

THE INDEXER OF
PREFERENCE THE
WORLD OVER



Illustrated:
Model T Indexer with a Table Top
(Rotary Indexing Table)

- ROTARY INDEXING TABLES •
- ROTARY INDEXING SPINDLE •
- PARALLEL AXIS DRIVES •
- OSCILLATORS •

autorotor

BARREL CAM DRIVE

EASOM | AUTOMATION SYSTEMS, INC.

32471 INDUSTRIAL DRIVE • MADISON HEIGHTS, MI 48071 • PHONE (248) 307-0650 • FAX (248) 307-0897
WWW.EASOM.COM

AUTOR. CAT. -06

DEDICATED TO CUSTOMER SATISFACTION



Machine Building and Servicing Facility



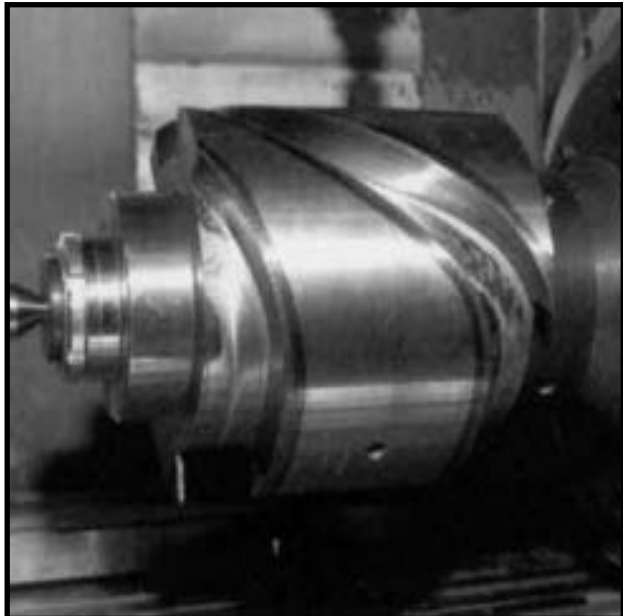
**Partial View of Inventory for
Ready Available Parts**

autorotor
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autorotor
autorotor
autorotor

**AUTOMATED ROTARY POSITIONING HAS MADE
CONSUMER PRODUCTS AFFORDABLE TO THE AVERAGE PERSON**



RING INDEX TABLES



EASOM

AUTOMATION SYSTEMS, INC.

32471 INDUSTRIAL DRIVE • MADISON HEIGHTS, MI 48071

PHONE (248) 307-0650 • FAX (248) 307-0897

WWW.EASOM.COM

Special Cams Available.

SPECIAL CAMS

APPLICATION INFORMATION

For possible additional application information with regard for forces, loads, and torque see bottom of Pg. 2.
Specify and Fax for AUTOROTOR Index Table Model selection, price, delivery and dimensions at no cost.

From preceding page indicate type of indexer:

- Model T, TA (Table top for mounting of a tooling plate)
- Model IT (Center rotating spindle for mounting driven tooling)
- Model OT (Oscillator for pick and place)
Application Information - See Page 18.
- Model AP (Parallel axis drive for conveyors)
Application Information - See Page 22.
- Model OP (Parallel axis drive for rise & fall motion)
Application Information - See Page 21.
- Not known, Model T will be quoted.

**FAX NUMBER:
1-800-335-3299**

**PHONE NUMBER:
1-800-335-3233**

From following page indicate gear box & motor

- Mounting position 1 2 3 4 5 6 7 8
 9 10 11 12 13 14 15 16 Not Known

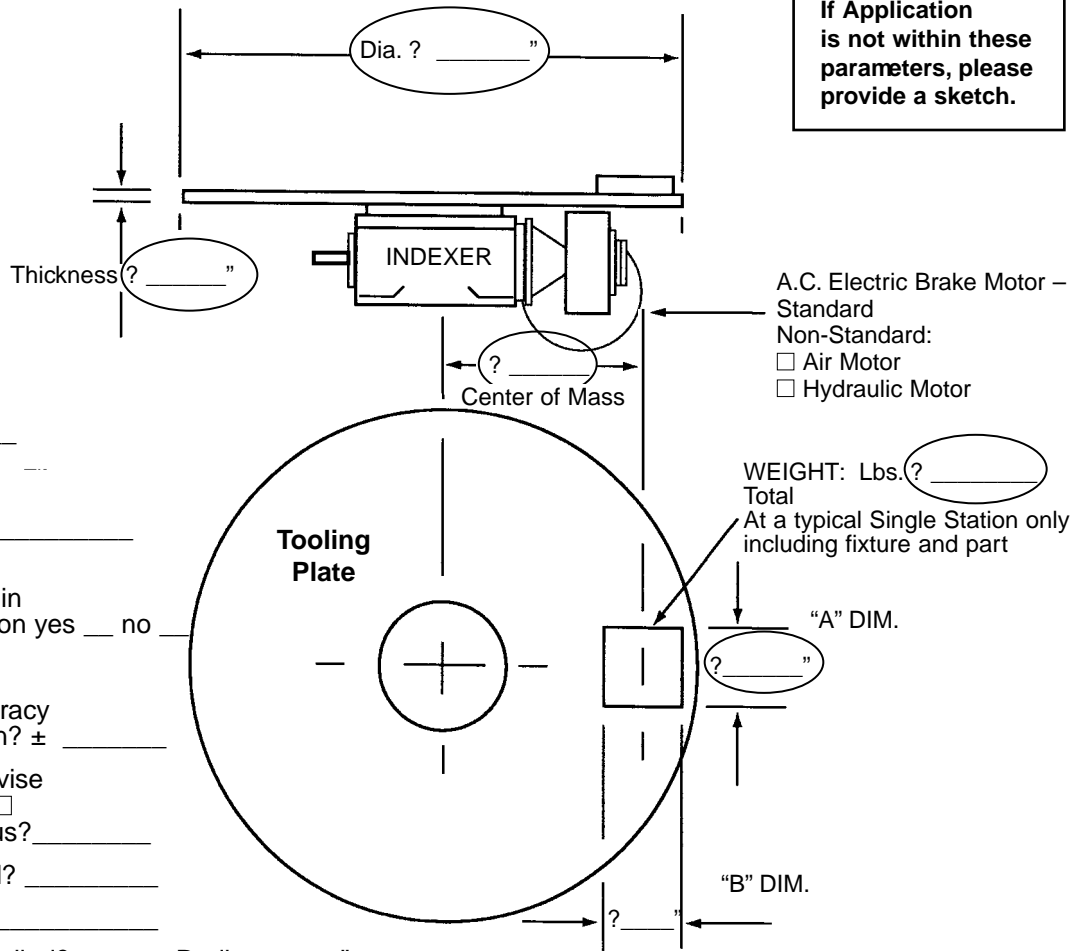
(When not known, or indicated, dimensional drawing supplied will be "2")

From following page indicate indexer mounting position 1T 2T 3T 4T Not Known

(When not known, dimensional drawing supplied will be "1T")

Tooling Plate Material:

Aluminum: ? _____
 (Preferred)
 or/Steel: ? _____
 or/Other: ? _____



If Application is not within these parameters, please provide a sketch.

No./Stations: ? _____
 INDEX TIME: _____
 Travel motion only from one station to another? _____
 DWELL TIME: _____
 Will drive motor stop in dwell during production yes ___ no

Customer Required:
 Repeatability of accuracy from station to station? ± _____
 Want Autorotor to advise standard accuracy? and at what radius? _____

Will a shot pin be applied? _____
 Will coolant be used? _____

Will support rollers be applied? _____ Radius _____" (Friction Coef. .03)

Type of application (assembly, welding, etc.): _____ Quantity: _____

Company _____
 Address _____
 Person's Name _____
 Phone _____ Fax _____

ADDITIONAL APPLICATION INFORMATION

MODEL T, TA, IT & OT

IF THE FOLLOWING FORCES, LOADS, AND TORQUE APPLY

X Axial Load. Additional tooling weight that is to be indexed that was not included on application information pg. 1.

X₁ Center: _____ Total Wgt., _____ Outside Area

X₂ Off Center: _____ Total Wgt., _____ Radius _____ Area

J Radial Load

Index: _____ Lbs., _____ Radius, _____ Coeff./Friction

Dwell: _____ Lbs., _____ Height

F_r Force in Dwell (Tangent)

Dwell: _____ Lbs., _____ Radius, _____ Height

Y₁ Bending (Up) Load

Dwell: _____ Lbs., _____ Radius

Y_r Bending (Down) Load

Dwell: _____ Lbs., _____ Radius

G_r Friction Force (Top or Bottom)

Index: _____ Lbs., _____ Radius

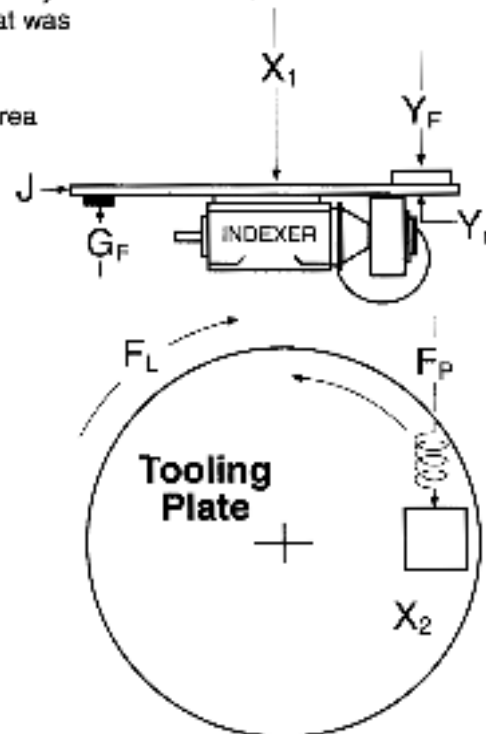
_____ Friction Coefficient

Metal on Lubricated Metal = .04 to .13

F₁ Force Opposed to the Motion

Index: _____ Lbs., _____ Radius, _____ Height

M Torque Applied to Part in Dwell _____ In. Lbs.



Gear Box (Reducer) & Standard A.C. Electric Brake Motor

MOUNTING POSITION - MODEL T, TA, IT & OT

Mounting Position can be changed by re-locating the 4 mounting holes 90° of gear box to indexer. Limitation must be within Nos. 1-4, 5-8, 9-12, 13-16

Shipping is in position: #2, #5, #12, #15

Assembling on "standard" side
VIEW YY

Refer to Pages 10-17, 18-20 for Location of View YY

MOTOR MOUNTED TO LEFT OF INPUT SHAFT



Also known as "1"

MOTOR MOUNTED TO RIGHT OF INPUT SHAFT



Also known as "2"



Also known as "3"



Also known as "4"

Assembling on "opposite" side
VIEW XX

Refer to Pages 10-17, 18-20 for Location of View XX

MOTOR MOUNTED TO LEFT OF INPUT SHAFT



Also known as "5"



Also known as "6"



Also known as "7"

MOTOR MOUNTED TO RIGHT OF INPUT SHAFT



Also known as "8"

INDEXER MOUNTING POSITION* - MODEL T, TA, IT & OT

Standard

1T



Oil Vent Plug
Plug to Check Oil Level

Overhead

2T



Special seal required around the table top for this position.

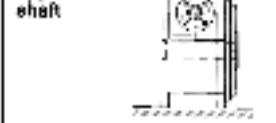
Horizontal axis lower input shaft

3T



Horizontal axis upper input shaft

4T



*Indexer Mounting Position Determines Location of Lubricating Oil Fill & Vent Plugs

STATION NUMBER AND CAM TRANSFER ANGLES

(CAM TRANSFER ANGLE EXPLANATION PG. 26, #2)

CAM TRANSFER ANGLE IS SELECTED BY THE FACTORY WHEN QUOTING UNLESS OTHERWISE SPECIFIED BY CUSTOMER.

*AUTOROTOR INDEXERS ARE DESIGNED TO ROTATE CW OR CCW
WITHOUT ALTERATION BY CHANGING THE ROTATION OF THE INPUT SHAFT*

Models			# Sta	Cam rotation angles performing the transfer movements											
				90°	120°	150°	180°	210°	240°	270°	300°	315°	330°		
T10	TA10	IT-10	2									X	—	—	
T15	TA15	IT-15											X	—	—
T25	TA25	IT-25											X	—	—
T35		IT-35											X	—	—
T55		IT-55											X	—	—
T75		IT-75											X	—	—
T95													X	—	—
T105													X	—	—
T10	TA10	IT-10	3				P	P	—	X	—	—	—	—	
T15	TA15	IT-15						P	P	—	X	—	—	—	—
T25	TA25	IT-25						P	P	—	X	—	—	—	—
T35		IT-35						P	P	—	X	—	—	—	—
T55		IT-55							P	P	X	—	—	—	—
T75		IT-75							P	P	X	—	—	—	—
T95									P	P	X	—	—	—	—
T105											X	—	—	—	—
T10	TA10	IT-10	4		P	P	—	—	—	X	—	—	—	—	
T15	TA15	IT-15				P	P	—	—	—	X	—	—	—	—
T25	TA25	IT-25				P	P	—	—	—	X	—	—	—	—
T35		IT-35				P	P	—	—	—	X	—	—	—	—
T55		IT-55					P	—	—	—	X	—	—	—	—
T75		IT-75					P	—	—	—	X	—	—	—	—
T95											X	—	—	—	—
T105											X	—	—	—	—
T10	TA10	IT-10	5		P	P	—	—	—	X	—	—	—	—	
T15	TA15	IT-15				P	P	—	—	—	X	—	—	—	—
T25	TA25	IT-25				P	P	—	—	—	X	—	—	—	—
T35		IT-35				P	P	—	—	—	X	—	—	—	—
T55		IT-55					P	—	—	—	X	—	—	—	—
T75		IT-75									X	—	—	—	—
T95											X	—	—	—	—
T105											X	—	—	—	—
T10	TA10	IT-10	6	P	—	—	—	—	—	X	—	—	—	—	
T15	TA15	IT-15			P	—	—	—	—	—	X	—	—	—	—
T25	TA25	IT-25			P	—	—	—	—	—	X	—	—	—	—
T35		IT-35			P	—	—	—	—	—	X	—	—	—	—
T55		IT-55				—	—	—	—	—	X	—	—	—	—
T75		IT-75						P	P	P	X	—	—	—	—
T95								P	P	P	X	—	—	—	—
T105											X	—	—	—	—
T10	TA10	IT-10	8									X	—	—	
T15	TA15	IT-15			—	—	—	—	—	—	—	—	X	—	—
T25	TA25	IT-25			—	—	—	—	—	—	—	—	X	—	—
T35		IT-35			—	—	—	—	—	—	—	—	X	—	—
T55		IT-55			P	—	—	—	—	—	—	—	X	—	—
T75		IT-75						P	P	—	X	—	—	—	—
T95								P	P	P	X	—	—	—	—
T105											X	—	—	—	—
T10	TA10	IT-10	9	P	—	—	—	—	—	—	—	X	—	—	
T15	TA15	IT-15			P	—	—	—	—	—	—	—	X	—	—
T25	TA25	IT-25			P	—	—	—	—	—	—	—	X	—	—
T35		IT-35			P	—	—	—	—	—	—	—	X	—	—
T55		IT-55			P	—	—	—	—	—	—	—	X	—	—
T75		IT-75											X	—	—
T95													X	—	—
T105													X	—	—
T10	TA10	IT-10	10	—	—	—	—	—	—	—	—	X	—	—	
T15	TA15	IT-15			—	—	—	—	—	—	—	—	X	—	—
T25	TA25	IT-25			—	—	—	—	—	—	—	—	X	—	—
T35		IT-35			—	—	—	—	—	—	—	—	X	—	—
T55		IT-55			—	—	—	—	—	—	—	—	X	—	—
T75		IT-75											X	—	—
T95													X	—	—
T105													X	—	—
T10	TA10	IT-10	11	P	—	—	—	—	—	—	—	X	—	—	
T15	TA15	IT-15			P	—	—	—	—	—	—	—	X	—	—
T25	TA25	IT-25			P	—	—	—	—	—	—	—	X	—	—
T35		IT-35			P	—	—	—	—	—	—	—	X	—	—
T55		IT-55			P	—	—	—	—	—	—	—	X	—	—
T75		IT-75											X	—	—
T95													X	—	—
T105													X	—	—
T10	TA10	IT-10	12	—	—	—	—	—	—	—	—	X	—	—	
T15	TA15	IT-15			—	—	—	—	—	—	—	—	X	—	—
T25	TA25	IT-25			—	—	—	—	—	—	—	—	X	—	—
T35		IT-35			—	—	—	—	—	—	—	—	X	—	—
T55		IT-55			—	—	—	—	—	—	—	—	X	—	—
T75		IT-75						P	P	P	X	—	—	—	—
T95								P	P	P	X	—	—	—	—
T105											X	—	—	—	—
T10	TA10	IT-10	14	—	—	—	—	—	—	—	—	X	—	—	
T15	TA15	IT-15			—	—	—	—	—	—	—	—	X	—	—
T25	TA25	IT-25			—	—	—	—	—	—	—	—	X	—	—
T35		IT-35			—	—	—	—	—	—	—	—	X	—	—
T55		IT-55			—	—	—	—	—	—	—	—	X	—	—
T75		IT-75											X	—	—
T95													X	—	—
T105													X	—	—

- X Suggested cam transfer angle
- Available cam transfer angle
- P Possible cam transfer angles with AUTOROTOR technical supervision
- Not available

Continued on Page 6

(Special cam angles available upon request.)

STATION NUMBER AND CAM TRANSFER ANGLES

(CAM TRANSFER ANGLE EXPLANATION PG. 26, #2)

CAM TRANSFER ANGLE IS SELECTED BY THE FACTORY WHEN QUOTING UNLESS OTHERWISE SPECIFIED BY CUSTOMER.

AUTOROTOR INDEXERS ARE DESIGNED TO ROTATE CW OR CCW WITHOUT ALTERATION BY CHANGING THE ROTATION OF THE INPUT SHAFT

Models			# Sta	Cam rotation angles performing the transfer movements										Models			# Sta	Cam rotation angles performing the transfer movements												
				90°	120°	150°	180°	210°	240°	270°	300°	315°	330°					90°	120°	150°	180°	210°	240°	270°	300°	315°	330°			
T10	TA10	IT-10	15	—	—	—	—	—	—	—	X	—	—	—	T10	TA10	IT-10	28					P	P	P	X	P	P	P	
T15	TA15	IT-15		—	—	—	—	—	—	—	—	X	—	—	—	T15	TA15		IT-15					P	P	P	X	P	P	P
T25	TA25	IT-25		—	—	—	—	—	—	—	—	X	—	—	—	T25	TA25		IT-25	—	—	—	—	—	—	—	X	—	—	—
T35		IT-35		—	—	—	—	—	—	—	—	X	—	—	—	T35			IT-35	—	—	—	—	—	—	—	X	—	—	—
T55		IT-55		—	—	—	—	—	—	—	—	X	—	—	—	T55			IT-55	●	—	—	—	—	—	—	X	—	—	—
T75		IT-75										X	—	—	—	T75			IT-75								X	—	—	—
T95												X	—	—	—	T95											X	—	—	—
T105												X	—	—	—	T105											X	—	—	—
T10	TA10	IT-10	16	●	—	—	—	—	—	—	X	—	—	—	T10	TA10	IT-10	30	○	P	P	P	P	P	P	X	—	—	—	
T15	TA15	IT-15		●	—	—	—	—	—	—	—	X	—	—	—	T15	TA15		IT-15	○	P	P	P	P	P	P	X	—	—	—
T25	TA25	IT-25		—	—	—	—	—	—	—	—	X	—	—	—	T25	TA25		IT-25	—	—	—	—	—	—	—	X	—	—	—
T35		IT-35		—	—	—	—	—	—	—	—	X	—	—	—	T35			IT-35	—	—	—	—	—	—	—	X	—	—	—
T55		IT-55		—	—	—	—	—	—	—	—	X	—	—	—	T55			IT-55	●	—	—	—	—	—	—	X	—	—	—
T75		IT-75										X	—	—	—	T75			IT-75								X	—	—	—
T95												X	—	—	—	T95											X	—	—	—
T105												X	—	—	—	T105											X	—	—	—
T10	TA10	IT-10	18	●	—	—	—	—	—	—	X	—	—	—	T10	TA10	IT-10	32					P	P	P	X	P	P	P	
T15	TA15	IT-15		●	—	—	—	—	—	—	—	X	—	—	—	T15	TA15		IT-15					P	P	P	X	P	P	P
T25	TA25	IT-25		—	—	—	—	—	—	—	—	X	—	—	—	T25	TA25		IT-25	—	—	—	—	—	—	—	X	—	—	—
T35		IT-35		—	—	—	—	—	—	—	—	X	—	—	—	T35			IT-35	●	—	—	—	—	—	—	X	—	—	—
T55		IT-55		—	—	—	—	—	—	—	—	X	—	—	—	T55			IT-55		—	—	—	—	—	—	X	—	—	—
T75		IT-75										X	—	—	—	T75			IT-75								X	—	—	—
T95												X	—	—	—	T95											X	—	—	—
T105												X	—	—	—	T105											X	—	—	—
T10	TA10	IT-10	20		—	—	—	—	—	—	X	—	—	—	T10	TA10		36	○	P	P	P	P	P	P	X	—	—	—	
T15	TA15	IT-15			—	—	—	—	—	—	—	X	—	—	—	T15	TA15			○	P	P	P	P	P	P	X	—	—	—
T25	TA25	IT-25		—	—	—	—	—	—	—	—	X	—	—	—	T25	TA25			—	—	—	—	—	—	—	X	—	—	—
T35		IT-35		—	—	—	—	—	—	—	—	X	—	—	—	T35				—	—	—	—	—	—	—	X	—	—	—
T55		IT-55		●	—	—	—	—	—	—	—	X	—	—	—	T55				●	—	—	—	—	—	—	X	—	—	—
T75		IT-75										X	—	—	—	T75											X	—	—	—
T95												X	—	—	—	T95											X	—	—	—
T105												X	—	—	—	T105											X	—	—	—
T10	TA10	IT-10	24		—	—	—	—	—	—	X	—	—	—																
T15	TA15	IT-15			—	—	—	—	—	—	—	X	—	—	—															
T25	TA25	IT-25		—	—	—	—	—	—	—	—	X	—	—	—															
T35		IT-35		—	—	—	—	—	—	—	—	X	—	—	—															
T55		IT-55		●	—	—	—	—	—	—	—	X	—	—	—															
T75		IT-75										X	—	—	—															
T95												X	—	—	—															
T105												X	—	—	—															

NUMBER OF STATIONS ARE AVAILABLE UP TO 256
REQUEST BULLETIN: ROTARY INDEX TABLE TYPE TAP

- Suggested cam transfer angle
 - Available cam transfer angle
 - Possible cam transfer angles with AUTOROTOR technical supervision
 - Double profile cam* (2 sets of barrel cam webs for each 360° of rotation of input-shaft)
 - Triple profile cam* (3 sets of barrel cam webs for each 360° of rotation of input-shaft)
 - Not available
- *See further explanation bottom Pg. 29.

PROFILE CAMS ARE SELECTED BY THE FACTORY COMPUTER WHEN QUOTING.
(Special cam angles available upon request.)

INDEX TIME IN RELATION TO CAM TRANSFER ANGLE

(CAM TRANSFER ANGLE EXPLANATION PG. 26, #2)

DETERMINED BY FACTORY FROM APPLICATION SUBMITTED
SPECIFICATIONS ARE FOR S.T.M. CO. GEAR BOXES

Electric Motor 1750 rpm		Total cycle time (sec)	Index time t1 (sec.) referred to cam transfer angle (degrees)									
Gear Box Ratio	Cycl./min.		90°	120°	150°	180°	210°	240°	270°	300°	315°	330°
7/1	250.00	0.24	0.060	0.080	0.100	0.120	0.140	0.160	0.180	0.200	0.210	0.220
10/1	175.00	0.34	0.086	0.114	0.143	0.171	0.200	0.229	0.257	0.286	0.300	0.314
15/1	116.67	0.51	0.129	0.171	0.214	0.257	0.300	0.343	0.386	0.429	0.450	0.471
20/1	87.50	0.69	0.171	0.229	0.286	0.343	0.400	0.457	0.514	0.571	0.600	0.629
25/1	70.00	0.86	0.214	0.286	0.357	0.429	0.500	0.571	0.643	0.714	0.750	0.786
28/1	62.50	0.96	0.240	0.320	0.400	0.480	0.560	0.640	0.720	0.800	0.840	0.880
40/1	43.75	1.37	0.343	0.457	0.571	0.686	0.800	0.914	1.029	1.143	1.200	1.257
49/1	35.71	1.68	0.420	0.560	0.700	0.840	0.980	1.120	1.260	1.400	1.470	1.540
56/1	31.25	1.92	0.480	0.640	0.800	0.960	1.120	1.280	1.440	1.600	1.680	1.760
70/1	25.00	2.40	0.600	0.800	1.000	1.200	1.400	1.600	1.800	2.000	2.100	2.200
80/1	21.88	2.74	0.686	0.914	1.143	1.371	1.600	1.829	2.057	2.286	2.400	2.514
100/1	17.50	3.43	0.857	1.143	1.429	1.714	2.000	2.286	2.571	2.857	3.000	3.143
120/1	14.58	4.11	1.029	1.371	1.714	2.057	2.400	2.743	3.086	3.429	3.600	3.771
130/1	13.46	4.46	1.114	1.486	1.857	2.229	2.600	2.971	3.343	3.714	3.900	4.086
160/1	10.94	5.49	1.371	1.829	2.286	2.743	3.200	3.657	4.114	4.571	4.800	5.029
200/1	8.75	6.86	1.714	2.286	2.857	3.429	4.000	4.571	5.143	5.714	6.000	6.286

Electric Motor 1150 rpm		Total cycle time (sec)	Index time t1 (sec.) referred to cam transfer angle (degrees)									
Gear Box Ratio	Cycl./min.		90°	120°	150°	180°	210°	240°	270°	300°	315°	330°
7/1	164.29	0.37	0.091	0.122	0.152	0.183	0.213	0.243	0.274	0.304	0.320	0.335
10/1	115.00	0.52	0.130	0.174	0.217	0.261	0.304	0.348	0.391	0.435	0.457	0.478
15/1	76.67	0.78	0.196	0.261	0.326	0.391	0.457	0.522	0.587	0.652	0.685	0.717
20/1	57.50	1.04	0.261	0.348	0.435	0.522	0.609	0.696	0.783	0.870	0.913	0.957
25/1	46.00	1.30	0.326	0.435	0.543	0.652	0.761	0.870	0.978	1.087	1.141	1.196
28/1	41.07	1.46	0.365	0.487	0.609	0.730	0.852	0.974	1.096	1.217	1.278	1.339
40/1	28.75	2.09	0.522	0.696	0.870	1.043	1.217	1.391	1.565	1.739	1.826	1.913
49/1	23.47	2.56	0.639	0.852	1.065	1.278	1.491	1.704	1.917	2.130	2.237	2.343
56/1	20.54	2.92	0.730	0.974	1.217	1.461	1.704	1.948	2.191	2.435	2.557	2.678
70/1	16.43	3.65	0.913	1.217	1.522	1.826	2.130	2.435	2.739	3.043	3.196	3.348
80/1	14.38	4.17	1.043	1.391	1.739	2.087	2.435	2.783	3.130	3.478	3.652	3.826
100/1	11.50	5.22	1.304	1.739	2.174	2.609	3.043	3.478	3.913	4.348	4.565	4.783
120/1	9.58	6.26	1.565	2.087	2.609	3.130	3.652	4.174	4.696	5.217	5.478	5.739
130/1	8.85	6.78	1.696	2.261	2.826	3.391	3.957	4.522	5.087	5.652	5.935	6.217
160/1	7.19	8.35	2.087	2.783	3.478	4.174	4.870	5.565	6.261	6.957	7.304	7.652
200/1	5.75	10.43	2.609	3.478	4.348	5.217	6.087	6.957	7.826	8.696	9.130	9.565

Special cam angles are available for continuous duty
(non-stopping of input power during dwell).

They can be manufactured to accommodate specific index times and dwell times.

The formula for this is as follows:

$$\begin{aligned} \text{INDEX TIME: } T1 \\ \text{DWELL TIME: } T2 \\ \text{CAM ANGLE: } A \end{aligned} \quad \frac{360^\circ \times T1}{T1 + T2} = A$$

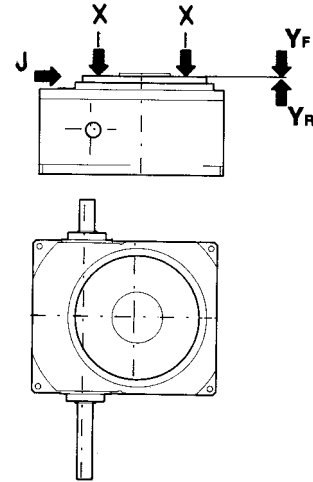
CYCLES ARE AVAILABLE UP TO 700 INDEXES PER MINUTE
REQUEST BULLETIN: HIGH SPEED INTERMITTENT DRIVES

**VALUES ARE FOR MODEL T & TA INDEXER WITH A TABLE TOP
MAXIMUM AXIAL AND RADIAL LOADS**

SAFE LIMITS FOR LOADS & FORCES DETERMINED BY THE FACTORY FROM APPLICATION SUBMITTED, AND IS ASSURED ON QUOTATION OF MODEL SELECTED

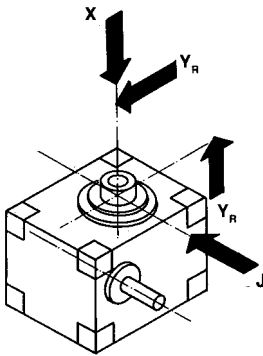
Model T Table Top	Model TA Table Top	Load/Forces Max. on Table Top			
		Axial X (Lbs.)	Radial J (Lbs.)	Bending Load/Force Downward Y _F (In/Lbs.)	Bending Load/Force Upward Y _R (In/Lbs.)
T10	TA10	1430	1275	1590	795
T15	TA15	2420	2420	2800	1750
T25	TA25	3900	3600	6000	2300
T35	N/A	6600	5280	10,000	6100
T55	N/A	9460	6600	21,000	12,000
T75	N/A	13,200	13,200	35,000	26,000
T95	N/A	22,000	22,000	70,000	61,000
T105	N/A	33,000	33,000	970,000	88,000
T105R	N/A	55,000	55,000	154,000	132,000

T105R Differs from T105 in that Double Table Top Bearings are applied.



**VALUES ARE FOR MODEL IT (INDEX) & OT (OSCILLATOR) WITH ROTARY SPINDLE
MAXIMUM AXIAL, RADIAL & BENDING LOADS**

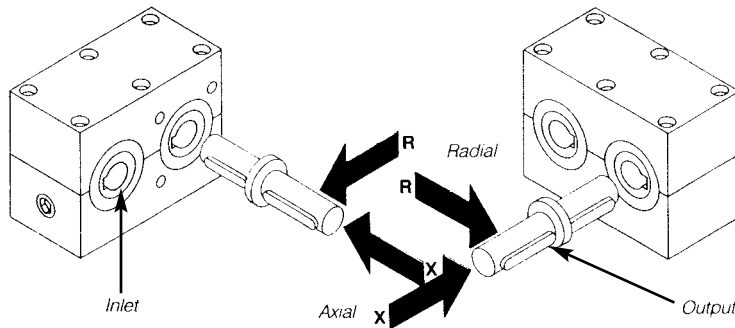
SAFE LIMITS FOR LOADS & FORCES DETERMINED BY THE FACTORY FROM APPLICATION SUBMITTED, AND IS ASSURED ON QUOTATION OF MODEL SELECTED



Load/Forces Max on Rotary Spindle			
Model IT/OT Rotary Spindle	Axial X (Lbs.)	Radial J (Lbs.)	Bending Y _R (In-Lbs.)
IT/OT 10	165	165	177
IT/OT 15	660	660	885
IT/OT 25	1210	1210	2832
IT/OT 35	1760	1760	5753
IT/OT 55	4400	4400	18,585
IT/OT 75	N/A	N/A	N/A

**VALUES ARE MODEL AP (INDEX) & OP (OSCILLATOR) PARALLEL AXIS DRIVES
MAXIMUM AXIAL & RADIAL LOADS**

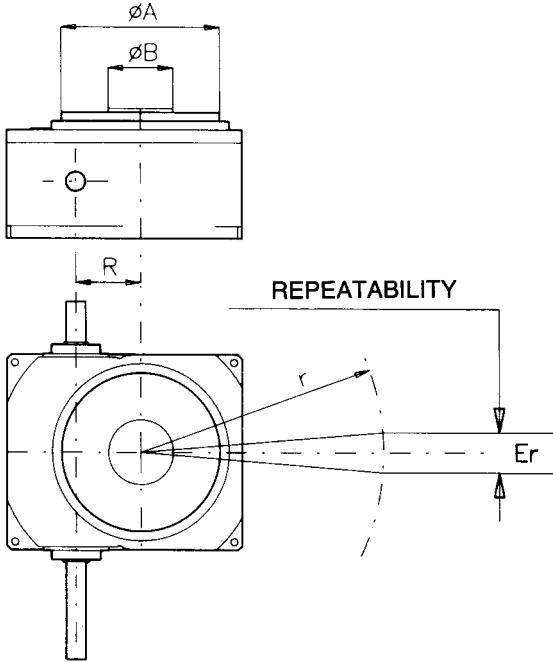
SAFE LIMITS FOR LOADS & FORCES DETERMINED BY THE FACTORY FROM APPLICATION SUBMITTED, AND IS ASSURED ON QUOTATION OF MODEL SELECTED



LOAD/FORCES MAX. ON OUTPUT SHAFT									
MODEL AP/OP	40	55	70	85	110	135	165	200	250
AXIAL X LBS.	330	550	990	1320	2200	3080	4180	5720	10,230
RADIAL R LBS.	4.4	6.6	28.6	44	77	99	187	253	418

VALUES ARE FOR MODEL T & TA INDEXER WITH A TABLE TOP ACCURACY

SPECIFICATIONS WITHIN REQUIRED LIMITATIONS IS DETERMINED BY THE FACTORY, AND IS ASSURED ON QUOTATION OF MODEL SELECTION



Tolerances of ROTARY INDEX TABLES – MODEL T & TA								
Model T Model TA Table Top	R (in.)	T Repeatability		TA Repeat- ability	Table Top flatness		Pilot eccentricity	
		Standard ± (in.)	Special ± (in.)		A (in.)	Total (In.)	B (in.)	Total (in.)
T10,TA10	1.48	.0006	.0004	.0008	4.72	.0004	1.18	.0004
T15,TA15	1.97	.0006	.0004	.0008	5.11	.0004	2.56	.0004
T25,TA25	3.15	.0006	.0004	.0008	7.67	.0004	3.15	.0004
T35	3.93	.0006	.0004	.0008	9.84	.0006	5.12	.0006
T55	5.51	.0006	.0004	.0008	13.78	.0006	7.87	.0006
T75	8.26	.0006	.0004	N/A	21.06	.0008	9.06	.0012
T95	10.62	.0008	.0004	N/A	27.56	.0012	12.60	.0012
T105	14.96	.0008	.0004	N/A	39.37	.0012	15.75	.0012

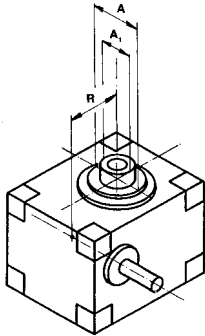
$$E_r = \frac{r}{R} \times \text{Repeatability}$$

Example: T35 \Rightarrow R 3.93" \Rightarrow r = 20"

$$E_r = \frac{20}{3.93} = 5.0890 \times (\text{Standard } \pm .0006") = \pm .003"$$

VALUES ARE FOR MODEL IT (INDEX) & OT (OSCILLATOR) WITH ROTARY SPINDLE ACCURACY

SPECIFICATIONS WITHIN REQUIRED LIMITATIONS IS DETERMINED BY THE FACTORY, AND IS ASSURED ON QUOTATION OF MODEL SELECTION

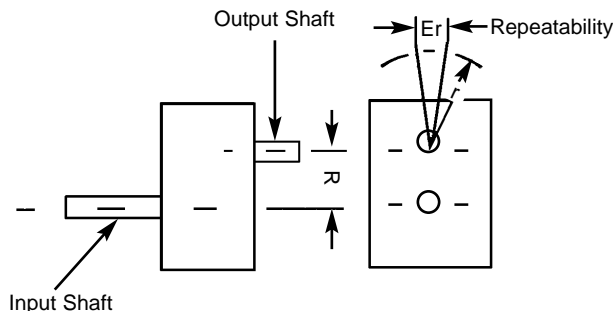


Tolerances of Rotary Spindle - Model IT & OT							
Model IT/OT Rotary Spindle	R (in.)	Repeatability		Pilot Eccentricity		Spindle Flatness	
		Standard ± (in.)	Special ± (In.)	A, ϕ (in.)	Total (in.)	A ϕ (in.)	Total (in.)
IT/OT 10	1.48	.0006	.0004	IT2.1654 OT1.1811	.0008	IT3.700 OT4.724	.0004
IT/OT 15	1.97	.0006	.0004	.7874	.0011	1.574	.0004
IT/OT 25	3.15	.0006	.0004	1.5748	.0011	2.559	.0008
IT/OT 35	3.93	.0006	.0004	1.7716	.0011	2.953	.0008
IT/OT 55	5.51	.0006	.0004	2.7560	.0011	4.724	.0008
IT/OT 75	8.26	.0006	.0004	7.0870	.0011	11.810	.0008

EXAMPLE SAME AS ABOVE.

VALUES ARE FOR MODEL AP (INDEX) & OP (OSCILLATOR) PARALLEL AXIS DRIVE ACCURACY

SPECIFICATIONS WITHIN REQUIRED LIMITATIONS IS DETERMINED BY THE FACTORY, AND IS ASSURED ON QUOTATION OF MODEL SELECTION



Tolerances of Parallel Axis Drive Model AP & OP					
Model	R	Repeatability	Model	R	Repeatability
AP/OP 40	1.57"	±.0020"	AP/OP 135	5.31"	±.0020"
AP/OP 55	2.17"	±.0020"	AP/OP 165	6.5"	±.0017"
AP/OP 70	2.76"	±.0020"	AP/OP 200	7.87"	±.0019"
AP/OP 85	3.35"	±.0020"	AP/OP 250	9.84"	±.0023"
AP/OP 110	4.33"	±.0020"			

EXAMPLE SAME AS ABOVE.

ROTARY INDEX TABLE

Model T-10 (normal accuracy)
 Model TA-10 (lesser accuracy,
 lower cost)

Weight of Index Table
21 Lbs. 9.5 kg.

FEATURES

- Center Pilot Top & Bottom
- Top & Bottom Mounting Holes
- Center Through Hole (Stationary)
- Stationary Center Column, Can be easily machined off.
- Through Drive Shaft
 - For direct timing with interlocking limit switch (See Top Pg. 30).
 - For alternative electric motor and gear box mounting side, that is supplied by Autorotor.
 - For direct drive of related components.

Additional Weight

Gear Box:

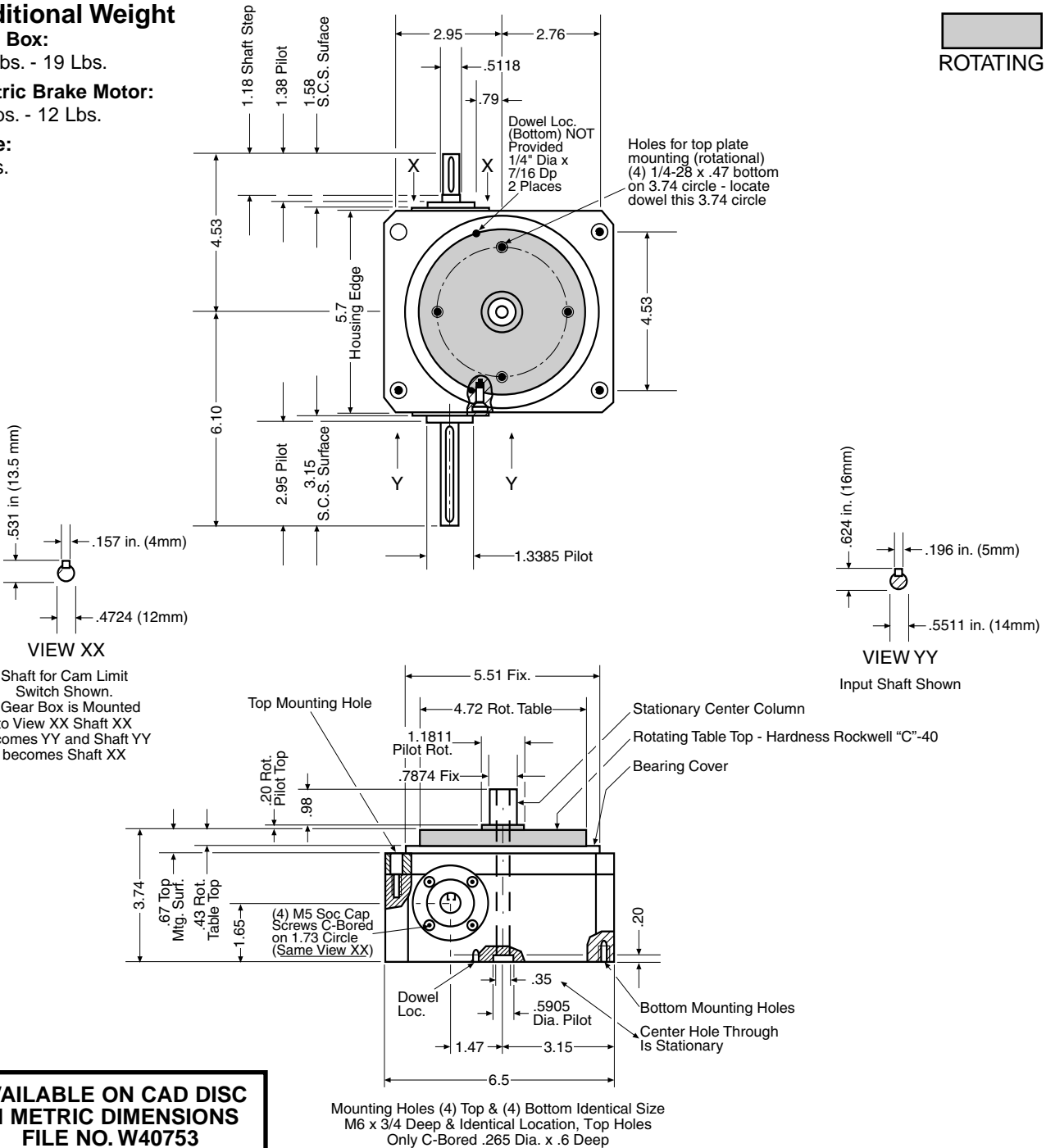
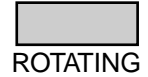
4.5 Lbs. - 19 Lbs.

Electric Brake Motor:

10 Lbs. - 12 Lbs.

Crate:

3 Lbs.



Motor size, gear box and flange mount to the indexer, are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at top of Page Number 30.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
 TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.**

ROTARY INDEX TABLE

Model T-15 (normal accuracy)
Model TA-15 (lesser accuracy, lower cost)

Weight of Index Table
51 Lbs. 23 kg.

FEATURES

- Center Pilot Top & Bottom
- Top & Bottom Mounting Holes, Dowel Holes Provided in Bottom Mounting Feet
- Center Through Hole (Stationary)
- Stationary Center, with Threaded Holes for Mounting a Stationary Center Column.
- Through Drive Shaft
 - For direct timing with interlocking limit switch (See Top Pg. 30).
 - For alternative electric motor and gear box mounting side, that is supplied by Autorotor.
 - For direct drive of related components.



Additional Weight

Gear Box:

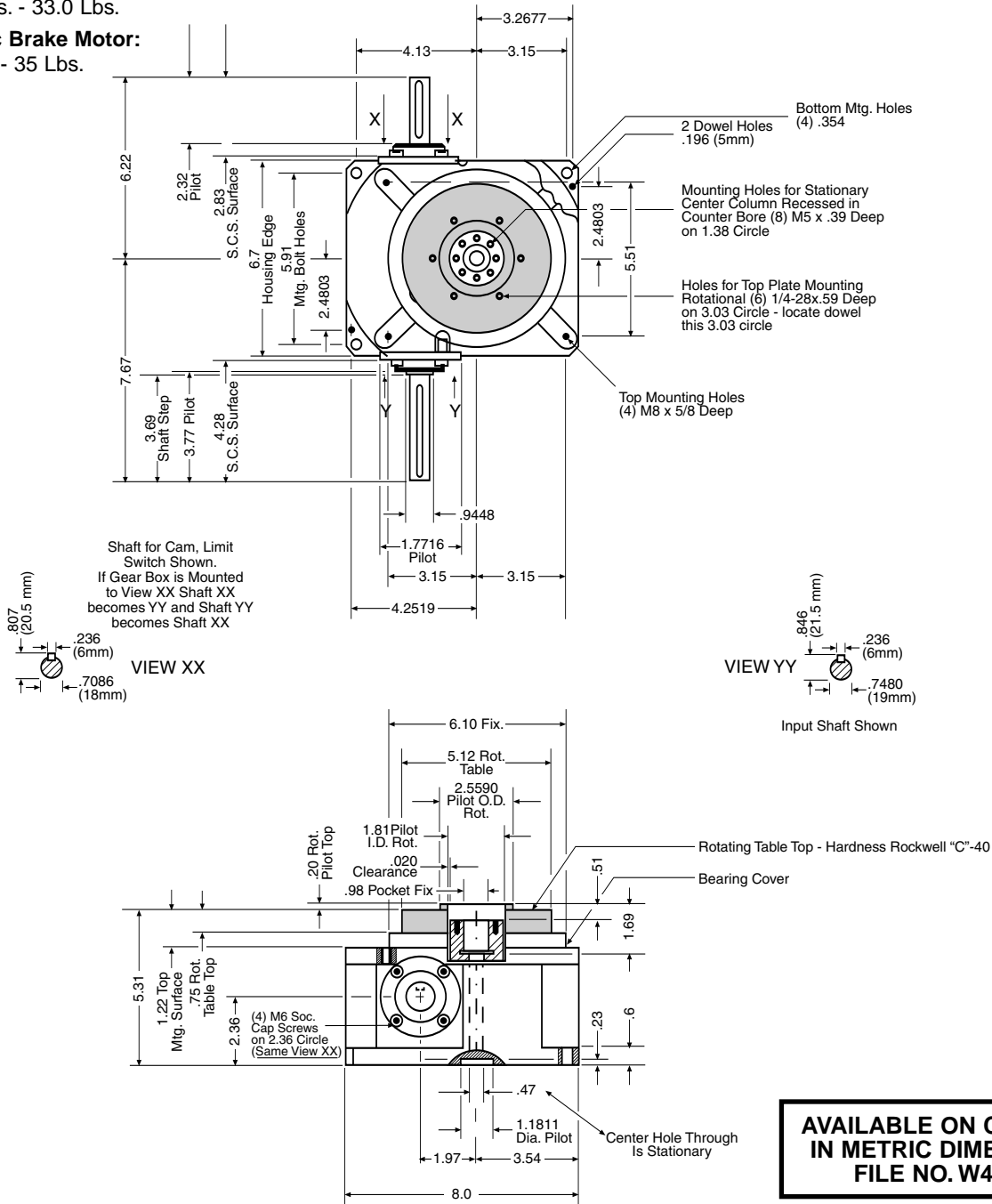
16.5 Lbs. - 33.0 Lbs.

Electric Brake Motor:

12 Lbs. - 35 Lbs.

Crate:

8 Lbs.



Motor size, gear box and flange mount to the indexer, are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at top of Page Number 30.

DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
To CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.

ROTARY INDEX TABLE

Model T-25 (normal accuracy)
Model TA-25 (lesser accuracy, lower cost)

Weight of Index Table
101 Lbs. 46 kg.

FEATURES

- Center Pilot Top & Bottom
- Top & Bottom Mounting Holes, Dowel Holes Provided in Bottom Mounting Feet
- Center Through Hole (Stationary)
- Stationary Center, with Threaded Holes for Mounting a Stationary Center Column.
- Through Drive Shaft
 - For direct timing with interlocking limit switch (See Top Pg. 30).
 - For alternative electric motor and gear box mounting side, that is supplied by Autorotor.
 - For direct drive of related components.



Additional Weight

Gear Box:

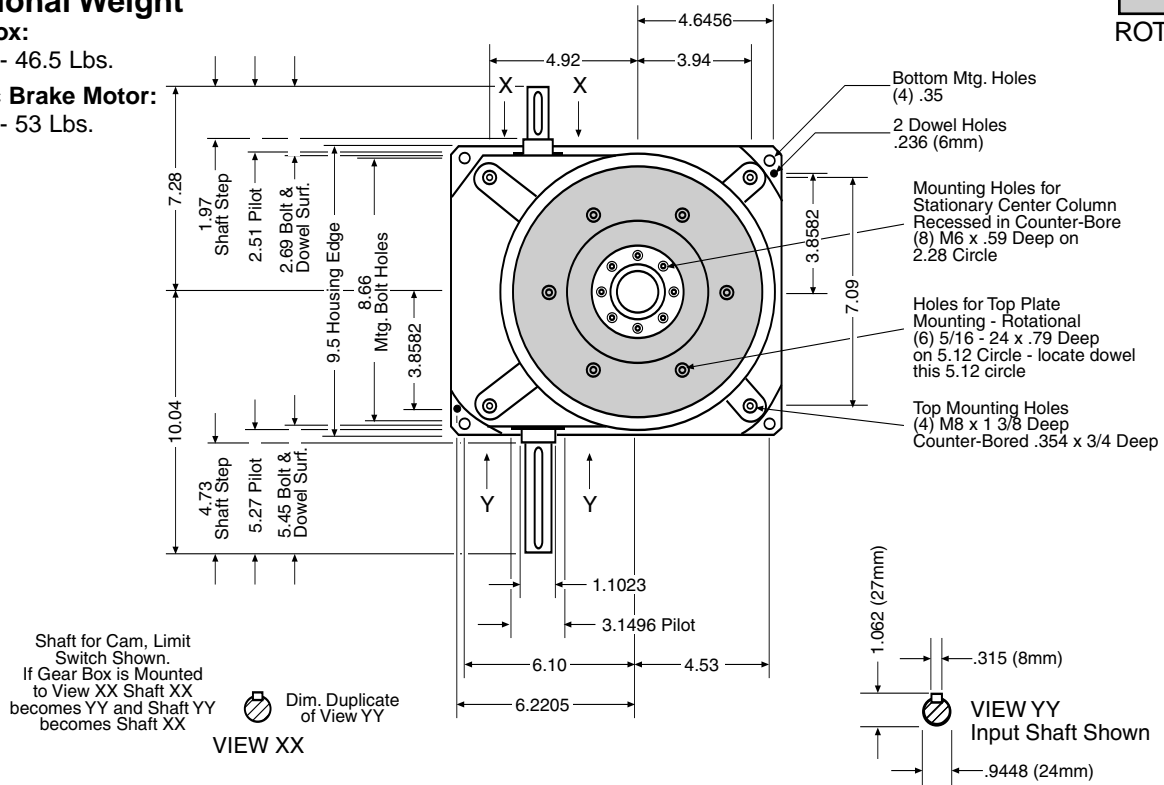
20 Lbs. - 46.5 Lbs.

Electric Brake Motor:

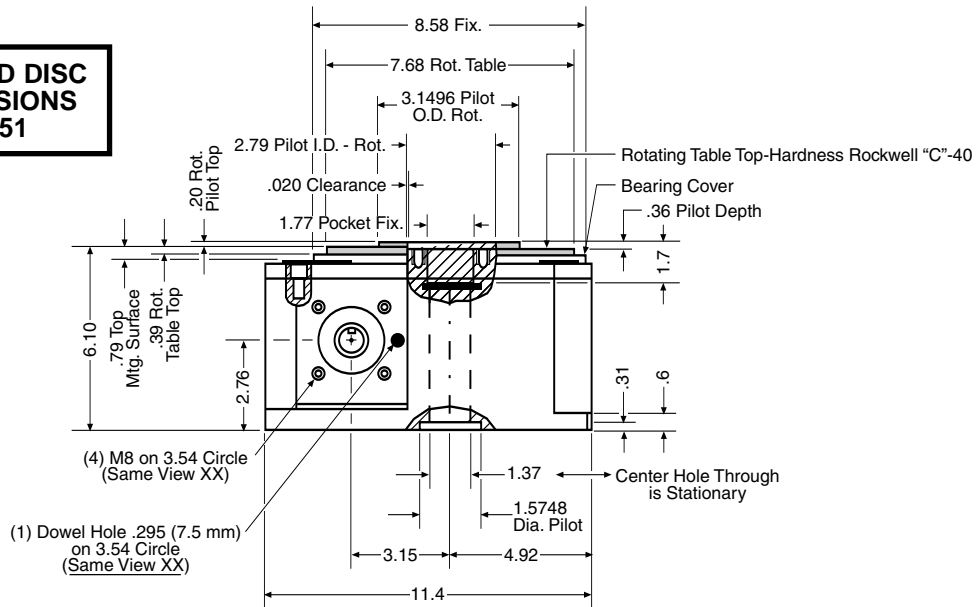
12 Lbs. - 53 Lbs.

Crate:

15 Lbs.



**AVAILABLE ON CAD DISC
IN METRIC DIMENSIONS
FILE NO. W40751**



Motor size, gear box and flange mount to the indexer, are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at top of Page 30.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.**

ROTARY INDEX TABLE

Model T-35

Model TA-35

Weight of Index Table
185 Lbs. 84 kg.

FEATURES

- Center Pilot Top & Bottom
- Top & Bottom Mounting Holes, Dowel Holes Provided in Bottom Mounting Feet
- Center Through Hole (Stationary)
- Stationary Center, with Threaded Holes for Mounting a Stationary Center Column.
- Through Drive Shaft
 - For direct timing with interlocking limit switch (See Top Pg. 30).
 - For alternative electric motor and gear box mounting side, that is supplied by Autorotor.
 - For direct drive of related components.

Additional Weight

Gear Box:

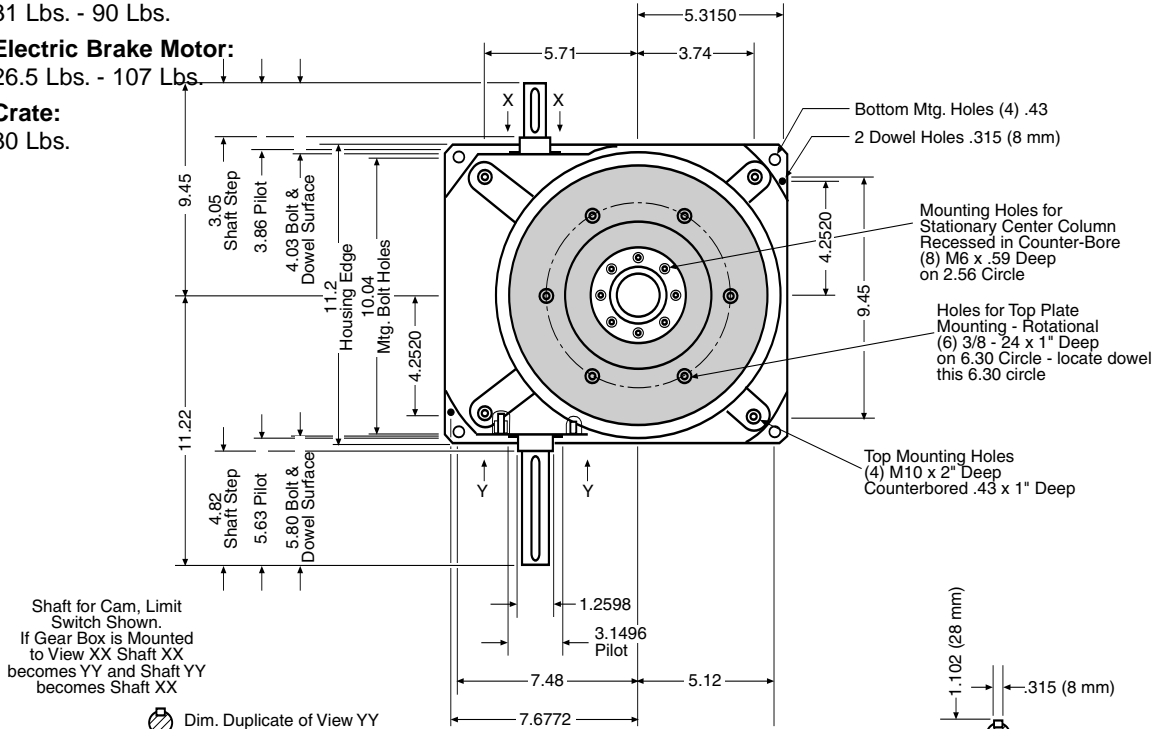
31 Lbs. - 90 Lbs.

Electric Brake Motor:

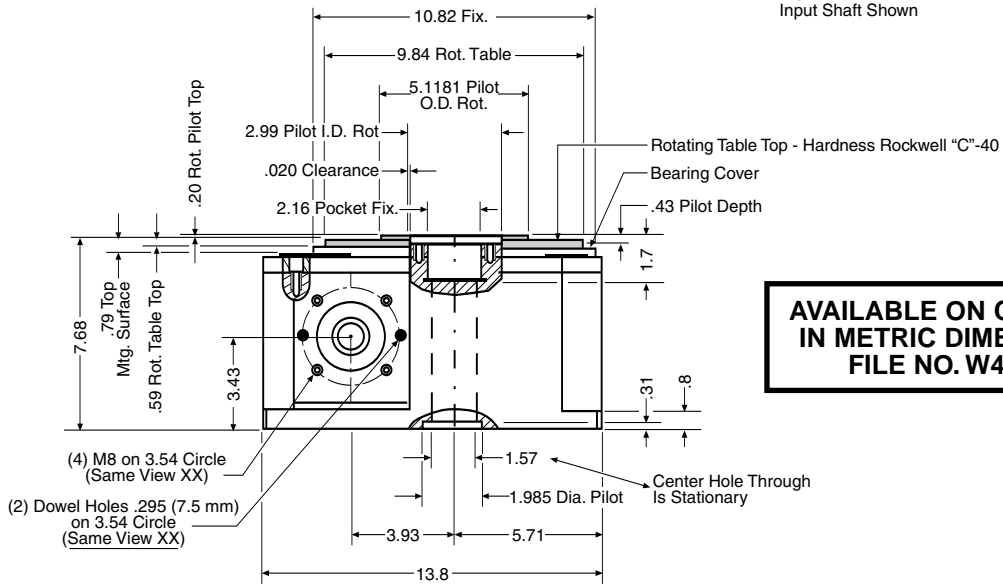
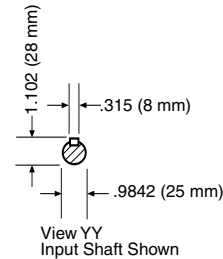
26.5 Lbs. - 107 Lbs.

Crate:

30 Lbs.



View XX



**AVAILABLE ON CAD DISC
 IN METRIC DIMENSIONS
 FILE NO. W40750**

Motor size, gear box and flange mount to the indexer, are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at top of Page 30.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
 TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.**

ROTARY INDEX TABLE

Model T-55

Model TA-55

Weight of Index Table

398 Lbs. 181 kg.

FEATURES

- Center Pilot Top & Bottom
- Top & Bottom Mounting Holes, Dowel Holes Provided in Bottom Mounting Feet
- Center Through Hole (Stationary)
- Stationary Center, with Threaded Holes for Mounting a Stationary Center Column.
- Through Drive Shaft
 - For direct timing with interlocking limit switch (See Top Pg. 30).
 - For alternative electric motor and gear box mounting side, that is supplied by Autorotor.
 - For direct drive of related components.



Additional Weight

Gear Box:

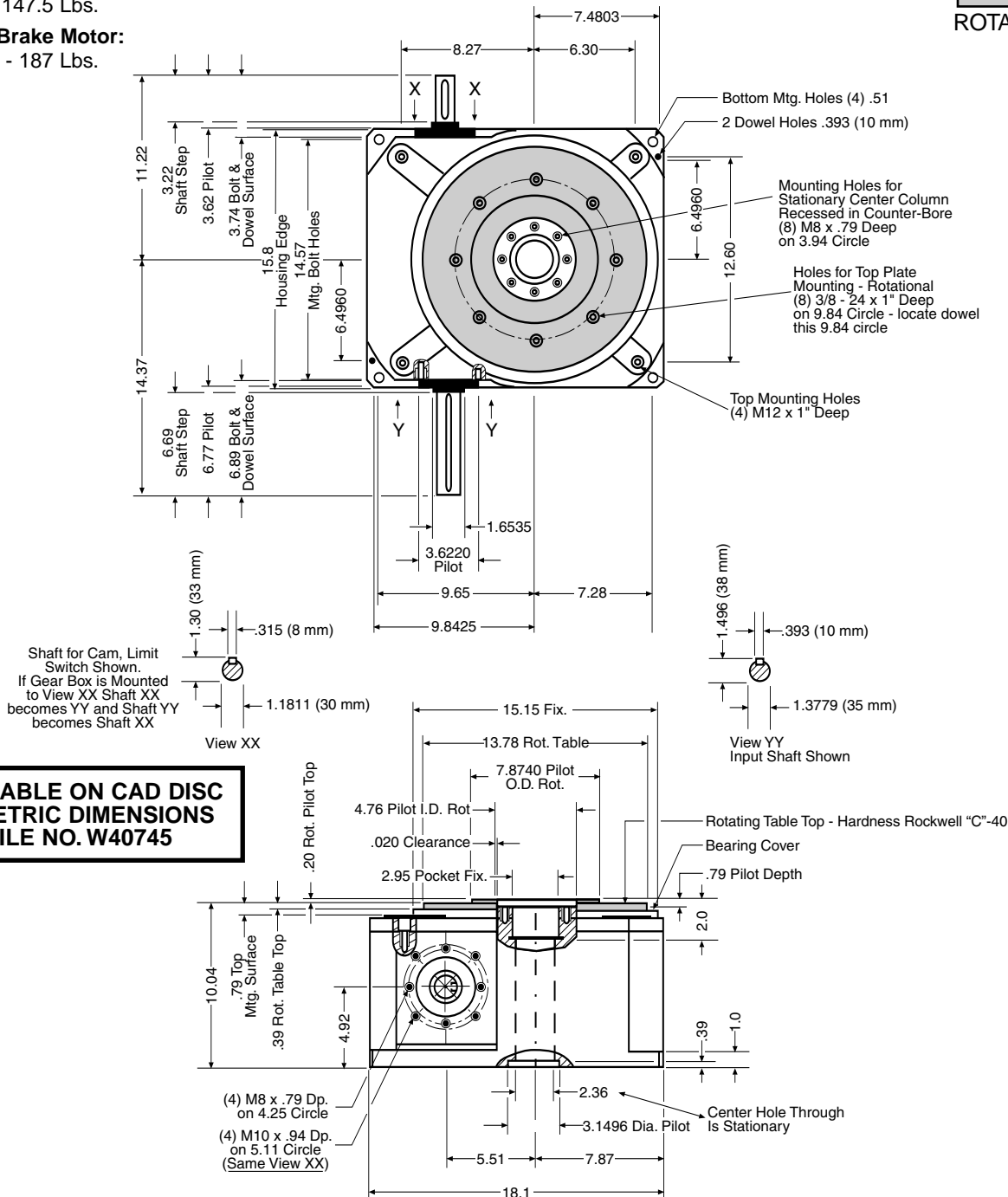
66 Lbs. - 147.5 Lbs.

Electric Brake Motor:

26.5 Lbs. - 187 Lbs.

Crate:

60 Lbs.



**AVAILABLE ON CAD DISC
IN METRIC DIMENSIONS
FILE NO. W40745**

Motor size, gear box and flange mount to the indexer, are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at top of Page 30.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4**

ROTARY INDEX TABLE

Model T-65

Weight of Index Table
792 Lbs. 360 kg.

Additional Weight

Gear Box:

66 Lbs. - 147.5 Lbs.

Electric Brake Motor:

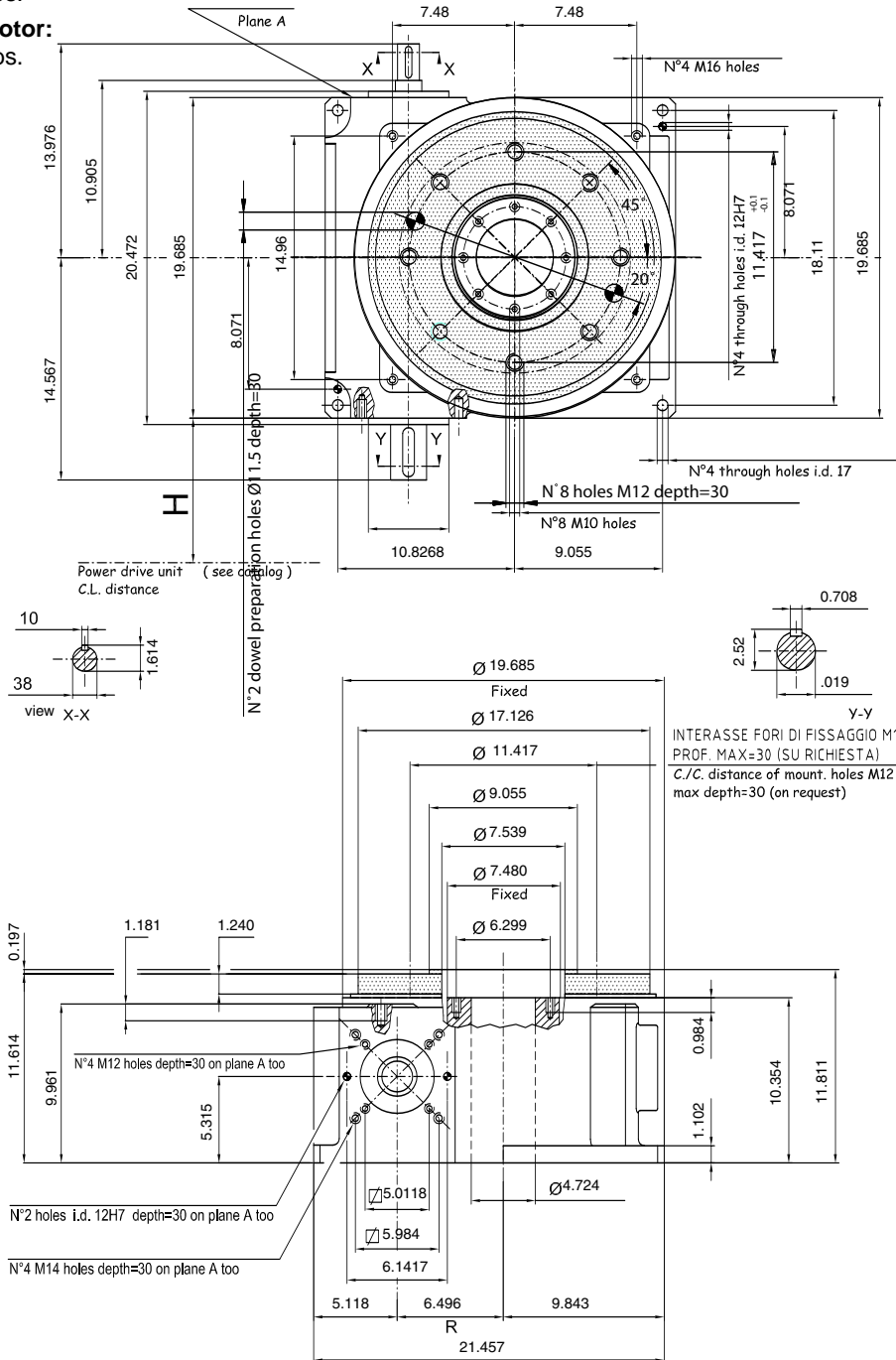
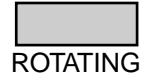
26.5 Lbs. - 187 Lbs.

Crate:

60 Lbs.

FEATURES

- Center Pilot Top & Bottom
- Top & Bottom Mounting Holes, Dowel Holes Provided in Bottom Mounting Feet
- Center Through Hole (Stationary)
- Stationary Center, with Threaded Holes for Mounting a Stationary Center Column.
- Through Drive Shaft
 - For direct timing with interlocking limit switch (See Top Pg. 30).
 - For alternative electric motor and gear box mounting side, that is supplied by Autorotor.
 - For direct drive of related components.



Motor size, gear box and flange mount to the indexer, are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at top of Page 30.

DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4

ROTARY INDEX TABLE Model T-75

Weight of Index Table
950 Lbs. 432 kg.

FEATURES

- Top Center Pilot
- Top & Bottom Mounting Holes, Dowel Holes Provided in Bottom Mounting Feet
- Center Through Hole (Stationary)
- Stationary Center, with Threaded Holes for Mounting a Stationary Center Column.
- Through Drive Shaft
 - For direct timing with interlocking limit switch (See Top Pg. 30).
 - For alternative electric motor and gear box mounting side, that is supplied by Autorotor.
 - For direct drive of related components.



Additional Weight

Gear Box:

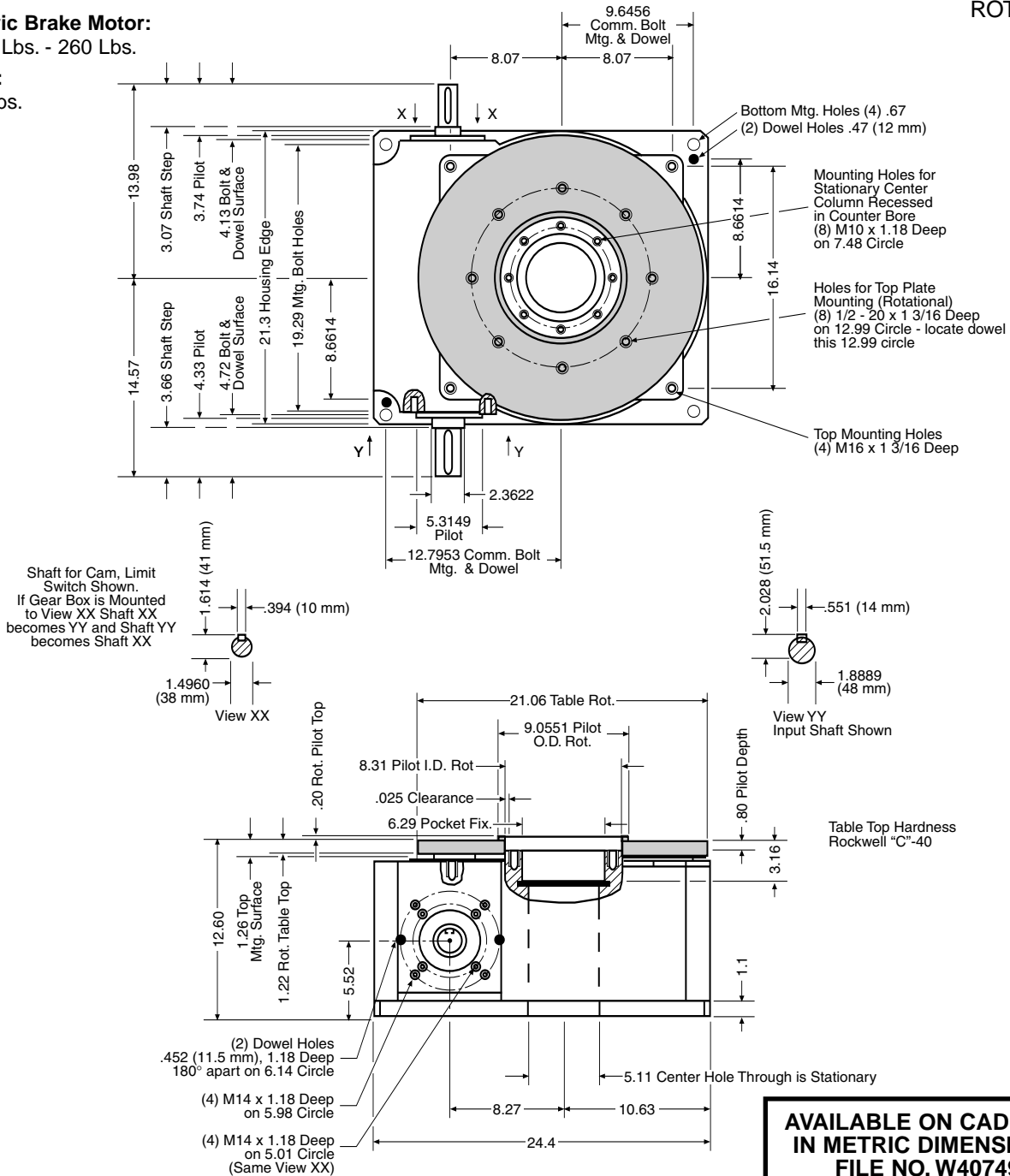
136.5 Lbs. - 260 Lbs.

Electric Brake Motor:

136.5 Lbs. - 260 Lbs.

Crate:

150 Lbs.



**AVAILABLE ON CAD DISC
IN METRIC DIMENSIONS
FILE NO. W40749**

Motor size, gear box and flange mount to the indexer are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at the top of Page 30.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.**

ROTARY INDEX TABLE

Model T-95

Weight of Index Table
2060 Lbs. 936 kg.

FEATURES

- Top Center Pilot
- Top & Bottom Mounting Holes, Dowel Holes Provided in Bottom Mounting Feet
- Center Through Hole (Stationary)
- Stationary Center, with Threaded Holes for Mounting a Stationary Center Column.
- Through Drive Shaft
 - For direct timing with interlocking limit switch (See Top Pg. 30).
 - For alternative electric motor and gear box mounting side, that is supplied by Autorotor.
 - For direct drive of related components.



Additional Weight

Gear Box:

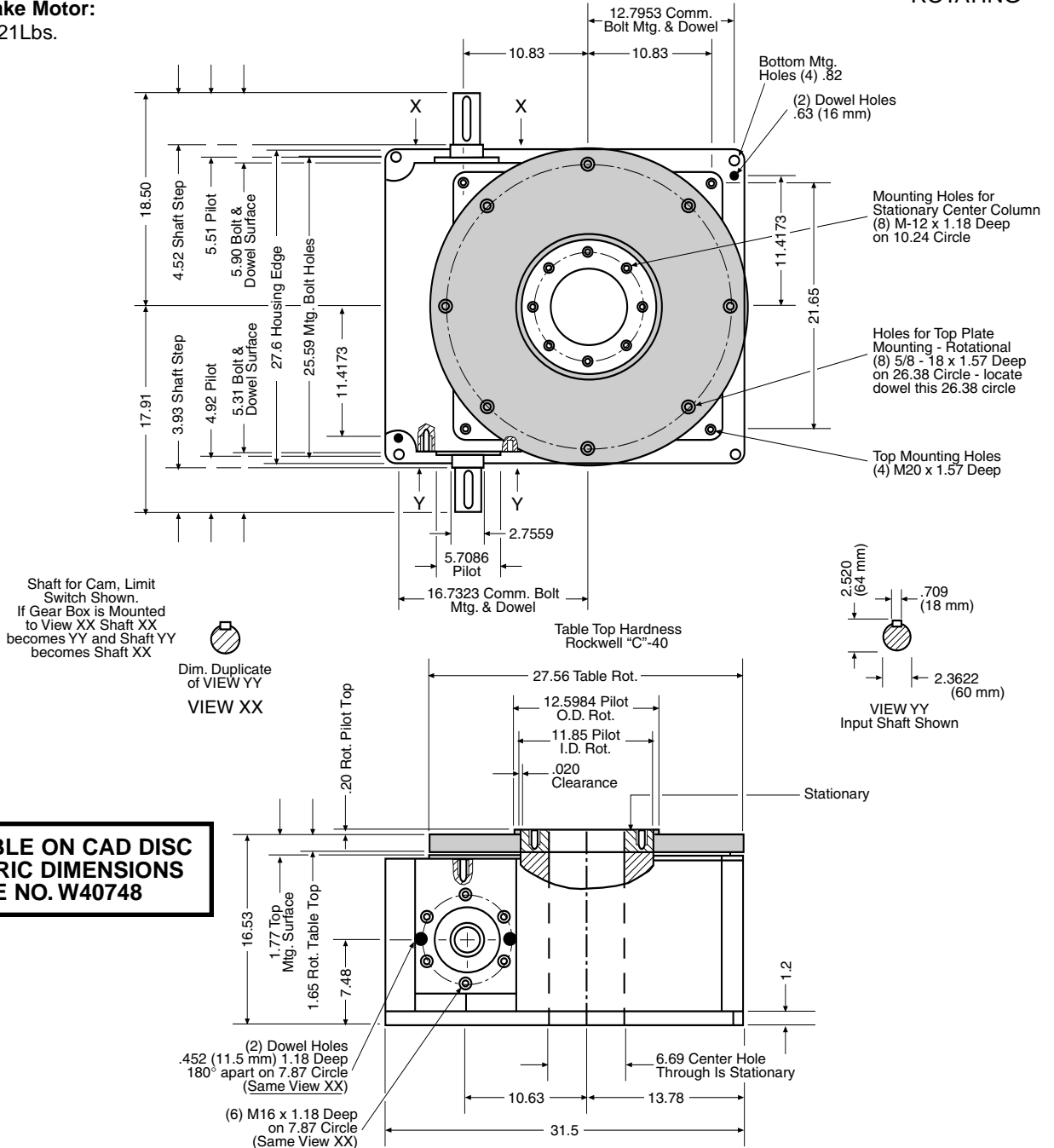
180 Lbs. - 416 Lbs.

Electric Brake Motor:

135 Lbs. - 421Lbs.

Crate:

310 Lbs.



**AVAILABLE ON CAD DISC
 IN METRIC DIMENSIONS
 FILE NO. W40748**

Motor size, gear box and flange mount to the indexer are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at the top of Page 30.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
 TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.**

ROTARY INDEX TABLE Model T-105

Weight of Index Table
5300 Lbs. 2400 kg.

Additional Weight

Gear Box:

386 Lbs. - 815 Lbs.

Electric Brake Motor:

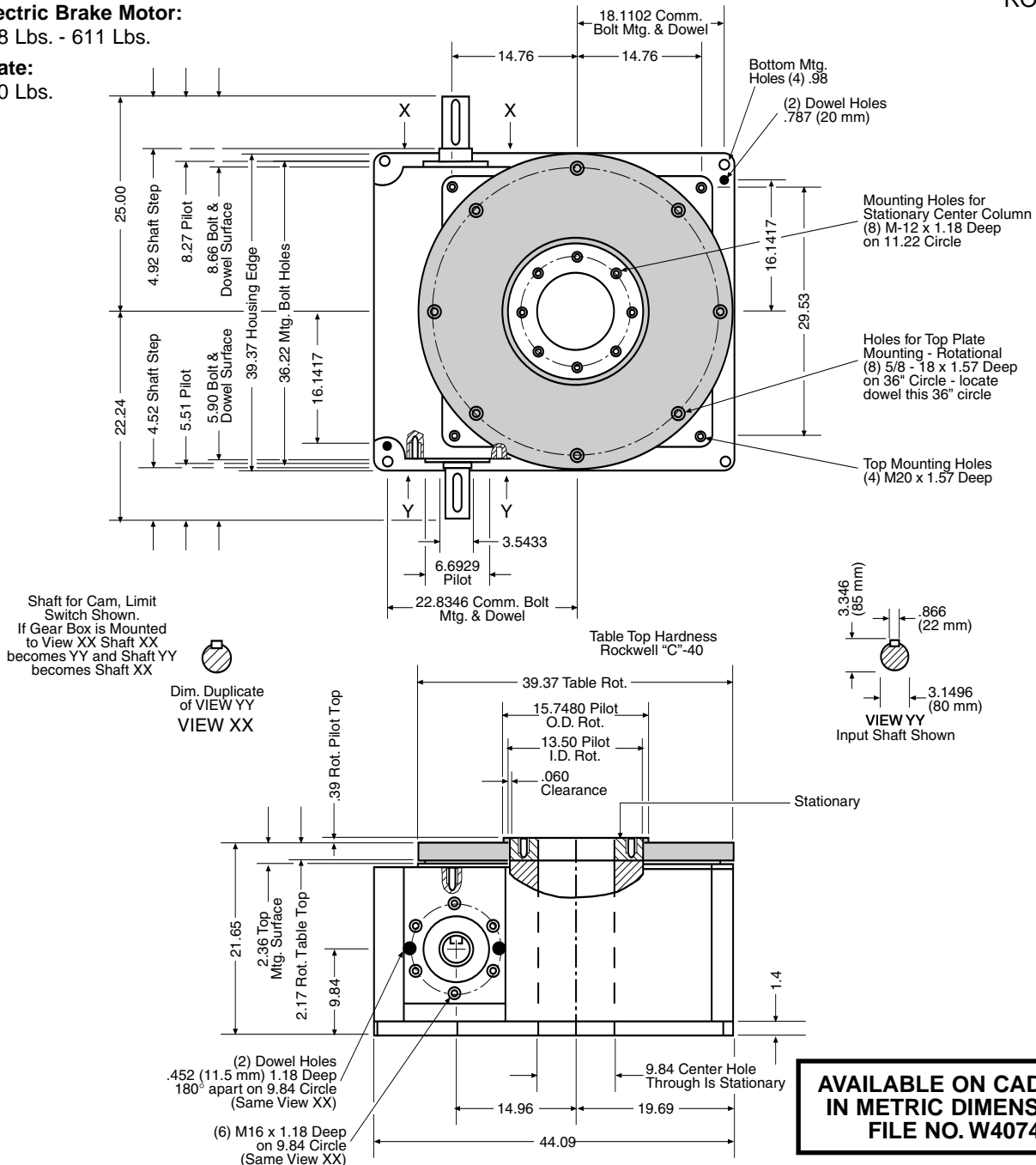
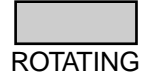
398 Lbs. - 611 Lbs.

Crate:

800 Lbs.

FEATURES

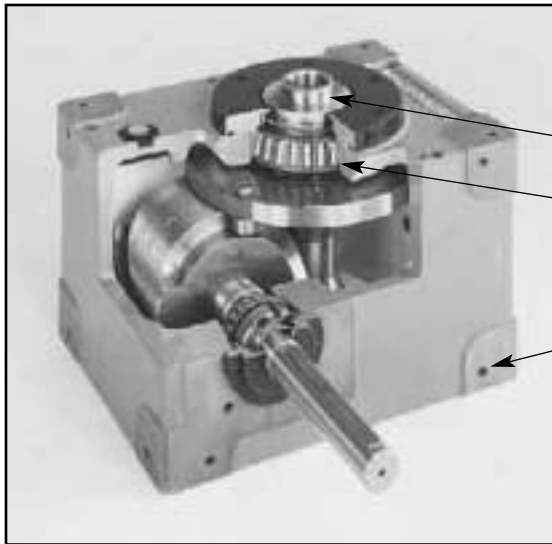
- Top Center Pilot
- Top & Bottom Mounting Holes, Dowel Holes Provided in Bottom Mounting Feet
- Center Through Hole (Stationary)
- Stationary Center, with Threaded Holes for Mounting a Stationary Center Column.
- Through Drive Shaft
 - For direct timing with interlocking limit switch (See Top Pg. 30).
 - For alternative electric motor and gear box mounting side, that is supplied by Autorotor.
 - For direct drive of related components.



Motor size, gear box and flange mount to the indexer, are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at the top of Page 30.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.**

ROTARY SPINDLE (INDEXING) & (OSCILLATOR) DRIVES



Same internal movement of previously illustrated index table with a rotary table top pages 10 through 17, but with following exceptions.

EXCEPTIONS:

(From Model T & TA - Rotating Indexing Table)

- Mounting of the driven tooling is to the spindle on the rotating center.
- Spindle bearing is a taper roller type. (Top and Bottom)
- Mounting is available at all corners.

Requires flange for gear box, gear box, A.C. electric brake motor and limit switch as will be specified on the quotation.

**MODEL IT
ROTARY SPINDLE (INDEXING)**

Provides station pattern with index and dwell and performance exactly as previous described Model T & TA rotary index table with the above exceptions. Model selection information, refer to Pg. 1.

MODEL OT ROTARY SPINDLE (OSCILLATOR)

Spindle rotates up to 90° in one direction and automatically returns to 0°.

Degrees of available arc are: 30°, 45°, 60°, 75°, and 90°. Specials on request.

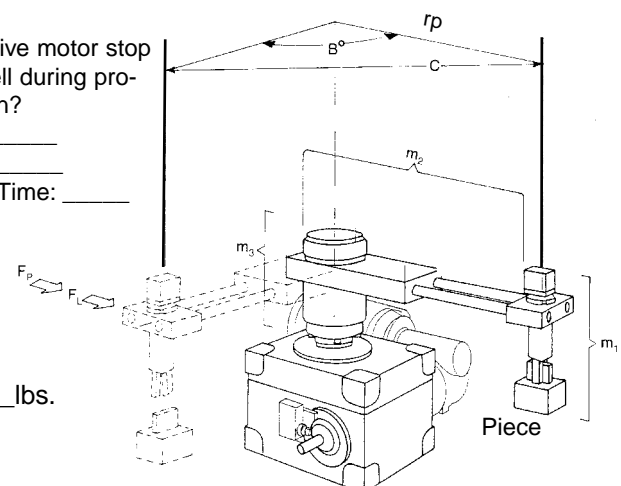
For determining arc distances, and index and dwell time, refer to bulletin "Calculations for Applying the Model OT & OP Oscillating Drives".

A center hole is provided for rise and fall mechanism, which can be a Model OP oscillating parallel axis drive that is illustrated on Pg. 21.

Refer to bottom Pg. 31 for input and output details.

**REQUIRED DESIGN INFORMATION FROM THE CUSTOMER
FOR MODEL OT OSCILLATOR SELECTION**

- | | | |
|--------------------------------------|---|--|
| Rotating angle | B = degrees _____ | Will drive motor stop in dwell during production? Yes _____ No _____ Dwell Time: _____ |
| Transfer length | C = inches _____ | |
| Radius to Part | rp = inches _____ | |
| Transfer time (A) | t1 = seconds _____ | |
| Dwell time (B) | t2 = seconds _____ | |
| Return time (C) | t3 = seconds _____ | |
| Dwell time (D) | t4 = seconds _____ | |
| Mass of the part, gripper and holder | m1 = larger side: _____ in.
smaller side: _____ in.
length _____ in., weight _____ lbs. | |
| Mass of the arm holder (conn. rod.) | m2 = larger side: _____ in.
smaller side: _____ in.
length _____ in., weight _____ lbs. | |
| Mass of the turret | m3 = larger side: _____ in.
smaller side: _____ in. or dia. _____ in.
length _____ in., weight _____ lbs. | |
| Ext. load during transfer | FL = applied force _____ lbs. | |
| Ext. load during dwell | FP = applied force _____ lbs. | |



Rise & Fall/Extention Arm is Not Supplied by Autorotor

Representative:

- Mounting Position of Gear Box & Motor of Model OT Per Top of Page No.2
 1_____, 2_____, 3_____, 4_____, 5_____, 6_____, 7_____, 8_____,
 9_____, 10_____, 11_____, 12_____, 13_____, 14_____, 15_____, 16_____, Now Known _____
- Mounting Position of Model OT Oscillator Per Middle of Pg. 2.
 #1T _____, #2T _____, #3T _____, #4T _____, Not Known _____

ROTARY SPINDLE (INDEXING AND OSCILLATOR DRIVES)

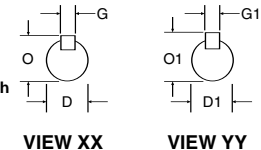
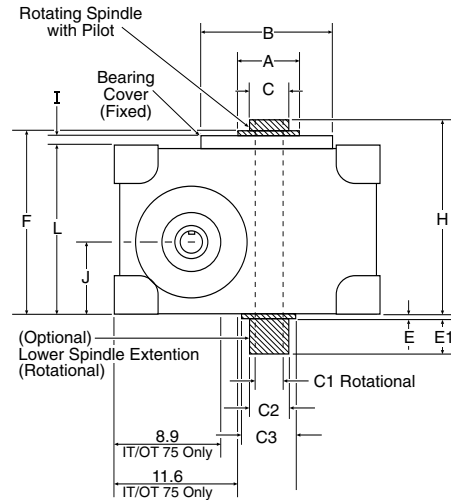
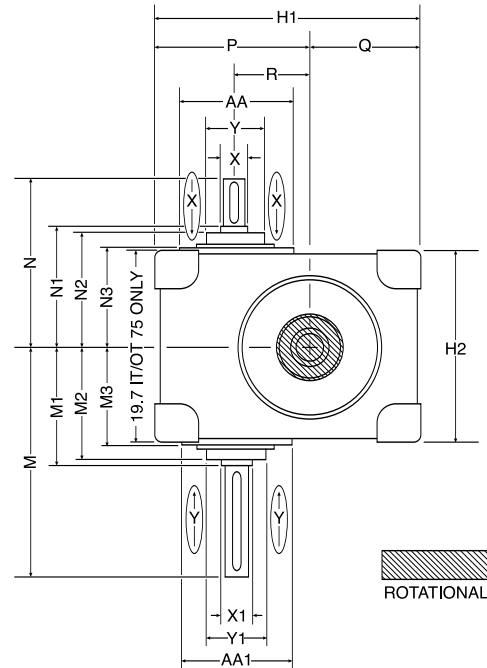
OVERALL DIMENSIONS (Also See Pg. 20 for Mounting Holes)

FEATURES

- See Chart, Not All Features Are Applicable to All Models.
- Center Pilot Top & Bottom
- Mounting Holes all Corners - See Pg. 20
- Center Through Hole (Rotational)
- Mounting Holes on Spindle top. See Pg.20
- Stationary center column Model IT10 & OT10 only (can be easily machined off) see Addendum Bottom Pg. 20 - not shown here.

- **Through Drive Shaft**
 - For direct timing with interlocking limit switch (See bottom of Pg. 30)
 - For alternative electric motor and gear box mounting that is supplied by Autorotor
 - For direct drive of related components

DIM.	MODEL (INDEXING) →	*IT10	—	IT15	IT25	IT35	IT55	IT75
	MODEL (OSCILLATOR) →	—	*OT10	OT15	OT25	OT35	OT55	OT75
	INDIVIDUAL PRINTS AVAILABLE UPON REQUEST							
ØA	Spindle O.D. (Rotational)	3.700	4.724	1.574	2.559	2.953	4.724	11.810
ØB	Cover O.D.	4.13	5.51	3.15	5.51	5.91	8.66	16.14
ØC	Pilot (top) O.D. (Rotational)	2.1654	1.1811	.7874	1.5748	1.7716	2.756	7.087
ØC1	Center Hole (Rotational)	.39 Fixed	.35 Fixed	.47 Ind/Osc	1.18 Ind/Osc	1.38 Ind/Osc	1.96 Ind/Osc	5.91 Ind/Osc
ØC2	Bottom Shaft Extension O.D. (Optional)	— O —	— O —	.67 Ind/Osc	1.57 Ind/Osc	1.77 Ind/Osc	2.55 Ind/Osc	— O —
ØC3	Pilot (Bottom) O.D. (Rotational)	— O —	.5906 Recessed	.7874 Extension	— O —	1.9685 Extension	2.7559 Extension	— O —
ØD	Shaft Dia. View XX	.4724 12MM	.4724 12MM	.7086 18MM	.9449 24MM	.9843 25MM	1.1811 30MM	1.4961 38MM
ØD1	Shaft Dia. View YY	.5511 14MM	.5511 14MM	.7480 19MM	.9449 24MM	.9843 25MM	1.3780 35MM	1.8898 48MM
E	Pilot (Bottom) Length (Rotational)	— O —	.197 Recessed	.197 Extension	— O —	.197 Extension	.197 Extension	— O —
E1	Bottom Shaft Extension Length (Optional) (Rotational)	— O —	— O —	1.18 Ind/Osc	1.57 Ind/Osc	1.77 Ind/Osc	2.17 Ind/Osc	— O —
F	Height to Top of Spindle (Rot.)	4.134	3.740	5.709	7.480	10.039	12.205	13.780
G	Keyway View XX	.157 4MM	.157 4MM	.236 6MM	.315 8MM	.315 8MM	.315 8MM	.393 10MM
G1	Keyway View YY	.197 5MM	.197 5MM	.236 6MM	.315 8MM	.315 8MM	.393 10MM	.552 14MM
H	Height to Top of Pilot (Rot.)	4.331	3.937	6.890	7.874	10.433	12.599	13.976
H1	Housing - Overall Length	5.91	6.50	7.48	10.83	12.99	17.72	24.41
H2	Housing - Overall Width	4.33	5.71	6.18	8.07	10.04	14.57	21.65
I	Thickness of bearing Cover	.19	.43	.39	.55	.63	.59	.19
J	Height of Shaft Center	1.77	1.65	2.24	2.99	3.94	5.31	5.51
L	Housing - Overall Height	3.54	3.07	5.12	6.89	9.25	11.42	13.39
M	Length ϕ to End of Shaft YY	5.51	6.10	7.36	9.44	10.83	14.37	14.57
M1	Length ϕ to End of Pilot YY	2.95	— O —	3.62	4.72	5.71	7.68	10.91
M2	Length ϕ to End Housing Pilot YY	2.78	3.15	3.58	4.67	5.45	7.40	10.23
M3	Length ϕ to Bolt Surface YY (pg20)	2.68	2.95	3.09	4.21	5.02	7.28	9.84
N	Length ϕ to End of Shaft XX	4.02	4.53	5.91	6.89	8.86	11.22	13.98
N1	Length ϕ to End of Pilot XX	2.95	3.35	— O —	4.72	5.71	7.68	10.91
N2	Length ϕ to End Housing Pilot XX	2.78	3.15	3.58	4.67	5.45	7.40	10.23
N3	Length ϕ to Bolt Surface XX (pg20)	2.68	2.95	3.09	4.21	5.02	7.28	9.84
O	Shaft XX Distance Over Key	.531	.531	.807	1.063	1.102	1.299	1.614
O1	Shaft YY Distance Over Key	.630	.630	.846	1.063	1.102	1.496	2.028
P	Width ϕ of Spindle to Housing End Shaft Side	3.74	3.35	4.33	6.20	7.68	10.24	13.58
Q	Width ϕ of Spindle to Housing End - Non-Shaft End	2.16	3.15	3.15	4.63	5.31	7.48	10.83
R	Width ϕ of Spindle to ϕ of Shaft	1.476	1.476	1.969	3.15	3.93	5.51	8.27
X	Shaft Pilot Dia. - Side XX	.5906	.5118	— O —	1.1023	1.2598	1.6535	1.7716
X1	Shaft Pilot Dia. - Side YY	.5906	— O —	.9449	1.1023	1.2598	1.8898	2.3622
Y	Housing Pilot Dia. - Side XX	1.5748	1.3385	1.7716	2.3622	2.3622	3.6220	5.3150
Y1	Housing Pilot Dia. - Side YY	1.5748	1.3385	1.7716	2.3622	2.3622	3.6220	5.3150
AA	Boss or Pad Bolt Surface Side XX - Pg. 20	2.72	2.15	2.83	4.72	3.15	6.10	7.09
AA1	Boss or Pad Bolt Surface Side YY - Pg. 20	2.72	2.15	2.83	4.72	3.15	6.10	7.09
Wgt.	Iron Housing (Standard) Lbs.	11	21	44	92	172	315	1056
Wgt.	Aluminum Housing (Optional) Lbs.	—	—	24	57	92	172	—
	CAD File No.	W40861	W40753	W40742	W40818	W40816	W40862	W40874



Shaft for CAM Limit Switch
If gear box is mounted to View XX, Shaft XX becomes YY, and Shaft YY becomes Shaft XX.

***See Bottom of Pg. 20**

For additional weights of the gear box, electric brake motor and crate, see identical model number preceded as letter "T" or "TA" instead of IT or OT Pgs. 10-17.

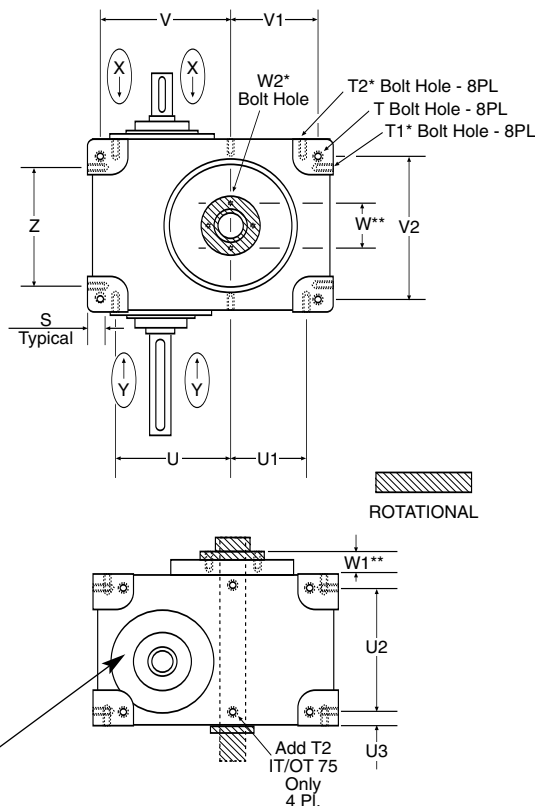
Motor size, gear box and flange mount to the indexer are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at bottom of Page 30.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4**

ROTARY SPINDLE (INDEXING) & (OSCILLATOR) DRIVE MOUNTING HOLES

IT10 & OT10
ONLY SEE
VARIATION BELOW

DIM.	MODEL (INDEXING)	IT10	—	IT15	IT25	IT35	IT55	IT75
	MODEL (OSCILLATOR)	—	OT10	OT15	OT25	OT35	OT55	OT75
S	Depth of Corner Bolt Holes	-0-	-0-	.47	.79	.79	.98	.98
T	Size of Top & Bottom Mounting Holes IT-10 Bottom Only (See Below Variation)	Top M6 6 DP	M6 6DP C-Bore Top 28x6	M8 47 DP	M8 79 DP	M10 79 DP	M12 98 DP	M16 98 DP
	Quantity of T Mtg. Holes	4	8	8	8	8	8	8
T1*	Size of Corner Mtg. Holes- <u>Length</u> End	-0-	-0-	M8	M8	M10	M12	M16
	Quantity of T1 Mtg. Holes	-0-	-0-	8	8	8	8	8
T2*	Size of Corner Mtg. Holes- <u>Width</u> End	-0-	-0-	M8	M8	M10	M12	M16
	Quantity of T2 Mtg. Holes	-0-	-0-	8	8	8	8	12
U	Spindle Center to Length Corner Mtg. Hole - Shaft End	-0-	-0-	3.74	4.92	6.40	8.76	11.81
U1	Spindle Center to Length Corner Mtg. Hole - Non Shaft End	-0-	-0-	2.56	3.35	4.04	6.00	9.06
U2	Corner Holes Center Dist.-Height	-0-	-0-	4.33	5.91	7.28	9.06	11.81
U3	Corner Holes Dist. From Bottom	-0-	-0-	.39	.49	.98	1.18	.79
V	Spindle Center of Length Top and Bottom Mtg. Holes - Shaft End	3.44 Top Only	2.95	3.35	5.51	6.99	9.45	12.20
V1	Spindle Center of Length Top and Bottom Mtg. Holes - Non-Shaft End	1.87 Top Only	2.76	2.16	3.94	4.63	6.69	9.45
V2	Top and Bottom Mtg. Holes Center Distance - Width	3.74 Top Only	4.53	4.72	7.09	8.66	12.99	15.75
W**	Bolt Circle on Spindle	2.95	Option 1.97 or 3.74	1.26	2.17	2.36	3.74	8.66
W1**	Depth of Bolt Holes on Spindle	.39	.47	.59	.79	.79	.98	.98
W2**	Size of Bolt Holes on Spindle	M5	M5	M6	M6	M8	M12	M12
**	Quantity of Spindle Bolt Holes W-1 and W-2 Equally Spaced	4	4	4	4	4	4	6
Z	Corner Holes Center Distance-Width	-0-	-0-	4.72	5.91	7.48	11.61	17.72



*T1 & T2 WILL BE TAPPED UPON REQUEST

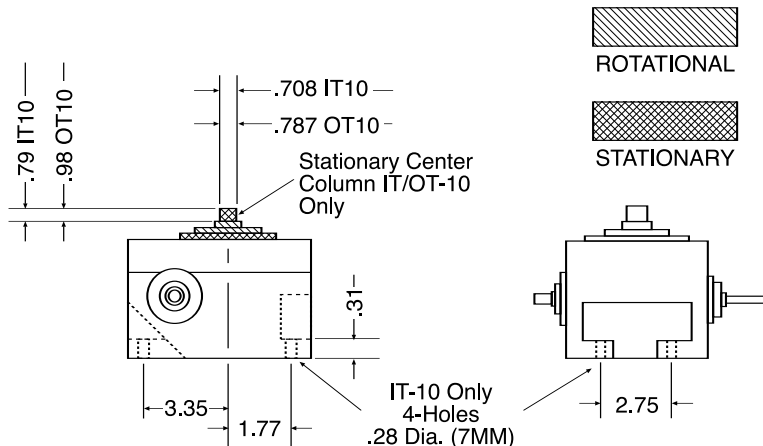
**W-OPTIONAL

Mounting holes on housing on surface M3 (Y) or N3 (X) (Pg. 19) to attach a gear box (Flange adapter is usually required) - Gear box and flange along with motor is supplied by Autorotor.

MODEL	IT/OT 10 & IT/OT 15	MODEL IT/OT 25	MODEL: IT/OT 35	MODEL: IT/OT 55	MODEL: IT/OT 75
IT-10	(4) M5 SOC Cap on 2.20 Bolt Circle	(4) M8 X .7 Deep on 3.54 Circle	(4) M8 X .9 Deep on 3.54 Circle	(4) M8 x .8 Deep on 4.25 Circle	(4) M14 X 1.18 Deep
OT-10	(4) M5 SOC Cap on 1.73 Bolt Circle	(1) Dowel Hole .2952 (7.5 mm x .8 Deep on 3.54 Circle)	(2) Dowel Holes .2952 (7.5 mm x .8 Deep on 3.54 Circle)	(4) M18 x .9 Deep on 5.12 Circle	(2) Dowel Holes .4527 (11.5 mm) x 1.18 Deep
IT/OT 15	(4) M6 SOC Cap on 2.36 Bolt Circle				(4) M12 x 1.18 Deep

VARIATION MODELS IT10/OT10

1. STATIONARY CENTER COLUMN MODEL IT-10 AND OT-10 ONLY
2. BOTTOM MOUNTING CLEARANCE HOLES MODEL IT-10 ONLY - ALL OTHER MODELS HAVE THREADED BOTTOM MOUNTING HOLES.



**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.**

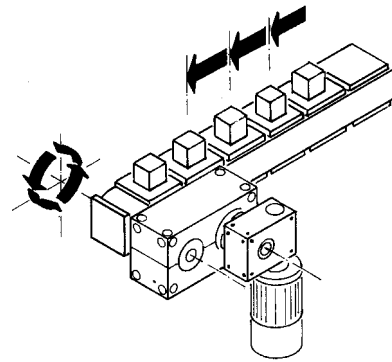
PARALLEL AXIS DRIVE:

MODEL AP (INDEXING)

Indexing with 1 to 8 Stations within 360° of Rotation.

Typical Applications: Conveyors

Required specifications of the application for quotation and ordering, see top of page 22.



MODEL OP (OSCILLATING)

Rotating in an Arc within 15°, or 20°, or 30°, or 45° Limits, and Automatically Reversing to 0°.

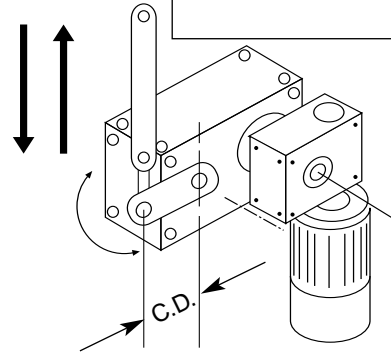
Typical Applications: Rise and Fall Motion

Required specifications of the application for quotation and ordering:

- Degrees of arc: _____ °
- Travel time (one direction): _____ Sec.
- C.D. (Center Distance): _____ In.
- Total Weight to be Moved (Including Linkage): _____ Lbs.
- Coefficient of Friction _____
Weight required to place the total moving weight in motion divided by the total moving weight = estimated is acceptable.

Refer to bottom Pg. 31 for input and output details.

Representative:



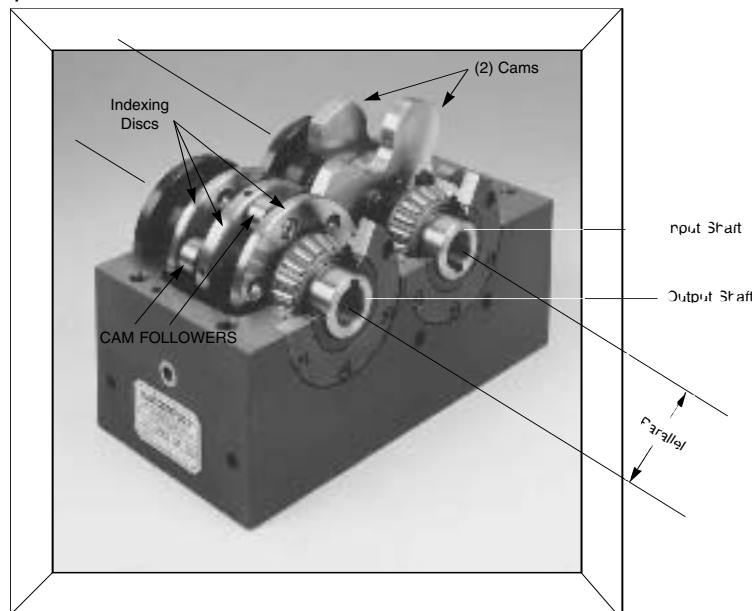
Indicate mounting position of gear box and motor (middle Pg. 22) # _____

Indicate mounting position of parallel axis drive (bottom Pg. 22) # _____

For determining arc distances, and index and dwell time, refer to bulletin "Calculations for Applying the Model OT & OP Oscillating Drives".

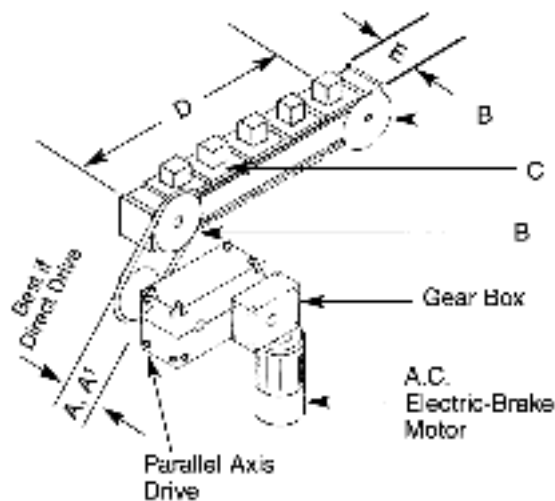
The parallel axis drive is best suited for linear transfer, or light rotary indexing that requires high index speed, low precision, and low cost.

AUTOROTOR INDEXING/OSCILLATING DRIVE series AP/OP is a mechanical parallel axis unit which transforms the continuous rotation of the input shaft into an intermittent rotation of the output shaft by means of two engaged cams with cam followers fixed to the indexing disc. The output shaft is hollow, so hoses, wires, etc., can pass through it, except for the Model AP/OP 40.



REQUIRED DESIGN INFORMATION FROM THE CUSTOMER FOR MODEL AP SELECTION

Representative: _____



No. of Stations _____

Index Time: _____ sec.

- A. Sprocket on parallel axis drive**
Dia. _____ Thickness _____ Material _____
A' Accuracy required \pm _____" at a radius of _____ inches.
- B. Sprocket on conveyor indicate if none**
 Yes No
Dia. _____ Thickness _____ Material _____
- C. Total weight of load being transmilled** _____
(includes chain, linkage pallets, fixtures and parts)
- D. Length** _____ inches
- E. Width** _____ inches
- F. Coefficient of Friction** _____
Weight required to place the total moving weight in motion divided by the total moving weight = estimated is acceptable.

EXAMPLE IS MOUNTING POSITION "106"

Indicate mounting position of gear box, motor, and parallel axis drive.

MOUNTING POSITION - MODEL AP/OP

Gear Box (Reducer) & Standard AC Electric Brake Motor

Mounting Position Can be Changed by Relocating the 4 Mounting Holes 90° of Gear Box to Indexer. Limitation must be within Nos. 101-104, 105-108, 109-112, 113-116
Shipping is in positions #104, #107, #110, #113

Assembling on "standard" side All Models (Pos. 23, 24 & 25) VIEW XX Models 165/200/250 Pg #25	MOTOR MOUNTED TO LEFT OF INPUT SHAFT	 Also known as "A"
	MOTOR MOUNTED TO RIGHT OF INPUT SHAFT	 Also known as "C" Also known as "B" Also known as "D"
	MOTOR MOUNTED TO LEFT OF INPUT SHAFT	 Also known as "H" Also known as "F" Also known as "G"
Assembling on "opposite" side Only Available Models 165/200/250 VIEW YY Pg #25	MOTOR MOUNTED TO RIGHT OF INPUT SHAFT	 Also known as "E"

**INDEXER MOUNTING POSITION* = MODEL AP/OP
MODELS AP/OP 55 THRU 135 SHOWN**

#101-P Standard Horizontal Axis Upper Input Shaft	#102-P Horizontal Axis Lower Input Shaft	#103-P Vertical Axis Upper Input Shaft	#104-P Vertical Axis Lower Input Shaft

*Indexer mounting position determines location of lubricating oil fill & vent plug.

AP (INDEXING) PARALLEL AXIS DRIVE

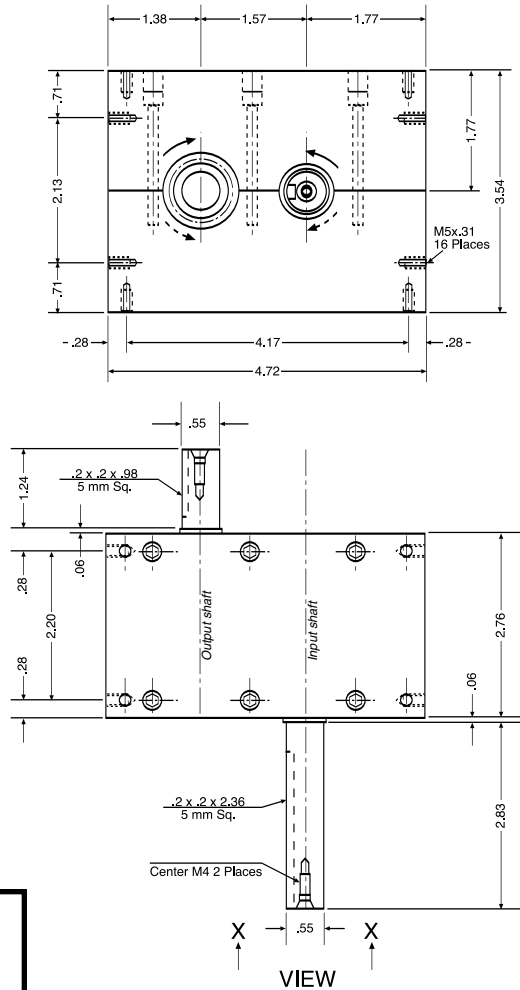
CHOICE OF DEGREES OF CAM ROTATION ANGLE
PERFORMING THE TRANSFER MOVEMENT

REMAINING DEGREES OF THE 360° CAM ROTATION
IS THE DWELL (LOCKED) PORTION

Model AP Sta. No.	Transfer (Indexing) Angle (°)						STD.	315°	
								300°	330°
1								300°	330°
2			150°	180°	210°	240°	270°		
3		120°	150°	180°	210°	240°	270°		
4	90°	120°	150°	180°	210°	240°	270°		
5		120°	150°	180°	210°	240°	270°		
6	•		150°	180°	210°	240°	270°		
8	•	120°	150°	180°	210°	240°	270°		

• 2 Sets of CAM Lobes for each 360° of rotation
of input shaft, further explanation bottom Pg. 29.

Model No. AP/OP 40 OVERALL DIMENSIONS



WEIGHT
6.6 Lbs.

Additional Weight

Gear Box: 4.5 Lbs.

Electric Brake Motor:
12 Lbs.

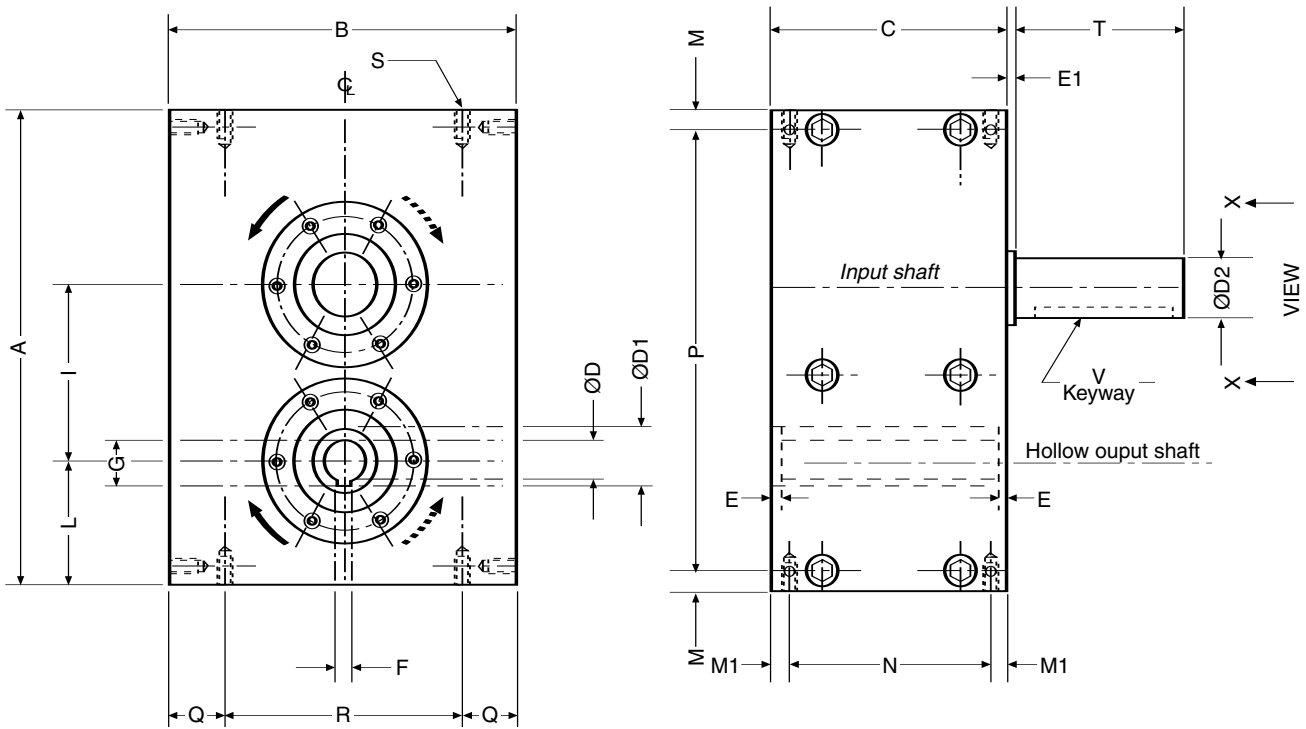
Crate: 2 Lbs.

**AVAILABLE ON CAD DISC
IN METRIC DIMENSIONS
FILE NO. W40640**

Motor size, gear box and flange mount to the indexer are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at the top of Page 31.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.**

Model No.
AP/OP 55 THRU 135
OVERALL DIMENSIONS



Model	CAD File n.	A	B	C	D	D1	D2	E	E1	F	G	I	L
AP/OP 55	W40643	6.10	4.33	3.54	.47	.79	.75	.02	.06	.16	.54	2.17	1.57
AP/OP 70	W40646	7.48	5.51	3.74	.63	.98	.94	.02	.12	.20	.72	2.76	1.97
AP/OP 85	W40647	9.45	7.09	4.72	.79	1.26	1.10	.02	.12	.24	.11	3.35	2.56
AP/OP 110	W40649	11.81	8.27	5.91	1.26	1.77	1.26	.02	.20	.39	1.39	4.33	3.35
AP/OP 135	W40652	14.51	10.24	7.09	1.77	2.36	1.65	.02	.20	.55	1.92	5.31	4.13

Model	M	M1	N	P	Q	R	S	T	V	Weight
AP/OP 55	.28	.39	2.76	5.55	.89	2.56	M6x.47	3.54	24 x.24x3.15	11.0 lb.
AP/OP 70	.30	.30	3.15	6.89	.89	3.74	M6x.47	4.33	.31x.28x3.98	17.0 lb.
AP/OP 85	.49	.49	3.74	8.49	1.18	4.72	M8x.59	5.12	.31x.28x3.94	59.4 lb.
AP/OP 110	.69	.69	4.53	10.43	1.38	5.51	M10x.79	5.51	.39x.31x5.12	103.4 lb.
AP/OP 135	.71	.71	5.67	13.15	1.57	7.09	M12x.98	5.91	.47x.31x5.51	202.4 lb.

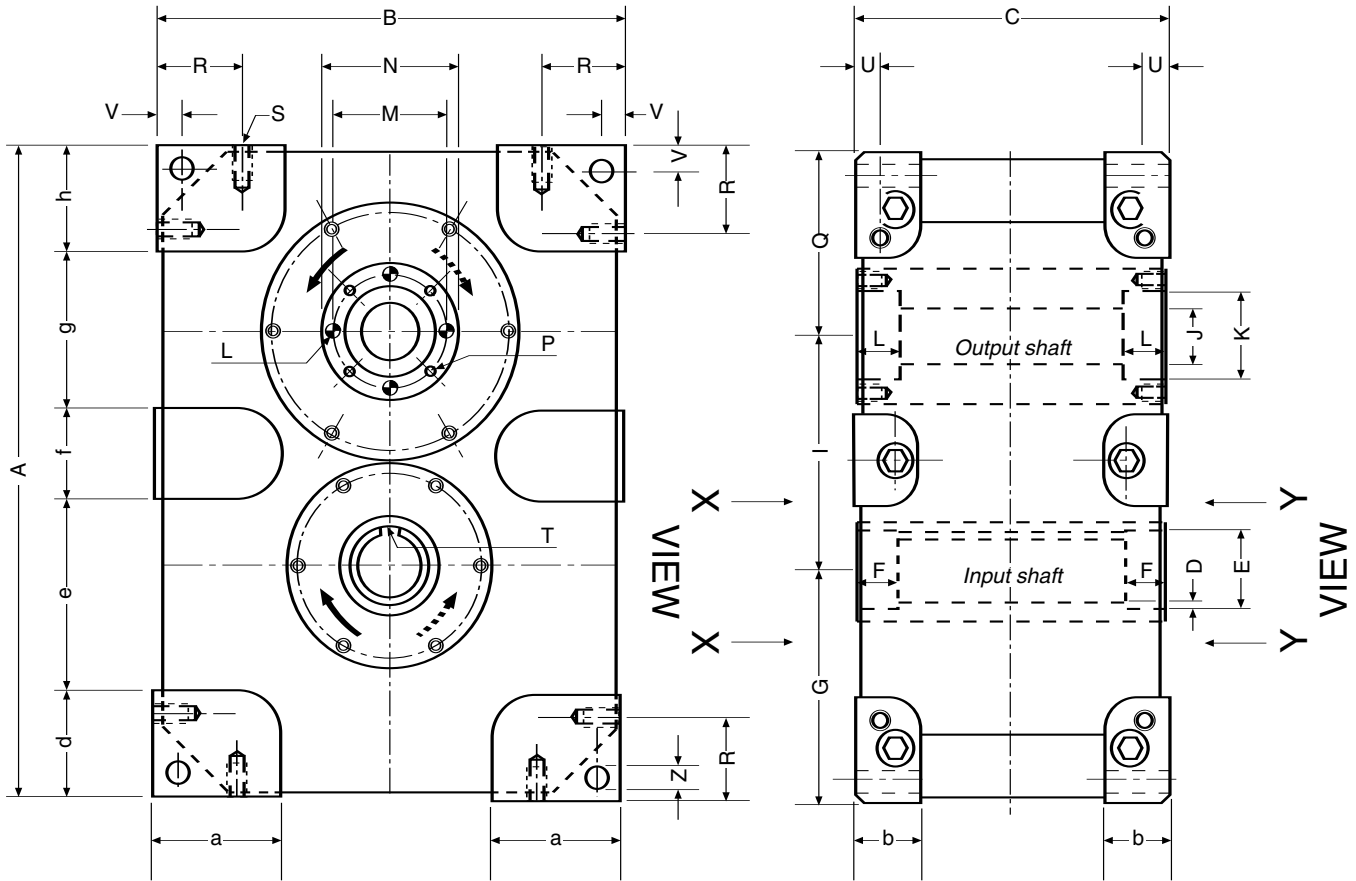
Additional Weights

Model	Gear Box	Electric Brake Motor	Crate
AP/OP 55	13 Lbs. to 17.5 Lbs.	12 Lbs. to 26.5 Lbs.	3 Lbs.
AP/OP 70	23 Lbs. to 30 Lbs.	12 Lbs. to 35 Lbs.	4 Lbs.
AP/OP 85	39.5 Lbs. to 44 Lbs.	26.5 Lbs. to 53 Lbs.	9 Lbs.
AP/OP 110	66 Lbs. to 77 Lbs.	35 Lbs. to 107 Lbs.	17 Lbs.
AP/OP 135	110 Lbs. to 207 Lbs.	62 Lbs. to 209 Lbs.	31 Lbs.

Motor size, gear box and flange mount to the indexer, are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at the top of Page 31.

DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4.

Model No.
HEAVY DUTY SERIES - AP/OP 165 - 200 - 250
 OVERALL DIMENSIONS



Model	CAD File n.	A	B	C	D	E	F	G	I	J	K	L	M	N	O	P
AP/OP 165	W40727	18.11	12.99	8.66	1.77	2.17	1.18	6.50	6.5	1.57	1.18	2.44	3.15	3.74	.39x.79	M8x.79
AP/OP 200	W40771	21.65	15.75	9.84	2.17	2.56	1.18	7.87	7.87	1.97	1.38	3.15	3.94	4.72	.47x.98	M10x.98
AP/OP 250	W40772	27.56	19.19	11.81	3.35	3.94	1.18	9.84	9.84	2.56	1.97	3.74	4.92	5.91	.55x1.18	M12x1.18

Model	Q	R	S	T	U	V	X	Z	a	b	d	e	f	g	h	Weight
AP/OP 165	5.12	2.36	M14x.98	.55x.35	.69	.69	8.58	.61	3.54	1.77	3.54	4.33	3.54	3.15	3.54	330lbs
AP/OP 200	5.91	2.95	M16x1.18	.63x.39	.79	.79	9.76	.69	4.53	2.17	4.33	5.12	3.94	4.72	3.54	605lbs
AP/OP 250	7.87	3.54	M18x1.38	.87x.55	.98	.98	11.73	.77	5.31	2.17	5.71	5.81	5.31	5.02	5.71	1056lbs

Additional Weights

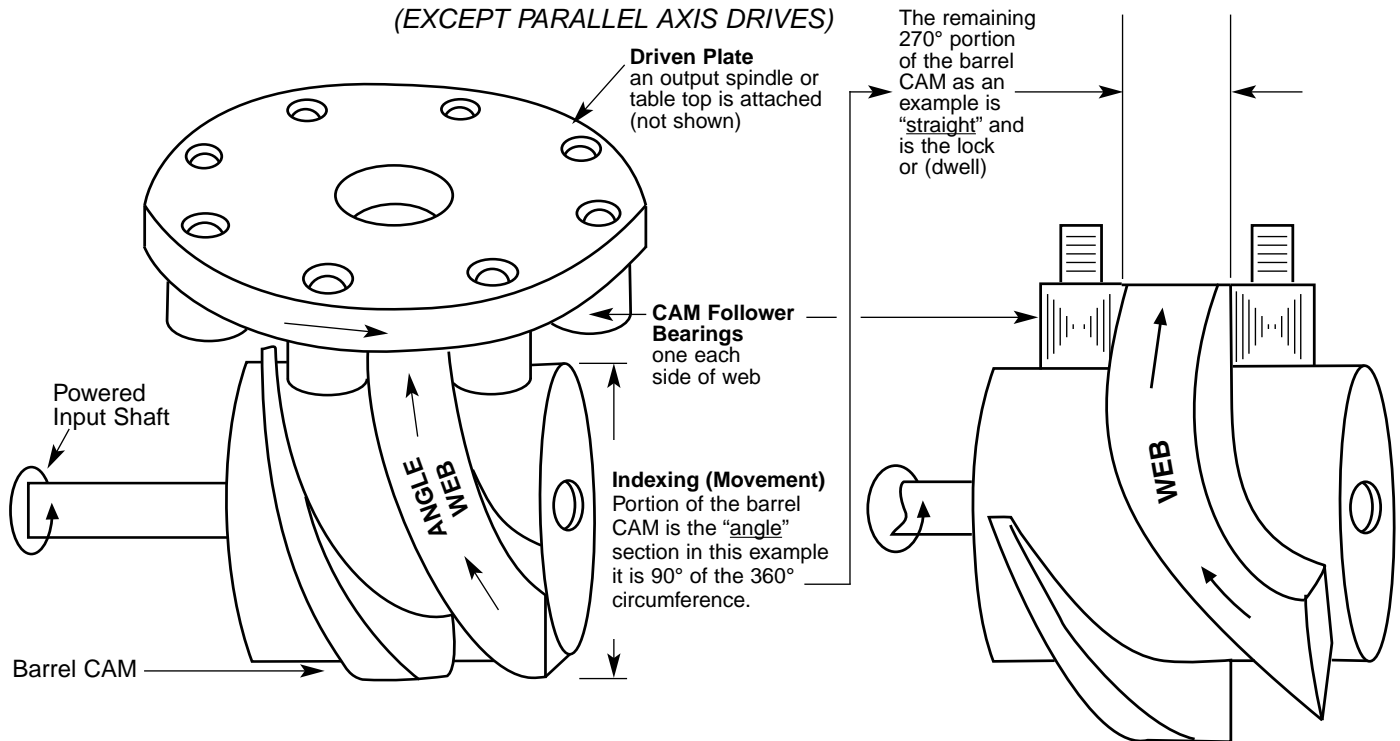
Model	Gear Box	Electric Brake Motor	Crate
AP/OP 165	285 Lbs. to 350 Lbs.	232 Lbs. to 381 Lbs.	50 Lbs.
AP/OP 200	412 Lbs. to 571 Lbs.	421 Lbs. to 562 Lbs.	93 Lbs.
AP/OP 250	589 Lbs. to 712 Lbs.	565 Lbs. to 691 Lbs.	162 Lbs.

Motor size, gear box and flange mount to the indexer, are specified and dimensioned on the print that is forwarded with the quotation. Limit switch with cam actuation are found at top of Page 31.

**DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.
 TO CONVERT INCHES TO MILLIMETERS, MULTIPLY INCHES BY 25.4**

THE PRINCIPLE OF THE BARREL CAM DRIVE

AS IS APPLIED IN ALL AUTOROTOR INDEXERS
(EXCEPT PARALLEL AXIS DRIVES)



1. The rotational powered input shaft, which is attached to the barrel cam also rotates the barrel cam.
2. The "angular" web section of the barrel cam (cam transfer angle) under power, places pressure on the cam follower bearings which moves the cam follower bearings in the rotational direction of the angle. The degree and curvature of the angle is designed for extremely smooth acceleration and deceleration at a rapid speed.
3. Being that the cam follower bearings are attached to the driven plate, the driven plate will rotate (index) until the barrel cam runs out of angle, and starts the straight portion of the barrel cam.
4. With the "straight" web portion of the barrel cam between the two cam follower bearings, the driven plate will not rotate and will keep the driven plate in a secure locked (dwell) position.

APPLICATION OF THE BARREL CAM DRIVE

The powered input shaft and barrel cam can be rotated in either direction, which enables the driven plate or output spindle and table top to rotate in either direction. See illustration middle of Pg. 31.

Number of available stations and available "cam" angles are found on Pages 5 and 6.

A.C. Electric brake motors are supplied as the standard to power and stop the powered input shaft.

The barrel cam can run continuously, or be stopped.

Continuously: As an example with one sec. r.p.m. of the powered input shaft a 90° cam web angle for indexing, and a 270° straight cam web for dwell the index/lock portion is calculated.

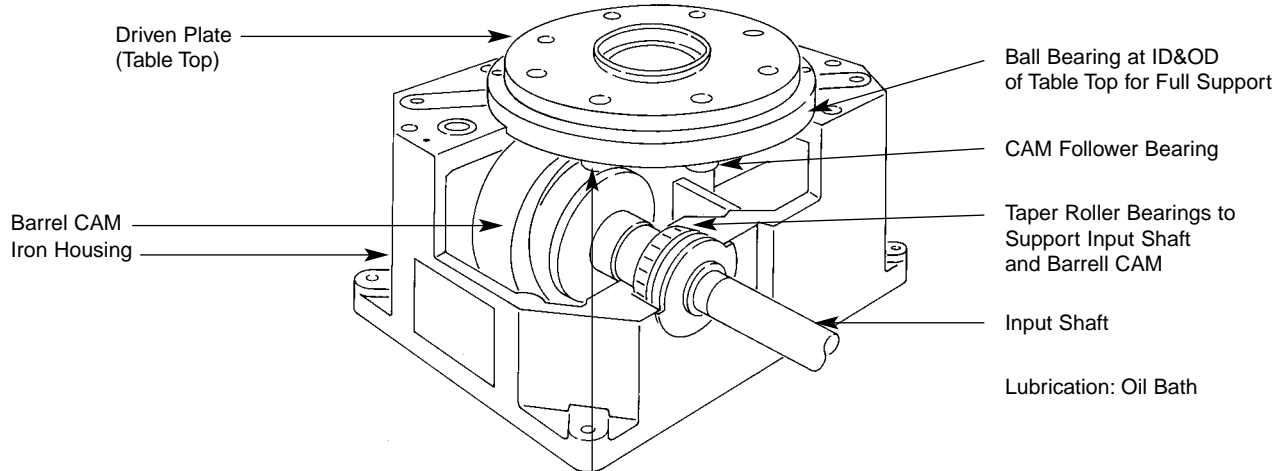
$$\begin{array}{l} 1/4 \text{ sec. index} / 3/4 \text{ sec. lock} = 1 \text{ sec. total each index/lock cycle} \\ 90^\circ \quad / \quad 270^\circ \quad = 360^\circ \text{ complete rotation of the barrel cam} \end{array}$$

Continuously operated index tables are usually applied with synchronized working heads by utilizing the powered input thru shaft. See dimensional drawings.

Stopping: The barrel cam can be stopped by de-energizing power to the motor to obtain any desired length of (dwell) time. A limit switch actuated by a cam is provided on the through shaft for the synchronized starting and stopping as explained on Pg. 29. Autorotor will advise and recommend on the quotation for prevention of over travelling the dwell into the index at the faster speeds, if the problem should exist.

INDEXER ASSEMBLY

The barrel cam with the connected input shaft, and driven plate with cam follower bearings are assembled into an iron housing to produce an indexer. Model T or Model TA with table top is shown.



Drive at Maximum Extremity for Smoothness of Indexing, Accuracy & Rigidity

POWER TO THE INDEXER

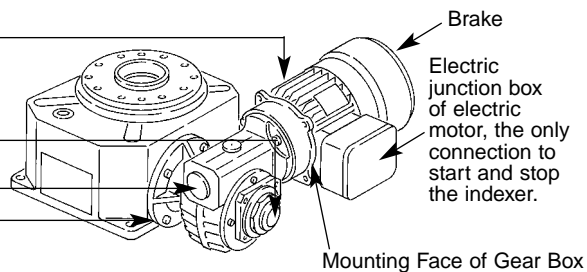
1. A **FLANGE** is mounted to the indexer to accept a reducer (gear box).
2. A **REDUCER** (gear box) with a special gear ratio to obtain the desired index speed is mounted to the flange.

An adjustable **TORQUE LIMITER** is provided on the gear box to interrupt power "*instantly*" from the electric motor to the indexer if indexing motion is obstructed to prevent damage to the indexer.

SETTING AND ADJUSTMENT OF THE TORQUE LIMITER

The torque limiter is pre-set at the factory for the application that is quoted, and will need no further attention. If the application should change adjustment can be easily accomplished by removing the round rubber cover and tightening the spanner nut for heavier/faster loads, or loosening for lighter/slower loads. Setting of the torque limiter should be such so that the tooling will stall stationary with minimum resistance to it.

3. **A.C. ELECTRIC BRAKE MOTOR DRIVE** - Standard - most economical and practical is mounted to the input of the gear box.



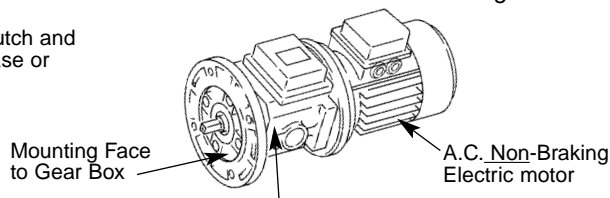
ALTERNATIVE MOTOR DRIVES

Dimensions are provided with quotations.

3.A. A.C. ELECTRIC MOTOR (NON-BRAKING) with D.C. Electric Clutch & Brake

A Rectifier is enclosed in the housing.

Specify Inlet Voltage to Electric Clutch and Brake of 120 volts, 60 cycle, 1-phase or 230 volts, 60 cycle, 1-phase

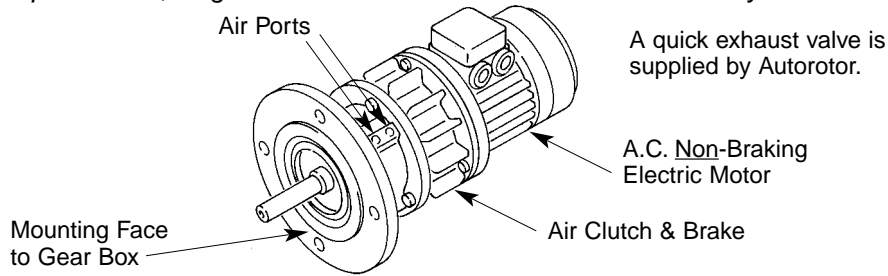


D.C. Electric Clutch & Brake
(Requires Separate Wiring from the Electric Motor)

Is required when the dwell portion of the cam is at less than .22 seconds to prevent overtravelling out of dwell and into index and/or when starts and stops exceed 25 per minute.

3.B. A.C. ELECTRIC MOTOR (NON-BRAKING) with AIR CLUTCH & BRAKE

Requires Filter, Regulator & Lubricator with a Valve - Provided by the User



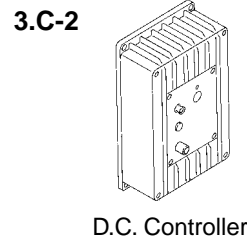
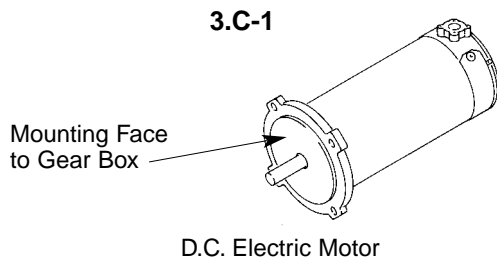
A quick exhaust valve is supplied by Autorotor.

Is required when the dwell portion of the cam is at less than .22 seconds to prevent overtravelling out of dwell and into index and/or when starts and stops exceed 25 per minute.

3.C. D.C. Electric Motor - Variable Speed

Requires A.C. to D.C. Controller, with Braking and Adjustable Speed Control - Supplied by Autorotor

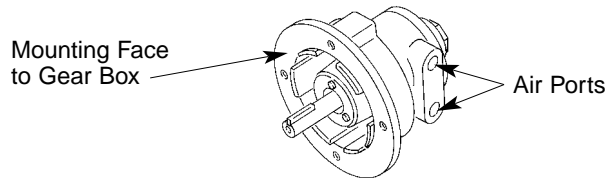
Most cost effective in comparison to the AC Electric Motor variable speed drive (Item 3.F. - Inverter) when under 1-1/2 H.P.



When inquiring specify inlet voltage of *240 volt, 60 cycle single phase or 110 volt, 60 cycle * preference

3.D. Air Motor

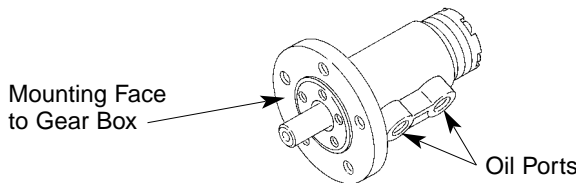
Requires Filter, Regulator and Lubricator with a Valve - Provided by the User



The control valve is to be piped on the outlet with a speed control.

3.E. Hydraulic Motor

Requires a Valve - Provided by the User



The control valve is to be piped on the inlet with a speed control.

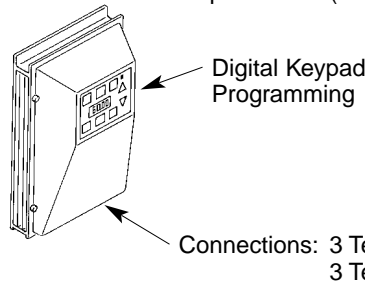
3.F. A.C. Electric Motor - Variable Speed

Inverter

Most cost effective in comparison to the DC Electric Motor variable speed drive (Item 3.C.) when over 1-1/2 H.P.

All A.C. electrical motors supplied by Autorotor are rated for inverter use.

Soft acceleration of the electric motor can be programmed to over come the shock start up problem as explained on the top of the next page (Pg. 29). Soft deceleration can also be programmed.



Electric Brake Not to be Wired Thru Inverter

The indexer should be stopped under power in the index position only for rare emergency stops or extensive damage will result. Otherwise the index has to be manually operated described below for the Standard A.C. Electric Brake Motor. If the indexer is stopper during the index under power, it should be manually re-positioned to the lock cycle before starting under power.

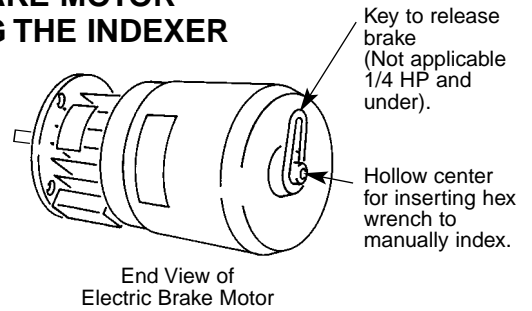
STANDARD A.C. ELECTRIC BRAKE MOTOR MEANS OF MANUALLY OPERATING THE INDEXER

The electric brake has to be dis-engaged to manually rotate the indexer due to the absence of electrical current to the motor brake, the brake locks the input shaft of the indexer.

PROCEDURE: A **KEY** located at the end of the electric motor, which is a triangular wire shaped tab on a hollow end bolt head is to be rotated clockwise until the key is lightly seated onto the plastic nut. (Approximately 13 turns) Turn 1/4 turn more to release the brake.

Depending on the model, a 6 or 8 mm allen (hex) wrench is then inserted through the hollow center of the key, and manually turned to rotate the electric motor shaft to rotate the indexer to the next position.

When returning to electric power drive - release the key and remove the allen (hex) wrench.

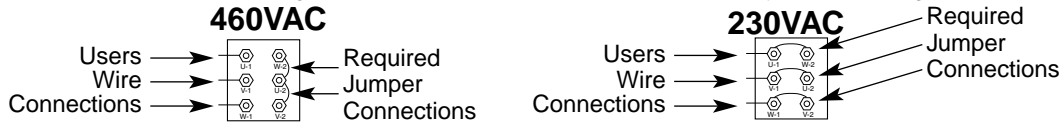


ELECTRICAL POWER TO THE STANDARD A.C. ELECTRIC BRAKE MOTOR

230/460 Volt, 60 Cycle, 3-Phase. A motor starter supplied by the user is required. (Brake is 230 Volt, 60 Cycle 3 Phase Only)

JUNCTION BOX WIRING CONNECTIONS ON ELECTRIC BRAKE MOTORS.

Motors are shipped wired for 460 volt, unless the factory is notified of 230 volt usage, otherwise the user must re-wire for 230 volt per below schematic. If change of indexer rotation is required, reverse any two incoming wire leads.



It is not necessary (nor should it ever be done) to separate wire for functioning of the electric brake unless item 3.F. inverter is applied.

SCHEMATICALLY INTERLOCKING OF THE INDEXER WITH RELATED WORKING HEADS

NOT a necessity in principle for continuous (non-stopping) of the barrel cam that is mechanically synchronized with related heads, but necessary for shut downs to always stop in the dwell position.

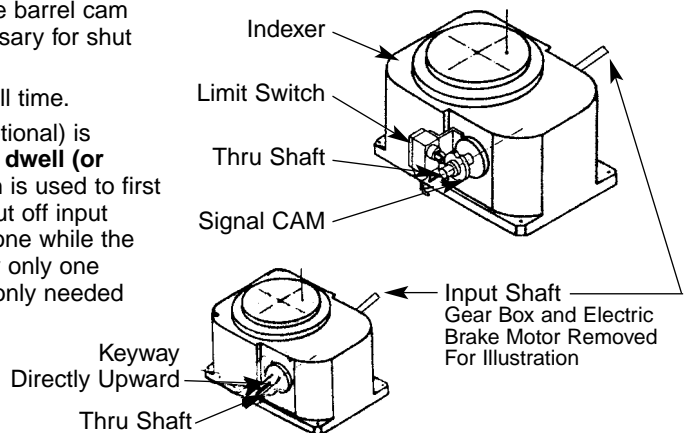
IS necessary when the barrel cam is stopped to extend the dwell time.

The limit switch, whether mechanical (standard) or proximity (optional) is actuated by a signal cam to indicated when the indexer is in the **dwell (or locked) portion** of the internal barrel drive cam. The limit switch is used to first signal the motor that the table is in the dwell position, and to shut off input power. Its second function is to actuate any work that is to be done while the indexer is in the dwell position. Standard requirement is to apply only one signal cam and one limit switch, but two are available, which is only needed according to the designers special requirements.

Positioning of the signal cam to actuate the limit switch

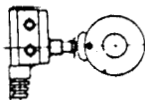
The keyway on the thru shaft must be directly upward (12 o'clock) (3 or 9 o'clock on parallel axis drive) indicating that the drive cam is in the middle of the dwell position. The middle of the lobe on the signal cam is positioned on the limit switch roller, and the two set screws on the signal cam are tighten on the thru shaft. This procedure will assure that the limit switch is actuated at the beginning of the dwell position. This is true whether single, double, or triple drive cams are supplied.

When double profile drive cams are applied inside the indexer (see bottom of page number 6) one rotation of the input shaft provides two complete indexes and dwells. When triple profile cams are applied one rotation of the input shaft results in three indexes and dwells. The factory will supply the correct limit switch cam with sufficient lobes for limit switch contact for each dwell whether single, double or triple profile drive cams are supplied.



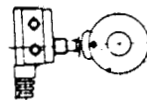
Single Profile Internal Barrel Drive CAM

One lobe on cam to actuate limit switch.



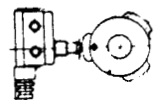
Double Profile Internal Barrel Drive CAM

Two lobes on cam to actuate limit switch



Triple Profile Internal Barrel Drive CAM

Three lobes on cam to actuate limit switch.



MECHANICAL - STANDARD LIMIT SWITCH SPECIFICATIONS

Omron Electronics, Inc., Schaumburg, IL Ph. 1-800-55-OMRON
Model No. ZC-N2255

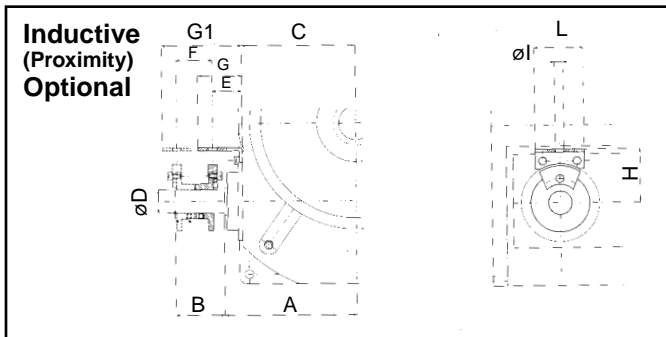
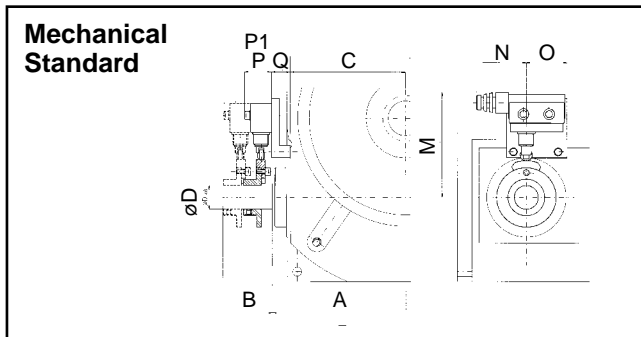
Contacts: 1 - Common, 1 - Normally Open, 1 - Normally Closed
Limit switches by other manufacturers than Omron Electronics can be supplied upon request.

**SINGLE (Standard) AND DUAL (Optional)
LIMIT SWITCHES MOUNTED**

OVERALL DIMENSIONS OF CAM/LIMIT SWITCH

For Model T & TA - Rotary Indexing Tables

Dual in Phantom



MODEL NO.	A	B	C	D	E	F	G	G1	H	I	L	M	N	O	P	P1	O
T10	3.35	1.18	2.95	.472	.59	1.26	1.18	2.36	2.17	.33	1.73	4.33	1.97	1.57	1.10	2.17	.17
T15	3.90	2.32	3.39	.708	.98	1.26	1.57	2.83	2.17	.33	2.17	4.33	1.97	1.57	1.10	2.52	.55
T25	5.31	1.97	4.59	.945	1.18	1.38	1.97	3.35	2.17	.33	1.97	4.33	1.97	1.57	1.10	2.76	.79
T35	6.40	3.05	5.41	.984	1.18	1.38	1.97	3.35	2.17	.33	1.97	4.33	1.97	1.57	1.10	2.76	.79
T55	7.67	3.54	7.48	1.181	1.18	1.38	1.97	3.35	2.44	.33	1.97	4.53	1.97	1.57	1.10	2.76	.79
T75	10.91	3.07	9.84	1.496	1.18	1.38	1.97	3.35	2.76	.33	1.97	5.12	1.97	1.57	1.10	2.76	.79
T95	13.98	4.53	12.60	2.362	1.77	1.38	2.56	3.97	2.95	.33	2.16	5.12	1.97	1.57	1.10	3.31	1.34
T105	20.08	4.92	16.39	3.54	1.77	1.38	2.56	3.94	3.46	.33	2.16	5.63	1.97	1.57	1.10	3.31	1.34

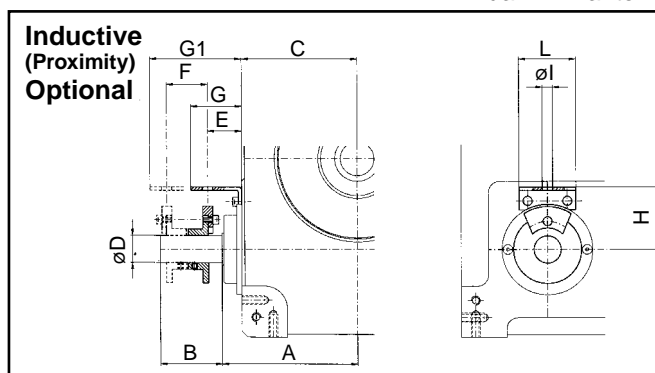
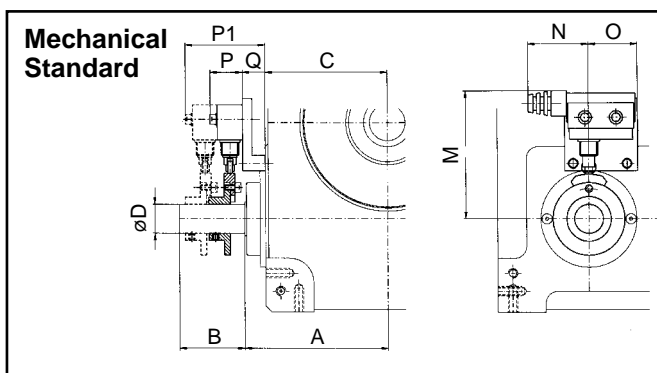
DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.

**SINGLE (Standard) AND DUAL (Optional)
LIMIT SWITCHES MOUNTED**

OVERALL DIMENSIONS OF CAM/LIMIT SWITCH

**For Model IT - Rotary Spindle-Indexing
For Model OT - Rotary Spindle-Oscillator**

Dual in Phantom



	A	B	C	ØD	E	F	G	G1	H	ØI	L	M	N	O	P	P1	Q
IT/OT10	2.95	1.18	2.68	0.47	0.59	1.26	1.18	2.36	2.17	0.33	1.73	4.33	1.97	1.57	1.10	2.17	0.20
IT/OT15	3.62	2.28	3.07	0.71	0.98	1.26	1.57	2.83	2.17	0.33	2.17	4.33	1.97	1.57	1.10	2.52	0.55
IT/OT25	4.72	2.17	4.21	0.94	1.18	1.38	1.97	3.35	2.17	0.33	1.97	4.33	1.97	1.57	1.10	2.76	0.79
IT/OT35	5.71	3.76	5.00	0.98	1.18	1.38	1.97	3.35	2.17	0.33	1.97	4.33	1.97	1.57	1.10	2.76	0.79
IT/OT55	7.68	3.54	7.28	1.18	1.18	1.38	1.97	3.35	2.44	0.33	1.97	4.33	1.97	1.51	1.10	2.76	0.79
IT/OT75	DIMENSIONS NOT AVAILABLE AT TIME OF PRINTING.																

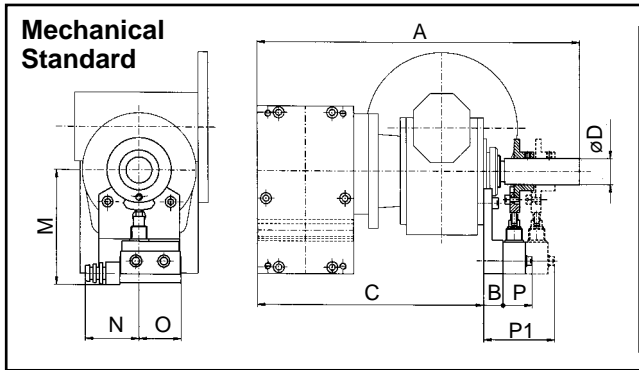
DIMENSIONS ARE ORIGINALLY METRIC, CONVERTED TO INCHES.

SINGLE (Standard) AND DUAL (Optional) LIMIT SWITCHES MOUNTED

OVERALL DIMENSIONS OF CAM/LIMIT SWITCH

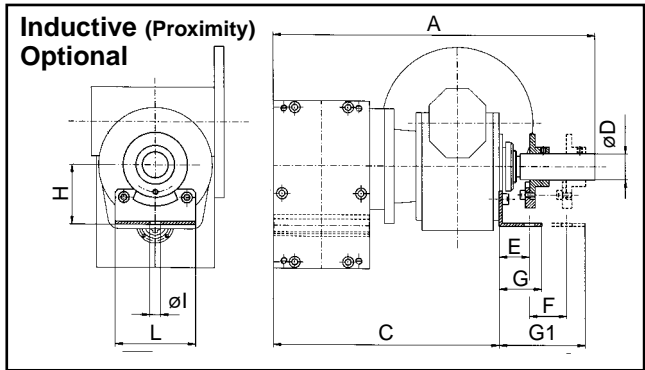
For Model AP

- Parallel Axis - Indexing



For Model OP

- Parallel Axis - Oscillating Dual in Phantom



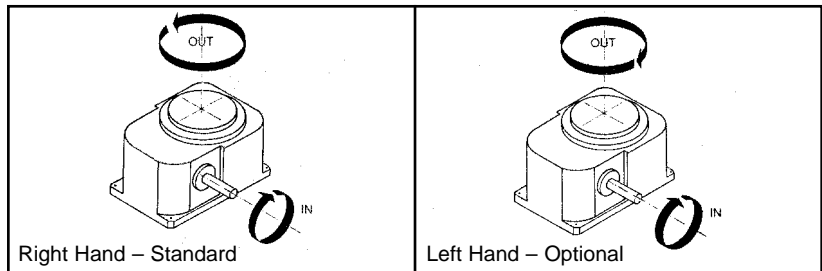
	A	B	C	ØD	E	F	G	G1	H	ØI	L	M	N	O	P	P1
AP/OP40	9.53	.71	6.34	.94	.98	1.38	1.77	3.15	2.17	.33	2.56	4.33	1.97	1.57	1.10	2.68
AP/OP55	11.81	.71	8.27	.94	1.10	1.38	1.77	3.15	2.17	.33	2.95	4.33	1.97	1.57	1.10	3.15
AP/OP70	25.40	1.18	9.69	.94	1.30	1.38	1.97	3.15	2.17	.33	2.95	4.33	1.97	1.57	1.10	3.15
AP/OP85	15.55	1.18	11.50	.94	1.77	1.38	2.56	3.94	2.17	.33	3.54	4.33	1.97	1.57	1.10	3.15
AP/OP110	16.93	1.18	13.15	.94	1.57	1.38	2.36	3.74	2.56	.33	4.33	4.33	1.97	1.57	1.10	3.15
AP/OP135	19.72	1.18	15.00	.94	1.89	1.38	2.68	4.06	3.74	.33	2.95	4.33	1.97	1.57	1.10	3.15
AP/OP165	DIMENSIONS NOT AVAILABLE AT TIME OF PRINTING.															
AP/OP200																
AP/OP250																

SHAFT ROTATIONS – INPUT & OUTPUT

BARREL CAM DIRECTION OF ANGULAR WEB

Standard is right hand angular web.

Illustration shows output rotation from input rotation. Reversing input shaft rotation (which will not cause harm) will result in opposite output rotation.



MODEL OT & OP OSCILLATING DRIVES

EX.: 90° Oscillating Arc, Model OT

Input shaft rotation showing sequence of movement, and dwell sequence of the output shaft.

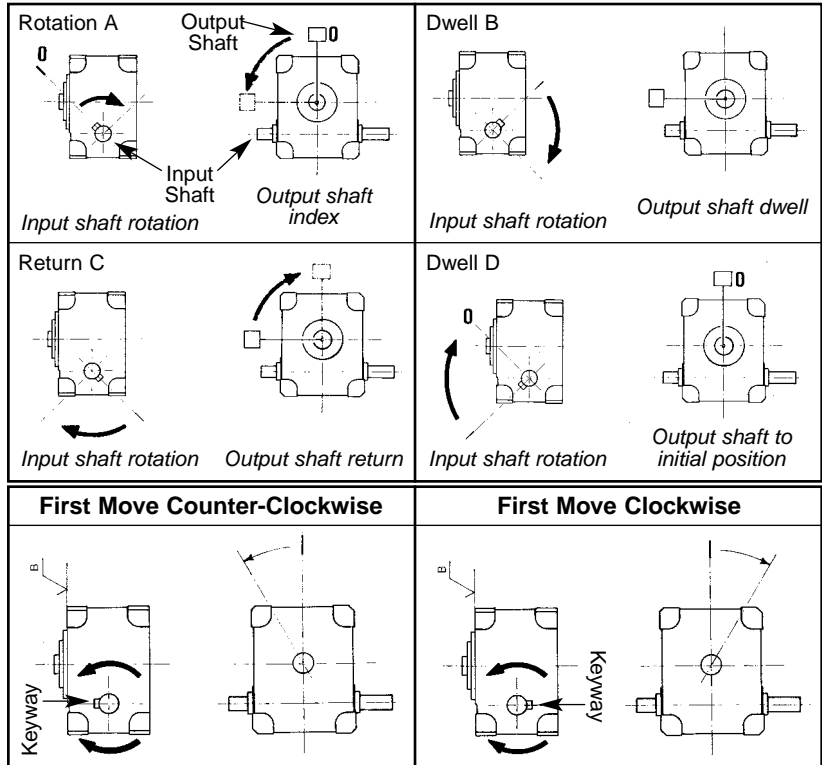
Each 90° rotation of the input shaft for a 360° revolution of the input shaft provides (A) index in one direction, (B) dwell, (C) index in the other direction, and (D) dwell at start.

For index and dwell times, refer to bulletin "Calculation for Applying the Model OT & OP Oscillating Drives".

The model OT & OP oscillating drives have an input shaft with keyway. When the keyway is positioned square to plane B at the top, the internal cam will be in the middle of dwell D. This position can be used as setting point for the limit switch.

If the input shaft in this position is rotated, whichever the rotation direction, the first angular displacement of the output shaft will be counterclockwise (See A above). To have it clockwise, you only need to place the inlet shaft 180° from the position mentioned above, i.e. square to plane B and with the keyway looking in the direction opposite to the output shaft.

On model OP oscillating parallel drive first input and output shaft direction must be specified at the time of order.



WARRANTY

At the discretion of Easom Automation Systems, any reasonable problem with a new, or completely rebuilt product in material or workmanship deemed the fault of Autorotor will be warranted up to one year from date of shipment. Notification of any warranty claim must be presented to Easom Automation Systems and all warranty work completed within the one year warranty period.

Easom Automation Systems reserves the right to do all warranty and/or adjustments at our plant. Expenses such as shipping, customs, etc. are not the responsibility of Easom Automation Systems. Any work done outside of our plant voids the warranty. Charge-back invoices will not be honored. Easom Automation Systems' **only** obligation is limited to replacement of those parts which, in our opinion, are found defective. We are not liable for delays, nonperformance, injury, loss of production or profit, or any damage which may be directly or indirectly implied. The total dollar amount of liability is limited to the total amount on our invoice. All sales are final.

A completed Application Information form signed by a responsible employee of the claimant and received by Easom Automation Systems before shipment is necessary for validation of warranty.

All precautions and methods must be adhered to for validation of warranty. Improper application or lack of maintenance voids this warranty.

Components applied to the Autorotor Indexer are limited to the warranty of the component manufacture.

All claims resulting from transit must be made directly to the carrier. Claims of shortage must be received by Easom Automation Systems within 30 days of shipment. All incorrectly quoted, printed, dimensional, or typographical errors are subject to correction. The right to change design and specifications is reserved.

The above is in lieu of all other warranties expressed or implied.

Cancellations will be billed for cost incurred.

TABLE OF CONTENTS

Types of Indexers	Inside Front Cover
Easom Automation Systems	1
Application Information Form	2
Additional Application Information And Mounting Positions, Model T, TA, IT & OT	3
Station Numbers and Cam Angles	4 - 5
Index Time and Cam Angles	6
Engineering	7 - 8
Dimensions: Indexers Model T	9 - 17
Rotary Spindle (Indexing) & (Oscillating) Drives Description	18
Rotary Spindle (Indexing) & (Oscillating) Drives Dimensions	19 - 20
Parallel Axis Drive Description	21 - 22
Parallel Axis Drive Dimensions	23 - 25
Principal of the Barrel Cam Drive	26
Application of the Barrel Cam	26
Assembly of the Barrel Cam	27
Power to the Indexer	27 - 28
Means of Manually Operating the Indexer	29
Electric Power to the Standard A.C. Electrical Brake Motor	29
Schematically Interlocking of the Indexer with Related Working Heads	29
Dimensions: Limit Switches	30 - 31
Input Shaft and Drive Rotations	31
Warranty	32



TYPES OF AUTOROTOR INDEXERS:

Model T (Normal Accuracy - All Sizes)
Model TA (Lesser Accuracy, Lower Cost
Size TA10, TA15, TA25 - Only)
 (Table Top for Mounting of a Tooling Plate)
 Rotary Indexing Table
 DETAILS PAGES 2 - 17

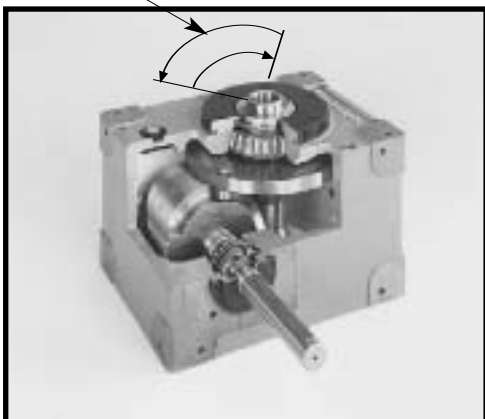


Model IT
 (Center Rotating Spindle for Mounting Drive Tooling)
 Rotary Indexing Spindle
 DETAILS PAGES 18 - 20

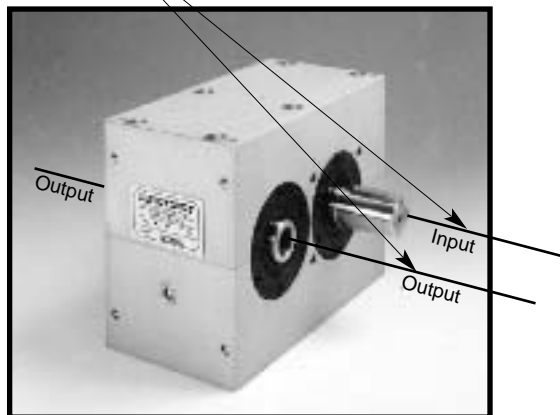


For cutaway, see middle, left.

Model OT
 (Center Rotating Spindle for Mounting Drive Tooling)
 (Oscillator - For Pick & Place) 30°, 45°, 60°, 75°, 90°
 DETAILS PAGES 18 - 20

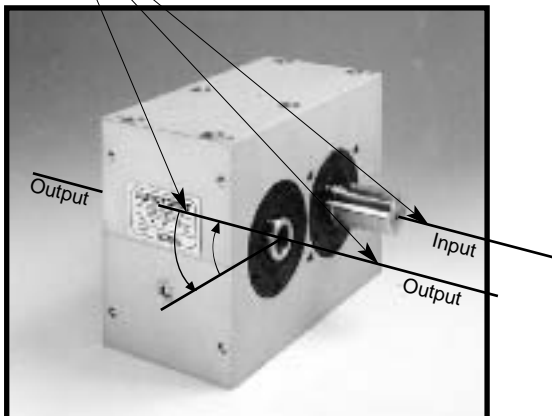


Model AP
 (Parallel Axis Drive for Conveyors)
 Full Rotational Indexing
 DETAILS PAGES 21 - 25



For cutaway, see Page 21.

Model OP
 (Parallel Axis Drive for Rise and Fall Motion)
 OSCILLATING: 15° or 20°, or 30° or 45°
 DETAILS PAGES 21 - 25

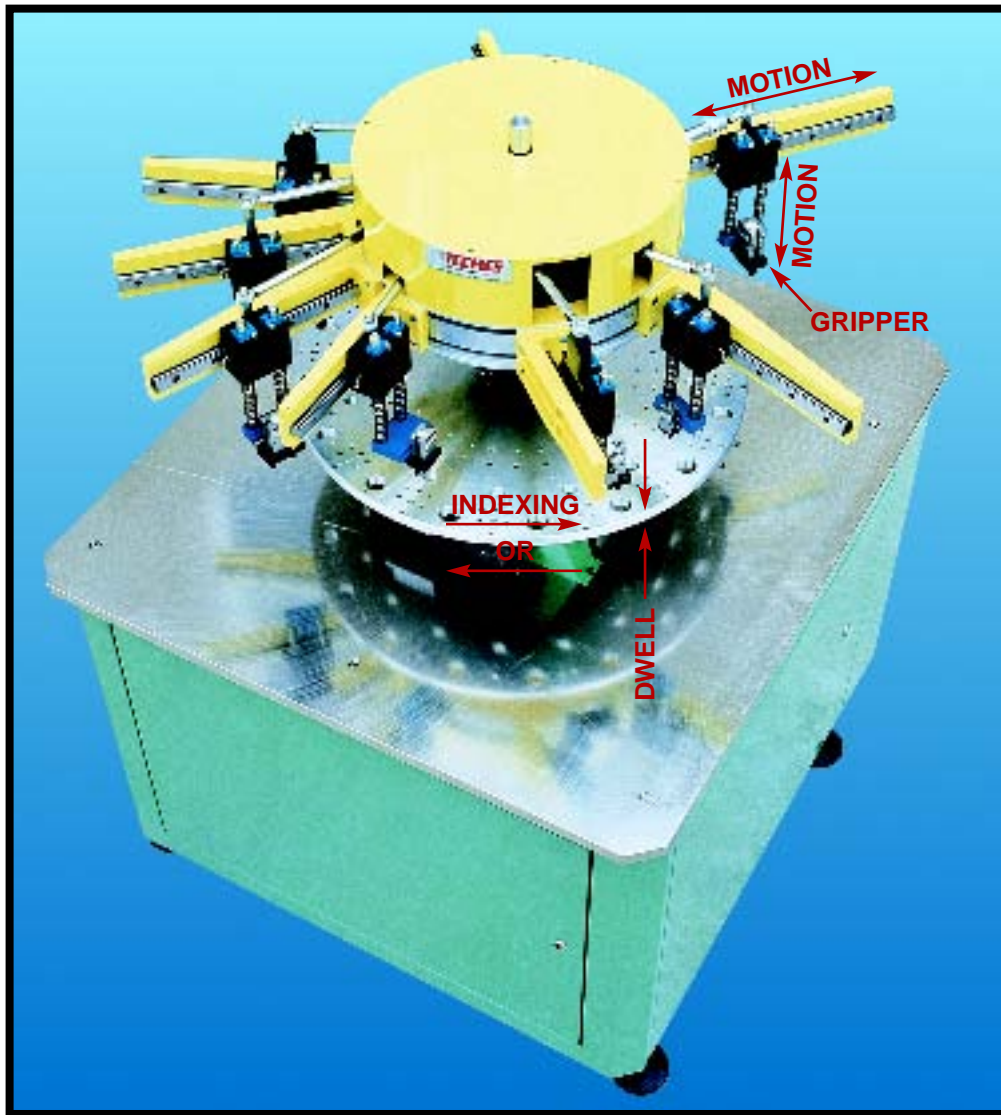


For cutaway, see Page 21.

The Autorotor indexer conforms to the European Community (C.E.) manufacturing standards, which is known for the ultimate in quality craftsmanship.

Easom Automation Systems offers to our North American customers the hometown advantage of local, total service for the Autorotor products.

The purpose of this literature is to properly select and apply the correct indexer for your application.



**3 Models Available
8 to 36 Stations**

TECMES ASSEMBLY MACHINES

Complete with index table, pick and place, and rise and fall for up to 90 assemblies per minute - ready for your tooling.

Request TECMES Bulletin for Quotation Purposes

EASOM AUTOMATION SYSTEMS, INC.

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WWW.EASOM.COM