

DIY Weld-In Half Cage Kits – Customer Installation Instructions

JP Cages – Precision Engineering for Serious Drivers

Important Safety Notice

This product is a safety-critical component. Installation must be carried out by a competent fabricator using suitable welding equipment and PPE. If any step in these instructions is unclear, seek professional assistance before proceeding.

Part Labelling Key (Typical)

Your tubes and plates are labelled to match the guide drawing included with your kit. Use the key below to identify parts during installation.

- MRB – Main Roll Bar (main hoop)
- LB – Left Backstay
- RB – Right Backstay
- D1 – Diagonal 1 (top of bar sits above driver's head)
- D2 – Diagonal 2 (sits above passenger head)
- D3 – Diagonal 3 (positioned at the bottom driver's side, where supplied)
- LH – Left Harness Bar
- RH – Right Harness Bar

If the terminology or labelling does not make sense, do not proceed. This is a safety product and should be installed by someone with the appropriate understanding.

Typical Kit Contents

- 1 Main hoop (MRB)
- 2 Backstays (LB/RB)
- 3 Cross-bracing (D1/D2/D3 as specified)
- 4 Harness bar(s) (LH/RH where supplied)
- 5 MSUK-style mounting plates/boxes for weld-in fitment
- 6 Gussets as specified
- 7 CNC-notched tubes, labelled to match the layout map

Required Tools & Materials

- MIG or TIG welder suitable for E355+N CDS steel
- Angle grinder with cutting, flap, and wire wheels
- Drill & step bits (for drain/rosette holes where applicable)
- Clamps, magnets, ratchet straps, stands
- Measuring tape, straight edge, spirit level/digital angle gauge
- Marker/scribe and centre punch
- Welding blankets/heat shields and fire extinguisher

- Primer/paint or access to powder coating for finishing

Vehicle Preparation

- Disconnect the battery. Remove front seats and rear bench.
- Strip rear interior as required around mounting areas: carpets, trim panels, sound deadening, and seam sealer where welding will occur.
- Clean to bright metal a minimum of 25–30 mm around all weld zones.
- Level the vehicle on a flat surface; ensure doors open/close freely to monitor shell movement during welding.
- Protect glass, wiring, and remaining trim with welding blankets. Keep a fire extinguisher within reach.

Mounting Plates/Boxes – Position & Weld

- Offer the main hoop into the car to visualise ideal foot locations and confirm clearance to roof and trims.
- Mark and prepare the chassis for the plates; grind to bright metal and drill any required drain/rosette holes.
- Square and tack the plates/boxes to the chassis. Verify symmetry and door aperture clearances.
- Fully weld plates to the shell using appropriate weld settings. Allow to cool naturally.

Do not reduce the footprint or weld length of mounting plates. Plates are engineered to exceed typical club-level requirements.

Trial Fit & Tacking Sequence

- Place the main hoop (MRB) on the welded plates. Centre it laterally and check plumb using a spirit level/angle gauge.
- Install backstays (LB/RB), diagonals (D1/D2/D3), and harness bar(s) (LH/RH) as supplied. Match labels to the layout map.
- Tack each joint at two points
- Measure diagonals between fixed references (e.g., hoop feet to top corners) to confirm squareness. Adjust as required.
- Set the hoop angle to broadly follow the B-pillar; do not exceed a rearward lean of 10°. (rear leg length will dictate angle)

Confirm seating position, helmet clearance, belt paths, and access to fixings prior to final welding.

Final Welding Guidance

- Use a staggered, opposing weld sequence to manage heat input and minimise distortion.
- Complete welds on the main hoop feet first, then backstays, then cross-bracing and gussets.
- Allow natural cooling between passes. Do not quench welds.
- Inspect for full fusion and consistent bead profile; rework any defects before finishing.

Harness Bar & Belt Routing (Guidance)

- Aim for a shoulder strap angle between 0° and –20° from horizontal.
- Avoid sharp edges and ensure appropriate hardware is used per the harness manufacturer.
- Position the bar to suit driver seat height; verify for passenger/co-driver if applicable.

Always follow current MSUK/FIA guidance and your harness manufacturer's instructions.

Finishing & Corrosion Protection

- Remove spatter and tidy where appropriate without grinding into structural welds.
- Degrease and apply zinc-rich primer and topcoat, or remove for powder coating if the design allows.
- Touch up exposed metal on plates and adjacent bodywork.

Post-Install Checks & Maintenance

- After first 50–100 km or first track session: re-inspect welds, plates, and any fasteners; re-torque as required.
- Before each event: check for cracks, paint witness marks at joints, and belt condition.
- Keep an inspection log with dates and photos for your records and scrutineers.

Notes & Compliance

Kits are manufactured from E355+N Cold Drawn Seamless (CDS) steel and are engineered to meet or exceed typical MSUK minimum standards when installed correctly. Half cages are generally not suitable for full competition use but may be accepted for some sprints, hill climbs, and track-day events where a full cage is not compulsory. Always check the latest regulations and event SRs.

© JP Cages. For support, contact us with your order number and clear photos of your installation.

