

# CLIMA LINE ECO LOCK®



## THE INTELLIGENT COUPLER SYSTEM FOR YOUR CLIMA LINE A/C STATION



## ECO LOCK®

BRAIN BEE exclusive system that enables **saving gas**, safeguard **operators' safety** and the **environment**.

### AUTOMOTIVE GREEN SYSTEM

Thanks to the contribution given to **environmental protection** with its technology, **ECO LOCK®** has carried off the prize **INDUSTRIE PREIS BEST OF 2012** of **VDI**, the Association of German Engineers

INDUSTRIE  
PREIS 2012

BEST OF

## THE PROBLEM: THE PUFF EFFECT

The operation of a recharge station has a strong impact on the environment, due to the formation of the so-called **'puff' effect**, that is to say dispersion of refrigerant in the environment that usually occurs at the end of a normal charge of a vehicle during the detachment of recharge hoses from the vehicle circuit.

In fact, due to its mechanical shape, any traditional coupler requires the presence of a small area of interchange among components called **"DEAD SPACE"**.

During recovery, the air in that area is sucked together with the refrigerant and contributes to the formation of **non condensable gases**.

After recharge, this area remains filled with refrigerant and upon hose detachment it is **released in the air** having an environmental and financial impact.

### PUFF EFFECT: ENVIRONMENTAL IMPACT

NUMBER OF CIRCULATING CARS IN EUROPE	<b>235.000.000</b>
AVERAGE NUMBER OF RECHARGES PERFORMED PER CAR	<b>0,15</b>
TOTAL NUMBER OF RECHARGE SERVICES PERFORMED IN EUROPE IN 1 YEAR	<b>35.250.000</b>
AVERAGE REFRIGERANT DISPERSION DURING 1 SINGLE RECHARGE ( <b>puff effect</b> )	<b>4 g</b>
ANNUAL REFRIGERANT DISPERSION DUE TO PUFF EFFECT	<b>141.000 kg</b>
ANNUAL GWP DUE TO RECHARGE (puff effect)	<b>2860</b>
EQUIVALENT ANNUAL CO2	<b>201.630.000 kg</b>

### PUFF EFFECT: FINANCIAL IMPACT ON THE GARAGE

AVERAGE REFRIGERANT DISPERSION DURING 1 SINGLE RECHARGE ( <b>puff effect</b> )	<b>4 g</b>
AVERAGE NUMBER OF RECHARGES PERFORMED PER YEAR	<b>300</b>
COST OF REFRIGERANT R-134a (trend starting from 2013)	<b>€ 150,00/Kg</b>
<b>ANNUAL COST FOR THE GARAGE DUE TO DISPERSION RESULTING FROM PUFF EFFECT</b>	<b>€ 180,00</b>

# ECO LOCK ® SYSTEM - THE SOLUTION

The **ECO LOCK ® SYSTEM** stems from BRAIN BEE experience and represents a state-of-the-art solution to comply with the specific requirements of **VDA** manufacturers, the prestigious Association of Car Manufacturers (Germany).

In particular those requirements concerning the **reduction of gas dispersion** during the normal recharge operation.



## THE ECO LOCK ® SYSTEM

This patented system is fitted with

an **ECO LOCK ® COUPLER**  
(available both for **GAS R-134a** and **GAS R-1234yf**)

controlled through its **ECO LOCK ® SOFTWARE**.  
This software is required for the correct operation of the system, which controls the automatic operation for couplers opening/closing, thus ensuring full functionality and safety.

Thanks to its patented technology, **ECO LOCK ®** allows fully avoiding the typical 'puff' effect.

The adoption of the ECO LOCK ® SYSTEM allows **elimination of the whole refrigerant to be recharged from the dead space of the coupler**, before hoses detachment. It hence prevents gas dispersion in the environment.



SYSTEM OF COUPLERS  
FOR A/C STATIONS WITH  
**ANTI-DISPERSION**  
TECHNOLOGY

## WHY CHOOSING ECO LOCK ®

1. TO ACTIVELY CONTRIBUTE TO **ENVIRONMENTAL PROTECTION**
2. TO **ENSURE INCREASED SAFETY** DURING ANY A/C RECHARGE SERVICE
3. TO **LIMIT WASTAGE** AND THUS **REMARKABLY REDUCE COSTS**

## ECO LOCK ®: THE FIRST AND ONLY

Following specific conformity tests carried out by TÜV RHEINLAND, the ECO LOCK ® SYSTEM has been recognized as

**UNIQUE TECHNOLOGY COMPLYING WITH THE VDA MANUFACTURERS' SPECIFICATIONS,**

therefore entirely fulfilling (and also going beyond) the requirements of containment of leaks caused by hoses detachment, which are in this way eliminated.

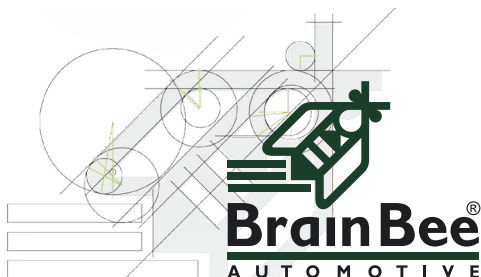


## THE INTELLIGENT COUPLER:

**Reduces the formation of non condensable gases** inside the vessel

**Avoids dispersion of refrigerant in the air** upon hose detachment (puff effect)

**Checks for any leak from the SCHRADER ® valve** before detachment



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