

# Fitting and User Instructions for

# WILLIANS

## COMPETITION HARNESS

Please read these instructions before attempting to install or  
wear your Willans Harness

**MODEL Super Sport 4 X 3 DTS  
4 X 4 DTS**

# FITTING AND USER INSTRUCTIONS FOR "WILLANS" COMPETITION HARNESS

Super Sport 4 x 3 - 3 attachment point - 4 body point  
Super Sport 4 x 4 - 4 attachment point - 4 body point

## FOR UNIVERSAL FITTING

**PLEASE read instructions right through before commencing fitting. No alterations should be made to the assembly or method of fitting.**

IF IN DOUBT CONSULT WILLANS

### GENERAL

This harness is designed for use by drivers and/or navigators in automobile competition to minimise the risk of bodily harm in an accident.

**WARNING** This product is intended solely for competition use and **must not** be regarded as suitable for safety or use under any other circumstances.

The correct installation, use and maintenance of the harness is paramount to its continued performance and reliability.

Both harnesses are suitable for fitting at either left or right hand front seat and will require the provision of either 4 or 3 anchorage points. If suitable anchorage points, of the commonly found 7/16" UNF threaded type, are already provided by the vehicle manufacturer these should be used in preference to constructing new points. In other cases the position of these anchorage points may be unsuitable.

An additional Press Button release is incorporated within the tail strap section of the harness as shown in figure 1 to allow easy stowage of the harness, when not in use.

This harness is intended for use by a single adult size occupant only in a forward facing position.

To satisfy legal requirements in some regions the lap and diagonal seat belt, if fitted, may need to be left in place.

### IMPORTANT WARNINGS

1. Inspect the harness every time before use. Check condition of stitching, webbing, adjusters, anchorages and the release mechanism.
2. Check the integrity and operation of the tail strap release and that it is correctly connected before every use of the harness.
3. Do not carry occupants in the rear seat position when the harness is in use.
4. Do not under any circumstances modify this harness. Alterations may render the harness ineffective.
5. Webbing must never be allowed to rub against sharp surfaces on seats or bodywork or come into contact with **Battery Acid**.
6. **Harnesses that have been cut, frayed, damaged or used on vehicles involved in accidents should be replaced.**
7. Do not use bleach, solvents, petrol or dye as they will affect the performance of the webbing.
8. Always use the harness correctly adjusted and never run a loose harness.
9. Do not attempt to drill any mounting holes in bodywork before checking for wiring, pipes, tanks, double skin or unsuitable load bearing bodywork.
10. Do not contaminate this harness with grease or petrol.
11. The use of a thickly upholstered seat and/or a seat which may distort or collapse in an accident **will** reduce the performance of this harness.
12. Lap belt/strap anchorages which are not vertically below the hip joint **will** reduce the performance of this harness.

**If in any doubt about installation, use or serviceability of this harness contact WILLANS.  
Our advice is given willingly and its free.**

### INSTALLATION REQUIREMENTS

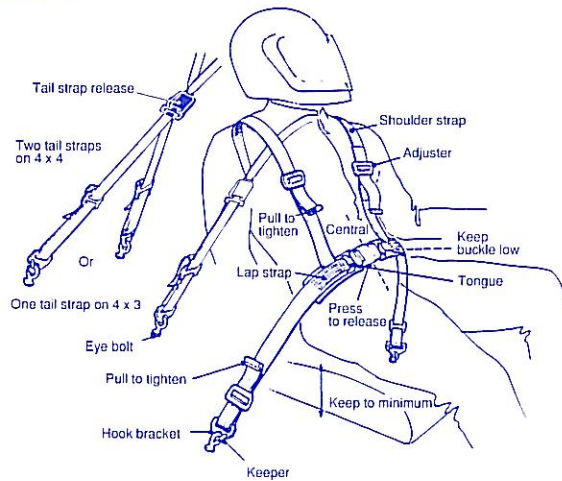
Anchorage points are required at either side of the seat and two at the rear for the 4x4 harness or one for the 4x3 harness.

Lap and shoulder anchorage points should be capable of accepting a static load of 3500 lbf (1590 kg). If two straps attach to the same point, that point should withstand the sum of both anchor point load requirements.

All mounting points should accept 7/16" UNF high tensile steel threaded eyebolts.

Refer to Figure 1 - General Assembly which illustrates the typical layout of webbing and anchor points. Straps should run directly to their anchorage point with no obstruction or deviation. Straps should not be twisted and severe twists should not be induced by the installation when the harness is worn.

**Figure 1 - General Assembly - Supersport DTS**

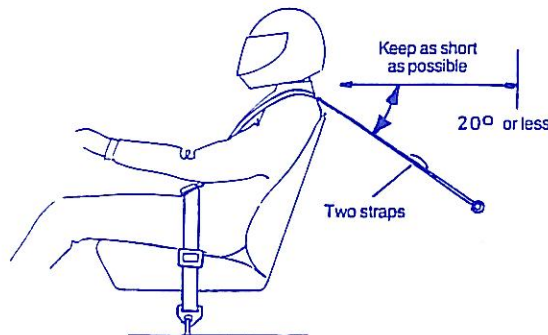


The lap belt/straps should not pass over the sides of the seat but through it, in order to wrap and hold the pelvic region over the greatest possible surface, the lap belt crossing it below the anterior-superior iliac spines, (bony part of the hip). Under no circumstances should it be worn over the region of the abdomen. Lap belt/straps must terminate vertically downwards and not forwards or rearwards of the hip joint. Lap belt/straps should terminate symmetrically about the wearer on either side of the seat about 20" (500mm) apart. The distance between the seating surface and anchorage points should be kept to a minimum to prevent submarining. This is very important for harnesses which do not use a crotch strap.

Figure 2 shows locations for the tail strap(s) which should be horizontal to 20° below horizontal and as close to the shoulder as is practical for optimum restraint.

The manufacturers seat belt anchorages may be used if they satisfy the requirements above and are centrally positioned behind the front seat to which the harness is fitted. Twin tail strap anchorages should be set about 12" (300mm) to 20" (500mm) apart.

**Figure 2 - Tail Strap Location**



Where new anchorages need to be provided it will be necessary to drill 29/64" (11.5mm) holes in the selected positions. Before drilling CHECK - that there are no pipes, cables or double skin sections which will make the position unsuitable. These anchorages should each be capable of withstanding the load requirement specified in this instruction when used with either a threaded anchor plate or suitable reinforcing.

CHECK - that bodywork can accept the load required by consulting a qualified engineer or the vehicle manufacturer if in doubt.

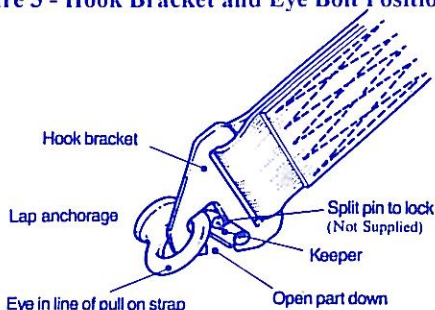
**All installed strap lengths should be kept as short as possible for the best performance of the harness.**

## FITTING THE EYE BOLTS

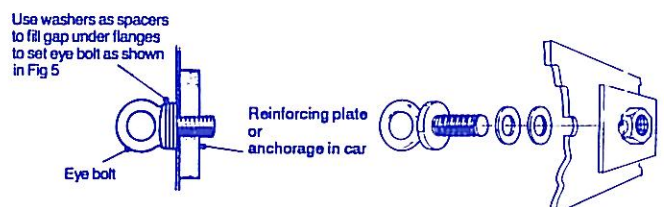
Positioning eye bolts - as shown in Figures 3 and 4 - is necessary to reduce the risk of the hook end bracket twisting off in a "roll-over" situation and retains its maximum strength when installed. Failure to use packers under the eye bolt head - Figure 4 - may result in the loss of 50% of the bolts ultimate strength.

This guidance applies both to the use of makers anchorages and new anchorages created by the installer.

**Figure 3 - Hook Bracket and Eye Bolt Positioning**



**Figure 4 - Eye Bolt Spacing**



## FITTING THE HARNESS

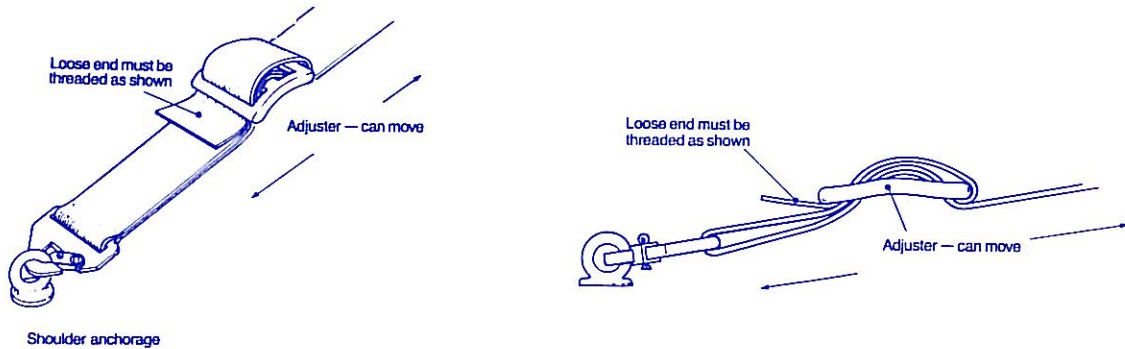
Connect the respective harness hook end brackets to the 'eyes' as in Figure 3. Lap strap hook end brackets must be connected with the open part of the hook forwards as in Figure 3. Use split locking pins in holes provided in the hook bracket keepers to secure. Failure to do this may lead to a reduction in performance of the harness.

We recommend that the shoulder strap adjusters are positioned on the breast bone as in Figure 1 - General Assembly. To set them in this position it is necessary to adjust tail strap(s) length using the rear adjuster(s). The tail section adjustment is designed to give a wide range of fitted lengths by movement of the slotted adjuster itself along the strap, and also by feeding the return end of webbing through the slots.

The tail strap release buckle should be positioned approximately 12" (300mm) behind the seat back and should not be able to contact the seat or any other part of the vehicle hardware when the harness is in use.

To ensure maximum security the lock off end must be fed into the adjuster and tensioned as shown in Figure 5.

Figure 5 - Tail Strap Adjustment



## USING THE HARNESS

Ensure the tail strap release is correctly engaged by inserting the tongue into the slot in the buckle, as shown in figure 1, until a positive "click" is heard.

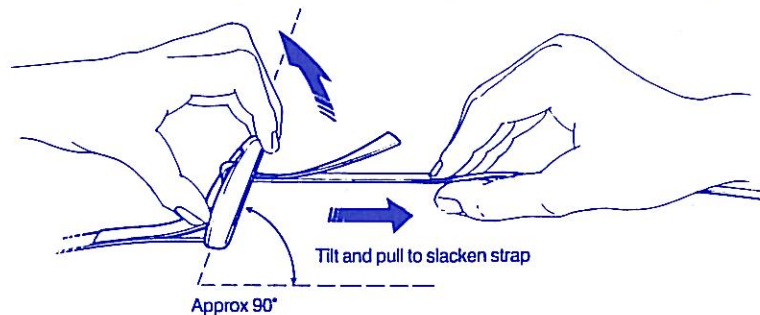
Extend the webbing straps at all shoulder and lap strap positions. This is done by tilting the adjuster at about 90° to its normal position and pulling the webbing through as shown in Figure 6.

When seated, fasten the harness by engaging the lap strap tongue into the slot of the lap strap buckle, as shown in figure 1 - General Assembly until a 'positive' click is heard. Next tighten each lap strap in turn by pulling the loose end of the webbing upwards through the adjusters provided until the buckle is central to the wearer. Ensure that the strap passes over the bony part of the hip/pelvis and is adjusted until the straps are as tight as is comfortably possible. Please remember that any springing in a car seat will compress if the occupant is bumped downwards which will then slacken the lap strap.

Finally, tension the shoulder straps by pulling the loose end of webbing through each adjuster. These straps should pull firmly on the shoulders, but not so tight that they start to pull the lap strap upwards.

To release the harness press the red release button on the lap strap buckle (see figure 1 - General Assembly)

Figure 6.



## CLEANING

Use only a mild detergent to clean webbing. All other parts should be kept clear of dirt as they cannot be dismantled for cleaning. If in any doubt contact WILLANS for further advice.

*Designed and Manufactured by*

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**In order that we are able to offer restraint harnesses which incorporate the most up-to-date design features and legislative requirements, we reserve the right to make changes without notice.**