

WHY SPARK ARRESTORS?

BY GLEN FORD



Left: stacked disc type. See <http://www.jacksmallengines.com/strapmain.cfm> for a good example. Center: the most popular is NAPA 1 1/2" ID and OD part number 35807. Tailpipe for center arrestor is 41784. Right: NAPA 2" ID and OD is part number 21578. Adapter 41886 goes from 1 1/2" pipe to 2" ID. Tailpipe is 42536.

I am often asked why spark arrestors are required on motorcars at excursions. Motorcar Operators West (MOW), and the other western states clubs, have this as a requirement in an effort to prevent wildland fires. Several of the recent spectacular Southern California wildfires were started as a result of power lines down. Each one of the big three California utility companies is now in court with California Department of Forestry and Fire (CAL FIRE) lawyers settling up the cost of the fires they caused. In California an individual or entity can be charged with starting a fire and be fined or made to pay back the cost of suppressing the fire.

An Engine Company costs \$150 / hr.

A bulldozer - \$55 / hr.

A 15 person inmate hand crew - \$90 / hr. (the inmate gets \$1 per hour.)

A chief officer - \$50 / hr.

Wildland fires are fought and won on the ground. Nevertheless, as the fire grows in size and intensity aircraft are required, and the cost really goes up. During the week of October 22, 2007 CAL FIRE aircraft flew a total of 800 hours and dropped 1.15 million gallons of retardant.

The Air Tactics aircraft that controls airspace over the fire costs \$734 / hr.

A Bell UH-1 helicopter - \$936 / hr.

The S-2T 1,200 gallon Air Tanker - \$2,649 / hr. plus the cost of retardant at \$0.79 / gal.

DC-10 12,000 gallon Air Tanker - \$26,500 / hr. with 3 hour minimum.

Individuals may also face charges if homes are lost or firefighters are killed while fighting the fire. The MOW Board of Directors and meet coordinators feel strongly that the spark arrestor requirement protects the environment, the public, our club, and its members from the devastating effects of wildfire.

Here is some technical language about spark arrestors. A spark arrestor is a device which traps or pulverizes (to a size below 0.023 - inch diameter) exhaust particles as they are expelled from an exhaust system. The arrestor shall have provisions for the easy disposal of the accumulated particles without removal of the clamping or mounting devices from the stack, pipe, or manifold. Screen type devices shall provide for the easy removal and cleaning or replacement of the screen.

For motorcar use I recommend the "cyclone" type that pulverizes the particles by centrifugal force. It will have a band around it like a hose clamp or a pipe plug. This is the clean out port used to remove the accumulated particles. Be sure the pipe plug, or hole that the clamp covers, is mounted downward to facilitate proper clean out. At the end of the season the clamp is loosened exposing the hole, or the pipe plug is removed, and while the motor runs, all of the pulverized particles blow out on to the garage floor.

The spark arrestor may be placed after the muffler on Fairmont cars with Onan motors. Nelson and Hapco make suitable models. They are about half the size of the Fairmont muffler. I prefer to replace the Fairmont muffler with a combination muffler/spark arrestor made by Onan for generator application. The model number is 155-1258.

Two cycle cars should not use the screen type or stacked disc type of spark arrestor. They may clog up and affect performance.

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