

## Counterbores and Taps

### Recommended Use of Porting Tools

Parker offers porting tools for machining precision ports (glands) conforming to DIN 3852-1, SAE J1926-1 (SAE straight thread port) and the new world standard port, ISO 6149-1.

Machining ports to accept Parker tube fittings is completed in three simple steps.

To begin, select the appropriate size port tooling for the fitting end in question. Next, follow these machining steps.

#### 1. Pilot Hole Drilling.

First, make a pilot hole for the counterbore by using a drill or bore size found in the counterbore tooling tables. Make hole depth according to the port detail on pages A18, A19 and A21. Parker Tube Fittings Division does not sell tap drills or bore tooling.

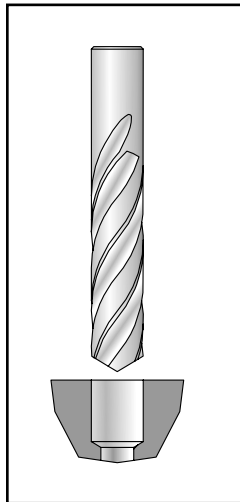


Fig. V1 — Pilot drilling for counterbore tool

#### 2. Port Counterboring.

Then, run the counterbore tool into the pilot diameter created in step 1. All features and dimensions of the port and O-ring cavity are built into the counterboring tool except the depth. The depth of the counterbore machining may vary from a light spotface, up to the maximum spotface depth listed on the port detail on pages A18 and A19.

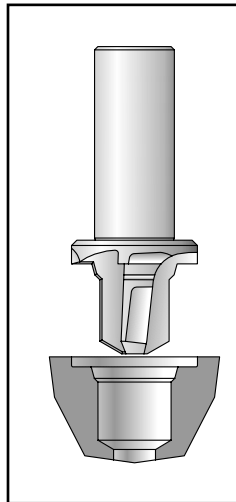


Fig. V2 — Counterboring tool

#### 3. Thread Tapping.

Lastly, the machined port must be threaded to accommodate the fitting. Use the appropriate Parker tapping tool or another tap intended for the same thread type, size, and class.

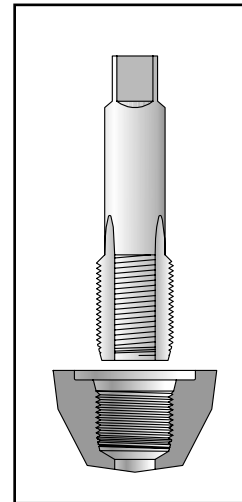


Fig. V3 — Tapping

**Note:** It is necessary to create a spotface surface which is flat and perpendicular to the port, and with a smooth finish to prevent leakage or O-ring extrusion. Cast or forged surfaces must be spotface machined to meet these requirements. Even on smooth surfaces (machined surfaces), it is necessary to lightly touch the surface to assure a smooth radius at the entrance of the port.