
THE BOOTH 3-RING RELEASE



INFORMATION FOR SKYDIVERS AND RIGGERS

THE BOOTH 3-RING RELEASE SYSTEM: AN INTRODUCTION

The Booth 3-Ring Release System is the first successful canopy release device to be solely developed for sport parachuting.

First introduced in 1976, the system gained rapid acceptance by skydivers for both its reliability and ease of operation.

As of 1981, the 3-Ring Release has been installed on nearly 6,000 Wonderhogs and more than 3,500 other parachute rigs.

As a result, the system has proven itself during hundreds of thousands of jumps by novice as well as experienced parachutists, under many different conditions.

HOW THE SYSTEM WORKS

The riser rings are actually ten-to-one levers. When interlocked, their mechanical advantages multiply to equal 100 to 1. The nylon cord loop acts as a two-to-one pulley, yielding a total mechanical advantage of 200 to 1 per riser, or 400 to 1 for both.

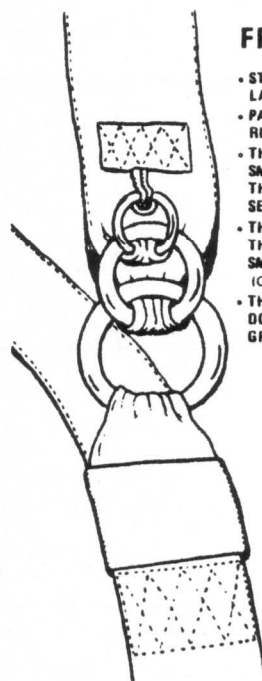
In other words, if the whole system were loaded to 2,000 lbs. (roughly equivalent to opening an unreefed ram-air at terminal), the nylon loop/cable locking system would be exposed to a force of only five pounds. Or, to release a 200 pound jumper from his canopy, the cable activator need only move against a one-half pound load from each nylon loop.

BREAKAWAY PROCEDURES

Familiarize yourself with the system by practicing breakaways from a suspended harness, before actually jumping it.

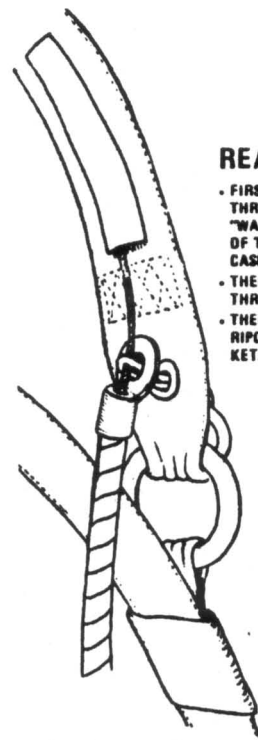
For maximum ease of operation, the soft breakaway handle (which is Velcroed in place) should be peeled away from the main lift web, then pulled downward about 8" to effect release. If the handle is just pulled straight down, considerably more force will be required to release the handle from the main lift web Velcro.

If you pull the breakaway ripcord cable completely out of its housing during a breakaway, throw it away before pulling the reserve ripcord.



FRONT VIEW

- START WITH THE LARGEST RING.
- PASS THE SECOND RING THROUGH IT.
- THEN PASS THE SMALLEST RING THROUGH THE SECOND RING.
- THEN PASS THE LOOP THROUGH THE SMALLEST RING (OVER IT).
- THEN PASS THE LOOP DOWN THROUGH THE GROMMET.



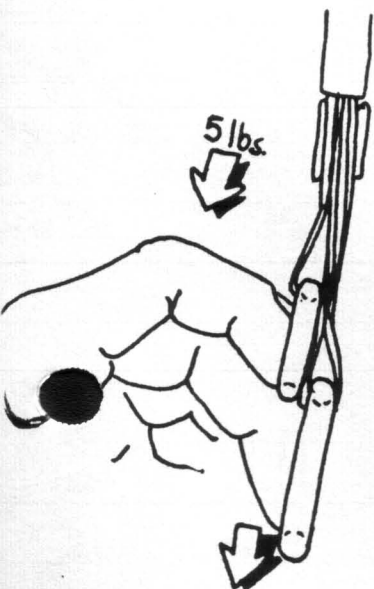
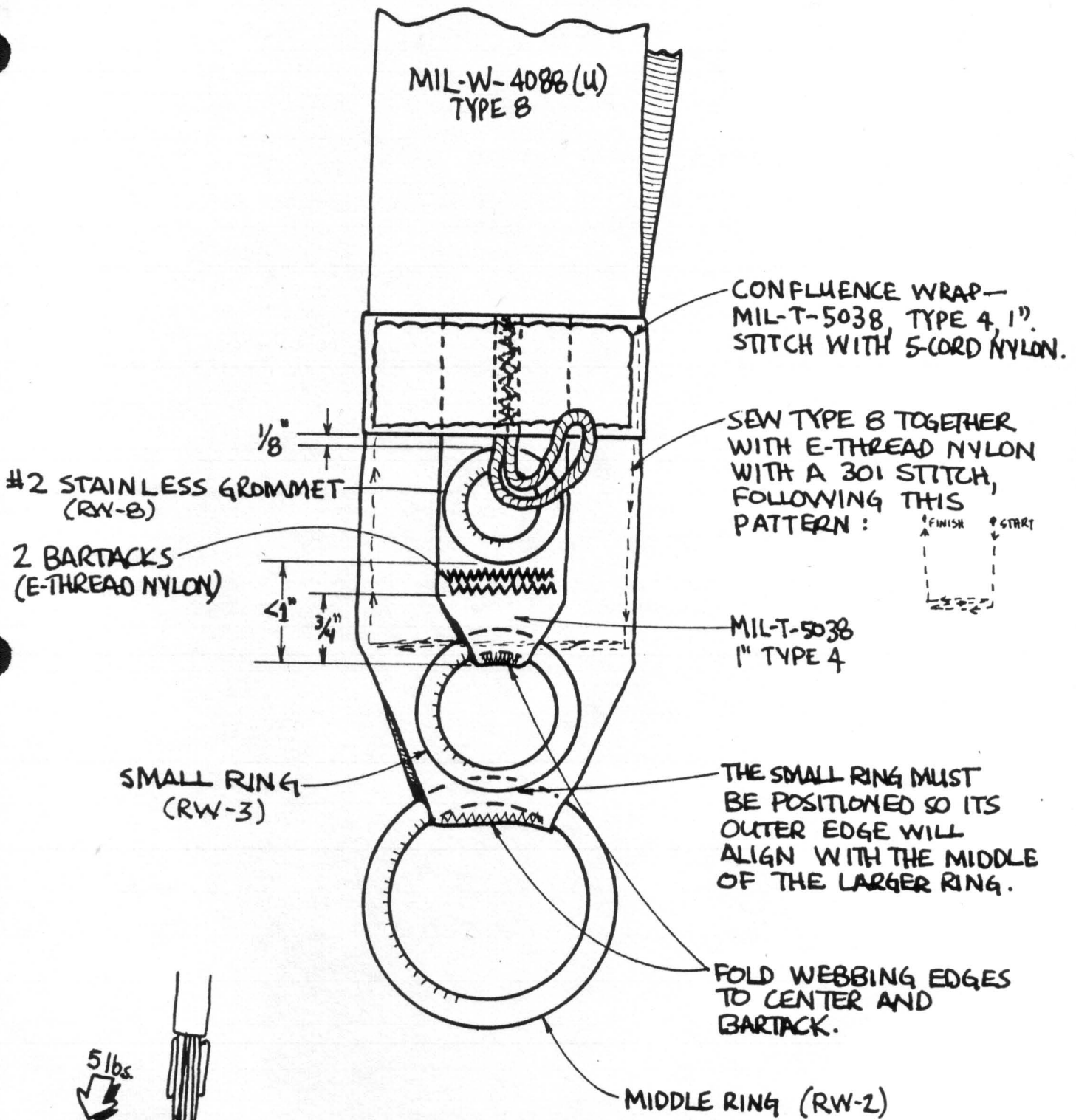
REAR VIEW

- FIRST, PASS THE LOOP THROUGH THE "WASHER" ON THE END OF THE RIPCORD CASING.
- THEN PASS THE RIPCORD THROUGH THE LOOP.
- THEN STOW THE RIPCORD IN THE POKET.

Here is a list of maybe's to look for:

1. Assemble as the diagrams show. Be sure that the nylon cord loop on the risers passes over only the small ring. Do not pass the loop over the middle ring also.
2. Do not construct any sort of cover for the rings. They will not operate if covered, and there is no reason for a cover anyway.
3. Do not wet and then refreeze the nylon cord loop. If it is rigidly frozen, the rings may not release a low-drag malfunction such as a bag lock or streamer.
4. Periodically inspect the system for wear. Check:
 - nylon cord loops
 - breakaway ripcord
 - cable housings endings
 - riser grommets
5. Avoid prolonged exposure to sunlight. Nylon will lose strength rapidly in sunlight, without apparent visual damage.

3-RING RISER CONSTRUCTION

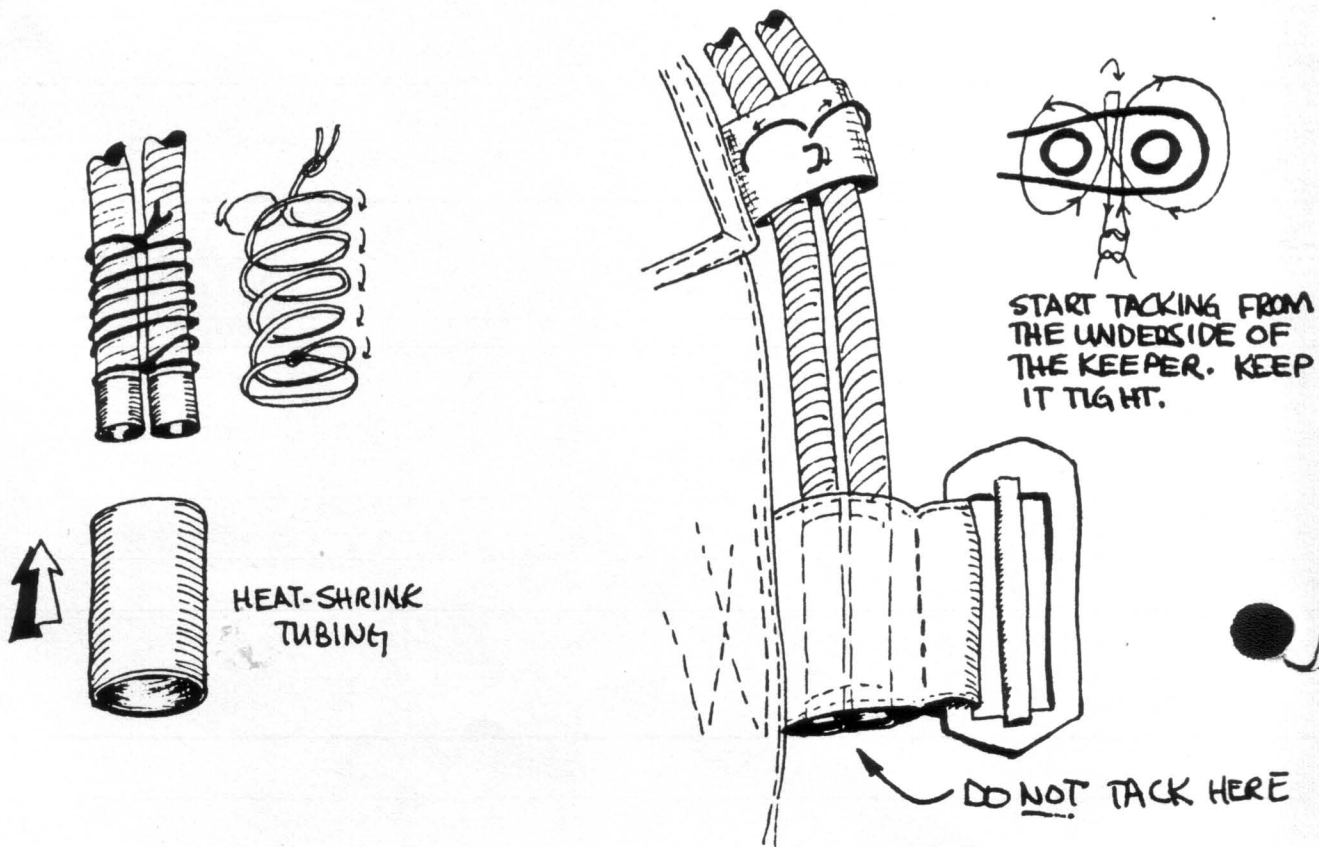


ABOUT 5 LBS. OF PRESSURE,
APPLIED BY HAND AS SHOWN,
SHOULD CAUSE THE OUTER EDGE
OF THE SMALL RING (RW-3)
TO ALIGN WITH MIDDLE OF
THE LARGER RING (RW-2).

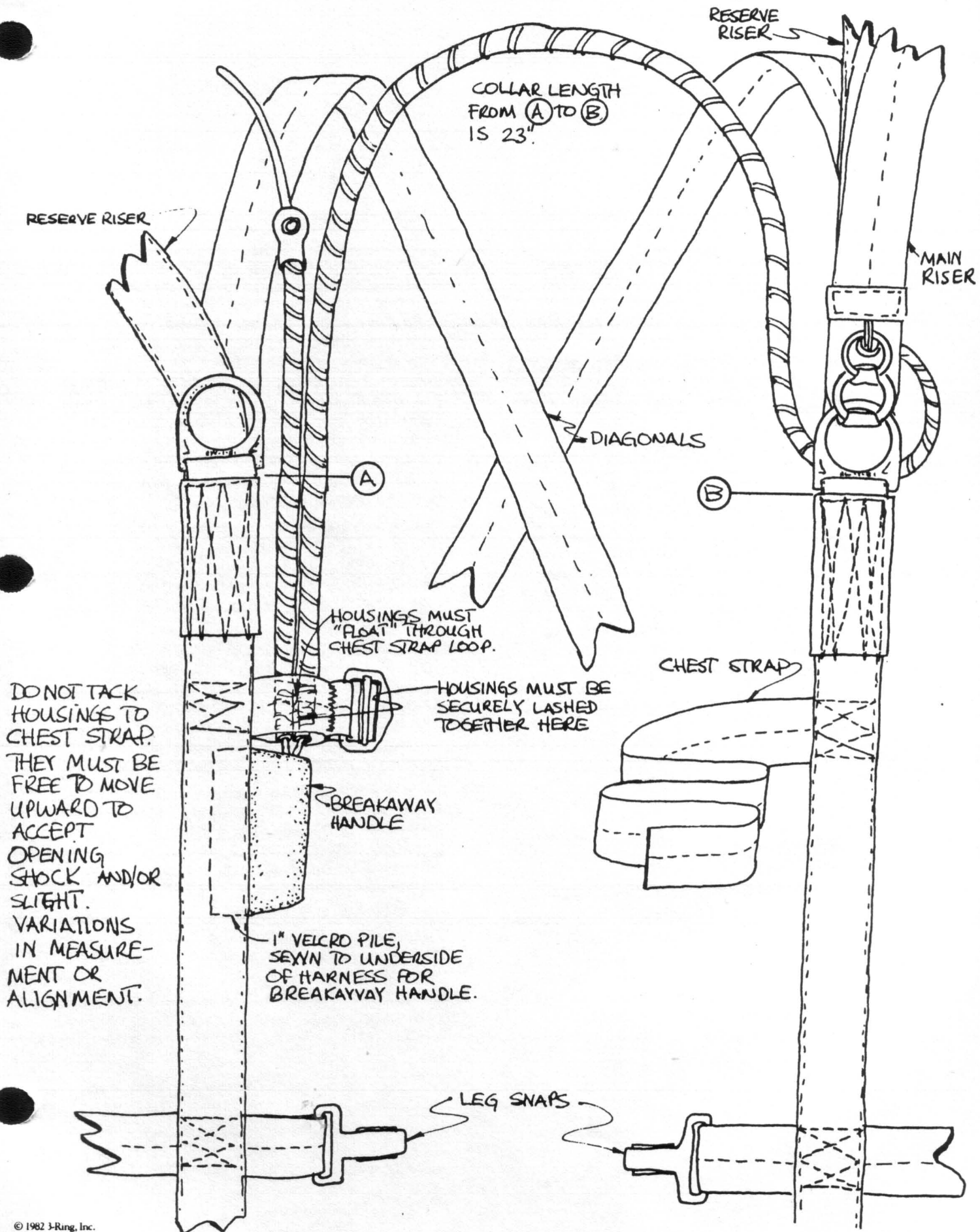
THIS INDICATES PROPER
CONSTRUCTION.

INSTALLING THE 3-RING HOUSINGS ON THE HARNESS

1. Thread the housings through the keepers and channel. Rotate the housings so that the swaged terminal grommets are flat side up, flush against the risers.
2. Using about 24" of waxed tacking cord, tie the housing ends together with an overhand and surgeons knot immediately above the brass ferrule. Then wrap the free ends tightly around the housings, putting about six turns in the spiral grooves and binding them together.
3. Bring the cord up between the space between the housings. Wrap one end around one housing and finish with a locking and surgeons knot. Trim excess cord.
4. Slip a 1" length of shrink wrapping over the bound housings and shrink with a hot air gun.
5. Insert the bound housings into the keeper in the chest strap. **DO NOT TACK** -- the housings must float in the chest strap.
6. Position the housing in the chest strap and keeper. The housings ends should be flush with the lower edge of the chest strap. Put a little tension on the upper harness to determine the exact position of the upper keeper before tacking.
7. Tack the housings securely in the upper keeper, insuring the keepers cannot slide. A suggested tacking pattern is shown below.



BOOTH 3-RING RELEASE SYSTEM INSTALLATION DETAIL



REQUIRED PERIODIC MAINTENANCE

The Booth 3-Ring Release System has been in use for six years, with excellent results. Although the system is at least as durable as the rest of the harness/container assembly, it requires periodic maintenance and inspection to insure proper operation.

Feedback from riggers and some of the thousands of users has made it possible to publish this set of maintenance and inspection instructions. It must be followed exactly.

Generally, it is NOT recommended that the risers be attached to the harness when new and "forgotten." Like all skydiving gear, the 3-Ring Release should be carefully inspected and cycled (operated) on a regular basis.

Specifically, the procedures below should be done at least every month. This is especially important if the rig has not been used for a month or more (such as during the winter). Immediate inspection is required if it has been subjected to some abuse such as a drag across the runway, a water landing, or exposure to a lot of dust or sand.

1. Every month operate the 3-Ring Release System on the ground. Extract the release cable completely from the housings and disconnect the risers.

2. While the system is disassembled, closely inspect it for wear.

— **Check the white locking loops** (the ones that pass over the smallest ring and through the grommet) to be sure they aren't frayed.

— **Check the Velcro** on the release handle and main lift web to insure that it adequately holds the handle.

— **Check the stitching**, including that which holds the large ring to the main lift web and the hand tacking that prevents the release housings from sliding through its keeper. (This keeper is located a few inches above the padded release handle.)

3. Take each riser and vigorously twist and flex the webbing near where it passes through each ring. The idea is to remove any set or deformation in the webbing. Failure to do this might make the release hesitate when activated in response to a low-drag malfunction such as a streamer.

4. Check the inside of the release housing for gravel or other obstructions. Use the cable to do this. Inspect the housing for dents or other damage (this is very unlikely unless the rig was smashed in a car door or suffered similar abuse).

5. Clean and lubricate the release cable with a light oil such as "3-in-1." Put a few drops on a paper towel and firmly wipe the cable a few times. A THIN invisible film should remain — too much will attract grit and dirt. Failure to do this could require a higher-than-normal force to extract the cable during a breakaway.

6. Inspect each release housing and assembly. There are two kinds: an older hand-tacked one (with a flexible grommet) and a newer swedged version. It is recommended that the older type be replaced. Kits are available from the Relative Workshop at \$5 a set.

7. Re-assemble the system properly, insuring that it is done in accordance with the *Owner's Manual*. Double check it. Make sure the risers aren't reversed.

8. If any wear is found, consult the manufacturer or a rigger immediately.

For more information contact
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Patents for the 3-Ring Release are pending.

3-RING RELEASE PARTS LIST

Part Number	Qty. per kit	Description
RW-0	2	Large Ring (old style)
RW-1	2	Large Ring (new style)
RW-2	2	Middle Ring
RW-3	2	Small Ring
RW-4	2	Mini Ring
RW-509	1	9" Housing
RW-510	1	10" Housing
RW-555	1	5½" Housing
RW-634	1	34" Housing
RW-629	1	29" Housing
RW-624	1	24" Housing
RW-7	10 ft.	Yellow Teflon-coated Breakaway cable, 1/8" dia.
RW-8	2	#2 stainless steel rolled rim spur grommet and washer
RW-9	2	Nicopress swage, 1/8"
RW-10	14"	Type 2 Nylon sheathing

Note: As of mid-1982, three components of the Booth 3-Ring System carried identifying marks to help the buyer insure he was getting genuine 3-Ring parts. The Large Ring (RW-1), the yellow Teflon-encased breakaway cable (RW-7) and the yellow shrink tubing each are marked with an "RW" imprint. Components so marked, and only those so marked, can be positively identified as meeting 3-Ring Incorporated's quality control standards.