

3 Jaw Punch Former



**Before Operating Your Tools,
Please Read This Instruction Carefully**



**ITEM NO.61-324-210
MODEL NO . #TTC JP807**

Content

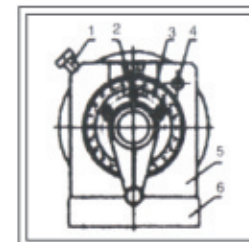
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◆ Main function

3-Jaw punch former is used to grind standard punch former precisely. With this device to meet specialized sizes and shapes is available. The punch former is attached with 3-jaw chuck with an hold workpieces quickly and conveniently. In addition it can adjust roundness and parallelism. It is suitable to produce in batch.

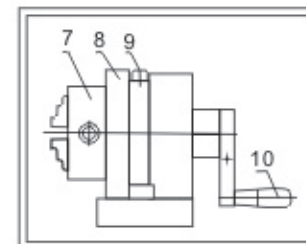
◆ Construction

- | | |
|--------------------------|---------------------|
| 1. indexing pin | 6. base |
| 2. hex head socket screw | 7. 3-jaw chuck |
| 3. indexing plate | 8. connecting plate |
| 4. locating pin | 9. adjustable block |
| 5. Body | 10. handle |



Auxiliary measure tool:

- Square block
above 250mm X250mm
- Dial indicator
available for 0.01mm or 0.001mm
- Dial indicator stand
with micro adjuster
- Block gauge



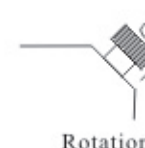
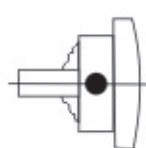
◆ Main technical parameter

- | | |
|--|---------------|
| 3-Jaw chuck hole diameter | 16mm |
| clamped punch former diameter capacity | 2mm to 70mm |
| center height | 80mm |
| indexing | 24(every 15°) |

◆ Operation steps

1. Install The Punch

Clean the round punch part and put into the 3-jaw chuck hole, and tighten the chuck with its spanner homogeneously, until the punch is clamped tightly.



Rotation



Location

2. Alignment And Location

Pull up indexing pin 1 and turn left, and the index pin is pulled out. Make the dial indicator meet the top of punch, turn handle 10 by 90°, and the showing number is the required center height. Then check it with dial indicator.

3. Arc Movement

Setting angle and adjust are length with adjustable block.

- Pull out locating pin 4.
- Adjust the two adjustable blocks 9, and locate them according request.



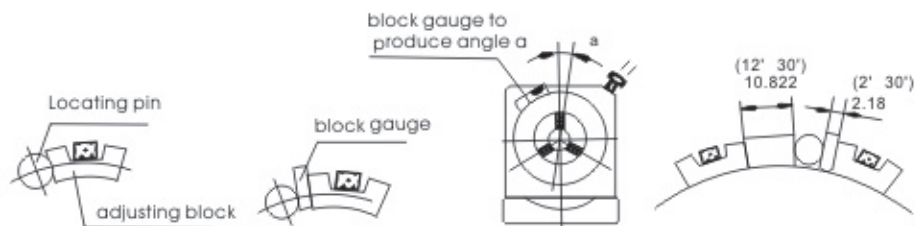
4. Indexing

Divide into 2, 3, 4, 6, 8, 15, 24 Share by 15°. And make sure the indexing pin is pushed into when per indexing finished.

5. Setting Angles

Use sine arbor to divide 5, 7, 9 share and grind angle less than 15° for easy operation.

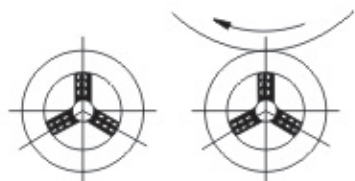
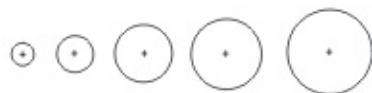
- Push indexing pin and set position then pull out location pin and meet location block completely and fix it.
- According formula: $\sin a \times 50$ to get required block gauge size. Pull out indexing pin and put the block gauge between locating pin and adjusting block.
- Move the block gauge and get center angle that is the one needed.
- In order to avoid this angle changing, tight hex head screw 2.
- If the size is too small according to the formula: 15° minus required angle.



example 1: 2° 30' use block gauge 2.18mm. To divide 2° 30' directly, or according to formula: $15^\circ - 2^\circ 30' = 12^\circ 30'$, and then block 12° 30', and get out block gauge size 10.822mm.
example 2: To calculate size of required block gauge for 9° 30': $\sin 9^\circ 30' \times 50 = 8.2525\text{mm}$. 8.2525mm is the required block gauge size.

Working example

1. Cylindrical Grinding



Location Rotating grinding



Punch grinding Other form pin grinding

2. Angular grinding

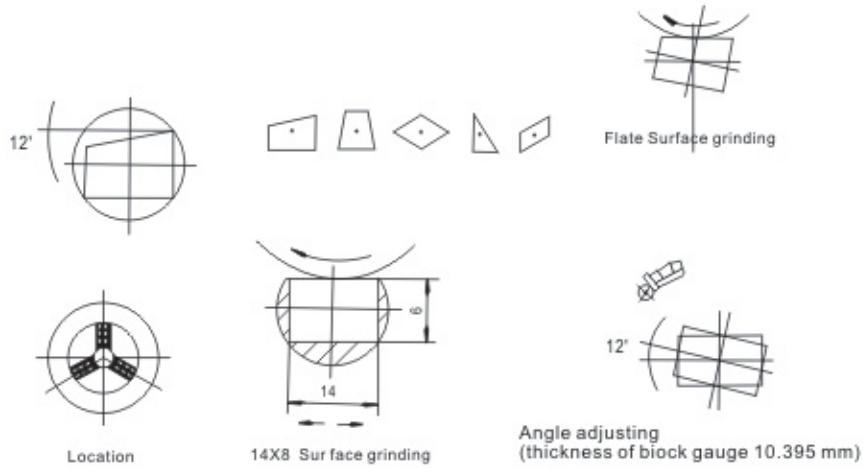
2-1 Multiangular grinding

- Grind 2, 3, 4, 6, 8, 24 regular polygon angles, or center angle is 15°.
- For polygon shape, to get the divided center angle according to the chart below.

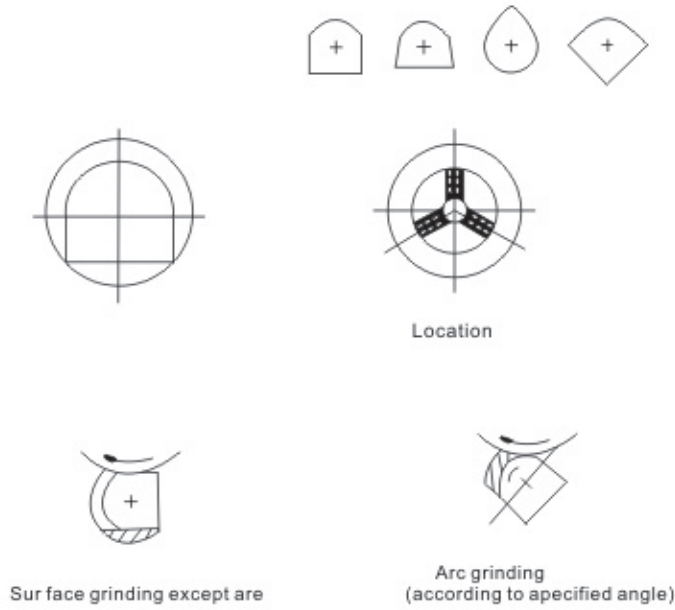


Regular Polygon	Center Angle	Sine angle	Regular Polygon	Center Angle	Sine angle
3	120°	60°	14	25°42'51"	154°17'09"
4	90°	90°	15	24°	156°
5	72°	108°	16	22°30'	157°30'
6	60°	120°	17	21°10'35"	158°49'25"
7	51°25'43"	128°34'17"	18	20°	160°
8	45°	135°	19	18°56'50"	161°03'10"
9	40°	140°	20	18°	162°
10	36°	144°	21	17°08'34"	162°51'26"
11	32°43'38"	147°16'22"	22	16°21'49"	163°38'11"
12	30°	150°	23	15°39'08"	164°20'52"
13	27°41'32"	152°18'28"	24	15°	165°

2-2 Grinding angle



3. Concentric arc grinding



3-JAWS PUNCH FORMER INSPECTIONLIST

Item	Inspection method	Runout Accuracy	Axis parallelism	Index plate Indexing tolerance	Accuracy	Measurement
					0.05	
					0.03	
					B	
					A	