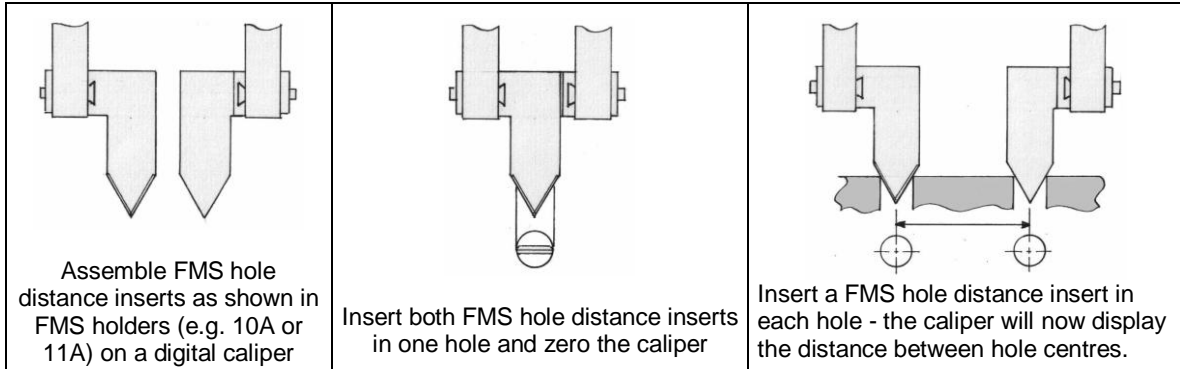


## Hole distance measurement (centre to centre)

### 1. Zero positioning and measurement between two holes



### 2. Holes evenly spaced on a bolt circle diameter

| No. of holes | Constant | No. of holes | Constant |
|--------------|----------|--------------|----------|
| 3            | 0,866025 | 14           | 0,222520 |
| 4            | 0,707106 | 16           | 0,195090 |
| 5            | 0,587785 | 18           | 0,173648 |
| 6            | 0,500000 | 20           | 0,156434 |
| 8            | 0,382683 | 24           | 0,130526 |
| 10           | 0,309017 | 30           | 0,104528 |
| 12           | 0,258819 | 36           | 0,087155 |

**Hole distance = Constant x bolt circle diameter**

e.g. with 3 evenly spaced holes and a bolt circle diameter of 100 the hole distance is  $0,866025 \times 100 = 86,60$

**Bolt circle diameter = Hole distance / constant**

e.g. with 3 evenly spaced holes and a hole distance of 86,85 the bolt circle diameter is  $86,85 / 0,866025 = 100,29$

N.B. Where an even number of holes are closely spaced it might be an advantage to "jump" over a hole. i.e. 24 holes and calculate as 12 holes.

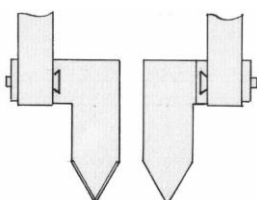
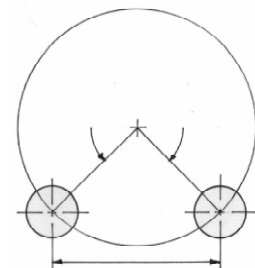
### 3. Two holes on a bolt circle diameter where the angle is given

**Hole distance =  $\sin(\text{angle}/2) \times \text{bolt circle diameter}$**

e.g. with an angle of  $70^\circ$  and a bolt circle diameter of 100 the distance is  $\sin(70^\circ / 2) \times 100 = \sin 35^\circ \times 100 = 0,573576 \times 100 = 57,36$

**Bolt circle diameter = Hole distance /  $(\sin \text{angle}/2)$**

e.g. with a hole distance of 57,15 and an angle of  $70^\circ$  the bolt circle diameter is  $57,15 / \sin(70^\circ / 2) = 57,15 / \sin 35^\circ = 57,15 / 0,573576 = 99,64$



A pair of standard FMS hole distance inserts type **63A** can measure the hole distance (centre to centre) between holes up to  $\varnothing 15 \text{ mm}/0.6''$

**Inserts for other dimensions can be made to order**  
 – ask for a price quote and delivery time