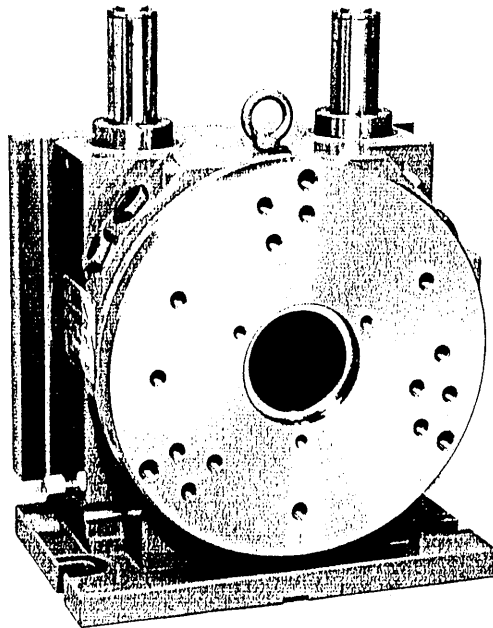


# **SUPER-RAPIDEX**

clockwise, counter-clockwise

STOCK #710-230CS No. 0102007

## **INSTRUCTION MANUAL**



**YUASA**

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# **SUPER-RAPIDEX INSTRUCTION MANUAL**

## **INTRODUCTION**

Thank you very much for choosing our SUPER-RAPIDEX indexer.

This indexer has been newly designed and manufactured precision indexer not only time and cost saving purpose but also being considering maintenance, safety and durability.

## **SPECIAL CAUTIONS**

1. The coolant oil should be given directly to cutting spot, not to the indexer

If the coolant oil penetrates accidentally, it may deteriorate the performance and wholly sealed to prevent the coolant oil penetration into the body.

2. The thickness of the indexer turret is about 20mm.(0.787")

Do not make deeper holes when you mount fixtures etc.

3. Read the manual carefully and prevent machine crush and jig interference, which cause the index pin damage and accuracy problem.

4. Work pieces and fixtures should be equally balanced as much as possible (less than 10 lbs at 8.7"). otherwise the indexer may not turn, and the internal mechanism will be broken.

## **NEGLECTING ABOVE CAUTIONS WILL VOID OUR WARRANTY POLICY**

## **WARNINGS**

1. Loading and unloading of the workpieces should be done away from the machine or when machine operation is totally stopped. Or you will get hurt accidentally.
2. Our SUPER-RAPIDEX is a mechanical unit, therefore very safe. But , you must pay a full attention at any time to avoid any trouble and accident.



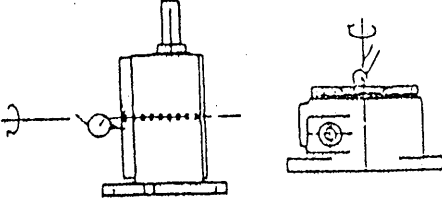
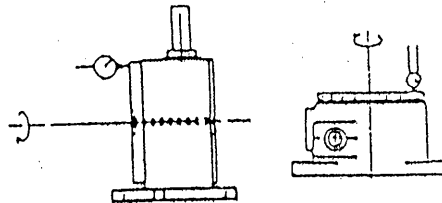
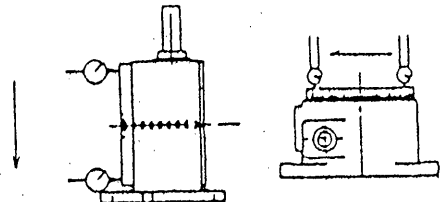
Description		Tolerance
Table center hole runout		0.01mm 0.0004"
Table surface runout	15mm inner from the table circumference 	0.01mm 0.0004"
Table surface squareness	15mm inner from the table circumference 	0.03mm 0.0012"
	cumulative error accuracy	± 30 sec.

Fig 2

## 2. OPERATION with CNC Machines

Using any tool from the machine ( or install a metal bar at the machine, Spindle), a programmed Z-axis motion provides indexing motion of the SUPER-RAPIDEX.

It turns toward the right, if the SUPER-RAPIDEX faces and push the Push bar of the right.

It turns toward the left, if the SUPER-RAPIDEX faces and push the Push bar of the left.

Model: 710-230CS 45° Indexer

Depending on length of stroke programmed, the unit will index 5° ,10° ,15° , 20° ,25° ,30° ,35° ,40° and 45° .

### CAUTION

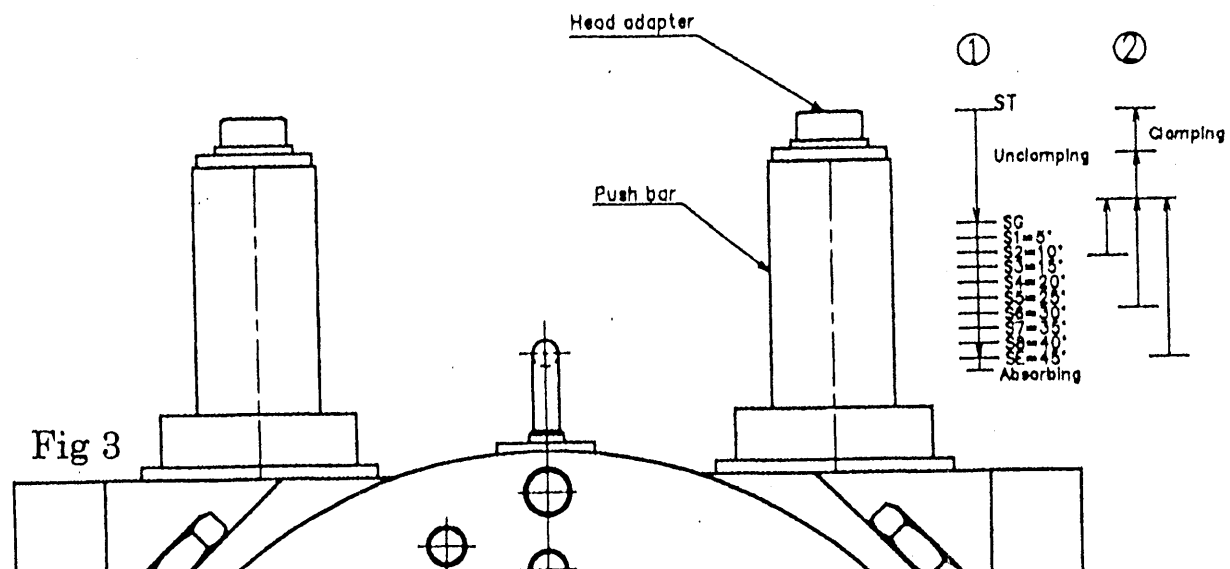
- The head adapter is fixed with M8 screw.

In case of damage of the head adapter, replace it by any similar material.

Be careful not to interfere the guide tube when depressed.

- SUPER-RAPIDEX has a mechanical absorber (3mm=0.11" allowance), which absorbs an excessive of the push bar.

In case of overstroke, the absorber will be broken.



## 2-1) FULL STROKE

710-230CS: The full stroke (56mm=1.02") of the push bar of SUPER-RAPIDEX achieves 45° movement of the indexer.

The push bar will be depressed by any toucher tool (e.g. End mills).

(We recommend you to install a metal bar at the spindle to push the indexer, which is easy and faster for indexing.)

### (CAUTION)

The protrusion length of the push bar of the right and left, is different.

Please confirm the length of the actual thing individually.

### [ Procedure]

- ① Stop the toucher tool(or the bar) once at 2mm(0.1") away from the indexer  
Push bar. (Violent push will give damage to SUPER-RAPIDEX)
- ② Depress, by approx. 56mm (1.02"), the push bar at 1.2 to 1.5m/minute (4 to 5ft/min.) speed. (Adjust the depressing speed according to the application or the weight of workpiece, heavy workpiece will cause an overrun.)
- ③ Retrace the toucher tool to the initial stop position.
- ④ If you do not push a push bar to a set point properly when the push bar goes back  
To the original position, A table automatically move a little bit to stabilize the position its self.  
You need to adjust until this table's movement disappear.

### CAUTION

- The indexer push bar should be depressed exactly in the direction of its Center line.
- The toucher tool (e.g. End Mills) should not rotate while depressing.  
45° movement will be given by 56mm (1.02") stroke of the push bar,  
however, the exact amount must be determined by depressing the push bar gradually until the table stops rotating.
- The retracing speed is as same as the depressing one.

## 2-2) INDIVIDUAL POSITIONING

710- 230CS

5° : Depress the push bar at 1/9 of its stroke. (Point S1)

10° : Depress the push bar at 2/9 of its stroke. (Point S2)

15° : Depress the push bar at 3/9 of its stroke. (Point S3)

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45° : Depress the push bar by 56mm (1.02") of its stroke. (Point SE)

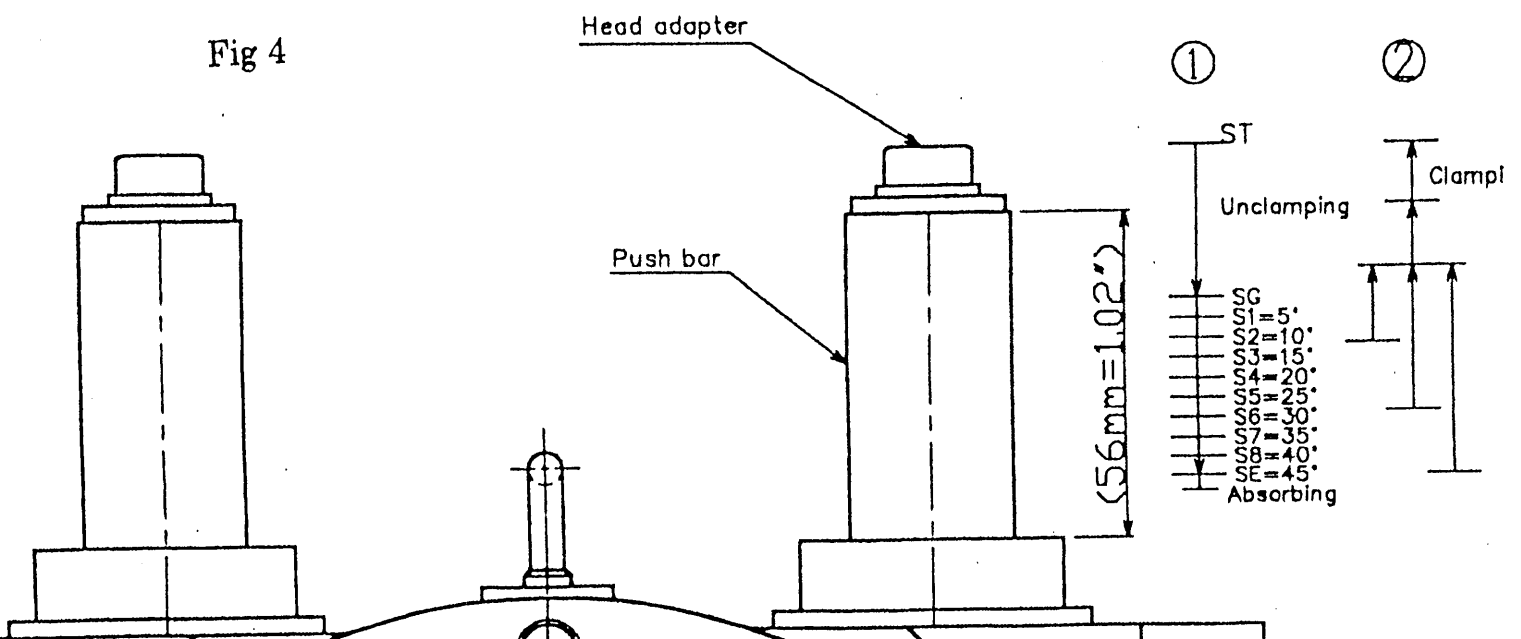
- 45° =56mm stroke is essentially 1 section.

The table can not turn over 1 section/stroke.

- When you rotate 10° (2/9 stroke), the additional (2<sup>nd</sup>) 10° will be accomplished at the position of 20° (4/9 stroke) (⇒ S4)

- In case of incremental movement, because of the work weight or fixtures, you may lose the position (overrun). Reduce the speed of depressing the bar from 1.2-1.5m/min. (3 to 4ft/min) to 0.8m/min. (2.7ft/min)

Fig 4



## 2-3) POSITION CHECKING

The angle indication scale on the indexer turret shows 5° reference points and 15° increment marks.

The position of Point S1 is where the reference mark comes to meet the first 5° reference point, Point S2 is on the 10° (2<sup>nd</sup> reference point) position and Point SE is on 45° mark position.

Before starting actual production, please carefully check the table rotation.

If you do not push a push bar to a set point properly when the push bar goes back to the original position, A table automatically move a little bit to stabilize the position its self.

You need to adjust until this table's movement disappear.

### CAUTION:

While test running, carefully operate your machine. Your machine hits you  
When you are checking the indexer rotation.

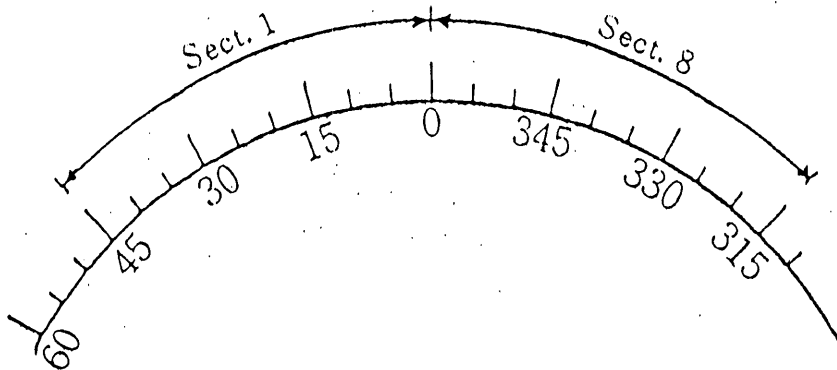


Fig 5

710-230CS

[Sample Operation]

1. Turn from  $0^\circ$  to  $65^\circ$

1<sup>st</sup>  $65^\circ$

Depress the push bar once (full stroke) to get  $45^\circ$ , and then  $4/9$  stroke to get an additional  $20^\circ$ .

2<sup>nd</sup>  $65^\circ$

Depress the bar full to get an additional  $25^\circ$ , (4/9 of the stroke gives no movement.) and then  $8/9$  stroke to get an additional  $40^\circ$ .

$45^\circ = 56\text{mm}$  stroke is essentially 1 section.

The table can not turn over 1 section/stroke.

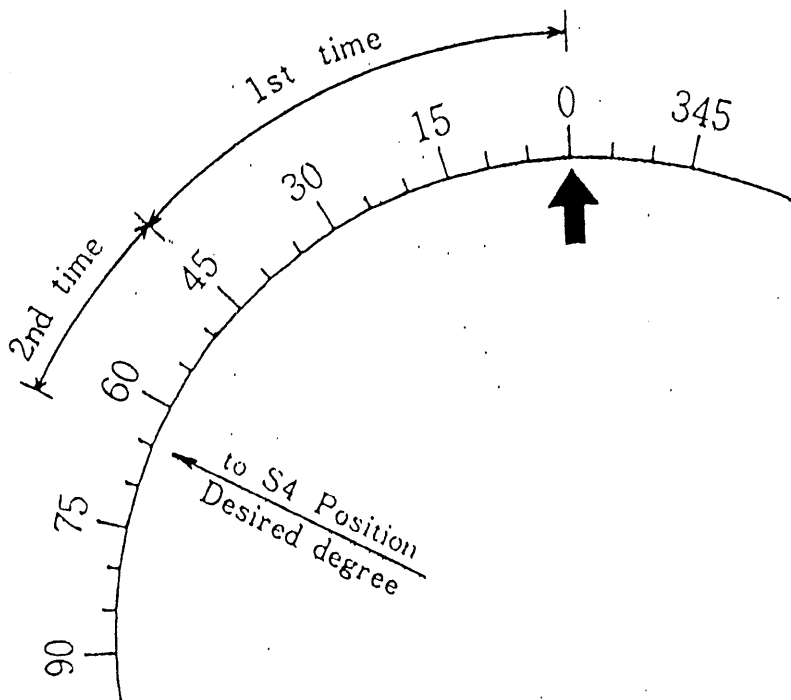


Fig 6

### 3. MEIMTENANCE

#### ○710-230CS

45 ° Type SUPER-RAPIDEX is practically a maintenance free product. However, to keep better accuracy, please pay attention to the following.

1. Always keep it clean after the job.
2. Keep it dry (oily) and clean in storage.
3. Dew occurs to SUPER-RAPIDEX by a sharp temperature change and become the cause of rust.

Coolant water and moisture will gather rust, which may cause rotational Trouble and inaccuracy of positioning.

Always keep it clean and put some oil after completely dry.

#### Imbalance back-up function

It stop it with 4 -M14 nuts on the side of push bar of the turn table and there is a screw.

This does the role of the brake at the time of the inertia, imbalance in the time that the table turns.

The stopping screw (M14) that adjusts the strength of the spring and the spring that suppress the ball and the ball that touch to the outside diameter of the gear it consists of.

The place where stops with the face of the nut and the face of the screw fit is strongest and please do not tighten this over.

### 3. OPERATION WITH MANUAL HANDLE (SPECIAL ACCESSORY)

You can use the SUPER-RAPIDEX as a manual indexer.

You can use the handle for workpiece setting before operation.

#### SETUP

- ① Mount the handle on to the bar and tighten the fixing knob into the pit by the side of the guide tube.
- ② Turn the handle and check if the table actually rotate.

Fig 7

MH-2

