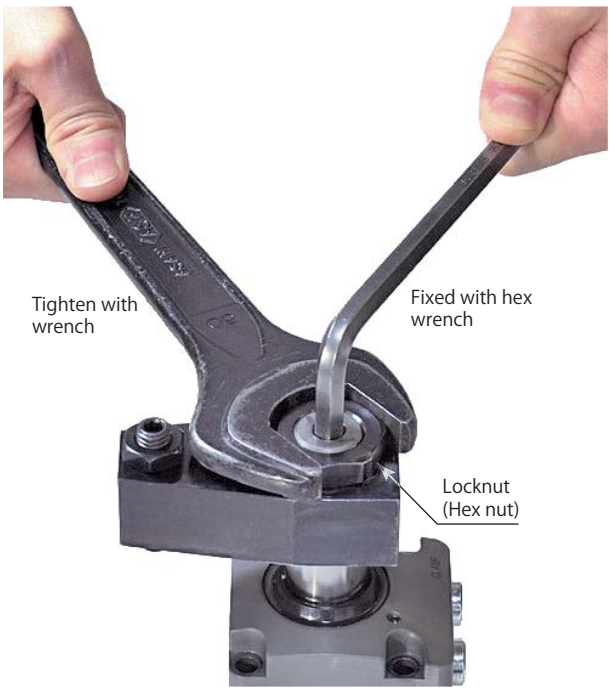
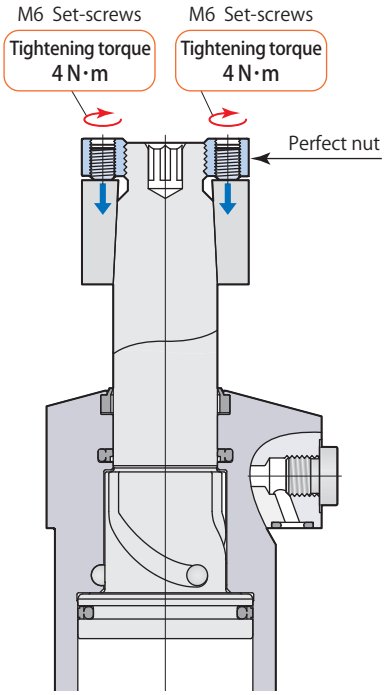
Mounting arm firmly and easily.

- Fastening or loosening the nut over the top of the clamp by an electric wrench helps to improve the workability on the machine table or the jig.

Less workability with conventional way of the mount.

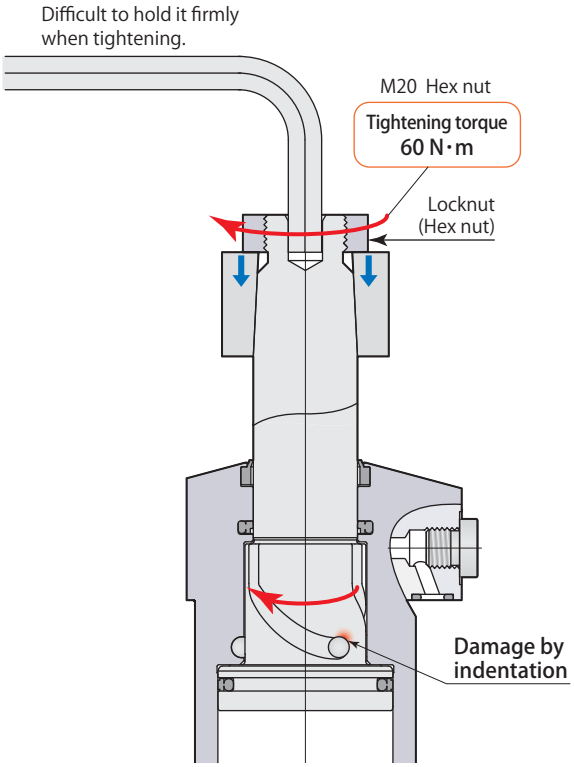


- To fasten or loosen the nut using the conventional way in a limited space makes the workability lower and may cause incomplete arm mounting.



Swing clamp model CTU06

- The perfect nut needs minimum torque to tighten the set-screws and it can avoid giving the overload to the cam groove on the piston rod, which enables the arm to mount firmly and easily.



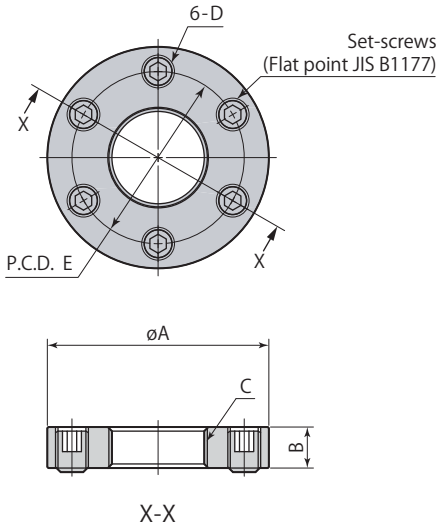
Swing clamp model CTU06

- The piston rod of the clamp must be fixed firmly to fasten the nut however it may cause damage on cam groove in case the rod is not fixed firmly.

Perfect nut

Size

CTH **01** **02** **04** **06** **10** **16** **25** — **TN** : Perfect nut



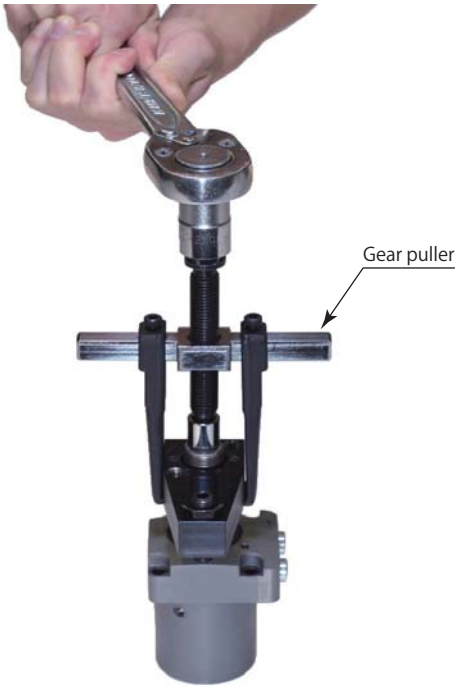
mm

Perfect nut		CTH01-TN	CTH02-TN	CTH04-TN	CTH06-TN	CTH10-TN	CTH16-TN	CTH25-TN
Applicable swing clamp		CTU01 CTT01	CTU02 CTT02	CTU04 CTT04	CTU06 CTT06	CTU10 CTT10	CTU16 CTT16	CTU25 CTT25
Set-screws	Size	M4×0.7 length 6	M5×0.8 length 8	M6×1 length 8	M6×1 length 8	M8×1.25 length 10	M8×1.25 length 10	M10×1.5 length 10
	Recommended tightening torque	1 N·m	2 N·m	3 N·m	4 N·m	6 N·m	7 N·m	10 N·m
øA		24	30	36	40	50	56	74
B		6.5	8	9	9	10	12	13
C		M12×1.5	M14×1.5	M18×1.5	M20×1.5	M24×1.5	M30×1.5	M39×1.5
D		M4×0.7	M5×0.8	M6×1	M6×1	M8×1.25	M8×1.25	M10×1.5
E		18	22	26.5	30	38	43	55
Mass		0.02 kg	0.04 kg	0.06 kg	0.07 kg	0.12 kg	0.17 kg	0.33 kg

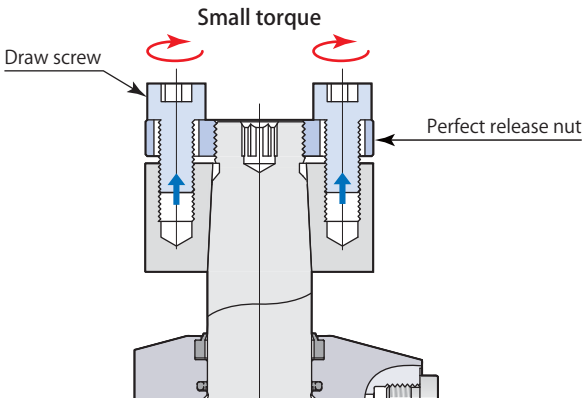
Dismounting arm easily.

- By simply fastening the draw screw the clamp arm can be easily removed, which does not need a specialized tool such as a gear puller.

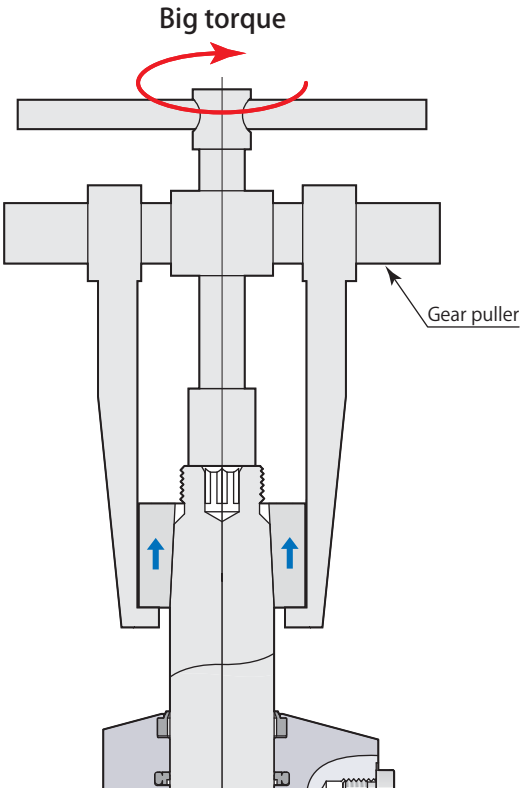
Inferior dismounting workability using a gear puller.



- On the machine table top and the jig the working space is limited, it is difficult to pull up a clamp arm using a specialized tool such as a gear puller.



- The clamp arm can be dismounted easily and securely with a small torque.



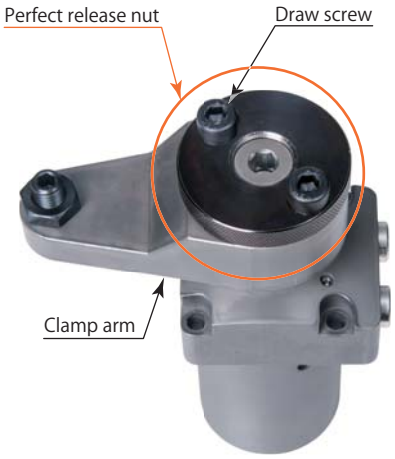
- A large torque is needed to pull the clamp arm off from the tapered area of the rod, which will be risky for a worker when the arm comes off suddenly.

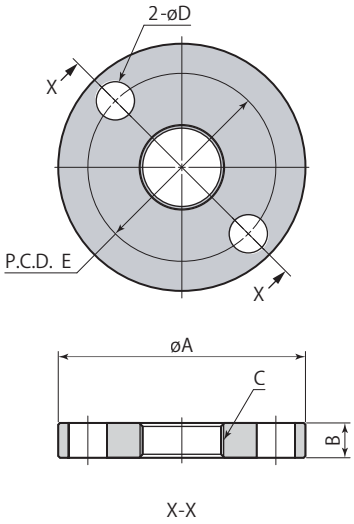
Perfect release nut

Size

CTH — **TNR** : Perfect release nut

- 01
- 02
- 04
- 06
- 10
- 16
- 25

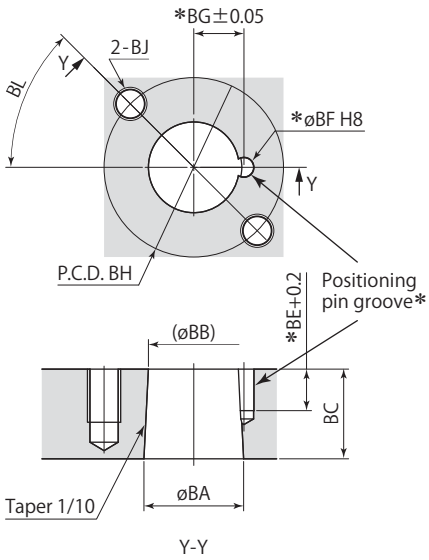




Clamp arm mounting details

(Using perfect release nut)

Drill a 1/10 taper hole into the clamp arm, and provide the tap holes for draw screws to remove the clamp arm.



*: No need to machine the pin groove (BE, øBF, BG) unless positioning pin is used for the arm.

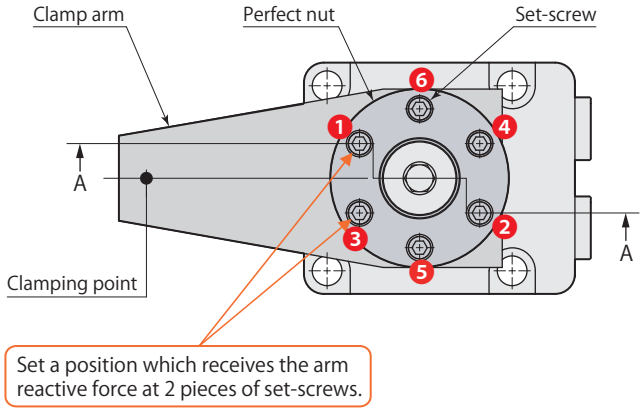
mm

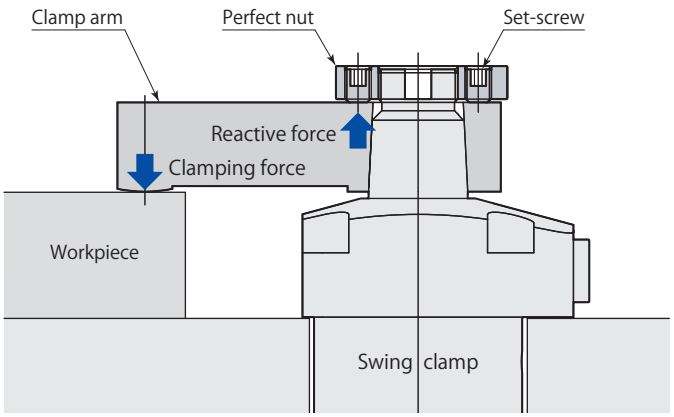
Perfect release nut	CTH01-TNR	CTH02-TNR	CTH04-TNR	CTH06-TNR	CTH10-TNR	CTH16-TNR	CTH25-TNR
Applicable swing clamp	CTU01 CTT01	CTU02 CTT02	CTU04 CTT04	CTU06 CTT06	CTU10 CTT10	CTU16 CTT16	CTU25 CTT25
Recommended draw screw	M5×0.8	M6×1	M8×1.25	M8×1.25	M10×1.5	M10×1.5	M12×1.75
øA	34	40	50	54	67	70	90
B	6.5	8	9	9	10	12	13
C	M12×1.5	M14×1.5	M18×1.5	M20×1.5	M24×1.5	M30×1.5	M39×1.5
øD	5.5	6.8	9	9	11	11	14
E	24	29	36	39	50	53	70
Mass	0.04 kg	0.07 kg	0.12 kg	0.14 kg	0.24 kg	0.30 kg	0.53 kg
øBA	14 $^{-0.016}_{-0.034}$	18 $^{-0.016}_{-0.034}$	22.4 $^{-0.020}_{-0.041}$	25 $^{-0.020}_{-0.041}$	30 $^{-0.020}_{-0.041}$	35.5 $^{-0.025}_{-0.050}$	45 $^{-0.025}_{-0.050}$
øBB	12.4	16	19.9	22.5	27.3	32	40.5
BC	16	20	25	25	27	35	45
BE	9	10.5	10.5	10.5	12.5	12.5	14.5
øBF (pin groove diameter)	3 $^{+0.014}_{0}$	4 $^{+0.018}_{0}$	4 $^{+0.018}_{0}$	5 $^{+0.018}_{0}$	6 $^{+0.018}_{0}$	6 $^{+0.018}_{0}$	6 $^{+0.018}_{0}$
BG	7.55	9.1	11.1	12.6	15.1	18.1	22.6
BH	24	29	36	39	50	53	70
BJ	M5	M6	M8	M8	M10	M10	M12
BL	Standard 60° allowable range 45°–75° (within range that there is no interference with set-screws)						

● Draw screws are not included with perfect release nut.

Perfect nut (Arm mounting guide)

1. Set clamp arm and turn perfect nut as tight as it gets manually.
2. Turn back perfect nut to the position where two set-screws hold against reactive force of arm, as shown in diagram below.
3. Tighten set-screws with recommended torque in order of ❶ to ❻ in diagram below.
4. Once set-screws are tightened to ❻ , ❶ becomes loose, so retighten in sequence of ❶ to ❻ again.
5. Repeat tightening of set-screws ❶ to ❻ six times.
6. Repeat clamping and unclamping of workpiece five times (this operation allows taper section to become accustomed to use).
7. Return to unclamped condition and then retighten set-screws in order of ❶ to ❻.
   Once tightening in sequence of ❶ to ❻ is repeated three times, all set-screws will be fixed and clamp arm is completely mounted.



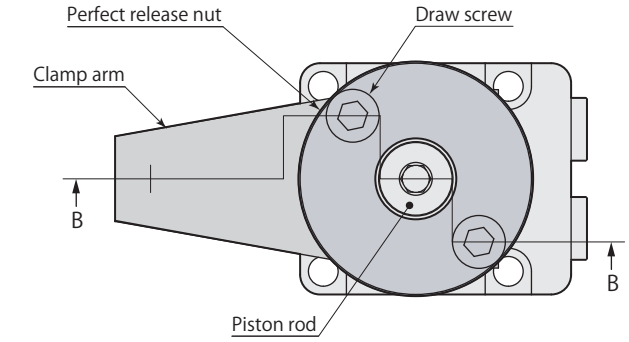


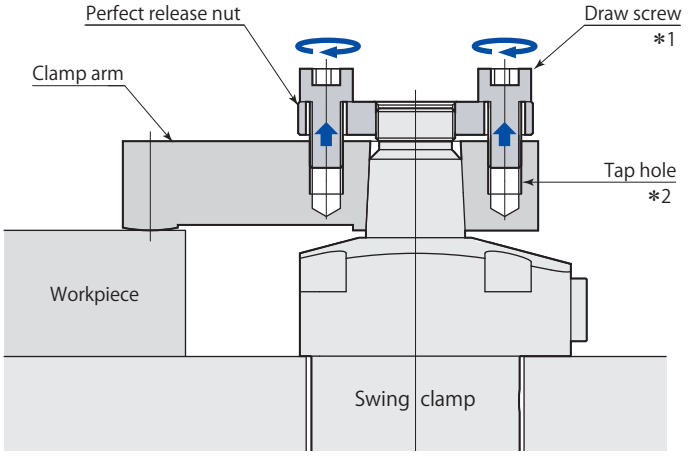
A-A

- The clamp arm may bite at the taper of the clamp rod and it will cause the demount failure if the set screw is tightened with excessive force. Be sure to use recommended torque when tightening.
- More secure tightening can be accomplished by applying some thread adhesive on set-screws.
  Recommended adhesive: LOCTITE 243 (medium strength type)

Perfect release nut (Arm dismounting guide)

1. Loosen all set-screws of perfect nut and dismount perfect nut from piston rod.
2. Mount perfect release nut and turn it until clamp arm comes into contact.
3. Turn perfect release nut back one or two more times, align the nut hole with tap hole of clamp arm and then mount the draw screws.
4. Once draw screws are tightened, clamp arm can be pulled off piston rod.





B-B

*1 : Turn draw screws as a pair, alternately turning 45° to 90° at a time to tighten them evenly. Some movement is felt in hand as clamp arm comes off, but there is no danger involved in this procedure.

*2 : Tap holes for draw screws are needed on clamp arm in order to use perfect release nut. Refer to clamp arm mounting details on **page →43** for details on tap holes.

Caution in use

In the event that a clamp arm is used with taper sleeve, the perfect release nut cannot remove the clamp arm due to the taper sleeve remaining on the piston rod. When using a taper sleeve, please use a gear puller (or similar) to remove clamp arm.
To be able to easily remove clamp arms using the perfect release nut, drill a 1/10 taper hole into the clamp arm. (Clamp arm mounting details refer to **page →43**)