

Selecting a Face Driver

In selecting a face driver several factors should be considered. As stated earlier, the simplest approach is to fill out an Information Request form on page 45 and send it to the factory. The second approach is to fill out the Information Request form and select the driver yourself based on material hardness, accuracy required, part diameter and the required mounting method. You may find it helpful to fill out the request form as you read the following example:

Assume you are attempting to turn a 15" long piece of 2" diameter bar stock (Dimension S), while maintaining .0004" TIR. The face driven end finishes at 1.5" in diameter (Dimension F). It has a .380 diameter center hole. The lathe has an A2-6 spindle nose. Part rotation is clockwise and the material is under 35 Rc. Harder materials may require carbide or diamond coated drive pins. Consult the factory in these circumstances.

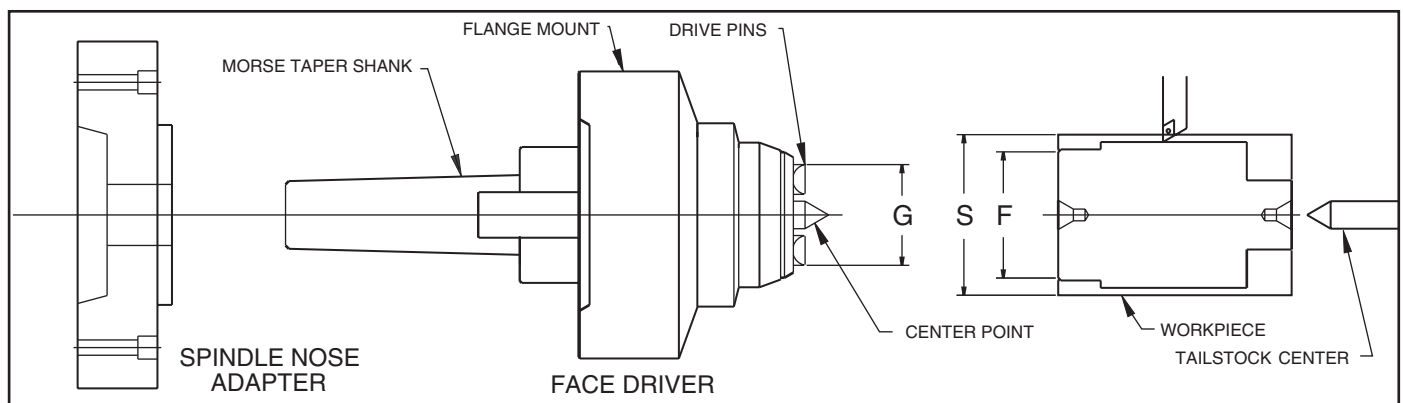
Accuracy is dependent on the mounting method and the design of the driver. Direct spindle mounting with a flange mount driver is the most accurate, followed by taper mounts and jaw chucking. Mechanical face drivers are accurate within .0004 - .0008" TIR depending on the mounting. Hydraulic face drivers are accurate within .0015 - .0025" TIR depending on the mounting. In this example, a flange mount mechanical face driver would be the best choice since you are trying to achieve .0004" TIR.

Sizing a Face Driver

To size the driver, determine the minimum stock diameter of the work piece on the face-driven end. Take into account any chamfers. The drive pin driving diameter must be smaller than this to allow for tool clearance. Allow a minimum of .080" clearance between the part diameter and the driving diameter of the face driver. In selecting the driving diameter, there are two general rules of thumb to consider: The maximum stock size should be no more than 2 – 2.5 times the driving diameter and the maximum part length should not exceed 15 times the driving diameter. Continuing with this example, a 44FM face driver (page 50) with a driving diameter of 1.02 – 1.42" would be a good choice. Even at the smallest driving diameter, the 44FM satisfies both rules of thumb. Other drivers will work, but the 44FM is neither too big nor too small.

Center points are selected based on center hole size. Drive pins are selected based on driving diameter, the direction of rotation and the choice of center point. In this example, a C4601 center point will accommodate the .380 diameter center hole. As stated earlier, when looking directly at the driver the rotation is clockwise. P4404 or P4406 drive pins satisfy both the rotation requirement and the selection of a C4601 center point. If several drive pins will work, select the pin with the largest driving diameter.

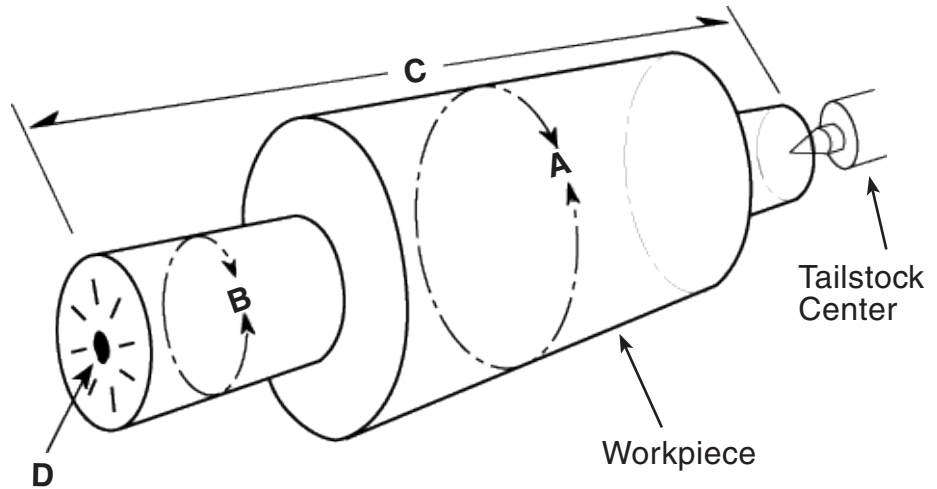
To finish the example, the correct selection is a 44FM face driver, a 708038 spindle adapter, a C4601 center point and six P4406 drive pins.





Information Request

The following technical information is needed to determine your face driver requirements. Please complete and fax to Riten at 1-800-338-0717. If you have any questions please phone our customer service department at 1-800-338-0027.



Face Driver Mounting Data

Type of mount (check one): Flange mount Chuck mount Taper mount Other _____

If flange mount (check one): A2-5 A2-6 A2-8 A2-11 Other _____

If taper mount (check one): 3 MT 4 MT 5 MT 6 MT Other _____

Workpiece Data

Workpiece Name (description): _____

A Beginning Diameter: _____ • Material Type: _____

B Finished Diameter: _____ • Material Hardness: Rc _____ BHN _____

C Overall Length of Workpiece: _____ • Workpiece Weight: _____

D Center Hole Diameter: _____ • Concentricity to Achieve: _____

E Center: Live _____ Dead _____ • Maximum Tailstock Ability Force (lbs.): _____

Please attach finished part print to this application data request sheet.

Operation

Maximum Depth of Cut: _____

Are there simultaneous operations? Yes No

Feed/Revolution: _____

Spindle rotation:

Cutting Speed (inch/rev.): _____

Clockwise Counterclockwise Both

RPM: _____

Machine Data

Machine Type (check one): Lathe Mill Hobber Grinder Other _____

Machine manufacturer: _____ Machine Model No: _____

Tailstock center: Live Dead

Tailstock center size: 3MT 4MT 5MT Other _____

Maximum tailstock force available (lbs.): _____