Garages – Autobody Frame Straightening – Fact Sheet

WHAT SHOULD I KNOW ABOUT HYDRAULIC DEVICES IN ALIGNMENT MACHINES?

Hydraulic devices, whether used as a frame straightener or as a lift, can be dangerous. Also refer to Garages – Hydraulic Lifts – General and Garages – Hydraulic Lifts – Operation for more information.

The clamp used for pulling may let go for several reasons:

- The clamp teeth may be dirty or worn.
- The clamp may have been fastened to the undercoating rather than to the metal itself.
- The clamp may not have been tightened enough.
- The metal may give way, especially from a rusted panel.
- The chain or clamp may break.

What should I check before starting a job?

Before starting a pulling job:

- Clean the teeth of clamps regularly with a wire brush.
- Inspect clamps and chains for wear. Replace clamps that have worn teeth. Replace the chain if it is nicked or otherwise damaged. Replace all chains at regular intervals, regardless of wear.
- Remove all undercoating where the clamp is attached.
- Tack weld a metal brace to the panel for support before attaching the clamp to a rusted panel.
- Have the vehicle on its wheels or bolted to mobile safety stands when pulling. This prevents the vehicle from falling off the stand during the pull.

What are some tips for frame or unibody straightening?

Follow these procedures when using collision repair equipment:

- Inspect clamps and chains before each use.
- Secure frame to a link in good condition.
- Wrap chain around a frame member several times. Do not twist the chain.

- Place padding around sharp corners of frame members that rub against the chain links.
- Ensure that the chain hook is connected to a link with a firm grip. Test it before applying hydraulic pressure.
- Place a heavy blanket over the chain and clamp before pulling to minimize fly-back if the chain breaks.
- Stand to one side of the chain, not behind it. Stand behind a strong acrylic plastic or safety glass shield during all but the lightest pulls.
- Use two or more chains for pulls that require a great deal of force.
- Reinforce weak parts before pulling.
- Check the level of hydraulic fluid.
- Inspect hoses and connections frequently for leaks and general condition.
- Screw all body attachments on tightly. Avoid damaging threads on the attachments.
- Replace damaged links with same quality and size of link. Do not use temporary threaded links for high stress applications.