Small Engine Repair

Developed and Presented by
Scott McFarland

On behalf of
Gateway Community College
Safety

Chapter #1
HEALTH AND SAFETY IN THE WORKPLACE

You never know when you might need it.

leenks.com
Personal Protection Equipment

- Proper/protective clothing
- Safety glasses – required by OSHA for certain activities
- Face shield
- Hearing protection
- Respiratory protection - chemical/dust

eye wash station?
Hazardous Material

- Hydrogen gas
- MSDS
- Disposal
- Shop rags
- Fuel storage (cabinet)
- Container labeling
- Poison Control -

(800) 222-1222
1. Chemical Product Information
2. Composition/Ingredients
3. Hazards Identification
4. First Aid Measures
5. Fire Fighting Measures
6. Accidental Release Measures
7. Handling and Storage
8. Exposure Controls/Personal Protection
9. Physical and Chemical Properties
10. Stability and Reactivity
11. Toxicological Information
12. Ecological Information
13. Disposal Considerations
14. Transport Information
15. Regulatory Information
16. Additional Information
Ventilation

• Carbon Monoxide (CO) – produced by incomplete combustion of gasoline (HC-based fuels)

• Evaporative emissions

• Silicon & painting

• Recovery systems
Compressed Air

- Compressors
- Nozzles/fittings
- Systems – copper pipe
- Air in bloodstream...
Lifting

• #1 injury on work place – your back...
• Lifting belt
• Lift table
• Lawn tractor lift jack – HF <$100
• Ramps
Electrical Safety

• Jewelry
• Ground prong on plugs
• GFI
• 120 vs. 240 Volts
• How many high current items per outlet?
Fire Extinguishers

- Class A – ordinary combustibles
- Class B – flammable liquids
- Class C – electrical equipment
- Class D – combustible metals

State and local codes may require a scheduled inspection of fire extinguishers
Tools and Measuring Instruments

Chapter #2
Hand Tools

• Tool programs
• Quality
• Specialty
Wrenches

- Open end
- Box end
- Adjustable
- Tubing – fuel/brake line
- Socket
- Allen
- Torx
Torque wrenches

- Beam
- Click
- Dial
- Torque to yield
- + Degree
- Foot/inch pounds
Pliers

- Gripping, pulling, cutting
- Vise-grips
- Strippers
- Retaining Ring
  - Inside
  - Outside
Screwdrivers

- Slotted
- Phillips
- Offset
Hammers/punches

- Ball peen
- Rubber mallet
- Plastic mallet
- Center punch
- Pin punch
Assorted

- Hacksaw
- Reamers
- Files
- Chisels
- Picks/probes/pickup
Vise/Bench Grinder
Pullers/holders

- Flywheel puller and holder
- Starter clutch wrench
Ridge Reamer

• Useful?
Ring Spreader

• Useful?
Ring compressor

- Must have!
  - Sized for small pistons
  - Get a decent one
Cylinder Hone
Valve Spring Compressor
Lapping stick
Engine Test Instruments

• Tachometer
• Spark Tester - a must...
• Compression Tester
• Leak Down Tester
Cleaning Equipment

- Parts washer/Fluid
  - A must have item
Measuring Instruments

• Micrometers
Measuring Instruments

- Vernier Caliper
Measuring Instruments

• Dial Indictor
Measuring Instrument

• Telescoping Gauge
Measuring Instrument

• Small Hole Gauge
Measuring instrument

- Thickness Gauge or Feeler Gauge
Measuring Instrument

• Combination Square
  – Measuring valve height
  – Straight edge
Screw Gauge

• How about an assortment of hardware???
Fasteners, Sealants, and Gaskets

Chapter #3
Threaded fasteners

- Bolts
- Nuts
- Washers
Tap/Die
Keys
Thread Adhesives
Sealant

- Form in Place
- RTV
- Anaerobic Sealant
Antiseize Compounds
Gaskets
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