



Human Cargo Long Line System

Operation and maintenance manual

LH PN 6F2592V01151
KONG PN 441SET000QQ



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ZZV008EN

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TABLE OF CONTENTS

CHAPTER 1 – SYMBOLOGY AND ASSISTANCE	7
1.1. SIMBOLOGY.....	7
1.2. ASSISTANCE.....	7
CHAPTER 2 –GENERAL INFORMATION	7
2.1. WARNING AND LIMITATION OF USE:	7
CHAPTER 3 – TECHNICAL CHARACTERISTICS.....	8
3.1. PURPOSE AND APPLICABILITY	8
3.2. GENERAL DESCRIPTION	8
3.3. PART DESCRIPTIONS	10
3.3.1.CARGO LINE.....	10
3.3.2.EXTENSION LONG LINE	11
3.3.3.END TERMINATION.....	12
3.3.4.SPIDER CONNECTION	13
3.3.5.BAG	14
CHAPTER 4 – SPECIFIC INFORMATION	15
4.1. SPECIFIC INFORMATION	15
4.1.1.TRANSPORT UP TO A MAXIMUM OF 4 PEOPLE AT THE SAME TIME	16
4.1.2.TRANSPORT UP TO A MAXIMUM OF 8 PEOPLE AT THE SAME TIME.	16
4.1.3.SHOCK PROTECTION ASSEMBLING.....	18
CHAPTER 5 - INSPECTION	19
5.1. GENERALITY	19
5.2. INSPECTION OF RECEIVING GOODS (I.R.M.)	19
5.3. PRE MISSION INSPECTION (I.P.M.)	20
5.4. SIX-MONTHLY ORDINARY INSPECTION (I.O.S.) OR EVERY 50 LIFTS	20
5.5. ANNUAL ORDINARY INSPECTION (I.O.A) OR EVERY 150 LIFTS	21
5.6. EXTRAORDINARY INSPECTION (I.S.).....	26
5.7. REVISION (R.)	26
5.8. LIFE LIMITS	26
CHAPTER 6 - MAINTENANCE AND REPAIRS	27
6.1. GENERALITY	27
6.2. MAINTENANCE OPERATIONS	27
6.2.1.KIT CLEANING.....	27
6.2.2.REPAIR.....	28
6.2.2.1. REPLACEMENT OF THE CONNECTOR (REF.Tab.5 – item 8/9/10/11)	28
6.2.2.2. REPLACEMENT OF THE SHOCK PROTECTION.....	28
CHAPTER 7 - SHIPPING AND STORAGE	29

7.1. SHIPPING	29
7.2. STORAGE	29
CHAPTER 8 - PRODUCT LIFE AND WARRANTY	29
8.1. PRODUCT LIFE	29
8.2. WARRANTY	29
CHAPTER 9 – ILLUSTRATED PART LIST	30
ANNEX A – EXAMPLE SERIAL NUMBER TABLE	32

LIST OF ILLUSTRATION

FIG. 1 - HUMAN CARGO LONG LINE SYSTEM	9
FIG.2 – CARGO LINE	10
FIG.3 – EXTENSION LONG LINE	11
FIG.4 – END TERMINATION	12
FIG.5 – SPIDER CONNECTION	13
FIG.6 – BAGS	14
FIG.7 – CONNECTION BETWEEN TERMINAL CONNECTORS AND JUNCTION LOOP	16
FIG.8 – CONNECTION BETWEEN END TERMINATION CONNECTORS AND SPIDER CONNECTION.	17
FIG.9 – CONFIGURATION FOR 8 PEOPLE TO BE TRANSPORTED	17
FIG.10 – SHOCK PROTECTION ASSEMBLING	18
FIG.11 – MAIN HOOK RING – EXAMPLE NON SIGNIFICATE DAMAGES	23
FIG.12 – BACKUP HOOK RING – EXAMPLE NON SIGNIFICATE DAMAGES	24
FIG.13 – JUNCTION RING – EXAMPLE NON SIGNIFICATE DAMAGES	24
FIG.14 – MAIN HOOK RING – EXAMPLE SIGNIFICATE DAMAGES	25
FIG.15 – MAIN HOOK RING - EXAMPLE SIGNIFICATE DAMAGES	25
FIG.16 – END TERMINATION SWIVEL - EXAMPLE SIGNIFICATE DAMAGES	26
FIG.17 – ASSEMBLY METHOD CONNECTOR WITH FAST	28
FIG.18 – ILLUSTRATED PART LIST	30

LIST OF TABLES

TAB.1 - P/N COMPONENTS OF HUMAN CARGO LONG LINE SYSTEM	7
TAB.2 – KIT COMPONENTS NEED ACCORDING TO THE REQUIRED OPERATING LENGTH	15
TAB.3 – INSPECTIONS	19
TAB.4 - MAINTENANCE OPERATIONS	27
TAB.5 - PART LIST	31

CHAPTER 1 – SYMBOLOGY AND ASSISTANCE

1.1. SIMBOLOGY

To make the reading of this manual comfortable and clear, the symbols used to manage important warnings are summarized hereafter, for correct and safe use of the device.



REQUIREMENT FOR CORRECT USE

Identifies the presence of information required to use the device correctly.



INFORMATION

Identifies the presence of useful and general information, to guide the user to consciously use the device and/or carry out the actions.

1.2. ASSISTANCE

For information, contact Kong Customer Service by:

- telephone 0039 0341 630506,
- fax 0039 0341 641550,
- email: safetycare@kong.it,
- writing to KONG S.p.A. – Via XXV Aprile, 4 – 23804 Monte Marenzo LC - ITALY.

To facilitate assistance operations, always communicate or indicate the serial number (SN) indicated on the label applied to the device.

CHAPTER 2 –GENERAL INFORMATION

Users must read and perfectly understand the information provided by the manufacturer (hereinafter information) before using the device. This information relates to the characteristics, services, assembly, disassembly, maintenance, conservation, disinfection, etc. of the device; even though it does include some suggestions on how to use the products, it must not be considered as a true to life instruction manual.

2.1. WARNING AND LIMITATION OF USE:

- This device must only be used by persons who are physically fit, trained (informed and trained) for use or, in training activities, by persons under the direct control of trainers / supervisors who guarantee their safety
- Do not use the device until you have read and well understood this entire operating manual.
- Before and after operation, all the checks described in chapter 5 must be carried out. If the user has any doubt about the efficiency of the device, it must be replaced immediately.
- Strictly follow the information provided by the manufacturer, improper use of the device is dangerous.
- Improper use, deformation, falls, wear, chemical contamination, exposure to temperatures below -55°C or higher than +85°C for the textile/plastic components/devices, and +100°C for metal devices, are some examples of causes that may reduce, limit or end the life of the device.
- Before any operation, make sure that the weight does not exceed the capacity defined in paragraph 3.2.
- Avoid exposing the device to heat sources or to contact with chemical substances. Reduce direct exposure to sunlight to the minimum necessary. At low temperatures and in the presence of humidity, ice may form. This, on textile devices, may reduce flexibility and increase the risk of cuts and abrasions.
- It is strictly forbidden to modify and/or repair the device except for the activities presented in para 6.2.2.

All our devices are tested/inspected piece by piece in accordance with the procedures of the Quality System certified according to the UNI EN ISO 9001 standard. Laboratory tests, inspections, information and norms do not always manage to reproduce what actually happens in practice, and so performance under real usage conditions in a natural environment can differ, sometimes even considerably. The best information can be gained by continual practice under the supervision of skilled, expert, qualified individuals.

CHAPTER 3 – TECHNICAL CHARACTERISTICS

3.1. PURPOSE AND APPLICABILITY

This document has the purpose to describe and give the necessary information for the right use of :

P/N 441SET000QQ HUMAN CARGO LONG LINE SYSTEM (LH P/N 6F2592V01151)

3.2. GENERAL DESCRIPTION

The “HUMAN CARGO LONG LINE SYSTEM”, following named kit, it is a kit designed for lifting and transporting people, up to a maximum of 8 at the same time, by use of the Dual Hook System of the Leonardo AW139 helicopter. The kit shown in fig.1 consists of the following parts:

Quantity	Description	Part Number (P/N)
1	Cargo Line	441010000QQ
1	Extension Long Line 10 m	441020100QQ
1	Extension Long Line 20 m	441020200QQ
1	Extension Long Line 40 m	441020400QQ
1	End termination	441030000QQ
2	Spider connection	441040000QQ
1	Bag	982526000KK

Tab.1 - P/N components of Human Cargo Long Line System

Limits operative temperature:	from -40 °C to +50 °C
Limits storage temperature:	from -55 °C to +85 °C
Weight:	33,3 kg (bags included)
Maximum working load:	800 Kg
Maximum number of persons attached:	8
Maximum length:	90 m.

For flight operation limitations refer to the AW139 helicopter flight manual.

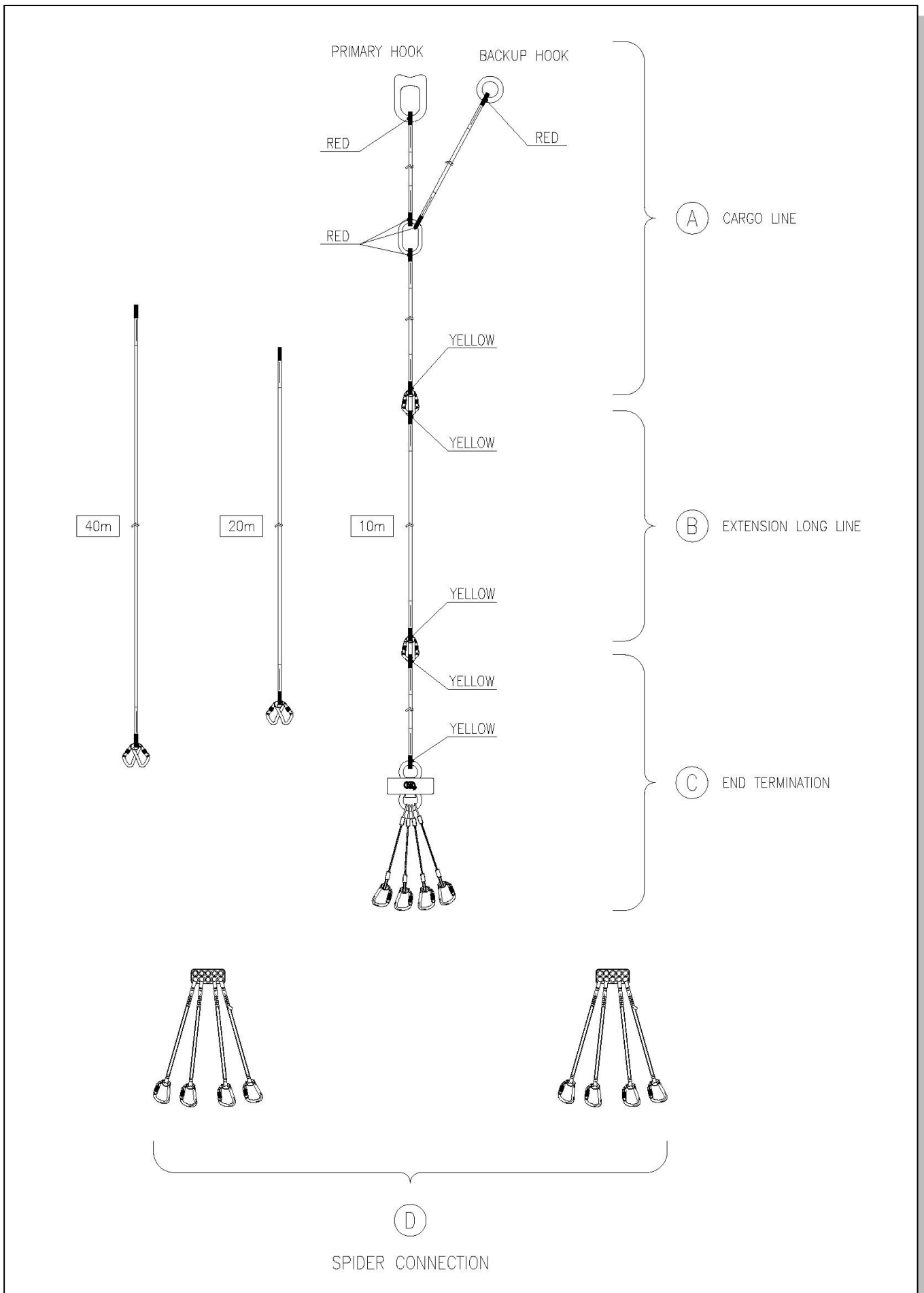


Fig. 1 - Human Cargo Long Line System

3.3. PART DESCRIPTIONS

3.3.1. CARGO LINE

The Cargo Line (fig.2) consists of three ropes (E, F and G) with loop terminals, connected with a loop to the junction ring (C) and with the other respectively:

- ring (A) intended for connection to the main hook,
- ring (B) intended for connection to the backup hook,
- with two connectors (D) in carbon steel, with screw sleeve and positioned with the opposing levers, to which the Extension line can be connected or, alternatively, the End Termination.

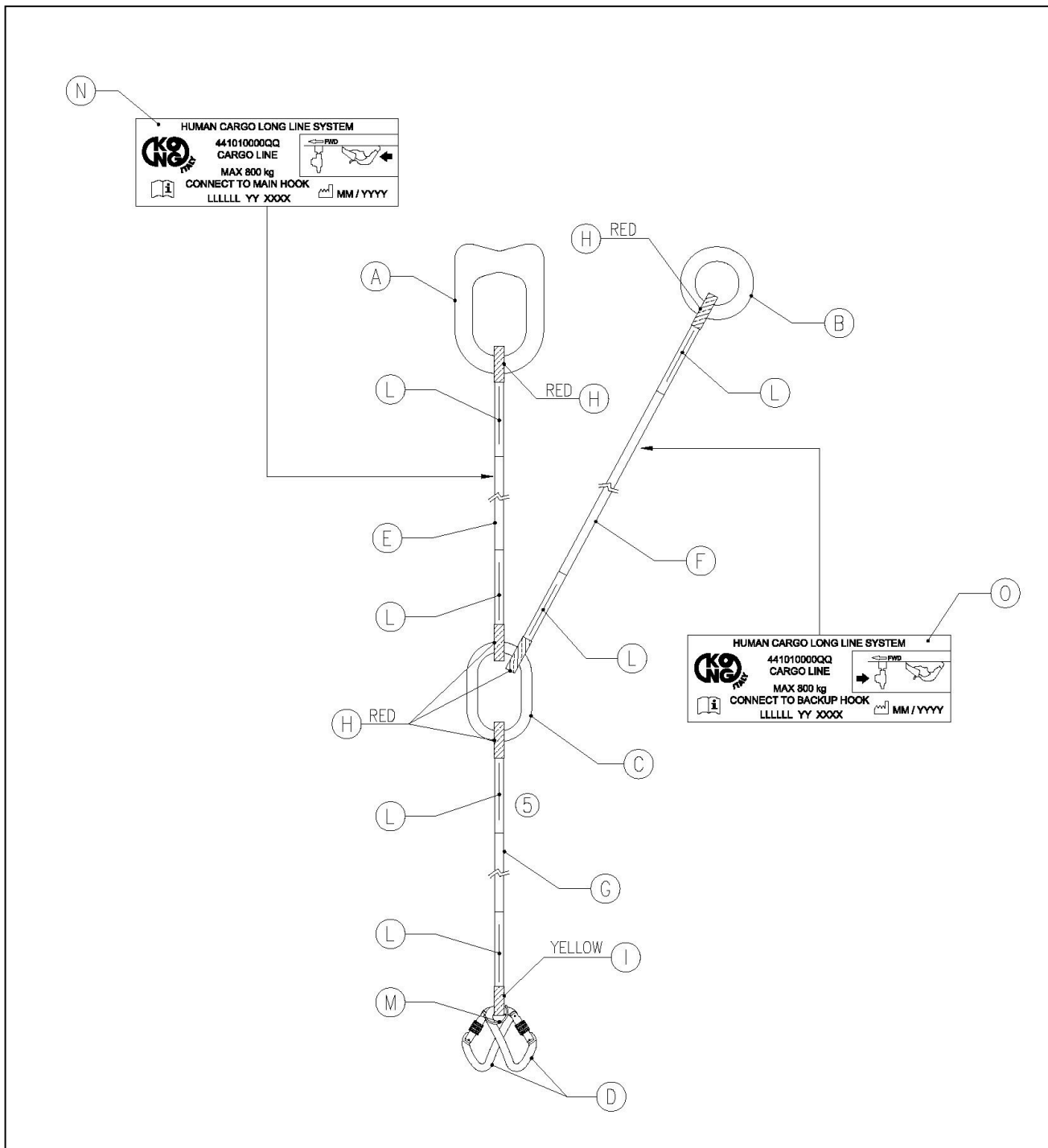


Fig.2 – Cargo Line

Terminology of parts (Fig. 2): (A) Connecting ring to the main hook, (B) Connecting ring to the backup hook, (C) Jointing ring, (D) Heavy Duty connectors with screw sleeve, (E, F, G) Stitched rope, (H) Rope protection (red color), (I) Rope protection (yellow color), (L) Stitching, (M) Fast, (N) "Main hook ring" label, (O) "Backup hook ring" label.

3.3.2. EXTENSION LONG LINE

The Extension Long Line (Fig. 3) consists of a rope (C) with the loop terminals to connect respectively:

- to the Cargo Line connectors,
- to a further Extension Long Line or, alternatively, to the End Termination, through the two carbon steel connectors (B), equipped with screw sleeve and positioned with the opposing levers,

The Extension Long Lines are 10, 20 and 40 meters long, respectively

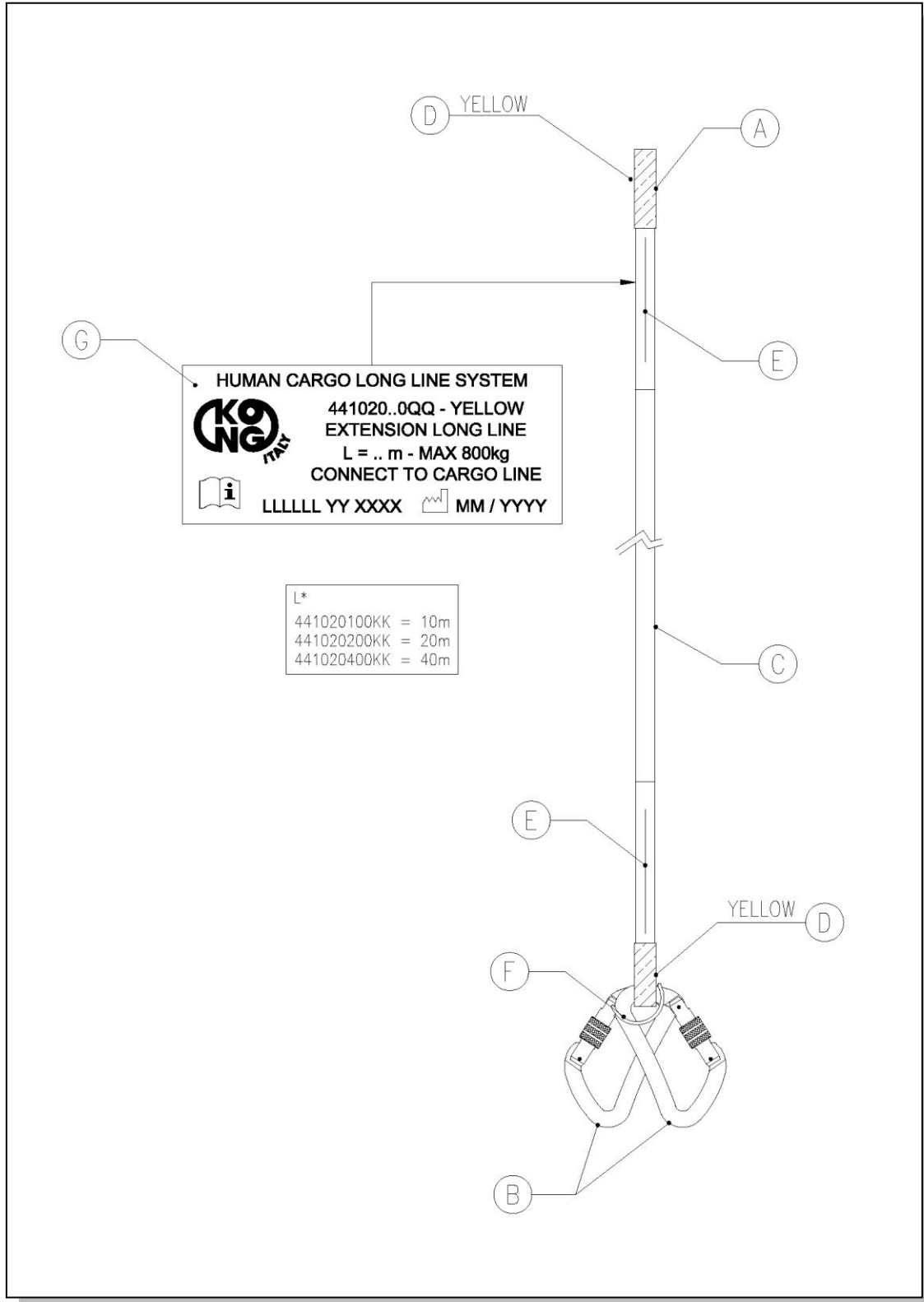


Fig.3 – Extension Long Line

Terminology of parts (Fig. 3): (A) "Extension long line" junction stitched loop, (B) Heavy Duty connectors with screw sleeve, (C) Stitched rope, (D) Protection rope (yellow color), (E) Stitching, (F) Fast, (G) "Extension long line" label

3.3.3.END TERMINATION

The End Termination (Fig. 4) consists of a rope (C) with the loop terminals, to connect respectively:

- to the connectors of the Extension Long Line or, as an alternative, to those of the Cargo Line,
 - to Spider Connection or to the user's harness,
- and from a Swivel (E) composed of:
- a central part covered with impact protection (I),
 - a eyebolt connected to the loop rope terminal (C),
 - a eyebolt to which 4 wire steel arms (G) are connected with the respective connectors (B) and fast (L).

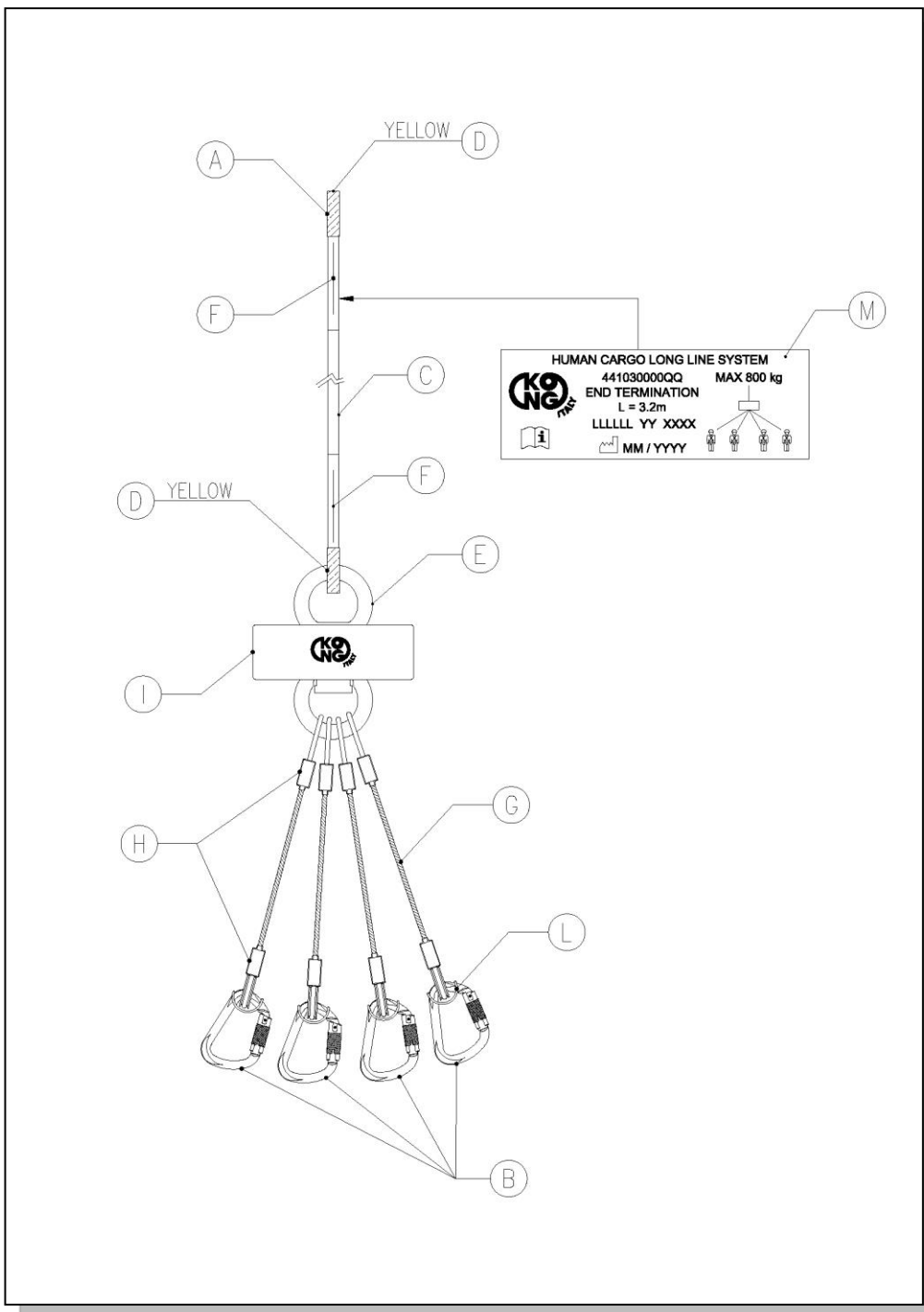


Fig.4 – End Termination

Terminology of parts: (Fig. 4): (A) End Termination junction stitched loop, (B) X-Large Steel connectors with automatic sleeve, (C) Stitched Rope, (D) Protection Rope (yellow color), (E) Swivel, (F) Stitching, (G) Wire steel arms, (H) Cable sleeves, (I) Shock protection, (L) Fast, (M) "End Termination" label.

3.3.4.SPIDER CONNECTION

The Spider Connection (fig. 5) consists of:

- a multi anchor point (A), provided with holes for connection to the End Termination connectors,
- four textile arms (B),
- four connectors with automatic sleeve (C), to which operators can be connected.

WARNING:



- connect the Spider Connection to the End Termination with at least 2 of the 4 connectors of which it is provided; use for the connection the two holes identified in figure 5 with the letter E to ensure a correct load balancing

- connect the connectors of the Spider Connection to the points of attachment of the harness (check the instructions for use of the harness which are the suitable ones) and visually check that the automatic sleeve close and prevent accidental opening of the lever

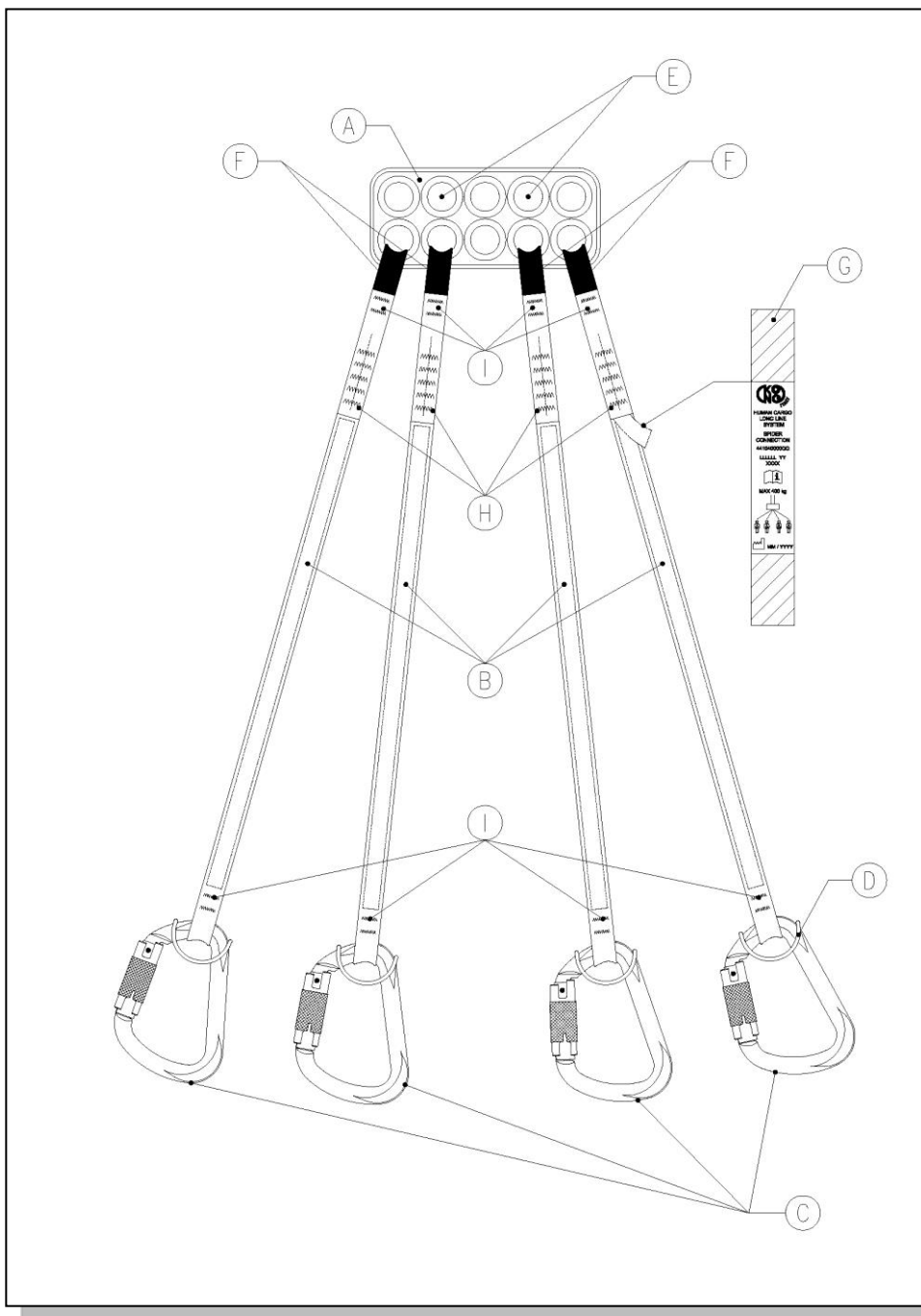


Fig.5 – Spider connection

Terminology of parts: (Fig. 5): (A) Multi-anchoring, (B) textile arms, (C) X-Large steel connectors with automatic sleeve, (D) Fast, (E) End Termination connection holes, (F) Protection loop webbing, (G) Spider Connection label, (H) Main stitchings, (I) Secondary Stitchings.

3.3.5.BAG

The bag (fig 6) is composed of 4 bags of different colors and sizes to be used for storage and transport respectively:

- of the Kit; black PVC bag (A),
- of the 10 meter Long Line Extension; black bag (B),
- of the 20 meter Long Line Extension; red bag (C),
- of the 40 meter Long Line Extension; green bag (D).



WARNING

Do not store the wet kit: check carefully that all parts are completely dry.

If at the end of the operations, the kit should be stored wet due to operational use, once the operation has been completed, it must be removed from the bag, if necessary cleaned, and dried.

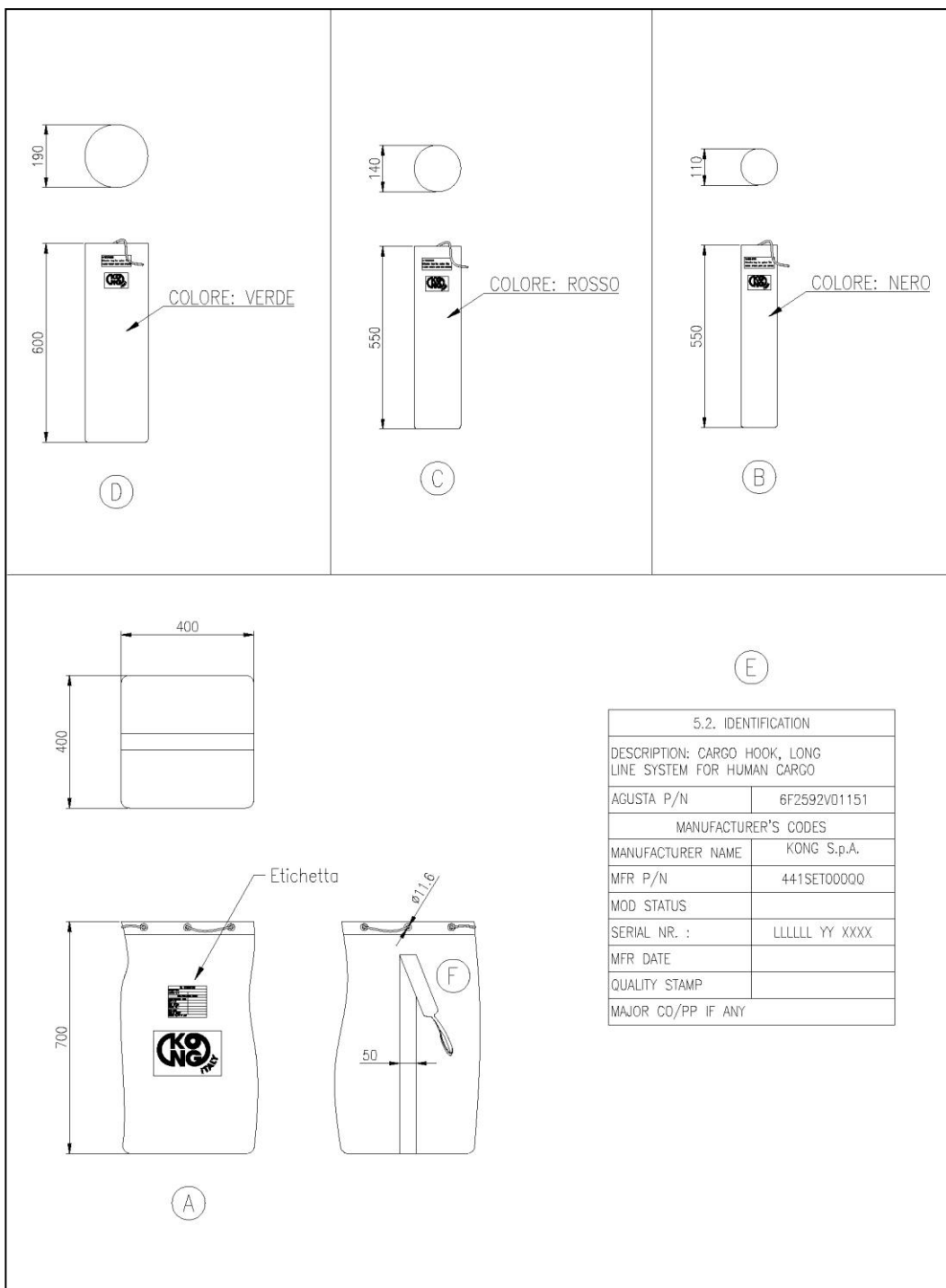


Fig.6 – Bags

Terminology of parts (Fig. 6): (A) Black PVC bag, (B) Black bag, (C) Red bag, (D) Green bag, (E) Label, (F) Bag carrying handles.

CHAPTER 4 – SPECIFIC INFORMATION

4.1. SPECIFIC INFORMATION

Important: The Kit can be used only with the helicopter AW 139 made by Leonardo S.p.A. company.

How to connect the Cargo Line (fig.2) to the hooks of the Dual Hook System of the helicopter:

- hook the ring (A) to the Main Cargo Hook,
- hook the ring (B) to the Secondary Cargo Hook



WARNING: hook both rings to the Dual Hook System!

Verify that the rings are completely inserted in the hooks of the Dual Hook System and that, the respective levers, are correctly and completely closed (for the opening of the Main and Secondary hooks follow the specifications of the manual of the helicopter).

The kit configuration shall be selected depending on the length needed for the foreseen operation (see table 2).

Operating length required	Kit parts required
20 m	441010000QQ CARGO LINE 441030000QQ END TERMINATION
30 m	441010000QQ CARGO LINE 441020100QQ LONG LINE EXTENSION 10 m 441030000QQ END TERMINATION
40 m	441010000QQ CARGO LINE 441020200QQ LONG LINE EXTENSION 20 m 441030000QQ END TERMINATION
50 m	441010000QQ CARGO LINE 441020100QQ LONG LINE EXTENSION 10 m 441020200QQ LONG LINE EXTENSION 20 m 441030000QQ END TERMINATION
60 m	441010000QQ CARGO LINE 441020400QQ LONG LINE EXTENSION 40 m 441030000QQ END TERMINATION
70 m	441010000QQ CARGO LINE 441020100QQ LONG LINE EXTENSION 10 m 441020400QQ LONG LINE EXTENSION 40 m 441030000QQ END TERMINATION
80 m	441010000QQ CARGO LINE 441020100QQ LONG LINE EXTENSION 20 m 441020400QQ LONG LINE EXTENSION 40 m 441030000QQ END TERMINATION
90 m	441010000QQ CARGO LINE 441020100QQ LONG LINE EXTENSION 10 m 441020100QQ LONG LINE EXTENSION 20 m 441020400QQ LONG LINE EXTENSION 40 m 441030000QQ END TERMINATION

Tab.2 – Kit components need according to the required operating length

The connection of the components of the kit must be carried out exclusively by means of both connectors inserted, opposite each other, in the junction stitched loops, with the following modalities (fig.7):

- unscrew the connector screw sleeve,
- open the connector lever,
- insert the connector in the rope stitched loop, yellow color, of the part to be connected,
- release the connector lever,
- completely tighten the screw sleeve of the connector.



WARNING:

the connection of the Kit components must be done absolutely with both connectors.

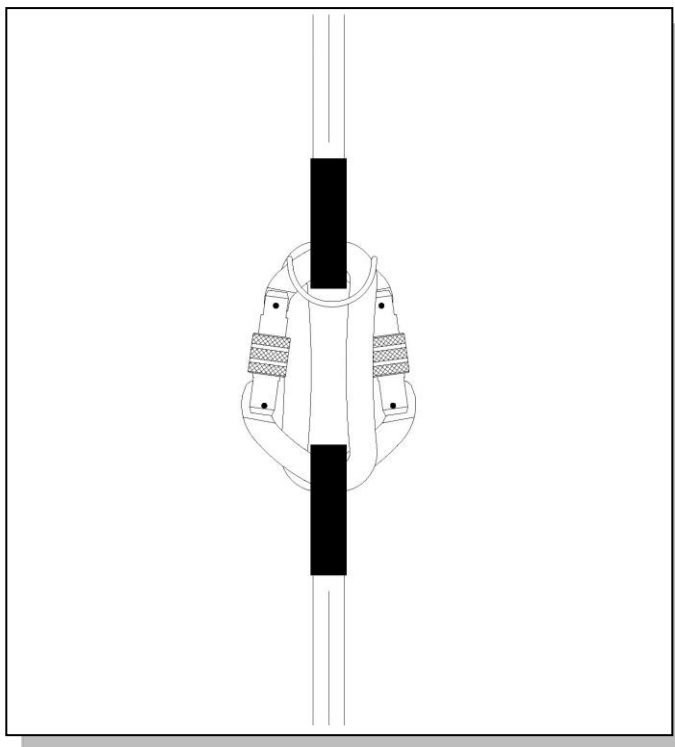


Fig.7 – connection between terminal connectors and junction loop

4.1.1. TRANSPORT UP TO A MAXIMUM OF 4 PEOPLE AT THE SAME TIME

Connect the people to be transported, equipped with a suitable harness, to the End Termination connectors in the following ways:

- slide the automatic sleeve on the connector lever and turn it about 90° clockwise,
- open the connector lever,
- insert the connector at the attachment point of the harness (read the harness instructions for use carefully),
- release the connector lever,
- check that the connector sleeve has closed automatically and completely, and that it blocks the accidental opening of the lever.

In the case of transporting a number of people under 4, always try to balance the load towards the central lifting axis.

4.1.2. TRANSPORT UP TO A MAXIMUM OF 8 PEOPLE AT THE SAME TIME.

Connect the dedicated holes of each Spider Connection (fig.8) to two End Termination connectors in the following ways:

- slide the automatic sleeve on the connector lever and turn it about 90° clockwise,
- open the connector lever,
- insert the connector in the upper middle holes of the Spider Connection (Fig. 5 - E),
- release the connector lever,
- check that the connector sleeve has closed automatically and completely, and that it blocks the accidental opening of the lever.



WARNING:

connect each Spider Connection to the End Termination with at least 2 of the 4 connectors provided; use for the connection the two holes identified in figure 5 with the letter E to ensure a correct load balancing (see the correct installation in figure 8).

Connect the people to be transported, equipped with a suitable harness, to the connectors of the Spider Connection in the following ways:

- slide the automatic sleeve on the connector lever and turn it about 90° clockwise,
- open the connector lever,
- insert the connector at the attachment point of the harness (read the harness instructions for use carefully),
- release the connector lever,
- check that the connector sleeve has closed automatically and completely, blocking the accidental opening of the lever.

When carrying less than 4 people on a Spider Connection, always try to balance the load towards the central lifting axle.

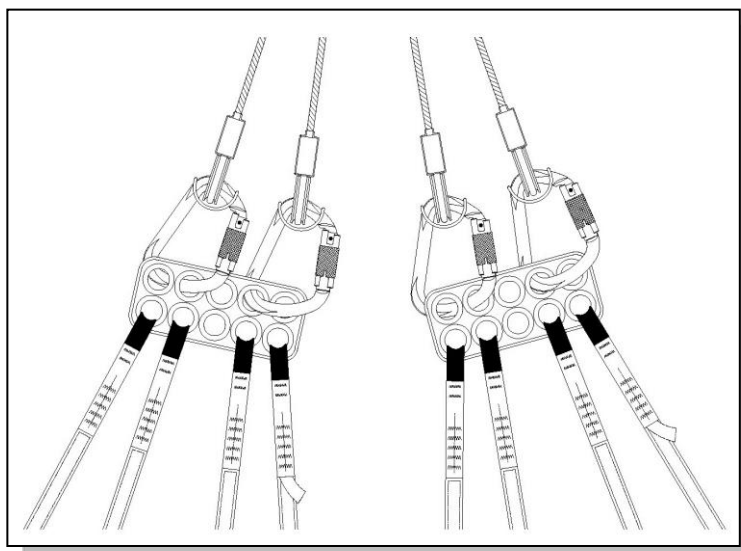


Fig.8 – Connection between end termination connectors and spider connection

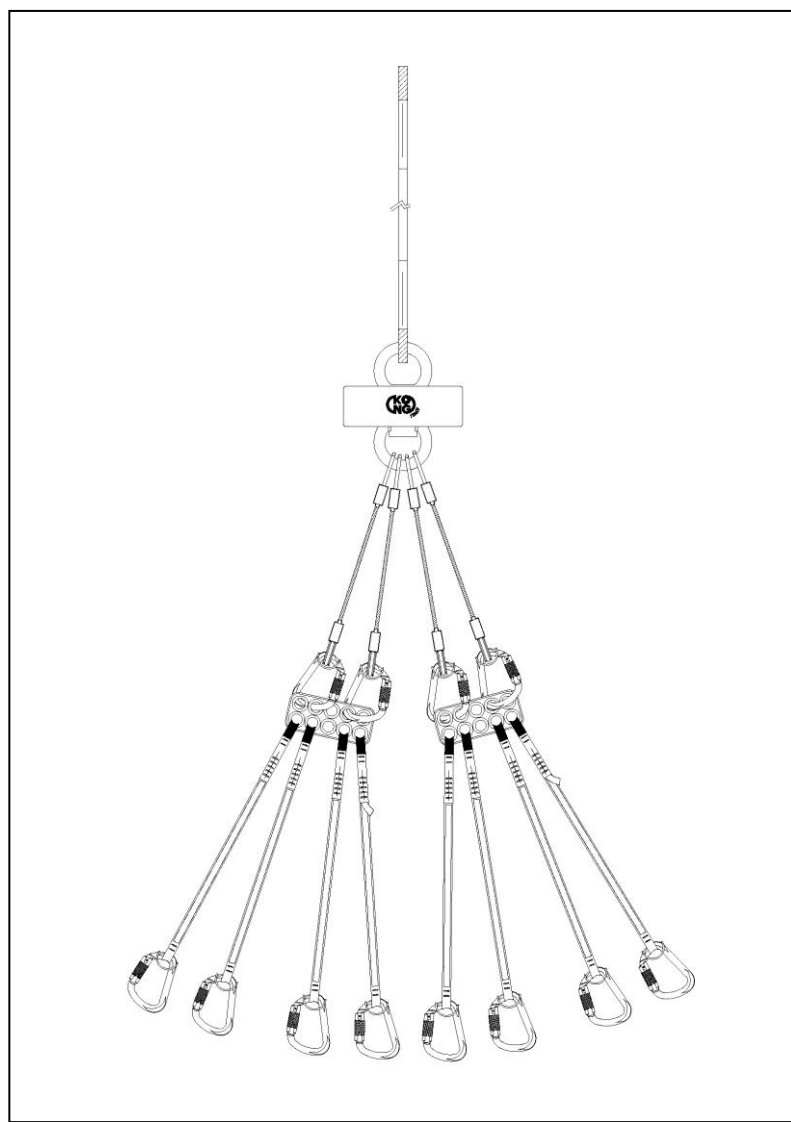


Fig.9 – Configuration for 8 people to be transported



NOTE

Due to the electrostatic effect, it is recommended to use a cable to discharge the electrostatic charge to earth (not included in the kit).

4.1.3. SHOCK PROTECTION ASSEMBLING

To assemble the shock protection of the swivel, follow the procedure (ref fig.10):

1. Open the plastic clips
2. Open the external Velcro
3. Open the inner Velcro
4. Insert completely the swivel into the shock protection.
5. Close the inner Velcro
6. Close the external Velcro
7. Close the plastic clips.

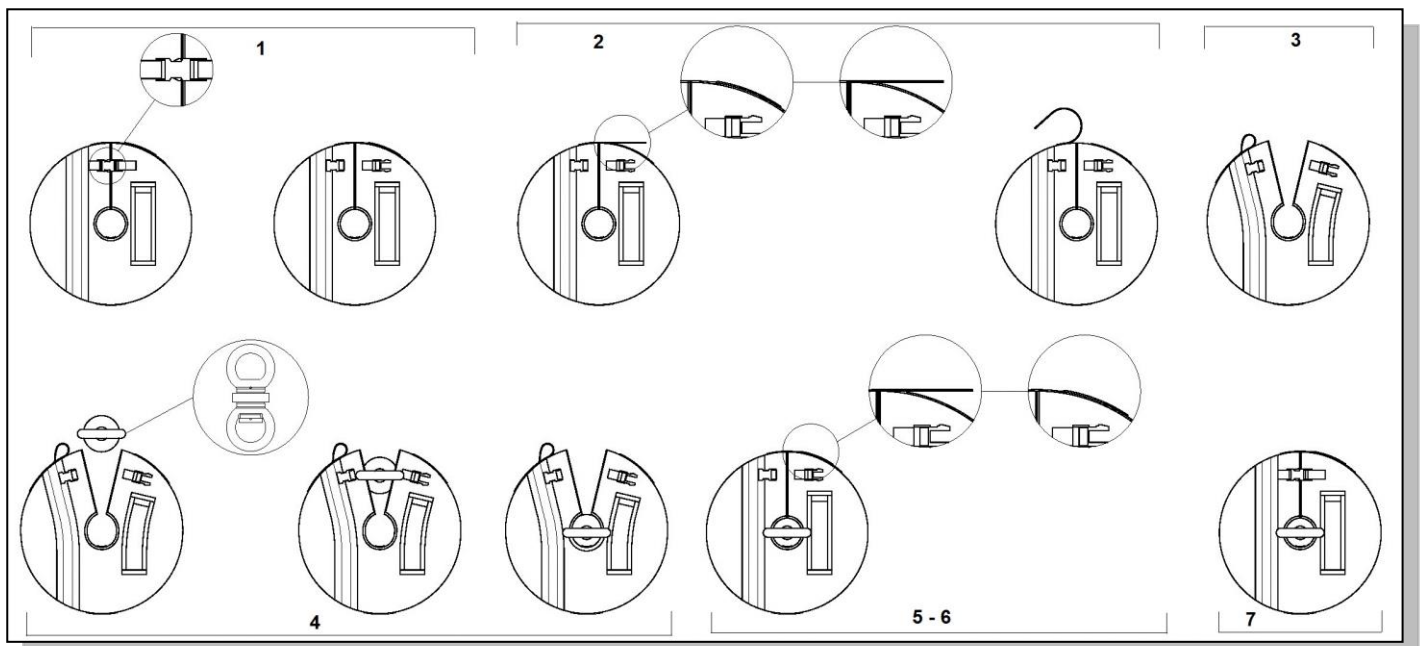


Fig.10 – Shock protection assembling

CHAPTER 5 - INSPECTION

5.1. GENERALITY

To guarantee the efficiency of the product and the safety of the operators, the Kit must be inspected according to the inspection activities defined in the following table:

INSPECTION ACTIVITY	DEADLINE TIME	PERSONNEL IN CHARGE
Inspection of receiving goods (I.R.M.)	<i>When the kit is purchased and taken over by the user.</i>	<i>The warehouse staff of the user who takes charge of it.</i>
Pre-Mission Inspection (I.P.M.)	<i>Before and/or after each use</i>	<i>The user operator of the Kit.</i>
Six-monthly Ordinary Inspection or every 50 lifts (I.O.S.)	<i>At the end of 6 months or at the achievement of 50 lifts from:</i> - date of first use - date of the last I.O.S.	<i>The user's personnel authorized for inspection activities.</i>
Annual Ordinary Inspection or every 150 lifts (I.O.A.)	<i>At the end of 12 months or at the achievement of 150 lifts from:</i> - date of first use - date of the last I.O.A.	<i>The user's personnel authorized for inspection activities.</i>
Extraordinary Inspection (I.S.)	<i>Whenever the kit comes into contact with corrosive substances, salt water, falls, cuts, etc.</i>	<i>The user's personnel authorized for inspection activities.</i>
Revision (R.)	<i>In cases of anomalies that cannot be eliminated with the normal maintenance.</i>	<i>Kong SpA</i>
Life Limits	<i>See paragraph 5.8</i>	

Tab.3 - Inspections

5.2. INSPECTION OF RECEIVING GOODS (I.R.M.)

This inspection must be carried out the first time the Kit is purchased and taken over by the user's warehouse in the following ways:

- a) Visual inspection of the kit's packaging, for the identification of possible abrasions, cuts, tears, holes, oil stains, etc. Check that the kit is in a clean condition suitable for use.
- b) Verify the presence and integrity of the components making up the system:
 - Cargo Line
 - Extension long line 10 m (with black bag)
 - Extension long line 20 m (with red bag)
 - Extension long line 40 m (with green bag)
 - End termination
 - Spider connection (2 pieces)
- c) Check and make sure that:
 - On all sections of the rope no cuts, burns, residues of chemicals, excessive pilling or wear are shown. In particular, check the areas in contact with metal components (connectors, rings, etc.).
 - The stitchings are intact and that there are no threads cut or loose.
 - Fast, that prevent the carabiner rotation, are present and intact and have no sharp burrs.
 - The rings have no cracks, traces of corrosion, mechanical deformations and that any wear is exclusively of an aesthetic nature.

- The opening levers of the connectors are free to operate without getting caught due to residual dirt or malfunctioning of the spring. When operated, the lever must open completely. When released, from any position, it must automatically and completely close again.
 - The screw sleeve, present on the connectors of the cargo line and the three long line extensions, is free to screw and unscrew completely.
 - The 3 automatic movement sleeve, present on the connectors of the end termination and on the two spider connections, when pushed upwards and turned clockwise allows the lever to open. When released, from any position, the sleeve rotates automatically and completely counterclockwise, blocking the lever opening.
 - The connector plugs are present, tight and not sharp or worn.
 - The end termination swivel pins are present and not sharp or worn.
 - The end termination swivel is free to rotate without locking, i.e. it must be possible to rotate it by hand.
 - The impact protection is well connected to the swivel with the Velcro rightly closed.
 - All cable loops are complete and undamaged. Check that all the metallic cables don't present any failure, abrasion or bending. Verify that crimps are intact.
- d) If no problems are detected, the Kit, once again packed, is ready for use.

5.3. PRE MISSION INSPECTION (I.P.M.)

This inspection must be carried out before each mission by the user operator, following the same steps provided in points a) b) and c) of paragraph 5.2. Alternatively, if the same inspection has been carried out at the end of the previous mission, it is not necessary to repeat it.

At the end of the operations, before storing the kit in the warehouse, it shall be verified that the textile items of the long line system have not been exposed to sand, dust, chemical contaminants, salt water or any other contaminant which would require to carry out the cleaning/washing activities. In addition, it shall be assured that the textile items of the long line are completely dried before the storage.

WARNING



Whole kits or single parts list in table 1 that are not intact must be discarded or, eventually, sent to I.O.S. for a more detailed assessment of the actual damage and, if needed, sent to repair and / or replace.

5.4. SIX-MONTHLY ORDINARY INSPECTION (I.O.S.) OR EVERY 50 LIFTS

Six-monthly ordinary inspection I.O.S. must be performed:

- At the expiry of 6 months from the date of first use;
- At the end of 6 months from the last I.O.S.;
- When 50 lifts are reached

The kits for which the above conditions are presented must be inspected by the user's personnel authorized for inspection activities.

The environment in which the inspection is carried out must be clean and tidy, and the worktop must not have any roughness, such as protruding nails or other, and preferably must be covered with a clean sheet of fabric.

WARNING



In case of damage to structural parts of any Kit component, repair work cannot be carried out by the user (except for those presented in para. 6.2.2), but by Kong SpA company, to whom the component to be repaired must be sent.



NOTE

The kits in stock and unused do not need to be submitted to I.O.S. even if 6 months have passed since the date of purchase. Before delivery to the user for operational use, they must be submitted to I.O.S. if 6 months have passed since the dates indicated above.



NOTE

The six-monthly ordinary inspection must be carried out after a washing of the kit which must be carried out using warm water max 40°C, possibly with the addition of a gentle detergent. Then rinse well without centrifuging and allow drying in the shade and away from direct heat and not under direct sunlight

To guarantee the efficiency of the product and the safety of the user, the Kit must be inspected in the following ways:

- a) Repeat the checks in 5.2 a), b), c).
- b) Check that on every section of the kit all the markings or at least the following data are present and readable:
 - logo and / or name of the manufacturer;
 - serial number;
 - manufacturing date.



NOTE

The cargo line has two markings, one on the arm that must be connected to the main hook and one on the arm that must be connected to the backup hook

- c) No hardening or variations in the cross-section of the rope must be present over the entire length of the device. The check must be performed by sliding the rope into the bare hand, making sure that there are no parts where the section abruptly decreases or the rope is hardened. At the point where a slight change in section is perceived by touch, further check the rope at the detected point making it, using the hands, an arc. The arc of the string must be circular and uniform; must not have edges.
- d) End termination metal cables: Wearing a protective glove, slide each cable between the hands and verify the absence of raised or broken strands. Check that the clamping sleeves of the metal cables are intact and that no cracks are present.
- e) Perform a thorough visual inspection of all metal parts to confirm that there are no signs of corrosion.
- f) Check the axial clearance of the swivel: Check that the swivel does not have axial clearance between the rotating parts. Rotate the swivel and check that there are no signs of rubbing between the metal parts.



NOTE

The I.O.S. must be registered on the Long Line log-card.

5.5. ANNUAL ORDINARY INSPECTION (I.O.A) OR EVERY 150 LIFTS

The Annual Ordinary Inspection must be performed:

- At the end of 12 months from the date of first use;
- At the end of 12 months from the last I.O.A.;
- Upon reaching 150 lifts;

The kits for which the above conditions are presented must be inspected by the user's personnel authorized for inspection activities.

The environment in which the inspection is carried out must be clean and tidy, and the worktop must not have any roughness, such as protruding nails or other, and preferably must be covered with a clean sheet of fabric.



WARNING

In case of damage to structural parts of any Kit component, repair work cannot be carried out by the user (except for those presented in para. 6.2.2), but by Kong SpA company, to whom the component to be repaired must be sent.



NOTE

The kits in stock do not need to be submitted to the I.O.A. even if 12 months have passed since the date of purchase. Before delivery to the user for operational use, they must be submitted to the I.O.A. if 12 months have elapsed since the dates indicated above.



NOTE

The I.O.A. must be carried out after washing the kit, which must be carried out using warm water max 40 °, possibly with the addition of a gentle detergent. Then rinse without centrifuging and allow drying in the shade and away from direct heat sources and not under direct sunlight.

To guarantee the efficiency of the product and the safety of the user, the Kit must be inspected in the following ways:

- a) Repeat the checking explained to the par. 5.4 a), b), c) d), e), f).

- b) notches check metal part (main hook ring, backup hook ring, conjunction ring, swivel, spider connection plate, connectors). The part must be inspected using a magnifying lens to identify surface notches. Figure 11, figure 12 and figure 13 show typical damages to be considered not significant; figure 14, figure 15, figure 16 show typical damages which require the notch depth to be measured; such measurement should be performed according to the following procedure (Material needed: elastomeric, silicone based, as “Provil® novo Regular” or “Provil® novo Fast”, or equivalent):
- Carefully clean the surface (to remove any contamination, dust or grease) with products that don't leave residual as organic solvents (volatile, e.g. methyl alcohol, acetone), by means of soft pad or clean cloth (pay attention: the textile parts must not be contaminated)
 - Prepare a containment frame, with the height equal to the thickness of the negative to be realized (minimum 10 mm)
 - Pour or spread on the surface the silicone based elastomer, avoiding to entrap air bubbles
 - Wait for the silicone polymerization time (as prescribed by the product instructions)
 - Once the polymerization is complete, carefully remove the silicone, starting from the containment frame
 - Cut the mold, using a cutter, in the section where the notch has the maximum depth. Verify that the cut has not damaged the profile to be measured.
 - Measure the depth of the notch using a profilometer, micrometer or any other proper tool with a sensitivity equal or higher than 0,05 mm.
 - If the measured depth is greater than 0,35 mm the part shall be discarded, otherwise it can be maintained in service.



NOTE

If anomalies are found, it is necessary to take note of them, and send the kit to the revision.



NOTE

The I.O.A. must be registered on the Long Line log-card.

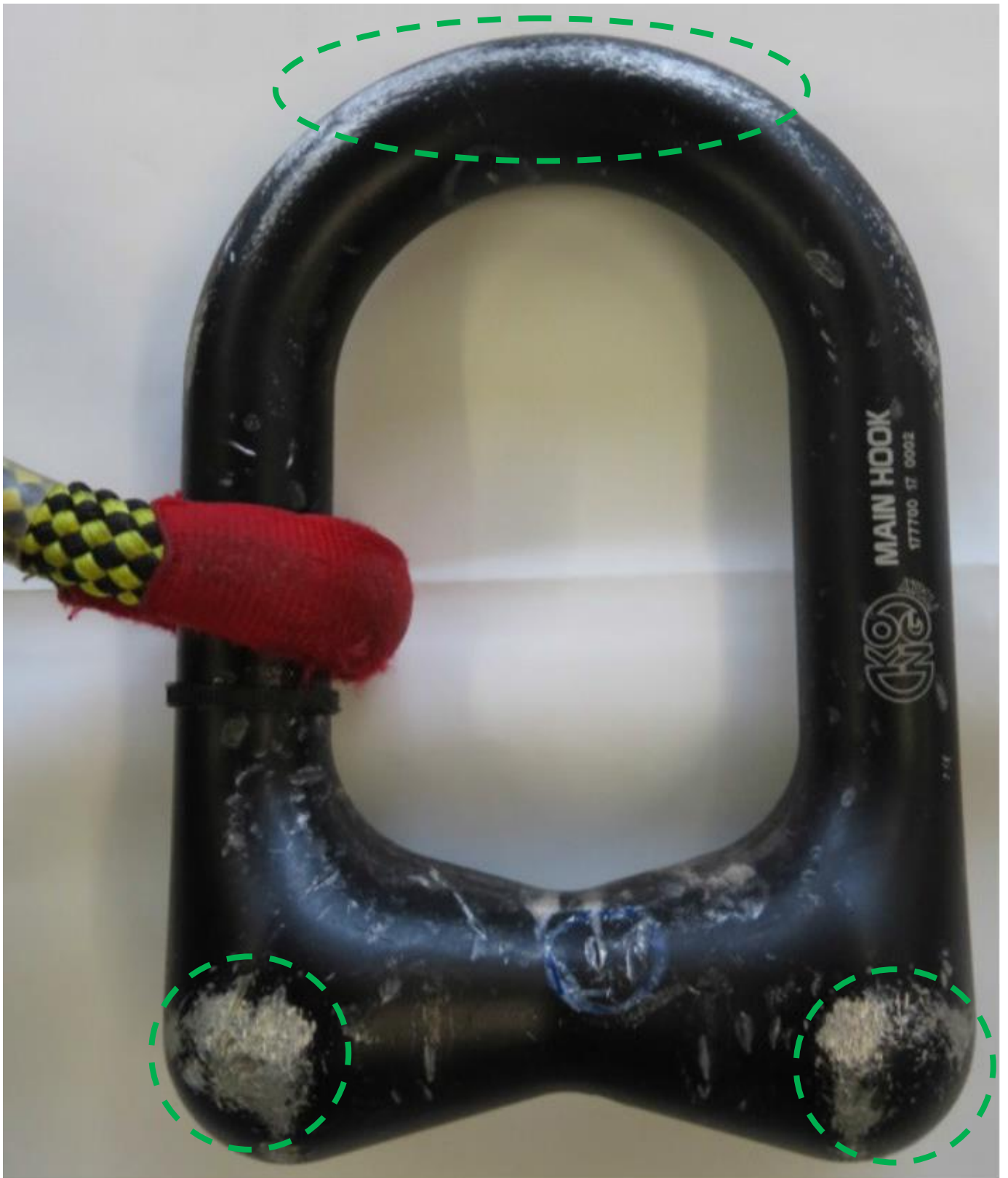


Fig.11 – Main hook ring – Example non significant damages

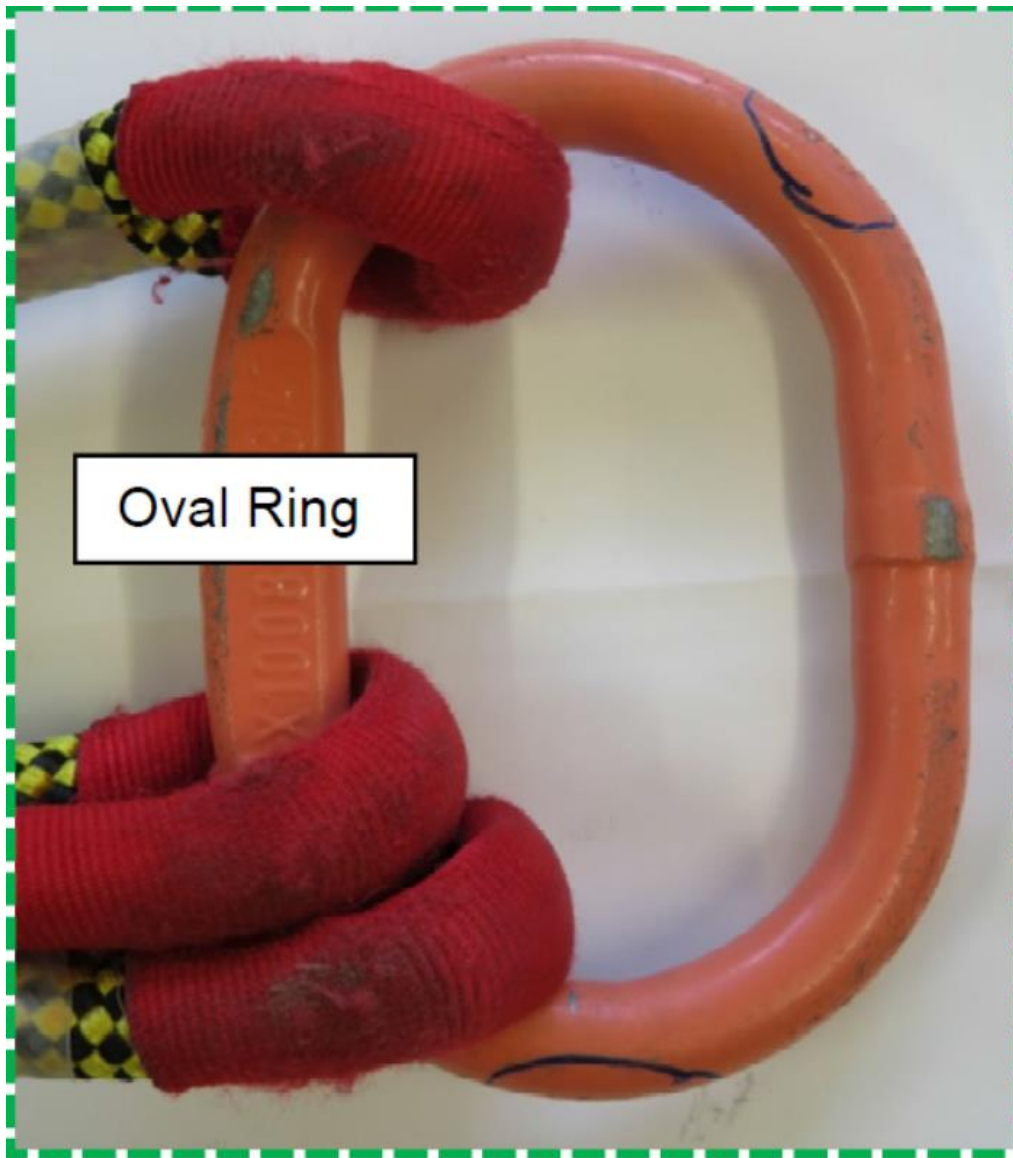


Fig.12 – Backup hook ring – Example non significant damages

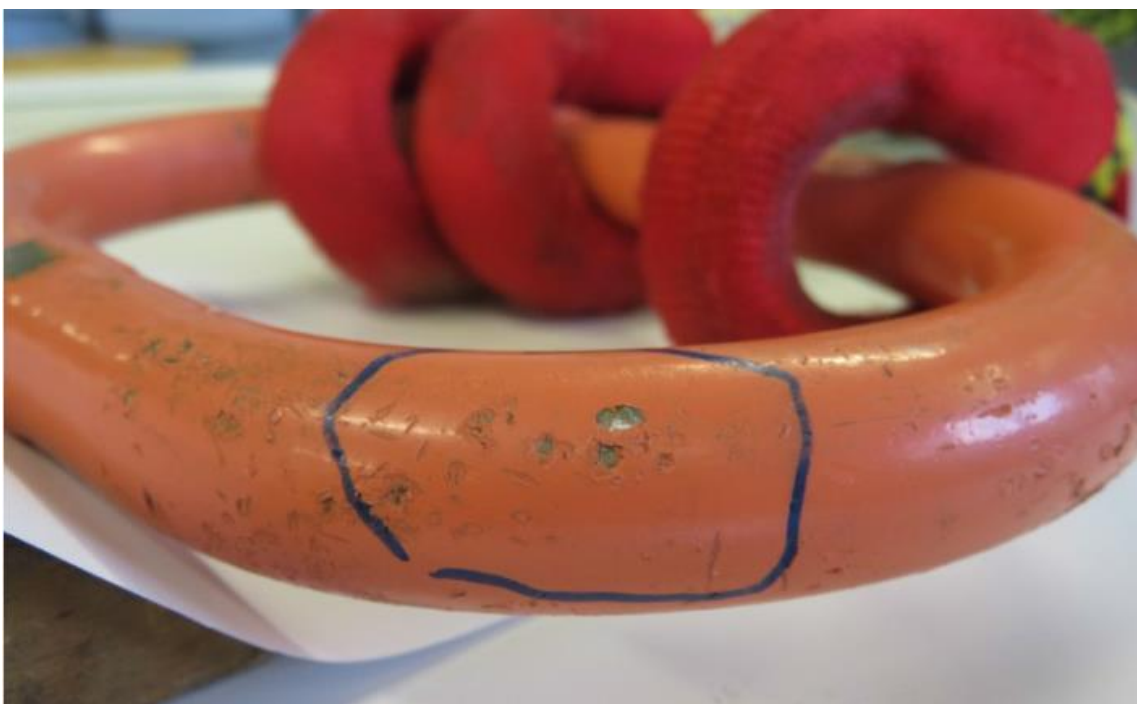


Fig.13 – Junction ring – Example non significant damages

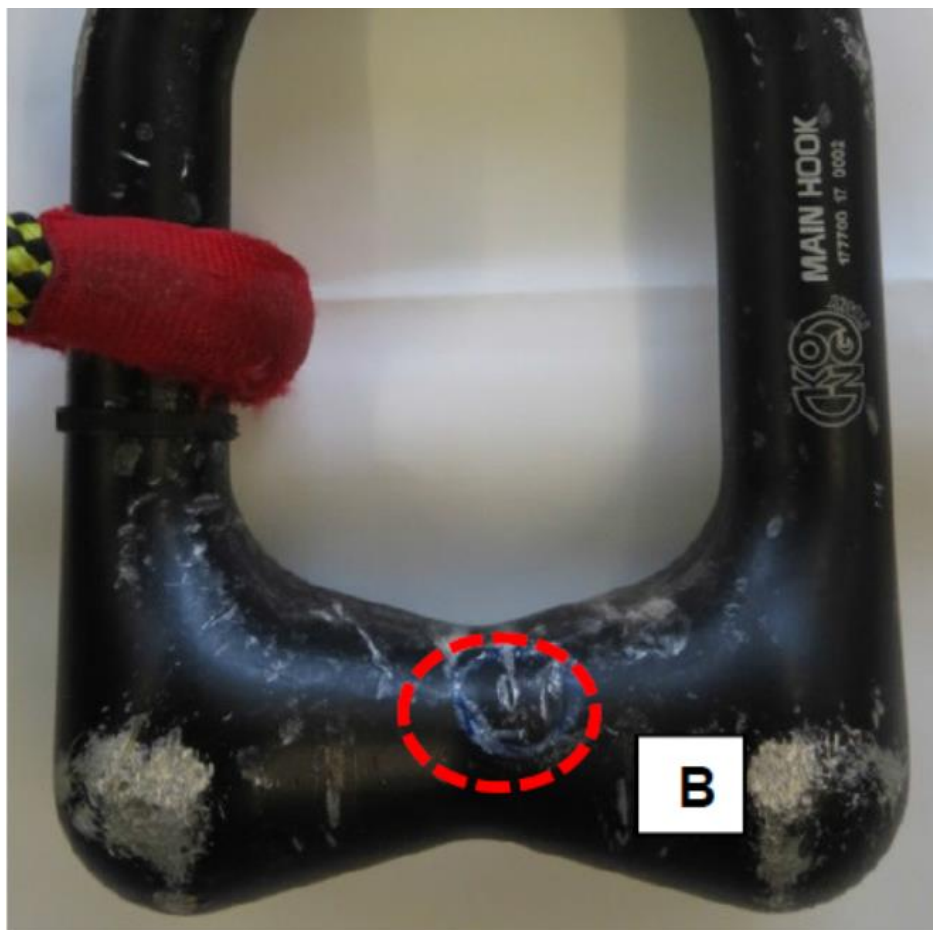


Fig.14 – Main hook ring – Example significate damages



Fig.15 – Main hook ring - Example significate damages

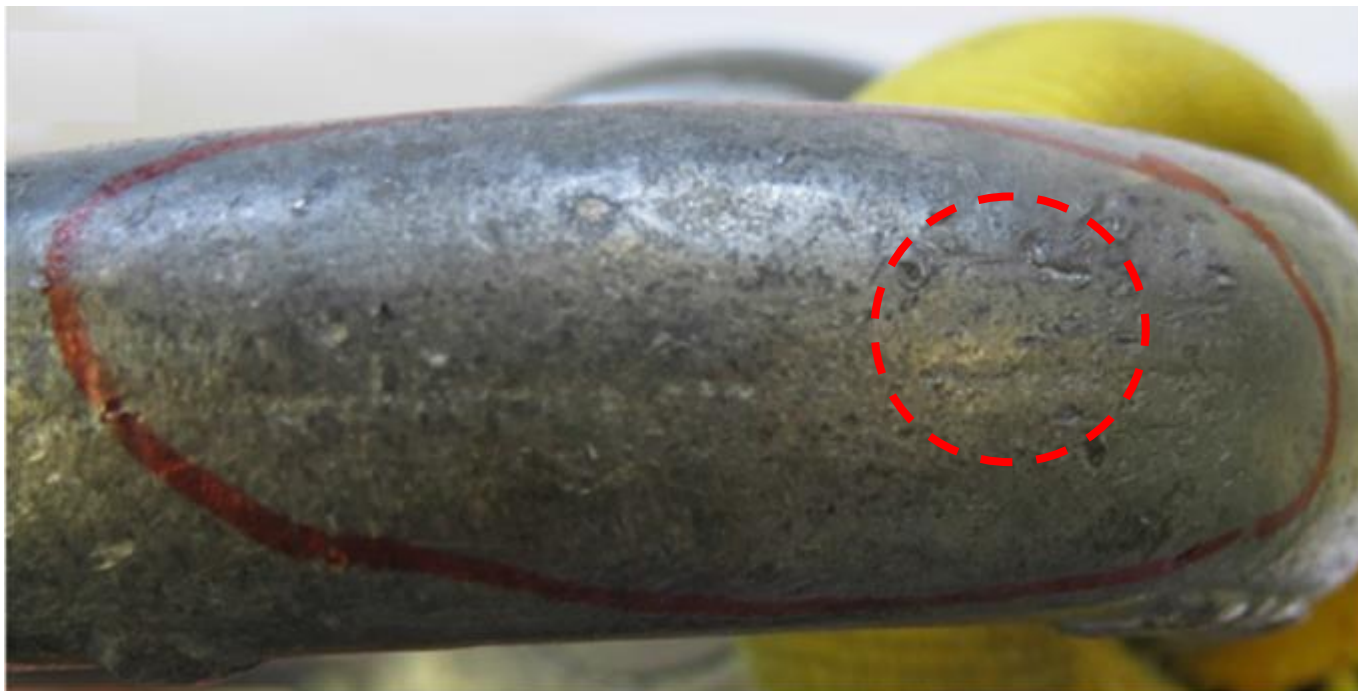


Fig.16 – End termination swivel - Example significant damages

5.6. EXTRAORDINARY INSPECTION (I.S.)

The Extraordinary Inspection (I.S.) must be performed by the personnel authorized for the inspection activity, in the ways indicated in table 3, when the Kit or individual components of the same have come into contact with substances in reference to paragraph 6.2.



NOTE

The I.S. must be registered on the Long Line log-card.

All parts that show evident signs of wear or otherwise in conditions that do not guarantee correct operation must be replaced. All operations performed must be registered.

5.7. REVISION (R.)

The revision must be carried out if, during the inspections, anomalies or defects are found that cannot be eliminated with normal maintenance.

In this case the product must be sent to the manufacturer.

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WARNING:

In the event that an emergency release is made, the device must be discarded.

5.8. LIFE LIMITS

Carefully read point 2.1. The life of the kit is 4 years from the date of the first use plus max 2 years of storage before the first use, provided that:

- maintenance and storage are carried out as described in paragraphs 6.2 and 7.2 respectively;
- the inspections do not show defects in operation, deformation, wear, etc.;
- the product is used correctly.

If the 2 years of storage before the first use have been overcome:

- the end of the maximum admitted storage period (i.e. 2 years from manufacturing date) shall be considered as the formal first use
- the equipment shall be subjected to the I.O.A. before the actual first use

CHAPTER 6 - MAINTENANCE AND REPAIRS

6.1. GENERALITY

The Kit is made with materials highly resistant to wear and to external agents. Despite this, the conditions of use make it necessary to perform maintenance and, in particular cases, even repairs

6.2. MAINTENANCE OPERATIONS

The Kit does not require particular maintenance procedures. It is essential to follow few simple rules, and to intervene immediately with the required cleaning operations.

The Kit, during normal use, may come into contact with oil or grease, salt water, in addition to rust, acid, or other organic substances.

These may compromise efficiency, and it is therefore necessary to act quickly, as indicated:

Substance	Operations	Inspection/Action
Chemical and corrosive agents	Wash with clean warm water - maximum 40°C - possibly with the addition of a gentle detergent. Rinse without spinning and allow drying in the shade, away from direct heat sources.	Perform a visual inspection. When in doubt, perform the necessary maintenance activities (such as replacing components, or sending to the manufacturer for repairs, inspections, or disposal).
Mould and organic liquids (blood, vomit)	Wash the part with warm water- maximum 40°C and neutral soap, with the help of a brush. However, be careful not to damage the product. Leave it drying in the shade, away from direct heat sources.	Perform a visual inspection. When in doubt, perform the necessary maintenance activities (such as replacing components, or sending to the manufacturer for repairs, inspections, or disposal).
Food grade liquids	Wash with clean warm water - maximum 40°C - possibly with the addition of a gentle detergent. Rinse without spinning and allow drying in the shade, away from direct heat sources.	Perform a visual inspection. When in doubt, perform the necessary maintenance activities (such as replacing components, or sending to the manufacturer for repairs, inspections, or disposal).
Salt water, mud	Wash with clean warm water - maximum 40°C - possibly with the addition of a gentle detergent. Rinse without spinning and allow drying in the shade, away from direct heat sources.	Perform a visual inspection. When in doubt, perform the necessary maintenance activities (such as replacing components, or sending to the manufacturer for repairs, inspections, or disposal).
Dust	Direct a compressed air jet on the affected part, staying to the right distance.	None
Disinfection	Carry out disinfection operations, when necessary, as follows: Dilute 1% bleach (sodium hypochlorite) in water, submerge the product and leave it to soak for about an hour, rinse in abundant water without spinning, and leave it drying without exposing it to heat sources. <u>Precautions:</u> bleach and sodium hypochlorite solutions are irritant and caustic. It is therefore best to handle them using rubber gloves and being careful not to get them in contact with eyes (refer to the product safety data sheets).	Perform a visual inspection. When in doubt, perform the necessary maintenance activities (such as replacing components, or sending to the manufacturer for repairs, inspections, or disposal).
Lubrication	Lubrication: Frequently lubricate the moving parts of metal products with Teflon based oil (i.e. Kong Oil or Interflon Lube TF oil). Avoid contact between oil and textile parts. This job must be done after cleaning and completely drying.	Make sure it works properly.

Tab.4 - Maintenance operations

6.2.1. KIT CLEANING

The cleaning must be carried out, in addition to the normal maintenance activities, after the kit has situations of dirt due to use. Wash in warm water (max 40° C) with a normal neutral detergent for hand washing and do not centrifuge. Rinse thoroughly and dry away from direct sunlight. It is strictly forbidden to spin-dry the kit.

6.2.2.REPAIR

Repairs should only be carried out by the manufacturer.

In case of need, the user is allowed to replace only the components listed in Tab. 5 – part list.

For the replacement of the main components of the long line (ref. tab.5 – item 1,2,3,4,5,6) is important to register the serial number on the relative table (see annex A) indicating the date of disposal for the replaced part and inserting a new line for the new component.

6.2.2.1. REPLACEMENT OF THE CONNECTOR (REF.Tab.5 – item 8/9/10/11)

To replace the connectors and the relevant fasts the instructions hereafter are to be followed:

- open the fast using a nipper;
- disconnect the connector from the rope loop
- connect a new connector replacing the removed one inserting before the fast riding the rope:
 - for the Heavy-Duty connectors which are part of the cargo line and the three long line extensions, make sure that, when assembling is complete, the two connectors show the relevant levers in opposite orientation
 - for the X-Large connectors which are part of the end termination and spider connections, make sure that, when assembling is complete, the new connector has the same orientation of the other present in the same assembly
- When the connector is in the right position block the fast using a nipper. The connector must be free to move on the loop but avoiding the capsizing. See figure 17.

Record the repair activity on the long line log-card indicating:

- P/N and S/N of the affected long line subpart
- P/N and S/N of the connector discarded
- S/N of the new connector installed
- Date of the activity and relevant number of lifts accumulated
- Additionally, the replaced component must be registered in the serial number table reported in annex A of the present manual, indicating the date of disposal for the replaced part and inserting a new line for the new component.



NOTE

The serial number of each component replaced must be registered (see example annex A).

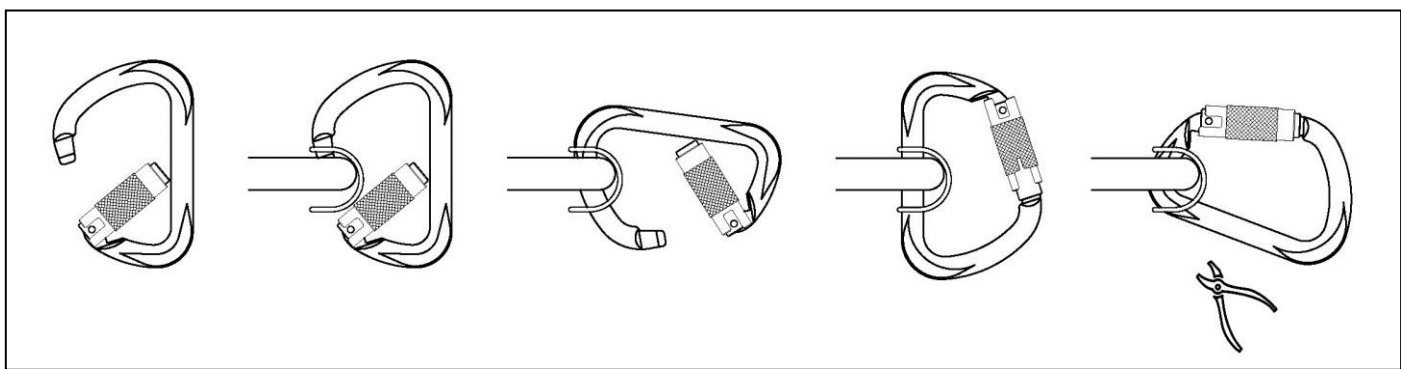


Fig.17 – Assembly method connector with fast

6.2.2.2. REPLACEMENT OF THE SHOCK PROTECTION.

To replace the shock protection (ref. tab.5 – item 7) refer to para 4.1.3.

CHAPTER 7 - SHIPPING AND STORAGE

7.1. SHIPPING

Kits destined for different user sites or to be sent to the manufacturer must be packed in cardboard boxes and contained in their transport bag.

During transport, avoid exposure of these products to U.V., heat sources, contact with chemical reagents or other corrosive substances.

7.2. STORAGE

After cleaning, drying and lubricating, store the kit in a dry place (relative humidity 40-90%), cool (temperature + 85°C /-55°C) and dark (avoid UV radiation), chemically neutral (avoid absolutely saline and / or acidic environments), away from sharp edges, sources of heat, humidity, corrosive substances or other possible damaging conditions



WARNING

Never store the kit wet!

CHAPTER 8 - PRODUCT LIFE AND WARRANTY

8.1. PRODUCT LIFE

WARNING: do not use obsolete devices (for example, whose expiration has expired, without the booklet where maintenance operations must be recorded, which do not comply with current regulations, are unsuitable or incompatible with current techniques, etc.). Eliminate obsolete, deformed, worn out, incorrectly functioning devices, etc. destroying them to avoid any future use.

8.2. WARRANTY

KONG S.p.A. guarantees the conformity of the supplied products with the agreed features. The warranty for defects is limited to manufacturing and raw material defects: it does not include normal wear and tear, damage caused by improper use and / or competitions, incorrect maintenance, transport, storage, etc. The warranty becomes void immediately if any changes or tampering to the product are made. The validity corresponds to the legal guarantee of the country where the product was sold, starting from the date of sale by KONG SpA. After this deadline no claim can be made against KONG SpA. Any request for repair or replacement under warranty must be accompanied by a proof of purchase. If the defect is recognized, KONG S.p.A. undertakes to repair or, at its discretion, replace or refund the product. In no case is the responsibility of KONG S.p.A. extends beyond the invoice price of the product.

CHAPTER 9 – ILLUSTRATED PART LIST

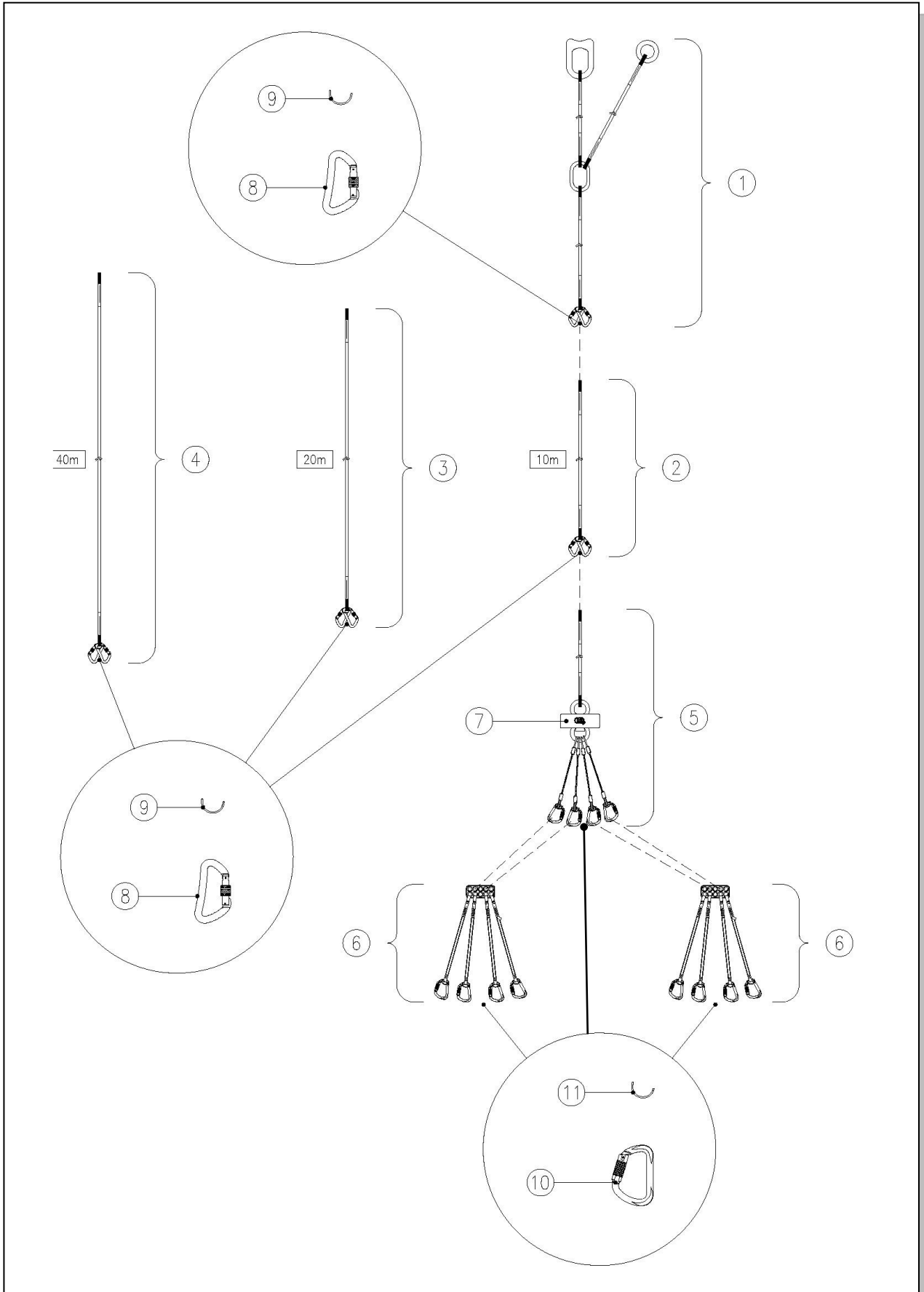


Fig.18 - Illustrated part List

Ref.	Description	P/N component	Quantity
1	Cargo Line	441010000QQ (Connectors Heavy Duty included)	1
2	Extension Long Line 10m	441020100QQ (Connectors Heavy Duty included)	1
3	Extension Long Line 20m	441020200QQ (Connectors Heavy Duty included)	1
4	Extension Long Line 40m	441020400QQ (Connectors Heavy Duty included)	1
5	End Termination	441030000QQ (Connectors X-Large steel autoblock and shock protection included)	1
6	Spider Connection	441040000QQ (Connectors X-Large steel autoblock included)	2
7	Shock protection	CPP492QA	1
8	Heavy Duty connectors with screw sleeve	472MD011PKK	8
9	Fast 15	809015000KK	8
10	X-Large steel connectors with automatic sleeve	411MR021PKK	12
11	Fast 12	809012000KK	12

Tab.5 - part list

ANNEX A – EXAMPLE SERIAL NUMBER TABLE

P/N	S/N*	Description	Date of Production (C) Installation (I)	Deadline date**	Out of use date
441SET000QQ	LLLLLL YY XXXX	HUMAN CARGO LONG LINE SYSTEM	2018 (C)	2022	
441010000QQ	LLLLLL YY XXXX	CARGO LINE	2018 (C)	2022	
441020100QQ	LLLLLL YY XXXX	LONG LINE EXTENSION 10 m	2018 (C)	2022	
441020200QQ	LLLLLL YY XXXX	LONG LINE EXTENSION 20 m	2018 (C)	2022	
441020400QQ	LLLLLL YY XXXX	LONG LINE EXTENSION 40 m	2018 (C)	2022	
441030000QQ	LLLLLL YY XXXX	END TERMINATION	2018 (C)	2022	
441040000QQ	LLLLLL YY XXXX	SPIDER CONNECTION	2018 (C)	2022	
441040000QQ	LLLLLL YY XXXX	SPIDER CONNECTION	2018 (C)	2022	
472MD011PKK	LLLLLL YY XXXX	HEAVY DUTY CONNECTOR	2018 (I)	2022	
472MD011PKK	LLLLLL YY XXXX	HEAVY DUTY CONNECTOR	2018 (I)	2022	
472MD011PKK	LLLLLL YY XXXX	HEAVY DUTY CONNECTOR	2018 (I)	2022	
472MD011PKK	LLLLLL YY XXXX	HEAVY DUTY CONNECTOR	2018 (I)	2022	
472MD011PKK	LLLLLL YY XXXX	HEAVY DUTY CONNECTOR	2018 (I)	2022	
472MD011PKK	LLLLLL YY XXXX	HEAVY DUTY CONNECTOR	2018 (I)	2022	
472MD011PKK	LLLLLL YY XXXX	HEAVY DUTY CONNECTOR	2018 (I)	2022	
472MD011PKK	LLLLLL YY XXXX	HEAVY DUTY CONNECTOR	2018 (I)	2022	
472MD011PKK	LLLLLL YY XXXX	HEAVY DUTY CONNECTOR	2018 (I)	2022	
411MR021PKK	LLLLLL YY XXXX	X-LARGE CONNECTOR	2018 (I)	2022	
411MR021PKK	LLLLLL YY XXXX	X-LARGE CONNECTOR	2018 (I)	2022	
411MR021PKK	LLLLLL YY XXXX	X-LARGE CONNECTOR	2018 (I)	2022	
411MR021PKK	LLLLLL YY XXXX	X-LARGE CONNECTOR	2018 (I)	2022	
411MR021PKK	LLLLLL YY XXXX	X-LARGE CONNECTOR	2018 (I)	2022	
411MR021PKK	LLLLLL YY XXXX	X-LARGE CONNECTOR	2018 (I)	2022	
411MR021PKK	LLLLLL YY XXXX	X-LARGE CONNECTOR	2018 (I)	2022	
411MR021PKK	LLLLLL YY XXXX	X-LARGE CONNECTOR	2018 (I)	2022	

* The serial number of each component is marked on the labels for parts with textile components (ropes and spider connections) and on the body of the connectors. YY indicates the year of production of the component.

** The deadline date is 4 year after the first use with a maximum storage (before the first use) of 2 years.