THE CONVEYOR SHOP ACADEMY

ACADEMY / TECHNICAL TRAINING SERIES

VULCANISING PRESS SETUP

MODULE 10 / ASSESSOR GUIDE & ANSWER KEY

LEARNER NAME _____

DATE _____ TRAINER / ASSESSOR _____

ONLINE TRAINING / VIDEO LINK _____

TRAINING SCOPE Theory and awareness. Live press operation requires separate supervised practical competence assessment.

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Module Overview

This module introduces the safe setup, operation, cooling, dismantling and inspection of a conveyor belt vulcanising press.

A vulcanising press is used to apply controlled heat and pressure to a conveyor belt splice or repair. The press does not make a good splice on its own. A successful splice depends on correct belt preparation, correct splice materials, correct press setup, correct pressure, correct temperature, correct cure time and correct cooling.

Poor press setup can cause splice failure, burns, crush injuries, electrical hazards, damaged equipment and unsafe working conditions.

This module is designed for engineers, fitters, belt technicians, maintenance teams, apprentices, supervisors and companies wanting to improve in-house conveyor belt vulcanising knowledge.

This module can be used as a classroom training guide, toolbox talk, apprentice handout or self-training document.

Important Safety and Training Notice

This module is for general training and awareness only.

Vulcanising presses should only be set up and operated by competent, trained and authorised people using the correct equipment, instructions and method for the belt and splice being completed.

Always follow:

- Site safety rules
- Risk assessments
- Method statements
- Permit-to-work systems
- Isolation and lock-off procedures
- Belt manufacturer splice instructions
- Splice material supplier instructions
- Vulcanising press manufacturer instructions
- Electrical safety requirements
- Lifting and manual handling procedures
- Company procedures
- Local health and safety requirements

Do not use a generic training guide as the only instruction for live vulcanising press work.

If you are unsure, stop and ask a competent supervisor.

Learning Objectives

By the end of this module, the learner should be able to:

1. 1. Understand the purpose of a vulcanising press.
2. 2. Identify the main parts of a press system.
3. 3. Understand the safety risks from heat, pressure, electricity and manual handling.
4. 4. Check that the correct press is selected for the splice.
5. 5. Understand basic press setup sequence.
6. 6. Understand why pressure, temperature and cure time must follow the splice specification.
7. 7. Understand the importance of even pressure and even heat.
8. 8. Understand cooling and safe press dismantling.
9. 9. Complete a basic press setup checklist.
10. 10. Recognise common vulcanising press setup faults.

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1. What Is a Vulcanising Press?

A vulcanising press is a piece of equipment used to cure conveyor belt splices and repairs using heat and pressure.

A press normally applies:

- Heat from heated platens
- Pressure from air bags, pressure bags, hydraulic systems or mechanical systems
- Controlled cure time
- Cooling where required

The press is used to bond the prepared belt and uncured splice materials together.

A vulcanising press may be used for:

- Hot vulcanised stepped splices
- Overlap splices
- Finger splices where suitable
- Steel cord splices where suitable
- Hot repairs
- Cover repairs
- Edge repairs
- Workshop training and testing

Assessor Reference Answer

A vulcanising press applies controlled heat and pressure to a prepared belt splice or repair so the materials can cure and bond together.

2. Main Parts of a Vulcanising Press

A vulcanising press system may include the following parts.

Upper Platen

The heated platen placed above the splice area.

Lower Platen

The heated platen placed below the splice area.

Press Beams

The structural beams that clamp the press together and hold pressure across the splice.

Pressure System

This may be an airbag, pressure bag, hydraulic system or mechanical pressure arrangement.

Control Box

The control box regulates temperature and may control heating zones, timers and power supply.

Temperature Probes

Temperature probes monitor platen temperature and help control the cure cycle.

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Power Cables

Power cables connect the control box to the press platens and power supply.

Cooling Hoses

Some presses use water cooling to cool the splice before opening the press.

Release Cloth or Paper

Release material prevents the splice from sticking to the platens.

Edge Bars and Packing

Edge bars and packing help control splice thickness, edge shape and pressure distribution.

Assessor Reference Answer

The main parts of a vulcanising press include upper and lower platens, beams, pressure system, control box, temperature probes, power cables, cooling hoses, release materials and edge packing.

3. Main Hazards of Vulcanising Press Work

Vulcanising press work involves several hazards.

Common hazards include:

- Hot surfaces
- Burns
- Electrical shock
- Damaged cables
- Incorrect voltage or phase
- Pressure release
- Crush points
- Pinch points
- Heavy lifting
- Trapped fingers
- Slips and trips from cables or hoses
- Water and electricity in the same area
- Manual handling injuries
- Fire risk
- Press instability
- Stored pressure
- Poor communication

The press should never be treated as just a heater. It is a heavy, powered, pressurised piece of equipment.

Assessor Reference Answer

The main hazards are heat, pressure, electricity, heavy lifting, pinch points, crush points, cables, hoses, fire risk and poor communication.

4. Competence and Supervision

A person setting up or operating a vulcanising press must be competent for the task.

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Competence may include understanding:

- Conveyor isolation
- Stored belt tension
- Belt clamping
- Splice preparation
- Press assembly
- Electrical connections
- Pressure systems
- Temperature controls
- Cure requirements
- Cooling procedures
- Safe dismantling
- Emergency response

A trainee should not operate a press alone.

Assessor Reference Answer

Press setup should be carried out by trained and competent people because the work involves heat, pressure, electricity, heavy equipment and splice quality control.

5. Selecting the Correct Press

The press must be suitable for the belt and splice.

Check:

- Belt width
- Splice length
- Splice angle
- Belt thickness
- Press platen width
- Press platen length
- Beam length
- Pressure rating
- Temperature range
- Power requirement
- Voltage
- Phase
- Cooling method
- Condition of equipment
- Site access
- Lifting method

The press must cover the full splice area with suitable margin beyond the belt edges and splice length.

If the press is too small, the splice may not cure properly.

Assessor Reference Answer

The correct press must cover the full splice area and be capable of applying the required heat and pressure safely and evenly.

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6. Checking Platen Size

The platens must cover the splice area.

Check:

- Platen is wide enough for the full belt width.
- Platen has suitable side overlap beyond belt edges.
- Platen is long enough for the splice length.
- Platen covers the full prepared splice area.
- Platen surface is clean and flat.
- Platen is not damaged.
- Platen heating zones work correctly.

Insufficient platen coverage can leave part of the splice under-cured or poorly bonded.

Assessor Reference Answer

Platen size matters because the full splice must receive heat and pressure. If the platen does not cover the splice correctly, the joint may fail.

7. Checking the Power Supply

Before connecting a press, confirm the power supply.

Check:

- Correct voltage
- Correct phase
- Correct plug type
- Correct amperage
- Correct control box
- Cable condition
- Plug condition
- Site supply rating
- Generator suitability if used
- Earth protection
- RCD or site protection where required
- Local electrical rules

Do not connect a press to an unknown or unsuitable power supply.

Do not modify plugs or cables unless completed by a competent authorised person.

Assessor Reference Answer

The power supply must be checked because using the wrong voltage, phase, plug, cable or supply rating can damage equipment and create serious electrical risk.

8. Checking the Control Box

The control box is used to control the press heating system.

Before use, check:

- Correct control box for the press
- Case condition

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- Switches
- Display
- Temperature controller
- Heating zone outputs
- Cable sockets
- Plugs
- Labels
- Emergency stop if fitted
- Timer function if fitted
- Data logging if fitted
- Earth and electrical safety condition
- Signs of overheating or damage

Do not use a damaged control box.

If the control box shows a fault, stop and ask a competent person.

Assessor Reference Answer

The control box controls the heating system and must be suitable, undamaged and working correctly before the press is used.

9. Checking Cables and Connectors

Cables and connectors must be inspected before use.

Check for:

- Cuts
- Cracks
- Exposed wires
- Damaged plugs
- Loose pins
- Burn marks
- Melted insulation
- Water damage
- Missing strain relief
- Incorrect connectors
- Poor repairs
- Overheating
- Trip hazards

Damaged cables should not be used.

Cables should be routed to avoid:

- Sharp edges
- Hot surfaces
- Water pooling
- Vehicle movement
- Pinch points
- Walkways
- Material falling from above

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Assessor Reference Answer

Cables and connectors must be inspected because damage can cause electrical shock, overheating, equipment failure or fire.

10. Checking the Pressure System

The pressure system applies pressure to the splice.

Depending on the press type, this may include:

- Airbag
- Pressure bag
- Compressor
- Air line
- Hydraulic pump
- Hydraulic hose
- Pressure gauge
- Pressure regulator
- Mechanical screw or bolt system

Before pressurising, check:

- Pressure system is suitable.
- Hoses are undamaged.
- Fittings are secure.
- Gauge works.
- Pressure units are understood.
- Maximum pressure is not exceeded.
- Pressure is applied evenly.
- There are no trapped hands or tools.
- People are clear of danger areas.

Do not exceed the press or splice specification.

Assessor Reference Answer

The pressure system must be inspected because it applies force to the splice. Hoses, gauges, bags and fittings must be safe and suitable before pressure is applied.

11. Understanding Pressure Units

Pressure may be shown in:

- psi
- bar
- kPa
- MPa

Always check which unit is being used.

Example conversion:

- 1 bar is approximately 14.5 psi
- 7 bar is approximately 100 psi

Many conveyor belt press systems may use pressure values around this range, but the correct pressure must always follow the press, belt and splice material specification.

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Do not confuse air supply pressure with actual splice pressure if the press design uses a different calculation.

Assessor Reference Answer

Pressure units must be understood so the correct pressure is applied. Confusing bar and psi can cause under-pressing, over-pressing or equipment damage.

12. Checking Temperature Requirements

The correct temperature depends on the belt and splice materials.

Check:

- Belt type
- Rubber compound
- Splice material instructions
- Top platen setting
- Bottom platen setting
- Heating zones
- Temperature probe location
- Temperature tolerance
- Cure start point
- Cure time
- Cooling requirement

Do not guess temperature settings.

Incorrect temperature can cause:

- Under-cure
- Over-cure
- Burnt rubber
- Weak bonding
- Blisters
- Surface damage
- Material breakdown

Assessor Reference Answer

Temperature must follow the belt and material specification. Wrong temperature can cause weak bonding, under-cure, over-cure or belt damage.

13. Cure Time

Cure time is the time the splice must remain under the correct heat and pressure.

Cure time may depend on:

- Belt thickness
- Belt type
- Rubber compound
- Splice material
- Press type
- Manufacturer instructions
- Temperature reached

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- Splice design

The timer should start according to the approved procedure. On many systems, cure time starts once the required temperature has been reached, but this must be confirmed by the correct method.

Do not shorten cure time to save downtime.

Assessor Reference Answer

Cure time is the required time under heat and pressure. It must follow the approved splice procedure and should not be shortened.

14. Work Area Setup

Before assembling the press, check the work area.

The area should be:

- Safe
- Clean
- Dry where possible
- Well lit
- Protected from weather
- Clear of trip hazards
- Clear of falling material
- Suitable for lifting press parts
- Suitable for cable routing
- Suitable for hose routing
- Free from unnecessary people
- Organised for the sequence of work

The belt should be:

- Isolated
- Locked off
- Clamped
- Supported
- Aligned
- Prepared
- Clean
- Dry
- Ready for pressing

Assessor Reference Answer

The work area must be clean, safe and organised before the press is assembled. Poor access, water, dust, trip hazards or poor lighting can affect safety and splice quality.

15. Manual Handling and Lifting

Press parts can be heavy and awkward.

Examples include:

- Platens
- Beams
- Control boxes

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- Airbags
- Packing plates
- Edge bars
- Cable sets
- Water hoses

Before lifting:

- Assess the weight.
- Use mechanical lifting where possible.
- Use team lifting where needed.
- Keep fingers clear of pinch points.
- Keep feet clear.
- Use stable footing.
- Do not twist while lifting.
- Plan where each part will be placed.
- Keep people clear of suspended loads.

Assessor Reference Answer

Manual handling must be planned because press parts are heavy and awkward. Poor lifting can cause strains, crush injuries and trapped fingers.

16. Basic Press Setup Sequence

The exact setup depends on the press design, belt and splice method.

A basic setup sequence may include:

1. 1. Confirm conveyor isolation and lock-off.
2. 2. Confirm belt tension is controlled.
3. 3. Confirm belt is clamped and supported.
4. 4. Confirm splice preparation is complete.
5. 5. Clean the lower platen area.
6. 6. Position the lower platen under the splice.
7. 7. Fit release material or packing as required.
8. 8. Position the prepared splice area.
9. 9. Fit edge bars or packing where required.
10. 10. Fit release material above the splice.
11. 11. Position the upper platen.
12. 12. Position beams correctly.
13. 13. Fit pressure system.
14. 14. Connect temperature probes.
15. 15. Connect press cables.
16. 16. Connect control box to the correct power supply.
17. 17. Check settings.
18. 18. Apply pressure as required.
19. 19. Apply heat as required.
20. 20. Start cure timing according to procedure.
21. 21. Monitor cure.
22. 22. Cool as required.
23. 23. Release pressure safely.
24. 24. Dismantle press safely.
25. 25. Inspect splice.

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Assessor Reference Answer

Press setup should follow a controlled sequence: isolate, clamp, prepare, position platens, fit packing, assemble beams, connect controls, apply pressure, heat, cure, cool, release and inspect.

17. Positioning the Lower Platen

The lower platen supports the splice from underneath.

Check:

- Platen is centred under the splice.
- Platen covers the full splice width.
- Platen covers the full splice length.
- Surface is clean.
- No dirt is trapped.
- No tools are trapped.
- Platen is stable.
- Cables are not trapped.
- Hoses are clear.
- Belt is flat over the platen.

Poor lower platen positioning can cause uneven pressure and poor curing.

Assessor Reference Answer

The lower platen must be clean, stable and positioned under the full splice area so the splice receives even support, heat and pressure.

18. Release Material and Packing

Release material and packing may be used before the press is closed.

This may include:

- Release paper
- Silicone cloth
- Edge bars
- Packing strips
- Pressure pads
- Fill strips
- Caul plates where required

The purpose may be to:

- Prevent sticking
- Control splice thickness
- Support edges
- Improve pressure distribution
- Protect the platen surface
- Improve finish

Use only suitable materials for the temperature and pressure involved.

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Assessor Reference Answer

Release material and packing help prevent sticking, control splice thickness, support edges and improve pressure distribution.

19. Positioning the Upper Platen

The upper platen applies heat from above.

Check:

- It is centred over the splice.
- It covers the full splice area.
- It matches the lower platen position.
- It is clean.
- It is not damaged.
- Cables are routed safely.
- Hands are clear during placement.
- It sits flat.
- It does not move the splice out of alignment.

If the upper and lower platens are not aligned, pressure and heat may be uneven.

Assessor Reference Answer

The upper platen must align with the lower platen and cover the full splice area so heat and pressure are applied evenly.

20. Positioning Press Beams

Press beams hold the press together and allow pressure to be applied.

Check:

- Beams are the correct length.
- Beams are positioned evenly.
- Beam spacing follows press instructions.
- Bolts or clamps are fitted correctly.
- Threads are clean and safe.
- Hands are clear of pinch points.
- Beams are not damaged.
- Beams are tightened evenly.
- Nothing is trapped under the beams.

Uneven beam setup can cause uneven pressure across the splice.

Assessor Reference Answer

Press beams must be positioned and tightened correctly so the press applies even pressure across the splice.

21. Connecting Temperature Probes

Temperature probes help monitor the press temperature.

Check:

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- Correct probe is used.
- Probe is connected to the correct channel.
- Probe is placed in the correct position.
- Probe is not damaged.
- Cable is not trapped.
- Probe reading is sensible.
- Top and bottom readings are checked where required.

A poor probe connection can give incorrect temperature readings.

Assessor Reference Answer

Temperature probes must be connected and positioned correctly so the press temperature is monitored accurately.

22. Applying Pressure

Pressure should be applied according to the approved specification.

Before applying pressure:

- Check hands are clear.
- Check tools are clear.
- Check beams are secure.
- Check hoses are connected.
- Check pressure gauge reads correctly.
- Check pressure units.
- Increase pressure gradually where required.
- Watch for movement.
- Do not exceed rated pressure.

During cure, pressure may need monitoring.

Loss of pressure can affect splice quality.

Assessor Reference Answer

Pressure should be applied safely and to the approved requirement. Hands, tools and loose items must be clear before pressurising.

23. Applying Heat

Heat should be applied using the correct control box settings.

Check:

- Correct temperature set.
- Top and bottom platens are heating.
- Zones are working.
- Control display is stable.
- No cables are overheating.
- No abnormal smell or smoke.
- No fault alarms.
- Temperature rise is controlled.
- Cure timing starts at the correct point.

Do not leave the press completely unattended unless the site procedure allows controlled monitoring.

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Assessor Reference Answer

Heat must be applied using the correct temperature settings and monitored to make sure the platens heat correctly and safely.

24. Monitoring During Cure

During the cure cycle, monitor:

- Temperature
- Pressure
- Time
- Control box operation
- Cable condition
- Hose condition
- Press stability
- Water leaks if cooling lines are fitted
- Abnormal smells
- Smoke
- Alarms
- Site conditions
- People near the press

Do not disturb the press during cure unless required for safety.

If a fault occurs, follow site and equipment procedure.

Assessor Reference Answer

The press must be monitored during cure to make sure temperature, pressure and time remain correct and the equipment remains safe.

25. Cooling the Press and Splice

Cooling is part of the process.

The splice should not be opened too early.

Cooling may be:

- Water cooling
- Natural cooling
- Controlled cooling cycle
- Manufacturer-specific method

Opening too early can cause:

- Blisters
- Distortion
- Weak bonding
- Edge opening
- Surface damage
- Poor finish
- Splice movement

Follow the approved cooling procedure.

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Assessor Reference Answer

Cooling allows the splice to stabilise. Opening the press too early can damage the splice or weaken the bond.

26. Water Cooling Safety

Some presses use water cooling.

When using water cooling:

- Keep water hoses secure.
- Check for leaks.
- Keep water away from electrical connections.
- Route hoses safely.
- Avoid trip hazards.
- Confirm water flow if required.
- Do not over-pressurise cooling circuits.
- Drain or disconnect safely.
- Keep connectors clean.

Water and electricity must be controlled carefully.

Assessor Reference Answer

Water cooling must be controlled because leaks, hoses and electrical equipment can create safety risks and trip hazards.

27. Releasing Pressure

Pressure must be released safely before the press is dismantled.

Before releasing pressure:

- Confirm cure and cooling are complete.
- Keep people clear.
- Follow the press procedure.
- Release pressure gradually where required.
- Watch for movement.
- Confirm pressure is at zero.
- Do not loosen beams while pressure remains.
- Keep hands clear of pinch points.

Stored pressure can be dangerous.

Assessor Reference Answer

Pressure must be released safely and confirmed at zero before beams or press parts are loosened or removed.

28. Dismantling the Press

Dismantling should be controlled.

Steps may include:

- Confirm cooling is complete.

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- Confirm pressure is released.
- Isolate press power.
- Disconnect cables safely.
- Disconnect probes safely.
- Disconnect cooling hoses safely.
- Remove beams carefully.
- Remove upper platen safely.
- Remove release material.
- Inspect the splice.
- Remove lower platen.
- Store equipment safely.
- Keep cables and hoses organised.

Press parts may still be warm and heavy.

Assessor Reference Answer

The press should be dismantled only after cooling, pressure release and safe electrical disconnection. Parts should be handled carefully.

29. Final Splice Inspection After Pressing

After the press is removed, inspect the splice.

Check:

- Surface finish
- Edge sealing
- Splice alignment
- Cure appearance
- Blisters
- Voids
- Soft areas
- Loose rubber
- Exposed fabric or cords
- Contamination
- High spots
- Low spots
- Flash or excess rubber
- Trim quality
- Belt edges
- Overall splice condition

If the splice has a serious defect, do not return the conveyor to service until it is assessed.

Assessor Reference Answer

Final inspection checks that the splice is cured, aligned, sealed and free from serious defects before the belt is returned to service.

30. Restart Checks

Before restarting the conveyor:

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- Remove all tools.
- Remove press parts.
- Remove offcuts and waste.
- Refit guards.
- Confirm everyone is clear.
- Confirm locks are removed only by authorised persons.
- Follow site restart procedure.
- Jog or run slowly where possible.
- Watch the splice pass over pulleys.
- Watch the splice pass over rollers.
- Check scraper contact.
- Check belt tracking.
- Listen for abnormal noise.
- Recheck after running under load.

Do not leave a new splice unchecked.

Assessor Reference Answer

The conveyor should be restarted carefully with guards refitted, people clear and the splice monitored over pulleys, rollers and scrapers.

31. Cleaning and Storing Press Equipment

After use, press equipment should be cleaned and stored correctly.

Check:

- Platens are clean.
- Rubber residue is removed carefully.
- Cables are coiled safely.
- Probes are protected.
- Control box is dry and protected.
- Beams are stored safely.
- Hoses are drained if required.
- Bags or pressure systems are checked.
- Damage is reported.
- Missing parts are recorded.
- Equipment is ready for next use.

Good storage extends equipment life and improves safety.

Assessor Reference Answer

Press equipment should be cleaned, inspected and stored properly after use so it remains safe and ready for the next job.

32. Common Press Setup Faults

Common setup faults include:

- Wrong press size
- Platen not covering full splice
- Poor platen alignment

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- Dirty platens
- Damaged release material
- Incorrect packing
- Uneven beams
- Wrong pressure
- Confused pressure units
- Pressure loss during cure
- Wrong temperature
- Faulty probe
- Poor cable connection
- Wrong voltage
- Wrong phase
- Water leak
- Opening press too early
- Poor cooling
- Press moved during cure
- Splice contaminated before pressing
- Tools trapped in press area

Assessor Reference Answer

Common press faults include wrong press size, uneven pressure, wrong temperature, poor probe setup, damaged cables, wrong power supply, water leaks and opening the press too early.

33. Common Splice Defects Linked to Press Setup

Poor press setup can create splice defects.

Examples include:

Blisters

Possible causes include trapped air, moisture, poor cooling or incorrect cure.

Soft Areas

Possible causes include under-cure, low temperature or poor heat transfer.

Burnt Rubber

Possible causes include excessive temperature, over-cure or control fault.

Open Edges

Possible causes include poor edge packing, poor pressure or poor edge build-up.

High Spots

Possible causes include excess rubber, poor packing or uneven pressure.

Low Spots

Possible causes include missing material, poor build-up or over-compression.

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Poor Bond

Possible causes include contamination, wrong cure, low pressure or wrong materials.

Assessor Reference Answer

Press setup problems can cause defects such as blisters, soft areas, burnt rubber, open edges, high spots, low spots and poor bonding.

34. Press Setup Record

A press setup record should be completed where required.

Record:

- Date
- Customer or site
- Conveyor number
- Technician name
- Belt width
- Belt type
- Belt rating
- Splice type
- Press used
- Platen size
- Control box used
- Power supply
- Pressure setting
- Temperature setting
- Cure time
- Cooling method
- Material batch numbers if available
- Final inspection result
- Photos before and after
- Any issues during cure
- Follow-up action required

A record helps with quality control, warranty review, equipment maintenance and future training.

Assessor Reference Answer

A press setup record provides traceability of the equipment, settings, cure cycle, inspection result and any problems found during the job.

Practical Exercise

Use a press, press photograph, training setup, belt sample or workshop demonstration and complete the following exercise.

1. Identify the Press Parts

Assessment notes / expected response:

Identify the upper platen, lower platen, beams, pressure system, control box, temperature probes, power cables, cooling hoses, release material and packing.

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2. Check the Press Size

Assessment notes / expected response:

Confirm that the platen width and length cover the full splice area with suitable margin beyond the belt edges and splice length.

3. Check the Power Supply

Assessment notes / expected response:

Confirm voltage, phase, plug type, cable condition, supply rating and that the correct control box is being used.

4. Inspect the Cables

Assessment notes / expected response:

Check for cuts, exposed wires, damaged plugs, burn marks, loose connectors, water damage and trip hazards.

5. Check the Pressure System

Assessment notes / expected response:

Inspect the airbag, pressure bag, hydraulic system, hoses, fittings, gauge and regulator. Confirm the correct pressure unit is being used.

6. Check the Temperature Control

Assessment notes / expected response:

Check the set temperature, heating zones, probe connections, display readings and control box condition.

7. Position the Lower Platen

Assessment notes / expected response:

Place the lower platen under the full splice area, making sure it is clean, stable, centred and not trapping tools, dirt, cables or hoses.

8. Position the Upper Platen and Beams

Assessment notes / expected response:

Place the upper platen directly above the lower platen, then fit beams evenly and safely according to the press instructions.

9. Explain Why Cooling Is Important

Assessment notes / expected response:

Cooling allows the splice to stabilise before the press is opened. Opening too early can cause blisters, distortion, weak bonding or edge opening.

10. Complete a Final Press Inspection

Assessment notes / expected response:

Check the splice finish, edges, alignment, blisters, voids, soft areas, tools, guards and safe restart requirements.

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Knowledge Check

Question 1

What does a vulcanising press do?

Model answer

It applies controlled heat and pressure to cure a prepared conveyor belt splice or repair.

Question 2

Name five main parts of a vulcanising press system.

Model answer

Upper platen, lower platen, beams, pressure system, control box, temperature probes, power cables, cooling hoses and release materials.

Question 3

Why must the press be the correct size?

Model answer

The press must cover the full splice area so the splice receives even heat and pressure.

Question 4

Why must power supply be checked?

Model answer

The wrong voltage, phase, plug or supply rating can damage equipment and create electrical hazards.

Question 5

Why should cables be inspected before use?

Model answer

Damaged cables can cause electric shock, overheating, equipment failure or fire.

Question 6

Why must pressure units be understood?

Model answer

Confusing units such as bar and psi can lead to incorrect pressure, equipment damage or poor splice quality.

Question 7

Can the same temperature and cure time be used for every belt?

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Model answer

No. Temperature and cure time must follow the belt and splice material specification.

Question 8

Why should the press be monitored during cure?

Model answer

To make sure temperature, pressure, time and equipment condition remain safe and correct.

Question 9

Why is cooling part of the process?

Model answer

Cooling stabilises the splice before opening the press and helps prevent defects such as blisters, distortion and weak bonding.

Question 10

Why must pressure be released before dismantling the press?

Model answer

Stored pressure can move press parts suddenly and create crush or pinch risks.

Question 11

What should be checked after the press is removed?

Model answer

Check surface finish, edges, alignment, cure appearance, blisters, voids, soft areas, exposed fabric or cords and overall splice condition.

Question 12

Why should press settings be recorded?

Model answer

Recording settings gives traceability and helps with quality control, warranty review, equipment maintenance and future fault finding.

Self-Assessment

Tick each statement once you understand it.

- I understand what a vulcanising press does.
- I can identify the main parts of a press system.
- I understand the main hazards of press work.
- I understand why competence and supervision matter.
- I understand why the correct press size is important.
- I understand why power supply must be checked.
- I understand why cables and connectors must be inspected.

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- I understand why pressure units must not be confused.
- I understand why temperature and cure time must follow approved guidance.
- I understand the basic press setup sequence.
- I understand why even heat and pressure are important.
- I understand why cooling is part of the process.
- I understand why pressure must be released before dismantling.
- I understand what to check during final splice inspection.
- I understand why press setup records are important.

Self-Assessment Answers

A learner should be confident with the following after completing Module 10:

36. 1. A vulcanising press applies heat and pressure to a belt splice or repair.
37. 2. Main press parts include platens, beams, pressure system, control box, probes, cables and cooling hoses.
38. 3. Press work involves heat, pressure, electricity, heavy lifting and pinch-point risks.
39. 4. Only competent and authorised people should set up and operate a press.
40. 5. The press must cover the full splice area.
41. 6. The power supply must match the press and control box requirements.
42. 7. Damaged cables, plugs or control boxes must not be used.
43. 8. Pressure units such as psi and bar must be understood correctly.
44. 9. Cure temperature, pressure and time must follow the approved splice specification.
45. 10. The press should be assembled in a controlled sequence.
46. 11. Even heat and pressure are needed for good splice quality.
47. 12. Cooling must be completed before the press is opened.
48. 13. Pressure must be safely released before dismantling.
49. 14. The finished splice must be inspected before restart.
50. 15. Press setup records support quality control and traceability.

Vulcanising Press Setup Checklist

Safety

- Conveyor isolated and locked off
- Stored energy controlled
- Belt clamped and supported
- Take-up secured
- Work area clean and safe
- Correct PPE worn
- Lifting plan in place
- Electrical supply checked
- Fire risks controlled
- Competent person supervising

Press Selection

- Belt width checked
- Splice length checked
- Platen width suitable
- Platen length suitable
- Beam length suitable

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- Pressure capability suitable
- Temperature range suitable
- Cooling method available if required
- Press condition checked

Electrical

- Correct voltage confirmed
- Correct phase confirmed
- Correct plug confirmed
- Supply rating confirmed
- Control box checked
- Cables inspected
- Connectors inspected
- Probes inspected
- RCD/site protection considered where required
- Cables routed safely

Pressure

- Pressure system checked
- Hoses inspected
- Fittings inspected
- Gauge working
- Pressure units confirmed
- Maximum pressure not exceeded
- Pressure applied safely
- Pressure monitored during cure

Setup

- Lower platen clean and positioned
- Release material fitted where required
- Splice positioned correctly
- Edge bars or packing fitted where required
- Upper platen clean and positioned
- Beams fitted evenly
- Probes connected correctly
- Cables connected correctly
- Cooling hoses connected if required
- Settings checked before heating

Cure

- Correct temperature set
- Correct pressure set
- Cure time confirmed
- Timer started according to procedure
- Temperature monitored
- Pressure monitored
- Equipment monitored
- Area kept controlled

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Cooling and Dismantling

- Cooling completed correctly
- Pressure released safely
- Power isolated before dismantling
- Cables disconnected safely
- Hoses disconnected safely
- Beams removed safely
- Platens lifted safely
- Press parts stored safely

Final Inspection

- Splice surface checked
- Edges checked
- Alignment checked
- No blisters
- No visible voids
- No exposed fabric or cords
- No soft areas
- Flash trimmed safely
- Tools removed
- Guards refitted
- Conveyor restarted carefully
- Splice monitored under load
- Press setup record completed

Trainer Notes

This module should be delivered as awareness unless the learner is working under direct supervision of a competent vulcanising press operator.

Where possible, use:

- Vulcanising press
- Upper and lower platen
- Beam set
- Airbag or pressure system
- Control box
- Temperature probe
- Power cable
- Cooling hose
- Release cloth
- Edge bars
- Pressure gauge
- Example splice
- Photos of good and poor press setup
- Photos of press setup defects

The trainer should show the difference between:

- Correct and poor platen coverage
- Correct and poor beam position

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- Good and damaged cables
- Correct and incorrect pressure units
- Good and poor edge packing
- Correct cooling and opening too early
- Safe and unsafe cable/hose routing
- Good final splice finish and defective finish

The key message in this module is:

The press must be set up to control heat, pressure and time evenly across the whole splice.

For self-training, the learner should read each section, review the self-study answers, complete the practical exercise and check their understanding using the knowledge check.

Module Summary

A vulcanising press applies controlled heat and pressure to a prepared conveyor belt splice or repair.

Safe and successful press setup depends on selecting the correct press, checking power supply, inspecting cables, confirming pressure units, positioning platens correctly, fitting beams evenly, using suitable release materials, applying the correct pressure and temperature, completing the full cure time, cooling properly and inspecting the finished splice.

Press setup mistakes can cause splice defects, equipment damage and serious safety risks.

This module completes the 10-part Conveyor Shop Academy and Vulca-fix belt splicing foundation course.

Assessment Record

Learner name: _____

Assessor name: _____

Date: _____

Theory outcome: Competent / Not Yet Competent

Practical competence (separate supervised assessment): Not assessed / Assessed

Assessor comments: _____

Assessor signature: _____

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