Galaxy GRS

Ballistic parachute rescue system

GALAXY GRS - SIMPLE SOLUTION OF BALISTIC RESCUE SYSTEM FOR YOUR ULTRALIGHT HELICOPTER !!!

Super modern efficient „Rescue unit GRS Heli 1-2" for MOSQUITO helicopter.

MOSQUITO with GRS Galaxy system:

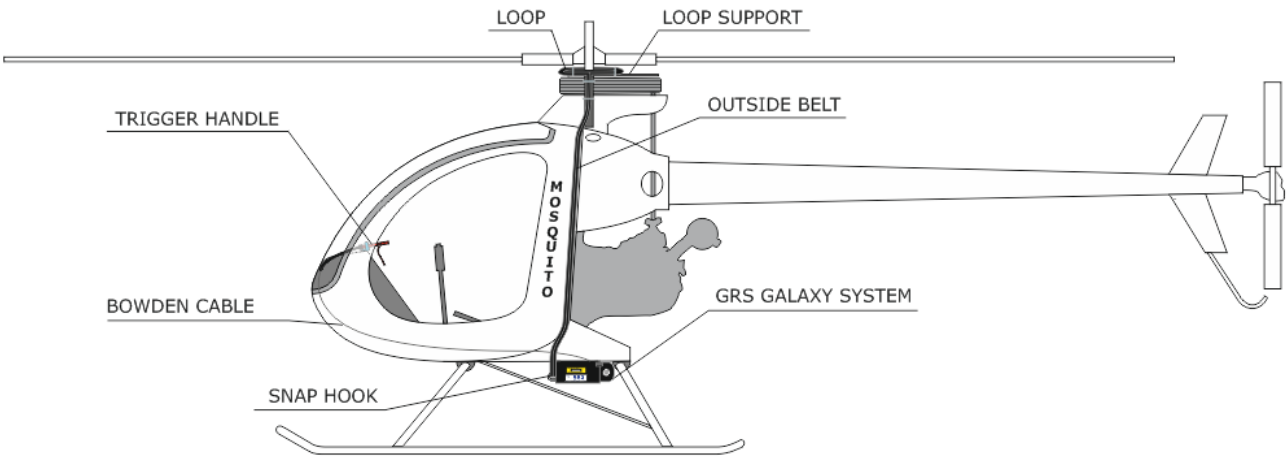


Figure 1

Complete KIT provided by Galaxy GRS s.r.o.:

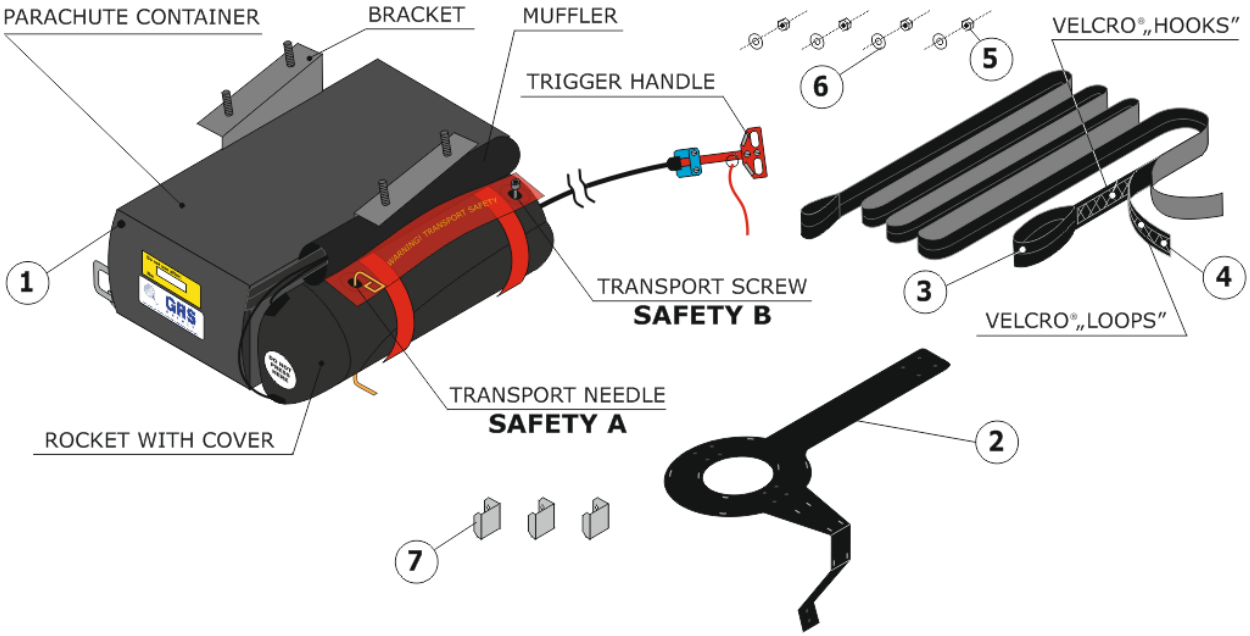


Figure 2

Parts list:

PART No.	Description	Qty
1	GRS system assembly	1
2	Loop support	1
3	Outside belt with Velcro® hooks	1
4	Strap with Velcro® loops to stick to the Mosquito fuselage	1
5	Self-locking nut M5	4
6	Washer for M5 screw	4
7	Metal stripes for outside belt securing	3

INSTALLATION:

1) After unpacking you first **unscrew the safety B** from the rear of the rocket cover **but leave the needle - safety A and the red little flag attached until the system is installed!!!** (Figure 3)

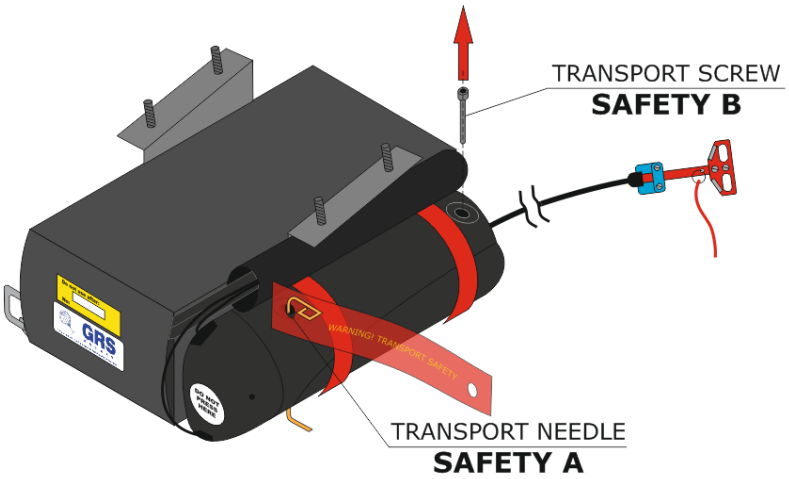


Figure 3

2) Attach the **GRS system assembly** to the bottom of helicopter´s fuselage (drill 4x hole for M5 screw through the fuselage) by using self-locking nuts and large metal washers. **Center whole GRS unit** according to figure 4. Look at the GRS System along the system deployment direction, place a long ruler to the left bottom corner of GRS unit and check that there is a **minimum 10 mm gap between a diagonal wire and GRS System** (figure 5)!!! If necessary make a mounting holes for rear screws (figure 6).

MAKE SURE THAT THERE IS NO HINDRANCE IN THE WAY OF GRS SYSTEM DEPLOYMENT!

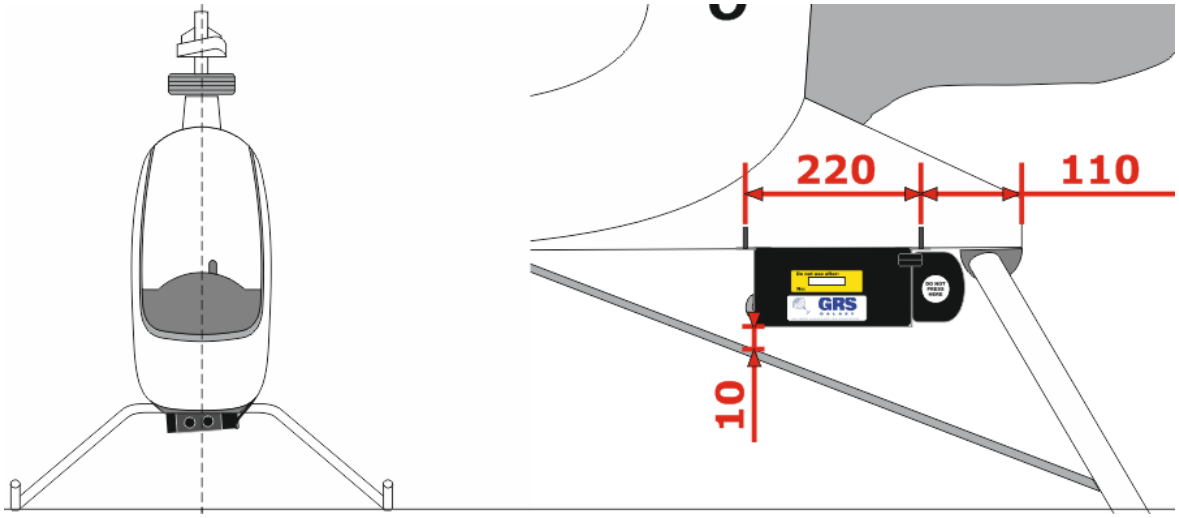


Figure 4

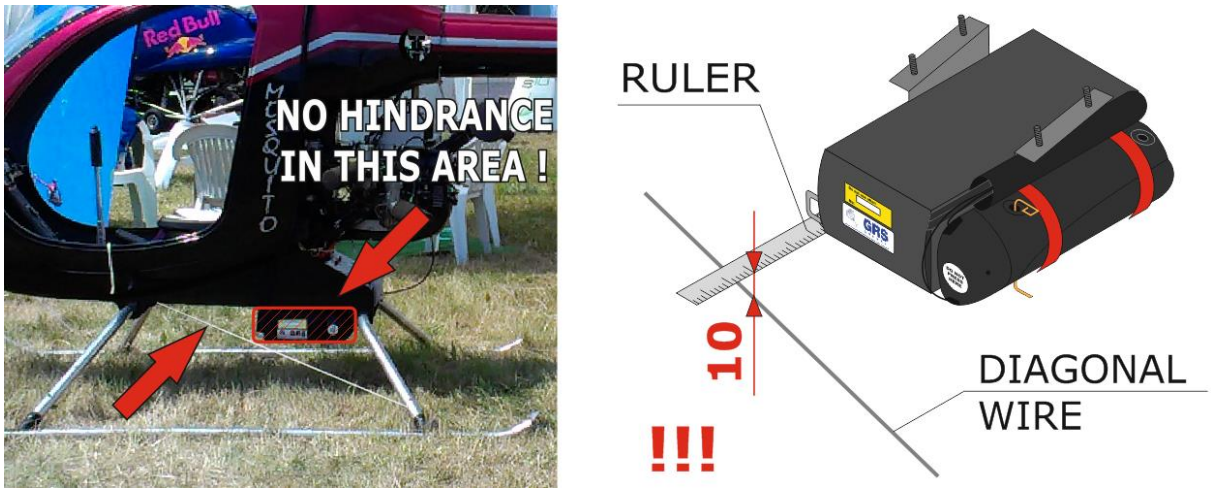


Figure 5

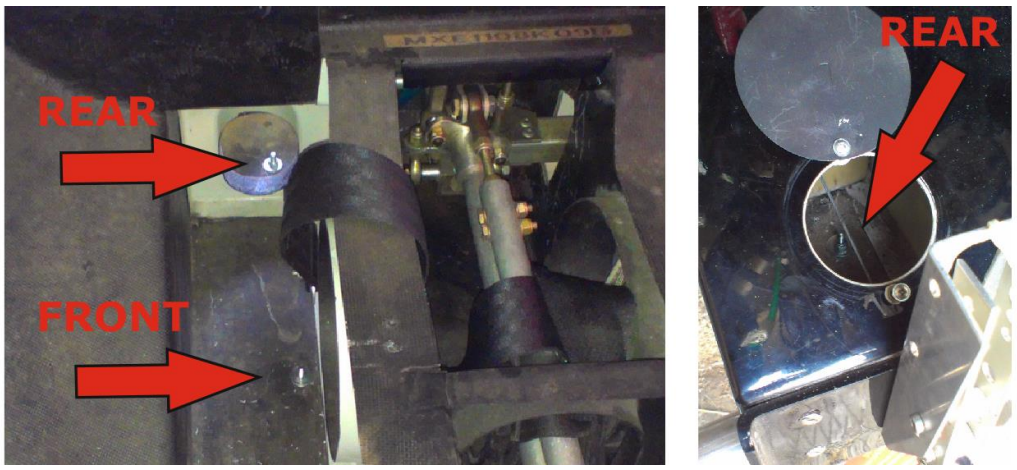


Figure 6

3) Disassemble the trigger handle. Instead of safety pin with little flag put a Ø1,5-2mm safety wire! Drill a Ø20 mm hole through the helicopter fuselage and insert the handle body with bowden through the fuselage inside the cockpit. Assemble the trigger handle and **secure it with the safety pin with little flag agin!** Fasten the trigger handle to the left top side of the instrument panel. The example of bowden installation is shown in the figure 7.

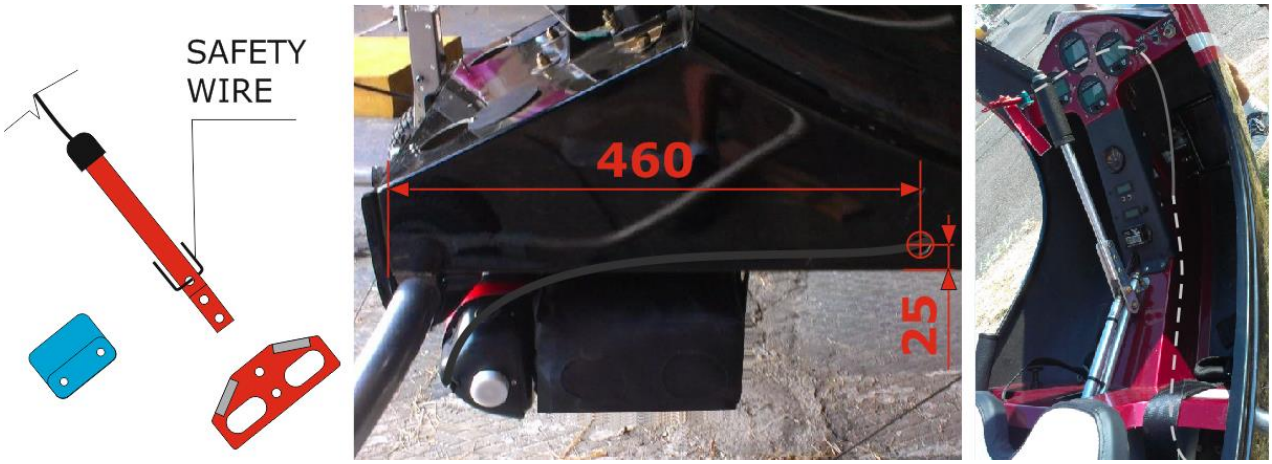


Figure 7

4) Assemble and install the loop support by using 4 rear screws, which are already part of helicopter construction. Rivet the down part of the support to the helicopter fuselage by using 2x Ø4mm rivet. Velcro® strap is already on the support.

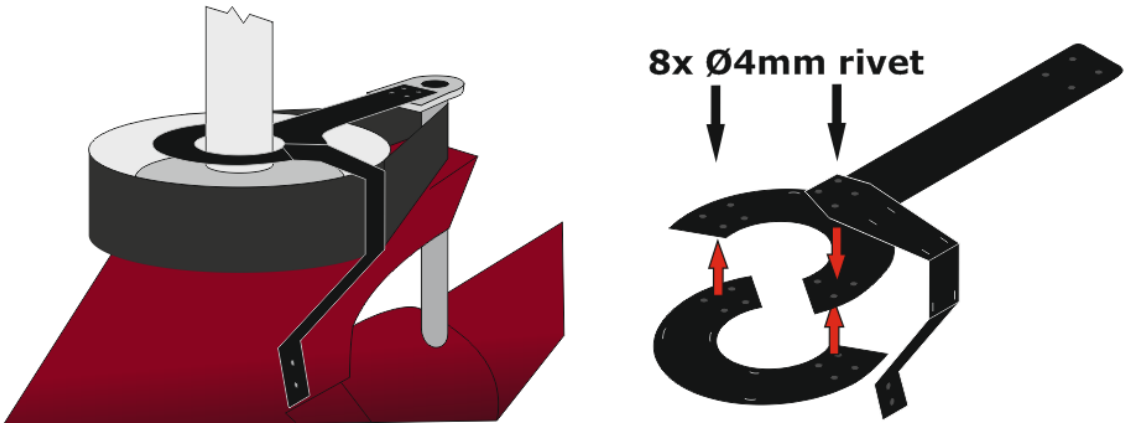


Figure 8

5) Stick the Velcro® strap with "loops" on the fuselage of the helicopter along the firewall and on the side part of loop support (Figure 9).

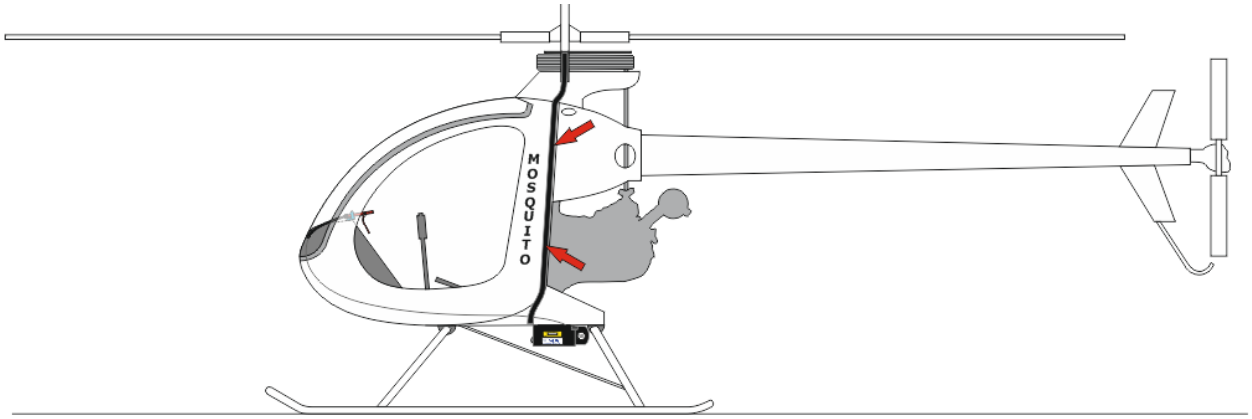


Figure 9

6) Make a hang sling loop around the rotor by using the outside belt with Velcro® "hooks" (figure 10). **NOTE:** For this hang sling loop use the end of the belt with bigger loop! **The loop will be a little bit wavy**.

Figure 10

7) Secure the hang sling loop to the loop support by using plastic tapes (5mm width – 3 pcs., 3mm width – 6 pcs.). **Change the plastic tapes every 3 years!** Stick the belt with the hang sling loop to the opposite Velcro® strap on the fuselage starting from the hang sling loop going down to the GRS System location according to figure 11. Secure the belt with riveting of 3 metal stripes. **Make sure there is no contact between belt and rotor.**

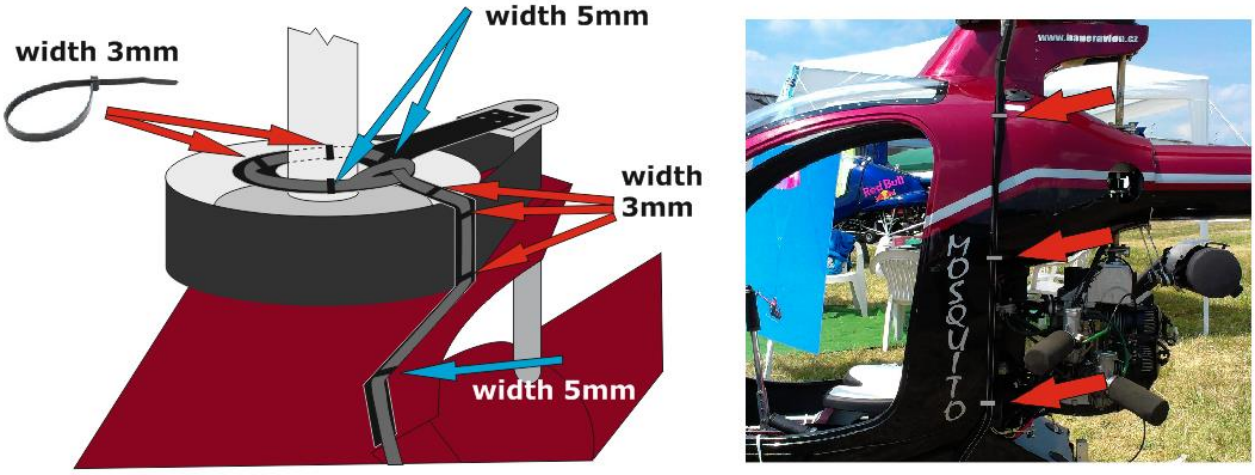


Figure 11

8) Connect the outside belt with the belt, which is going from the GRS System assembly by using a snap hook and cover it with a snap hook cover. Secure the cover with 2 plastic tapes (5mm width). Make sure that the **snap hook is connected correctly** according to figure 12. Attach the snap hook to the side of bracket in front by 5mm plastic tape.

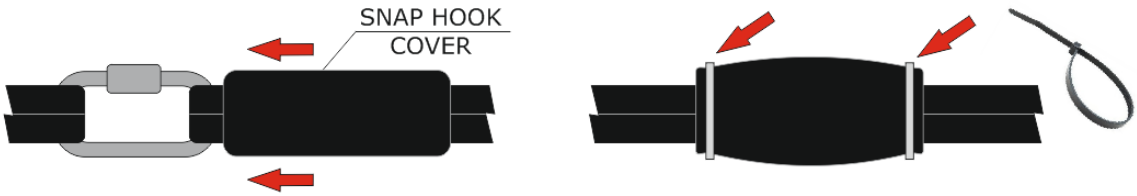


Figure 12

9) After the system installation you snip the **needle - safety A**, take it out and remove the flag - the **system is now secured only by the operational pin with the flag on the handle**. It is released by pilot shortly before flight and after the flight applied again so that the handle is secured against possible activation (Figure 13).

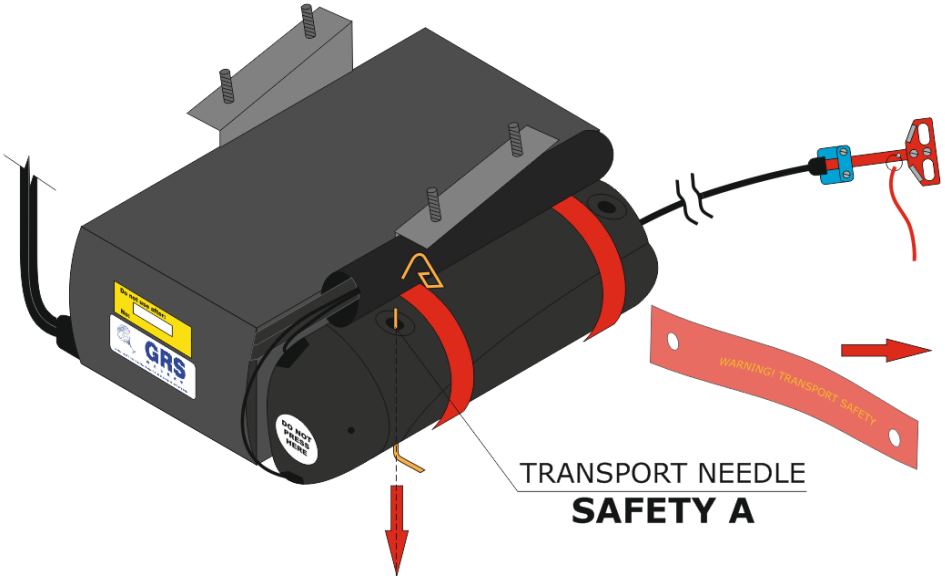


Figure 13

INNER ARRANGEMENT OF THE GRS SYSTEM:

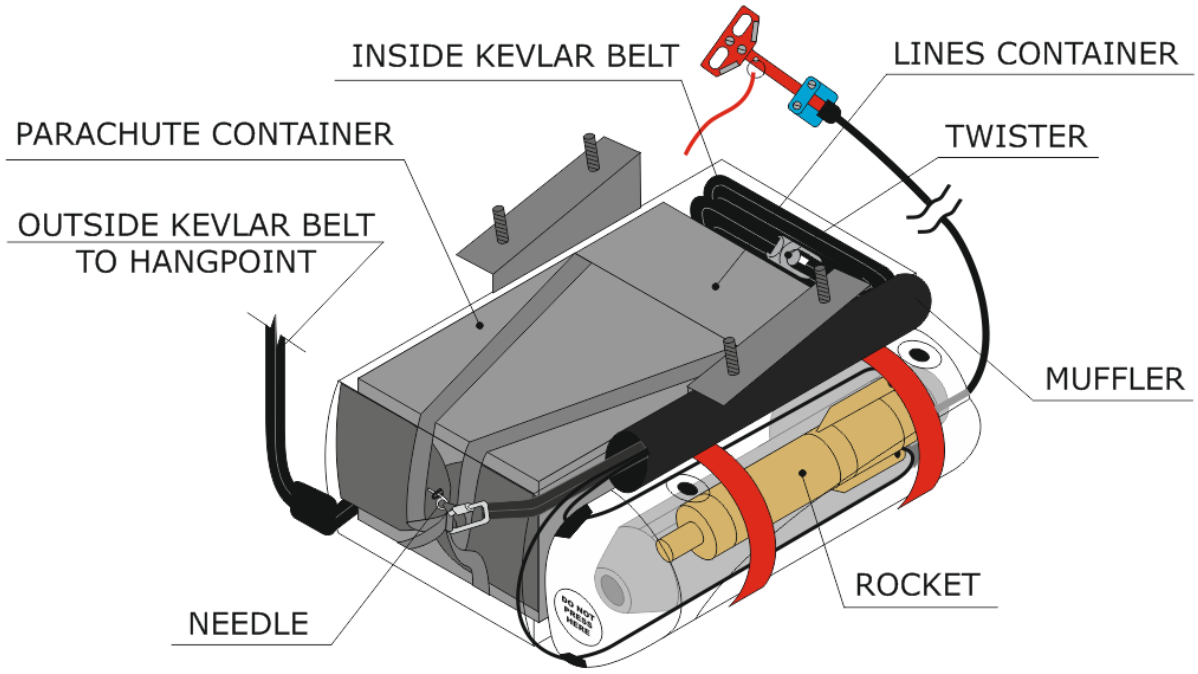
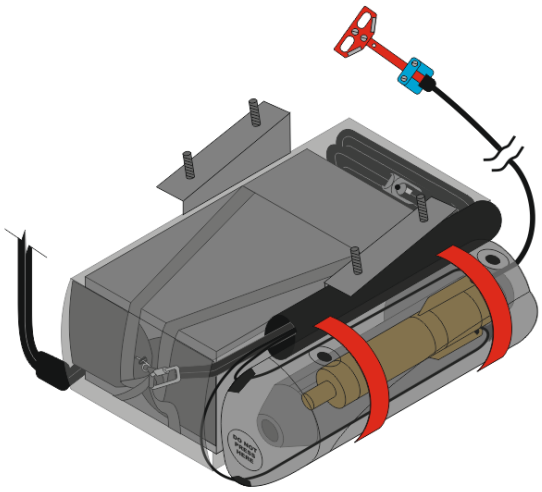
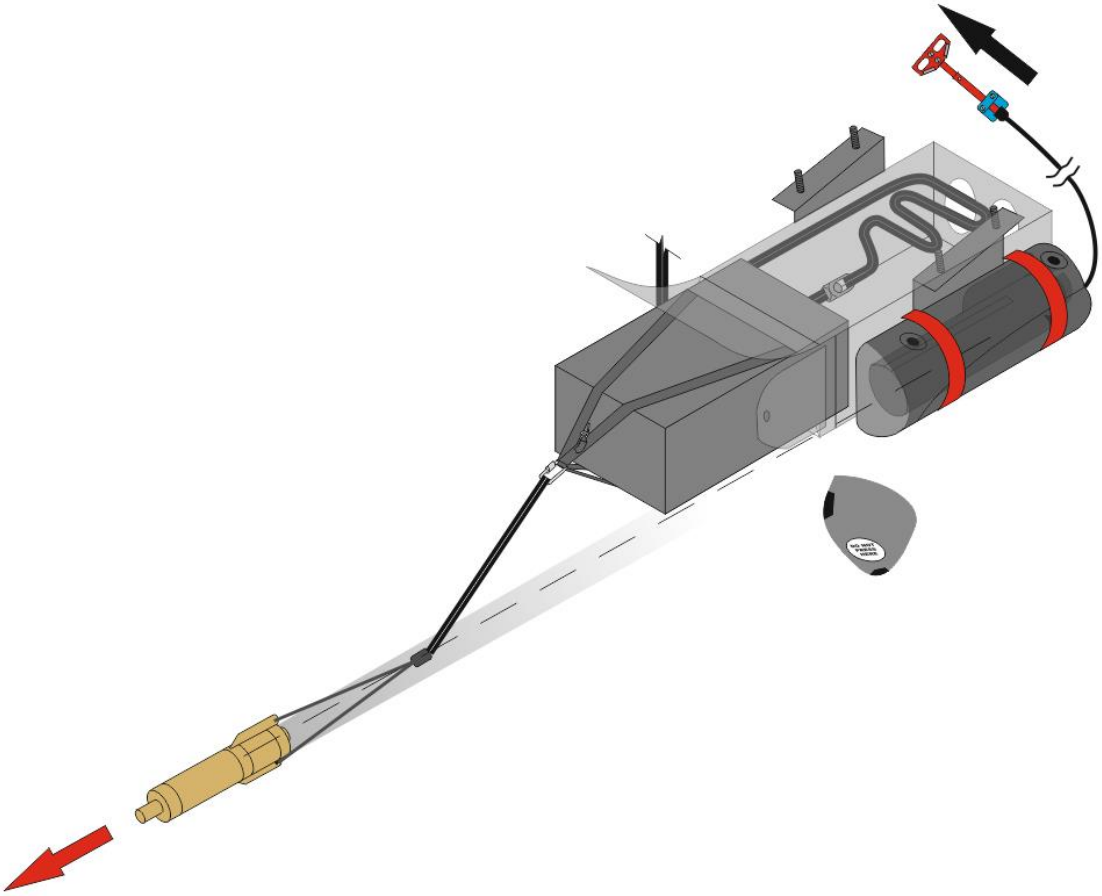


ILLUSTRATION OF OPERATION:

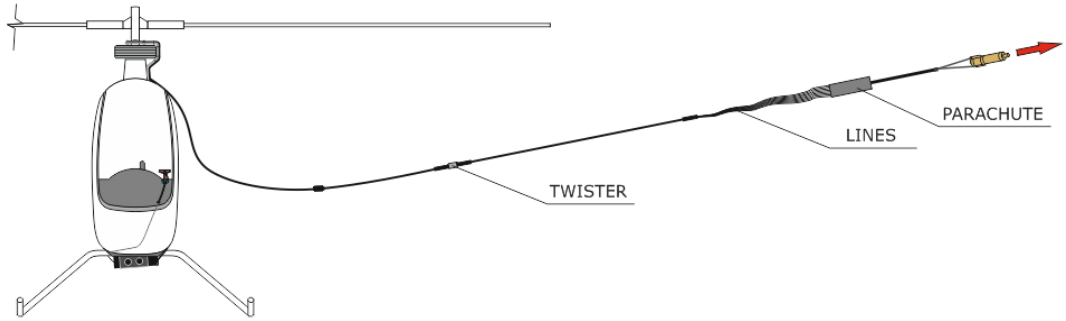
1) GRS System before activation



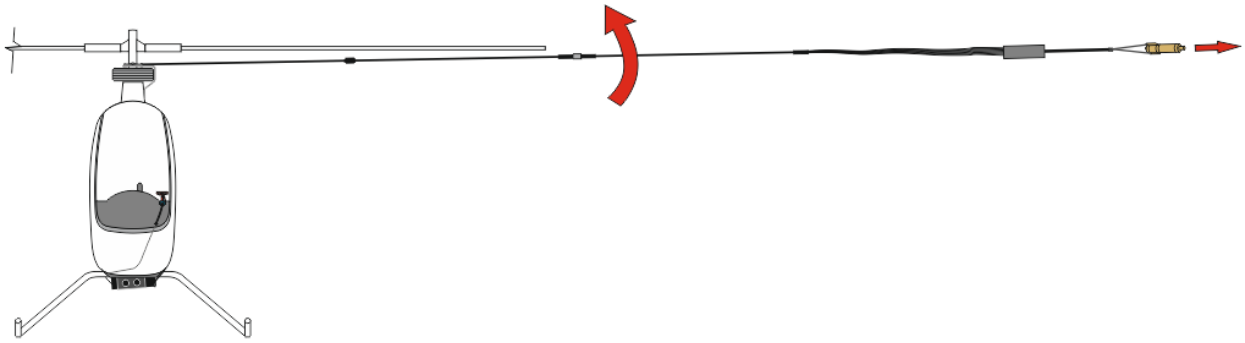
2) GRS System right after activation



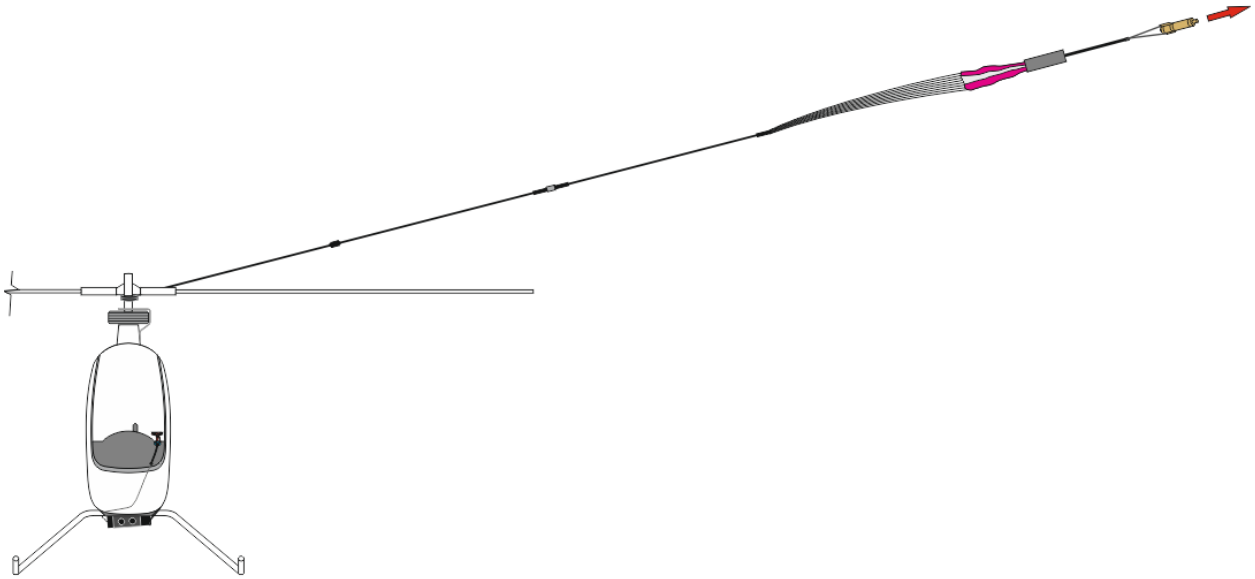
3) GRS System is being stretched



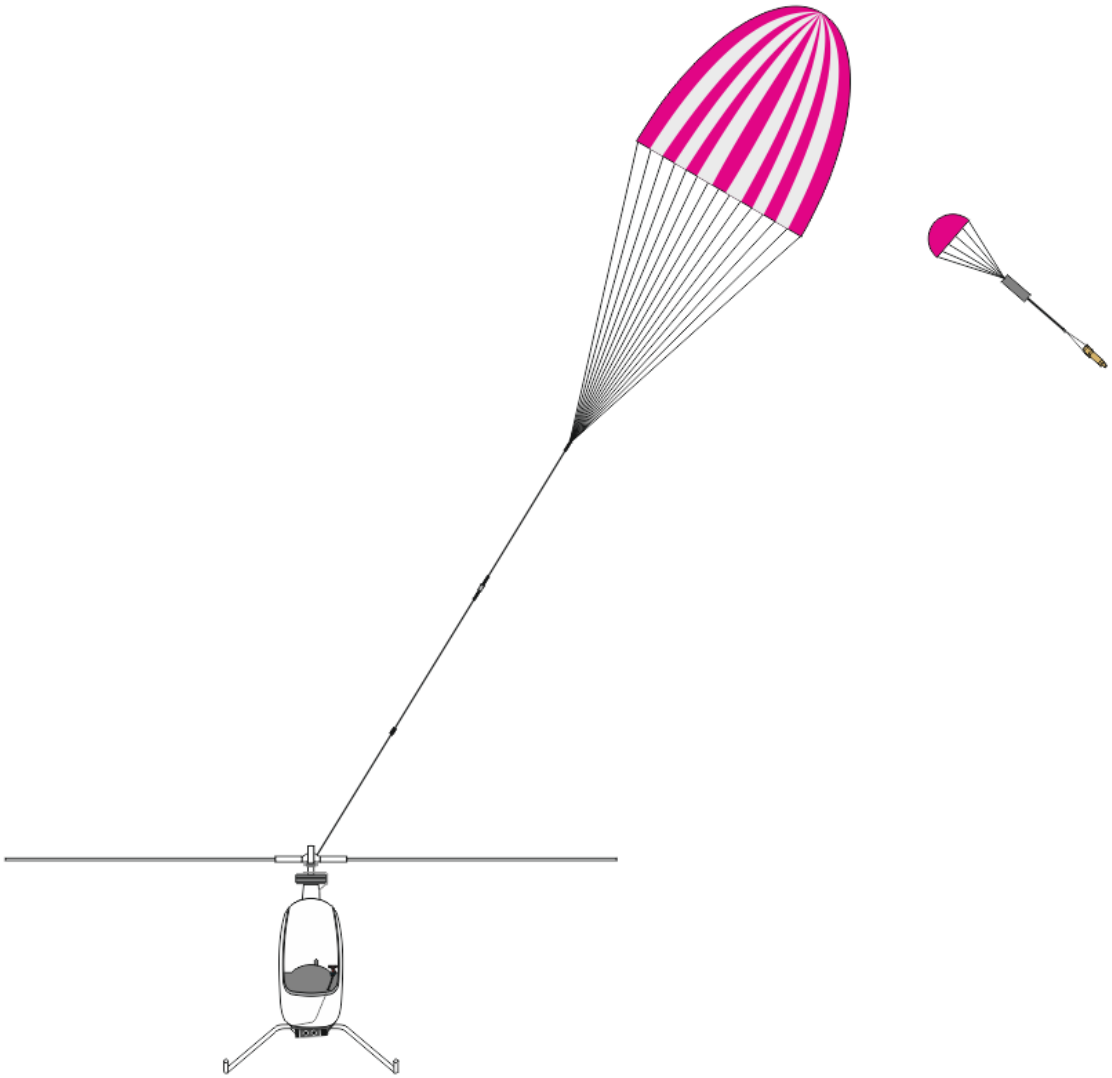
4) Stretched belts are passing through the rotor blades



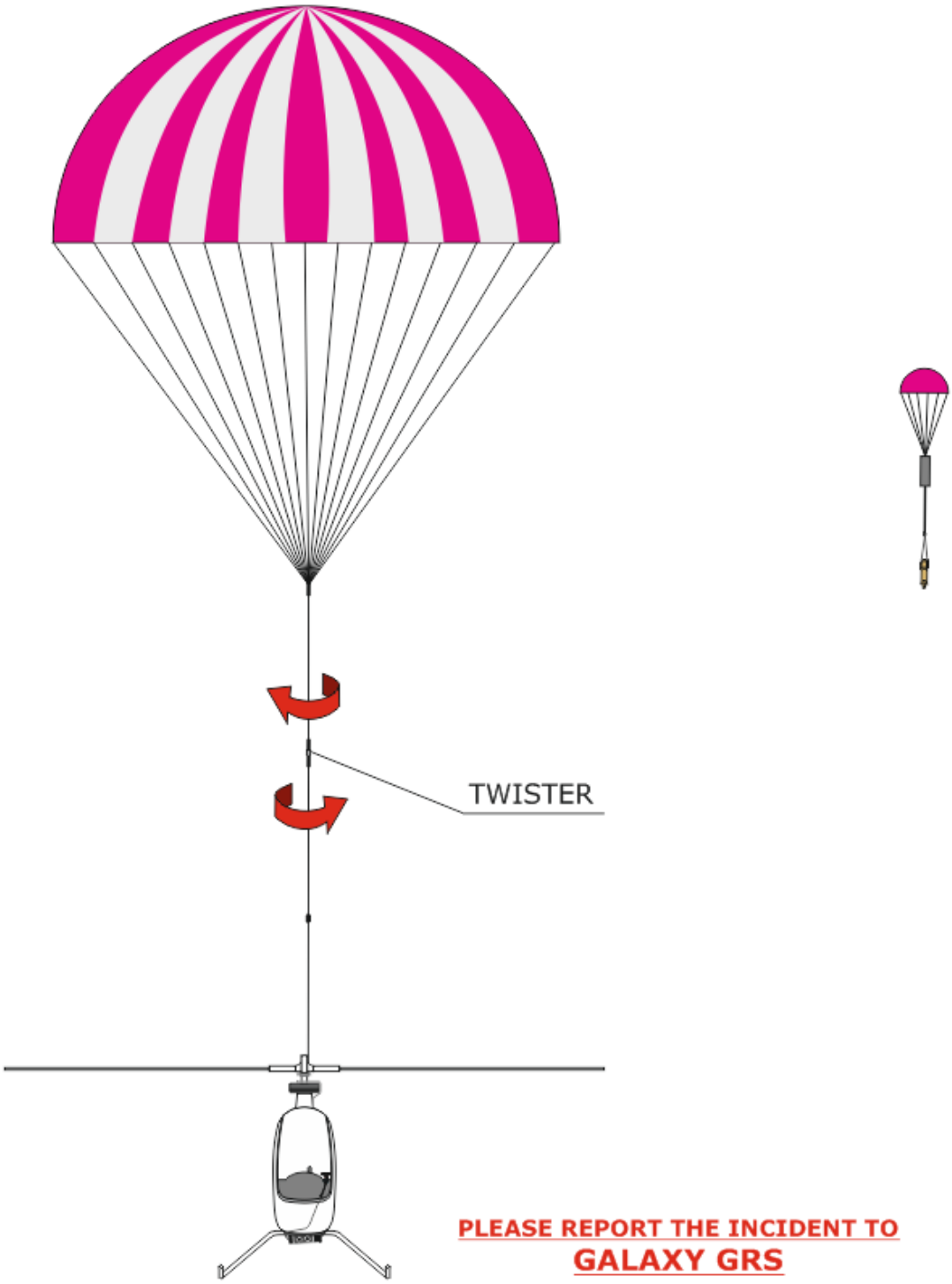
5) Hang sling loop is tightened around the rotor, parachute is opening



6) Rocket is slowly falling down with its own separate parachute



7) Deployment process is complete. The twister allows an independent rotation between the parachute and the rotor of the helicopter.



GRS Heli 1-2

TIME full open: 1,5 – 2,1 sec.

UNIT WEIGHT: 8,1 – 10,9 Kg

Super modern efficient „Rescue unit GRS Heli 1-2" for MOSQUITO helicopter fully replaces the autorotation regime, with better sinking by 1-1,5m/sec.

Parameters for Heli 1 :

Flies at speed of 60 Km/h - projected rescue height 40 m above ground.

Projected rescue height in hover at very low forward speeds, already 50-60 m above ground.

GRS System GRS 3/180 **Soft 40 m2** **GRS Heli 1** 6,8 kg	**Total time from firing a parachute to its full opening 1,5 - 2,0 sec.**
Accessories 1,3 kg	Descending recorded at 1000m ASTM by 190 Kg - 6,3 m/sec.
WEIGHT TOTAL	**8,1 kg**

Parameters for Heli 2 :

Flies at speed of 65 Km/h - projected rescue height 40 m above ground.

Projected rescue height in hover at very low forward speeds, already 50-60 m above ground.

GRS System GRS 3/270 **Soft 60 m2** **GRS Heli 2** 9,6 kg	**Total time from firing a parachute to its full opening 1,5 - 2,1 sec.**
Accessories 1,3 kg	Descending recorded at 1000m ASTM by 270 Kg - 6,5 m/sec.
WEIGHT TOTAL	**10,9 kg**

Notes :

- **Helicopter must be equipped with 4-point safety belts !**
- **Make a visual inspection of all parts and connections every 50 flight hours !**
- **Complete assembly can be done by the owner of the helicopter.**
- **Estimated installation time is 4 hours.**

Galaxy GRS s.r.o. Liberec 5.2.2015 Czech Republic