

HOW TO USE THIS MANUAL

Chilton's Total Car Care manual for Ford Taurus and Mercury Sable is intended to help you learn more about the inner workings of your car and save you money on its upkeep and operation. The first two sections will be used the most, since they contain maintenance and tune-up information and procedures. Studies have shown that a properly tuned and maintained car can get better gas mileage than an out-of-tune car. The other sections deal with the more complex systems of your vehicle. Operating systems from engine through brakes are covered to the extent that we feel the average do-it-yourselfer becomes mechanically involved, as well as more complex procedures that will benefit both the advanced do-it-yourselfer mechanic as well as the professional.

A secondary purpose of this book is as a reference for owners who want to understand their car and/or their mechanics better. In this case, no tools at all are required.

Before attempting any repairs or service on your car, read through the entire procedure outlined in the appropriate section. This will give you the overall view of what tools and supplies will be required. There is nothing more frustrating than having to walk to the bus stop on Monday morning because you were short one gasket on Sunday afternoon. So read ahead and plan ahead. Each operation should be approached logically and all procedures thoroughly understood before attempting any work. Some special tools that may be required can often be rented from local automotive jobbers or places specializing in renting tools and equipment. Check the yellow pages of your phone book.

Sections contain adjustments, maintenance, removal and installation procedures, and repair or overhaul procedures. When repair is not considered practical, we tell you how to remove the failed part and then how to install the new or rebuilt replacement. In this way, you at least save the labor costs. Backyard overhaul of some components is just not practical, but the removal and installation procedure is often simple and well within the capabilities of the average car owner.

Two basic mechanic's rules should be mentioned here. First, whenever the left side of the car or engine is referred to, it is meant to specify the driver's side of the car. Conversely, the right side of the car means the passenger's side. Second, all screws and bolts are removed by turning counterclockwise, and tightened by turning clockwise, unless otherwise noted.

Safety is always the most important rule. Constantly be aware of the dangers involved in working on or around an automobile and take proper precautions to avoid the risk of personal injury or damage to the vehicle. See the procedure in this section, Servicing Your Vehicle Safely, and the SAFETY NOTICE on the acknowledgment page before attempting any service procedures.

Pay attention to the instructions provided. There are 3 common mistakes in mechanical work:

- 1. Incorrect order of assembly, disassembly or adjustment. When taking something apart or putting it together, doing things in the wrong order usually just costs you**

extra time; however it CAN break something. Read the entire procedure before beginning disassembly. Do everything in the order in which the instructions say you should do it, even if you can't immediately see a reason for it. When you're taking apart something that is very intricate, you might want to draw a picture of how it looks when assembled at one point in order to make sure you get everything back in its proper position. We will supply exploded views whenever possible, but sometimes the job requires more attention to detail than an illustration provides. When making adjustments (especially tune-up adjustments), do them in order. One adjustment often affects another and you cannot expect satisfactory results unless each adjustment is made only when it cannot be changed by any other.

2. **Overtightening (or undertightening) nuts and bolts.** While it is more common for overtightening to cause damage, undertightening can cause a fastener to vibrate loose and cause serious damage. Especially when dealing with aluminum parts, pay attention to torque specifications and utilize a torque wrench during assembly. If a torque figure is not available, remember that if you are using the right tool to do the job, you will probably not have to strain yourself to get a fastener tight enough. The pitch of most threads is so slight that the tension you put on the wrench will be multiplied many, many times in actual force on what you are tightening. A good example of how critical torque is can be seen in the case of spark plug installation, especially when you are putting the plug into an aluminum cylinder head. Too little torque can fail to crush the gasket, causing leakage of combustion gases and consequent overheating of the plug and engine parts. Too much torque can damage the threads or distort the plug, which changes the spark gap.

There are many commercial chemical products available for ensuring that fasteners won't come loose, even if they are not torqued just right (a very common brand is Loctite®). If you're worried about getting something together tight enough to hold, but loose enough to avoid mechanical damage during assembly, one of these products might offer substantial insurance. Read the label on the package and make sure the product is compatible with the materials, fluids, etc. involved before choosing one.

3. **Crossthreading.** This occurs when a part such as a bolt is screwed into a nut or casting at the wrong angle and forced, causing the threads to become damaged. Crossthreading is more likely to occur if access is difficult. It helps to clean and lubricate fasteners, and to start threading with the part to be installed going straight in, using your fingers. If you encounter resistance, unscrew the part and start over again at a different angle until it can be inserted and turned several times without much effort. Keep in mind that many parts, especially spark plugs, use tapered threads so that gentle turning will automatically bring the part you're threading to the proper angle if you don't force it or resist a change in angle. Don't put a wrench on the part until it's been turned in a couple of times by hand. If you suddenly encounter resistance and the part has not seated fully, don't force it. Pull it back out and make sure it's clean and threading properly.

Always take your time and be patient; once you have some experience, working on your car will become an enjoyable hobby.