

avoid the problem of converting an enormous amount of scrap metal back into recovered metal stock with the associated energy waste, particulates and carbon dioxide released from the burning of coal during smelting (even if the smelting is done in the new smaller electrically powered smelters, the electricity will likely be coal generated), together with the depletion of our resources by mining of additional iron ore, all to be used for the new cars. Likewise, with implementation of the Hydristor, most of the new manufacturing jobs involved will be going toward production of new items for sale, not treatment of scrap to be needlessly discarded while it is still serviceable. Furthermore, **the retrofit can be done at an expenditure low enough that the cost can be recouped in a period of about two to three years.**

At the same time, the simplicity and familiarity of the concepts and mechanics of operation of the Hydristor will enable all current repair shops to prepare their staffs to work with the hydristor with minimal problems and little retraining cost. As a consequence, the task of retrofit can be undertaken in a wide range of settings including manufacturers' factories, dealerships, and independent service garages so that conversion options will be maximized and a wider spectrum of jobs will be required. Even "back-yard" mechanics can purchase retrofit packages, custom designed for particular vehicles and install them themselves at a cost that is lower still.

It is also worth noting that the greater the effort that is made to install Hydristors, not only will the Nation's problems of energy efficiency and CO₂ emission be attacked more vigorously, but the more jobs will need to be devoted to their manufacture and installation. The market for this conversion effort will include not only new car production, but also owners of vehicles currently on the road, so that the potential market will be not only enlarged, but moreover greatly broadened to consist of customers who cannot afford the purchase of a new car, as well as those who can. Since the major portion of the costs of conversion will go toward the costs of labor for production of the Hydristors as well as the conversion work, this will mean not only a larger number of jobs, but a greater variety, from the manufacturers of Hydristors, and producers of new vehicles, down to "mechanics on the block".

For the future, the variety of potential applications for the Hydristor will prove to be enormous and will open up a wide range of additional new possibilities for auto/truck design and performance and a variety of applications in other areas. Many of these uses have already been foreseen and preliminary work undertaken by Mr. Kasmer. For instance he has developed a prototype garden tractor which has four driving wheels for which the front and rear wheels *on each side* drive in synchronous hydraulic lock-step with each other. Furthermore, the wheels on the right and the left sides of the tractor are designed so that all four wheels can turn in the same directions, forward and reverse, but with a flip of the control lever, the two right wheels and the two left wheels can be made to rotate simultaneously in opposite directions resulting in an ability to make not just tighter turns, but even turns so tight that the tractor can rotate in place about a vertical axis! To view the working prototype model of this tractor, and to see the independent motions of its wheels, and the ease with which the operator can choose "forward", "reverse", or "independent wheel motion", select the "Hydristor.com" website, click on "audio/video" and select the IFPE video. I include the garden tractor here, not because I think tractors by themselves will be our salvation, but because prototypes are an important part of the verification of any concept. **They demonstrate that the Hydristor is a workable, practical device, and show only a small portion of what it is capable of accomplishing.**

And, of course, for auto/truck use, the Hydristor makes a variety of new configurations possible. For instance, four-wheel drive could be accomplished with a second Hydristor to drive the second axle, or all four wheels could be powered by separate Hydristor motors fitting into the existing wheel wells (such as those visible on the wheels of the tractor in the IFPE video on the