

Proper Work
under the End-of-Life Vehicle Recycling Law

Concerning Proper Work, etc.
for CFCs/HFCs

- Simplified manual -

Background of the designation of fluorocarbons and airbags as items to be covered under the End-of-Life Vehicle(ELV) Recycling Law

[Fluorocarbons]

Since chlorofluorocarbons (CFC), hydro-chlorofluorocarbons (HCFC), and hydro-fluorocarbons (HFC), which are used as coolant in car air-conditioners and refrigeration/air-conditioning equipment for business use, lead to the depletion of the ozone layer and global warming, their reduction and complete elimination are being promoted based on international protocols.

Main international protocols and gasses they cover

Name of protocol	Year of adoption/ratification	Gases covered
Montreal Protocol	Adopted in 1987	CFC R11, R12, R113, R114, R115 And three specified types of halons
Kyoto Protocol	Ratified in 2002	As greenhouse effect gases, together with HFCs, Carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), perfluorocompounds (PFCs), sulfur hexafluoride (SF ₆)

Jun. 2001: Enactment of the Law Concerning the Recovery and Destruction of Fluorocarbons (Fluorocarbons Recovery and Destruction Law)

April 2002: Enforcement (concerning car air-conditioners, full enforcement from Oct. 2002)

Objective: To prohibit the release into the atmosphere of fluorocarbons contained in equipment using fluorocarbons upon the disposal of such equipment, and to make obligatory proper recovery and destruction processing at the time of disposition of the equipment, etc.

Operation: Japan Automobile Recycling Promotion Center is commissioned by automobile manufacturers and importers to construct and operate the Automobile Fluorocarbon Recovery and Destruction System.

It issues automobile fluorocarbon coupons and conducts operations such as the collection of costs of recovery/destruction from automobile users, payment of fees to recovery firms, acceptance station operators, and destruction firms, etc.

July 2002: Enactment of the Law Concerning Recycling Measures of ELVs (ELV Recycling Law)

January 2005: Full enforcement

With the ELV Recycling Law fully in force, regulations concerning car air-conditioners were transferred from the jurisdiction of the Fluorocarbon Recovery and Destruction Law to the ELV Recycling Law (refrigeration/air-conditioning equipment for business use continues to be regulated under the Fluorocarbon Recovery and Destruction Law).

Objective: Since most operators in the business of recovery of fluorocarbons from car air-conditioners are also engaged in the acceptance of end-of-live vehicles and dismantlement, etc., the change to the ELV Recycling Law has made it possible to control and manage these items together with other items that it covers in an efficient and smooth way.

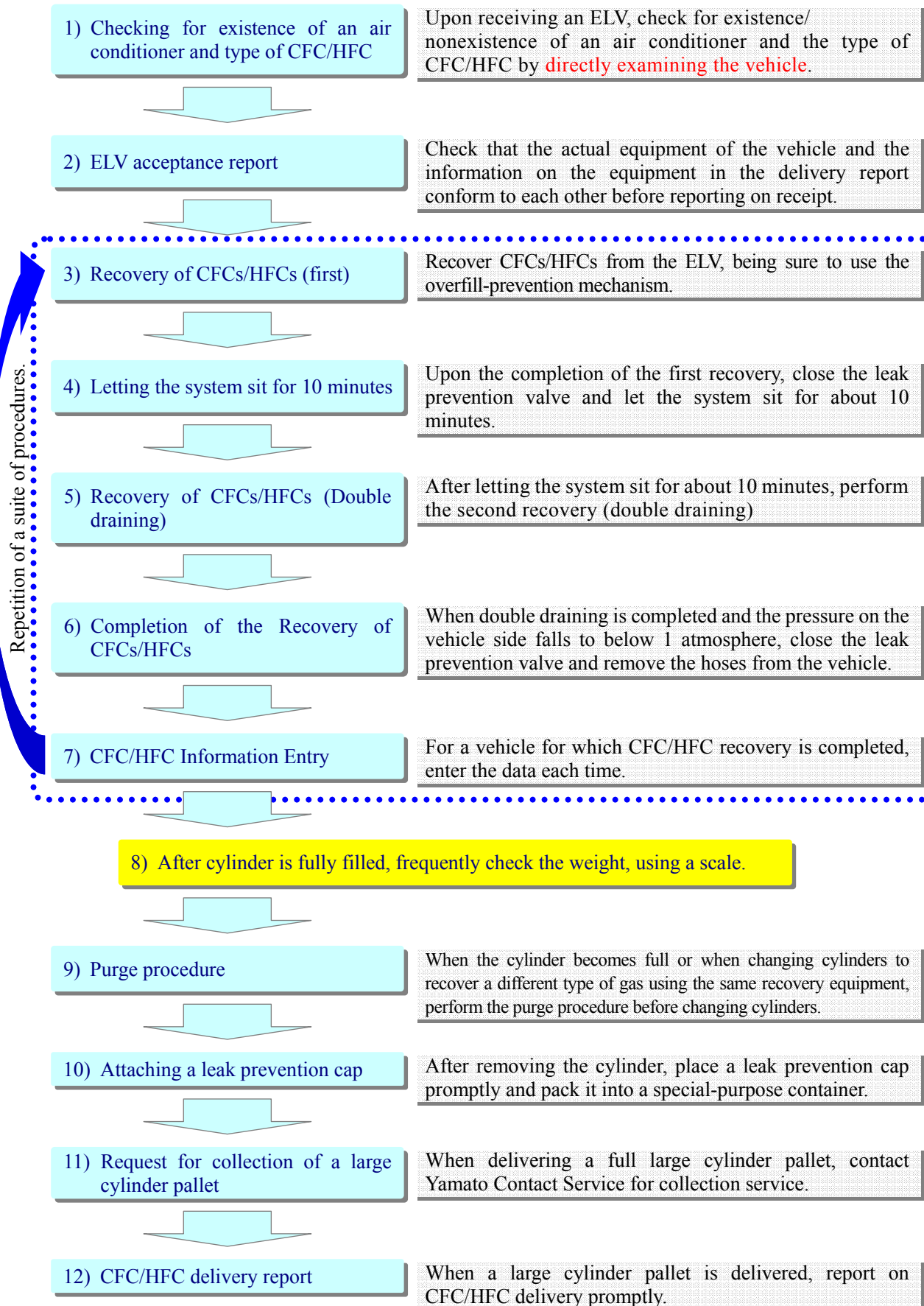
Operation: Through the establishment of an electronic manifest system, the processing of ELVs (acceptance, CFC/HFC recovery, dismantlement, including disposal of airbags, shredding) is carried out under a unified system.

The collection of the costs of recovery/destruction from vehicle users is conducted by the Japan Automobile Recycling Promotion Center. The Japan Auto Recycling Partnership (JARP) is commissioned by automobile manufacturers and importers to conduct tasks such as payments to recovery firms, acceptance station operators, and destruction firms.

I. Correct and proper work of CFC/HFC recovery

1. Work procedure

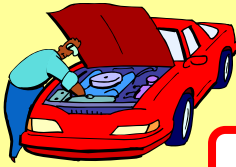
Follow the procedure below for CFC/HFC recovery work.



2. Work contents

1) Checking the vehicle (existence/nonexistence and type of CFC/HFC)

[Actual vehicle checking]



[Verification of the "ELV receipt report" on screen]



Verify conformity of "actual vehicle equipment" and "type of CFCs/HFCs"

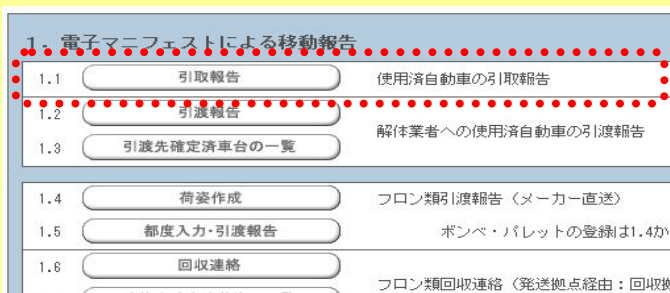


When the report concerns delivery not the "CFC/HFC recovery process" but the "dismantling process," there is a possibility that a delivery report has been made with an indication of "No CFCs/HFCs."

* If there are no lacerations on piping or hoses for CFCs/HFCs or damage to the condenser due to accidents, etc., report on receipt with an indication of "Yes" for equipment.

2) ELV receipt report

[CFC/HFC recovery process "1.1 ELV acceptance report"]



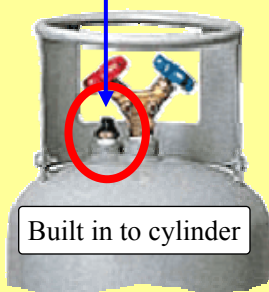
Verify the conformity and report on receipt.



3) Recovery of CFCs/HFCs (first time)

[Recovery process, using the overfill-prevention function]

Float sensor



Built in to gas detector



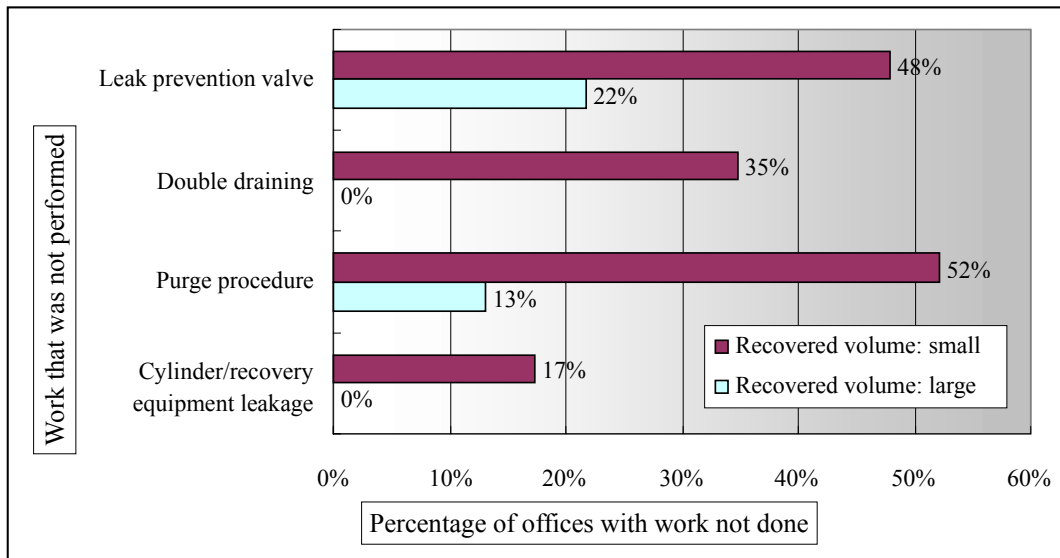
Integrated gas detector/recovery equipment type



In the case of an integrated gas detector/recovery equipment type unit, as when a cylinder from a different manufacturer is used, there is a possibility of overfilling due to a different weight setting. Be sure to use a cylinder appropriate for the recovery equipment.

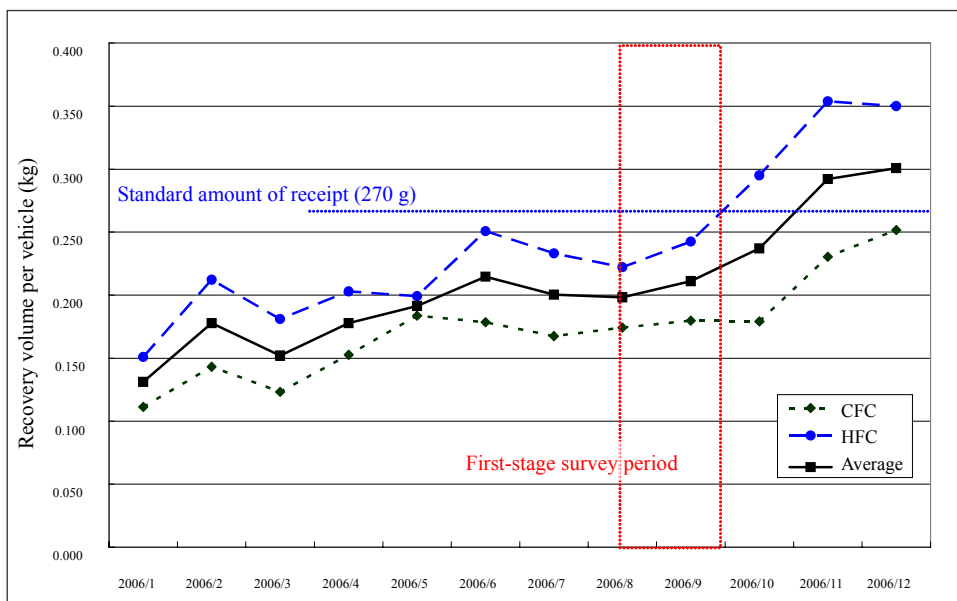
[Survey results]

According to a survey conducted by Japan the Auto Recycling Partnership (JARP) in August-September 2006, the following difference was observed between the offices with larger recovery volume and those with smaller recovery volume.



Work contents	Effect
Leak prevention valve	When a tube was removed from the cylinder without using a leak prevention valve, a large amount of CFCs/HFCs remaining inside the tube/recovery equipment was released (the amount released was impossible to measure).
Double draining	By performing a second draining after letting the system sit for about 10 minutes, an additional 20-50 g could be recovered, regardless of the type of the gas.
Purge procedure	By performing the purge procedure, 10-210 g of CFCs/HFCs remaining inside the hose/recovery equipment could be recovered.
Cylinder/recovery equipment leakage	CFCs/HFCs were leaking gradually from the recovery equipment body and cylinder body (mainly through the valve part). The amount released could not be measured.

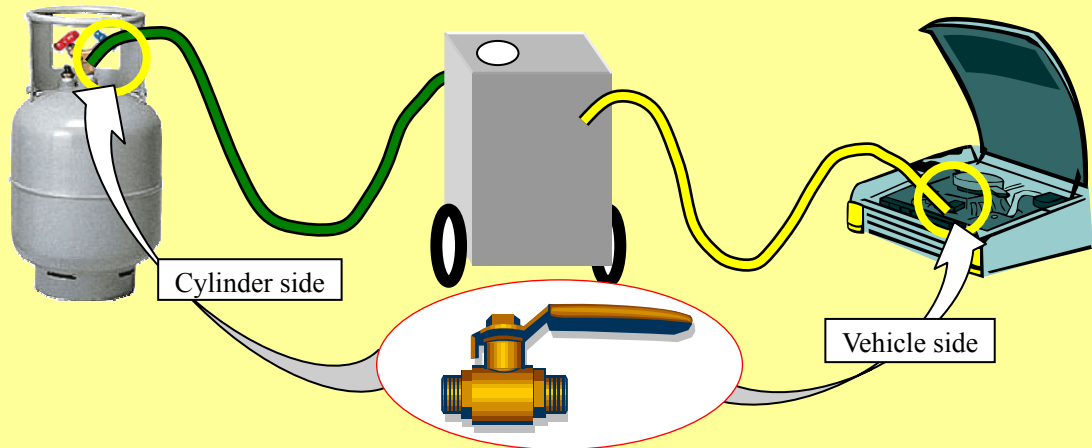
When the above processes were fully implemented, at offices where the recovery volume was small at the time of the August-September 2006 survey, the recovery volume per vehicle improved, as shown below.



Change in recovery volume of the operators to whom instructions were given in the first-stage survey (11 companies)

4) Letting the system sit for about 10 minutes

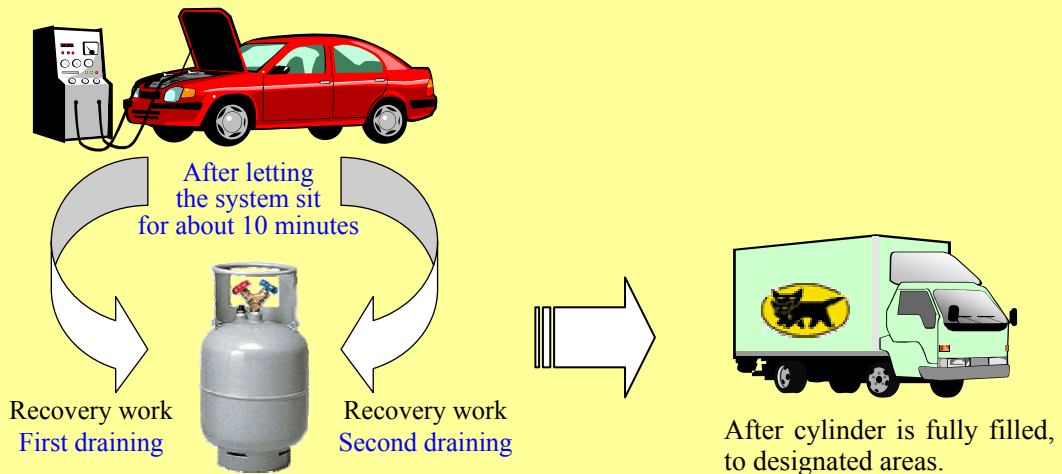
[Wait with the leak prevention valve closed]



Let the system sit for about 10 minutes with the leak prevention valve closed so that CFCs/HFCs remaining in the hose or recovery equipment will not leak out.

5) Recovery of CFCs/HFCs (double draining)

[Another recovery when the gauge reading of the recovery equipment rises]

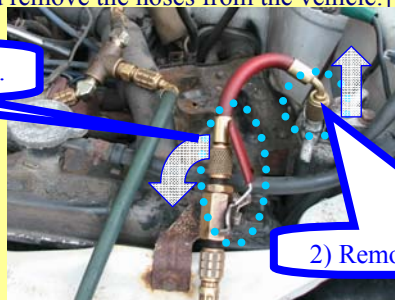


If the time the system is left to sit is too short, CFCs/HFCs dissolved in oil will not fully evaporate, leading to almost no effect. There is a possibility of recovering an additional 20-50 g by performing a second draining.

6) Completion of CFC/HFC recovery

[Close the leak prevention valve and remove the hoses from the vehicle.]

1) Close the leak prevention valve.



2) Remove the hoses from the vehicle.

7) CFC/HFC Information Entry

[Register the vehicle for which CFC/HFC recovery is done]

When the CFC/HFC recovery is completed, enter the information about the vehicle.

1. 電子マニフェストによる移動報告

1.1	引取報告	使用済自動車の引取報告
1.2	引渡報告	解体業者への使用済自動車の引渡報告
1.3	引渡先確定済車台の一覧	
1.4	荷姿作成	フロン類引渡報告 (メーカー直送)
1.5	都度入力・引渡報告	ボンベ・パレットの登録は1.4から、ボンベに車
1.6	回収連絡	フロン類回収連絡 (発送拠点経由: 回収拠点から発送拠点)

1. 引渡実施事業者 (自社) 情報

事業所コード	X00000000003	事業者/事業所名	詳細 ○○フロン類回収業者	取扱フロン種別	CFC/HFC
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2. 引渡先確定済荷姿の一覧

※都度入力をする場合には、「変更」ボタンをクリックしてください。
 ※引渡報告をする場合には、「引渡報告対象選択」をチェックし、「センターへ報告」ボタンをクリックしてください。

該当荷姿は1件です

最終確定日	引渡先事業者/事業所名	荷姿ID	ボンベ・パレット番号	フロン種類	ボンベに充填された車台数			都度入力 (荷姿内容変更)	確定取消	引渡報告対象選択
					乗用車等	小型バス	大型バス			
X000/X00/X00	○○フロン類指定引取場所	詳細 X0-X0000000-X00000	X0000	CFC	3	0	0	変更	<input type="checkbox"/>	<input type="checkbox"/>

3. ボンベ・パレット情報

ボンベ・パレット番号	33333	荷姿ID	X0-X0000000-X00000	フロン種類	CFC	荷姿作成日	X000/X00/X00	最終確定日	X000/X00/X00
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4. 引取報告済車台の一覧

該当車台は3件です

引取報告日	車台番号	型式	車名	フロン種類	フロン種類	引取報告対象選択
X000/X00/X00	X000-X000	詳細 X0-X000	○○○	乗用車等	CFC	<input checked="" type="checkbox"/>
X000/X00/X00	X000-X000	詳細 X0-X000	○○○	乗用車等	CFC	<input type="checkbox"/>
X000/X00/X00	X000-X000	詳細 X0-X000	○○○	乗用車等	CFC	<input type="checkbox"/>

Record management can be done efficiently by printing out the input screen (Menu 15 ["Entering/delivery report"]) and using it as a check sheet for on-site work.

8) Preventing overfilling

[When the cylinder is nearly full, prevent overfilling by weighing with a scale]

Volume: 21 liters

Empty cylinder weight + 21 kg = Full cylinder weight

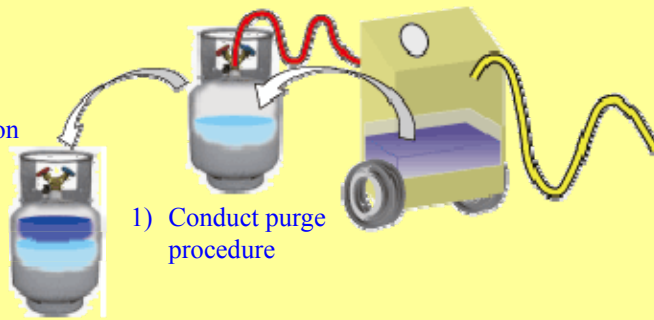
There is a danger that an overfilled cylinder will become damaged, as shown in the photograph.

In advance, measure the empty cylinder weight and enter the result of the addition of that empty cylinder weight and the figure following "V" stamped on the cylinder as the full cylinder weight. We recommend that you measure the weight at the time of the beginning of business each morning and make a rough estimate of the timing of the cylinder's becoming full. When the cylinder becomes close to full, check the weight frequently, using a scale. (For details, refer to: <http://www.jarp.org/12/04.html>.)

9) Purge procedure

[Fill CFCs/HFCs remaining in the hose and the recovery equipment into the cylinder]

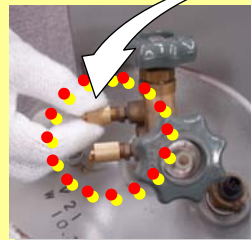
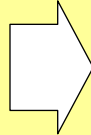
2) Close leak prevention valve and remove cylinder.



In a case where both of CFCs and HFCs are being recovered with one recovery equipment, perform the purge procedure (or refresh procedure depending on the recovery equipment) in order to prevent mixing different types of gases and to prevent leakage from the hose/recovery equipment. Up to about 200 g of CFCs/HFCs will have been accumulated inside the hose/recovery equipment.

10) Attaching a leak prevention cap

[Prevention of leakage from the cylinder]



Example of a leak prevention cap



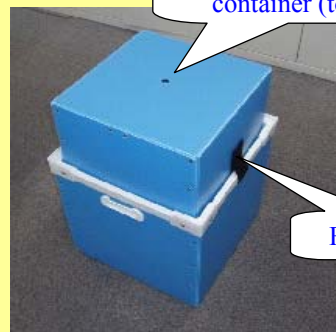
When the recovery work is completed and the cylinder is fully filled, close the valve tightly and place the leak prevention cap on the cylinder intake.

11) Request for collection of a large cylinder pallet

[Cylinder packing to prevent leakage]



Special-purpose packing container (bottom part)



Special-purpose packing container (top part)

Fixing band

1) Place the full cylinder in a special-purpose container.

2) Place the top part of the special-purpose container and bind it with a band.



Place the cylinder inside a special-purpose container after closing the valve tightly and placing the leak prevention cap to the intake in order to prevent leakage of CFCs/HFCs due to falls during transport, etc.

12) Request for collection of a large cylinder pallet

[Request for collection on the "Delivery report" screen]

Request for collection of a cylinder ready to be delivered.

* Check the separately distributed manual for how to request collection using an electronic manifest.

最終確定日	引渡先事業者/事業所名	荷姿 I D	ボンベ・パレット番号	フロム種類	ボンベに 充填された 車台数	都度入力 (荷姿内 容変更)	確定 取消	集荷 依頼 ※2	引渡報告 対象選択 ※3			
2004/11/20	〇〇化学(株) 〇〇工場	GH-20041120-000001	AAAD00000001	CFC	70	2	2	74	変更	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2004/11/20	〇〇化学(株) 〇〇工場	GH-20041120-000002	AAAD00000002	CFC	7	10	5	70	変更	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2004/11/20	〇〇化学(株) 〇〇工場	GH-20041120-000003	AAAD00000003	CFC	7	10	5	70	変更	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13) CFC/HFC delivery report

[When the cylinder is delivered, carry out delivery reporting promptly.]

When the cylinder is delivered, report on the delivery promptly.

* If the delivery report is delayed, return of the cylinder will also be delayed.

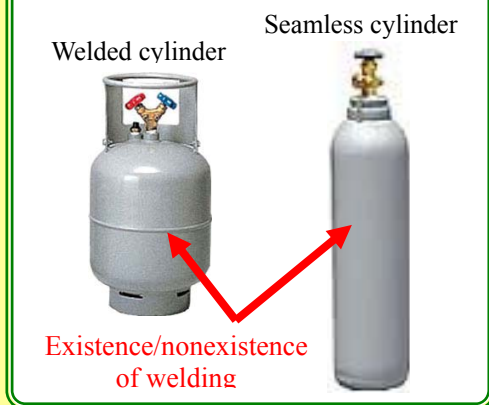
最終確定日	引渡先事業者/事業所名	荷姿 I D	ボンベ・パレット番号	フロム種類	ボンベに 充填された 車台数	都度入力 (荷姿内 容変更)	確定 取消	引渡報告 対象選択 ※				
XXXX/XX/XX	〇〇フロム類指定引取場所	XX-XXXXXXX-XXXXXX	XXXXX	CFC	8	0	0	3	変更	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14) Other matters that require attention

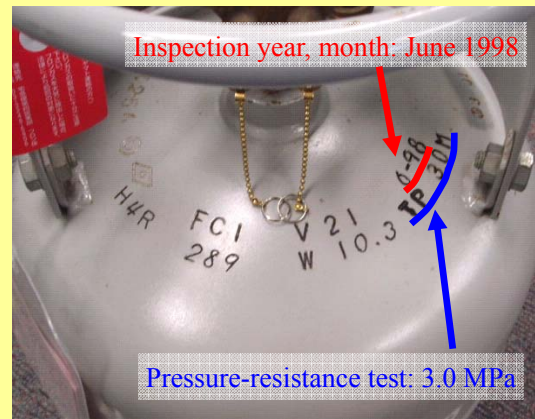
[Inspection deadline specified in the High-Pressure Gas Safety Law]


Type of cylinder	Volume, pressure resistance, etc.	Number of years that have passed from the date of manufacture	
		Less than 20 years	20 years or longer
Welded cylinder* ¹	Pressure resistance (test pressure): 3.0 MPa or less, Volume: 25 l or less	6 years	2 years
	Other than the above	5 years	
Seamless cylinder* ²	All	5 years	

* Welded cylinder and seamless cylinder



Example: In the case of the welded cylinder shown below, the deadline for reinspection is May 2004 (6 years after June 1998).



 As use of a cylinder beyond the date of the inspection deadline poses dangers of damage, etc., it is against the High-Pressure Gas Safety Law to continue to use it. Have any cylinder approaching the inspection deadline reinspected by the store where it was purchased or its manufacturer.

* For inspection organizations, refer to the Japan Auto Recycling Partnership (JARP) Web page: http://www.jarp.org/07/pdf/0711F_BonbeLimit_001.pdf

* When additional cylinder leak prevention caps and special-purpose containers for large-cylinder packaging are needed, fill in the items required on the order forms shown on the next pages and place an order by FAX.

For: Yamato Contact Service

Leak Prevention Cap Order Form

Although Yamato Contact Service checks whether the customer possesses leak prevention caps or not when a request for collection is made and distributes them to customers that do not have caps or are faced with a shortage, if you would like to obtain them in advance, place an order, using this form.

.....<Order Section>.....

Operator/office name	
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Operator code											0	3
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Name of the person in charge		Contact phone number	
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* Specify your daytime phone number.

For the circumstances concerning a request for collection, circle the applicable circumstances.

Request for collection	Requested (by Web/Phone/FAX)	No plan for requesting immediately.
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Referring to the photographs below, circle the type of cap needed and enter the number of sets (pieces) necessary.

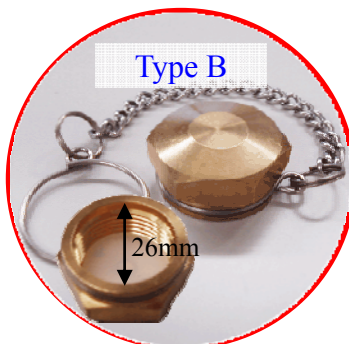
Type of leak prevention cap	Number of sets (pieces) necessary
Type A (2 pieces per set)	Sets
Type B	Pieces
Type C	Pieces

* Concerning cylinders with two spouts, there are two kinds:
 (1) Cylinder requiring 2 pieces of Type A
 (2) Cylinder requiring 1 piece each of Type B and Type C
 Be careful to select the correct one.

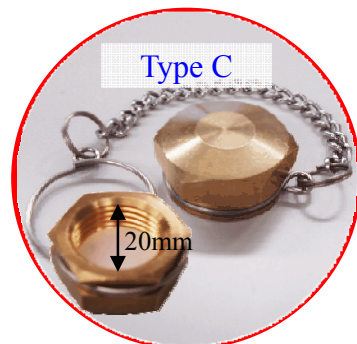
Types of leak prevention caps



Size: Unified thread 7/16-20



Size: Base 26 mm



Size: Base 20 mm
 (used mainly for rocket-type cylinders)

FAX: 0120-260-995

For: Yamato Contact Service

Special-purpose Container for Cylinders Order Form

Recovery operators that are faced with a shortage of special-purpose containers for cylinders. Be sure to place an order for the needed additional number of pieces, using this form.

.....<Order Section>.....

Choose one of the following

- New order (for customers that have not delivered CFCs/HFCs in the past)
- Additional order (for customers that have delivered 4 cylinders or more per month on average)

Operator/office name	
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Operator code										0	3
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Name of the person in charge		Contact phone number	()
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* Specify your daytime phone number.

Address for delivery	〒 -
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Enter the necessary number of pieces. (We may contact you for confirmation. Thank you for your understanding.)

Necessary number of units of special-purpose containers for cylinders	Units
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The case is good for the cylinder type shown below



The case is not good for the cylinder types shown below
 If you are using them, contact JARP as soon as possible.

1) Without a guard	2) Guard location is low.	3) Rocket type

FAX: 0120-260-995

II. Correct and proper work of the ELV handling process

1. Work procedure

The receipt and delivery work of the ELV handling operator must be conducted according to the following procedures:

Verification of the actual vehicle equipment

After receiving an ELV, check for the presence of an air conditioner, type of CFCs/HFCs, and presence of airbags **on the actual vehicle.**

Verification of deposit of recycling fee

Verify whether the recycling fee has been deposited, and if deposited, whether it is deposited in accordance with the actual equipment situation.

* Even if the ASR fee has been deposited, if the fees for CFCs/HFCs and airbags have not been deposited, it is necessary to deposit the balance.

* Even if all the fees, including those for equipment, have been deposited, if processing is not necessary due to an accident, etc. the vehicle must be received with equipment specified as "NONE."

Receipt reporting and delivery reporting

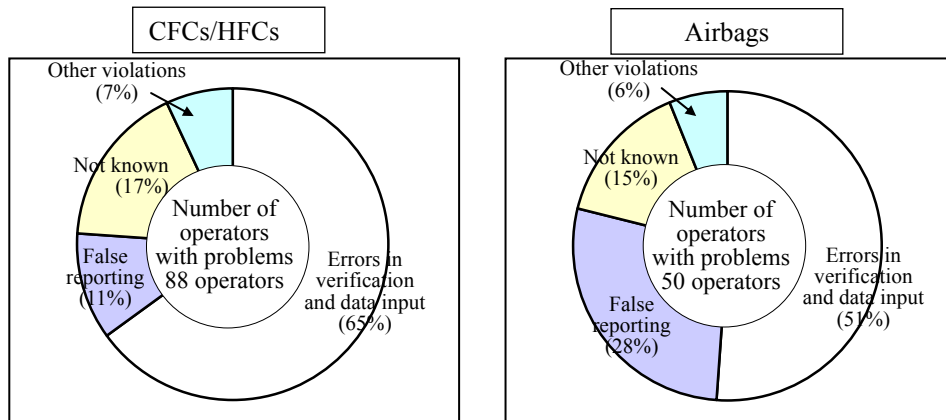
Report on receipt after verifying that the recycling fee is deposited and report on delivery in accordance with the equipment situation.

<Survey result>

According to "Research and the result of administrative guidance concerning equipment information on CFCs/HFCs and airbags in ELVs" published by the Ministry of the Environment on May 14, 2007, 88 operators (15% of the investigated operators) were found to be neglecting verification of equipment concerning CFCs/HFCs and 50 operators (14% of the investigated operators), concerning airbags, and all of these operators had been given administrative guidance/admonition, etc., by the prefectures, etc., of jurisdiction by March 2007.

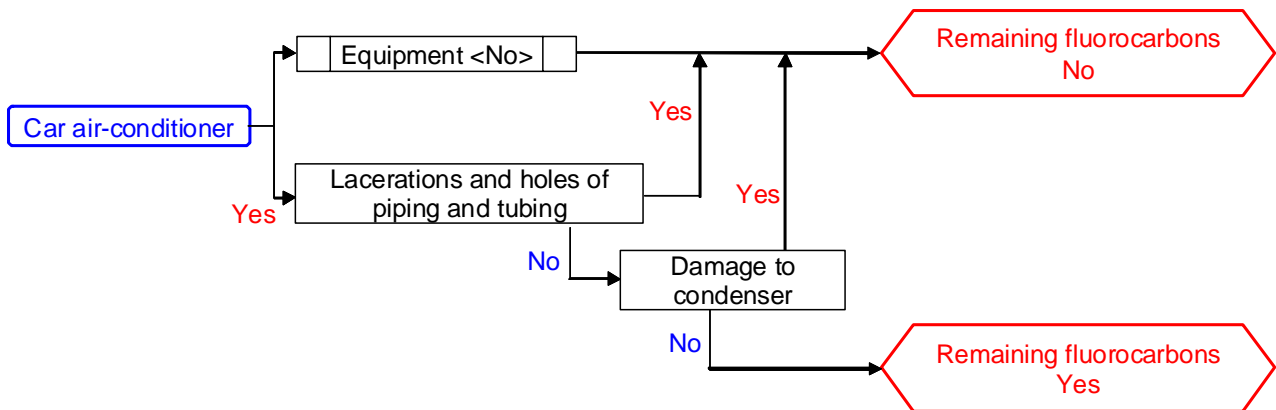
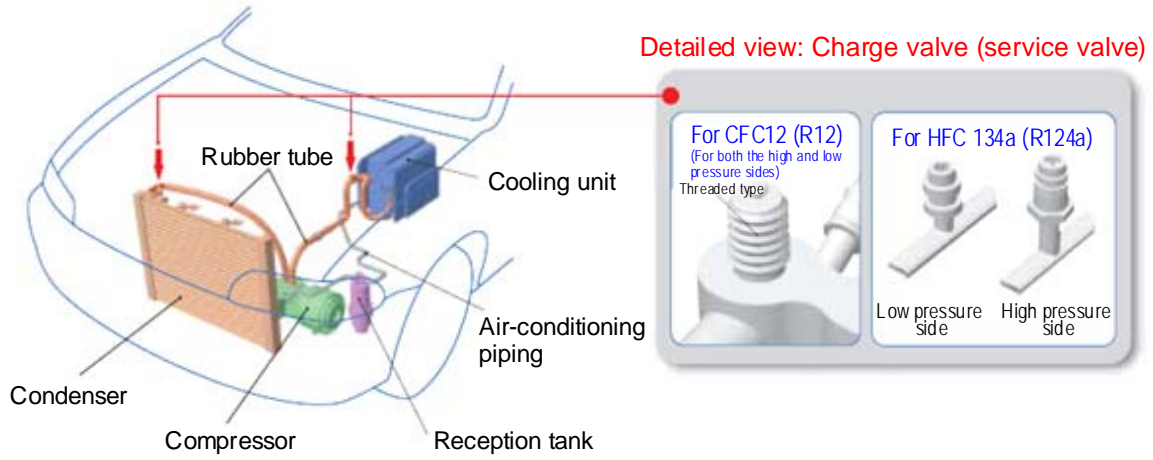
Situation of operators investigated	CFCs/HFCs	Airbags
Number of local governments that needed to conduct surveys	101	93
Number of local governments that conducted surveys	101	92
Local governments that did not conduct surveys	-	1
Number of operators investigated	583	349
Number of operators found to have problems of neglect of verification	88	50
Response	Administrative guidance	34
	Admonition	6
	Notification	48
Operators in violation	7	3

It was also found that above violations, etc. could be classified as shown below.



2. Work contents

1) Method of judgment about existence of remaining CFCs/HFCs

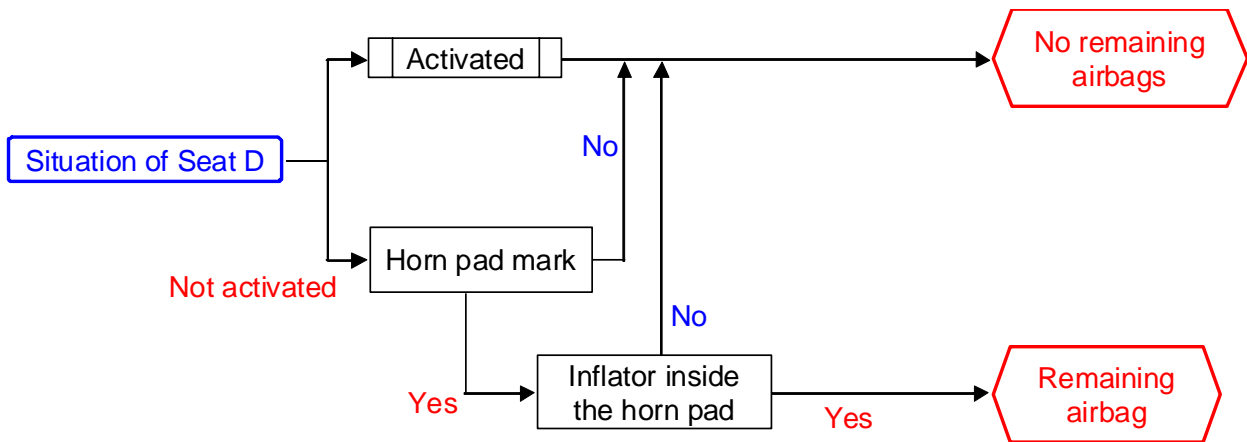


2) Method of judgment about existence of remaining airbags

Outline of the equipment locations of airbags



Verification of driver's seat (D seat) airbag <Example>



Check of seatbelt pretensioner equipment

