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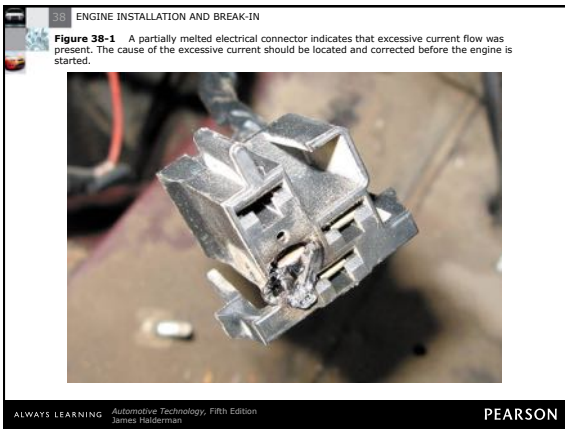
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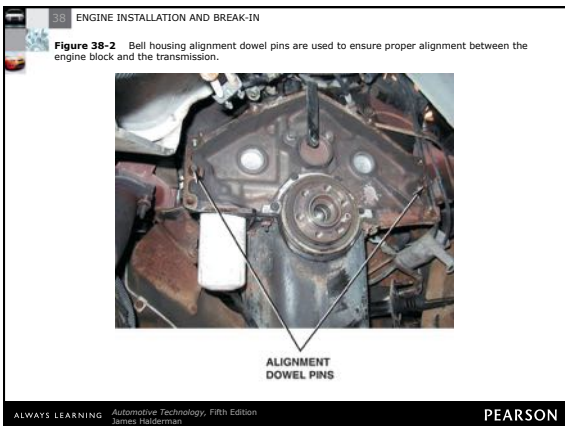
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38 ENGINE INSTALLATION AND BREAK-IN

**TECH TIP**

**The Headless Bolt Trick**

Sometimes parts do not seem to line up correctly. Try this tip the next time. Cut the head off of extra-long bolts that are of the same diameter and thread as those being used to retain the part, such as a transmission. ● **SEE FIGURE 38-3.**

Use a hacksaw to cut a slot in this end of the guide bolts for a screwdriver slot. Install the guide bolts; then install the transmission. Use a straight-blade screwdriver to remove the guide bolts after securing the transmission with the retaining bolts.

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38 ENGINE INSTALLATION AND BREAK-IN

**Figure 38-3** Headless long bolts can be used to help install a transmission to the engine.

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38 ENGINE INSTALLATION AND BREAK-IN

**Figure 38-4** The internal splines inside the torque converter must be properly aligned with all of the splines of the automatic transmission.

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38 ENGINE INSTALLATION AND BREAK-IN

**Figure 38-5** It is often easier to install all of the accessory drive belts before the engine is installed in the vehicle.



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38 ENGINE INSTALLATION AND BREAK-IN

**Figure 38-6** A fixture installed that is used as a place to attach the hosting chains.



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38 ENGINE INSTALLATION AND BREAK-IN

**? FREQUENTLY ASKED QUESTION**

**What Is Break-In Engine Oil?**

Many years ago, vehicle manufacturers used straight weight such as SAE 30 nondetergent engine oil as break-in oil. Today, the engine oil recommended for break-in (running in) is the same type of oil that is recommended for use in the engine. No special break-in oil is recommended or used by the factory in new vehicles. Always use the specified viscosity oil as recommended by the vehicle manufacturer.

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38 ENGINE INSTALLATION AND BREAK-IN

**Figure 38-7** Even though the dash gauge may show normal operating temperature, a scan tool or an infrared pyrometer can also be used to verify proper coolant temperature.



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