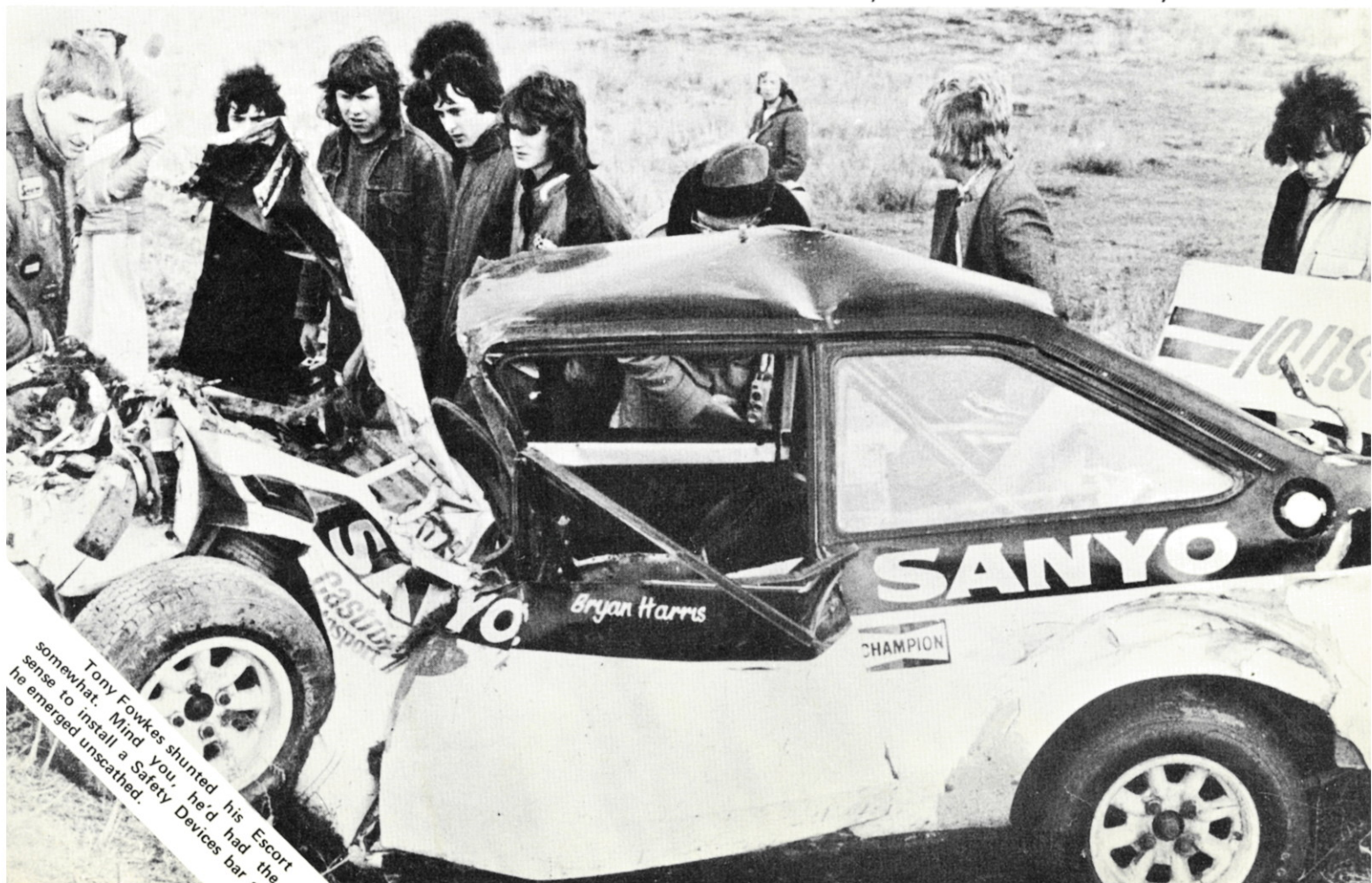


# Rollover bars

## THE FACTS

By Brian Wilkinson of Safety Devices Limited



Tony Fowkes shunted his Escort somewhat. Mind you, he'd had the sense to install a Safety Devices bar and he emerged unscathed.





Brian Wilkinson, Managing Director, Safety Devices Limited.

“ People don't always fit the right bar.  
Or in the right way.  
Or understand what it should or should not do; what it will withstand or not.

This brochure, then, sets out to give you the facts on this important accessory.

Because, quite simply, it can be a matter of life or death.

## Our references.

We at Safety Devices design and supply bars and cages for *every* U.K. manufacturer's team cars.

That's Dealer Team Chrysler, Dealer Opel Team, Dealer Team Vauxhall, Ford Motor Company and Leyland Cars.

They all come to Safety Devices because *no other* company builds to our standards.

In addition to the rally teams, we are sole supplier of bars to Lotus. And Morgan offer our products as an optional extra.

To have achieved pole position, after only being in business for five years, makes us feel very proud.

And should make you feel very safe.”

# What do the pro's think?

Our products have been used by works teams since Safety Devices inception and have been tried, tested and proved by all of them. The identical product is available to you through our dealers and here is what four of our more famous customers have to say.

## Stuart Turner



The architect of Ford's motor sport success, records in his book, 'The Way to Win', the importance of roll-over bars:

"The single, most important item to fit is an interior roll cage, and this is one area where you shouldn't try to save either weight or money; it can make the difference between walking or being carried away from an accident. Be sure the cage you fit is one which will protect you properly if you have a shunt. Even if you're not running under F.I.A. regulations you should try to keep to their specification for a roll cage because in theory they should be most up to date in this area. Above all, include tubes down the inside of the screen pillars. I suspect one or two works drivers owe their lives to them. Hannu and Timo, for instance, have walked away from monumental end-over-ends!"

(Reproduced by kind permission of Motor Racing Publications Ltd.)

## Roger Clark



Ford's works team driver, twice R.A.C. rally winner, and British rally champion, has this to say in a passage from his book, 'Sideways to Victory!' regarding the standard fit of Safety Devices roll over bars:

"In the early days we used to find that an Escort that was really getting old would give itself away with a bit of wind-screen pillar cracking. That was before we used full roll cages. Now that we stiffen the whole shell by our roll bars, which follow the screen pillars very closely, the Boreham mechanics have to look elsewhere."

(Reproduced by kind permission of Motor Racing Publications Limited.)

## Gerry Johnstone



Team Manager of Dealer Team Vauxhall, constructors of Gerry Marshalls' championship winning Super Saloon, and the 2.3 litre Chevette rally cars.

"I always insist on the fitting of a Safety Devices roll cage to cars we construct. The closeness of fit they achieve with their products ensures that they are as unobtrusive as possible, thus not hindering the driver's sightline. This also improves the torsional rigidity of the bodyshell. A driver's performance is affected by the degree of confidence he has in his machine; if he knows he has the best available in all departments he will try to the best of his ability."



## Johnstone Syer



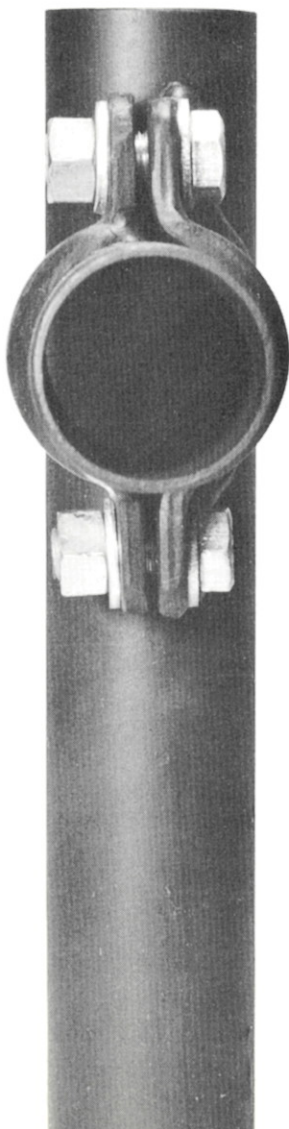
Brian Culcheths' navigator in the Leyland Cars TR7, co-driving successfully for some fifteen years.

"With the increasing mechanical sophistication of rally cars, now capable of achieving 125 m.p.h. in the forests and on tarmac, I would not consider rallying unless the vehicle had full and adequate roll over protection. Knowing Safety Devices reputation gives me great confidence; they are decidedly the best there is!"

### The front cage mounting

This joint is designed for strength (and ease of assembly). Indeed, it is of at least equal strength to actual welding.

And it's all very accurate. In fact, to within ten thousandths of an inch! So when you insert a Safety Devices bar there's no heaving, no struggling — and no nonsense.



# The design and manufacture of your roll over bar - and what it is designed to do in the event of an accident.

The purpose of roll over bars is to protect the driver if the car turns over or is involved in a serious accident. Our products, therefore, are designed not only to prevent the roof collapsing on the occupants in the event of a roll over, but also to absorb energy from other forms of accident impact — for example, sideways intrusion or head-on collision. As an energy absorbing structure a roll over bar will distort in extreme impacts. This distortion is intentional, and is complimentary to the body shell in primarily protecting the occupants and possibly preventing a written-off body shell.

A roll over bar will only be as good as that which it is attached to and by. Safety Devices products are designed to attach to the high strength regions of the bodyshell (other manufacturers please copy!) and come complete with the required reinforcing plates, high tensile bolts, washers and nuts.

One continuous length of tube is used in the central hoop. We have developed a unique tube bender which is capable of bending tube in many planes, ensuring that all bends are of minimum arc to give maximum compressive strength.

All our products are welded to aircraft standard. We do not use cast aluminium clamps which might shatter on impact. Neither will we use cross bolted tube joints which reduce overall structural efficiency. Safety Devices roll over bars do not use tubing of less than 1.5 inch (38 mm) diameter, to ensure that even non FIA bars offer a full degree of protection. If the bar you're using does use cast aluminium clamps, cross bolted tube joints and has tubing less than 38 mm. you're taking unnecessary risks.

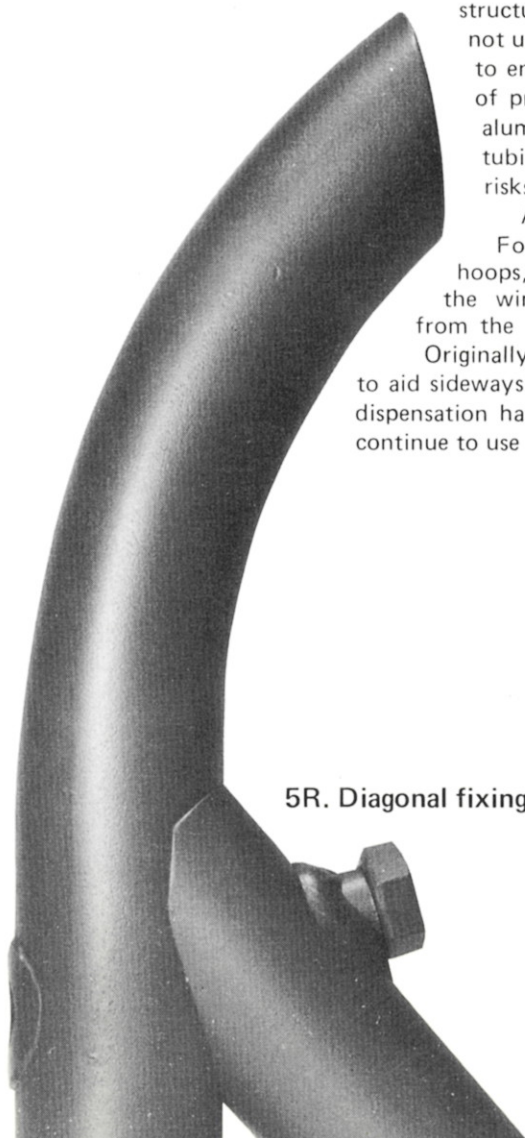
As a general rule, cars that run in Groups One to

Four must have a safety cage made of two main hoops, one behind the front seats and one following the windscreen pillars. In rallies the diagonal strut from the main hoop to the backstay is not compulsory.

Originally the FIA did insist upon the fitting of a diagonal to aid sideways strength of the roll over structure. However, a dispensation has been granted to Rally cars so that they may continue to use the rear seat.

### 5R. Diagonal fixing

See how the diagonal joints the bar itself. It's so simple — and it's safer. For example, there are no projecting pieces of steel for you to bang your head on. And the unit snugly complements the lines of your car.





# Safety Devices are everyone's first choice...



Works Leyland Cars' TR7.



Chrysler Dealer Team Avenger



Dealer Opel Team Kadett



The Dealer Team Vauxhall Chevette.



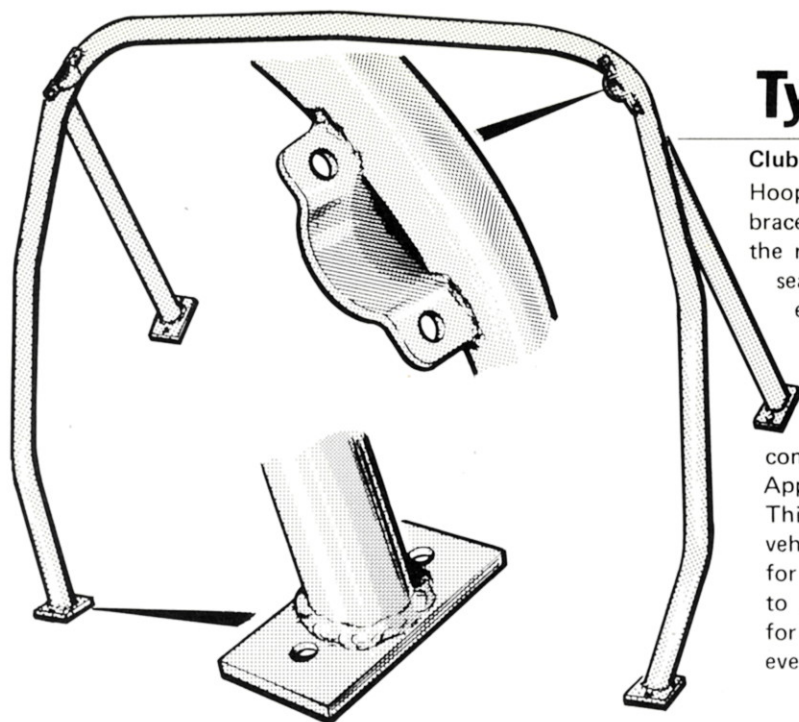
Works Ford Escort II

## Type 3A

### Aluminium front cage

This structure is exactly the same as a Type 3 but manufactured from high tensile aluminium alloy of similar strength to the steel Type 3, but with a 60% weight saving. Therefore it is especially suitable for competition cars where a weight saving is essential; for example, Group 1 race and rally cars.

**MATERIAL:** 38 mm. outside diameter, 3 mm. inside diameter. H.T. 30 Aluminium Alloy.

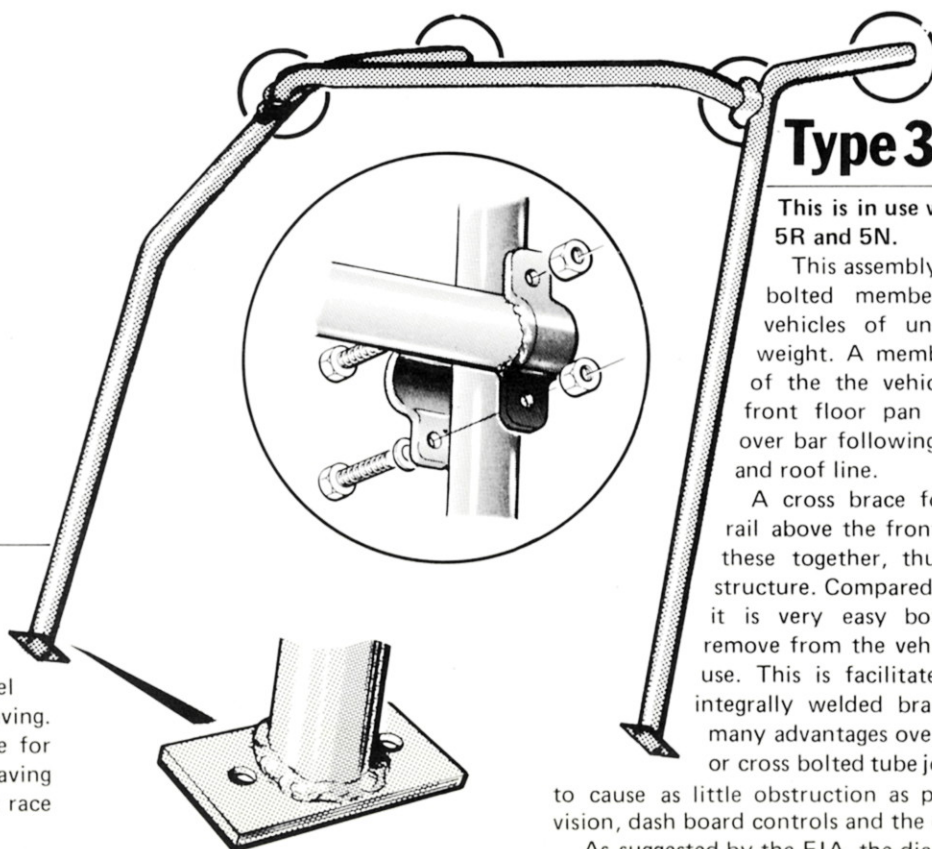


## Type 2

### Clubman's rear roll-over bar.

Hoop bolted to the floors and braced by two straight legs to the rear wheel arches. 38 mm. seam welded steel tube, stove enamelled black. Integrally welded front cage fittings.

This rear bar is identical in appearance to our Type 4, but does not comply with the F.I.A. Appendix J material regulations. This unit is suitable for saloon vehicles of under 1000 Kg and for competition events not run to Appendix J regulations — for example Club and restricted events.



## Type 3

This is in use with Types 2, 4, 5, 5R and 5N.

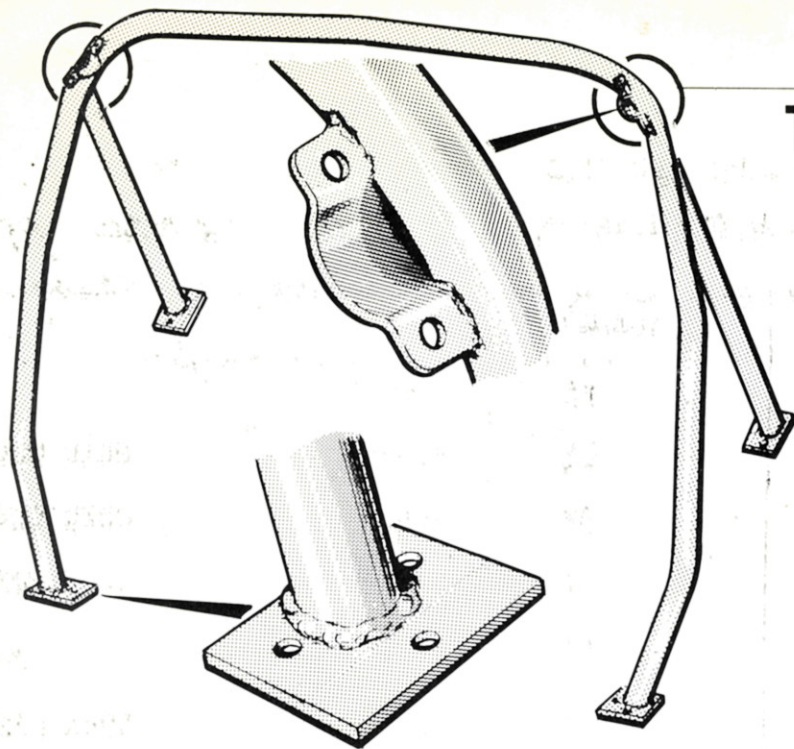
This assembly of three precision bolted members is for use in vehicles of under 1200 Kg in weight. A member on either side of the vehicle runs from the front floor pan to the main roll over bar following the screen pillars and roof line.

A cross brace following the cant rail above the front windscreen joins these together, thus completing the structure. Compared to others available it is very easy both to fit and to remove from the vehicle if distorted by use. This is facilitated by our unique integrally welded brackets, which have many advantages over cast alloy clamps or cross bolted tube joints. It is designed

to cause as little obstruction as possible to drivers' vision, dash board controls and the door fittings.

As suggested by the FIA, the diameter of our front cages tube is exactly the same as our rear bars, an important factor in structural efficiency. The material used is 38 mm seam welded tube.



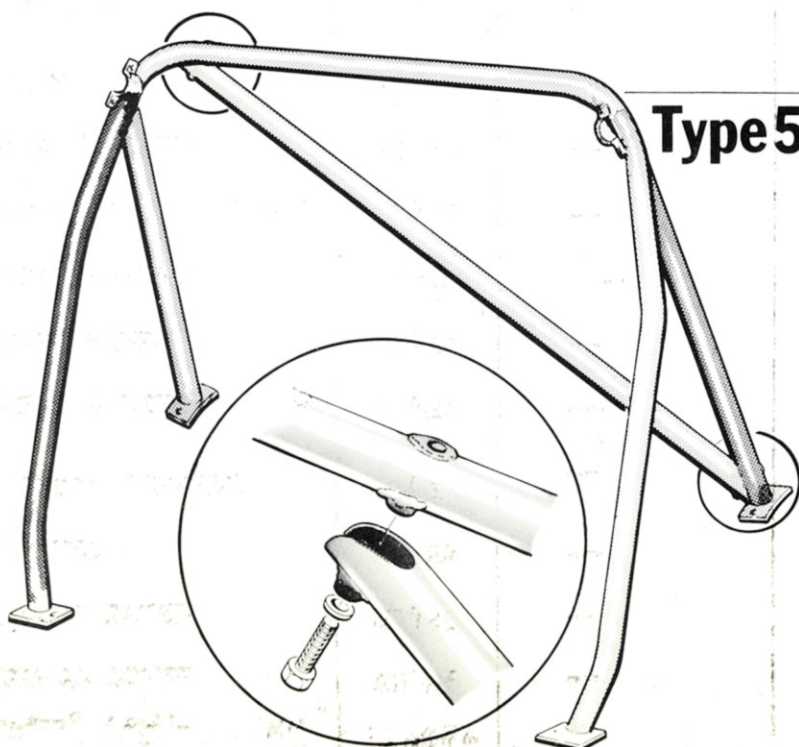
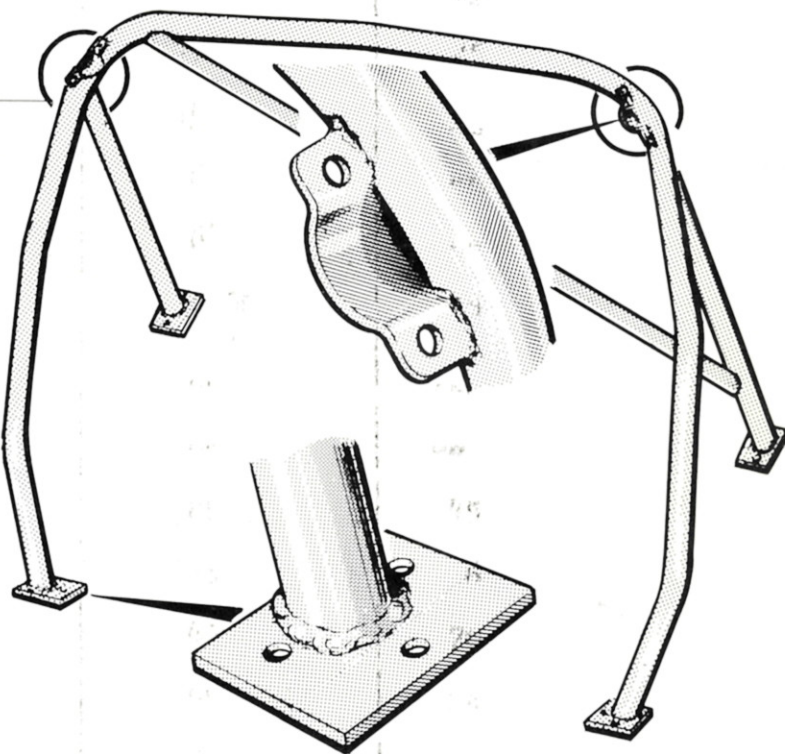


## Type 4 FIA minimum requirement for rallying.

This bar complies with the FIA regulations and its use is compulsory in all rally events run to Appendix J. It consists of a hoop bolted to the floor and braced by two straight legs to the rear wheel arches. 38 mm cold drawn seamless steel tube is used, and finished in black stove enamel, complete with integrally welded front cage mountings, FIA re-inforcing plates and high tensile fixings.

## Type 5 FIA minimum requirement for racing.

The use of this type of bar is compulsory in racing, sprint and hill climbing events run under Appendix J regulations. It consists of a hoop bolted to the floor and braced by two straight legs to the wheel arches. A member is welded diagonally between the base of the rear brace on the passenger side of the car to the main hoop above the driver's head, the purpose of which is to aid sideways strength. 38 mm cold drawn seamless steel tube is used, and finished in black stove enamel, complete with integrally welded front cage mountings, FIA re-inforcing plates and high tensile fixings.



## Type 5R FIA rally or race roll over bar with removable diagonal brace, for use in two door cars.

This bar was designed with the clubman specifically in mind in that he can compete in a road car in all events including those run to Appendix J regulations whilst not prohibiting the carrying of rear seat passengers when the car is in use on the road.

The removable diagonal is held in place by a simple two bolt fixing (see illustration) which has been fully homologated by ourselves and is unique to Safety Devices. This fixing has been designed to protrude as little as possible beyond the outline of the bar, thereby minimising projection hazard to the occupants. As with all Safety Devices roll over bars, integrally welded mountings are provided for the front cage, together with FIA required backing plates and high tensile fittings.

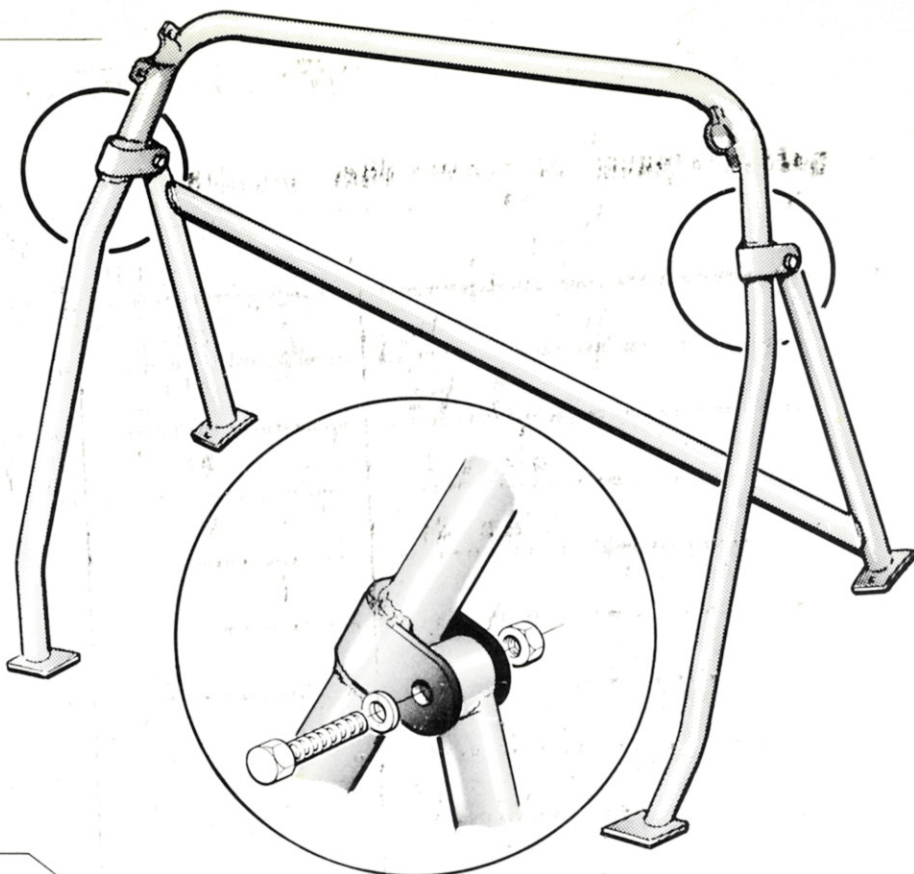


## Type 5N

FIA race or rally removable back stays and diagonal, for use in four door cars.

This bar is similar to the 5R in that it was designed specifically with the clubman in mind. With the increasing popularity of combined road, racing and rallying events these products were designed to meet the FIA requirements in all cases whilst not encroaching upon rear passenger space, and in the case of the 5N allowing rear door access when the backstay and diagonal assembly is removed.

You may think that it would be far easier to manufacture curved backstays for the rear parcel shelf and you would be right in production and cost terms. However, as previously stated, the parcel shelf is just not strong enough to provide the necessary strength for the structure to withstand the type of loads imposed upon a roll over bar in the event of an accident. It is well worth putting up with the inconvenience of removing the rear section as shown in the illustration after each event to facilitate the vehicle's use as a family car again.



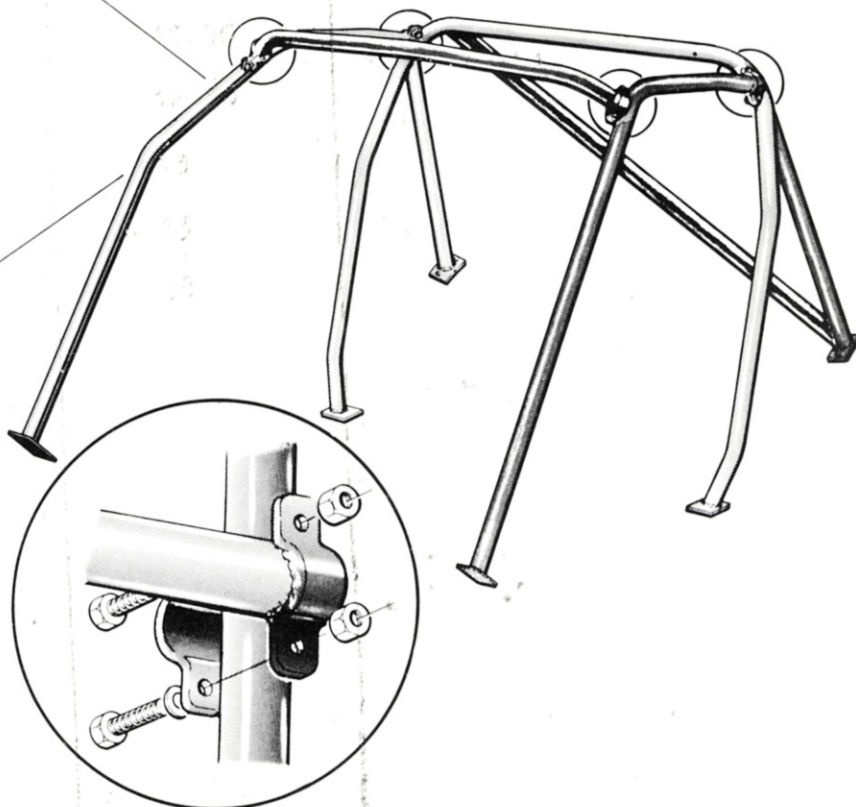
## Type 6A

A full aluminium F.I.A. roll over cage for use in cars with an homologated weight less than 800 KG

Material specification: 38 mm H.T. 30.

This structure is a full cage, specifically homologated for special saloons etc. that have extensively lightened bodywork or where weight is critical.

The Cage looks exactly like our types 3 and 5, but it represents a 50% weight saving on the steel equivalent.



## Type 6

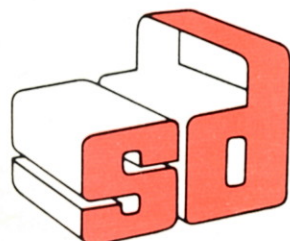
A full FIA roll over cage for use in cars with an homologated weight exceeding 1200 Kg.

Material Specification:

Main Hoop: 50 mm cold drawn seamless steel

Backstays, Diagonal and Front Cage: 38 mm cold drawn seamless steel.

This structure is a full cage and its use is compulsory in all events run to Appendix J, by vehicles whose weight exceeds 1200 Kg such as the Camero or BMW 3.0 Si. This cage's design is exactly the same as our Types 5 and 3 but with different material, sizes and specification.



**SAFETY DEVICES**

BEWARE OF IMITATIONS

176 Exning Road, Newmarket, Suffolk CB8 0AF.

Telephone: Newmarket (0638) 61421-4. Telex: 81653.

All Safety Devices roll over bars are homologated. R.A.C. recognition certificates are available at £1.00 each.

As our products are well-known in the U.K. a certificate is not required for scrutineering.

However, should you be contemplating tackling European events, it would be advisable to purchase our

types 5R and 3 and request a certificate to be supplied with the bars to comply with local road regulations and scrutineers' preferences.

Unless the manufacturer of your roll over bar has this R.A.C. approval certificate to offer you, heaven knows what you might be installing...