

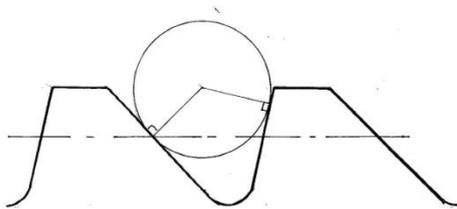
# Buttress Thread Measurement

## Pitch diameter

The traditional method for measuring external Buttress thread pitch diameter is by wires and balls for internal measurement.

Buttress threads are threads with two different flank angles and these are standard but with various different flank angles. Just to mention a few 45° & 7°, 30° & 3° and 45° & 5°.

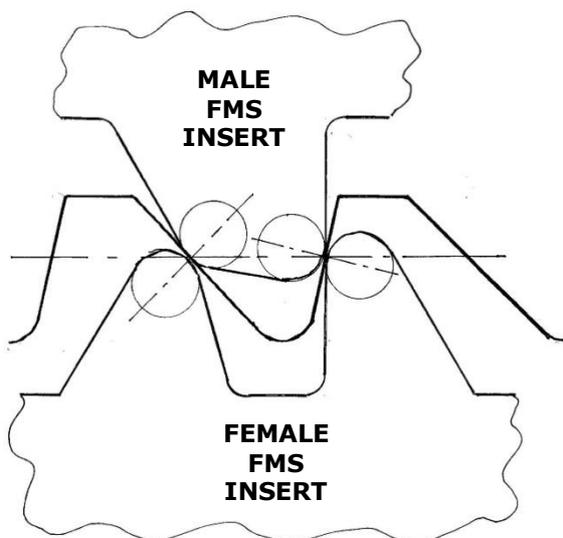
Traditional Buttress thread pitch diameter measurement requires calculations based on the pitch and different flank angles and a suitable wire/ball diameter but otherwise basically the same as with a standard isosceles thread i.e. 60° etc.



Usual practice is with 2 wires/balls on one side and 1 wire/ball on the other. As can be seen from the figure the best contact and closest to the pitch diameter is only achieved on the one flank angle.

## FMS Buttress thread inserts

With FMS Buttress thread inserts (available for both external and internal threads) the points of contact are the actual pitch diameter positions.



As with traditional Buttress pitch diameter measurement and thread gauge inspection where each pitch diameter and type requires its own specific wire/ball diameter, specific FMS thread inserts are also required for each pitch diameter and type.

However, where FMS has a major advantage is that when measuring external Buttress threads no calculation is necessary. After zeroing the inserts then the measurement result is the actual pitch diameter. For internal add the calibration plate pitch diameter distance to the measurement result. Calibration plates can also be made to the nominal pitch diameter and then it is only  $\pm$  half the pitch diameter tolerance after zeroing.

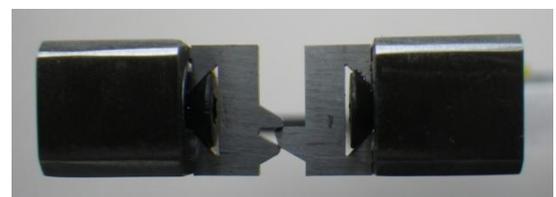
Measuring an internal Buttress thread pitch diameter requires a reference master but FMS also supplies a calibration plate for this purpose with a specific pitch diameter made to order.



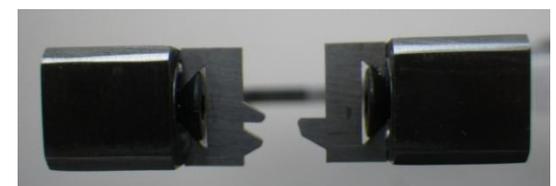
Buttress 3mm pitch internal



Buttress calibration plate



Buttress 3mm external zeroed



Buttress 3mm pitch



Thread inserts mounted on a caliper for internal pitch diameter measurement. Can be mounted on any standard digital caliper.