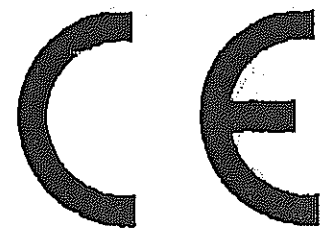
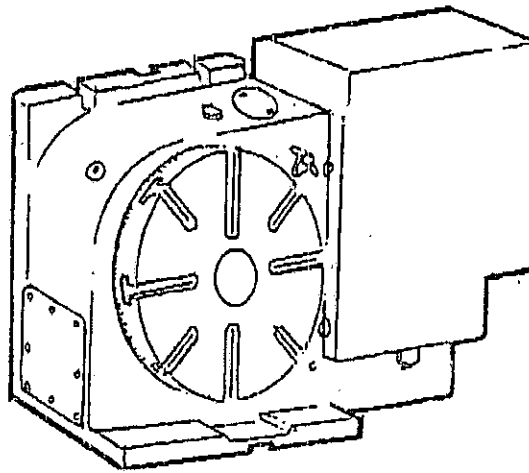


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NIKKEN CNC ROTARY TABLE
CNC320V, 400V SERIES
INDIVIDUAL INSTRUCTION MANUAL

EIGHTH EDITION



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This manual was produced using NIKKEN CNC rotary table CNC320V,400V series. CNC320V,400V series includes CNC320V,CNC320B,CNC320T,CNC400V,CNC400B and CNC400T with any kind of motor.

It is essential that you read the instructions and safety regulations before you attempt to use CNC rotary table.



! : Read the instructions and safety regulations carefully before using the machine. Failure to do so may result in injury or death. Please read these instructions and safety regulations carefully.



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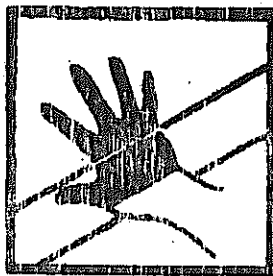
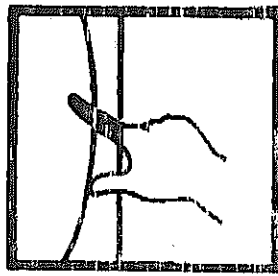
! : Use the correct type of cable for the machine with a capacity of 400V in combination with the power system.



! : Switch off main power of machine before doing any maintenance work.



! : Make sure you turn the dust or oil filter marked as follows.



! : Do not attempt to modify CNC rotary table.



! : Never hammer, punch, tap or work on work piece.



! : Never attempt to operate CNC rotary table when the machine is under the influence of alcohol or drugs.



! : Gloves and shoes should be worn when operating CNC rotary table.

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APPENDIX

- 1 Relation between work dia. and length for allowable max. load
- 2 Relation between work dia. and length for allowable work inertia

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1 Adjustment of backlash

The worm screw rotates in the totally-enclosed oil bath and the reduction mechanism is composed of a combination of the special ion-nitrided worm wheel and the hardened worm screw, so that it is not necessary to adjust the backlash until four to five years have elapsed after the rotary table is put in service. However, if necessary, the backlash can be adjusted according to the following procedures.

1.1 Measurement of backlash

- 1) Unclamping the brake.
Execute unclamp command.
- 2) Confirming the backlash

Read a deflection of the dial gauge (G) by inserting the flat plate (H) into a T-slot and manoeuvre the faceplate clockwise and anticlockwise through the plate by hand. A backlash of within 5 ~ 15 microns is normal when shipped (It means that at least 5 microns of backlash amount is required for CNC rotary table.), and the adjustment should be done in the event when a backlash of 50 microns or more is observed. The confirmation is to be done on eight spots of every 45° of table.

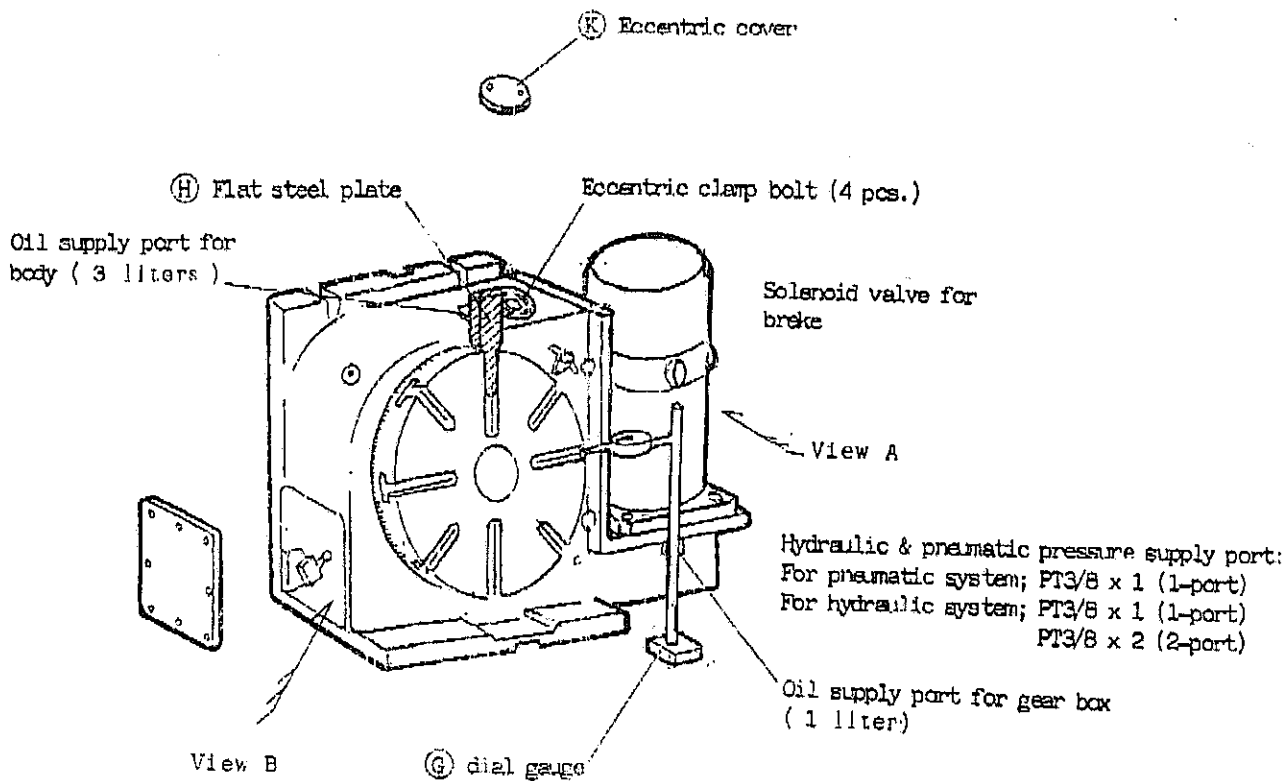


Fig. 1

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NOTE | The adjustment of backlash is necessary dial gate work, so be careful when
 executing.

NOTE | Be sure to seal the tapered screw plugs (A) and (B) using a seal tape.

NOTE | Be sure to apply each retaining agent (shown in Fig. 1) to its corresponding
 part assembling the work, so that no ingress of coolant is
 permitted.

NOTE | By no means turn the table at the spindle speed immediately after the
 adjustment. Be sure to turn it at a low speed (2000 rpm) for 10 minutes
 after the turn of the table.

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2 Brake mechanism

There are three type of brake system as follows;

- 1) Pneumatic system (clamp by pneumatic pressure)

Solenoid valve is provided inside the motor cover.

- 2) Hydraulic 1 port system (clamp by hydraulic pressure)

Solenoid valve is not provided in CNC rotary table.

- 3) Hydraulic 2 ports system (clamp and unclamp by hydraulic pressure)

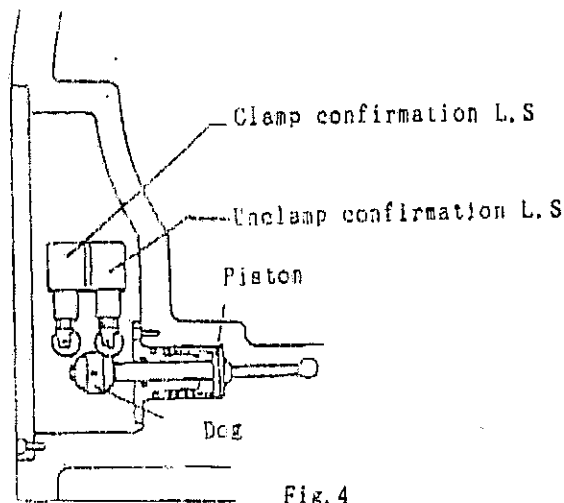
Solenoid valve is not provided in CNC rotary table.

Since the specification of brake system will differ to some extent depending on demand, reference should be made to the attached "External Dimension" or "Hydraulic Circuit Diagram"

NOTE
 Since this brake mechanism requires a fine adjustment, by no means disassemble it. In disassembling it.

Remove the side cover of the table, clamp and unclamp confirmation limit switches are provided. In the event when the position of the dog is incorrect with no trouble in air/hydraulic supply and the brake mechanism, loosen the dog locking screw and adjust the dog position correctly.

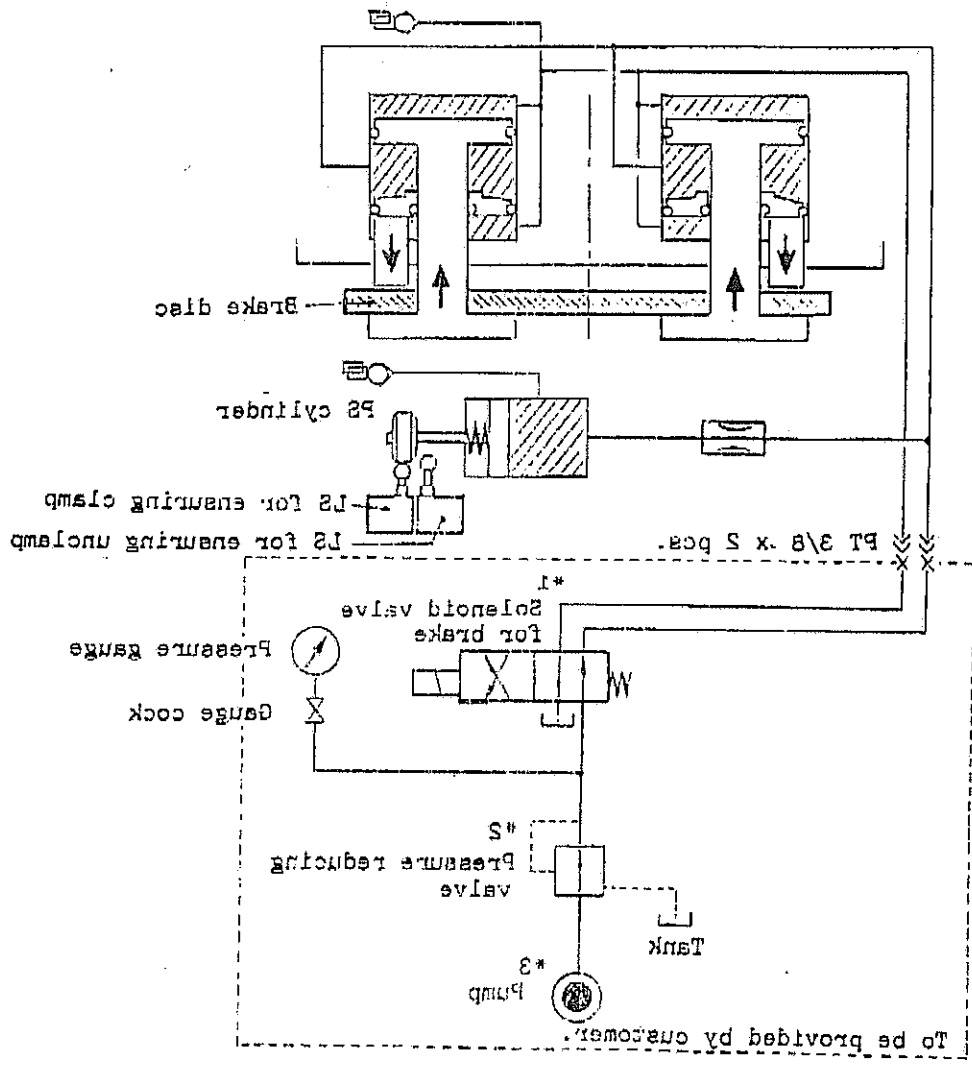
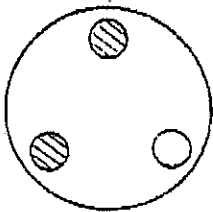
NOTE
 In case of the pneumatic system, be sure to adjust the position of the dog from the low pressure side. In case of the hydraulic system, be sure to adjust the position of the dog from the high pressure side.



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2.3 Hydraulic 2 port system

Two disc brakes are provided on the backside of rotary table as shown below.



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3. Zero-point return mechanism

Remove the side cover of the table. the zero-point return mechanism will be found. The dog ring for deceleration (DEC*) for zero-point return is fastened by two set screws. In case when the correct machine zero-point can not be obtained even if the grid shift amount is varied, adjust the dog ring.

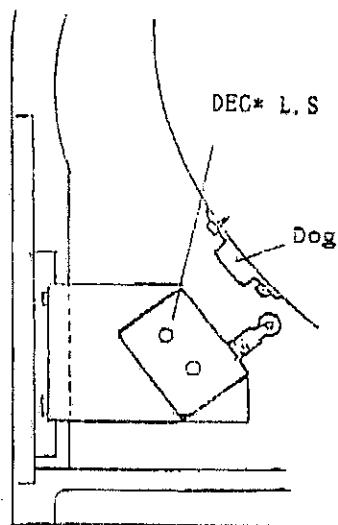
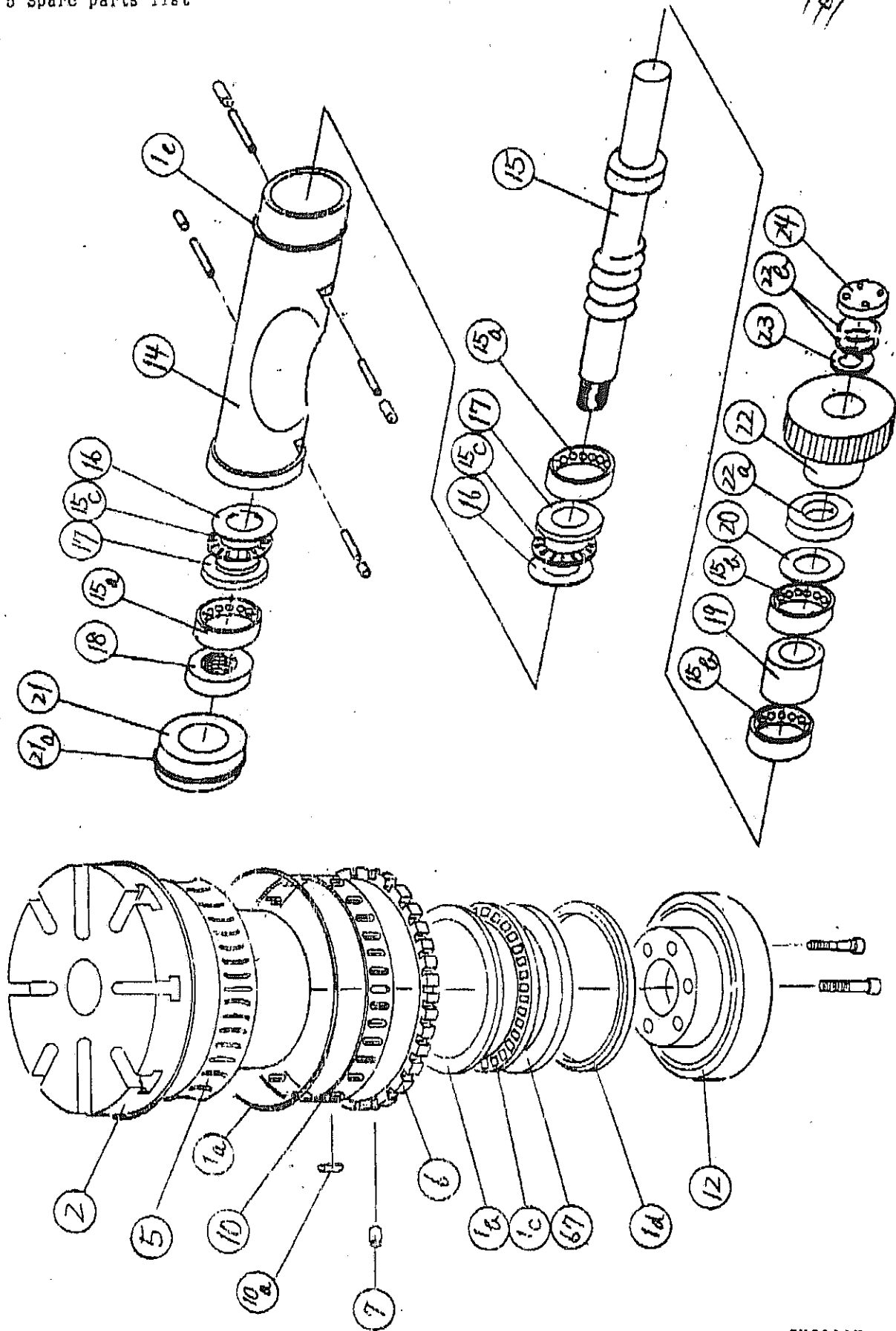


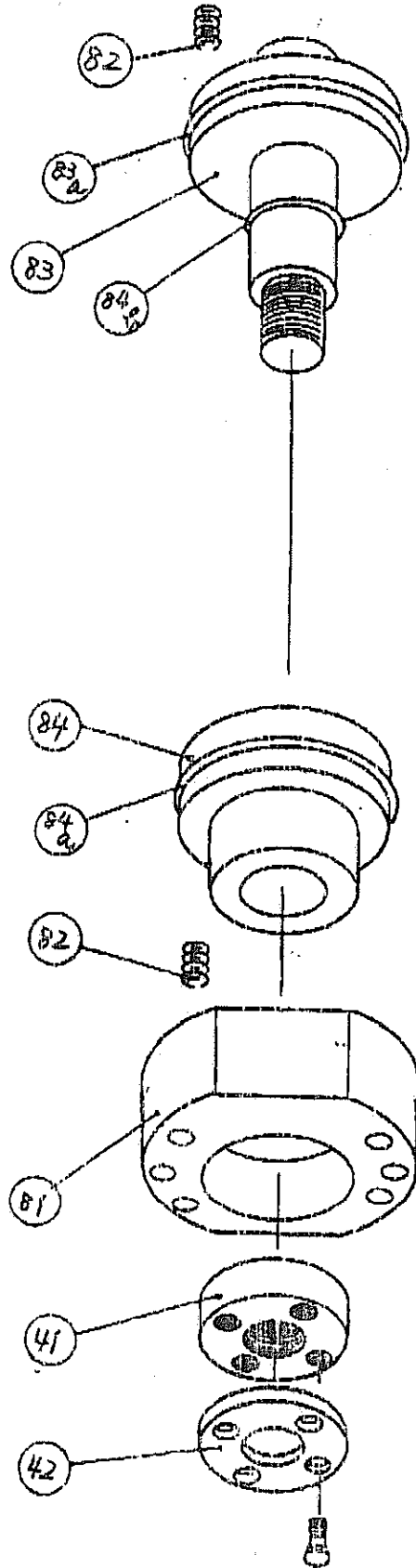
Fig.5

5 Spare parts list



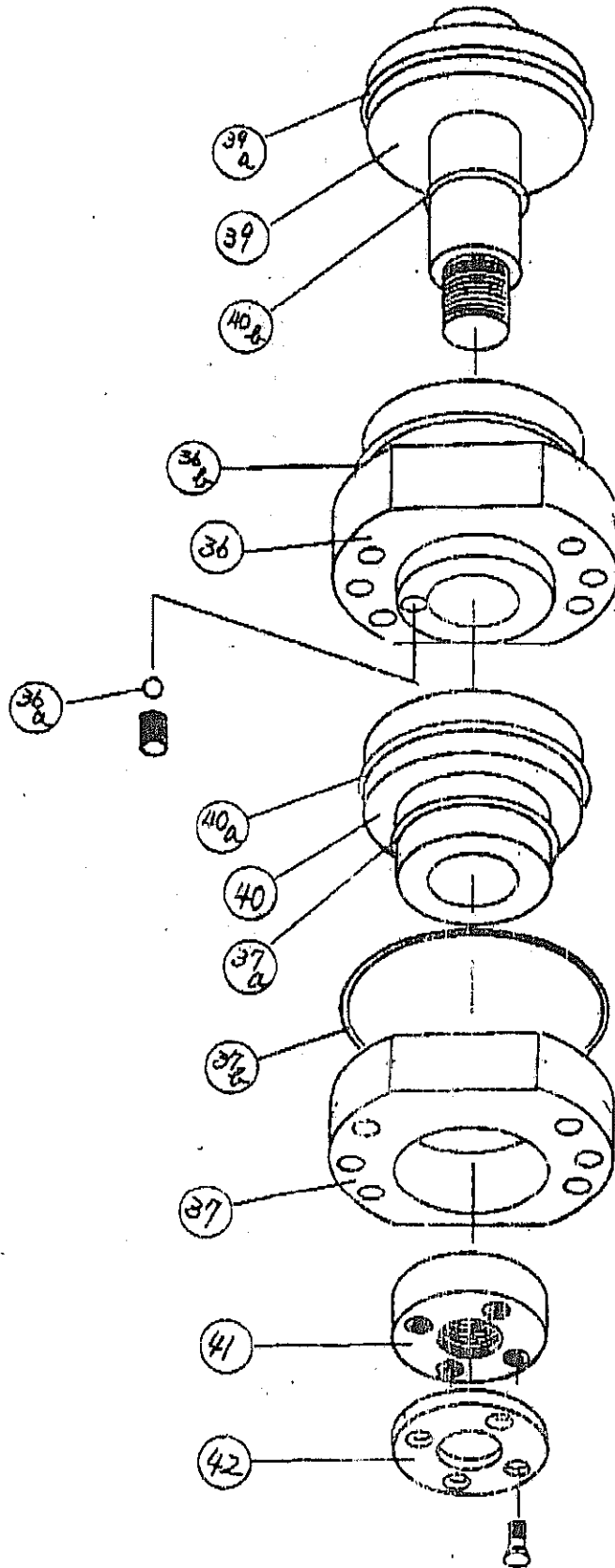
CNC320V, 400V
TCZ-05002

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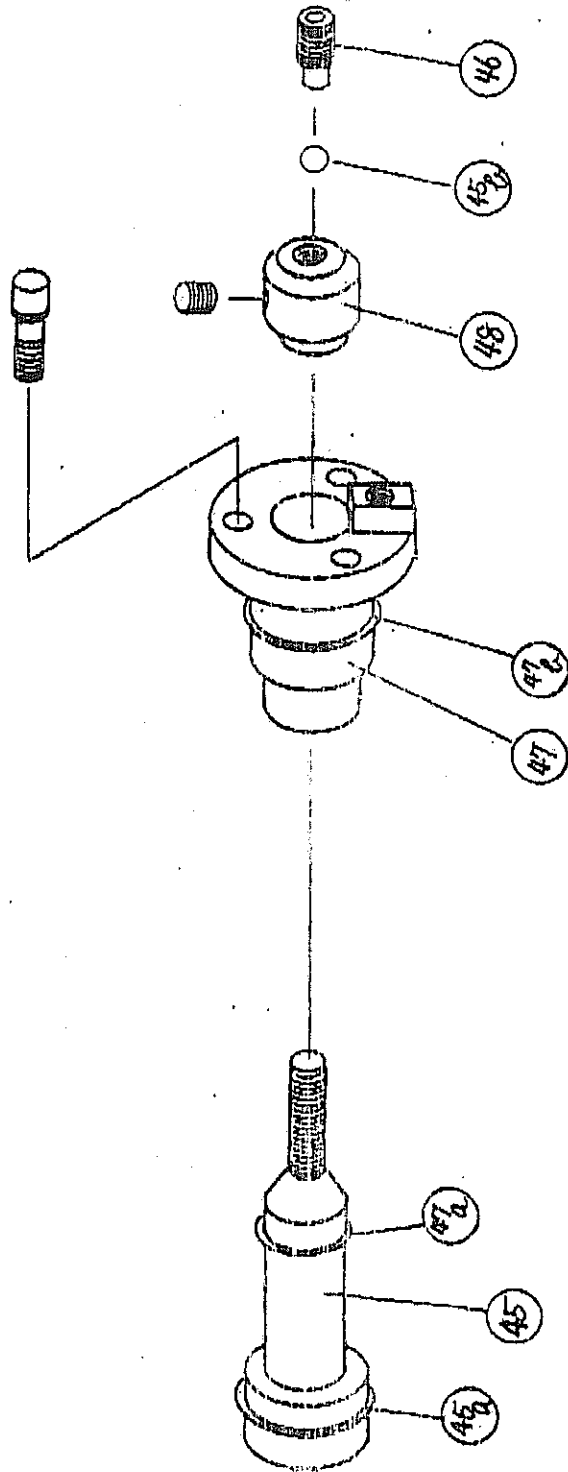
CNC920V,400V PNEUMATIC SYSTEM
TCZ-05004

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CNC820V, 400V HYDRAULIC 2 PORTS SYSTEM
TCZ-05008

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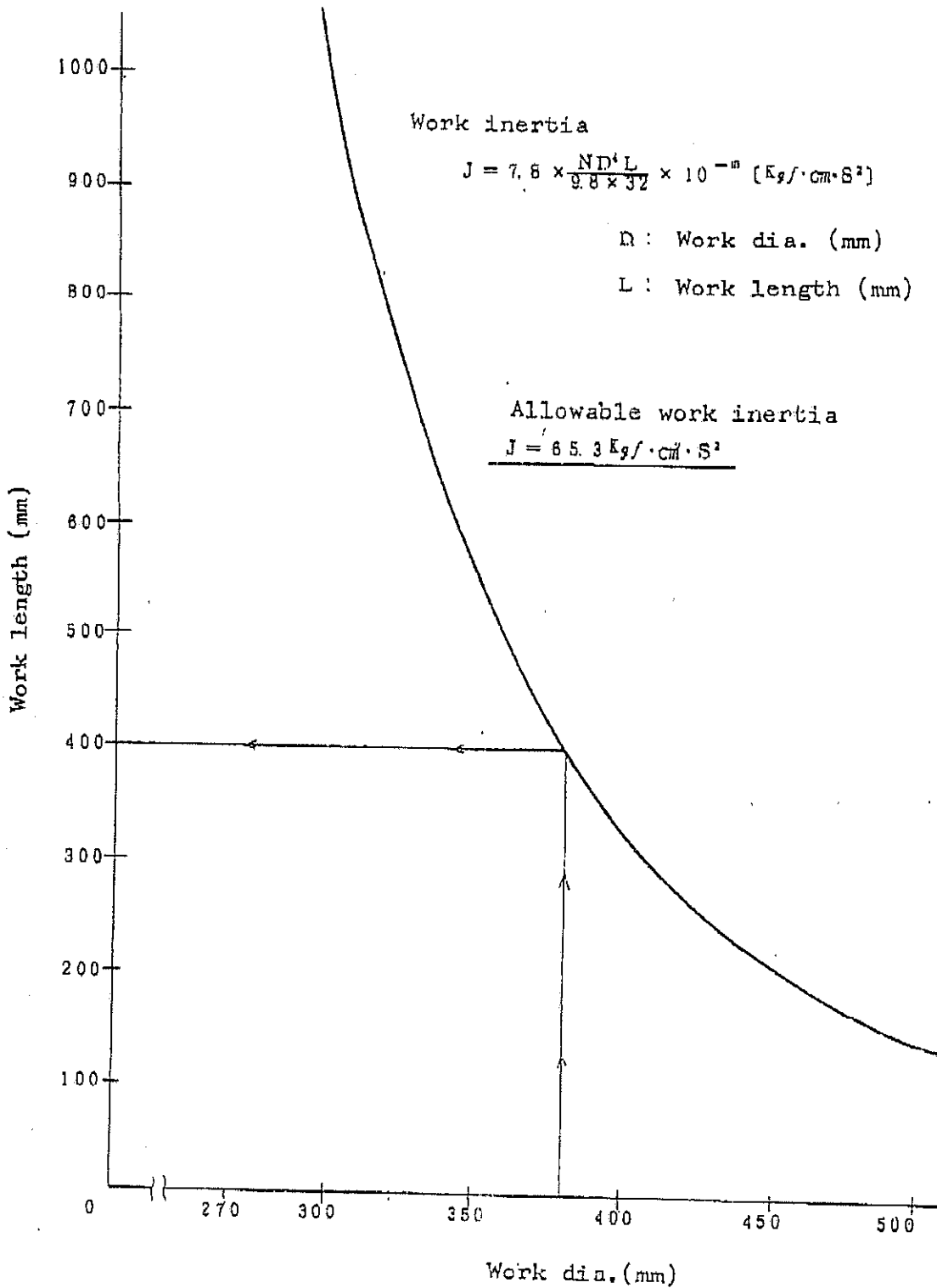
CNC320Y, 400Y CLAMP/UNCLAMP CONFIRMATION
TCZ-05008

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No.	REFERENCE	ITEM	PIECES	REMARKS
36A	TCZ-05005	BRAKE CYLINDER	1	
37A	TCZ-05005	FLANGE	1	
38A	TCZ-05005	SPRING	4	
39A	TCZ-05005	PISTON ROD	1	
40A	TCZ-05006	PISTON RING	1	
41	TCZ-05005	BRAKE NUT	1	
42	TCZ-05005	BRAKE LOCK NUT	1	
39Aa	TCZ-05005	PACKIN	1	SKY-55
40Aa	TCZ-05005	PACKIN	1	SKY-55
40Ab	TCZ-05006	PACKIN	1	SKY-20
36	TCZ-05006	BRAKE CYLINDER	1	
37	TCZ-05008	CYLINDER FLANGE	1	
39	TCZ-05006	PISTON ROD	1	
40	TCZ-05008	PISTON RING	1	
41	TCZ-05006	BRAKE NUT	1	
42	TCZ-05006	BRAKE LOCK NUT	1	
36a	TCZ-05008	3/16" BALL	1	
36b	TCZ-05008	O-RING	1	G-70
37a	TCZ-05008	O-RING	1	P-40
37b	TCZ-05008	O-RING	1	N-71
39a	TCZ-05006	O-RING	1	P-48
40a	TCZ-05006	O-RING	1	P-48
40b	TCZ-05006	PACKIN	1	SKY-20
45	TCZ-05007	PISTON ROD	1	
46	TCZ-05007	BOLT	1	
47A	TCZ-05007	CYLINDER FLANGE	1	
48	TCZ-05007	DOG	1	
46A	TCZ-05007	SPRING	1	FOR HYDRAULIC 1 PORT SYSTEM
88	TCZ-05007	SPRING	1	FOR PNEUMATIC SYSTEM
45a	TCZ-05007	O-RING	1	P-22
45b	TCZ-05007	1/8" BALL	1	
45	TCZ-05008	PISTON ROD	1	
46	TCZ-05008	BOLT	1	
47	TCZ-05008	CYLINDER FLANGE	1	
48	TCZ-05008	DOG	1	
45a	TCZ-05008	O-RING	1	P-22
45b	TCZ-05008	1/8" BALL	1	
47a	TCZ-05008	O-RING	1	P-12
47b	TCZ-05008	O-RING	1	P-22

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2 Relation between work dia. and length for allowable work inertia



Utilizing method of above figure

A work, having ϕ 380 mm dia. and a length of within 400 mm, will have an allowable work inertia of within 65.3 kgf.cm.s².