

【Consultation】



I found the specification of "TM10X2" as the internal thread on the old parts drawing. I know it is a 30° Trapezoidal threads, but a distributor said the TM tap has been obsoleted and is no longer available as a standard item and now only Tr10X2 is available for the 30° Trapezoidal threads. Can I make the same TM10X2 internal threads with a Tr10X2 tap? Also, what is the appropriate bored hole size?

【Answer】

TM threads was the old JIS 30° Trapezoidal threads standard, but it is now obsoleted. Currently, the Tr threads (Metric Trapezoidal threads) is defined by JIS. We recommend you to confirm with your customer whether they can accept the Tr threads instead of TM threads before machining. Please refer to the explanation below for the difference between TM and Tr screws.



【Explanation】

Standards for internal TM threads Unit: mm

Size	Major Diameter	Pitch Diameter	Minor Diameter
TM 10×2	10.500	9.000	8.500
TM 14×3	14.500	12.500	11.500
TM 20×4	20.500	18.000	16.500
TM 22×5	22.500	19.500	18.000
TM 30×6	30.500	27.000	25.000

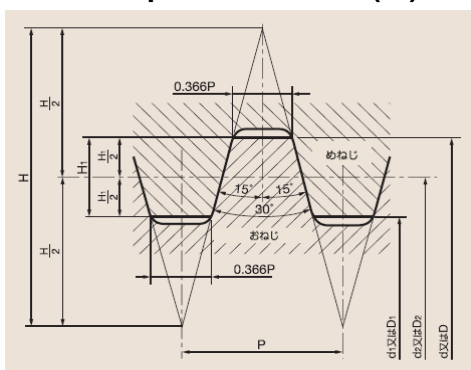
<Standard for TM threads >

In the old JIS standard for TM threads, only the basic diameter was defined for major diameter, pitch diameter and minor diameter as shown in the table on the left. It was common for a contractor to discuss with a client about actual tolerances of the threads to be made.

Standards for internal Tr threads (Engagement category: Medium, Class: 7H) Unit: mm

Size	Major Diameter		Pitch Diameter			Minor Diameter		
	Dmax	Dmin	Dmax	Dmin	TD2	Dmax	Dmin	TD1
Tr 10×2	Not Specified	10.500	9.250	9.000	0.250	8.236	8.000	0.236
Tr 14×3		14.500	12.800	12.500	0.300	11.315	11.000	0.315
Tr 20×4		20.500	18.355	18.000	0.355	16.375	16.000	0.375
Tr 22×5		22.500	19.875	19.500	0.375	17.450	17.000	0.450
Tr 30×6		31.000	27.450	27.000	0.450	24.500	24.000	0.500

Metric Trapezoidal thread (Tr) reference "V"



<Standard for Tr threads (Metric trapezoidal threads)>

Both the basic diameters and tolerances of Tr threads are clearly defined for major diameter, pitch diameter and minor diameter in the current JIS standard. We recommend you to make the 30° trapezoidal threads according to the current JIS standard. If you use Tr10X2 taps, the recommended bored hole size is about 8.1 mm.