

CONSTRUCTION TRAINING INTERNATIONAL

A.C.N. 069 758 023 A.B.N. 49 069 758 023

PO Box 311, Riddells Creek, Victoria 3431

Phone: 5428 6790

fax: (03) 5428 6317 E-mail: constructiontraining@bigpond.com

Website: www.constructiontraining.com.au

TRACTOR OPERATIONS



ASSESSMENT INSTRUMENT



TRACTOR

Performance Assessment & Oral / Written Assessment

Assessment Instrument

MARCH 2001

UNIT 1
CONDUCT ROUTINE CHECKS

Conduct routine checks on Tractor

- 1. Complete walk around machine _____
- 2. Underneath machine for any water or oil leaks _____
- 3. Tyre / wheel condition and inflation _____
- 4. Fuel _____
- 5. Hydraulic oil level _____
- 6. Transmission oil _____
- 7. Engine oil _____
- 8. Brake fluid (where applicable) _____
- 9. Power steering (where applicable) _____
- 10. Battery security, water level and cleanliness _____
- 11. Coolant _____

Visual check of structure / attachment for defects (at least 8 elements checked)

- 12. Attachments for condition and security _____
- 13. Damaged or broken parts _____
- 14. Fall on protective structure (FOPS) _____
- 15. Roll-over protection structure (ROPS) _____
- 16. Loose nuts, bolts and couplings _____
- 17. Hoses, fittings hydraulic rams for oil leaks _____
- 18. Connections for missing pins _____
- 19. Grease fittings and grease pins _____

PLAN WORK AND CHECK EQUIPMENT

Inspects site and plans work: All hazards are identified where applicable

- 20. Powerlines _____
- 21. Trees _____
- 22. Overhead service lines _____
- 23. Obstructions _____
- 24. Other equipment in area _____
- 25. Workers in area _____
- 26. Dangerous materials _____
- 27. Underground services _____
- 28. Recently filled trenches _____
- 29. Uneven ground _____

Appropriate access and path of Load movement is shown

- 30. To work area _____
- 31. Traffic control considered _____

Conducts pre-operational start-up checks in accordance with manufacturer's specifications/operating manual

- 32. Window clean _____
- 33. Mounts correctly _____
- 34. Adjusts seat _____
- 35. Fastens seat belt _____
- 36. Gear in neutral _____
- 37. Park brake on _____
- 38. Engine start _____
- 39. Warning device _____
- 40. Gauges _____
- 41. Warm up allowed _____
- 42. Attachment movement _____
- 43. Clear for travel _____
- 44. Foot brake moving forward & reverse _____
- 45. Holding brake, moving forward & reverse _____
- 46. Steering _____

OPERATES TRACTOR

Drives to the work area:

- 47. Ensures travel direction clear _____
- 48. Selects appropriate route _____
- 49. Travels at safe speed _____

Operates Tractor

- 50. Uses sufficient revs and speed _____
- 51. Avoids excessive wheel spin _____
- 52. Equipment operated at a safe speed _____
- 53. Ensures direction of travel clear _____
- 54. Uses appropriate path of travel _____
- 55. Signals are interpreted and observed _____

Identify the following signals

- 56. Stop – Hand _____
- 57. Travel – Hand _____

**SHUT DOWN EQUIPMENT AND
SECURE SITE**

**Shuts down equipment and secures
site:**

- 95. Parks and shuts down equipment _____
- 96. Machine parked in suitable area _____
- 97. Attachments lowered to ground _____
- 98. Neutralises controls _____
- 99. Applies holding brake _____
- 100. Idles to stop, locks ignition _____
- 101. Applies safety lock (where applicable) _____
- 102. Parks away from danger _____
- 103. Removes keys _____

1. Name three defects to look for in the hydraulic system

2. Briefly describe how you would check the air pressure of water filled tyres.

3. What safety precautions should be taken when inflating tyres fitted with demountable split rims?

6. Why are you not permitted to join a chain sling with a bolt?

7. What safety precautions should be taken when checking the tyre when checking the tyre pressure or inflating/deflating a tyre fitted to the wheel that has split safety – locking ring?
_____ ! _ !
8. What defects would you look for on the hydraulic rams and hydraulic pressure hoses?

9. When would you check the transmission fluid in a tractor?

10. What happens when you add ballast to the Tractor?

11. Why is it important that the front tyres are of equal pressure on your Tractor?
_____ ! _ _ !
12. What would you look for on the attachment pins to ensure they will not fall out?

13. What underground services would you check for before starting to excavate?
_____ ! _ _ !
14. If you accidentally damage an underground electrical cable who would you immediately contact to render the power supply safe?

15. Name six possible hazards that may be found on a work site that you must check for before operating the Tractor

16. What is the minimum distance any part of a front end loader is allowed to operate from:
a) Distribution powerlines
b) High Voltage transmission lines
_____ ! _ _ !

17. Why is it dangerous to drive along the high side of a trench?

18. What is the danger of using a Tractor on uneven soft or sloping ground?
_____ !__!
19. What is the danger of starting and running an internal combustion engine in an enclosed space?
_____ !__!
20. What action must be taken before starting up and whilst operating a combustion engine in an enclosed space?

21. Why is it important to keep the machine floor plates free from oil, grease and tools?

22. What must be provided and maintained on the exhaust of an internal combustion engine operated in a confined space such as a shaft or tunnel?

23. When should hearing protection (ear muffs) be worn?

24. What is the minimum type of footwear that an operator should wear to operate loadshifting equipment?

25. What must be provided for a passenger to ride on a machine with the operator?
_____ !__!
26. Which is the preferred direction of travel, on a sloping surface.
_____ !__!
27. What gear should be selected to travel down a steep sloping surface?

28. What hazards would you check for on a travel route before moving the Tractor to perform work?

29. What Government license do you require to drive a Tractor over 4.5 tones on a public road?

30. What should be provided on a front-end loader to prevent the operator from been pinned by an overturned machine?
_____ !__!
31. What action would you take if you noticed a bulge form in a hydraulic hose?
_____ !__!

32. When should the operator complete tests, checks and inspections on a Tractor that is to be operated?

33. Describe how to safely mount/dismount a Tractor.

34. Where can the start up procedures and shut down procedures for the Tractor be found?

35. Before performing any work with a Tractor what should you do if you have not used the machine before?

36. On mounting the front-end loader what should you do before attempting to start the engine?

37. Once sitting in the operator's seat and before driving off, what should you do for safety and comfort?

38. What should be referred to for the correct start up and shut down procedure for the equipment

39. Name the important items that should be tested after moving off.

40. Before reversing a Tractor what action should you take?

41. What action would you take if you found damage or a defect on the Tractor?

42. You are required to operate a Tractor on soft and uneven ground. What effect would this have on the load capacity that you could raise and carry with the Tractor?

43. Before reversing the Tractor what actions/ precautions should you take?

44. Where a front-end loader has two pedals for independent rear brakes what must be done to these pedals before the loader is driven on a road?

45. The Tractor you are about to operate is fitted with air brakes, what precautions must you take when operating?

46. What device is fitted to the rear brakes of a Tractor that assist with maneuvering?

47. How are vehicles/machines stopped from coming too close to an excavation?
_____ !____!
48. What are the dangers of driving your Tractor close to the edge of an excavation?

49. You have to travel a Tractor, which is fitted with a very large balloon type tyres on a road. What are the dangers?

50. Interpret the following signal.

51. The Tractor you are operating overheats and coolant level requires checking. What precautions would you take prior to removing the radiator cap and topping up the coolant?

52. Name three areas where you would not park the Tractor?

53. When leaving the Tractor what should be done with all hydraulically raised attachments?

54. What type of surface is the ideal type to park a Tractor on?

55. What post-operational checks should the operator carry out on the Tractor to prepare it for the next operator?

56. For what reason should the key be removed form the ignition of the machine?

57. List eight things that must be done to ensure safe parking of a Tractor?



TRACTOR

Answers to Written Assessment

Assessment Instrument

MARCH 2001

1. Name three defects to look for in the hydraulic system
(2) *Oil Leaks, Loose Connections, Splits fractures or bulges in hoses, Bent piston rod, Damaged rams.* _____
2. Briefly describe how you would check the air pressure of water filled tyres.
(5) *Check with the valve at the top of the wheel or when using a glycerine gauge, the wheel can be in any position.* _____
3. What safety precautions should be taken when inflating tyres fitted with demountable split rims?
(6) *Do not stand in front of the wheel and inflate tyre in a cage if available and ensure all split rim bolts are secure.* _____
6. Why are you not permitted to join a chain sling with a bolt?
(7) *Because the bolt is not an approved joining method and does not have a load rating.* _____
7. What safety precautions should be taken when checking the tyre when checking the tyre pressure or inflating/deflating a tyre fitted to the wheel that has split safety – locking ring?
(9) *Use a gauge with a chuck and inflate the tyre in a cage (if available) or by standing to the side. Do not stand in front of the wheel.* ! _ _ !
8. What defects would you look for on the hydraulic rams and hydraulic pressure hoses?
(15) *Leaks from seals, split or fractured hoses, and bent or damaged rams.* _____
9. When would you check the transmission fluid in a tractor?
(16) *When the transmission is cold and after the transmissions hot or in-accordance with manufacture's specifications* _____
10. What happens when you add ballast to the Tractor?
(17) *Increases the weight and the stability of the loader and provides better traction as the tread is embedded.* _____
11. Why is it important that the front tyres are of equal pressure on your Tractor?
(20) *If the tyre pressure is not equal the weight of the load would transfer to the side of less pressure, which may cause the Tractor to over turn.* ! _ _ !
12. What would you look for on the attachment pins to ensure they will not fall out?
(23) *Make sure that all pins and keeper plates are not worn and that the keeper plates and safety pins or clips are not damaged or missing.* _____
13. What underground services would you check for before starting to excavate?
(25) *Check for power, telephone, gas, water, sewer, drainage, fibre-optic cable lines.* ! _ _ !
14. If you accidentally damage an underground electrical cable who would you immediately contact to render the power supply safe?
(28) *Supervisor who would contact the electrical supply authority.* _____

15. Name six possible hazards that may be found on a work site that you must check for before operating the Tractor.

(29)

- *Uneven / unstable ground*
- *Personnel*
- *Powerlines*
- *Trees*
- *Overhead service lines*
- *Bridges*
- *Surrounding building, structures*
- *Obstructions*
- *Other equipment*
- *Dangerous materials*
- *Underground services (gas, electricity, sewerage, water, communication lines).*
- *Recently filled trenches*

16. What is the minimum distance any part of a front end loader is allowed to operate from:

(31)

- a) *Distribution powerlines*
- b) *High Voltage transmission lines*
- a) *At least 2 metres from distribution powerlines*
- b) *At least 6 metres from high voltage transmission lines*

! !

Note: Assessor must ensure that the applicant is aware of Statutory Authority regulations

17. Why is it dangerous to drive along the high side of a trench?

(32)

The trench could caved in and cause the loader to overturn

18. What is the danger of using a Tractor on uneven soft or sloping ground?

(34)

The machine could overturn

! !

19. What is the danger of starting and running an internal combustion engine in an enclosed space?

(35)

Exhaust fumes in an enclosed space can kill

! !

20. What action must be taken before starting up and whilst operating a combustion engine in an enclosed space?

(36)

The 'enclosed space' can kill

21. Why is it important to keep the machine floor plates free from oil, grease and tools?

(37)

- *To prevent the foot plates from becoming slippery and causing operator to slip when mounting or dismounting*
- *To prevent the tool from fouling controls*

22. What must be provided and maintained on the exhaust of an internal combustion engine operated in a confined space such as a shaft or tunnel?

(38)

An approved exhaust control unit, catalytic converter (scrubber)

23. When should hearing protection (ear muffs) be worn?

(40)

When the noise level could contribute to the loss of hearing

24. What is the minimum type of footwear that an operator should wear to operate
(43) loadshifting equipment?
Footwear that encloses the foot and has a non-slip sole _____
25. What must be provided for a passenger to ride on a machine with the operator?
(44) *A special seat and seat belt must be provided within the confines of the machine for the passenger.* !____!
26. Which is the preferred direction of travel, on a sloping surface.
(47) *Directly up or down the sloping surface.* !____!
27. What gear should be selected to travel down a steep sloping surface?
(48) *The lowest possible gear.* _____
28. What hazards would you check for on a travel route before moving the Tractor to perform work?
(49)
 - *Personnel*
 - *Hidden holes*
 - *Drop offs*
 - *Embankments*
 - *Overhead obstructions*
 - *Underground services*
 - *Overhead powerlines*
 - *Telephone lines*
 - *Other obstructions that could be dangerous* _____
29. What Government license do you require to drive a Tractor over 4.5 tones on a public road?
(51) *The appropriate license as required by the relevant state vehicle licensing authority.* _____
30. What should be provided on a front-end loader to prevent the operator from been pinned by an overturned machine?
(52) *Roll over protection equipment (ROPS) and seat belt.* !____!
31. What action would you take if you noticed a bulge form in a hydraulic hose?
(56) *Stop operating, tag the machine and make sure the hose is replaced before machine is used.* !____!
32. When should the operator complete tests, checks and inspections on a Tractor that is to be operated?
(57) *Daily before use.* _____
33. Describe how to safely mount/dismount a Tractor.
(58) *Facing the machine use the grab rail or hand rail and steps to mount / dismount the machine (Three points of contact)* !____!
34. Where can the start up procedures and shut down procedures for the Tractor be found?
(59) *In the manufacturer's manual* _____

35. Before performing any work with a Tractor what should you do if you have not
(60) used the machine before? _____
Read the operator's manual to familiarize yourself with the machine (e.g. controls and decal information). Seek training and supervision from your employer if you consider you cannot competently operate the equipment.
36. On mounting the front-end loader what should you do before attempting to start
(61) the engine? _____
Make sure controls are in neutral or park and park brake is on.
37. Once sitting in the operator's seat and before driving off, what should you do for
(62) safety and comfort? _____
Adjust seat until comfortable, adjust mirror (if applicable) and secure safety belt.
38. What should be referred to for the correct start up and shut down procedure for
(63) the equipment? _____
Always refer to the manufacturer's manual for the correct procedure.
39. Name the important items that should be tested after moving off.
(65) *The foot brake and steering* _____
40. Before reversing a Tractor what action should you take?
(67) *Look over both shoulders to ensure the path of travel is clear and sound horn twice before moving unless there is a reversing alarm fitted. Continue to look in direction of travel.* !____!
41. What action would you take if you found damage or a defect on the Tractor?
(69) *Tag the machine, put it out of service and report and damage or defects to the authorized person.* _____
42. You are required to operate a Tractor on soft and uneven ground. What effect
(75) would this have on the load capacity that you could raise and carry with the Tractor?
It would reduce the load that could be raised and safely carried. !____!
43. Before reversing the Tractor what actions/ precautions should you take?
(92) *Look over both shoulders to ensure the path of travel is clear and sound the horn twice before moving unless there is a reversing alarm fitted. Continue to look in the direction of travel.* _____
44. Where a front-end loader has two pedals for independent rear brakes what must
(95) be done to these pedals before the loader is driven on a road?
The pedals must be connected together. !____!
45. The Tractor you are about to operate is fitted with air brakes, what precautions
(96) must you take when operating? _____
- *Make sure correct pressure is up and can be maintained before moving off*
 - *Never pump or fan the air brakes*
 - *Brake firmly in one application*
 - *Never use a brake that neutralizes the transmission when traveling*

46. What device is fitted to the rear brakes of a Tractor that assist with maneuvering?
(98) *Dual brake pedals, a separate brake pedal for each rear wheel.* _____
47. How are vehicles/machines stopped from coming too close to an excavation?
103 *By using barricades and warning signs* !_____!
48. What are the dangers of driving your Tractor close to the edge of an excavation?
104 *The excavation could collapse causing the Tractor to over turn or fall into the excavation.* _____
49. You have to travel a Tractor, which is fitted with a very large balloon type tyres on a road. What are the dangers?
105 *At speed, wheel bounce will develop making it more difficult to control the Tractor. Front tyre pressures should be lowered before traveling on the road.* _____
50. Interpret the following signal.
106 *Stop* _____
51. The Tractor you are operating overheats and coolant level requires checking.
114 What precautions would you take prior to removing the radiator cap and topping up the coolant?
Allow the machine to cool down, loosen radiator cap to release pressure using a cloth to protect from hot water burns then remove the radiator cap slowly. Top up using manufacturer's recommended coolant. _____
52. Name three areas where you would not park the Tractor?
117
 - *Access ways*
 - *Near overhangs*
 - *Refuelling sites*
 - *Tidal or flood areas*
 - *Adjacent to an excavation*_____
53. When leaving the Tractor what should be done with all hydraulically raised attachments?
118
 - *Attachments lowered*
 - *Cutting edge flat on ground*
 - *Lever placed in float position*
 - *Pressure removed from hydraulic lines*_____
54. What type of surface is the ideal type to park a Tractor on?
119 *A firm level surface* _____
55. What post-operational checks should the operator carry out on the Tractor to prepare it for the next operator?
121
 - *Look under and around the loader for leaks or defects. Check the structure and equipment for defects and wear.*
 - *Check the oil, fuel and water level when cool.*_____
56. For what reason should the key be removed from the ignition of the machine?
122 *To prevent unauthorized movement.* _____

57. List eight things that must be done to ensure safe parking of a Tractor?
124 _____

- *Park clear of access ways overhangs and fuelling site.*
- *Park clear of excavations and trenches*
- *Park clear of fire hazards*
- *Park clear of entrances, exits*
- *Parked clear of fire-fighting and electrical equipment*
- *Park clear of tidal and flood areas*
- *Park on a firm level ground or if on an incline facing slope.*
- *Lower the bucket with cutting edge on ground*
- *Engine is stopped in accordance with manufacture's manual (idle engine before turning off).*
- *Secure parking brake, leave controls in park position or in neutral.*
- *Remove the keys*
- *Secured the machine against unauthorised movement.*