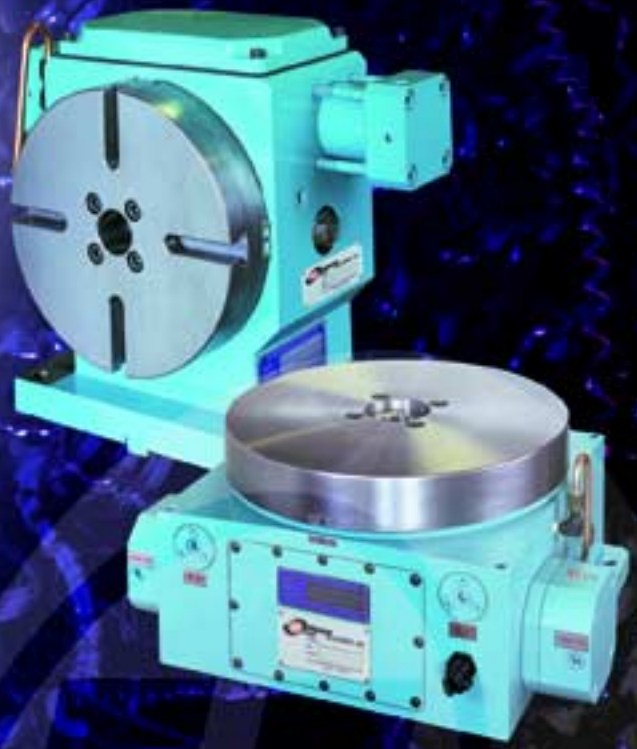
Components for Machine Building

Vertical and Horizontal Indexers



Hause Machines

Engineered Solutions for Manufacturing Excellence

Standard and Custom Components to Fit Your Needs Exactly

If you're building equipment to drill, tap, chamfer or thread, Hause Machines can help you create a machine that will fulfill your most demanding requirements.

Our vastly expanded product line includes a broad array of components, and the selection is constantly growing.

Building on a long tradition of excellence, we've also renewed our commitment to quality, value and service. With product warranties ranging from one year to five years, standard Hause components are available for a wide range of manufacturing functions. Off-the-shelf type components include:

- Drilling Units
- Tapping Units
- Indexers
- Multiple Spindle Heads
- Drill Presses and Tap Presses
- Special Components: Columns, Risers and Bases

Custom Components

Although one of our standard components may fulfill your requirements, our experienced engineering group is ready to develop a custom component that will fit your production needs exactly.

We'll draw from a wide range of proven solutions and new technologies to solve your problems and increase your productivity.

Visit Hause Machines on the Web

To see our full line of engineered solutions – and to learn more about how Hause can help you solve manufacturing problems – please visit our home on the World Wide Web. The Web site is an exciting development at Hause. We are using it for rapid communication with customers, troubleshooting, electronic commerce and more. Come see what Hause can do for you at **www.hausemachines.com.**

Product and Accuracy Information

The interior of this Coupling Gear Index Table consists of three pieces of gear plate, no floating action during rotating and a robust clamping structure.

Characteristics

1. High accuracy within ± 5 arc seconds still remains after long-term use.
2. Robust clamping system ensures smooth operation during high-difficulty or heavy-duty cutting.
3. No floating action during rotation and the sealed structure keeps 100% of the coolant out.

Diagram #1

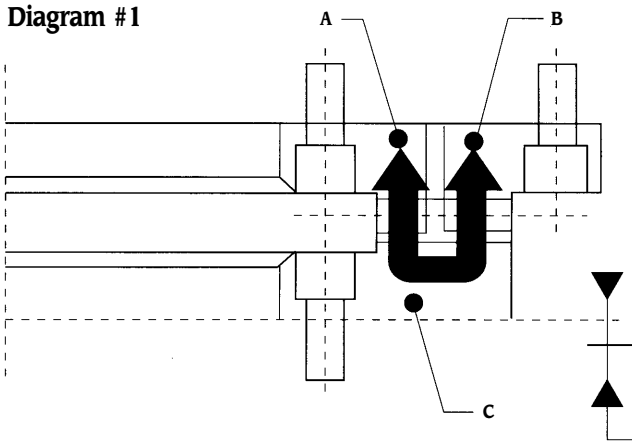
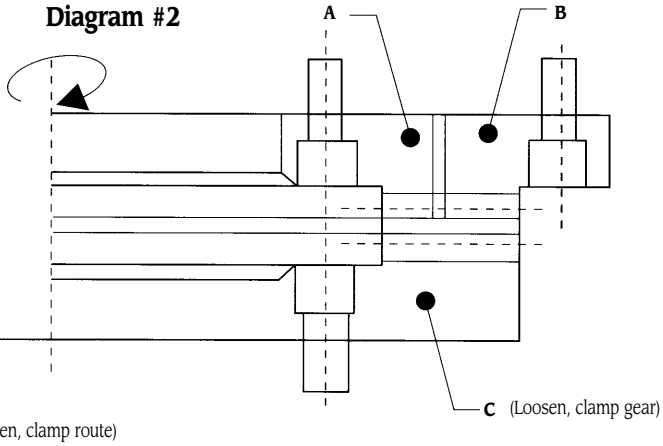


Diagram #2



Principle Function of Gear Plates

- As shown in diagram #1, there are three parts that make up the gear plate assembly.
  - Gear plate "**A**" is locked to the dial plate.
  - Gear plate "**B**" is attached to the index table's base.
  - Gear plate "**C**" moves up and down; up to lock and down to allow the dial plate's rotation.

  These components work together to provide rigidity and accuracy of the table.
- As shown in diagram #2, gear "**C**" moves downward and the table unlocks. Gear "**A**", supported by a rotary bearing, rotates smoothly.
- After rotation, gear plate "**C**" moves upward and mates to "**A**" and "**B**" forming a rigid, highly accurate structure.
- As index table "wears in," it becomes even more accurate.

Indexing Accuracy in Inches Per Second of Arc

Reference Dia.	4″	6″	8″	10″	12″
1 sec.	.000010	.000015	.000019	.000024	.000029
2 sec.	.000019	.000029	.000039	.000048	.000058
3 sec.	.000029	.000044	.000058	.000073	.000087
4 sec.	.000039	.000058	.000078	.000097	.000116
5 sec.	.000048	.000073	.000097	.000121	.000145
6 sec.	.000058	.000087	.000116	.000145	.000175
10 sec.	.000096	.000145	.000194	.000242	.000291
15 sec.	.000145	.000218	.000291	.000364	.000436
30 sec.	.000290	.000436	.000582	.000727	.000873

Reference Dia.	16″	20″	30″	40″	50″
1 sec.	.000039	.000048	.000073	.000097	.000121
2 sec.	.000078	.000097	.000145	.000193	.000242
3 sec.	.000116	.000145	.000218	.000291	.000364
4 sec.	.000155	.000194	.000291	.000388	.000485
5 sec.	.000194	.000242	.000363	.000485	.000606
6 sec.	.000233	.000291	.000436	.000582	.000727
10 sec.	.000388	.000485	.000727	.000970	.001212
15 sec.	.000582	.000727	.001090	.001454	.001818
30 sec.	.001163	.001454	.002181	.002909	.003636

These high-precision indexers are perfect for most trunnion and carrousel type machines. Their heavy load capacity and "non-lifting" tabletop make them even more enticing. The interlocking three-piece gear increases the accuracy of these tables the longer they are used. Hydraulic power packs are available for operating these indexers. Electrical versions are also available (including servo controlled).

Features

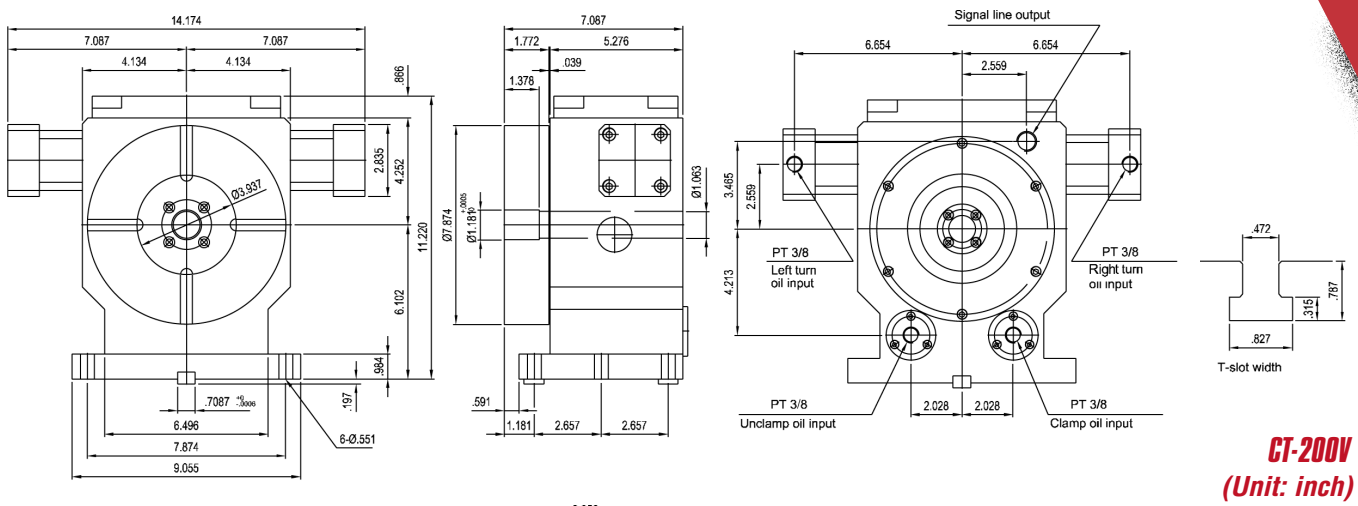
- **Hirth Coupled with ±5 arc sec repeatability**
- **Heavy Duty – carries large, heavy fixtures**
- **Hydraulic Powered†**
- **"Non-lifting" dial plate**
- **Less than .0004" table run out**
- **Electric powered version available**
- **Tailstocks are available**

Specifications (Unit: inch)

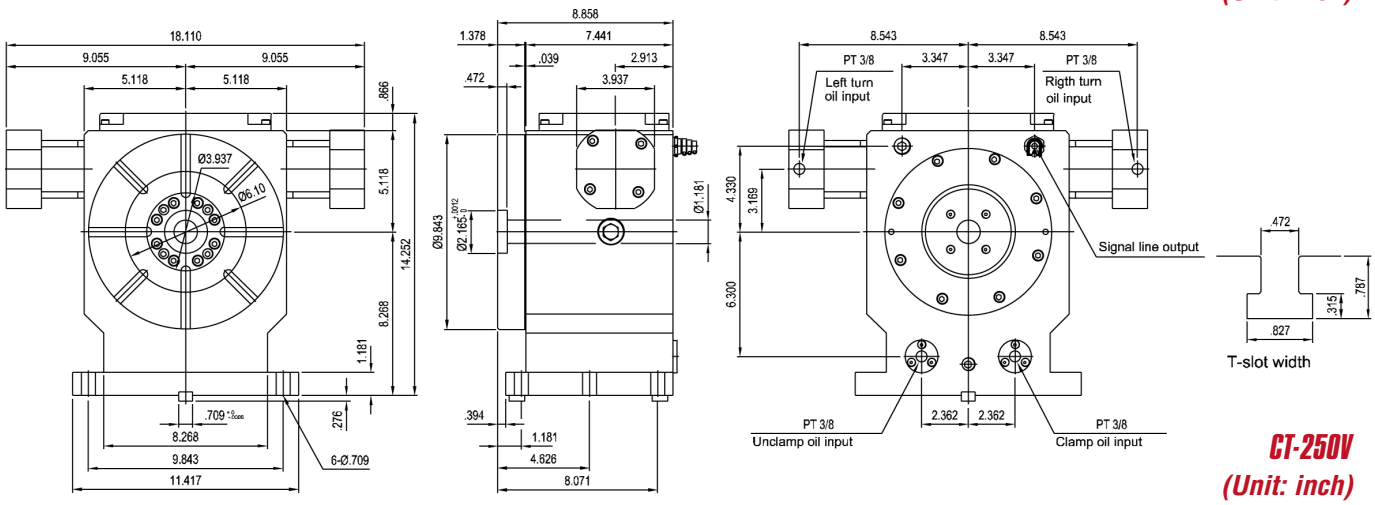
Model		CT-200V	CT-250V	CT-320V	CT-470W
Plate Diameter	(inch)	7.874	9.843	12.598	18.504
Center Hole Diameter	(inch)	$1.181^{+0.0005}_{0}$	$2.165^{+0.0007}_{0}$	$2.559^{+0.0007}_{0}$	$3.543^{+0.0009}_{0}$
Spindle Hole Diameter	(inch)	1.062	1.181	1.220	N/A
Table Center Height (Ver. Pos.)	(inch)	6.102	8.267	9.055	N/A
Overall Height (Ver. Pos.)	(inch)	11.220	14.251	15.354	N/A
Width of T-Slot	(inch)	$0.472^{+0.0008}_{0}$	$0.472^{+0.0008}_{0}$	$0.551^{+0.0008}_{0}$	N/A
Width of Key	(inch)	$0.708^{0}_{-0.0004}$	$0.708^{0}_{-0.0004}$	$0.708^{0}_{-0.0004}$	N/A
Index Numbers		4, 6, 8, 12, 24			
Index Accuracy*	(arc sec)	± 5	± 5	± 5	± 5
Table Running Direction		clockwise and counterclockwise			
Rotary Torque	(lb ft)	159	268	434	579
Working Pressure	(psi)	430	430	430	430
Clamping Force	(lb)	2646	3042	3439	8752
Permissible Loading	(lb)	209	331	441	1543
Permissible Instant Inertia GD²	(lb ft²)	451	1187	2017	4218
Weight	(lb)	117	220	320	55

† For hydraulic circuit drawing refer to page 7.
* For indexing accuracy in inches per arc sec, refer to page 3.

DIAGRAM OF EXTERNAL SIZE (VERTICAL)



CT-200V
(Unit: inch)



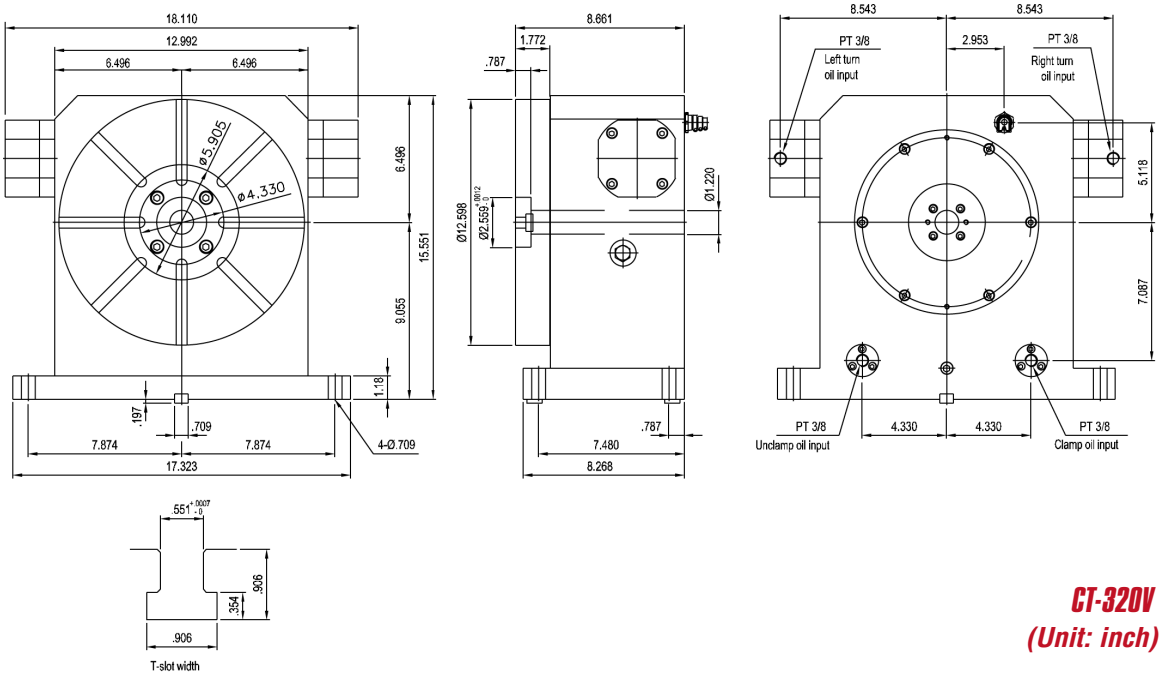
CT-250V
(Unit: inch)

Inspection Value (Unit: inch)

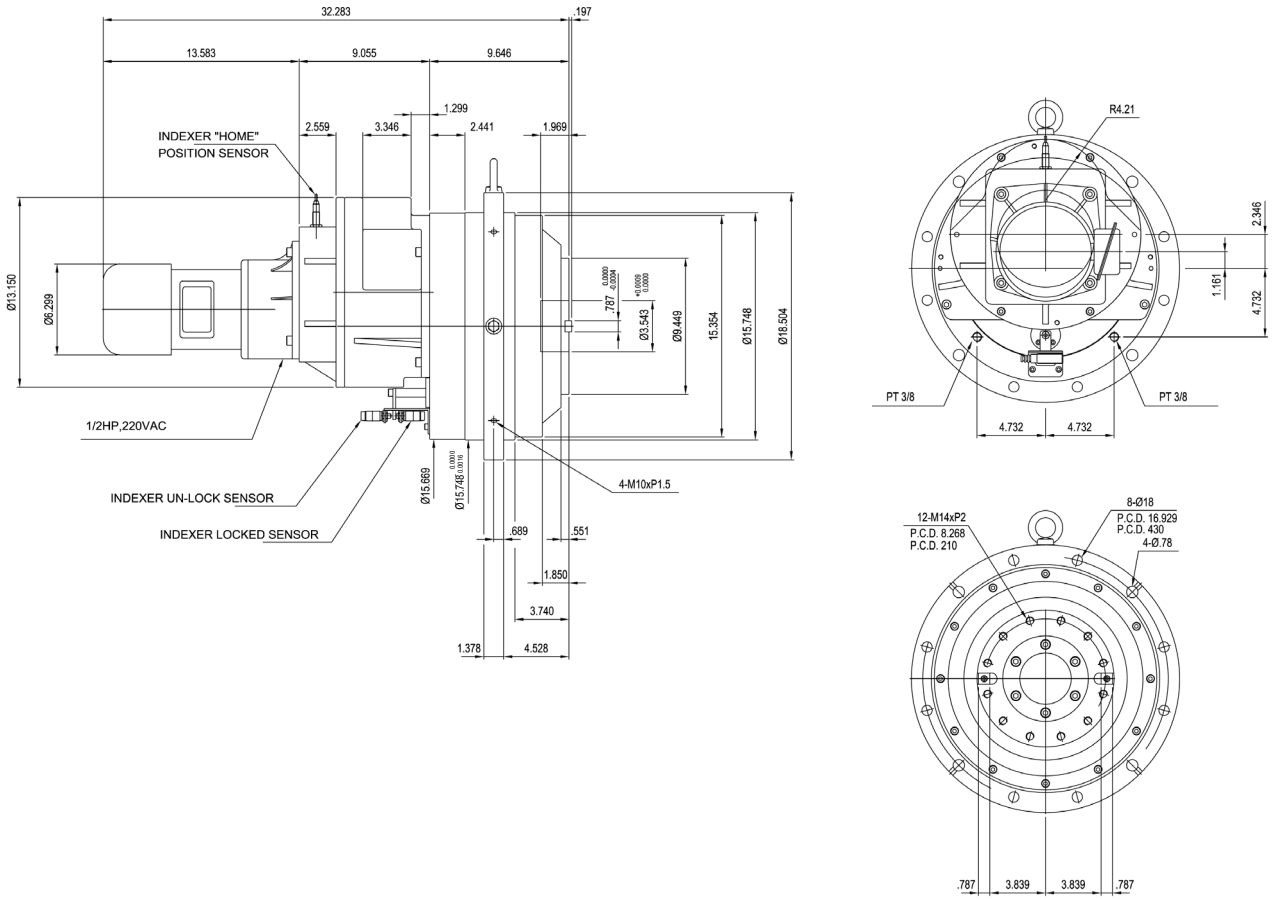
Inspection Item	CT-200V	CT-250V	CT-320V	CT-470W
Table Surface Straightness	0.0006	0.0006	0.0006	0.0008
Table Surface Run Out	0.0004	0.0004	0.0004	0.0008
Parallelism Between Plate and Bottom Surface	0.0008	0.0008	0.0008	0.0008
Index Accuracy (arc sec)*	± 5	± 5	± 5	± 5
Spindle Hole Run Out Tolerance	0.0004	0.0004	0.0004	N/A
Squareness Between Plate and Bottom Surface	0.0008	0.0008	0.0008	N/A
Squareness Between Plate and Bottom Anchor Center Line	0.0008	0.0008	0.0008	N/A
Parallelism Between Plate, Tailstock Center Line and Bottom Anchor	0.0008	0.0008	0.0008	N/A
Tolerance Between Plate and Tailstock Center Line (Tailstock Slightly Higher)	0.0008	0.0008	0.0008	N/A

* For indexing accuracy in inches per arc sec, refer to page 3.

DIAGRAM OF EXTERNAL SIZE (VERTICAL)

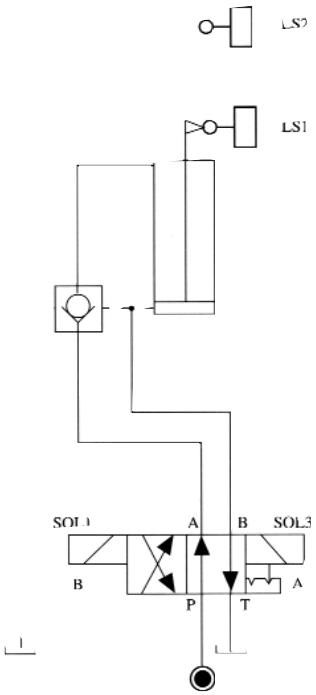


CT-320V
(Unit: inch)

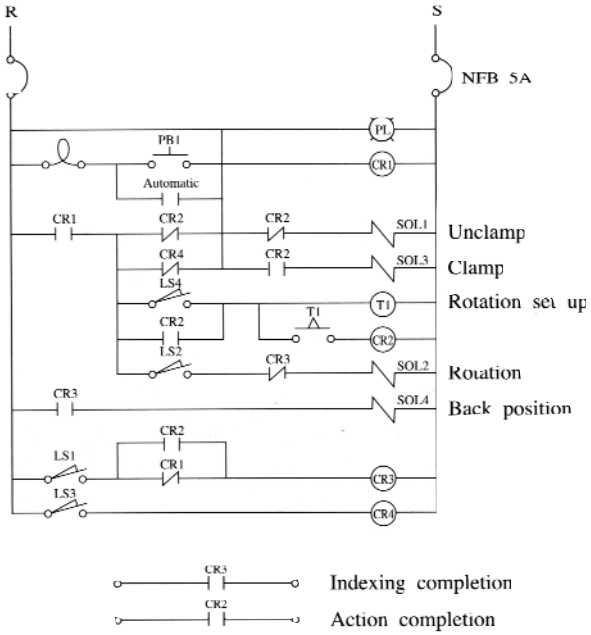


CT-470W
(Unit: inch)

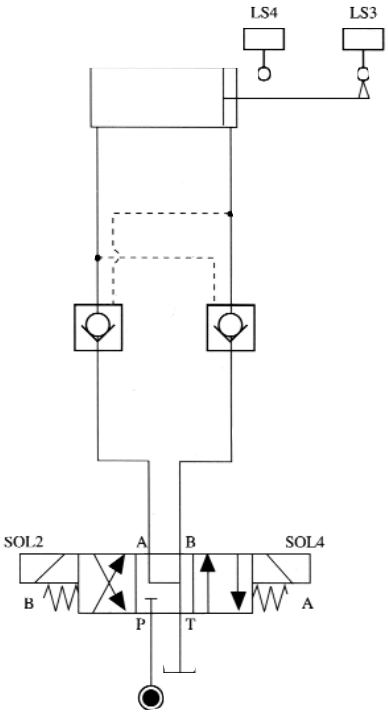
HYDRAULIC CIRCUIT DRAWINGS



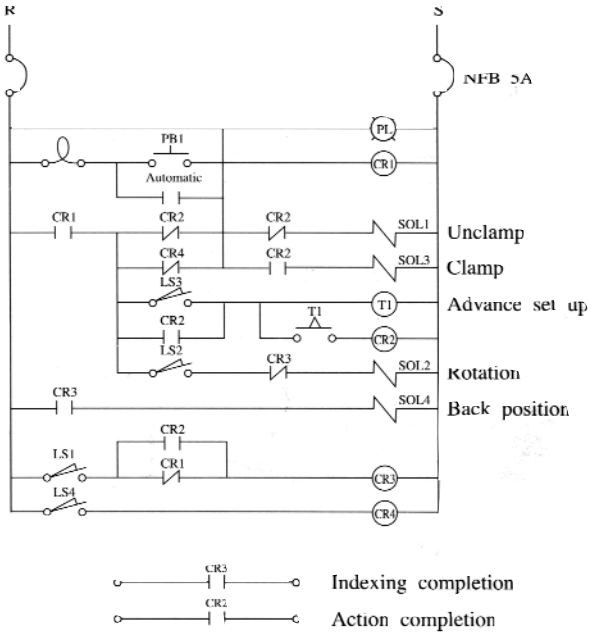
INDEXING HYDRAULIC UNIT



RIGHT TURN CIRCUIT



ROTARY HYDRAULIC UNIT



LEFT TURN CIRCUIT

Attention: Max. using pressure 430 psi

These heavy-duty indexers feature a "non-lifting" tabletop that allows them extra capacity. The interlocking three-piece gear increases repeatability with use and makes them perfect for precision machine tools. Hydraulic power packs are available for operating these indexers. Electrical versions are also available.

Features

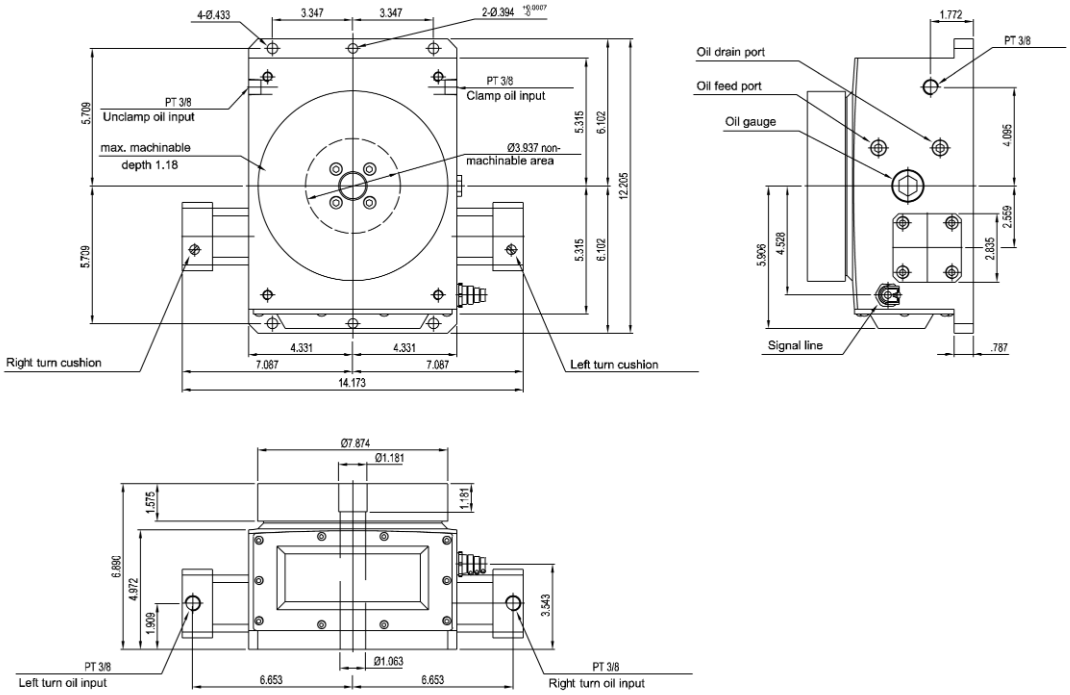
- **Hirth Coupled with ±5 arc sec repeatability**
- **"Non-lifting" dial plate**
- **Standard 4, 6, 8, 12 and 24 station indexers**
- **2, 3, 5 and other specials available**
- **Sealed housing keeps coolant out of the oil and away from the switches**
- **Special dial plates "cast to print" available**

Specifications (Unit: inch)

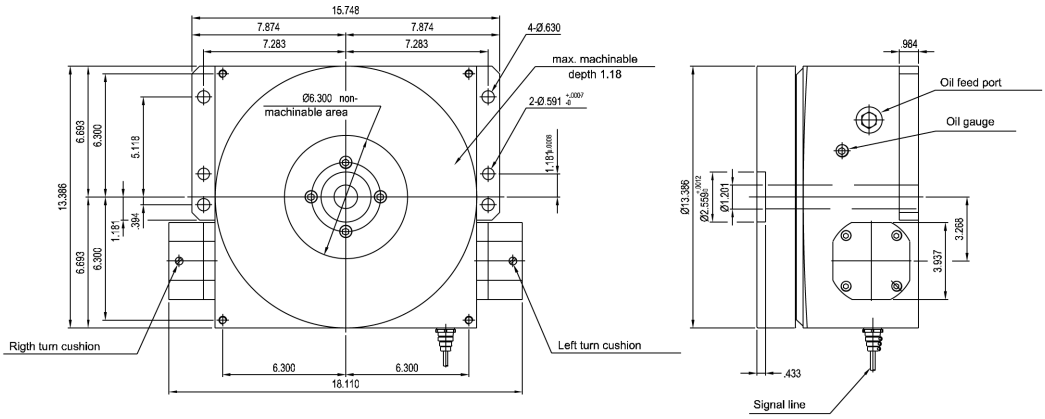
Model		CT-200	CT-340	CT-470	CT-600	CT-800
Plate Diameter	(inch)	7.874	13.386	18.504	23.622	31.496
Height	(inch)	6.693	8.268	9.449	10.236	11.811
Center Hole Diameter	(inch)	$1.181^{+0.013}_{0}$ Depth 1.181	$2.559^{+0.019}_{0}$ Depth 0.433	$3.543^{+0.022}_{0}$ Depth 0.433	$4.330^{+0.022}_{0}$ Depth 0.433	$4.724^{+0.025}_{0}$ Depth 1.575
Index Numbers	(Standard)	4, 6, 8, 12, 24 (one of them)				
	(Special)	2, 3, 5, etc. available by special order				
Index Accuracy*	(arc sec)	±5	±5	±5	±5	±5
Table Running Direction		clockwise and counterclockwise				
Rotary Torque	(lb ft)	159	434	579	723	2025
Working Pressure	(psi)	430	430	430	500	500
Clamping Force	(lb)	2646	3439	8752	17452	24912
Permissible Loading	(lb)	209	1102	1543	2756	5291
Permissible Instant Inertia GD²	(lb ft²)	451	2017	4218	11866	28477
Weight	(lb)	117	216	55	1213	2205

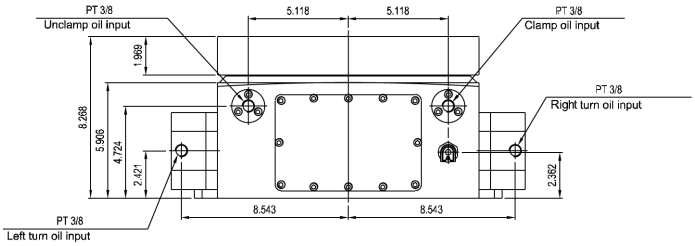
* For indexing accuracy in inches per arc sec, refer to page 3.

DIAGRAM OF EXTERNAL SIZE (HORIZONTAL)



CT-200
(Unit: inch)





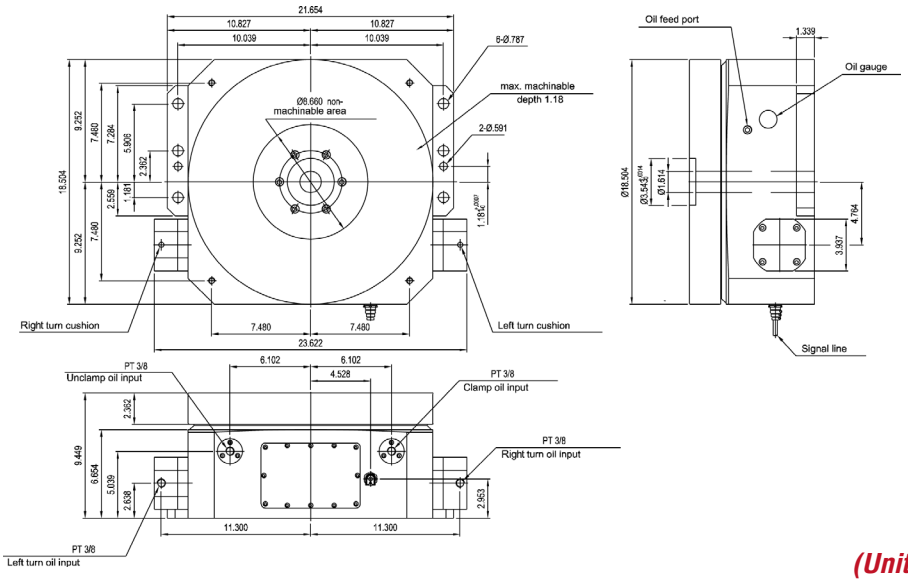
CT-340
(Unit: inch)

Inspection Value (Unit: inch)

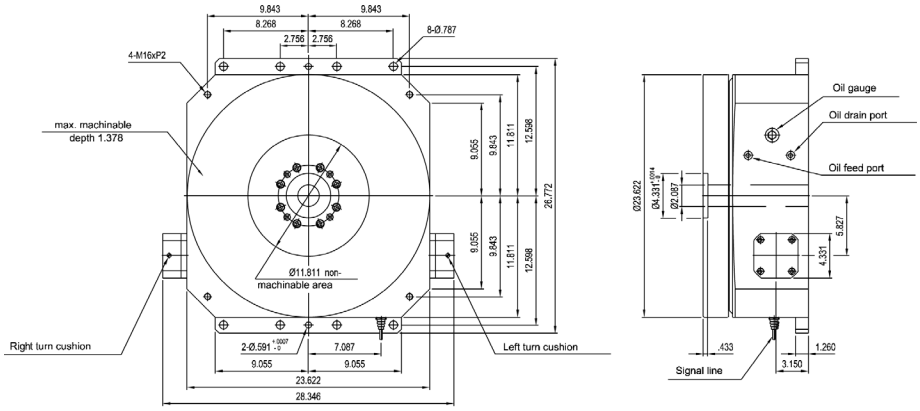
Inspection Item	CT-200	CT-340	CT-470	CT-600	CT-800
Center Hole Run Out	0.0008	0.0008	0.0008	0.0008	0.0008
Table Surface Straightness	0.0008	0.0008	0.0008	0.0008	0.0008
Table Surface Run Out	0.0006	0.0006	0.0008	0.0008	0.0008
Parallelism Between Plate and Bottom Surface	0.0008	0.0008	0.0008	0.00118	0.00118
Index Accuracy*(arc sec)	± 5	± 5	± 5	± 5	± 5

* For indexing accuracy in inches per arc sec, refer to page 3.

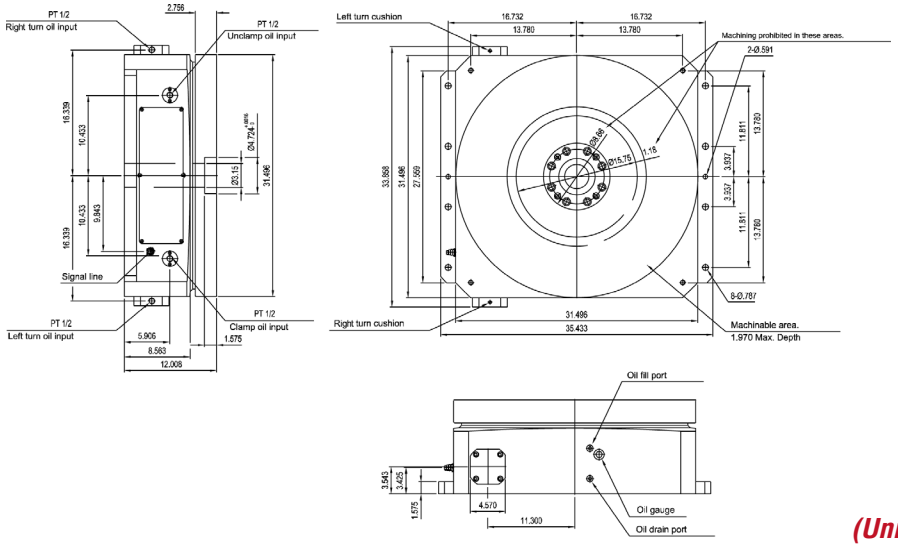
DIAGRAM OF EXTERNAL SIZE (HORIZONTAL)



CT-470
(Unit: inch)



CT-600
(Unit: inch)



CT-800
(Unit: inch)

NOTES

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