

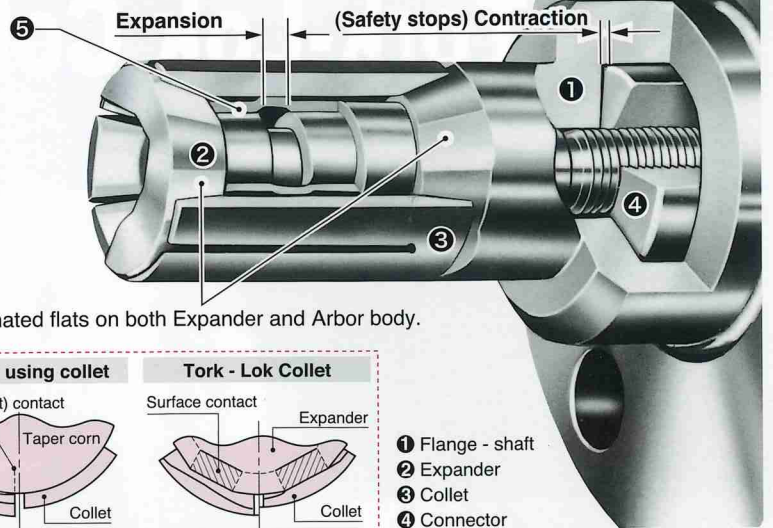
AC Tork-Lok Collets & Arbors

I.D. clamping has a disadvantage in terms of clamping torque, since machining for large-diameter work-pieces are processed by a small clamping diameter, and often high-precision processes are required, such as finishing. In Tork-Lok Collets, the contact faces of the chuck body and the collets are precisely finished into flat faces, which together work as a "Tork-Lok mechanism" allowing no slippage between the contact surfaces, even under large cutting torque. The part of the contact between COLLET and EXPANDER is strong in the abrasion because each flat surface is contacted. Also cutting dust hardly enters into the contact portion and it enables to maintain high accuracy for long term. The Tork-Lok Collet Arbor Chuck is adopted by a lot of customers, because of these excellent points such as "Pull-Back" function, high-accuracy and performance and plenty of stock. The standard series and short series are available, each of which includes Arbor models with rotating cylinders and Between Center types for spanner operation.

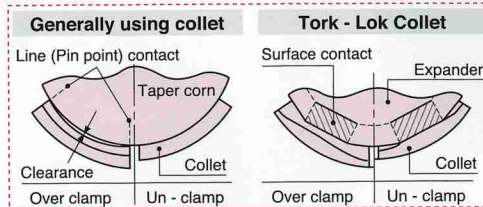
Notes for application of AC Tork-Lok

- The squareness and the parallelism are influenced by the accuracy of the reference end face of the work-piece, since the work-piece is pulled toward to the stop while it is clamped.
- It is necessary to set up the Collets on tapered portion of the Expander and the Arbor to be "flat surface contact." (Use a restrictor for short length work-pieces. See the lower right figure.)
- Fit the Expander tightly.
- When the draw bar thrust is not enough, it is effective to use a hydraulic tail stock.

Structure and Function



Precision mated flats on both Expander and Arbor body.



- 1 Flange - shaft
- 2 Expander
- 3 Collet
- 4 Connector
- 5 Dust - seal

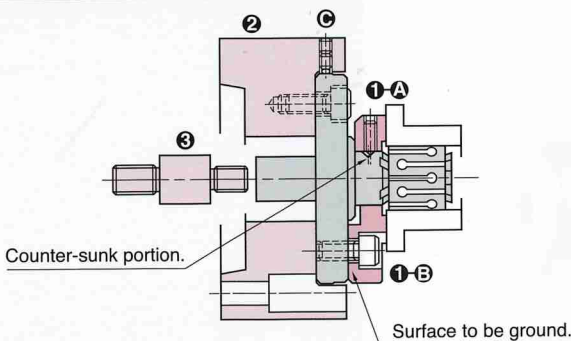
Advantages

- | | |
|-----------------------------------|------------------------|
| 1 "Tork-Lok" design | 5 Great accuracy |
| 2 Great torque transmission | 6 Less Collet breakage |
| 3 Geometrically sealed | 7 Self-releasing |
| 4 Work-piece "Pull-Back" function | 8 Sufficient stock |

Standard design of drawbar type chuck

● We are available to design special parts chucking layout such as stoppers on request basis.

Clamp with the whole portion of collet surface.



1-A Stopper

Please make the center of bolt hole be higher to adhere to the counter-sunk portion (3 points recommended) surface of the body.

1-B Stopper

Attach to the standard bolt hole (inch bolt) after grinding flange surface of the chuck body.

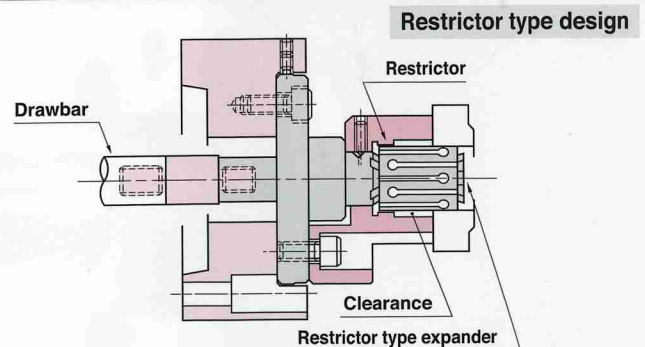
2 Adapter

Provide the bolt for adjusting concentricity as 4 equally, also employ such as gunmetal for the contact portion to the body to avoid scratching and use insert two bolts to protect unfasten the bolt for safety.

3 Drawbar

Decide the diameter of draw bar stroke according to examining the amount of in and out of the drawbar stroke and the distance of the connector surface at the time of attaching the adapter and the body. Therefore, it is necessary to select the material which has the strength for pulling action.

When the work-piece clamping length is shorter than the collet length.



1 Restrictor (for un-clamping)

The work-piece which clamping length is short needs restrictor. For restrictor of the collet this stopper's I.D. should be finished within +0.05~0.1 of the upper limit of workpiece I.D. tolerance. The position where should be restricted is at collet lower taper portion.

2 Restrictor type expander (AC-**67)

This restrictor expander allows making over-clamping stroke smaller than standard expander, and preventing it from exceeding the limit of the un-clamping range. Please indicate us when you need the restrictor expander. However, if in case the work-piece clamping length is close to the maximum of collet clamping range, please use standard expander. You can distinguish the standard type (AC-**65) from the restrictor type by stamped of the center of the expander.

4 Clearance

If the restrictor portion effects until stop position, there is a possibility to break the collet at the time of un-clamping. Restrictor expander should be used at lower collet taper portion. Please keep more than 1mm clearance in diameter from the maximum of the collet's clamping range.

COLLET CHUCK

AC Drawbar models inch type

Short series

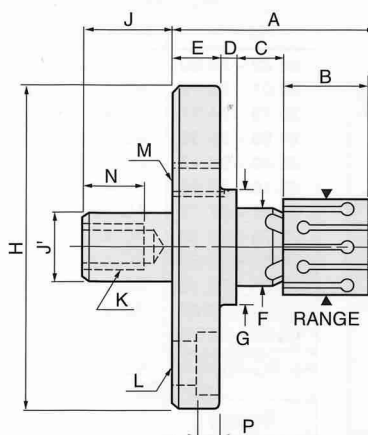


Short series [8000 type]

The AC Drawbar models - Short series suits when the work-pieces have short clamping width, or when you need to make the over-hang length of NC lathe short. Also it is suitable to the heavy-load cutting operation of the work-pieces which need to be restricted but having concerns of torsional rigidity by standard series.

When using this model, basically it is necessary to prepare adapter plate, draw-bar connector, stopper (or restrictor stopper). We are available to prepare to design them and conduct technical evaluation if you provide us necessary information.

Dimension diagram



AC-8100 • AC-8200 • AC-8300 are only for light cutting.

Dimensions

Model No.	Clamping range (Collet necessary Qty)	A	B	C	D	E	F	G	H
AC-8100	12.70 ~ 16.64 (15)	46.0	15.0	10.7	6.4	12.7	11.94~11.92	*22.4	85.74~85.73
AC-8200	15.06 ~ 20.24 (20)	50.0	18.3	11.4	6.4	12.7	14.72~14.70	*25.4	85.74~85.73
AC-8300	18.24 ~ 25.40 (28)	54.6	21.3	13.0	6.4	12.7	17.90~17.87	*28.4	85.74~85.73
AC-8400	22.23 ~ 33.00 (20)	59.7	23.9	15.0	4.6	14.2	21.47~21.44	35.1	104.79~104.78
AC-8500	28.58 ~ 41.70 (24)	65.8	28.6	16.5	4.6	14.2	27.42~27.40	39.6	104.79~104.78
AC-8600	37.27 ~ 53.44 (30)	74.4	31.0	21.1	3.0	17.3	35.76~35.73	47.8	123.84~123.83
AC-8700	49.20 ~ 71.65 (42)	75.7	33.3	20.1	3.0	17.3	46.87~46.84	60.5	123.84~123.83

Model No.	J (Stroke)		J'	N	P	K	L (4 Equal dimension)	M (4 Equal dimension)
	Max.	Min.						
AC-8100	23.8	19.2	14.3	15.8	6.3	3/8-24	3/8 63.5 P.C.D.	5/16-24 60.3 P.C.D.
AC-8200	23.8	19.2	14.3	15.8	6.3	3/8-24	3/8 63.5 P.C.D.	5/16-24 60.3 P.C.D.
AC-8300	23.8	19.2	14.3	14.2	6.3	3/8-24	3/8 63.5 P.C.D.	5/16-24 60.3 P.C.D.
AC-8400	36.5	31.1	19.1	19.0	7.9	1/2-20	1/2 79.2 P.C.D.	3/8-24 73.0 P.C.D.
AC-8500	36.5	31.1	19.1	19.0	7.9	1/2-20	1/2 79.2 P.C.D.	3/8-24 73.0 P.C.D.
AC-8600	46.0	40.6	24.6	25.4	9.5	3/4-16	1/2 95.3 P.C.D.	3/8-24 92.1 P.C.D.
AC-8700	46.0	40.6	24.6	25.4	9.5	3/4-16	1/2 95.3 P.C.D.	3/8-24 92.1 P.C.D.

* Please inform us of your requesting Expander to be used. If there is no request, Standard Expander will be provided.
 * Please note that the "dimension diagram" differs from "G" diameters marked with "*".

Component parts

Arbor model	Connector	Retaining-rings	Lock-pins	Flange-shaft	Dust-seal	Standard-Expander	*Restrictor-Expander
AC-8100	CAT. AC-8262	CAT. AC-8186	CAT. AC-8185	CAT. AC-8152	CAT. AC-8190	CAT. AC-8165	CAT. AC-8167
AC-8200	CAT. AC-8262	CAT. AC-8186	CAT. AC-8185	CAT. AC-8252	CAT. AC-8290	CAT. AC-8265	CAT. AC-8267
AC-8300	CAT. AC-8362	CAT. AC-8186	CAT. AC-8185	CAT. AC-8352	CAT. AC-8390	CAT. AC-8365	CAT. AC-8367
AC-8400	No. AC-8462	No. AC-8486	No. AC-8485	No. AC-8452	No. AC-8490	No. AC-8465	No. AC-8467
AC-8500	No. AC-8562	No. AC-8486	No. AC-8485	No. AC-8552	No. AC-8590	No. AC-8565	No. AC-8567
AC-8600	No. AC-8662	No. AC-8686	No. AC-8685	No. AC-8652	No. AC-8690	No. AC-8665	No. AC-8667
AC-8700	No. AC-8662	No. AC-8686	No. AC-8685	No. AC-8752	No. AC-8790	No. AC-8765	No. AC-8767

* Whenever the restricted stopper is used, the Restrictor Expander must be used.