THOMPSON RIVERS UNIVERSITY | Risk & Safety Services

Safe Work Procedure

Blocking and Jack Stands

Program/Services Trades & Technology, Facilities		**Document ID** RSS 18.26.4	**Department:** Risk and Safety Services
Personal Protective Equipment or Devices Used • Safety Glasses • Working Gloves • CSA-approved Protective Footwear • Coveralls/work clothing fitted and secured • Hair tied back and secured	**Training Requirements** • Classroom-based safety instruction covering hazards, safe work procedures, and regulatory requirements. • Hands-on practical training under direct supervision. • Verification of understanding through demonstration and instructor sign-off.	**Applicable Documents** • Pre-Lift Job Hazard Assessment Form • Jack Stand Inspection Checklist and Log • Lock Out and Zero Energy Procedures • Personal Protective Equipment • Vehicle Hoists • Manufacturer operating manuals and lifting instructions	**Creation Date:** March 7, 2019 **Effective Date:** 18 August 2026 **Next Review:** August 2027 **Revision no.: 4** **Reviewer:** Safety Technician

HAZARD IDENTIFICATION — VISUAL SUMMARY

LOAD COLLAPSE / CRUSHING	VEHICLE MOVEMENT	PINCH POINTS	FOOT INJURY	STRAINS / MUSCULOSK-ELETAL INJURY (MSI)
				
Critical Hazard Never work beneath a vehicle or mobile equipment supported only by a hydraulic jack. Use a minimum of two independent support systems capable of supporting the load.	Apply wheel chocks and parking brakes before lifting. Verify the vehicle cannot move before beginning work.	Keep hands, feet, and body parts clear when positioning loads, jack stands, and blocking. Never place any part of your body under a load that has not been fully secured.	Always wear CSA-approved protective footwear while lifting, supporting, or working around elevated loads.	Use proper lifting techniques when moving jack stands, cribbing, and support equipment. Use assistance when materials are heavy or awkward.

PURPOSE

To establish safe procedures for raising, blocking, and supporting vehicles using jacks, jack stands, and cribbing.
This procedure is intended to prevent crushing injuries, equipment collapse, vehicle movement, pinch-point injuries, and other hazards associated with elevated loads.
This procedure applies to students, instructors, and workers who perform or supervise lifting, blocking, or supporting activities involving vehicles.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

The following PPE shall be worn when performing lifting, blocking, supporting, or inspection activities involving vehicles or mobile equipment:

- CSA-approved protective footwear.
- Safety glasses with side shields.
- Work gloves appropriate for the task being performed.
- Hearing protection where noise levels exceed regulatory limits or where required by the work area.
- Coveralls or work clothing that is fitted and secured.
- Long hair shall be tied back and secured.
- Jewelry, lanyards, and other loose items that could create an entanglement hazard shall be removed or secured.

PPE shall be inspected prior to use and replaced if damaged or defective.

PRE-USE REQUIREMENTS

Verify all lifting devices (jacks, jack stands, wooden blocking/cribbing) are free from defects, properly rated, and suitable for the load and surface conditions.

Inspect for:

- Missing safety pins
- Cracked welds
- Bent components
- Excessive corrosion
- Damaged saddles
- Missing manufacturer labels
- Unauthorized modifications

PRE-USE REQUIREMENTS (cont.)

Inspect:

- Safety pin
- Saddle
- Ratchet teeth
- Base
- Frame
- Manufacturer label

Figure 1. Serviceable Jack Stand

Do not use any equipment that is damaged, missing safety pins, improperly labelled, or otherwise unsafe. Apply a TAG OUT / OUT OF SERVICE label and notify the instructor or supervisor immediately.

Figure 2. Missing Safety Pin

Jack stands shall not be used when the manufacturer's safety pin is missing or not installed.

Figure 3 - Unapproved Modification

Bolts, screws, nails, or substitute locking devices shall not be used in place of the manufacturer's safety pin.

HANDLING PROCEDURES

STEP 1 - SECURE THE VEHICLE

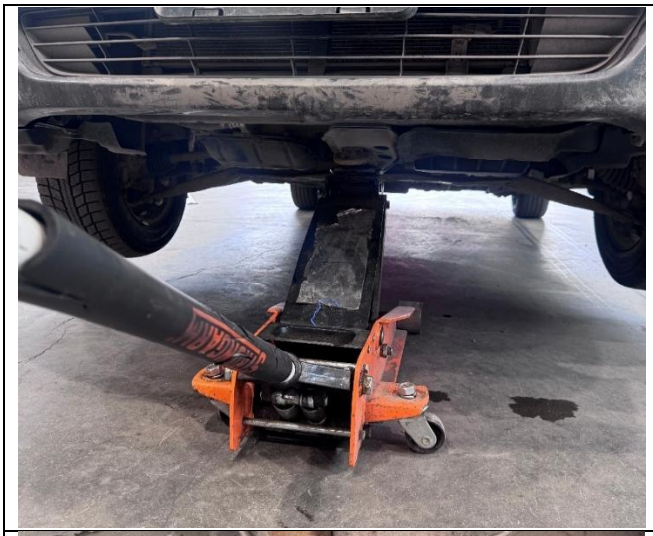
- Park on a firm, level surface.
- Apply the parking brake.
- Place the transmission in Park or in gear as applicable.
- Install wheel chocks.

Verify the vehicle cannot move prior to lifting.

Figure 4 - Wheel Chocks Installed

Vehicle secured with wheel chocks before lifting and support activities.

STEP 2 - POSITION THE FLOOR JACK



- Consult manufacturer lifting points.
- Position the jack at an approved lifting location.

Verify the lifting saddle is centered and stable.

Figure 5 – Front Lift Point Example

Hydraulic floor jack positioned at a manufacturer-approved front lifting location.
Note: Wheel chocks should be installed before lifting operations begin.

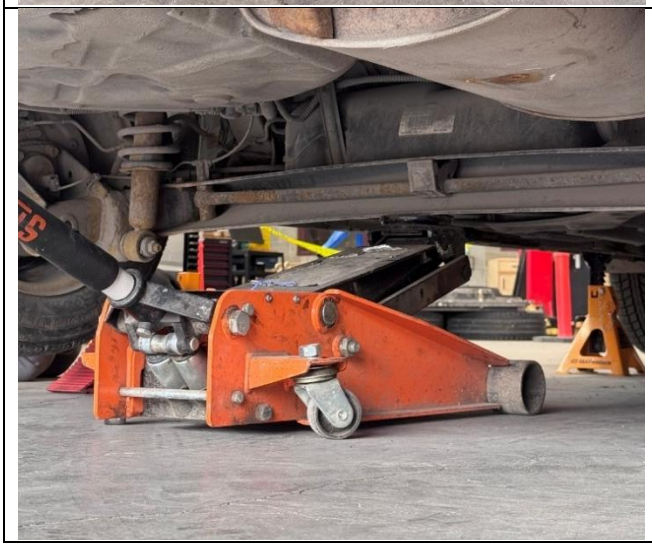
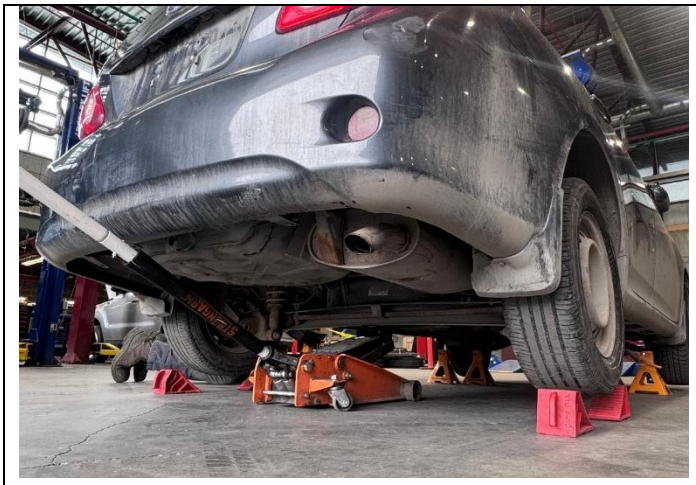


Figure 6 - Rear Lift Point Example

Hydraulic floor jack positioned at a manufacturer-approved rear lifting location.

STEP 3 - RAISE THE VEHICLE



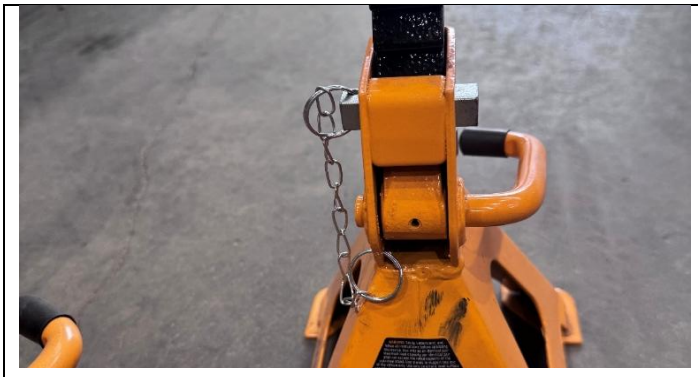
- Raise the vehicle slowly.
- Monitor for movement or instability.
- Stop immediately if shifting occurs.

Never place any body part beneath a vehicle supported only by a jack.

Figure 7. Vehicle Raised and Ready for Support

Placement
Vehicle elevated to allow installation of support stands.

STEP 4 - INSTALL JACK STANDS



Ratchet-type jack stands shall have manufacturer safety pins installed and used every time.

Figure 8 - Proper Safety Pin Installation

Manufacturer safety pin fully installed and secured.

Jack stands shall always be used in pairs.

Figure 9. Initial Jack Stand Placement

Jack stands positioned beneath approved support points before load transfer.

Figure 10. Front-End Support Arrangement

Front of vehicle supported by jack stands while rear wheels remain on the ground and chocked.

STEP 5 - TRANSFER THE LOAD

- Lower the vehicle slowly onto the jack stands.
- Ensure the load is centred on all support saddles.
- Confirm all jack stands remain vertical and stable.
- Verify the saddles remain fully engaged with the intended support locations.

Remove the hydraulic jack only after support stability has been confirmed.

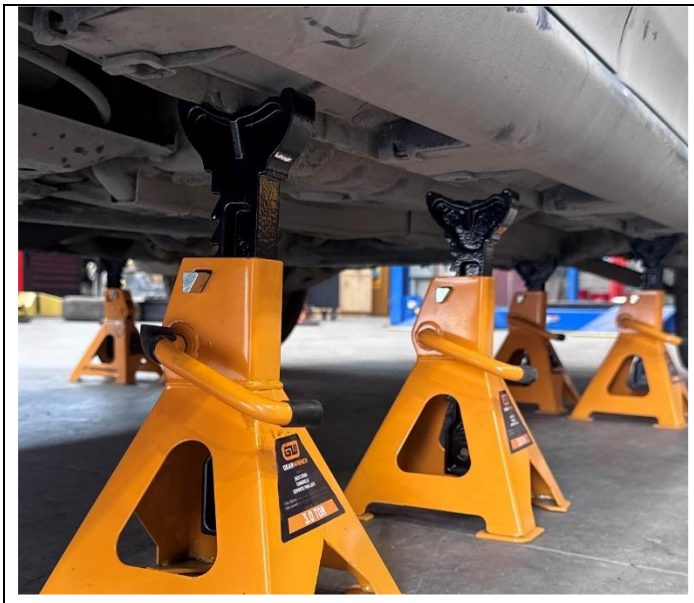
Figure 11. Load Transferred to Primary Supports

Vehicle weight transferred onto primary jack stands.

Figure 12. Primary Support Carrying Load

Primary support carrying the load while secondary support is positioned, adjusted, and pinned as an additional safety measure.

STEP 6 - VERIFY STABILITY



Before any person works beneath an elevated vehicle:

- Confirm wheel chocks remain installed.
- Confirm jack stands are properly positioned.
- Confirm safety pins are fully inserted.
- Confirm secondary supports are positioned correctly.
- Verify no shifting, leaning, or movement is present.
- Conduct a final visual inspection of the complete support arrangement.

Figure 13. Auxiliary Support Verification

Auxiliary support positioned beneath the vehicle and adjusted near the load.

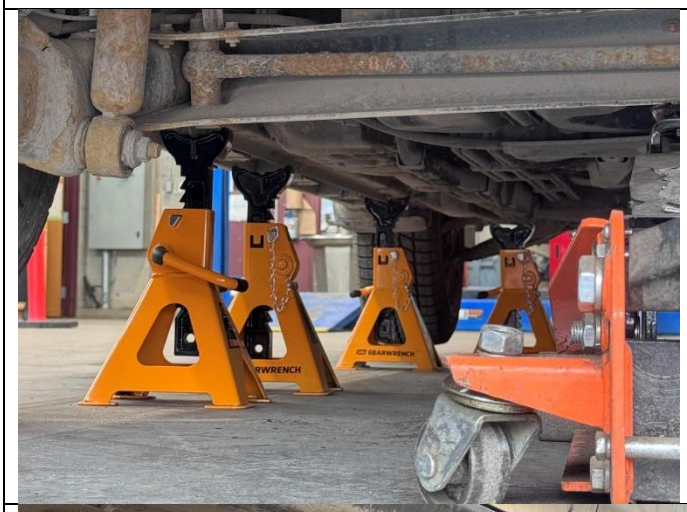


Figure 14. Multiple Support Locations

Verification of multiple support points beneath the vehicle.

Figure 15. Overall Stability Check

Inspection of support placement, stand condition, and vehicle stability.

STEP 6 - VERIFY STABILITY (cont.)

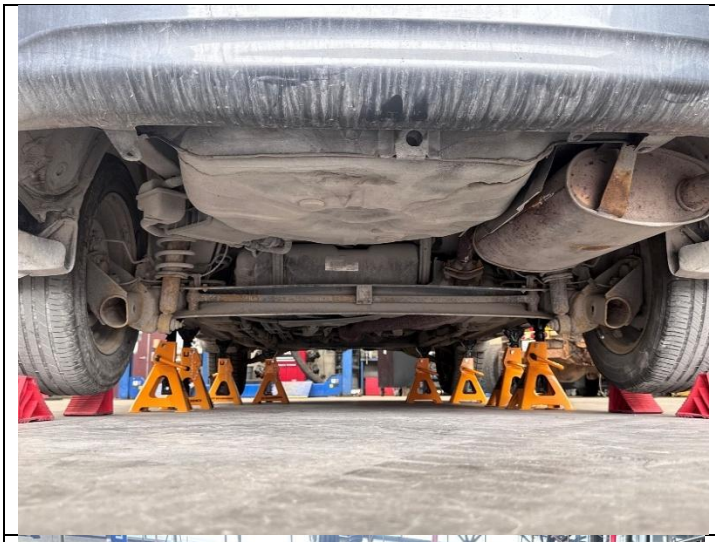


Figure 16. Underside Verification View

Underside inspection confirming support locations and wheel chock placement.

Figure 17. Completed Support Configuration

Vehicle supported, wheel chocks installed, safety pins installed, and support arrangement verified prior to commencing work.

BEFORE WORKING UNDER AN ELEVATED VEHICLE

Verify:

☐ Wheel chocks installed

☐ Jack stands positioned correctly

☐ Safety pins installed

☐ Load centred on support saddles

☐ Secondary support positioned

☐ Vehicle stable and not shifting

☐ Instructor approval obtained

JACK STANDS (VEHICLE SUPPORT STANDS)

- Loads placed on jack stands shall not exceed 50% of the manufacturer's rated capacity.
- Jack stands shall always be used in pairs.
- Ratchet-type jack stands shall have the manufacturer's safety pin installed and utilized every time.
- All jack stands shall have legible manufacturer ratings and instructions.
- Secondary supports shall always be used with jack stands.
- Jack stands shall be placed on a hard, level surface capable of supporting the load.
- Jack stands shall not be used on gravel, loose fill, or unstable surfaces.
- Loads must be centred on the saddle and supported at appropriate vehicle support locations.
- Jack stands shall be inspected before each use.
- Damaged, modified, or defective jack stands shall be removed from service immediately.
- Jack stands shall be used in accordance with manufacturer instructions.

WOODEN BLOCKING / CRIBBING

Wooden blocking and cribbing may be used as a supplemental support method where appropriate and approved by the instructor or supervisor.

- Cribbing shall never be used as a substitute for properly installed jack stands.
- Blocking shall only be used on firm, level surfaces.
- Cribbing shall be constructed from suitable materials such as Douglas Fir, Oak, or Maple.
- Minimum nominal dimensions shall be 4 × 4 inches.
- Construction-grade lumber shall be used.
- Cribbing shall be stacked in a stable criss-cross pattern.
- Blocking shall be square, level, and free from visible defects.
- Blocking shall not contain significant cracks, splits, rot, or other structural defects.
- Oil-soaked cribbing shall be inspected for suitability before use.
- Wooden blocking shall be used in pairs where practical.

The following shall not be used:

- Cinder blocks
- Concrete blocks
- Wheel rims
- Metal pipe
- Scrap material
- Log rounds

Instructor demonstrations of cribbing construction and inspection shall be included in practical training.

SAFETY RULES

- Never work beneath a vehicle supported only by a hydraulic jack.
- Use a minimum of two independent support systems whenever a person may be exposed to a load-collapse hazard.
- Follow manufacturer instructions for lifting points and support locations.
- Verify wheel chocks are installed before lifting.
- Never exceed 50% of the rated capacity of a jack stand.
- Never use damaged, modified, or improvised support equipment.
- Never use cinder blocks, concrete blocks, wheel rims, metal pipe, or other improvised supports.
- Students shall only perform lifting and blocking activities under direct instructor supervision.
- Reinspect supports before working beneath any vehicle that has remained elevated for an extended period.

HOUSEKEEPING

- Ensure the work area is clean, dry, and free from slip and trip hazards before beginning lifting operations.
- Remove unnecessary tools, materials, and debris from beneath and around the vehicle.
- Keep aisles, exits, and emergency access routes clear at all times.
- Clean oil, grease, coolant, and other spills immediately.
- Maintain adequate lighting around the work area.
- Ensure wheel chocks remain properly positioned throughout the task.
- Store jacks, jack stands, cribbing, and tools in designated locations when not in use.
- Remove damaged equipment from service and report defects to the instructor or supervisor.

HAZARD CONTROLS — DETAILED TABLE

Hazard	Control Measure
Load Collapse / Crushing	Use a minimum of two support methods. Never work beneath a vehicle supported only by a jack.
Vehicle Movement	Apply parking brake and wheel chocks before lifting.
Pinch Points	Keep hands, feet, and body parts clear while positioning supports.
Equipment Failure	Inspect all jacks, stands, and supports prior to use. Remove defective equipment from service.
Improper Support Placement	Use manufacturer-approved lifting and support locations.
Foot Injury	Wear CSA-approved protective footwear.
Strains / MSI	Use proper lifting techniques when handling support equipment.
Slips / Trips	Maintain good housekeeping and clear work areas.

RECORDS/VERIFICATION OF UNDERSTANDING

- Training and Verification of Understanding records shall be maintained for all students and workers performing vehicle lifting, blocking, and support activities.
- Jack stand inspection records shall be retained electronically for a minimum of one year.
- A training master log shall be maintained by the instructor, supervisor, or department responsible for the activity.
- Records shall be made available to Risk and Safety Services (RSS) upon request.

WORKING ALONE

Students are strictly prohibited from working alone in any lab or shop. If an employee anticipates isolation during work activities, a Working Alone assessment and check-in procedure must be implemented per TRU policy.

ANNUAL REVIEW

Risk and Safety Services (RSS) will complete a review of this Safe Work Procedure annually to ensure it remains current and effective. The Joint Occupational Health and Safety Committee (JOHSC) may be consulted during this review.
A review will also occur if:

- Regulatory requirements change.
- The procedure is reported to be ineffective.
- An incident occurs involving operation.

APPLICABLE OCCUPATIONAL HEALTH AND SAFETY REGULATION (OHSR)

SWP Section	Requirement Met	WorkSafeBC Regulation Reference
Pre-Operational Safety Checks	Equipment inspection, manufacturer instructions, rated capacity verification, area safety	OHSR 4.3, 4.5, 4.9, 12.78, 12.79
Vehicle Lifting and Support	Vehicle lifting, support placement, load transfer, support verification, vehicle restraint	OHSR 12.74-12.80.2
Housekeeping	Slip/trip prevention, vehicle restraint, clean work area	OHSR 4.39, 12.80.1
Potential Hazards	Hazard identification and assessment	OHSR 4.13
PPE and Clothing Requirements	Eye protection, foot protection, protective clothing, hand protection	OHSR 8.10-8.18
Training Requirements	Orientation, instruction, supervision, verification of understanding	OHSR 3.23-3.24
Records and Documentation	Training documentation and records retention	OHSR 3.25

SUMMARY OF CHANGES

Rev#	Date	Change	Issued By
1	10 APR 2014	NEW	OHS Officer
2	29 APR 2019	Review, Revisions and New Format	Safety Officer
3	23 AUG 2024	RSS update	Safety Advisor
4	18 AUG 2026	Full rewrite to align with new TRU SWP template; updated PPE requirements, hazard list, control measures, WHMIS/SDS language, and OHSR references. Re-written in consultation with mechanical faculty and input, images added, formatting amended for mobile/online accessibility	Safety Technician