

LOCATING AN ENGINE

I will suggest a couple of sources but these are by no means the best or only source of Mazda rotaries. If you live in or near a large city, the first place to check should be in the Yellow Pages under Automobile Parts - Used. Look for a dealer that specializes in engines. Because the Mazda rotary is relatively rare (compared to your basic Ford or Chevy), it is quite likely that there will not be an engine in stock at that particular yard on the day you call. Most large recyclers and junk yards are connected to a computerized nation wide locator service that catalogs and ships parts all over the country. Look for a yard that belongs to this service and your chances of finding the engine of your choice will be much better. The inventory of this network changes on a weekly basis so don't be discouraged if you don't find your engine on the first try. Find a dealer willing to check the locator service for you and call once a week until you find the right engine. It doesn't happen often but it's worth checking the used auto parts classified ads in the newspaper as well. I found a nice engine at lower than usual cost this way but it was lacking intake system and other accessories.

ENGINE INFO YOU SHOULD KNOW

Unless you are very confident of the engine's condition, it is strongly recommended that the engine be torn down for inspection and any worn parts replaced. Even if there are no worn parts this effort is worthwhile in order to de-carbon the various seal grooves in the rotors and assure yourself that everything is in good order.

As you may know, the lubrication of the rotor apex seals is not accomplished via the engines normal oiling system. Since the apex seals receive insufficient oiling from this source, an alternate method is used. Mazda used two methods of Apex seal lubrication during the evolution of the 12A and 13B engines. In the early models which were all carbureted, oil was injected into the carburetor float bowl where it was mixed with fuel and aspirated into the engine.

With the introduction of fuel injection, the oil was injected directly into the rotor housing. In both cases it is the oil from the engine's oil pan which is being injected. This is of course 4-Cycle high detergent oil which ultimately gets burned in the combustion chamber. When this oil burns, it leaves a lot of carbon and ash behind which tends to get impacted in the Apex seal grooves and to a lesser extent, the side seal grooves. After disassembling several 13B engines of various ages, it is my opinion that this carbon buildup is the main factor limiting engine life. The buildup can cause stuck seals and rapid wear.

This buildup could have been greatly reduced by injecting 2-Stroke oil which was designed to burn with a minimum of deposits. Why did Mazda choose to do it the way they did? It was mainly a marketing decision. They perceived (correctly, I think) that the public would have a negative reaction to a requirement to refill a separate reservoir with 2-stroke oil (which might not be available at all gas stations). In many consumers minds it would also indicate that their \$40,000 sports car had a "cheap 2-stroke engine". Because all other engines using oil injection are two-strokes, there are many people under the mistaken impression that the rotary is a two cycle engine.

The method of apex seal lubrication I recommend is the same as that used by the car racers. That is, simply removing the oil injector pump hardware and mixing a bit of oil in the fuel. Very little oil is needed. I have been using between 4 and 5 ounces of 2-stroke oil per 5 gallons of gasoline. Others have used as little as 3 oz per 5 gal. with good results. This also eliminates the possibility of oil injector pump failure and since the engine oil is no longer being consumed, it does not need to be topped off as often. Yes, adding oil to the fuel is inconvenient at times but the improvement in long