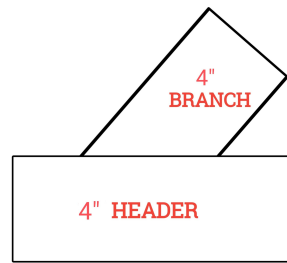


EQUAL LATERAL TEE BRANCH FORMULA



4" Header OD = 114 mm

4" ½ OD = 57 mm

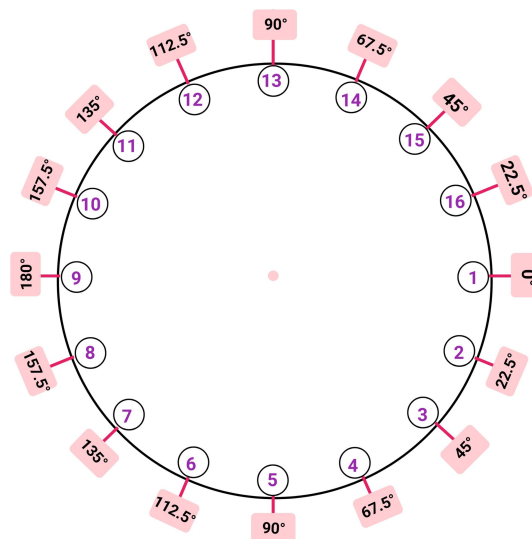
4" Branch ID = 113 mm

½ ID = 56.5 mm

Degree = 45°

16 Center Line = 360° ÷ 16 = 22.5°

Branch Pipe Center Line Marking Layout



Cutback Formula:

$$(H\frac{1}{2}OD - \sqrt{(H\frac{1}{2}OD^2 - (\sin(D) \times B\frac{1}{2}ID)^2}) \div \sin(Y) + B\frac{1}{2}ID (1 - \cos(D)) \div \tan(Y)$$

$$22.5^\circ = (57 - \sqrt{(57^2 - (\sin(22.5^\circ) \times 56.5)^2)}) \div \sin(45^\circ) + 56.5(1 - \cos(22.5^\circ)) \div \tan(45^\circ) = 10.32 \text{ mm}$$

$$45^\circ = (57 - \sqrt{(57^2 - (\sin(45^\circ) \times 56.5)^2)}) \div \sin(45^\circ) + 56.5(1 - \cos(45^\circ)) \div \tan(45^\circ) = 39.66 \text{ mm}$$

$$67.5^\circ = (57 - \sqrt{(57^2 - (\sin(67.5^\circ) \times 56.5)^2)}) \div \sin(45^\circ) + 56.5(1 - \cos(67.5^\circ)) \div \tan(45^\circ) = 83.1 \text{ mm}$$

$$90^\circ = (57 - \sqrt{(57^2 - (\sin(90^\circ) \times 56.5)^2)}) \div \sin(45^\circ) + 56.5(1 - \cos(90^\circ)) \div \tan(45^\circ) = 126.45 \text{ mm}$$

$$112.5^\circ = (57 - \sqrt{(57^2 - (\sin(112.5^\circ) \times 56.5)^2)}) \div \sin(45^\circ) + 56.5(1 - \cos(112.5^\circ)) \div \tan(45^\circ) = 126.35 \text{ mm}$$

$$135^\circ = (57 - \sqrt{(57^2 - (\sin(135^\circ) \times 56.5)^2)}) \div \sin(45^\circ) + 56.5(1 - \cos(135^\circ)) \div \tan(45^\circ) = 119.56 \text{ mm}$$

$$157.5^\circ = (57 - \sqrt{(57^2 - (\sin(157.5^\circ) \times 56.5)^2)}) \div \sin(45^\circ) + 56.5(1 - \cos(157.5^\circ)) \div \tan(45^\circ) = 114.72 \text{ mm}$$

$$180.5^\circ = (57 - \sqrt{(57^2 - (\sin(180^\circ) \times 56.5)^2)}) \div \sin(45^\circ) + 56.5(1 - \cos(180^\circ)) \div \tan(45^\circ) = 113 \text{ mm}$$

MARKING LAYOUT

