

Henan Master Machinery Co., Ltd.	QA35-12 PUNCHING & SHEARING MACHINE	Total 17 page
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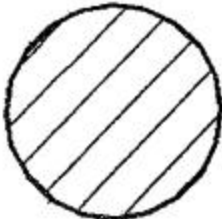
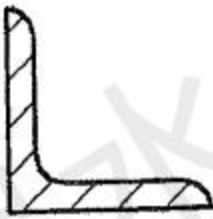

Foreword

<QA35-12>Punching& shearing machine is the member of new series machine. This machine features modern designing, rational structure, beautiful appearance, easy installation and application In contrast to similar machines, it has smaller electricity consumption bigger output power, wider scope of application It is ideal selection for use in purpose of multi station shearing and punching of sheet and profiles.

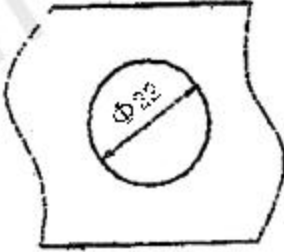
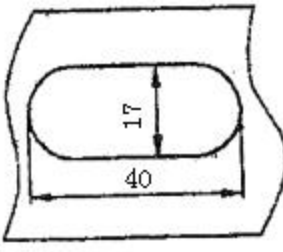
1. Property:

This machine applies to punching and shearing low carbon cold bar, angle steel, steel plate and flat steel whose tensile strength not more than 450MPA. It is used to perform profiled processing and hole making, also to processing the same way for nonferrous metals in above said shapes. This machine is especially suitable for processing in industries of machinery, electricity, construction, light industry factory. It excels in electricity economy, big power, small size and weight, compact structure, easy operation and repairing.

Specifications sheet

names of steel material	round bar steel	equal angle steel	steel plate
sectional view			
size	$\Phi 40$	125×125×10	340×12

Hole punching & profiled processing

processing scope	hole punching (dia./thickness of plate)	slotted hole punching(L×Hthickness of plate)
shape		
size	$\Phi 22/12$	40×21×12

2、Technology standard :

Number of travels/Minute: 30 Number of travels/Minute

Electric motor: 4kw 380V

Outside dimensions (mm): 1100×600×1450 (L×H×W)

Weight: 1000kg

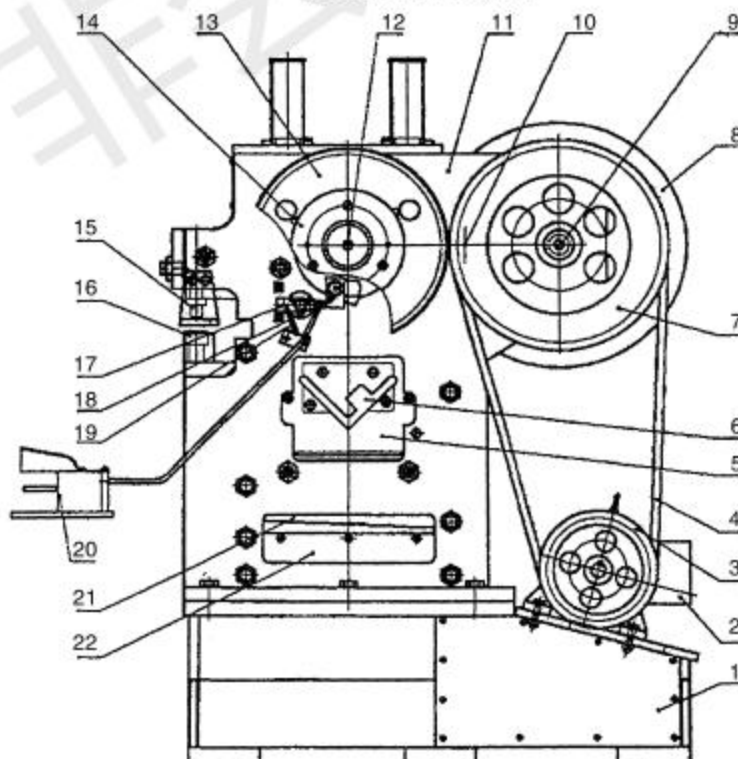
3. Structure

This machine is composed of electric motor, machine trunk, drive system, operating clutch system and working part etc. Electric motor 2 is fixed on seat 1, electric motor wheel 3 transfer drive power through V-belt 4 to big V-belt wheel 7, big V-belt wheel is on the same shaft with bevel shaft 9, connected by key. The other bevel gear 10, which is engaging the bevel gear shaft 9, transfers drive through Straight gear 13 and clutch 14 to the eccentric shaft 12. By the work of eccentric action, link bar (installed on eccentric shaft) drives movable blade seat 5 going up and down inside the machine trunk. On movable seat there are movable blade 6, upper blade 21 and punching head 15 etc. On the machine trunk 11, there are accordingly installed the fixed blades, lower blade 22 and punching die seat 16 etc. The moving blade seat going up and down, the shearing of various kinds of profile materials are realized by the moving blade and fixed blade. Between the upper and lower blades the steel plate and flat steel can be cut, the punching head and punching die can work together to punch holes.

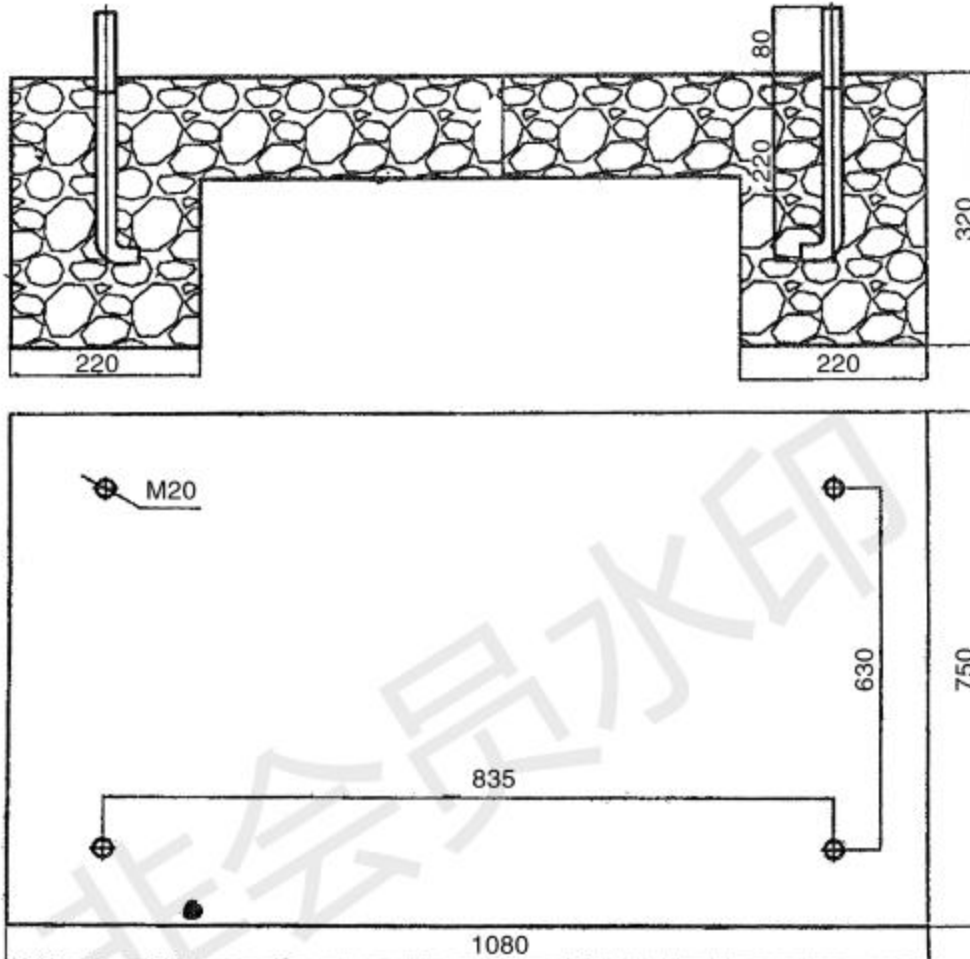
Distance between the two eccentric shaft is 18mm, shearing cutter travel distance is 34mm, when eccentric shaft rotates at rate 30rev./minute, the cutting blade goes the same times up and down, this means this machine offers 30times of shearing actions for every minute.

Movable cutter seat is controlled by clutch, stepping down the switch 20 then metal flexible shaft will pull link bar 17 to detach turning key lock 18 so as to have turning key being pulled out by clutch spring to engage the gear, the gear 13 drives eccentric shaft 12 so as to pull movable cutter seat goes up and down repeatedly. Releasing the stepping switch, operating link bar will block turning key lock so that retreat the turning key back to clutch then detaching gear from eccentric shaft, the movable cutter seat stops moving.

Structure diagram



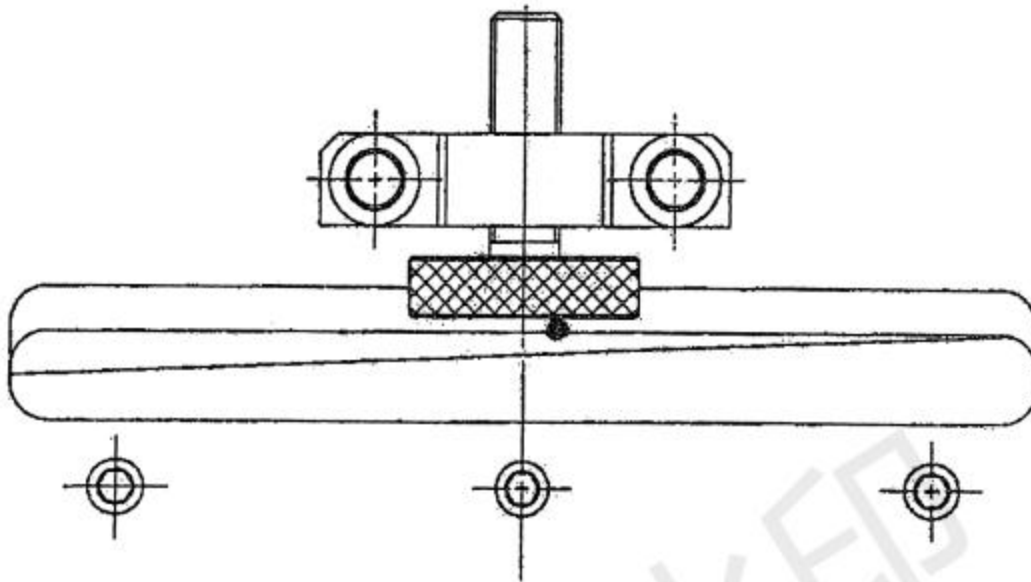
Henan Master Machinery Co , Ltd.	QA35-12 PUNCHING & SHEARING MACHINE	Total 17 page
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<p>1. seat 2. electric motor 3. V-belt wheel of motor 4. type B V belt 5. movable blade seat 6. movable blade 7. Big V belt wheel 8. Flywheel 9. bevel gear 10. bevel gear 11. Machine trunk 12. Eccentric shaft 13. gear 14. operating clutch 15. Punching head 16. punching die seat 17. Operating link bar 18. Turn key switch 19. Drag spring 20. Stepping switch 21. Upper blade 22. Lower blade</p> <p>4、 Lubrication and maintenance</p> <p>(1) Maintenance</p> <p>a. The machine gets to place, then cleaning the machine and oil the machine with new grease, only machine is fully greased can it start to operate.</p> <p>b. In the running of machine, keep eyes to shaft sleeve and bearing temperature, the temperature very high means the machine should stop working.</p> <p>c. Should be cleared of debris each station tools and tool around.</p> <p>d. Every group of worker finishing the work, it is must to clean the machine, oiling to prevent rusting, if the machine stay for long it is must to detach electric motor and place it in a dry place.</p> <p>(2) Greasing of machine</p> <p>Adequate greasing with right oil ensures machine operates finely, and this will prolong the machine working life, so the greasing for machine is important. The oil cups on this machine all needs refilling, please use lithium grease and calcium grease.</p> <p>a. according to greasing instruction, every group of workers should oil the machine 3 times with qualified (grease) oil.</p> <p>b. grease should be kept in sealed container, so that keep it clean.</p> <p>c. the machine should stay not working for a term, it is must to oiling the guiding rail with grease (oil).</p> <p>5、 Installation and operating</p> <p>(1) Installation</p> <p>The machine should be secured by grounding slot, before grounding the machine bed should be made by concrete, when the concrete gets dry placing the machine on the concrete bed and fastening it, then start operating try(concrete bed is below)</p> <p>(2) Preparation for operating</p> <p>a. Rotating the big belt wheel manually to see the engaging condition.</p> <p>b. Checking fastening condition of every part, fastening the loosened ones. To examining the shield condition and see if there are obstacles on each part of machine.</p> <p>c. Electric circuit, electric motor should be wired according to regulations and should be safely grounding.</p> <p>d. To grease the machine according to regulations.</p> <p>e. Idling operating, if there are strange noise heard, stopping the machine at once to find the cause of noises and repair.</p>		



Foundation sketch

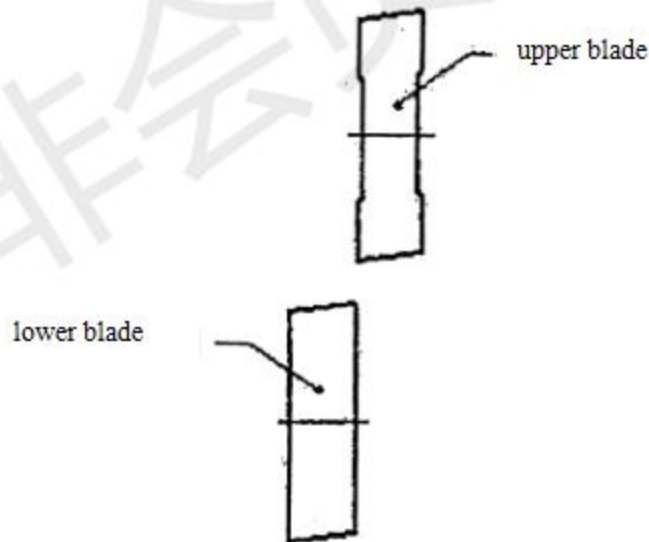
(3) Cautions in operating

- a. Machine started, to check the flywheel rotates in correct direction, if the direction is wrong then stop machine instant.
- b. In quantitative shearing of material, the guard block is used to position the material for continuous shearing processing.
- c. ① Movable blade, fixed blade works to shear angle steel and rod steel
② The upper and lower blade can shear steel plate and flat steel and the rod bar which diameter is less than 11mm.
③ Various blades and punching heads can not be used in mixture or working at the same time.
- d. Shearing angle steel (steel rod), by adjusting height of the material support plate decide the horseshoe shape of the cut plate.
- e. Using the upper and lower blade to shear materials, first we should have the steel plate leveled by using regulating screw for fear least the upper and lower blades worn quickly.



f. Gaps between blades and punching heads

① Upper and lower blades worn or just repaired, the both sides gaps should get even, the gap should be around 3% of the steel plate which is to be sheared.

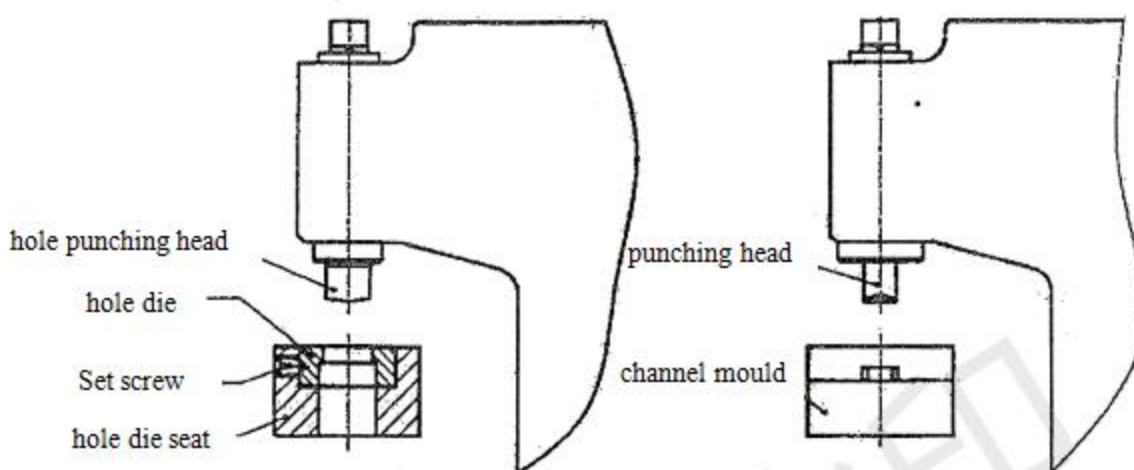


② Before special angle steel punching head and bottom blade are to be used, the gap should be regulated to 1/10 of the thickness of an angle, the punching die should be regulated to centre to centre with the punching head, all are ok then operate.

When punching a round hole, first to demount the channel mould, the hole mould to be installed on the punching die seat and being fastened by screw. Then fasten the punching die seat onto the machine, when the gaps between punching die and the surroundings is even then to start punching.

Round hole position

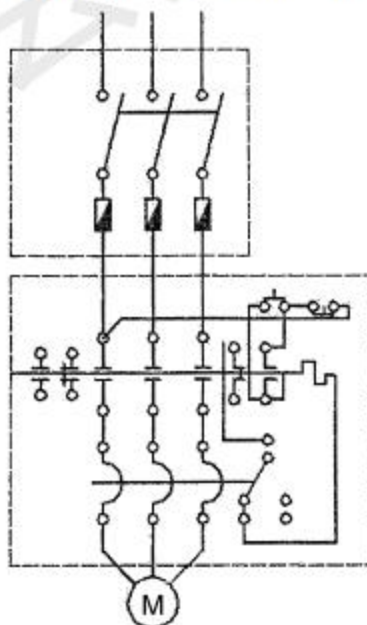
slotted hole position



6、electric devices connection

- (1) In using the machine, it is must to be according to safety operating rules
- (2) electric connections diagram

electric devices connection



a. QC10L-2/6 magnetic starter (coil voltage 380V)

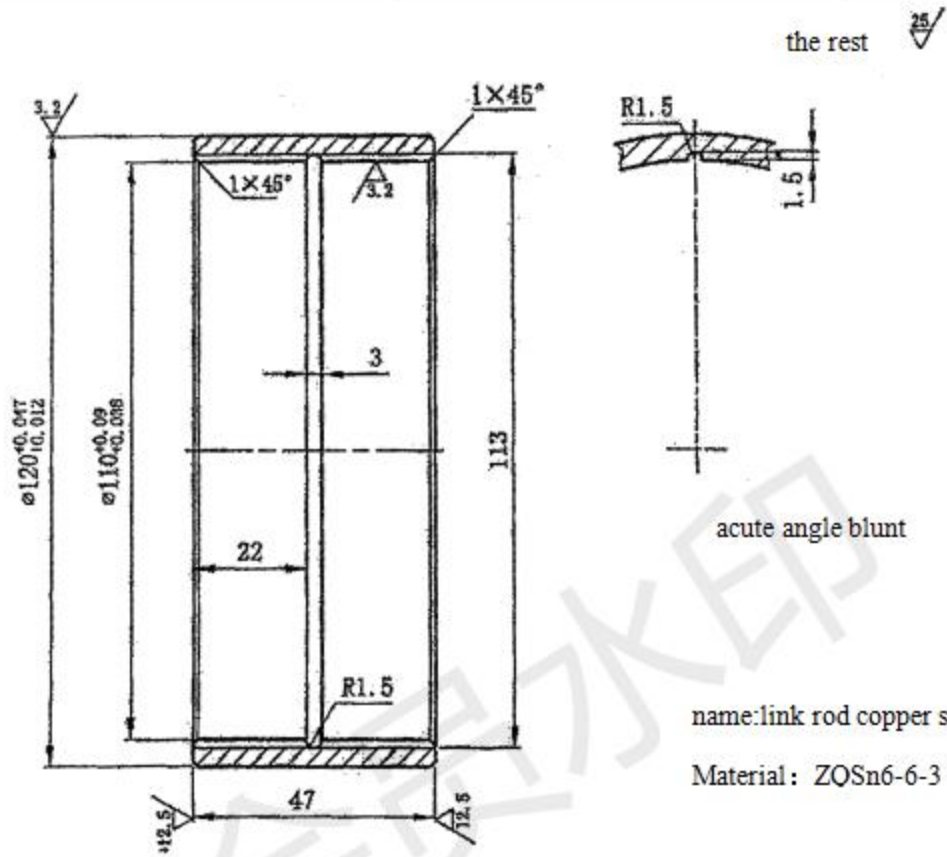
b. motor: 4kw (380V)

7、easily worn parts sheet

No.	Name	quantity
1	eccentric shaft left flange bronze sleeve	1pc
2	bronze sleeve for link rod	1pc
3	eccentric shaft right flange bronze sleeve	1pc
4	hole pattern	1pc
5	hole punching head	1pc
6	drag spring	1pc
7	sliding bush	1pc
8	rectangular turning key	1pc
9	upper blade	1pc
10	lower blade	1pc
11	movable blade	1pc
12	fixed blade	1pc
13	roller bearing 30309	2 sets
14	roller bearing 30311	2 sets
15	Triangle	2 pcs

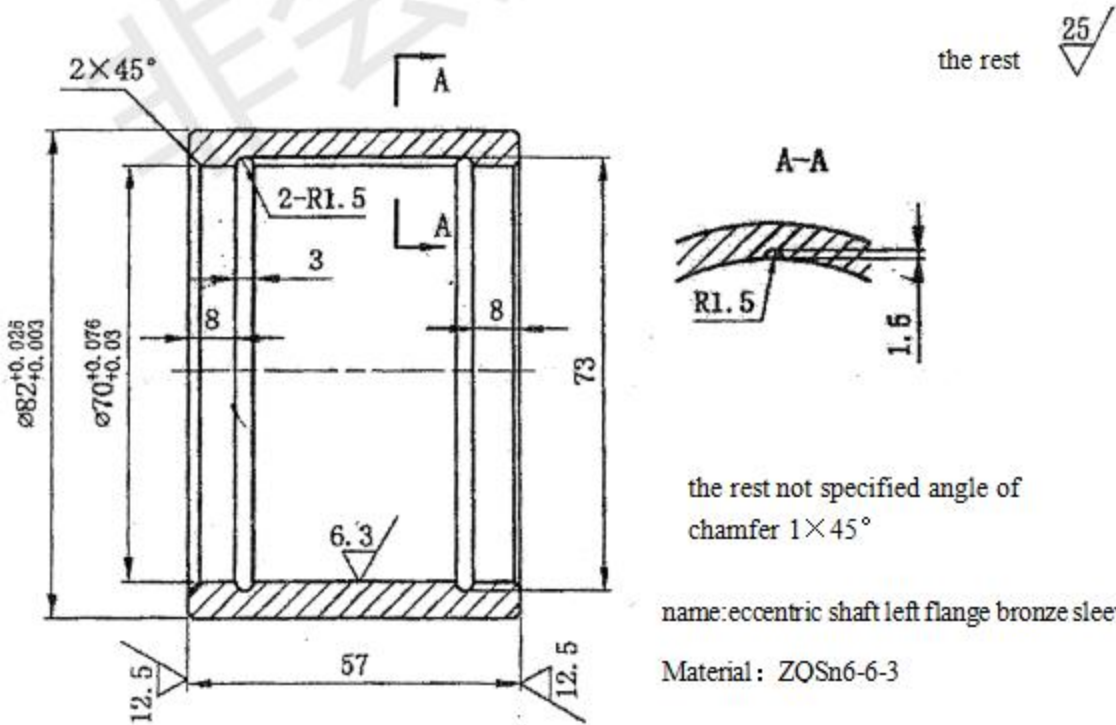
Remarks: 1. A set of tools are with machine, demanding more cutters it is up to order separately.

2. According to this machine shearing capability, our factory will custom make tools used by this type of machine by customers' requirement.



name: link rod copper sheathing

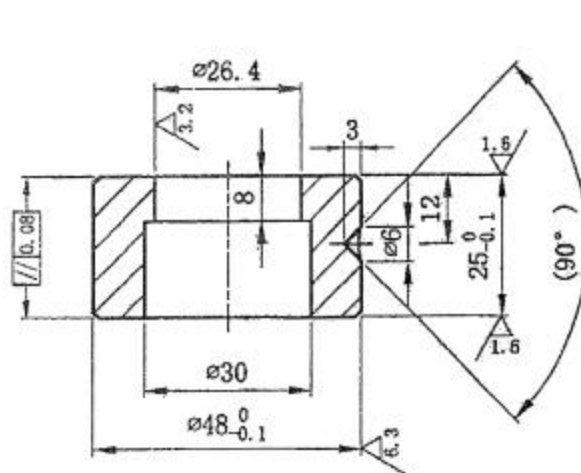
Material: ZOSn6-6-3



the rest not specified angle of chamfer $1 \times 45^\circ$

name: eccentric shaft left flange bronze sleeve

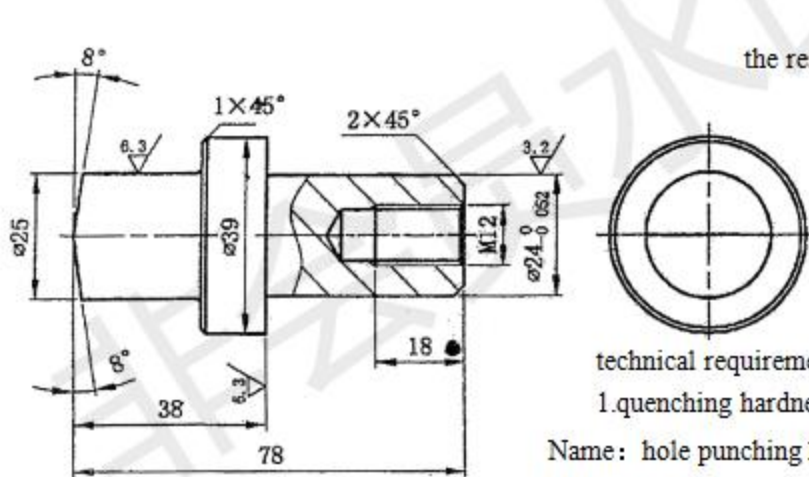
Material: ZOSn6-6-3



the rest $\frac{12.5}{\sqrt{\quad}}$

technical requirements:
1. external chamfering $1 \times 45^\circ$
2. quenching hardness HRC55-60

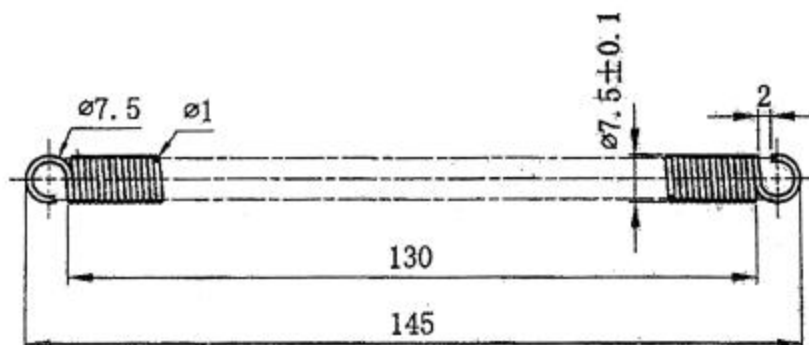
Name : hole die
Material : T8A



the rest $\frac{12.5}{\sqrt{\quad}}$

technical requirements:
1. quenching hardness HRC55-60

Name : hole punching head(25)
Material : T8A

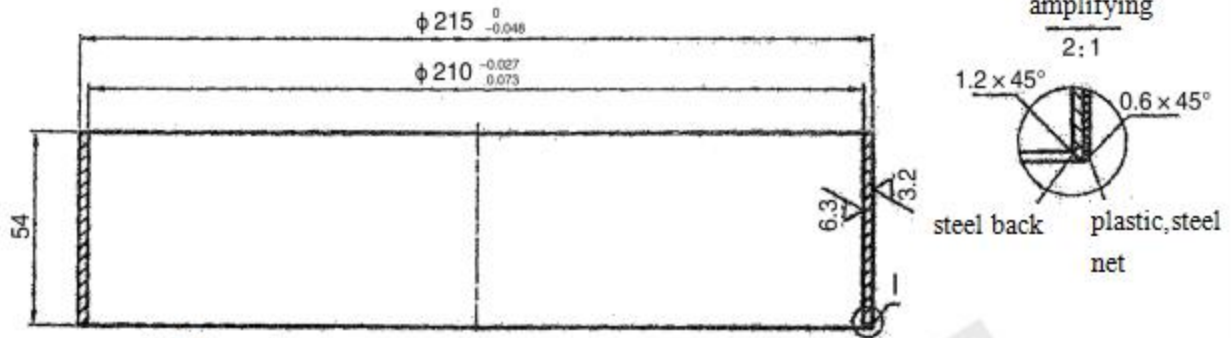


technical requirements:

- 1、 helix direction: right;
- 2、 effective number of turns $n=130$;
- 2、 heat treating HRC45-50

Name : Drag spring

material: carbon spring steel wire II

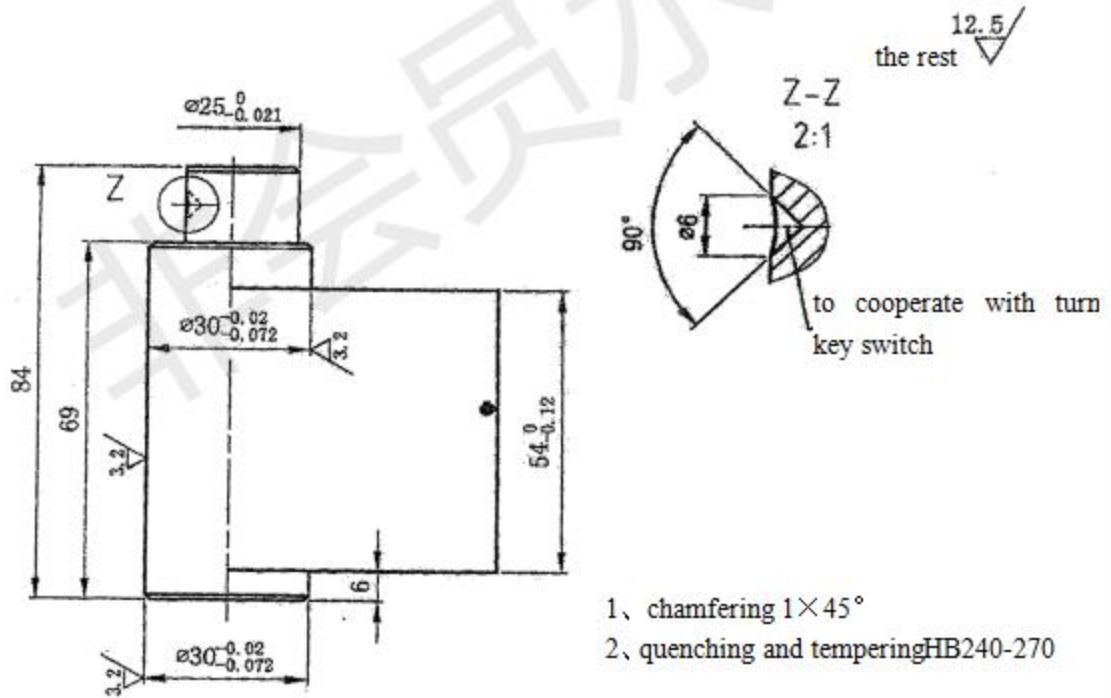


technical requirements:

- 1、 first install the slide bush on the clutch then drilling hole.
- 2、 oil hole to cooperate with crank axle

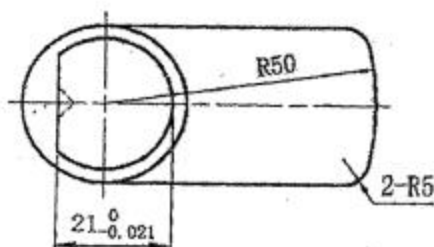
Name: sliding bush

Material: 3layer composite



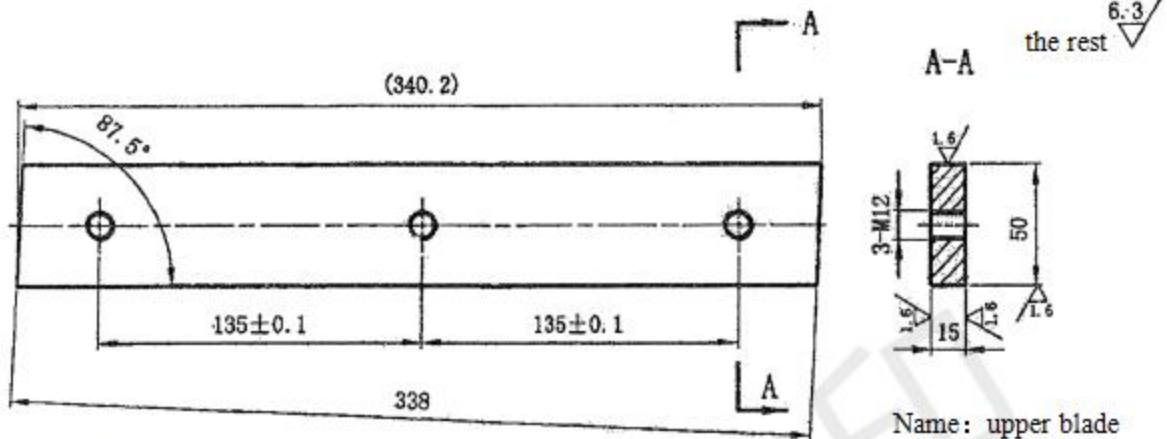
- 1、 chamfering $1 \times 45^\circ$

- 2、 quenching and tempering HB240-270



Name: rectangular turning key

Material: 45

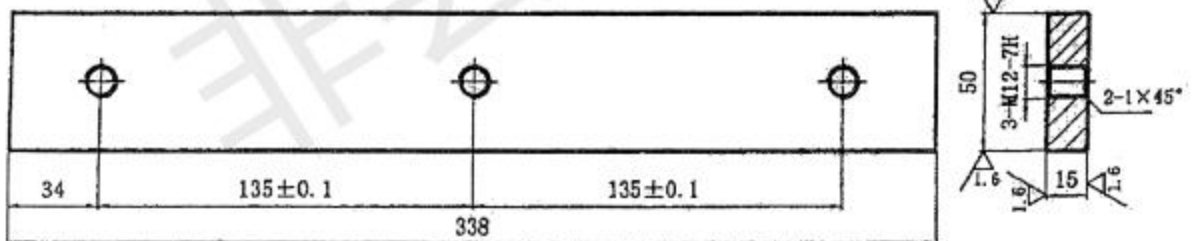


technical requirements:

1. quenching hardness HRC55-60

Name: upper blade

Material: T8A



technical requirements:

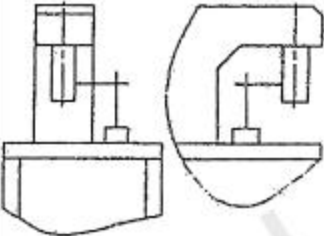
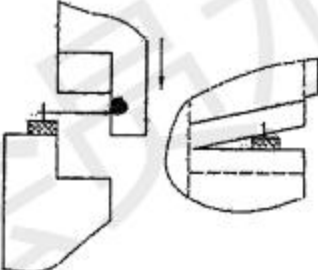
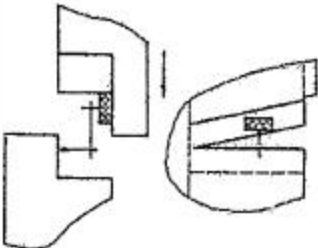
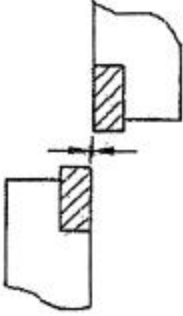
1. quenching hardness HRC55-60
2. keeping the edge sharp

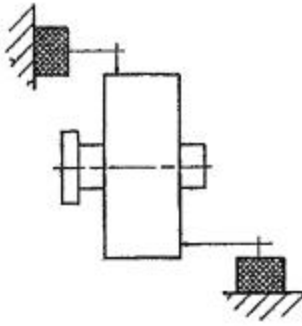
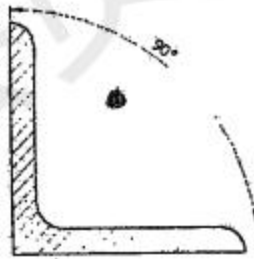
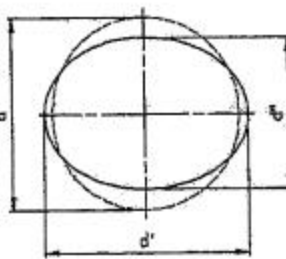
Name: lower blade

Material: T8A

officer		serial no.		date:
name of goods	punching & shesring machine		type of goods	QA35-12A

Examining items sheet

geomet ric precisi on	No.	testing items	sketch	acceptable error(mm)	tested error (mm)
	1	parrallelism of sliding seat travel line and rod of punching head on the sliding seat		0.15 (X direction) (bottom end of testing rod slanting towards cutter seat only)	
				0.15 (Y direction)	
	2	parrellism between upper blade seat travel line and vertical support plane which is laminating to upper blabe		0.10 (when upper blade seat moving down, two vertical planes which seperately laminating to upper and lower blades should keep as much gap as it can be.)	
	3	parrallelism between the upper blade seat travel line and vertical support plane laminating to lower blade		0.10 (when upper blade seat moving down, two vertical planes which seperately laminating to upper and lower blades should keep as much gap as it can be.)	
4	gap between upper and lower blades for shearing steel plate		0.06-0.26		

	No.	testing items	sketch	acceptable error(mm)		tested error (mm)
geomet ric precisi on	5	radial play of flywheel and jumping of end plane circle of big belt wheel		flywh	0.10 (radial play)	
				eel	0.20 (end plane jumping)	
				big belt wheel	0.10 (radial play)	
					0.20 (end plane jumping)	
Working Accurac y	6	quality of punched hole and shorn plate steel		big tearing and burrs are not allowed		
	7	distortion of angle steel		+1.5°—2.5° (Length of angle steel for test should be not less than it's side length, testing position 5mm away the shorn end plane)		
	8	ovality of steel rod (d' -d'')		4.5		
noise	9	testing in accordance with JB/T3623-1984 rules		≤85dB (A)		

compiler:

inpector:

date:

Henan Master Machinery Co
. , Ltd.

QA35-12 PUNCHING &
SHEARING MACHINE

Total 17 page

16th page

QA-35-12 punching and shearing machine

Packing list

Serial no.: _____ Packager: _____ Date: _____

- 1、 Type: QA35-12
- 2、 Outside dimensions (mm) 1100×600×1450 (L×H×W)
- 3、 Net weight: 1000kg
- 4、 Single decoration

serial no.	name	size	quantity	remarks
	machine			
1	QA-31-12 punching and shearing machine		1 set	
	technical files			
1	operating manual		1 pc	
2	Certificate of Qualification		1 pc	
3	Packing List		1 pc	
	enclosures			
1	wrenches		1 pc	
2	oil gun		1 pc	

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		17th page

QA-35-12 punching and shearing machine

Certificate of qualification

According to test, this machine is qualified for factory standard
and permitted for dispatch

serial no.: _____

Inspection chief: _____

Inspector: _____

date: _____

Henan Master Machinery Co., Ltd.