

**CPC-S**

Check Pins  
(Straight Type)

**CPC-T**

Check Pins  
(Taper Type)

# Check Pin Series

Accurate pre-tapped hole sizes are the key to high-quality threads.  
You can easily and accurately check pre-tapped hole sizes.

**ANSI**



Important

# Are you checking pre-tapped hole sizes?

## CPC-S

HSS



Check Pins (Straight Type) (5 pcs/set)

## CPC-T

HSS



Check Pins (Taper Type) (1 pc)

### General process for tapping



This single tool enables simultaneous inspection of the pre-tapped hole size and condition.

Check the finished threads.  
<https://www.yamawa.com/en/download/leaflet.html?itemid=505&dispmid=693>

◀ CPC-S straight type

Step. 5

Simple thread inspection tool

Step. 1

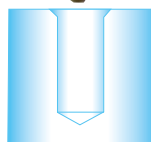
Positioning & Chamfering

Point drill PE-Q-V



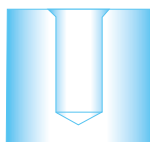
Step. 2

Drilling



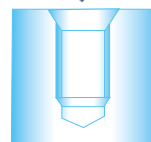
Step. 3

Reaming

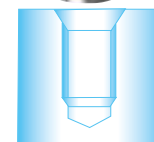


Step. 4

Tapping



SIT



## Key point



Appropriate pre-tapped hole sizes

- Longer tap tool life
- Improve the quality of internal threads

Total cost savings



# ■ Check the pre-tapped hole conditions before tapping!



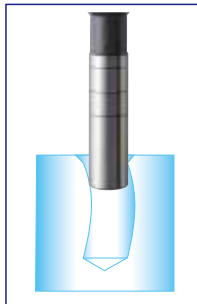
In some cases, the pre-tapped hole may not be machined to the required accuracy.



## Case 1

— Bending —

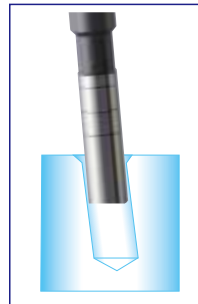
The check pin does not pass through and becomes stuck partway.



## Case 2

— Inclination —

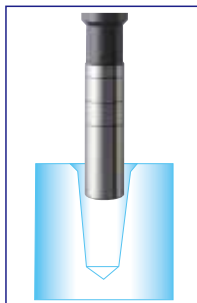
The pre-tapped hole is not perpendicular to the end surface of the workpiece.



## Case 3

— Enlargement at the pre-tapped hole entrance —

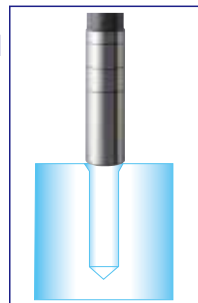
The entrance diameter is too large.



## Case 4

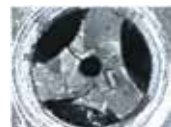
— Undersized pre-tapped hole diameter —

The pre-tapped hole diameter is smaller than the specified minimum value.



### ■ Problems caused by defects in the pre-tapped hole

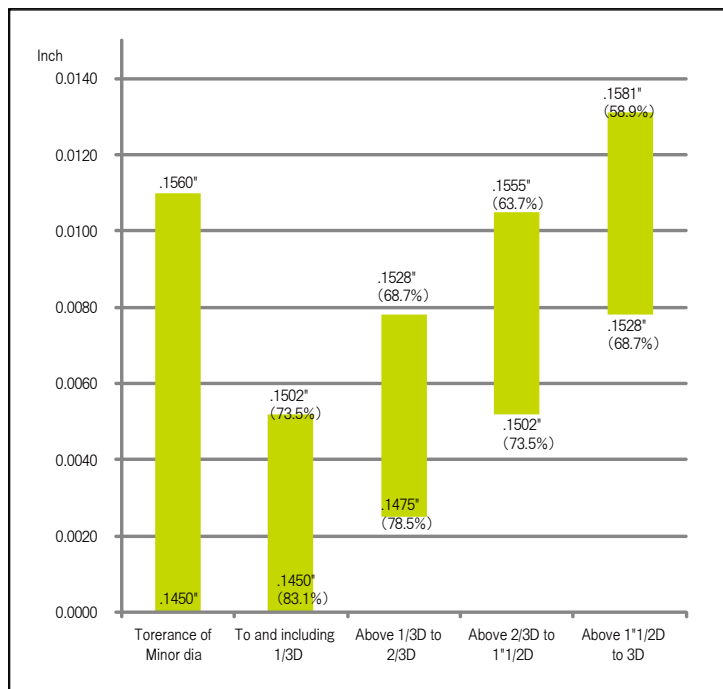
- 1) Bended pre-tapped hole
- 2) Inclined pre-tapped hole
- 3) Enlargement at the pre-tapped hole entrance
- 4) Undersized pre-tapped hole etc.



Proper pre-tapped hole machining and optimal sizing help reduce tapping issues and extend tool life. Let's check pre-tapped hole size and condition before tapping.

## ■ Recommended pre-tapped hole size for different engagement lengths

(Example) 10-24UNC 3B



Depending on the design and the materials used for the mating threads, a longer internal thread engagement length may be needed. When more threads are engaged, the thread engagement height becomes smaller. However, the thread stripping strength may still exceed the fracture strength of the external thread. In these cases, increasing the maximum tolerance can make tapping easier.

## ■ Relationship between percentage of thread height and area removed

### 【Percentage of Full Thread】

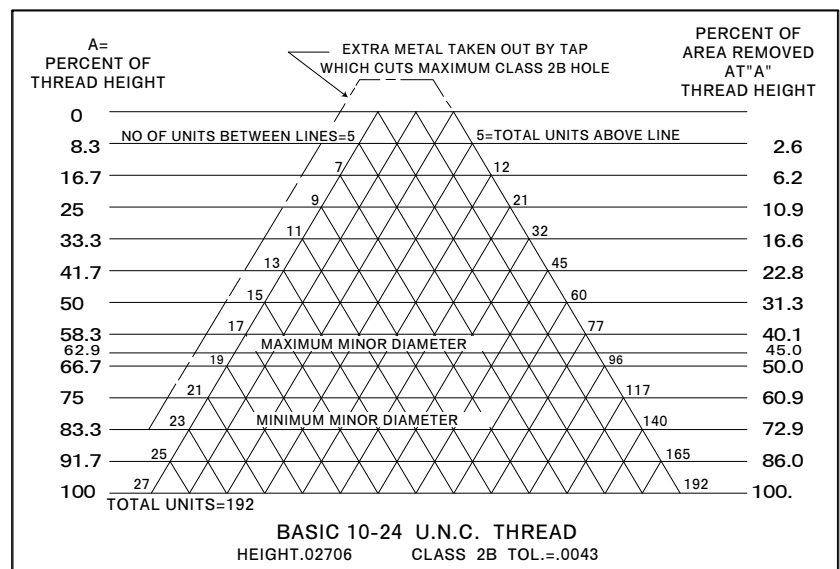
Minimum line  
0.1450  
(83.1%)

$$\text{Percentage of Full Thread (\%)} = \frac{\text{Number of Threads per inch} \times \left( \frac{\text{Basic Major Dia. of Thread (inch)} - \text{Drill Hole Size (inch)}}{.0130} \right)}{.64952 \times P \times 2} \times 100$$

### 【Basic Thread Height】

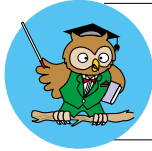
Unified Thread : .64952P

$$P: \text{Pitch} = \frac{1}{\text{Number of Threads per inch}}$$



The graph shows that a higher thread requires more material to be removed. For this reason, when using a cutting tap, it is generally better to make the pre-tapped hole as large as allowed by the thread specifications.

# Check the pre-tapped hole size before tapping!



Use a check pin for cutting taps to check the pre-tapped hole size before tapping a 10-24UNC 3B internal thread.

## Application Example of the CPS-S (Straight Type)

**Step. 1** Check the minor diameter of 10-24UNC 3B internal thread.

**Step. 2** Size of the check pins

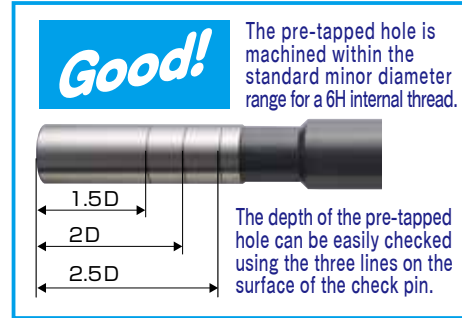
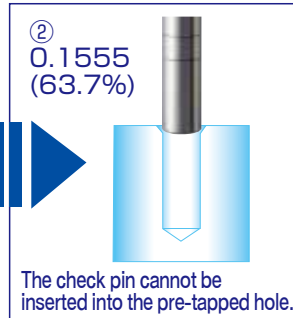
| Nominal size | O A<br>L | $\ell$ | $D_s$ | $d1$<br>(Percentage of<br>thread engagement) | $d2$<br>(Percentage of<br>thread engagement) |
|--------------|----------|--------|-------|----------------------------------------------|----------------------------------------------|
| 10-24UNC     | 2.56     | 0.55   | 0.22  | 0.1450 (83.1%)                               | 0.1502 (73.5%)                               |
|              |          |        |       | 0.1475 (78.5%)                               | 0.1528 (68.7%)                               |
|              |          |        |       | 0.1502 (73.5%)                               | 0.1555 (63.7%)                               |
|              |          |        |       | 0.1528 (68.7%)                               | 0.1581 (58.9%)                               |

From the table on the left, select two check pins: one close to the maximum value and one close to the minimum value for the 3B tolerance class.

⇒ ①0.1502(73.5%) & ②0.1555(63.7%)

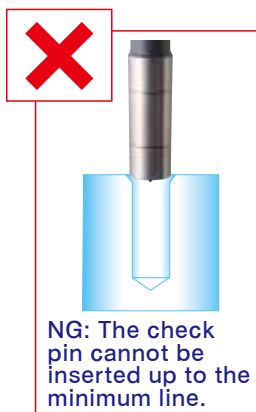
Before tapping, select the largest possible pre-tapped hole size within the tolerance range.

**Step. 3** Insert the check pins ① and ② chosen in Step 2.



## Application Example of the CPS-T (Tapered Type)

| Nominal size | O A<br>L | $\ell$ | $D_s$ | $d1$<br>(Percentage of<br>thread engagement) | $d2$<br>(Percentage of<br>thread engagement) | Product<br>code | ( $\ell 1$ ) | ( $\ell 2$ ) |
|--------------|----------|--------|-------|----------------------------------------------|----------------------------------------------|-----------------|--------------|--------------|
| 10-24UNC     | 2.34     | 0.49   | 0.22  | 0.1450(83.1%)                                | 0.1555(63.7%)                                | CPCTAUNAM       | 0.10         | 0.39         |



Please scan QR code to watch the detailed instruction video!

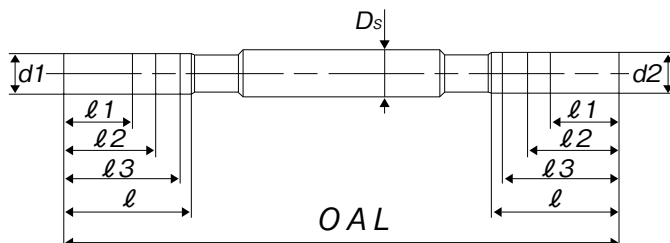




## Features

1. This 5-piece set enables checking various pre-tapped hole diameters and depths.
2. Manufactured from wear-resistant high-speed steel.
3. Applicable to both through and blind holes.

## Dimensions



### Example : 10-24UNC(Hole size $\phi 0.153$ )



Tolerance: 0.1450 min. 0.1560 max.  
Our recommended hole size for achieving good tapping results: 0.153

## CPC-S (ANSI Standard)

| Nominal size | O A L | $\ell$ | $D_s$ | $d1$<br>(Percentage of thread engagement) | $d2$<br>(Percentage of thread engagement) | Product code | $\ell 1$<br>(1.5D) | $\ell 2$<br>(2D) | $\ell 3$<br>(2.5D) |
|--------------|-------|--------|-------|-------------------------------------------|-------------------------------------------|--------------|--------------------|------------------|--------------------|
| 2-56UNC      | 1.63  | 0.22   | 0.12  | 0.0667 (83.1%)                            | 0.0705 (66.8%)                            | CPCSAUN2EA   | 0.13               | 0.17             | 0.22               |
|              |       |        |       | 0.0686 (75.0%)                            | 0.0724 (58.6%)                            | CPCSAUN2EB   |                    |                  |                    |
|              |       |        |       | 0.0699 (69.4%)                            | 0.0737 (53.0%)                            | CPCSAUN2EC   |                    |                  |                    |
| 2-64UNF      | 1.63  | 0.22   | 0.12  | 0.0691 (83.1%)                            | 0.0724 (67.0%)                            | CPCSAUN2DA   | 0.13               | 0.17             | 0.22               |
|              |       |        |       | 0.0707 (75.4%)                            | 0.0740 (59.1%)                            | CPCSAUN2DB   |                    |                  |                    |
|              |       |        |       | 0.0720 (69.0%)                            | 0.0753 (52.7%)                            | CPCSAUN2DC   |                    |                  |                    |
|              |       |        |       |                                           |                                           |              |                    |                  |                    |

(unit: inch)

| Nominal size | O A L | $\ell$ | $D_s$ | $d1$<br>(Percentage of thread engagement) | $d2$<br>(Percentage of thread engagement) | Product code | $\ell 1$<br>(1.5D) | $\ell 2$<br>(2D) | $\ell 3$<br>(2.5D) |
|--------------|-------|--------|-------|-------------------------------------------|-------------------------------------------|--------------|--------------------|------------------|--------------------|
| 3-48UNC      | 1.77  | 0.30   | 0.12  | 0.0764 (83.4%)                            | 0.0804 (68.7%)                            | CPCSAUN3FA   | 0.15               | 0.20             | 0.25               |
|              |       |        |       | 0.0785 (75.7%)                            | 0.0825 (61.0%)                            | CPCSAUN3FB   |                    |                  |                    |
|              |       |        |       | 0.0805 (68.4%)                            | 0.0845 (53.6%)                            | CPCSAUN3FC   |                    |                  |                    |
| 3-56UNF      | 1.77  | 0.30   | 0.12  | 0.0797 (83.1%)                            | 0.0831 (68.5%)                            | CPCSAUN3EA   | 0.15               | 0.20             | 0.25               |
|              |       |        |       | 0.0814 (75.9%)                            | 0.0848 (61.2%)                            | CPCSAUN3EB   |                    |                  |                    |
|              |       |        |       | 0.0831 (68.5%)                            | 0.0865 (53.9%)                            | CPCSAUN3EC   |                    |                  |                    |
|              |       |        |       | 0.0833 (67.7%)                            | 0.0867 (53.0%)                            | CPCSAUN3ED   |                    |                  |                    |

(unit: inch)

| Nominal size | OA<br>L | $\ell$ | $D_s$ | $d_1$<br>(Percentage of thread engagement) | $d_2$<br>(Percentage of thread engagement) | Product code | $\ell_1$<br>(1.5D) | $\ell_2$<br>(2D) | $\ell_3$<br>(2.5D) |
|--------------|---------|--------|-------|--------------------------------------------|--------------------------------------------|--------------|--------------------|------------------|--------------------|
| 4-40UNC      | 1.77    | 0.30   | 0.12  | 0.0849 (83.4%)                             | 0.0894 (69.6%)                             | CPCSAUN4HA   | 0.17               | 0.22             | 0.28               |
|              |         |        |       | 0.0871 (76.7%)                             | 0.0916 (62.8%)                             | CPCSAUN4HB   |                    |                  |                    |
|              |         |        |       | 0.0894 (69.6%)                             | 0.0939 (55.7%)                             | CPCSAUN4HC   |                    |                  |                    |
|              |         |        |       | 0.0902 (67.1%)                             | 0.0947 (53.3%)                             | CPCSAUN4HD   |                    |                  |                    |
| 4-48UNF      | 1.77    | 0.30   | 0.12  | 0.0894 (83.5%)                             | 0.0931 (69.8%)                             | CPCSAUN4FA   | 0.17               | 0.22             | 0.28               |
|              |         |        |       | 0.0912 (76.9%)                             | 0.0949 (63.2%)                             | CPCSAUN4FB   |                    |                  |                    |
|              |         |        |       | 0.0931 (69.8%)                             | 0.0968 (56.2%)                             | CPCSAUN4FC   |                    |                  |                    |
|              |         |        |       | 0.0939 (66.9%)                             | 0.0976 (53.2%)                             | CPCSAUN4FD   |                    |                  |                    |
| 5-40UNC      | 1.93    | 0.35   | 0.16  | 0.0979 (83.4%)                             | 0.1020 (70.8%)                             | CPCSAUN5HA   | 0.19               | 0.25             | 0.31               |
|              |         |        |       | 0.1000 (77.0%)                             | 0.1041 (64.4%)                             | CPCSAUN5HB   |                    |                  |                    |
|              |         |        |       | 0.1021 (70.5%)                             | 0.1062 (57.9%)                             | CPCSAUN5HC   |                    |                  |                    |
|              |         |        |       | 0.1036 (65.9%)                             | 0.1077 (53.3%)                             | CPCSAUN5HD   |                    |                  |                    |
| 5-44UNF      | 1.93    | 0.35   | 0.16  | 0.1004 (83.2%)                             | 0.1042 (70.5%)                             | CPCSAUN5GA   | 0.19               | 0.25             | 0.31               |
|              |         |        |       | 0.1023 (76.9%)                             | 0.1060 (64.4%)                             | CPCSAUN5GB   |                    |                  |                    |
|              |         |        |       | 0.1042 (70.5%)                             | 0.1079 (57.9%)                             | CPCSAUN5GC   |                    |                  |                    |
|              |         |        |       | 0.1060 (64.4%)                             | 0.1097 (51.8%)                             | CPCSAUN5GD   |                    |                  |                    |
| 6-32UNC      | 1.93    | 0.35   | 0.16  | 0.1040 (83.7%)                             | 0.1091 (71.2%)                             | CPCSAUN6JA   | 0.21               | 0.28             | 0.35               |
|              |         |        |       | 0.1066 (77.3%)                             | 0.1115 (65.3%)                             | CPCSAUN6JB   |                    |                  |                    |
|              |         |        |       | 0.1091 (71.2%)                             | 0.1140 (59.1%)                             | CPCSAUN6JC   |                    |                  |                    |
|              |         |        |       | 0.1115 (65.3%)                             | 0.1164 (53.2%)                             | CPCSAUN6JD   |                    |                  |                    |
| 6-40UNF      | 1.93    | 0.35   | 0.16  | 0.1110 (83.1%)                             | 0.1148 (71.4%)                             | CPCSAUN6HA   | 0.21               | 0.28             | 0.35               |
|              |         |        |       | 0.1128 (77.6%)                             | 0.1167 (65.6%)                             | CPCSAUN6HB   |                    |                  |                    |
|              |         |        |       | 0.1147 (71.7%)                             | 0.1186 (59.7%)                             | CPCSAUN6HC   |                    |                  |                    |
|              |         |        |       | 0.1166 (65.9%)                             | 0.1205 (53.9%)                             | CPCSAUN6HD   |                    |                  |                    |
| 8-32UNC      | 2.24    | 0.43   | 0.20  | 0.1300 (83.8%)                             | 0.1345 (72.7%)                             | CPCSAUN8JA   | 0.25               | 0.33             | 0.41               |
|              |         |        |       | 0.1324 (77.8%)                             | 0.1367 (67.2%)                             | CPCSAUN8JB   |                    |                  |                    |
|              |         |        |       | 0.1346 (72.4%)                             | 0.1389 (61.8%)                             | CPCSAUN8JC   |                    |                  |                    |
|              |         |        |       | 0.1367 (67.2%)                             | 0.1410 (56.7%)                             | CPCSAUN8JD   |                    |                  |                    |
| 8-36UNF      | 2.24    | 0.43   | 0.20  | 0.1340 (83.1%)                             | 0.1377 (72.9%)                             | CPCSAUN8IA   | 0.25               | 0.33             | 0.41               |
|              |         |        |       | 0.1359 (77.9%)                             | 0.1397 (67.3%)                             | CPCSAUN8IB   |                    |                  |                    |
|              |         |        |       | 0.1378 (72.6%)                             | 0.1416 (62.1%)                             | CPCSAUN8IC   |                    |                  |                    |
|              |         |        |       | 0.1397 (67.3%)                             | 0.1435 (56.8%)                             | CPCSAUN8ID   |                    |                  |                    |
| 10-24UNC     | 2.56    | 0.55   | 0.22  | 0.1450 (83.1%)                             | 0.1502 (73.5%)                             | CPCSAUNAMA   | 0.29               | 0.38             | 0.48               |
|              |         |        |       | 0.1475 (78.5%)                             | 0.1528 (68.7%)                             | CPCSAUNAMB   |                    |                  |                    |
|              |         |        |       | 0.1502 (73.5%)                             | 0.1555 (63.7%)                             | CPCSAUNAMC   |                    |                  |                    |
|              |         |        |       | 0.1528 (68.7%)                             | 0.1581 (58.9%)                             | CPCSAUNAMD   |                    |                  |                    |
| 10-32UNF     | 2.56    | 0.55   | 0.22  | 0.1560 (83.7%)                             | 0.1601 (73.7%)                             | CPCSAUNAJA   | 0.29               | 0.38             | 0.48               |
|              |         |        |       | 0.1581 (78.6%)                             | 0.1621 (68.7%)                             | CPCSAUNAJB   |                    |                  |                    |
|              |         |        |       | 0.1601 (73.7%)                             | 0.1641 (63.8%)                             | CPCSAUNAJC   |                    |                  |                    |
|              |         |        |       | 0.1621 (68.7%)                             | 0.1661 (58.9%)                             | CPCSAUNAJD   |                    |                  |                    |
| 12-24UNC     | 2.56    | 0.55   | 0.22  | 0.1710 (83.1%)                             | 0.1758 (74.3%)                             | CPCSAUNCMA   | 0.32               | 0.43             | 0.54               |
|              |         |        |       | 0.1733 (78.9%)                             | 0.1782 (69.8%)                             | CPCSAUNCMB   |                    |                  |                    |
|              |         |        |       | 0.1758 (74.3%)                             | 0.1807 (65.2%)                             | CPCSAUNCMC   |                    |                  |                    |
|              |         |        |       | 0.1782 (69.8%)                             | 0.1831 (60.8%)                             | CPCSAUNCMD   |                    |                  |                    |

| Nominal size | OA<br>L | $\ell$ | $D_s$ | $d_1$<br>(Percentage of thread engagement) | $d_2$<br>(Percentage of thread engagement) | Product code | $\ell_1$<br>(1.5D) | $\ell_2$<br>(2D) | $\ell_3$<br>(2.5D) |
|--------------|---------|--------|-------|--------------------------------------------|--------------------------------------------|--------------|--------------------|------------------|--------------------|
| 12-28UNF     | 2.56    | 0.55   | 0.22  | 0.1770 (84.0%)                             | 0.1815 (74.4%)                             | CPCSAUNCKA   | 0.32               | 0.43             | 0.54               |
|              |         |        |       | 0.1794 (78.9%)                             | 0.1836 (69.8%)                             | CPCSAUNCKB   |                    |                  |                    |
|              |         |        |       | 0.1815 (74.4%)                             | 0.1857 (65.3%)                             | CPCSAUNCKC   |                    |                  |                    |
|              |         |        |       | 0.1836 (69.8%)                             | 0.1878 (60.8%)                             | CPCSAUNCKD   |                    |                  |                    |
| 1/4-20UNC    | 2.87    | 0.65   | 0.24  | 0.1960 (83.1%)                             | 0.2013 (75.0%)                             | CPCSAU04NA   | 0.38               | 0.50             | 0.63               |
|              |         |        |       | 0.1986 (79.2%)                             | 0.2040 (70.8%)                             | CPCSAU04NB   |                    |                  |                    |
|              |         |        |       | 0.2013 (75.0%)                             | 0.2067 (66.7%)                             | CPCSAU04NC   |                    |                  |                    |
|              |         |        |       | 0.2040 (70.8%)                             | 0.2094 (62.5%)                             | CPCSAU04ND   |                    |                  |                    |
| 1/4-28UNF    | 2.87    | 0.65   | 0.24  | 0.2110 (84.0%)                             | 0.2152 (75.0%)                             | CPCSAU04KA   | 0.38               | 0.50             | 0.63               |
|              |         |        |       | 0.2131 (79.5%)                             | 0.2171 (70.8%)                             | CPCSAU04KB   |                    |                  |                    |
|              |         |        |       | 0.2150 (75.4%)                             | 0.2190 (66.8%)                             | CPCSAU04KC   |                    |                  |                    |
|              |         |        |       | 0.2169 (71.3%)                             | 0.2209 (62.7%)                             | CPCSAU04KD   |                    |                  |                    |
| 5/16-18UNC   | 3.90    | 0.87   | 0.31  | 0.2520 (83.8%)                             | 0.2577 (75.9%)                             | CPCSAU05OA   | 0.47               | 0.63             | 0.78               |
|              |         |        |       | 0.2551 (79.5%)                             | 0.2604 (72.2%)                             | CPCSAU05OB   |                    |                  |                    |
|              |         |        |       | 0.2577 (75.9%)                             | 0.2630 (68.6%)                             | CPCSAU05OC   |                    |                  |                    |
|              |         |        |       | 0.2604 (72.2%)                             | 0.2657 (64.8%)                             | CPCSAU05OD   |                    |                  |                    |
| 5/16-24UNF   | 3.90    | 0.87   | 0.31  | 0.2670 (84.0%)                             | 0.2714 (75.9%)                             | CPCSAU05MA   | 0.47               | 0.63             | 0.78               |
|              |         |        |       | 0.2694 (79.6%)                             | 0.2734 (72.2%)                             | CPCSAU05MB   |                    |                  |                    |
|              |         |        |       | 0.2714 (75.9%)                             | 0.2754 (68.5%)                             | CPCSAU05MC   |                    |                  |                    |
|              |         |        |       | 0.2734 (72.2%)                             | 0.2774 (64.8%)                             | CPCSAU05MD   |                    |                  |                    |
| 3/8-16UNC    | 4.33    | 1.08   | 0.39  | 0.3070 (83.7%)                             | 0.3127 (76.7%)                             | CPCSAU06PA   | 0.56               | 0.75             | 0.94               |
|              |         |        |       | 0.3101 (79.9%)                             | 0.3155 (73.3%)                             | CPCSAU06PB   |                    |                  |                    |
|              |         |        |       | 0.3128 (76.6%)                             | 0.3182 (70.0%)                             | CPCSAU06PC   |                    |                  |                    |
|              |         |        |       | 0.3155 (73.3%)                             | 0.3209 (66.6%)                             | CPCSAU06PD   |                    |                  |                    |
| 3/8-24UNF    | 4.33    | 1.08   | 0.39  | 0.3300 (83.1%)                             | 0.3336 (76.5%)                             | CPCSAU06MA   | 0.56               | 0.75             | 0.94               |
|              |         |        |       | 0.3314 (80.6%)                             | 0.3354 (73.2%)                             | CPCSAU06MB   |                    |                  |                    |
|              |         |        |       | 0.3332 (77.2%)                             | 0.3372 (69.8%)                             | CPCSAU06MC   |                    |                  |                    |
|              |         |        |       | 0.3351 (73.7%)                             | 0.3391 (66.3%)                             | CPCSAU06MD   |                    |                  |                    |
| 7/16-14UNC   | 4.76    | 1.30   | 0.47  | 0.3600 (83.5%)                             | 0.3660 (77.1%)                             | CPCSAU07QA   | 0.66               | 0.88             | 1.09               |
|              |         |        |       | 0.3630 (80.3%)                             | 0.3688 (74.0%)                             | CPCSAU07QB   |                    |                  |                    |
|              |         |        |       | 0.3659 (77.2%)                             | 0.3717 (70.9%)                             | CPCSAU07QC   |                    |                  |                    |
|              |         |        |       | 0.3688 (74.0%)                             | 0.3746 (67.8%)                             | CPCSAU07QD   |                    |                  |                    |
| 7/16-20UNF   | 4.76    | 1.30   | 0.47  | 0.3830 (83.9%)                             | 0.3875 (77.0%)                             | CPCSAU07NA   | 0.66               | 0.88             | 1.09               |
|              |         |        |       | 0.3855 (80.1%)                             | 0.3896 (73.7%)                             | CPCSAU07NB   |                    |                  |                    |
|              |         |        |       | 0.3875 (77.0%)                             | 0.3916 (70.7%)                             | CPCSAU07NC   |                    |                  |                    |
|              |         |        |       | 0.3896 (73.7%)                             | 0.3937 (67.4%)                             | CPCSAU07ND   |                    |                  |                    |
| 1/2-13UNC    | 4.76    | 1.30   | 0.47  | 0.4170 (83.1%)                             | 0.4225 (77.6%)                             | CPCSAU08RA   | 0.75               | 1.00             | 1.25               |
|              |         |        |       | 0.4196 (80.5%)                             | 0.4254 (74.7%)                             | CPCSAU08RB   |                    |                  |                    |
|              |         |        |       | 0.4226 (77.5%)                             | 0.4284 (71.7%)                             | CPCSAU08RC   |                    |                  |                    |
|              |         |        |       | 0.4255 (74.6%)                             | 0.4313 (68.8%)                             | CPCSAU08RD   |                    |                  |                    |
| 1/2-20UNF    | 4.76    | 1.30   | 0.47  | 0.4460 (83.1%)                             | 0.4498 (77.3%)                             | CPCSAU08NA   | 0.75               | 1.00             | 1.25               |
|              |         |        |       | 0.4477 (80.5%)                             | 0.4517 (74.4%)                             | CPCSAU08NB   |                    |                  |                    |
|              |         |        |       | 0.4497 (77.4%)                             | 0.4537 (71.3%)                             | CPCSAU08NC   |                    |                  |                    |
|              |         |        |       | 0.4516 (74.5%)                             | 0.4556 (68.4%)                             | CPCSAU08ND   |                    |                  |                    |



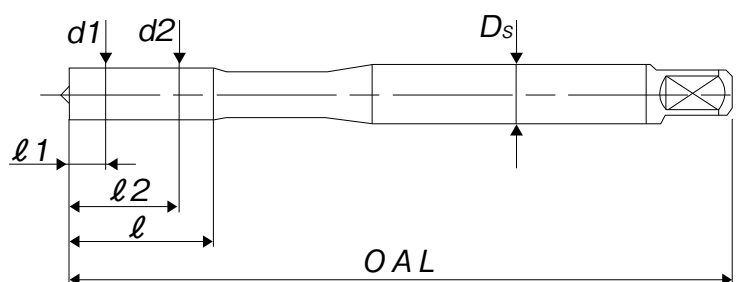
## Features

1. A single tool enables quick checking of pre-tapped hole diameter.
2. Manufactured from wear-resistant high-speed steel.
3. Applicable to through holes and blind holes with sufficient depth to avoid interference between the pre-tapped hole bottom and the check pin.

### ■ Example : 10-24UNC(Hole size $\phi 0.153$ )



## ■ Dimensions



## CPC-T (ANSI Standard)

(unit: inch)

| Nominal size | OA   | L    | Ds   | d1<br>(Percentage of thread engagement) | d2<br>(Percentage of thread engagement) | Product code | (l1) | (l2) |
|--------------|------|------|------|-----------------------------------------|-----------------------------------------|--------------|------|------|
| 2-56UNC      | 1.65 | 0.28 | 0.21 | 0.0667 (83.1%)                          | 0.0737 (53.2%)                          | CPCTAUN2E    | 0.04 | 0.24 |
| 2-64UNC      | 1.65 | 0.28 | 0.21 | 0.0691 (83.1%)                          | 0.0753 (52.8%)                          | CPCTAUN2D    | 0.04 | 0.24 |
| 3-48UNC      | 1.81 | 0.31 | 0.21 | 0.0764 (83.4%)                          | 0.0845 (53.6%)                          | CPCTAUN3F    | 0.06 | 0.26 |
| 3-56UNC      | 1.81 | 0.31 | 0.21 | 0.0797 (83.1%)                          | 0.0865 (53.9%)                          | CPCTAUN3E    | 0.06 | 0.26 |
| 4-40UNC      | 1.81 | 0.31 | 0.21 | 0.0849 (83.4%)                          | 0.0939 (55.7%)                          | CPCTAUN4H    | 0.06 | 0.26 |
| 4-48UNC      | 1.81 | 0.31 | 0.21 | 0.0894 (83.5%)                          | 0.0968 (56.3%)                          | CPCTAUN4F    | 0.06 | 0.26 |
| 5-40UNC      | 1.81 | 0.33 | 0.16 | 0.0979 (83.4%)                          | 0.1062 (57.9%)                          | CPCTAUN5H    | 0.06 | 0.28 |
| 5-44UNC      | 1.81 | 0.33 | 0.16 | 0.1004 (83.2%)                          | 0.1079 (58.0%)                          | CPCTAUN5G    | 0.06 | 0.28 |
| 6-32UNC      | 1.81 | 0.33 | 0.16 | 0.1040 (83.7%)                          | 0.1140 (59.2%)                          | CPCTAUN6J    | 0.06 | 0.28 |
| 6-40UNF      | 1.81 | 0.33 | 0.16 | 0.1110 (83.1%)                          | 0.1186 (59.7%)                          | CPCTAUN6H    | 0.06 | 0.28 |
| 8-32UNC      | 2.05 | 0.41 | 0.20 | 0.1300 (83.8%)                          | 0.1389 (61.8%)                          | CPCTAUN8J    | 0.09 | 0.33 |
| 8-36UNF      | 2.05 | 0.41 | 0.20 | 0.1340 (83.1%)                          | 0.1416 (62.1%)                          | CPCTAUN8I    | 0.09 | 0.33 |
| 10-24UNC     | 2.34 | 0.49 | 0.22 | 0.1450 (83.1%)                          | 0.1555 (63.7%)                          | CPCTAUNAM    | 0.10 | 0.39 |

(unit: inch)

| Nominal size | OA   | L    | Ds   | d1<br>(Percentage of thread engagement) | d2<br>(Percentage of thread engagement) | Product code | (l1) | (l2) |
|--------------|------|------|------|-----------------------------------------|-----------------------------------------|--------------|------|------|
| 10-32UNF     | 2.34 | 0.49 | 0.22 | 0.1560 (83.7%)                          | 0.1641 (63.8%)                          | CPCTAUNAJ    | 0.10 | 0.39 |
| 12-24UNC     | 2.34 | 0.49 | 0.22 | 0.1710 (83.1%)                          | 0.1807 (65.2%)                          | CPCTAUNCM    | 2.5  | 10   |
| 12-28UNF     | 2.34 | 0.49 | 0.22 | 0.1770 (84.0%)                          | 0.1857 (65.3%)                          | CPCTAUNCK    | 2.5  | 10   |
| 1/4-20UNC    | 2.42 | 0.65 | 0.24 | 0.1960 (83.1%)                          | 0.2067 (66.7%)                          | CPCTAU04N    | 3.8  | 12.8 |
| 1/4-28UNF    | 2.42 | 0.65 | 0.24 | 0.2110 (84.0%)                          | 0.2190 (66.8%)                          | CPCTAU04K    | 3.8  | 12.8 |
| 5/16-18UNC   | 3.54 | 0.76 | 0.31 | 0.2520 (83.8%)                          | 0.2630 (68.6%)                          | CPCTAU05O    | 4.7  | 14.7 |
| 5/16-24UNF   | 3.54 | 0.76 | 0.31 | 0.2670 (84.0%)                          | 0.2754 (68.5%)                          | CPCTAU05M    | 4.7  | 14.7 |
| 3/8-16UNC    | 3.94 | 0.92 | 0.39 | 0.3070 (83.7%)                          | 0.3182 (70.0%)                          | CPCTAU06P    | 6.7  | 16.7 |
| 3/8-24UNF    | 3.94 | 0.92 | 0.39 | 0.3300 (83.1%)                          | 0.3372 (69.8%)                          | CPCTAU06M    | 6.7  | 16.7 |
| 7/16-14UNC   | 4.33 | 1.08 | 0.47 | 0.3600 (83.5%)                          | 0.3717 (70.9%)                          | CPCTAU07Q    | 7.7  | 19.7 |
| 7/16-20UNF   | 4.33 | 1.08 | 0.47 | 0.3830 (83.9%)                          | 0.3916 (70.7%)                          | CPCTAU07N    | 7.7  | 19.7 |
| 1/2-13UNC    | 4.33 | 1.08 | 0.47 | 0.4170 (83.1%)                          | 0.4284 (71.7%)                          | CPCTAU08R    | 7.7  | 19.7 |
| 1/2-20UNF    | 4.33 | 1.08 | 0.47 | 0.4460 (83.1%)                          | 0.4537 (71.3%)                          | CPCTAU08N    | 7.7  | 19.7 |



# Understanding YAMAWA products through Manga



## Characters

### Isn't choosing the right tool kind of tricky?

We introduce YAMAWA's taps, dies, and center drills through a fun manga so you can enjoy learning about them.

Please understand the features of our products and make full use of them for your tool selection and training!



**Takumi**

65, a local workshop owner. He's dedicated to his work but has a soft spot for his granddaughter Koharu.



**Koharu**

A second-grade elementary school student. Takumi's curious and inquisitive granddaughter.



**Yamawan**

The guide to YAMAWA world  
A friendly hero who makes learning about taps easy and fun!



**Wakaba**

YAMAWA's new employee who is passionate about manufacturing.



**Makoto**

Makoto Mukai  
YAMAWA's sales person. He takes good care of his young colleagues and engages with customers in a sincere and dedicated manner.

Learn  
**YAMAWA products**  
through manga!

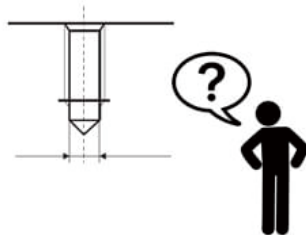


Check YAMAWA's  
official website

Visit the YAMAWA website for more helpful resources.



Understanding through Manga!  
YAMAWA's Tools



Pre-tapped Hole size / Bar diameter



NC Program



Safety Data Sheet (SDS)



Catalog · Flyer



YAMAWA Online EXPO NEJITEN

A convenient app that allows you to search anywhere on your smartphone! You can search for products, calculate speeds, and even check recommended drill hole diameters! Please download and use it.



Android



iPhone



### Warning

- ◆Tools may shatter during use. Wear safety eye cover or eye glasses to avoid injury during tapping.
- ◆Use tools under the proper tapping condition.
- ◆Never wear gloves during turning operations as the gloves may get caught in the tools.
- ◆Wear safety shoes to avoid foot injury by the falling tools.
- ◆When attaching tools to the machine, fasten firmly to avoid chatter and run-out.
- ◆Fasten the workpiece firmly so it never moves during the tapping operation. Never use worn tools or damaged tools.
- ◆Take a special care to prevent fire during machining. High temperature during tapping can cause a fire.



**YAMAWA MFG. Co., Ltd.**

Head  
office

Nakajima Gold bldg.13-10 Kyobashi  
3chome, Chuo-ku, Tokyo 104-0031, JAPAN

Website: <https://www.yamawa.com>

**YAMAWA group for Overseas**

**YAMAWA INTERNATIONAL CO.,LTD.**



JQA-QM5420  
JQA-EM2687