No.006

Taper angles of taper pipe threads

Thread specification

【Question】

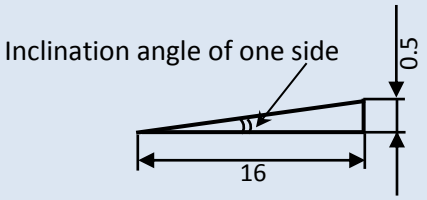
Tell me about the "Taper" and "Taper angle" of the Japan PT Tapered pipe thread, an ISO R and Rc Tapered pipe thread and an American Tapered pipe thread (NPT・NPTF).

【Answer】

The Taper rate for PT, R, Rc and American tapered pipe threads is 1 in 16 or 3⁄4" inch taper per foot (62.5 millimeters per meter) measured by the change of diameter of the pipe thread over the length of the thread. For details, please refer to the drawing shown below.

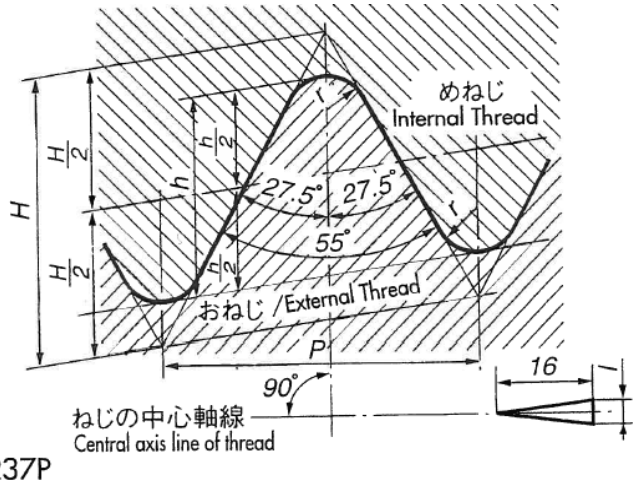
【Improvement】

The Taper rate of tapered pipe threads is 1 in 16.
The angle between the taper and the center axis of the pipe is tan−1(1⁄32) = 1.7899° or
1° 47′ 24″.



The pipe thread taper angle is double the inclination angle or 3° 34′47″. That wasn't difficult was it?

Taper Pipe Threads: Basic profile of Rc threads.



H =0.960237P
h =0.640327P
r =0.137278P

P=25.4/n
n=山数／Threads per inch

Since the American Taper Pipe Threads NPT and NPTF have the same 1 in 16 taper rate, the taper angle of these threads is also 3° 34′47″, right?

At last, now I think I understand the defination of "Taper rate", "Inclination angle on one side" and "Taper angle" thanks to your wisdom.