

Unit Standard **918**

Demonstrate knowledge of light vehicle final drive assembly operation

Level 3 Credit 4 v4

Student Name:

School:

Date:

Marked By: _____ **Mark** _____ **%**

Feedback: **Excellent work**

Good work

Please attempt all questions

Please resubmit

USEFUL WEBLINKS

Differential

<http://youtu.be/gIGvhvOhLHU>
http://youtu.be/IN_xGRt_vVY
http://youtu.be/2i9eRoRkx_U
<http://youtu.be/K4JhruinbWc>
<http://youtu.be/WAyD9HIMtcU>

Manual Transmission

<http://youtu.be/IKywZ730JFs>
<http://youtu.be/QPaUJfA1KsY>
<http://youtu.be/vzYGcDZXgWQ?list=PLxyaRsQHmj8Z6BLsAb05RafeILvj-P8nD>
<http://youtu.be/MgmxydwmtTg>

Cone Clutch

<http://youtu.be/fMcTgcK4fJ8>

Limited Slip

<http://youtu.be/duLUwp11i5A>
<http://youtu.be/WeLm7wHvdxQ>
<http://youtu.be/w2bRb17jJ1U?list=PLNEpLfCMNijZmu5DlXhMcrw7UgD2rlBpn>
<http://youtu.be/w2bRb17jJ1U>

Four Wheel Drive

<http://youtu.be/-dh0VQxprJA>
<http://youtu.be/QjMdUHDI6UY>
<http://youtu.be/gNq3Sc6opNU>
<http://youtu.be/47m7QAPrpsI>
<http://youtu.be/MjaCbpw84kw>

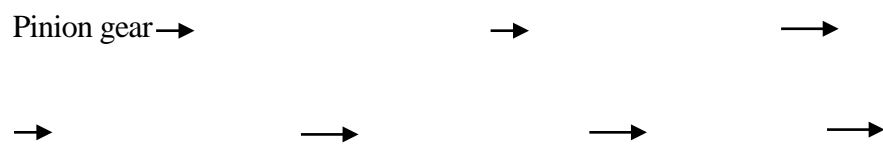
Traction Control

<http://youtu.be/CKtqDIC-rHs>
<http://youtu.be/LXwNllw0CLQ>
<http://youtu.be/K5AJVMk4U8Q>
<http://youtu.be/Z8KjsjrIGqI>
<http://youtu.be/mKiTAcXK6M4>

REVIEW QUESTIONS ONE

Q1 Describe the main function of a differential on a vehicle.

Q2 Outline the path of power through a standard differential.



Q3 Describe the purpose of an axle shaft.

Q4 Describe a likely consequence of excessive wheel spin for the differential.

Q5 Explain why helical gears are commonly used in transverse engines.

Q6 Name each of the components pictured below and outline their main function.

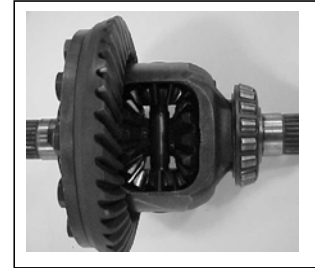
Component

Function



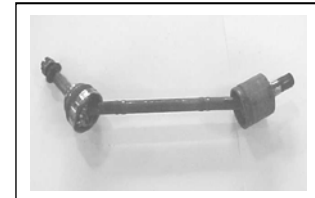
Component

Function



Component

Function

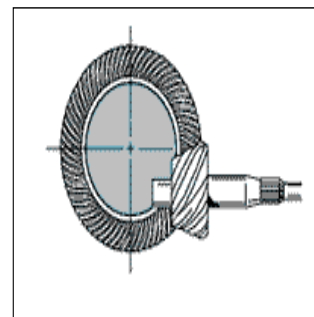


Q7 Describe the operation of the cone clutch type limited slip differential.

Q8 Name the gear type pictured below and list four advantages of using this gear type.

Gear type

Advantages



- Q9 Explain the term 'back lash' .
- Q10 Name the two main integral type differential drive arrangements.
- Q11 Describe the operation of a clutch disc limited slip differential arrangement.
- Q12 Describe the operation of a viscous clutch differential when a road wheel begins to spin.
- Q13 List three advantages of a limited slip differential.
- Q14 List three disadvantages of a locked differential arrangement.

Q15 Explain the term 'torque steer'.

Q16 List the four most common configurations used as final drives on FWD vehicles.

Q17 Describe the purpose of both gear levers in a 4WD transfer case.

Q18 Explain the purpose of the preload springs in the cone clutch limited slip differential arrangement.

Q19 List three factors that determine the strength of a silent chain.

Q20 Permanent four wheel drive (all wheel drive) transmissions are always fitted with a third differential. Explain the need for this third differential.

Q21 At low vehicle speed what electrical component is activated to aid vehicle traction? Explain how it achieves this.

Q22 At high vehicle speed explain how traction control is maintained?