



For technical reasons, the same type of drilling tool or equipment cannot be used for all drilling operations. Different drilling systems have been introduced to obtain the desired hole dimensions, hole quality, and economics.

We at Jarvie Engineering utilise gun drills and Single Tube System (STS) drills and Counterboring tooling as the key to producing holes in components that require hole depths or bores from 10x-drill diameter up to 100x-drill diameter.

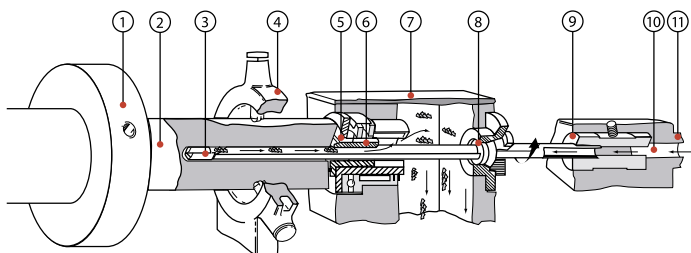
Drilling normally occurs from one end of the work piece, to ensure high quality straight holes to a tolerance IT 10, and a smoothness of 10µm can normally be maintained.

GUN DRILLING

The gun drill employs an internal-type cutting fluid supply and external chip exit. The fluid is supplied at very high pressure through the channel to the cutting edge where it lubricates and cools the cutting edge and support pads.

We use a CNC system incorporating a stationary work piece and rotating drill for work pieces up to 250kg, hole diameters ranging from 5mm to 30mm.

Gun drills produce holes that conform to high levels of straightness, surface finish, and tolerance.



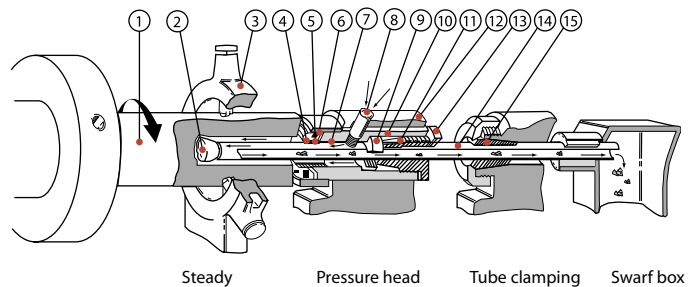
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|---------------|-----------------|-------------|-----------------------------|
| 1. Clamp | 4. Steady | 7. Chip Box | 10. Inlet for cutting fluid |
| 2. Workpiece | 5. Sealing ring | 8. Sealing | 11. Drive Mechanism |
| 3. Drill Head | 6. Drill Brush | 9. Driver | |

STS DRILLING

STS drills and Counterboring tools comprise of a drilling head fast-threaded to a drill tube. The cutting fluid is pumped under high pressure between the external surface of the drill and the hole being drilled.

The cutting fluid, diverted at the drilling face, transports the chips, through the drill head and out through the tube. The working principal of the Jarvie STS process incorporates a rotating component and a stationary drill.

Hole sizes can vary from 30mm to 150mm drilled from solid to 500mm diameter for counterboring in work pieces up to 6000mm in length and 10 tonne weight. Materials drilled include alloy steels, aluminium, stainless steels, and cast iron.



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|---------------|----------------------------|-----------------------|--------------------------|
| 1. Workpiece | 5. Slip Ring | 9. Drill tube sealing | 13. Guide for drill tube |
| 2. Drill head | 6. Sealing & bearing ring | 10. Sleeve | 14. Drill tube |
| 3. Steady | 7. Drill Brush | 11. Taper | 15. Collet |
| 4. Sealing | 8. Inlet for coolant fluid | 12. Slide | |

ENQUIRIES

Please direct all inquiries to the Works Manager and provide the following information:

- Required hole diameter
- Hole depth
- Hole tolerances
- Surface finish requirements
- Work piece dimensions and surface finish
- Number of components and batch size volume
- Component drawings when possible



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