

Instructions manual for the calculation of the repairability index of electrical and electronic equipments

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This instructions manual provides explanations and details for an application of the decree and orders relating to the reparability index of electrical and electronic equipment according to a uniform operating procedure for rating.

The obligation to calculate and display the reparability index does not apply to free, loaned, second-hand, re-used, reconditioned or rented equipments.

1 – Instructions sorted by criteria

This manual provides instructions to be followed, presented in two ways:

- details by key words;
- a detailed operating procedure.

Criterion 1 – Documentation

Documents/informations

The information can be freely distributed at the initiative of the producer in various physical or dematerialized documents. Scoring points are awarded if the information referred to is available in any document.

Language of documents

In accordance with the law of August 4, 1994 on the use of the French language, information intended for consumers must be drawn up in French ; English is tolerated for very technical aspects intended for professional repairers (example: technical bulletins).

technical bulletins

This wording covers announcements made by the producer to professional repairers, informing them, for example, of recently discovered bugs, of the corrections to be made, of the supply disruption of parts which have been replaced by others. Points are awarded if the edition of a technical bulletin is planned on an ongoing basis (when necessary).

Information on access to professional repairers

The producer or importer is free to indicate to consumers the professional repairers of his choice, but it is advisable to mention at least the repairer directories listed by Ademe.

Instructions for self-repair

Points corresponding to years of availability are only granted if one or more operations are specified to consumers for self-repair, with adequate safety instructions, in a specific section under the title “self-repair”, for example in the technical manual or of the instructions for use and maintenance. Article L 441-5 of the Consumer Code specifies the responsibility of the producer regarding self-repair.

Criterion 2 – Disassembly, accessibility, tools, fasteners

Operating mode - Understanding the concept of a step of disassembly and single access to a part

Reminder of regulatory provisions

« Une étape est une opération qui aboutit à la dépose d'un composant ou d'une pièce ou à un changement d'outil. Un composant peut comprendre une ou plusieurs pièces.

Cette définition générale peut admettre des exceptions justifiées par des considérations pratiques ou de sécurité. Ces exceptions sont précisées par arrêté du ministre chargé de l'environnement et du ministre chargé de l'économie et des finances pour chaque catégorie d'équipements.

Les fixations ou liaisons sont définies comme des techniques d'assemblage, de fixation ou de scellage.

Les éléments de fixation ou de liaison ne sont pas considérés comme des pièces. »

Definition of a step

The disassembly sequence is defined as the order of steps needed to remove a part from a product (which might include getting access to fasteners). A step consists of an operation that finishes with the removal of a part or a component, and/or with a change of tool.

A component may include one or several parts.

Figure 1 shows the procedure for counting steps.

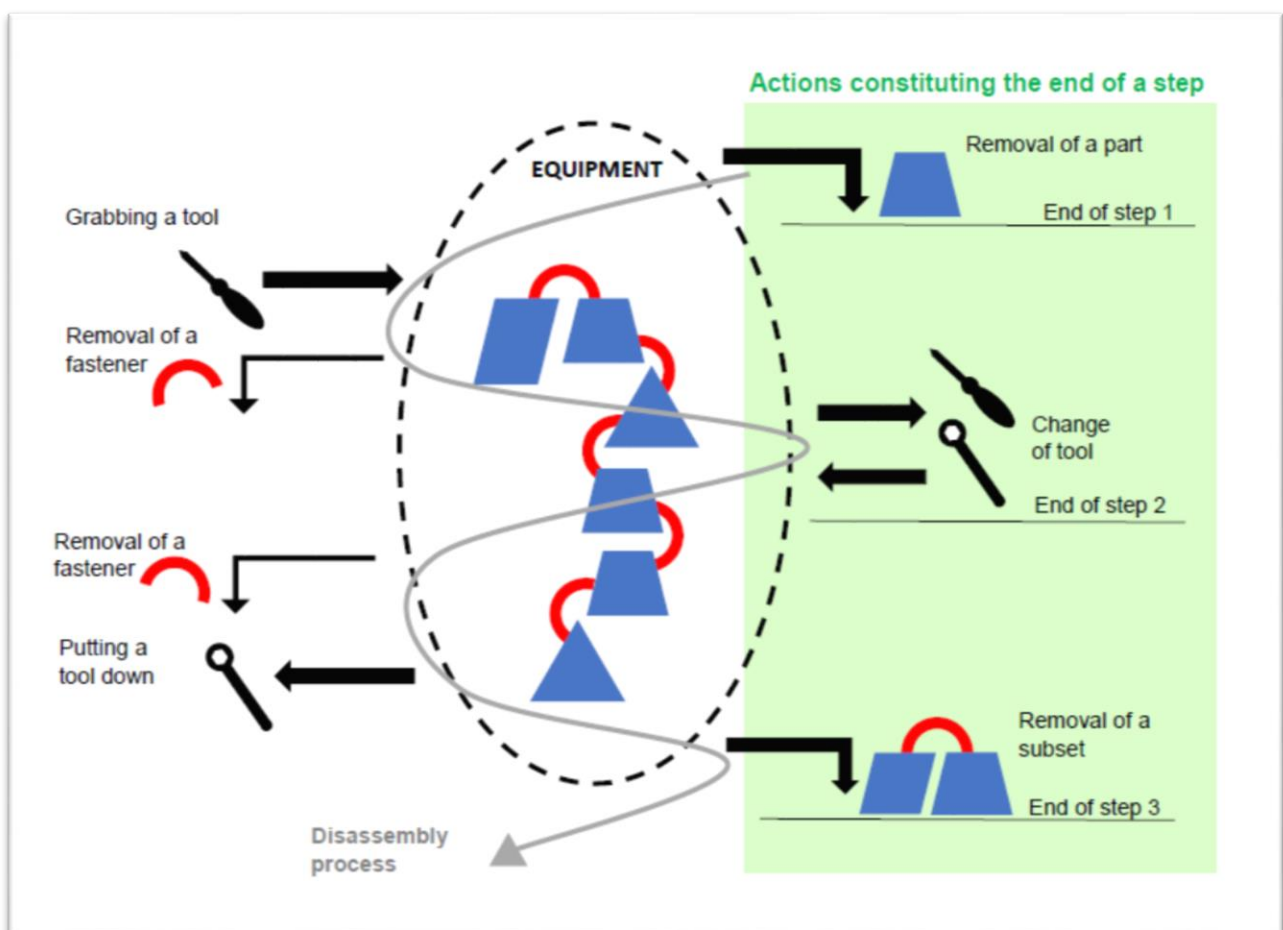


Figure 1 - Example of a disassembly process

In this example, all the actions carried out (listed on the left and on the right) can be broken down into three steps. The only actions that constitute the end of a step are the removal of a part, the removal of a subset,

a change of tool. Conversely, the following does not constitute the end of a step: to grab a tool, to put a tool down and to remove a fastener.

For safety reasons, the action "Unplug the equipment from the mains" is a step, even if it does not result in a change of tool or the removal of a part or component.

In addition, exceptions to the step counting rules are specified in part 2 of the instructions manual, by equipment category.

Start and end of step counting

When the intended target is a part, the counting of disassembly steps always begins with complete equipment connected to the mains.

The end of disassembly takes place when the part is dissociated. Special cases are dealt with below.

When the intended target is a part and its removal implies firstly the removal of a block (made up of several parts), the end of the disassembly process takes place when this part is finally removed from this block. The actions constituting the end of a step remain the same: removing a part, changing a tool, removing a component (subset of parts).

When the intended target is a subset (example: "door locking system" for the washing machine category), the end of the disassembly takes place when each of the parts of this subset is separated, therefore accessible individually.

Nota Bene :

- The hand is not considered as a tool.
- A fastener is not considered as a part.

Definition of a fastener

A hardware device that mechanically or magnetically connects or fixes two or more objects, parts or pieces. A fastener is generally non-permanent, i.e., it can be easily removed or disassembled without damaging the objects, parts or pieces connected or fixed together (e.g., screws or clips). Welds and some glues are in contrast to permanent fixings. Adhesives are considered non-reusable fasteners unless new ones are supplied with the spare part.

Criterion 3 - Availability of spare parts

Definition of spare parts distributor

The definition of a spare parts distributor is given in the glossary appended to this manual.

Commitments on the availability of spare parts and delivery times (except Sunday and fest days)

To award points to the A columns, the producer should have his own in-house repair service (example: via the after-sales service).

Whether for the period of availability of spare parts or the delivery time, the producer or the importer must retain, among all of their practices towards authorized and independent repairers, the period or the most penalizing time for each spare part. In the event that the producer or importer does not make spare parts directly available to independent repairers, then points are not awarded in column C for criteria 3.1, 3.2, 3.3, 3.4.

In addition, in the event that the producer or importer does not have an approved repairers network, the points are awarded based on the most penalizing practices towards independent repairers.

Delivery time

The delivery time is understood in working days between the day of the order and the day of arrival at the actor concerned.

Criterion 4 - Price of spare parts

Operating mode - calculation of the ratio for the price criterion

Reminder of regulatory provisions

« Sous-critère 4.1. Rapport entre le prix de vente des pièces par le constructeur ou l'importateur et le prix de vente des équipements par le constructeur ou l'importateur.

Le critère est établi en faisant le rapport entre :

le prix hors taxe de la pièce la plus chère de la liste 2 + (moyenne des prix hors taxe des autres pièces de la liste 2)/2

et

le prix hors taxe du modèle de l'équipement concerné,

où chaque prix s'entend comme le prix hors taxes du barème tarifaire en vigueur au moment du calcul de l'indice et figurant dans les conditions générales de vente du fabricant ou de l'importateur, ou à défaut dans tout document contractuel pertinent.

Dans le cas où un fabricant ou un importateur dispose, pour les pièces ou les équipements considérés, de plusieurs barèmes tarifaires selon les différentes catégories de clients distributeurs ou vendeurs, les prix retenus pour le calcul de l'indice sont ceux du barème ayant représenté la part la plus élevée du chiffre d'affaires du fabricant ou de l'importateur pour le type de pièces ou le type d'équipement concernés, au cours du dernier exercice clos.

Dans le cas où certaines de ces pièces sont indissociables ou bien dans le cas où la pièce visée est intégrée à un module, qui est seul disponible, le prix à prendre en compte est le prix cumulé des pièces ou le prix du module. »

Translation (for guidance only)

The criterion is established by calculating the ratio between:

the pre-tax price of the most expensive part in list 2 + (average of the pre-tax prices of the other parts in list 2) / 2

and

the pre-tax price of the model of the equipment concerned,

Each price is taken from the tariff schedule valid at the moment of the calculation as the pre-tax price in the tariff schedule valid at the moment of the calculation as mentioned in the and conditions of sale of the manufacturer or the importer general terms of sale, or if its not available, in any relevant contractual document.

Deduction of delivery costs

The principle adopted is to make a calculation excluding transport or delivery costs. If the latter are included in the tariffs of the general terms and conditions of sale, it is up to the producer or importer to deduct them in order to calculate the ratio.

In particular for the price of spare parts, two methods are possible for deducting transport or delivery costs: individually for each of the parts in list 2 or on a flat-rate basis (in absolute value or as a percentage). The same applies to the price of new equipment.

Spare part(s) forming part of a batch

If one or more of the parts in list 2 are part of a batch offered for sale or of any other subset of inseparable parts, the price of the part concerned is the price of this batch or subset.

Part not available

In the event that, at the time the index is calculated, a part from list 2 is not available, the number of points awarded for criterion 4 relating to the price of spare parts is 0.

Parts not managed by the producer or importer

If parts from list 2 are not managed by the producer or importer, the price of the parts to be considered is then that of the supplier's general terms and conditions of sale or any other any other relevant contractual document at the time of the index calculation. The producer or importer must then keep a copy of this document to be presented in the event of a control.

Options for products

If options are offered for the same model, and do not influence the technical characteristics for the purpose of calculating the index, then the calculation of the price ratio to be achieved is based on the price of spare parts and the price of the most current version of the product concerned.

Absence of a part

If the equipment does not include a part listed in list 1 or 2 of the category concerned, then the price of the absent part does not appear in the calculation of the ratio.

Criterion 5 - Criterion specific to the category of equipment concerned

Usage meter unit

When the unit for the usage meter is not specified in the decree corresponding to the category of equipment, the producer has to define it in the most relevant way to representing wear.

Remote assistance

Remote assistance includes any system that is intended to facilitate the search for information in the event of a breakdown, information to identify the origin of a breakdown, or remote assistance to carry out the repair. In the case of remote repair assistance, the service must be able to provide technical and accurate support to the user.

Remote assistance services include remote information (website, FAQs, etc.), remote diagnostic assistance (phone call line, chat, application included in the equipment, interactive decision tree, etc.) and remote repair assistance (phone call line, video call, remote control of the equipment, etc.).

Remote help services must be completely free of charge (including telephone calls in the case of a hotline).

Other details of a transversal nature

Use of European vocabulary (criteria 1, 2 and 3)

The vocabulary used to describe the information to be documented, whatever the category concerned, as well as certain spare parts, is taken from Commission Regulation (EU) 2019/2023 of 1 October 2019 for washing machines and Commission Regulation (EU) 2019/2021 of 1 October 2019 for electronic displays. The list of these documents and items is given in Annex 1 of this notice.

Different commitments of availability period between documentation and spare parts (criteria 1 and 3)

The producer or importer may make different commitments for the periods of availability of documentation and spare parts for the same equipment, for example: 9 years for the availability of documentation and 7 years for the availability of spare parts.

Absence of a part on the equipment

If the equipment does not include a part listed in List 1 or 2 of the category concerned, then the points corresponding to the part in question are awarded. For WIFI and Bluetooth modules, see the special case of televisions below.

Concerning criterion 4 relating to price, the price of the absent part does not appear in the calculation.

2 - Additional details by equipment category

Washing machines

Drum (including spider and bearings)

For this subset of parts, it is not required that disassembly leads to complete dissociation of the elements. The removal of the sub-assembly is sufficient.

Motor and motor brush

When a motor of the equipment does not include brushes, the requirements for the calculation of the index relate only to the motor concerned.

Printed Circuit Boards

This wording refers only to the power electronic board.

Determination of dismantling steps

The following action is considered as a step :

- Putting the washing machine on the side

The following actions are not considered as steps :

- Disconnecting the water inlet and outlet pipes.
- Emptying the water from the washing machine

Smartphones

Display device

The display device is a subset including the panel and the touch device.

Laptop Computers

Firmware

In the case of laptops, the drivers (for printer, keyboard, microphone, etc.) are examples of firmware.

Televisions

External power source and remote control

The external power source and the remote control do not need to be disassembled for counting the disassembly steps. The steps to be counted are limited to disconnecting the power source and removing the battery from the remote control.

WIFI and Bluetooth function

Some equipments have WIFI or Bluetooth functions, but not specific modules. In this case, the lines are not grayed out and the points are awarded considering the parts providing these functions.

Corded electric lawnmowers

Motor and motor brush

In the case where a motor of the equipment does not include brushes, the requirements related to the calculation of the index shall apply only to the motor concerned.

Battery powered lawnmowers

Determination of dismantling steps

For this category, the action "disconnecting the equipment from the mains" is not considered as a step.

Motor and motor brush

In the case where a motor of the equipment does not have brushes, the requirements related to the calculation of the index shall apply only to the motor concerned.

Price of the equipment if sold without battery In case the equipment is sold without a battery, the price of the equipment to be considered for the calculation of criterion 4 on spare parts prices shall include the price of a compatible battery at the time of the index calculation.

Robotic electric lawnmowers

Determination of dismantling steps

For this category, the action "disconnecting the equipment from the mains" is not considered as a step.

Motor and motor brush

In case a motor of the equipment does not include brushes, the requirements related to the calculation of the index shall apply only to the motor concerned.

Eco-conception des lave-linges / Ecodesign of washing machines

RÈGLEMENT (UE) 2019/2023 DE LA COMMISSION

du 1er octobre 2019 établissant des exigences en matière d'écoconception applicables aux lave-linge ménagers et aux lave-linge séchants ménagers conformément à la directive 2009/125/CE du Parlement européen et du Conseil, modifiant le règlement (CE) no 1275/2008 de la Commission et abrogeant le règlement (UE) no 1015/2010 de la Commission

COMMISSION REGULATION (EU) 2019/2023

of 1 October 2019 laying down eco-design requirements for household washing machines and household washer-dryers pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1015/2010

Liste des informations à fournir (documentation) - List of required informations for the consumer

→ Les informations de réparation et d'entretien du lave-linge ménager ou du lave-linge séchant ménager mentionnées au point a) comprennent :	→ the household washing machine or household washer-dryer repair and maintenance information referred to in (a) shall include :
une identification sans équivoque du lave-linge ménager ou du lave-linge séchant ménager	the unequivocal household washing machine or household washer-dryer identification
un schéma de démontage ou une vue éclatée	a disassembly map or exploded view
un manuel technique d'instructions relatives à la réparation	technical manual of instructions for repair
une liste du matériel de réparation et de test nécessaire	list of necessary repair and test equipment
les informations concernant les composants et le diagnostic (telles que les valeurs théoriques minimales et maximales pour les mesures)	component and diagnosis information (such as minimum and maximum theoretical values for measurements)
des schémas de câblage et de raccordement	wiring and connection diagrams
les codes d'erreur et de diagnostic (y compris les codes spécifiques au fabricant, le cas échéant)	diagnostic fault and error codes (including manufacturer-specific codes, where applicable)
les instructions pour l'installation des logiciels et micrologiciels pertinents, y compris les logiciels de réinitialisation	instructions for installation of relevant software and firmware including reset software
les informations sur les modalités d'accès aux données relatives aux incidents de défaillance signalés enregistrées dans le lave-linge ménager ou le lave-linge séchant ménager (le cas échéant)	information on how to access data records of reported failure incidents stored on the household washing machine or washer-dryer (where applicable)

Liste des pièces détachées à mettre à disposition – List of spare parts to be made available

Moteur et balais de moteur	Motor and motor brushes
Transmission entre moteur et tambour	Transmission between motor and drum
Pompes	Pumps
Amortisseurs et ressorts	Shock absorbers and springs

Tambour de lavage, croisillon de tambour et roulements correspondants (séparément ou en lot)	Washing drum, drum spider and related ball bearings (separately or bundled)
Générateurs de chaleurs et éléments chauffants, y compris les pompes à chaleur, (séparément ou groupés)	Heaters and heating elements, including heat pumps (separately or bundled)
Conduites et matériel connexe y compris l'ensemble des flexibles, vannes, filtres et systèmes aquastop (séparément ou groupés)	Piping and related equipment including all hoses, valves, filters and aquastops (separately or bundled)
Cartes de circuit imprimé	Printed circuit boards
Affichages électroniques	Electronic displays
Manocontacts	Pressure switches
Thermostats et capteurs	Thermostats and sensors
Logiciels et micrologiciels, y compris logiciels de réinitialisation	Software and firmware including reset software
Portes	Door
Charnières et joints de porte	Door hinge and seals
Autres joints	Other seals
Assemblage de verrouillage de la porte	Door locking assembly
Accessoires en matière plastique tels que distributeurs de détergent	Plastic peripherals such as detergent dispensers

Eco-conception des dispositifs d'affichage / Ecodesign of electronic displays

REGLEMENT (UE) 2019/2021 DE LA COMMISSION

du 1er octobre 2019 fixant les exigences en matière d'écoconception pour les dispositifs d'affichage électronique conformément à la directive 2019/125/CE du Parlement européen et du Conseil modifiant le règlement (CE) n°642/2009 de la Commission

COMMISSION REGULATION (EU) 2019/2021

Of 1 October 2019 laying down eco-design requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EC) No 642/2009

Liste des informations à fournir (documentation) - List of required informations for the consumer

→ Les informations disponibles sur la réparation et la maintenance comprennent :	→ The available repair and maintenance information shall include:
une identification sans équivoque du lave-linge ménager ou du lave-linge séchant ménager	the unequivocal appliance identification
un schéma de démontage ou une vue éclatée	a disassembly map or exploded view
une liste du matériel de réparation et de test nécessaire	list of necessary repair and test equipment
les informations concernant les composants et le diagnostic (telles que les valeurs théoriques minimales et maximales pour les mesures)	component and diagnosis information (such as minimum and maximum theoretical values for measurements)
des schémas de câblage et de raccordement	wiring and connection diagrams

les codes d'erreur et de diagnostic (y compris les codes spécifiques au fabricant, le cas échéant)	diagnostic fault and error codes (including manufacturer-specific codes, where applicable)
les informations sur les modalités d'accès aux données relatives aux incidents de défaillance signalés enregistrées dans le lave-linge ménager ou le lave-linge séchant ménager (le cas échéant)	information on how to access data records of reported failure incidents stored on the household washing machine or washer-dryer (where applicable)

Liste des pièces détachées à mettre à disposition – List of spare parts to be made available

Les sources d'alimentation internes	Internal power supply
Les sources d'alimentation externes	External power supply
Les connecteurs pour connecter les équipements externes (câble, antenne, USB, DVD et Blue-Ray)	Connectors to connect external equipment (cable, antenna, usb, dvd and blue-ray)
Les condensateurs	Capacitors
Les piles et accumulateurs	Batteries and accumulators
Les modules DVD/Blue-Ray le cas échéant	DVD/Blue-Ray module
Les modules HD/SSD	HD/SSD module
La télécommande	Remote control

Annex II – Glossary

The definitions of the following terms are specified in the decree relating to the repairability index for electrical and electronic equipment: “Making available on the market”, “Placing on the market”, “producer”, “importer”, “distributor”, “Seller”, “distance selling”, “model”.

Authorized repairer	The authorized repairer is often referred to as a technical station or authorized service center. It is a professional repairer for whom one or more contracts precisely define the relationship between the authorized repairer and the producer(s).	Based on the technical expertise of the repairability index working groups
Independent repairer	Independent repairers are repairers in the sense of "professional craftsmen repairers" designating repair companies listed in the trade directory with an APE or NAFA code. They are professional repairers who do not fall into the category of authorized repairers. For example, 95.11 Z-Z: Repair of computers and peripheral equipment; 95.21 Z-Z: Repair of televisions, radio receivers, VCRs, CD and DVD players, camcorders for domestic use; 95.22 Z-Z: Repair of household appliances and home and garden equipment.	
Professional repairer	Authorized repairer or independent repairer.	
Distributor of spare parts	Any moral or physical person in the supply chain, other than the producer or importer, who offers a spare part for sale. They are commonly referred to as "spare parts wholesalers".	According to Standard NF EN 45554 "General methods for the evaluation of the repair, reuse and improvement capacity of energy-related products", 2020.
Disassembly	The process by which a product, spare part or fastener is disassembled so that it can then be reassembled and made operational.	
Reassembly	The process by which a product, a spare part or a fastener is reassembled so as to fulfill its functional role and be made operational	
Reus / Reusable	The process by which a product, spare part or fastener, having reached the end of its first use, is used for the same purpose for which it was designed. Reuse after a second or subsequent use(s) is also considered to be reuse.	
Factory Restoration	A specific functionality or setting to be activated by the customer, if the product allows it, to restore the default value of a specific functionality of the device as set at the factory and available when the customer first uses the product.	Inspired by the Commission regulation (EU) 2019/2021 Of 1 October 2019 laying down ecodesign requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EC) No 642/2009
Update / Upgrade	The process of improving the functionality, performance, capacity or aesthetics of a product. This process may involve changes to the software, firmware and/or a hardware component of the product.	According to Standard NF EN 45554 "General methods for the evaluation of the repair, reuse and improvement capacity of energy-related products", 2020.
Corrective update	An update performed after a failure has been detected and intended to restore an asset or software to a state in which it can perform a required function. This type of update corrects hardware or software malfunctions or non-conformity but does not add new functionality.	Inspired by the AFNOR NF EN 13306 X 60-319 standard of June 2011 "All the technical, administrative and management actions during the life cycle of an asset, intended to maintain

		or restore it to a state in which it can perform the required function "
Evolutionary update	Upgrading, which consists of gradually modifying the software application by adding new features or additional modules, or by replacing an existing function with another, or even by proposing a different approach.	
Fastener	A hardware device that mechanically or magnetically connects or fixes two or more objects, parts or pieces. A fastener is generally non-permanent, i.e., it can be easily removed or disassembled without damaging the objects, parts or pieces connected or fixed together (e.g., screws or clips). Welds and some glues are in contrast to permanent fixings. Adhesives are considered non-reusable fasteners unless new ones are supplied with the spare part.	Inspired by, "Fasteners - Their Needs and Types", Bright Hub Engineering, 2020.
Reusable fastener	See the definition of "reusable".	According to Standard NF EN 45554 "General methods for the evaluation of the repair, reuse and improvement capacity of energy-related products", 2020.
Removable fastener	an original fastener system that can be completely removed (without causing damage or leaving residue)	
Proprietary tool	A tool that is not commercially available and is owned exclusively by one party or company, and under which its use by another party (an end user or customer) involves copyright, license and/or cost.	Inspired by Will Kenton, "Proprietary Technology", 2019.
Part / Spare parts	A unitary element in the composition of the equipment.	