Types of LATHE CARRIER

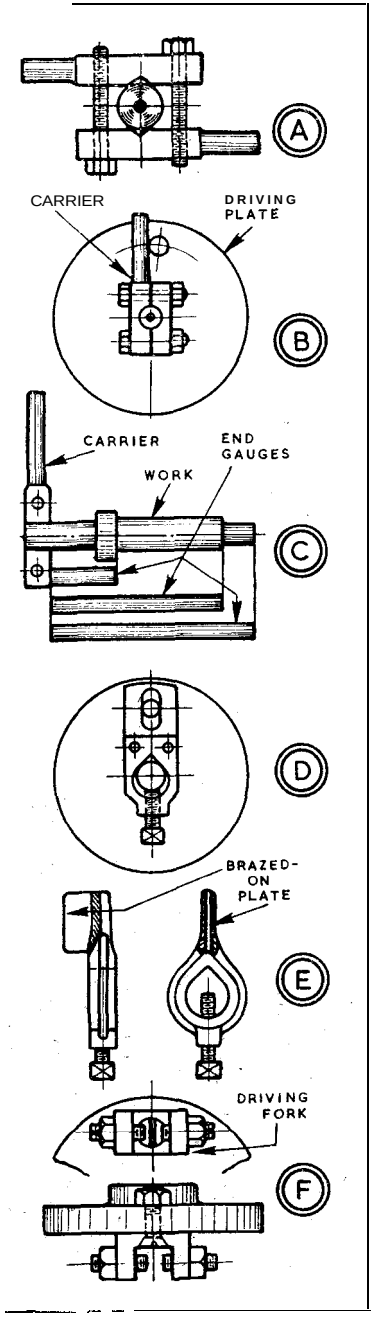
As a method of driving work of medium size, the standard type of lathe carrier is as good as any other; and two or three kinds will meet the requirements of most model engineers. Work which is large, however, needs a carrier that is massive in itself; while work which is small may seem to be overburdened by a standard carrier. In addition, the screw of the carrier can easily leave marks where it has been tightened to the work, from the combination of twisting and high local pressure-although, of course, protective packing will prevent this.

By GEOMETER

The clamp type carrier, often, used for between-centre turnmg on industrial lathes, is free of these and other failings, and is a type that can be easily and cheaply made up, as at A, from two pieces of square steel bar, and two bolts or setscrews. The square steel bar selected is appropriate to the size of the work: three such carriers, for instance, made from 1/4 in., 3/8 in. and 1/2 in. square material, with 1/8 in., 3/16 in. and 1/4 in. dia. screws, will cover most model engineering needs.

Small Vs can be made centrally between the. screws in each pair of pieces forming a carrier, to align it squarely on the work. If the Vs have to be filed, it is a good idea, to save time and effort, to drill a small hole at the joint-line of the clamped-up pieces; then, after separating them, align them with a piece of rod in the semi-circular grooves, grip them in the vice and file both grooves together. Naturally it is better if the Vs can be planed with a V-tool or milled with a V-cutter-though that is not essential. Even then drilling is the quickest and easiest way of roughing out-and will save work for the finishing tool or cutter.

If protection is required for the surface of work, flat strip material can be placed round it in the carrier. In tightening, however, there is very much less digging in than occurs with the screw of the standard type carrier. Nevertheless, for the important job



of a definite size, a clamp type carrier can be made to grip full circle, as at ***B,*** by drilling out to the diameter-or reaming if required. To give grip, drilling and reaming can be done with a piece of paper between the faces of the carrier, or one face can be eased afterwards with a file.

Such a carrier is particularly useful if work has to be gripped at a threaded end; in which case, the hole is drilled core size, then tapped for the thread. Drive is obtained as before by tightening the carrier, so it cannot unscrew if the thread is left-handed.

A carrier gripping full circle-which ensures that it is truly aligned to the work-can be used as a datum for end-gauges, as at C. Overall length and positions of shoulders can then be accurately obtained on all of several pieces of work. Each is entered flush with the left face of the carrier, and as the right face serves as the datum, allowance for width is made on the gauges. At each setting, the facing tool is brought up just to the end of a gauge.

Lash of carriers against their drivers-which occurs with work requiring intermittent cuts, can be prevented in various ways. One such, with a carrier having a long shank, as at ***B,*** is. to use a. strong rubber band round it and the pm m the driving plate. Attachment 1s made after adjusting the tailstock centre.

Using a forked or slotted tail on a carrier reduces lash at the driving pin to small proportrons ; and a simple made-up type can be as at ***D. The*** body of the carrier, resembling a standard type, can be made from thick rectangular material and the slotted tail of thinner plate, riveted on. The driving pin is fitted after adjusting the tailstock centre.

Using a standard carrier, a lash-free drive can be obtained as at ***E*** and ***F.*** A piece of steel plate is brazed or bronze-welded to the tail of the carrier, and entered between adjusting screws in the driving fork. Then any job on which lash could be fatal-particularly dividing or milling, can be safely performed. |Z|

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