cleaning and disinfection
- Simple handling
- Detailed instructions included with each product
- Effectiveness approved according to EN 1040

**Scope of delivery** 12 spray cans with integrated spray head, product with instructions, sales display

#### Ref. No.

**8887400007** (12-unit display)  
**8885300078** (spray head with hose)



# PROFESSIONAL INTERIOR CLEAN-UP

## ELIMINATES BACTERIA AND SMELLS



When fixing used cars for resale or giving customer cars a professional clean-up you often have to deal with persistent odours. This is where the **ozone generator** comes in. It eliminates smells effectively and without any chemicals and harmful residues. The handy unit turns oxygen into ozone, which is then blown into the vehicle's air duct via a flexible tube. Ozone consists of highly reactive, triple-bonded oxygen molecules. It has the ability to oxidise all kinds of organic substances. In the process it neutralises bacteria, mould, viruses and other microorganisms – which are the source of the smell. What remains is pure oxygen. The ozone method is a

highly effective alternative to conventional disinfectants. It also works against fungal spores, bacteria and virus strains that have become resistant to certain active substances.

Yet another proven method to neutralise smells in passenger compartments is the **WAECO Refresh-o-Mat**. The ultrasonic atomiser is available in two different versions: as a **compact unit in a practical workshop case** or as a **heavy-duty model** enclosed in a robust stainless steel housing.

### Ozone generator

#### Effectively eliminates unpleasant odours through oxidation with ozone

- Suitable for odour decontamination in vehicles and other interiors
- Effectively eliminates intensive odours (e.g. nicotine, mould and animal smell, lactic acid, vomit, diesel or fuel oil)
- Compact unit in a sturdy stainless steel housing
- Supplied with a flexible tube for blowing the ozone into the air duct
- Connection to the vehicle battery with 12-volt cigarette lighter plug and adapter plug

#### Specifications

Power supply: 12 volts DC  
Output: approx. 500 mg/h

#### Scope of delivery:

Ozone generator, 12-volt cigarette lighter plug, adapter plug, blow-off tube

#### Ref. No.

**8885300105** (ozone generator)

## Refresh-o-mat HD ultrasonic atomiser



### For professional use in workshops: Ultrasonic technology eliminates bacteria and smells

- Robust stainless steel housing
- Integrated power transformer
- Atomises up to 400 ml of cleaner fluid (also suitable for large vehicles such as buses)

#### Specifications

Power supply:	230 volts AC/50 Hz
Atomiser capacity:	approx. 383 l/h
Dimensions (WxHxD):	150 x 280 x 400 mm (incl. outlet tube)

**Optional extra:**  
Adapter kit for treatment of air ducts



#### Ref. No.

**8885300096** (Refresh-o-mat HD)  
**8885300097** (Hose set)

## Refresh-o-mat ultrasonic atomiser



### Cleans the air conditioner and neutralises odour in the passenger compartment

#### Specifications

Power supply	230 volts AC/50 Hz
Input voltage	24 volts AC
Dimensions (WxHxD)	138 x 310 x 285 mm

#### Scope of delivery

Refresh-o-mat, high-quality case, mains adapter, hose

#### Ref. No.

**8885300082** (Refresh-o-mat)

## Car Refresh smell stopper



Saver tip:  
100 ml single  
portion

### Smell eliminator for use with the Refresh-o-mat

- Ideal for eliminating intensive odours in vehicle interiors, e.g. cigarette smoke, plastic emissions and animal scent
- Works chemically to give a lasting result rather than just covering up
- **Can also be used with other manufacturers' equipment**
- **Also available in practical single-portion bottle. This ensures that only the required quantity is applied. Saves material and hence costs!**

#### Ref. No.

**8887400009** (1 litre capacity, sufficient for approx. 10 applications)  
**8887400015** (100 ml capacity, sales pack: 20 pcs.)

### LCD digital thermometer



#### For the exact measurement of air temperatures

- Extra-large, easy-to-read digital display
- Long probe (213 mm), excellent measuring accuracy

#### Specifications

Measurement range	-50°C to +150°C
Calibration	±0.1°C
Accuracy	± 1°C in a range from -30°C to +150°C
Ambient temperature	-10°C to +50°C (plastic cabinet)

#### Ref. No.

8885100072 (LCD digital thermometer)

### Digital pocket temperature meter



#### For reception testing of automotive A/C systems

- Extremely compact design allows measuring of air outlet temperature directly at the centre air vents
- Easy-to-read display

#### Specifications

Measurement range	-50°C to +150°C
Accuracy	1°C

#### Ref. No.

8885100059 (temperature meter)

### Infrared laser thermometer



#### Contact-free temperature measurements for automotive uses

- Ideal for measuring the air outlet temperature at the air vents
- Quick temperature checks on condenser surface or heat exchanger
- Integrated laser pointer for precise positioning of the measuring beam – exact measurements even over longish distances

#### Specifications

Measurement range	-20°C to +270°C
Accuracy	2%

#### Ref. No.

8885100062 (laser thermometer)

### Digital pressure meter



#### Digital pressure meter with battery and solar operation

- Measuring range: 0.2 – 7 bar
- Accuracy : +/- 1.5%
- ¼" LCD display
- Display in PSI, bar, kg/cm<sup>3</sup> or kPa

#### Ref. No.

8885100120 (Digital pressure meter)

### Pressure meter (low pressure side)



#### Pressure meter for measuring the pressure in the A/C system

- Ideal for quick check at service reception
- High-quality, impact protected housing
- Easy-grip coating for optimum handling in the workshop

#### Ref. No.

8885100096 (Pressure meter)

# INDISPENSABLE TOOLS:

## THE SPECIALISTS FOR PERFECT WORKMANSHIP

### Service quick couplers (see page 62)

Space is often in short supply in today's engine compartments. Therefore, automotive manufacturers are also using concealed areas to accommodate air conditioner components. On some models (e.g. 5-Series BMW, Ford, Volvo, Mercedes-Benz SLK) the high-pressure-side service port is mounted near the bonnet lock bracket, inaccessible with a standard A/C service coupler. WAECO AirCon Service has developed a matching service tool for easy access to the port.

### Spring lock repair set (see page 62)

Factory-fitted automotive air conditioners, especially those made by **Ford, Volkswagen and Opel**, come with **spring lock couplers** for quick fitting of refrigerant lines. To release these couplers you will need special tools, which WAECO supply.

### Workshop kits (page 68 ff.)

Repair work on automotive air conditioning systems often involves the replacement of **small parts, such as valve cores and O-rings**. To have everything ready at hand, you need a well organised storage system with parts for specific vehicles. WAECO workshop kits include all essential parts, clearly arranged and handily organised in metal cases. The spectrum ranges from plugs to prevent moisture and contaminants from entering an open A/C system to O-ring sets for factory-fitted and retrofit A/C systems.

## Dual diagnostic thermometer



**NEW**

### For diagnosis on two-zone air conditioners

- Ideal for measuring the air outlet temperature at the air vents
- Digital thermometer with 2 sensors and suction cup holder for the windscreen
- Sensors: 3 m long
- Measures and displays the minimum, maximum and average temperatures

#### Specifications

Display	dual, with 5-digit LCD display
Temperature unit	°C, °F, °K
Battery	9 V
Operating temperature	5°C to 40°C at 80% air humidity
Measuring range	-200°C to +1050°C

#### Ref. No.

**8885100127** (dual diagnostic thermometer)

### Surface sensor

#### Specifications

Measuring range	-50°C to +400°C
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### Temperature probe

#### Specifications

Measuring range	-50°C to +700°C
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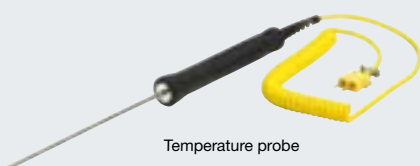
#### Ref. No.

**8885100128** (surface sensor)

**8885100129** (temperature probe)



Surface sensor



Temperature probe



## Service quick coupler HP

R 134a

For **hard-to-access** service ports

- Suitable for BMW E60 and others; Volvo S80, S60 and younger models; Mercedes M-Class; all Chrysler (USA) models and all Asian vehicles

## Ref. No.

8885400227 (Service quick coupler)

## Service quick coupler LP

R 134a

For **hard-to-access** service ports

- Suitable for Jaguar XJ (new) and all Asian vehicles

## Ref. No.

8885400228 (Service quick coupler)

## Service quick coupler HP

R 134a



Approved by  
automotive  
manufacturers

## For Mercedes-Benz SLK

- For connection of A/C service units to the high-pressure service port in the SLK (R171)
- For extending the vehicle's high pressure port

## Ref. No.

8885400117 (Service quick coupler)

## Service quick coupler HP to LP

R 134a



## Custom-made service quick coupler for various Renault vehicles, e.g. Laguna

- Adapter HP to LP

## Ref. No.

8885400098 (Service quick coupler)

## Spring lock repair and disconnect set, 8 items

R 134a



## For service work on spring lock connections

- Spring lock connections can be released or repaired to ensure durable leak protection
- Suitable for Audi, VW, Citroën, Chrysler, Ford, Hyundai, Peugeot, PSA, Renault, Opel, GM, Vauxhall, Seat and Skoda cars



Disconnect tool set for releasing spring lock connections.  
**Can also be supplied separately.**  
Not suitable for GM, Opel and Vauxhall cars.

## Ref. No.

8885300126 (SK44, spring lock disconnect case set)  
8885300044 (disconnect set)

## Threading tool set for metric threads, 9 items



### Thread repair tools for metric threads

- Suitable for cutting female and male thread of the following sizes:  
M14x1.5 female and male thread, M16x1.5 female and male thread,  
M18x1.5 female and male thread, M20x1.5 female and male thread,  
M22x1.5 female and male thread, M24x1.5 female and male thread,  
M27x1.5 female and male thread, M28x1.5 female and male thread

#### Scope of delivery:

8 thread cutters (double-sided), 1 extension

#### Ref. No.

**8885300123** (SK41, threading tool set)

## Threading tool set for inch threads, 9 items



### Thread repair tools for inch threads

- Suitable for cutting female and male thread of the following sizes:  
5/8" UNF, 3/4" UNF, 7/8" UNF, 1" UNF, 1-1/16" UNF

#### Scope of delivery:

5 thread cutters (double-sided), 1 extension

#### Ref. No.

**8885300124** SK42 (threading tool set)

## Adjustable spanner



### Spanner (adjustable from 0 – 30 mm)

- Spanner and ratchet all in one, simply move a lever to change between functions
- Convenient and durable
- Excellent torque
- Ergonomic, soft-grip handle

#### Ref. No.

**8885300133** (Adjustable spanner)

## Solenoid valve opener



example of use

### Tool for opening solenoid valves

- For use on buses
- Opens locked refrigerant circuits
- Can be used for 18 mm / 10 mm solenoid valve coils
- Small and handy, fits into every pocket and thus saves time

#### Ref. No.

**8885300131** (Solenoid valve opener)

## Octagon sockets for fitting service valves / O-ring pick tool



8885300092

O-ring pick tool

**Thin-walled sockets for exchanging 8-sided service ports (R 134a)**

**Special tool for picking O-lock gaskets on refrigerated vehicles or standard O-rings**

### Ref. No.

- 8885300032** (for low-pressure side)
- 8885300033** for high-pressure side)
- 8885300092** (for removal of expansion valves on VW and Audi cars)
- 8885300094** (O-ring pick tool)

## Valve fitting tools



8885300037

8885300035

8885300095

**Fitting tool for Schrader valves used in R 134a A/C systems, e.g. on Ford or Japanese vehicles**

- For high- and low-pressure side; connection diameters: 6.3 and 4.5 mm

**Torque wrench**

- For high- and low-pressure side; connection diameter 4.5 mm

### Ref. No.

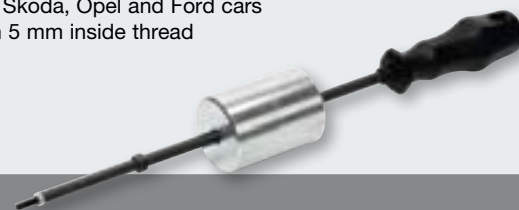
- 8885300037** (for Ford or Japanese vehicles)
- 8885300035** (for Ford, French or Japanese vehicles)
- 8885300095** (torque wrench)

## Slide hammer puller for dryer cores



**For removal of plugs on dryer cores**

- High quality special tool for easy removal of plugs on dryer cores
- Required for new condenser designs where the dryer is located inside the unit, e.g. on Audi, Seat, Skoda, Opel and Ford cars
- Universal tool for plugs with 5 mm inside thread



### Ref. No.

- 8885300091** (slide hammer puller)

## Crimping tool for refrigerant fittings



8885300045

8885300002

**Extremely sturdy, heavy-duty tool kit for fast and reliable connection of hoses and fittings**

- Operated by integrated hydraulic hand pump
- Equally suitable for use with aluminium and thin-walled steel fittings
- Socket sets for four hose sizes (6 – 8 – 10 – 12) included in the kit

**Scope of delivery**

Crimping tool and 7 socket sets

### Ref. No.

- 8885300045** (supplied in sturdy service case)
- 8885300002** (hose cutter)

## Manuli case set



### Manuli case set

- Tool set for working with Manuli fittings
- The hose cutter is necessary in order not to damage the inner plastic core during cutting
- Using the special fitting tool, fittings can be sealed quickly and reliably – and released, if required

**Scope of delivery** Fitting tool, hose cutter, mandrel

#### Ref. No.

**8885300060** (case set)  
**8885300066** (spare blade)

## Set of special ring spanners



### Set of ring spanners for the opening/closing of air conditioner pipes and threaded connections

- Universal set of ring spanners, sizes:  
10 mm / 11 mm / 13 mm /  
17 mm / 19 mm / 22 mm
- Supplied in high quality tool bag



#### Ref. No.

**8885300093** (set of ring spanners)

## Easy repair set for aluminium refrigerant pipes



Damaged pipe section is sawn out  
 Repair: insert the connection sleeve – tighten – done!



Check out our complete range at  
[www.airconservice.eu/easy-reparatur](http://www.airconservice.eu/easy-reparatur)

### For easy repair of damaged pipes

- Low-cost alternative to fitting a new refrigerant pipe
- No special tools required

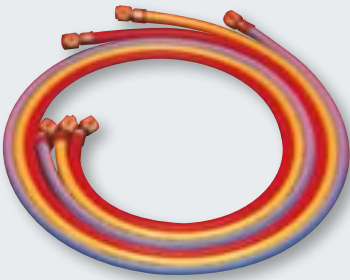
#### Ref. No.

**8885400119** (repair kit for 1/2" pipes)  
**8885400120** (repair kit for 3/8" pipes)  
**8885400121** (repair kit for 5/16" pipes)  
**8885400123** (repair kit for 5/8" pipes)  
**8885400122** (set of seals for 1/2", 3/8", 5/16" pipes)  
**8885400146** (T-piece for 5/16" pipes, low side)  
**8885400147** (T-piece for 3/8" pipes, low side)  
**8885400148** (T-piece for 1/2" pipes, low side)  
**8885400149** (T-piece for 5/8" pipes, low side)  
**8885400150** (T-piece for 10 mm pipes, low side)  
**8885400151** (T-piece for 12 mm pipes, low side)  
**8885400152** (T-piece for 15 mm pipes, low side)  
**8885400153** (T-piece for 16 mm pipes, low side)  
**8885400154** (T-piece for 5/16" pipes, high side)  
**8885400155** (T-piece for 3/8" pipes, high side)  
**8885400156** (T-piece for 1/2" pipes, high side)  
**8885400157** (T-piece for 5/8" pipes, high side)  
**8885400158** (T-piece for 10 mm pipes, high side)  
**8885400159** (T-piece for 12 mm pipes, high side)  
**8885400160** (T-piece for 15 mm pipes, high side)  
**8885400161** (T-piece for 16 mm pipes, high side)

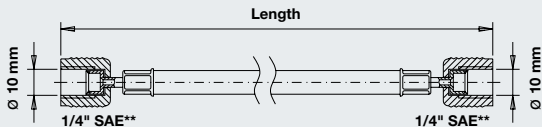


## Charging hoses and vacuum hoses

R 134a

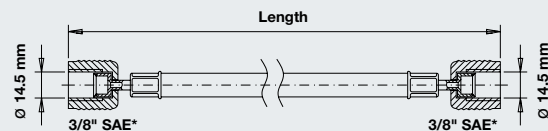

**Service hoses in various colours for all applications in A/C fitting and service**

- › Suitable for all commonly available refrigerants
- › Highly flexible material allows use even in hard-to-access areas of automotive A/C systems
- › Connection thread as per SAE standard



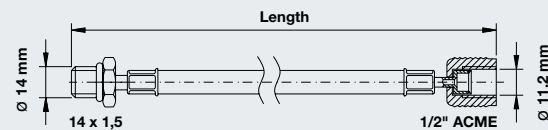
## Ref. No.

- 8885100005** (red hose, 1800 mm)
- 8885100006** (blue hose, 1800 mm)
- 8885100007** (yellow hose, 1800 mm)
- 8885400022** (spare seal)



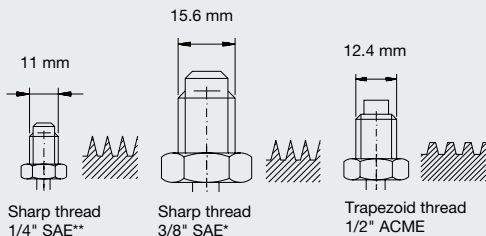
## Ref. No.

- 8885100008** (red hose, 1800 mm)
- 8885100024** (red hose, 5000 mm)
- 8885100009** (blue hose, 1800 mm)
- 8885100023** (blue hose, 5000 mm)
- 8885100010** (yellow hose, 1800 mm)
- 8881500037** (spare seal, sales pack: 10 pcs.)
- 8885400023** (seal)



## Ref. No.

- 8885100011** (red hose, 1800 mm)
- 8885100065** (red hose, 3000 mm)
- 8885100026** (red hose, 5000 mm)
- 8885100028** (red hose, 8000 mm)
- 8885100012** (blue hose, 1800 mm)
- 8885100064** (blue hose, 3000 mm)
- 8885100025** (blue hose, 5000 mm)
- 8885100027** (blue hose, 8000 mm)
- 8881500034** (spare seal)



\* 3/8" SAE = 5/8" UNF, \*\* 1/4" SAE = 7/16" UNF

For connection to A/C service units RHS-910, RHS-950 and RHS-1050, the adapter 8885400038 is required.

## Ref. No.



**8885400129** Connection adapter for reusable refrigerant bottle with seal



**8881500091** Seal for connection adapter 8885400129



**8885400024** Service quick coupler, low pressure, for R 134a with 3/8" SAE outside thread  
**8885400025** Service quick coupler, high pressure, for R 134a with 3/8" SAE outside thread  
**8885400089** Service quick coupler, low pressure, for R 134a with 1/4" SAE outside thread  
**8885400090** Service quick coupler, high pressure, for R 134a with 1/4" SAE outside thread




















**8885400026** Service quick coupler, low pressure, for R 134a with M14 x 1.5 inside thread  
**8885400027** Service quick coupler, high pressure, for R 134a with M14 x 1.5 inside thread



**8881500090** Service port low pressure, R 134a, with outside thread, for Mercedes-Benz, Porsche, BMW, MAN, Opel



**8881500088** Service port low pressure, R 134a, with inside thread, for VW, Audi, Ford, Chrysler

	Ref. No.	
	<b>8881500087</b>	Service port, high pressure, R 134a, with outside thread, for Mercedes-Benz, Porsche, BMW, MAN, Opel
	<b>8881500089</b>	Service port, high pressure, R 134a, with inside thread, for VW, Audi, Ford, Chrysler
	<b>8881500006</b>	Sealing cap for service port, R 134a, high pressure
	<b>8881500007</b>	Sealing cap for service port, R 134a, low pressure
	<b>8881500038</b>	Sealing cap for service port, R 134a, high pressure, for Japanese A/C systems
	<b>8881500039</b>	Sealing cap for service port, R 134a, low pressure, for Japanese A/C systems
	<b>8885400033</b>	Connection adapter with 1/4" SAE inside thread and connection for R 134a service quick coupler, low-pressure side
	<b>8885400082</b>	Connection adapter with 1/4" SAE inside thread for high-pressure side
	<b>8885400037</b>	Connection adapter with 3/8" SAE inside thread and connection for R 134a service quick coupler, low-pressure side
	<b>8881500013</b>	90° retrofit adapter for the high-pressure side with 1/4" inside thread
	<b>8881500014</b>	90° retrofit adapter for the high-pressure side with 3/16" inside thread
	<b>8881500015</b>	90° retrofit adapter for the low-pressure side with 1/4" inside thread
	<b>8885400036</b>	Retrofit adapter, straight, comprising one high-pressure and one low-pressure adapter, each with 1/4" inside thread
	<b>8881500017</b>	Retrofit hose adapter, with 3/16" SAE inside thread and 1/4" SAE outside thread
	<b>8881500018</b>	90° retrofit hose adapter, with 1/4" SAE inside and outside thread
	<b>8885400038</b>	Adapter 1/4" SAE inside thread x 1/2" ACME outside thread
	<b>8885400050</b>	Adapter 1/4" SAE inside thread x 3/8" SAE outside thread
	<b>8885400051</b>	Adapter 3/8" SAE inside thread x 1/4" SAE outside thread
	<b>8885400052</b>	Adapter for Audi 100/A6 original A/C systems for connection of a service quick coupler on the suction side
	<b>8885400034</b>	Adapter 1/4" x low-pressure side
	<b>8885400035</b>	Adapter 1/4" x high-pressure side
	<b>4440600148</b>	Adapter for R 1234yf refrigerant bottles, for large bottle valves -> HP
	<b>8885400238</b>	Adapter for R 1234yf refrigerant bottles, 1/2" ACME left -> HP

## Set of chip filters, 60 items



### Filter catches contaminants coming from the system to protect the compressor

- Keeps the compressor free from chips, recommended e.g. when a new one was fitted
- Easy to fit; no need to cut pipes or insert fittings
- Choice of sizes to suit different A/C systems

#### Scope of delivery:

60 filters in 20 different sizes, SK47 including tools

#### Ref. No.

**8885300128** (SK47, set of chip filters with tools)

**8885300129** (SK48, set of chip filters without tools)

**8887300038** (filter for Audi A3, VW Golf V and VW Touran)

**8887300019** (chip filter 22 mm, set of 3 items)

**8887300020** (chip filter 23 mm, set of 3 items)

## Set of valve cores, 70 items



### Set of valve cores – avoids time-consuming search and procurement

#### Scope of delivery

10	Valve cores R 134a	Ref. No. 8881500001
10	Valve cores R 134a for Japanese make A/C systems / Opel	Ref. No. 8881500002
10	Valve cores R 134a for Ford	Ref. No. 8881500004
5	Sealing caps for service port R 134a high pressure	Ref. No. 8881500006
5	Sealing caps for service port R 134a low pressure	Ref. No. 8881500007
5	Sealing caps for service port R 134a high pressure for Japanese make A/C systems	Ref. No. 8881500038
5	Sealing caps for service port R 134a low pressure for Japanese make A/C systems	Ref. No. 8881500039
5	Service ports high pressure R 134a with outside thread for Mercedes-Benz/Porsche/BMW/MAN/Opel	Ref. No. 8881500087
5	Service ports low pressure R 134a with inside thread for VW/Audi/Ford/Chrysler	Ref. No. 8881500088
5	Service ports high pressure R 134a with inside thread for VW/Audi/Ford/Chrysler	Ref. No. 8881500089
5	Service ports low pressure R 134a with outside thread for Mercedes-Benz/Porsche/BMW/MAN/Opel	Ref. No. 8881500090

#### Ref. No.

**8885300116** (SK25, Set of valve cores)

## Set of plugs for refrigerant lines, 179 items



### Prevent moisture and contaminants from entering the A/C system during servicing work

#### Scope of delivery

20	MF 9/16"	Ref. No. 8881500022
15	MF 5/8"	Ref. No. 8881500023
10	MF 3/4"	Ref. No. 8881500024
10	MF 7/8"	Ref. No. 8881500025
20	FF 9/16"	Ref. No. 8881500027
10	FF 5/8"	Ref. No. 8881500028
10	FF 3/4"	Ref. No. 8881500029
10	FF 7/8"	Ref. No. 8881500030
20	7.6 – 9.4 mm	Ref. No. 8881500180
20	8.4 – 10.2 mm	Ref. No. 8881500181
20	11.3 – 13.1 mm	Ref. No. 8881500182
14	20.7 – 23.5 mm	Ref. No. 8881500183

#### Ref. No.

**8885300120** (SK33, set of plugs)

## Orifice Tubes, 41 items



### Set of orifice tubes for automotive A/C systems with accumulator

- The SK set of orifice tubes allows the user optimum, cost-saving working because it avoids time-consuming search and procurement

#### Scope of delivery

5	Orifice tube (red)	Ref. No. 8881100003
5	Orifice tube (white)	Ref. No. 8881100004
5	Orifice tube (brown)	Ref. No. 8881100005
5	Orifice tube (blue)	Ref. No. 8881100007
5	Orifice tube (orange)	Ref. No. 8881100008
5	Orifice tube (grey)	Ref. No. 8881100038
5	Orifice tube (violet)	Ref. No. 8881100039
5	Orifice tube (yellow)	Ref. No. 8881100040
1	Orifice tube tool	Ref. No. 8885400040

#### Ref. No.

**8885300117** (SK26, set of orifice tubes)

## Original replacement O-rings for car air conditioners with R 134a, 654 items



### For all common types of cars

- To save you from time-consuming procurement processes, we have put together a professional set of O-rings to replace virtually all O-ring connections on original A/C systems of the following makes:

**Alfa-Romeo, Audi, BMW, Citroën, Fiat, Ford, Honda, Hyundai, Jaguar, Mazda, Mercedes-Benz, Mitsubishi, Nissan, Opel, Peugeot, Porsche, Renault, Rover, Saab, Subaru, Suzuki, Toyota, Volkswagen, Volvo**

#### Ref. No.

**8885300118** (SK31, set of O-rings for cars)

## Original replacement O-rings for truck air conditioners with R 134a, 330 items



### Workshop kit for all servicing and repair works on A/C systems in trucks and vans, 17 different O-rings (330 items).

#### Ref. No.

**8885300119** (SK32, set of O-rings for trucks)



### PAG oil dosing dispenser

For lubricating O-rings and threads during professional fitting of A/C components

**Scope of delivery** Sales pack: 2 cans (2 x 200 ml), dispenser tip

**Accessory** Spare dispenser tip

#### Ref. No.

**8887200010** (PAG oil dosing dispenser)

**8885300081** (spare dispenser tip)



## O-rings for R 134a refrigerant on retrofit A/C systems, 200 items



This workshop kit contains all the O-rings needed for servicing work on retrofitted A/C systems

### Scope of delivery

10	Valves R 134a	Ref. No. 8881500001
5	R 134a charging valves for Japanese make units	Ref. No. 8881500002
30	O-rings 6 R 134a	Ref. No. 8881500008
30	O-rings 8 R 134a	Ref. No. 8881500009
30	O-rings 10 R 134a	Ref. No. 8881500010
30	O-rings 12 R 134a	Ref. No. 8881500011
10	O-rings 6-6/16"	Ref. No. 8881500012
2	O-rings for compressor	Ref. No. 8881500020
2	O-rings for compressor	Ref. No. 8881500021
3	Seals for charging hose 1/4"	Ref. No. 8885400030
10	O-ring pressure switches, outside thread	Ref. No. 8881500055
10	O-ring pressure switches, inside thread	Ref. No. 8881500033
3	Seals R 134a for service hose	Ref. No. 8881500034
10	Seals OR	Ref. No. 8881500036
10	Seals for charging hose	Ref. No. 8885400037
5	O-rings for R 134a charging hose	Ref. No. 8881500037
5	O-Ringe für Füllschlauch R 134a	Ref. No. 8881500041

### Ref. No.

**8885300114** (SK06, set of O-rings)

## Original replacement special O-rings for various French make car A/C systems, 44 items



The ideal supplement to the SK 31 basic set

- Includes various special O-rings for French make cars
- 12 different designs / dimensionsen

### Ref. No.

**8885300109** (SK39, set of special O-rings)



### PAG oil dosing dispenser

For lubricating O-rings and threads during professional fitting of A/C components

**Scope of delivery** Sales pack: 2 cans (2 x 200 ml), dispenser tip

**Accessory** Spare dispenser tip

### Ref. No.

**8887200010** (PAG oil dosing dispenser)

**8885300081** (spare dispenser tip)

## Original replacement special O-rings for various German make car A/C systems, 84 items



The ideal supplement to the SK 31 basic set

- Includes various special O-rings for German make cars
- 7 different designs / dimensionsen

### Ref. No.

**8885300110** (SK40, set of special O-rings)



### PAG oil dosing dispenser

For lubricating O-rings and threads during professional fitting of A/C components

**Scope of delivery** Sales pack: 2 cans (2 x 200 ml), dispenser tip

**Accessory** Spare dispenser tip

### Ref. No.

**8887200010** (PAG oil dosing dispenser)

**8885300081** (spare dispenser tip)

# ONLINE CATALOGUE ON THE INTERNET – WWW.WAECOPARTS.COM

**Don't search, find!** The WAECO AirCon Parts online catalogue is as quick and easy to use as your TecDoc search engine. It provides detailed vehicle descriptions with all vehicle-specific parameters included on a **clearly structured platform.**



## Cross reference lists

The number of air conditioned cars on European roads is steadily increasing, and so is the demand for spares. With a virtually complete range of A/C spare parts Dometic WAECO offers profitable business opportunities for quality-conscious workshops. Attractive margins are guaranteed, because **WAECO AirCon parts** are just **as good as the original, but considerably less expensive.**

**Under [www.waecoparts.com](http://www.waecoparts.com) you can also find cross references to the A/C parts of original equipment manufacturers and other suppliers.**

Using these cross reference lists you can easily replace any commonly used A/C part with a WAECO AirCon part.

**Check it out for yourself!**

**[WWW.WAECOPARTS.COM](http://WWW.WAECOPARTS.COM)**

## Multi-gas leak detector



### Microprocessor controlled sensor electronics with multi-channel signal recognition

- Consistent sensitivity throughout the sensor's lifetime
- Can also be set for heavily contaminated environments (e.g. engine compartment)
- Complies with all international standards relevant for vehicle applications: SAE J2913 for R 1234yf, SAE J2791 for R 134a, EN14624:2005. Identifies all FC- and CFC-based refrigerants and blends as well as SF6.

#### Ref. No.

**8885100124** (Multi-gas leak detector)

## Electronic leak detector TP-9364/F

**R 1234yf**



### Electronic leak detector for professional use in workshops

- Supplied in practical hard-top case
- Leak detection with **infrared sensor**, leak detection rate: 3 g per year
- Certified according to SAE J 2791
- Battery operation, 12 V on-board charging cable in scope of delivery
- Suitable for all HFC, HCFC and CFC refrigerants and for SNAP blends such as: R 134a, R 22, R 410a, R 404a, R 12, R 407c, R 409A, R 410B, R 406A, R 414A, R 502, R 500 and all SNAP refrigerants such as R 1234yf

#### Ref. No.

**TP-9364/F** (electronic leak detector)

## External refrigerant analysis tools with USB connection

**R 1234yf**



8885100106

8885100107

### External R 1234yf gas analysis tool

(complies with the specifications of the task force of German OEMs)

- Reliable analysis with service coupler with clearance ventilation
- Easy handling and simple indication of the refrigerant purity

### External R 1234yf gas analysis tool SAE (complies with SAE J 2912)

- Including printer
- Indicates the specific gases on the display, e.g. R 1234yf, R 134a, R 22, HC and air

#### Ref. No.

**8885100106** (external refrigerant analysis tool)

**8885100107** (external refrigerant analysis tool)

## Service coupler

**R 1234yf**



### Service coupler with clearance ventilation

- Quality coupler
- Complies with SAE J 639
- **With 1 g clearance ventilation**
- e.g. for ASC 5000RPA

#### Ref. No.

**8885400170** (service coupler R 1234yf, **low side**)

**8885400171** (service coupler R 1234yf, **high side**)

## Service coupler

**R 1234yf**



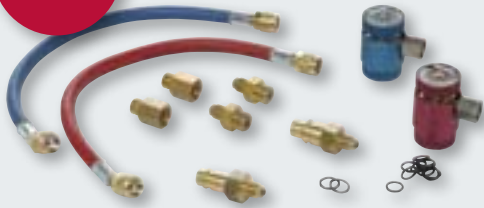
### Service coupler

- Quality coupler
- Complies with SAE J 639
- Suitable for leak checks

#### Ref. No.

**8885400163** (service coupler R 1234yf, **low side**)

**8885400164** (service coupler R 1234yf, **high side**)

**Extension kit for nitrogen pressure gauge and leak detector for R 1234yf****NEW****Extension kit for nitrogen pressure gauge and leak detector (8885400092) for use on R 1234yf air conditioners****Scope of delivery:**

- 1 x high side service coupler 8885400164,
- 1 x low side service coupler 8885400163,
- 2 x adapter 8885400162, 2 x adapter 8885400081, 1 x HP adapter 8885400178,
- 1 x LP adapter 8885400177, 1 x blue hose 8885100110,
- 1 x red hose 8885100111, 2 x O-ring 8881500041,
- 1 x O-ring (sales pack of 10 pcs.) 8881500055

**Ref. No.****8885400165** (nitrogen extension kit)**Service filter****R 1234yf****High-performance filter for ASC 5000 series**

- Special connector for easy installation

**Ref. No.****4445900221** (drier ASC 5000)**Cold light UV leak detection lamp R 1234yf****Blue light UV leak detection lamp**

- Cordless design
- Rechargeable NiMh battery
- Extremely high light output
- Up to 6 hours of operation between charges
- Safe and secure cold light technology for use with R 1234yf

**Ref. No.****TP-8690/F** (LED blue light UV leak detection lamp)**4-way manifold****R 1234yf****4-way manifold for R 1234yf**

- Complete with hoses and quality couplers
- Ideal for mobile R 1234yf charging
- Suitable for R 1234yf recovery

**Ref. No.****8885100098** (4-way manifold)**Oil injector****R 1234yf****Injector for manual injection of oils and/or UV additives**

- Easy-to-use, sturdy design, ideal for workshop use
- With ml and oz scales for oil and an extra scale for additive

**Ref. No.****8885300132** (Oil injector)**Special oil ND 12****R 1234yf****Special oil for use in R 1234yf A/C systems**

- Moisture-free storage of the PAG oil
- Contains 100 ml

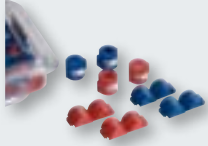
**Ref. No.****8887200031** (special oil ND12 for R 1234yf)**Special oil SPA2****R 1234yf****NEW****Special oil SPA2**

- Moisture-free storage of the oil
- Contains 500 ml

**Ref. No.****8887200039** (special oil SPA2)



### Click Lock service quality seal



Ref. No.  
8887300008

### Ester compressor oil SE 55



Ref. No.  
8887200028 (Content 500 ml)

### Service stickers



Ref. No.  
8887300007

### PAO compressor oil, universal



Ref. No.  
8887200009 (content: 1 litre)

### Refillable steel bottle



Ref. No.  
8887100007 (refill)

### PAG oil dosing dispenser

Scope of delivery:  
2 x 200 ml, dispenser tip



Ref. No.  
8887200010

### PAG compressor oil

(0.25 litres each)



Ref. No.  
8887200001 (ISO 46)  
8887200002 (ISO 100)  
8887200008 (ISO 150)

### Vacuum pump oil

HT32



Ref. No.  
8887200018 (content: 1 litre)

### PAG compressor oil, 500 ml each



(in patented container)

Ref. No.  
8887200013 (ISO 46)  
8887200014 (ISO 100)  
8887200019 (ISO 150)  
8887200017 (Universal oil)  
8887200028 (Ester oil)

### Leak detection spray

Leak detection by formation of foam on leaky spots in the refrigerant circuit



Ref. No.  
8887300018 (content: 500 ml)

### Denso ND 8 compressor oil Denso ND 11 compressor oil



(in patented container)

Ref. No.  
8887200021 (ND 8, 500 ml)  
8887200035 (ND 11, 100 ml)

### TRACER® Sticks



Ref. No.  
TP-3860-0601  
(for R 134a in combination with PAG oil)

### Special oil ND 12, 100 ml Special oil SPA2, 500 ml



Ref. No.  
8887200031 (ND 12)  
8887200039 (SPA2)

### TRACER® cartridge



Ref. No.  
TP-9860-0301  
(for R 134a in combination with PAG oil)

### Ester compressor oil for R 134a and R 404



Ref. No.  
8887200006 (content: 1 litre)

### TRACER® cartridge



Ref. No.  
TP-9760-0304  
(for R 134a in combination with PAG oil)

**TRACER® bottle**

Ref. No.

**TP-3820-0008** (236 ml)  
(for R 134a in combination with PAG oil)

**TRACER® bottle**

Ref. No.

**TP-3820-0016** (475 ml)  
(for R 134a in combination with PAG oil)

**TRACER® UV-Additiv**

UV tracer dye

Ref. No.

**TP-3820-500** (500 ml)

(in patented container)

**TRACER® bottle**

Ref. No.

**TP-3820-0301** (sales pack: 3 pcs.)  
(for R 134a in combination with PAG oil)

**TRACER® Dyes**

Ref. No.

**TP-3400-0601**  
(for oils and fuels)

**TRACER® Dyes**

Ref. No.

**TP-3900-0601**  
(for cooling water)

**TRACER® GLO-AWAY**

Ref. No.

**TP-9000-0008** (content: 225 ml)  
**TP-9000-0016** (content: 450 ml)

**TRACER® hybrid application**

Ref. No.

**TP-3812** (UV additive injection kit for hybrid vehicles)

**AirCon Refresh  
air conditioner cleaner**

For use with Refresh-o-mat, 1 litre

Ref. No.

**8887400008**

**AirCon Refresh  
air conditioner cleaner**

For use with Refresh-o-mat, 100 ml

Ref. No.

**8887400016** (sales pack: 20 pcs.)

**Car Refresh smell eliminator**

For use with Refresh-o-mat, 1 litre

Ref. No.

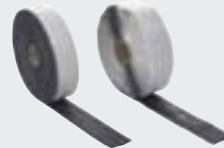
**8887400009**

**Car Refresh smell eliminator**

For use with Refresh-o-mat, 100 ml

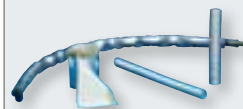
Ref. No.

**8887400015** (sales pack: 20 pcs.)

**Insulating material**

Ref. No.

**8887300001** (tar tape)  
**8887300002** (neoprene tape)

**Heat protection pipe**

For fitting on refrigerant lines

Aluminium coated on one side

Highly extendable and flexible

Suitable for temperatures up to 600°C

**Heat protection hose with Velcro fastener**

For fast retrofitting on refrigerant lines

Suitable for temperatures up to 600°C

Ref. No.

**8887300003** (pipe length: 425 mm; ø inside: 26.5 mm)

**8887300004** (pipe length: 240 mm; ø inside: 36.5 mm)

**8887300005** (hose length: 1000 mm; ø inside: 30 mm max.)

**ASC 1000****R 134a****Basic entry-level package for A/C service use****Ref. No.**

<b>9103301826</b>	Aircon Service Centre ASC 1000
<b>TP-1151</b>	236 ml refillable TRACER® bottle and 50-watt leak detection lamp
<b>8887100007</b>	R 134a refrigerant, refillable bottle, 12 kg capacity
<b>8885300118</b>	SK31 Original replacement O-rings for R 134a refrigerant and PAG oil
<b>8885100072</b>	LCD digital thermometer
<b>TP-9000-0008</b>	GLO-AWAY® spray bottle
<b>8885300037</b>	Universal valve fitting tool
<b>TP-3820-500</b>	TRACER® UV additive (in patented container)

**ASC 2000****R 134a****For workshops wishing to improve the efficiency of their A/C service business****Ref. No.**

<b>9103301815</b>	Aircon Service Centre ASC 2000
<b>8887100007</b>	R 134a refrigerant, refillable bottle, 12 kg capacity
<b>8885100072</b>	LCD digital thermometer
<b>TP-8690X</b>	LED blue light UV leak detection lamp
<b>TP-9000-0008</b>	GLO-AWAY® spray bottle
<b>8885300037</b>	Universal valve fitting tool
<b>TP-3820-500</b>	TRACER® UV additive (in patented container)

**ASC 3000****R 134a****Package solution for A/C service on buses, rail cars, etc.****Ref. No.**

<b>9103301819</b>	Aircon Service Centre ASC 3000
<b>8887100007</b>	R 134a refrigerant, refillable bottle, 12 kg capacity
<b>8885300118</b>	SK31 Original replacement O-rings for R 134a refrigerant and PAG oil
<b>8885100072</b>	LCD digital thermometer
<b>8887200006</b>	Ester oil, 1 litre
<b>8885300037</b>	Universal valve fitting tool
<b>TP-9360</b>	R 134a leak detector

**ASC 500RPA****R 1234yf****For future-minded A/C specialists****Ref. No.**

<b>8885200102</b>	Aircon Service Centre ASC 500RPA
<b>8885100072</b>	LCD digital thermometer
<b>TP-8690X</b>	LED blue light UV leak detection lamp
<b>TP-9000-0008</b>	GLO-AWAY® spray bottle
<b>8887200031</b>	Special oil ND 12 for R 1234yf (in patented container)
<b>8885400206</b>	Adapter for R1234yf refrigerant bottle



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