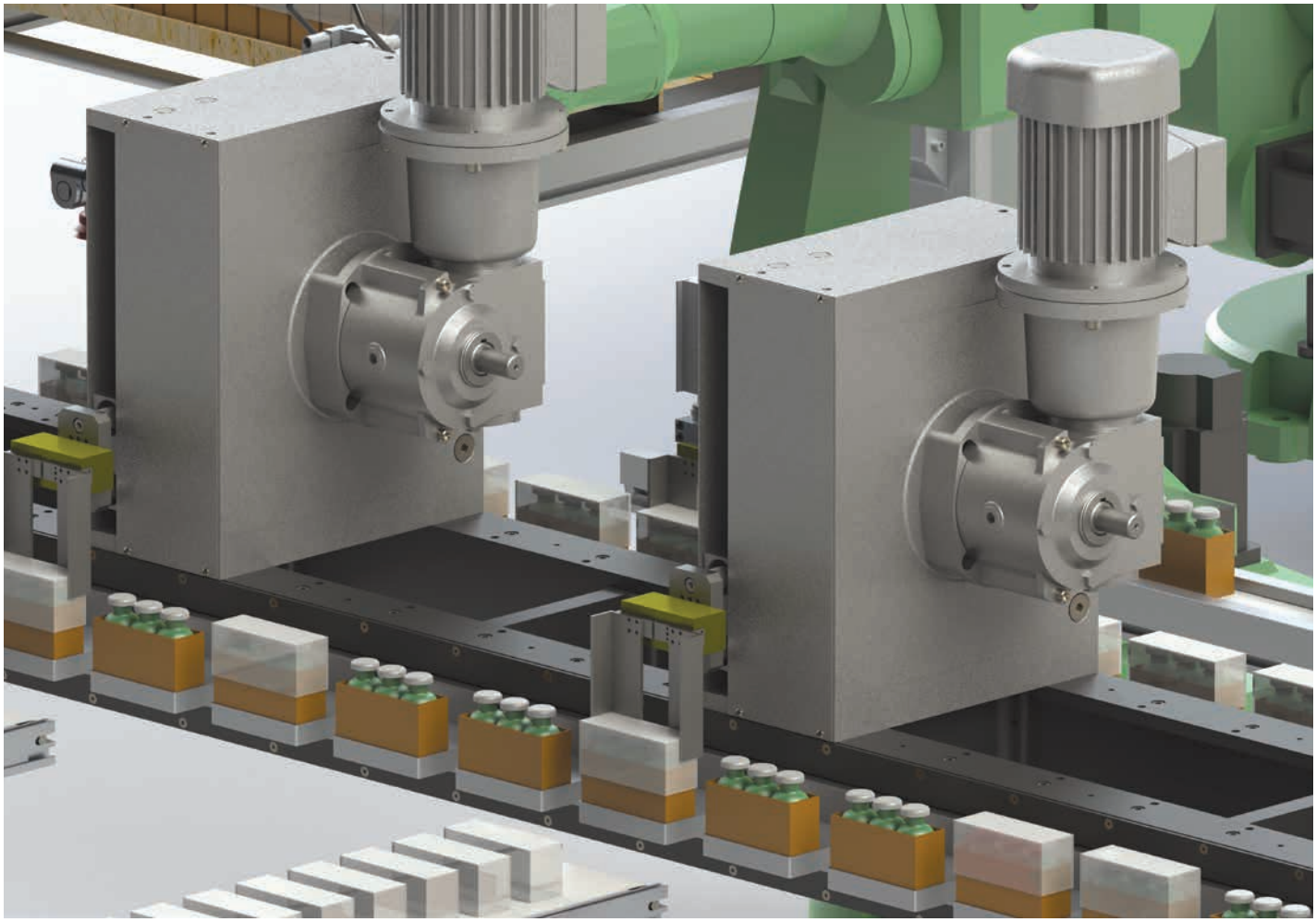
LINEAR PART HANDLER

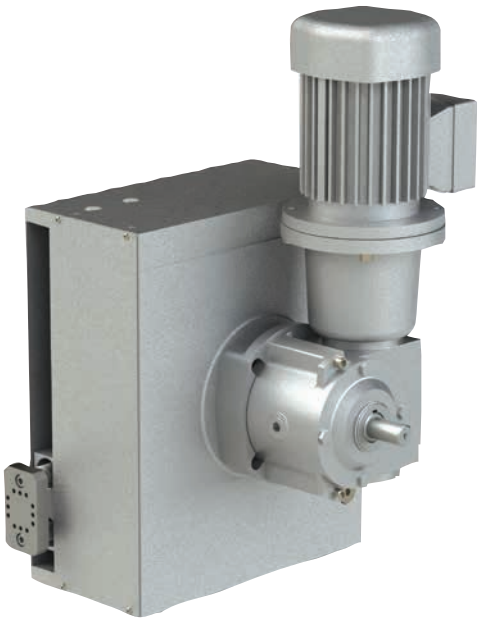
Gripper Mounting Accessory



Indexer driving a conveyor and Linear Part Handlers

- Operation can be asynchronous (cycle on demand) – a single index followed by a variable dwell time, or the operation can be continuous.
- Index motion time is changed by changing the motion profile of the servo motor.
- Dwell time is variable. Single axis servo or multiple axis servo controllers can be used.
- More than 60 cycles per minute – maximum cycle rate can be determined by your application engineer.

LINEAR PART HANDLER



Features:

CAMCO Cambot® Linear Parts Handlers, combined with other DESTACO products, offer a low maintenance, cost-effective solution for a complete parts handling package.

Cost effective design for low-cost operation
- Reliable CAMCO mechanical cam design
- Lubed for Life

Easy integration with other DESTACO products for one-stop shopping
- Camco Modular Precision Link Conveyors and Ring Drives
- DESTACO Vacuum products
- Robohand Direct Connect™ Grippers (no adapter plates) and E-Gripper

Customized for your application
- Input shaft available on either side for ease of integration
- Line shaft drive or gear reducer and motor drive package for synchronous or asynchronous operation

Standard or custom strokes and timing designed for your specific requirements

Applications:

Automated production systems with small parts transfer such as consumer products, electronics, and medical device assembly and test.

Table of Contents

LINEAR PART HANDLER

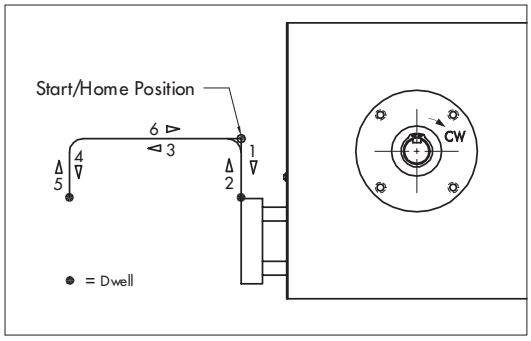
How To Order

LPP Ordering Procedure

1. Model
2. Lift (Vertical) Stoke
3. Transfer (Horizontal) Stroke

Standard Strokes: Lift x Transfer mm [in]	
M100	**M150**
15.0 [0.59] x 100 [3.94]	15 [0.59] x 150 [5.91]
45 [1.77] x 100 [3.94]	45 [1.77] x 150 [5.91]
65 [2.56] x 20 [0.79]	75 [2.95] x 50 [1.97]
65 [2.56] x 60 [2.36]	75 [2.95] x 110 [4.33]
65 [2.56] x 100 [3.94]	75 [2.95] x 150 [5.91]

4. Output Sequence (Standard or Custom)

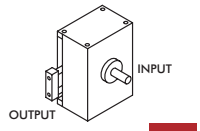
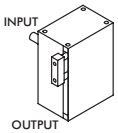
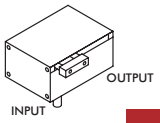
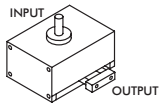
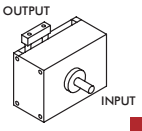
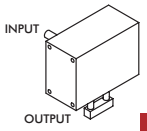


5. Drive Page including Gear Reducer, Motor, and AC Drive

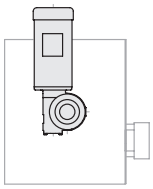
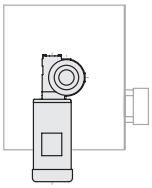
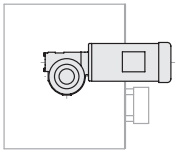
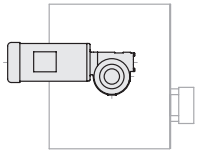
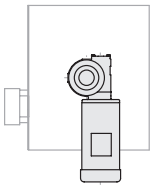
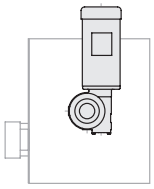
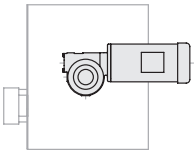
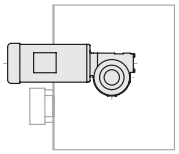
Model	Gear Reducer	AC Motor	1 hp AC Drive Input Voltage (select 1)		
M100	R180	1/3 hp	120 VAC	240 VAC	480 VAC
M150	R225	3/4 hp	120 VAC	240 VAC	480 VAC

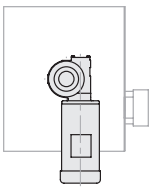
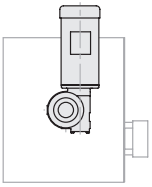
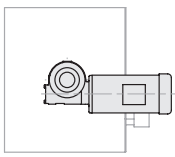
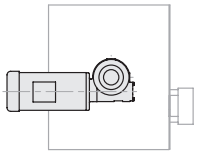
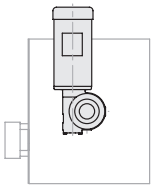
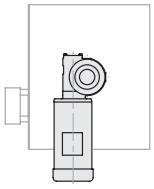
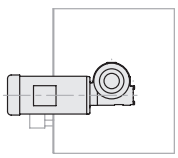
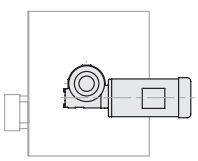
LINEAR PART HANDLER

Mounting Position

OHUI (output horizontal, under input)	OHOI (output horizontal, over input)	OHID (output horizontal, input down)	OHIU (output horizontal, input up)	VU (output vertical up)	VD (output vertical down)
 1	 2	 3	 4	 5	 6

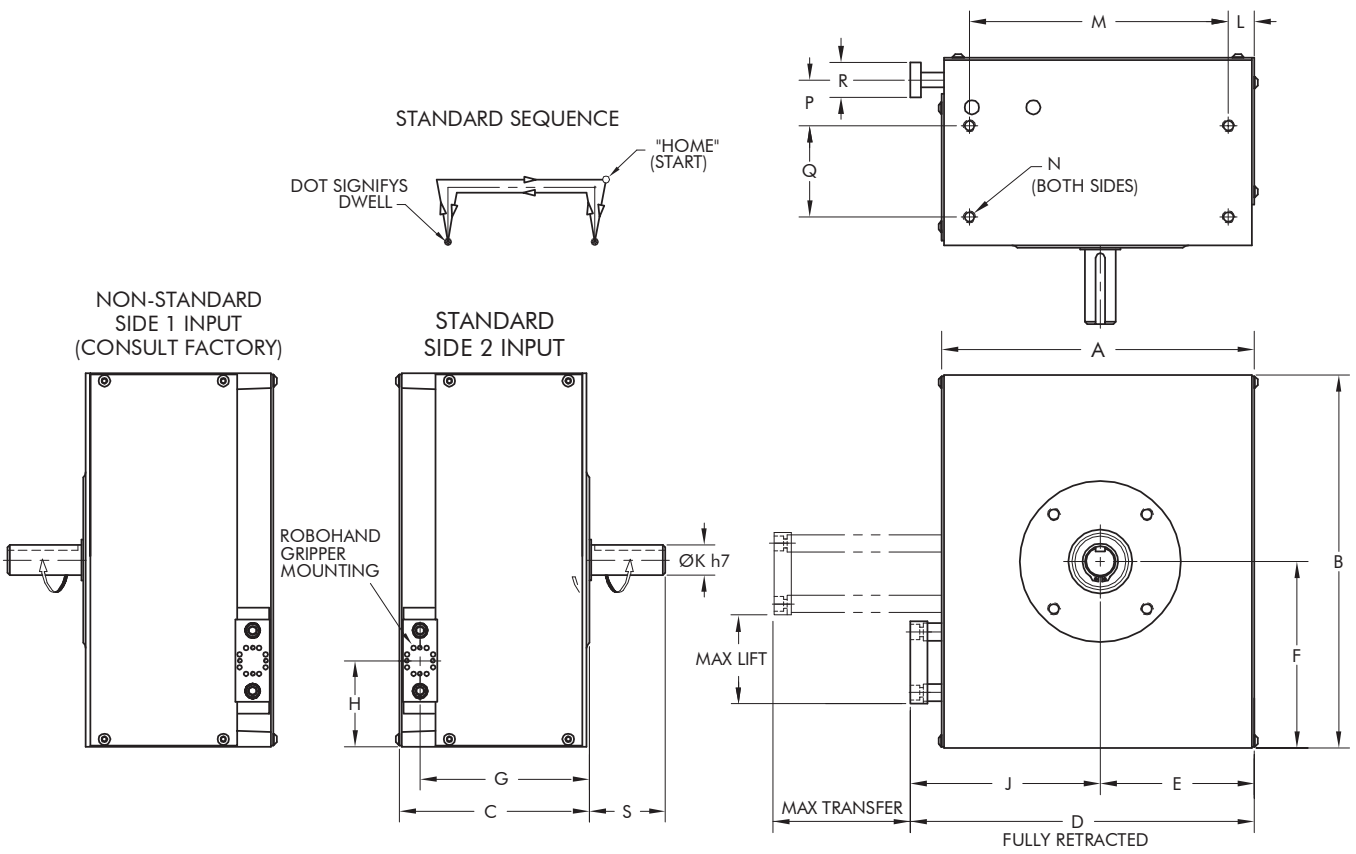
Gear Reducer Mounting Positions

	Mounting "A"		Mounting "B"	
	RH	LH	RH	LH
SIDE 1	 A	 B	 C	 D
SIDE 2	 E	 F	 G	 H

	Mounting "C"		Mounting "D"	
	RH	LH	RH	LH
SIDE 1	 J	 K	 L	 M
SIDE 2	 N	 P	 R	 S

M100/M150 SERIES

Linear Part Handler | Dimensions and Technical Information



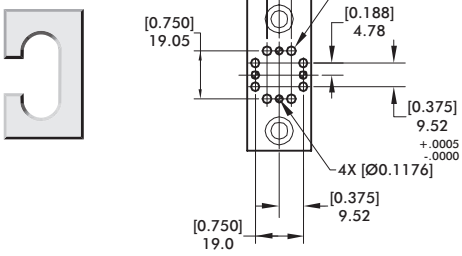
Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
M100	[9.88] 251.0	[11.42] 290.0	[5.71] 145.0	[11.01] 279.7	[4.84] 123.0	[5.71] 145.0	[5.12] 130.0	[2.56] 65.0	[6.18] 157.0	[0.98] 25.0	[0.47] 12.0	[8.86] 225.0	4 x M8	[1.57] 40.0	[2.56] 65.0	[1.00] 25.4	[1.97] 50.0
M150	[13.07] 332.0	[15.75] 400.0	[6.69] 170.0	[14.41] 366.0	[6.30] 160.0	[7.87] 200.0	[5.83] 148.0	[3.54] 90.0	[8.11] 206.0	[1.18] 30.0	[0.59] 15.0	[11.81] 300.0	4 x M10	[1.57] 40.0	[3.15] 80.0	[2.01] 51.0	[2.17] 55.0

Technical Specifications				
Model	Maximum Lift mm [in]	Maximum Transfer mm [in]	Capacity at 30 rpm kg [lb]	Capacity at 60 rpm kg [lb]
M100	65.0 [2.56]	100.0 [3.94]	8 [18]	3.6 [8]
M150	75.0 [2.95]	150.0 [5.91]	18 [40]	9 [20]

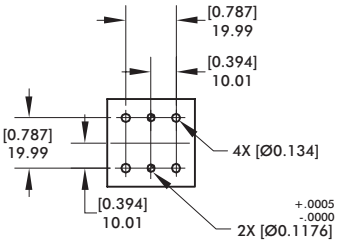
Model	Lift		Transfer	
	Accuracy	Repeatability	Accuracy	Repeatability
M100	±.13 mm [±.005 in]	±.03 mm [±.001 in]	±.08 mm [±.003 in]	±.03 mm [±.001 in]
M150	±.20 mm [±.008 in]	±.08 mm [±.003 in]	±.08 mm [±.003 in]	±.03 mm [±.001 in]

Gripper Mounting Block

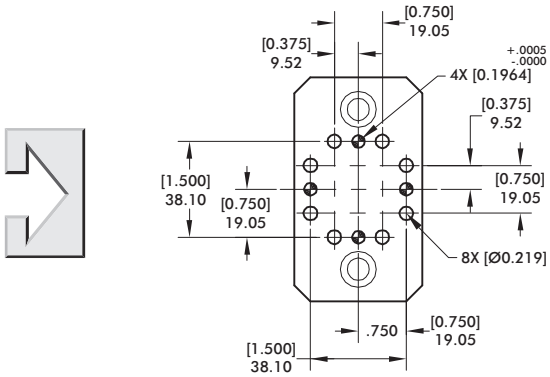
M100
DIRECTCONNECT



M100
ROBOHAND E-GRIPPER



M150
DIRECTCONNECT



Robohand DirectConnect Grippers & Rotaries

Consult the DESTACO Automation Catalog or your local sales representative for information about these items.

Model	E-Gripper	DPDS/DPDL	DPG	DPP	DPW	DCT	DRF
M100	RPE-100M RPE-101M	DPDS-047M DPDS-056M DPDL-047M DPDL-056M	N/A	DPP-10M-06 DPP-10M-12 DPP-14M-15 DPP-14M-25	DPW-250M-1 DPW-250M-2	DCT-12M DCT-16M DCT-20M	N/A
M150	N/A	DPDS-088M DPDS-125M DPDL-088M DPDL-125M	DPG-10M-1 DPG-10M-2 DPG-10M-3 DPG-10M-4	DPP-20M-25 DPP-20M-28 DPP-28M-31 DPP-28M-50	DPW-375M-1 DPW-375M-2 DPW-500M-1 DPW-500M-2	DCT-25M	DRF/DRG-075M DRF/DRG-094M DRF/DRG-106M

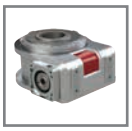
ROTARY PART HANDLER

Product Overview

INDEXERS

Servo Positioners

GTB Series
Globoidal (Roller Gear)
Servo Positioner..... IN-SRV-1

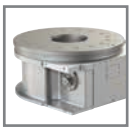


RSD Series
Rotary Servo Drives..... IN-SRV-39

Mechanical Indexers

RDM Series
Rotary Index Drive IN-MCH-2

RD Series
Roller Dial Index Drive..... IN-MCH-18

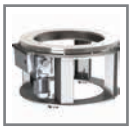


E Series
Heavy-Duty Index Drive IN-MCH-30

RA Series
Right Angle Index Drive IN-MCH-42

RGD/RGS Series
Roller Gear Index Drive IN-MCH-52

P Series
Parallel Shaft/Flange Drive.... IN-MCH-72



RNG Series
Ring Drive Dial Indexer.....IN-MCH-84

OVERLOAD CLUTCHES

Overload Clutches
Output Overload..... IN-CLU-1

CUSTOM CAMS

Custom Cams
Cam Design Solutions IN-CAM-1

CONVEYORS

Rite-Link Series
Thin-Profile..... IN-CNV-1

Precision Link Series
Table-Top IN-CNV-4

Precision Link Series
Heavy-Duty IN-CNV-16

PARTS HANDLERS

LPP Series
Linear Part Handlers IN-PRT-2

RPP Series
Rotary Part Handlers IN-PRT-8

ROTARY PART HANDLER

Features:

The **CAMCO RPP Cambot® Rotary Parts Handler** is designed for high precision and high capacity. This proven design can be used in a wide variety of industries including automotive, packaging and electronics among others. The RPP can be combined with other CAMCO products such as index drives and precision conveyors for a complete, automated system. The RPP is ideal for pick and place applications with features including:

Rugged and precise cam operated mechanisms engineered for a minimum of 8000 hours of maintenance-free life.

Hardened and ground cams drive both the lift and rotary axes.

Preloaded precision cam followers eliminate backlash and ensure smooth movement.

Preloaded taper roller bearings on the camshaft (Input Shaft).

Four-point contact preloaded roller bearing on the rotary axis.

All bearings are lubricated by an oil bath.

One-piece lift arm.

Ball bushings (recirculating-ball type) support the main lift shaft and turn the large output surface and ride on hardened shafts for stability and stiffness.

Manufactured in a fully integrated application, design, manufacturing and inspection environment.

Table of Contents

ROTARY PART HANDLER

How to Order

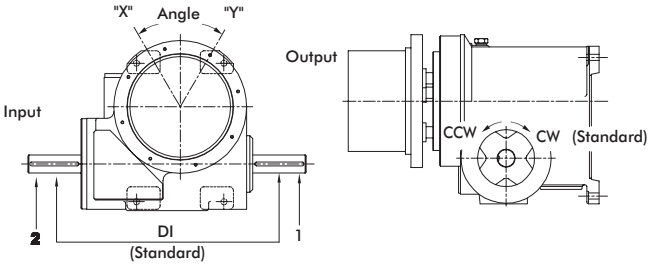
RPP Ordering Procedure

1. Model
2. Rotary Motion (degrees)
   - Oscillator or indexer
   - Oscillator: Home at X or Y
   - Indexer: CW or CCW index
3. Lift (inches)
4. Input Shaft: Side 1, Side 2 or Double Input (DI)
5. Mounting Position: 1-6

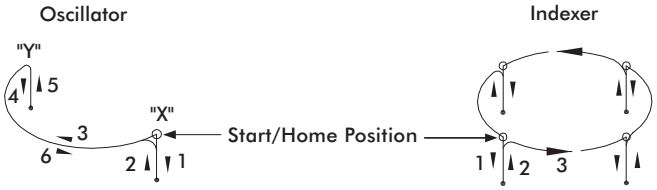
Reducer Ordering Procedure

1. Reducer Model, Ratio and Mounting Position
2. Motor Adaptor Model
3. Motor size

Input Shaft Configuration

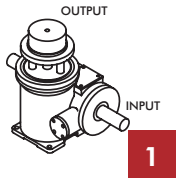
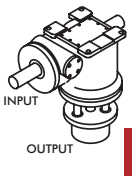
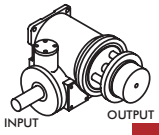
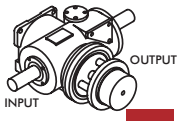
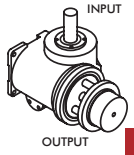
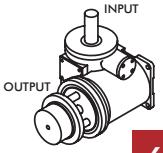


Standard Output Sequence

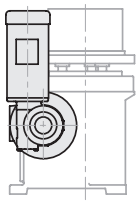
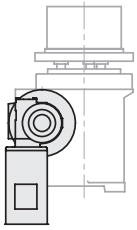
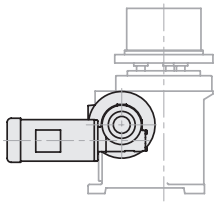
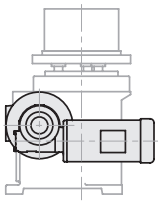
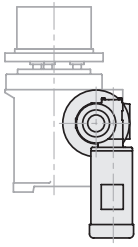
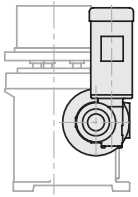
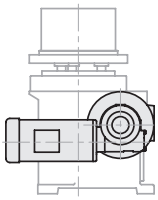
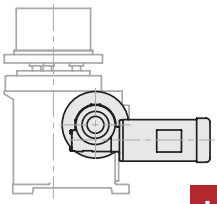


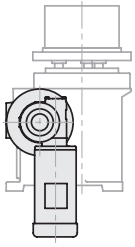
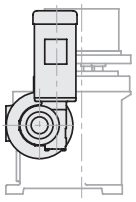
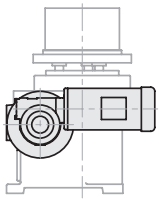
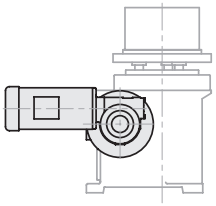
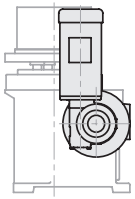
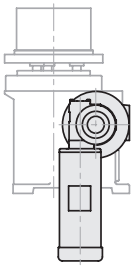
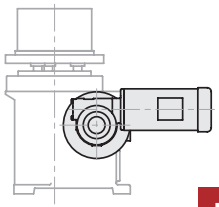
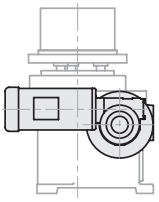
ROTARY PART HANDLER

Mounting Position

OVOI (output vertical, over input)	OVUI (output vertical, under input)	OHOI (output horizontal, over input)	OHUI (output horizontal, under input)	H-S1-UP (output horizontal, side 1 up)	H-S2-UP (output horizontal, side 2 up)
 1	 2	 3	 4	 5	 6

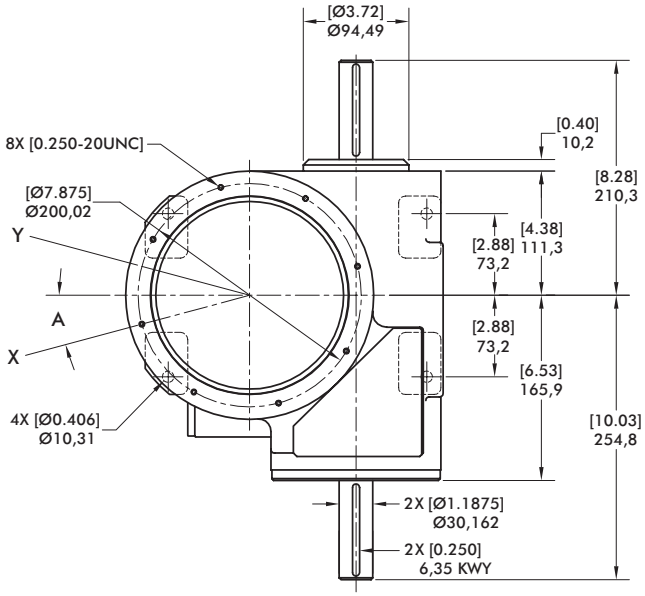
Gear Reducer Mounting Positions

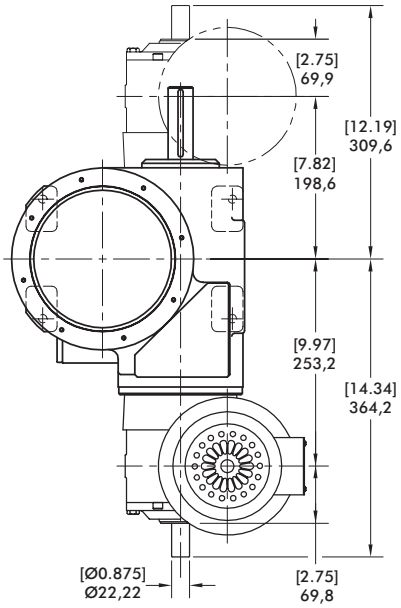
	Mounting "A"		Mounting "B"	
	RH	LH	RH	LH
SIDE 1	 A	 B	 C	 D
SIDE 2	 E	 F	 G	 H

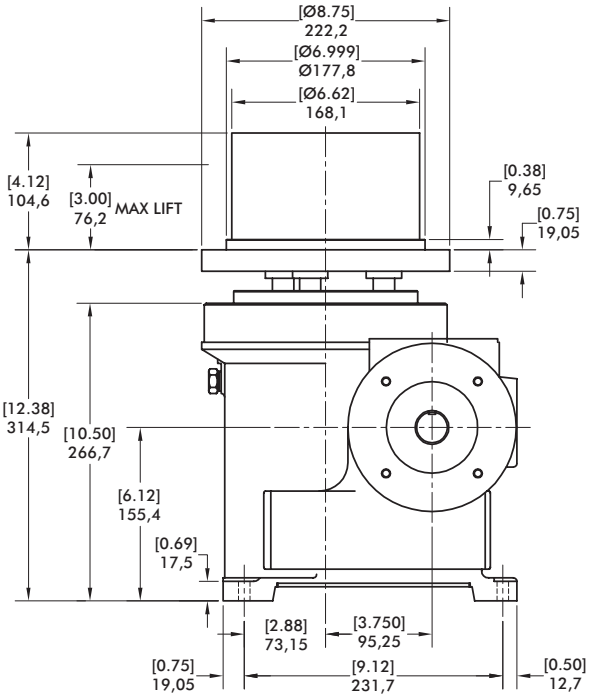
	Mounting "C"		Mounting "D"	
	RH	LH	RH	LH
SIDE 1	 J	 K	 L	 M
SIDE 2	 N	 P	 R	 S

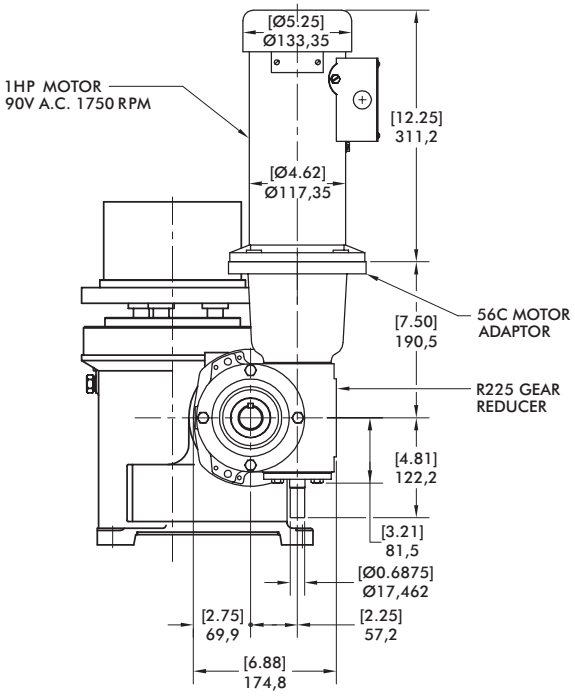
300RPP SERIES

Rotary Part Handler | Configurations









Indexing Motion			
Rotation	**Angle A**	**Lift mm [in]**	**Model**
120°	0°	25,4 [1]	300RPP120H24-1H24
		50,8 [2]	300RPP120H24-2H24
90°	15°	25,4 [1]	300RPP90H24-1H24
		50,8 [2]	300RPP90H24-2H24
		76,2 [3]	300RPP90H24-3H24
60°	0°	25,4 [1]	300RPP60H24-1H24
		50,8 [2]	300RPP60H24-2H24
		76,2 [3]	300RPP60H24-3H24
45°	22.5°	25,4 [1]	300RPP45H24-1H24
		50,8 [2]	300RPP45H24-2H24
		76,2 [3]	300RPP45H24-3H24

Oscillating Motion			
Rotation	**Angle A**	**Lift mm [in]**	**Model**
180°	0°	25,4 [1]	300RPP2H24-1H24
		50,8 [2]	300RPP2H24-2H24
		76,2 [3]	300RPP2H24-3H24
120°	0°	25,4 [1]	300RPP3H24-1H24
		50,8 [2]	300RPP3H24-2H24
		76,2 [3]	300RPP3H24-3H24
90°	0°	25,4 [1]	300RPP4H24-1H24
		50,8 [2]	300RPP4H24-2H24
		76,2 [3]	300RPP4H24-3H24
60°	0°	25,4 [1]	300RPP6H24-1H24
		50,8 [2]	300RPP6H24-2H24

Features

- Standard Indexing or Oscillating Motion
- R225 Reducer (Ratios from 5:1 to 60:1)
  — 56C Motor Adapter and Coupling
- 1 HP AC Drive Package with Inverter Duty Motor and Inverter Drive (up to 60 cpm)

Optional Accessories

- 1 HP DC Motor
- Varipak DC Motor Control (up to 30 cpm)

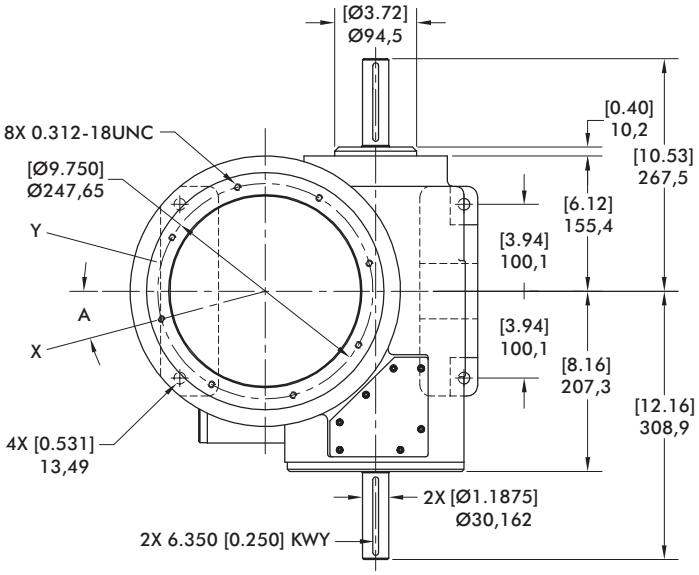
Capacity:*

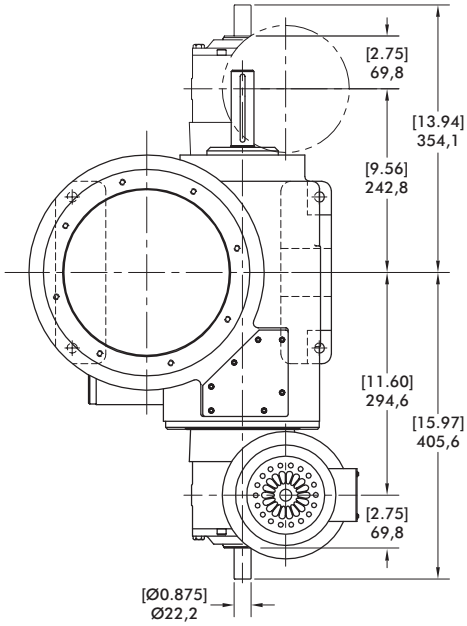
Maximum Mass	68,04 kg [150 lbm]
Maximum Inertia	4975 kg-cm² [1700 lb-in²]

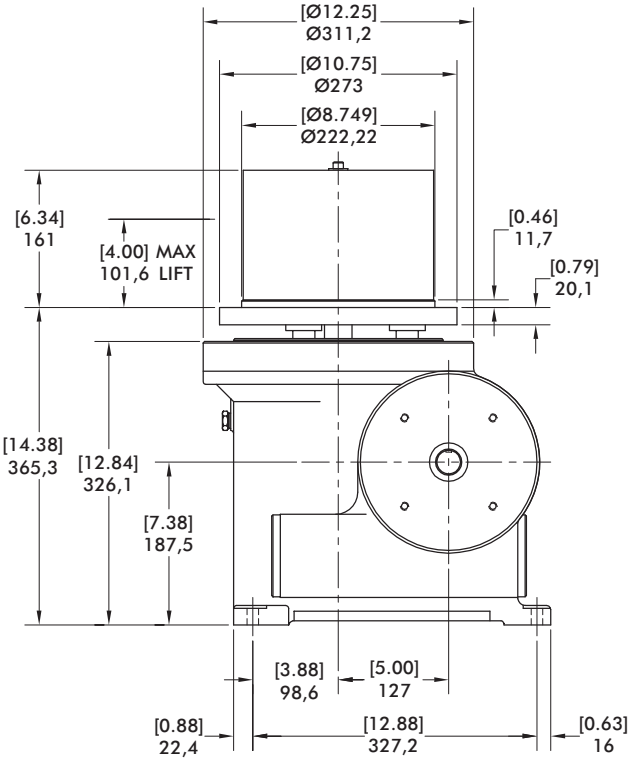
* Note: These values are for speeds of less than 30 rpm, the minimum cam time for rise and rotation, and are for reference only. Each application must be reviewed and approved by CAMCO Engineering.

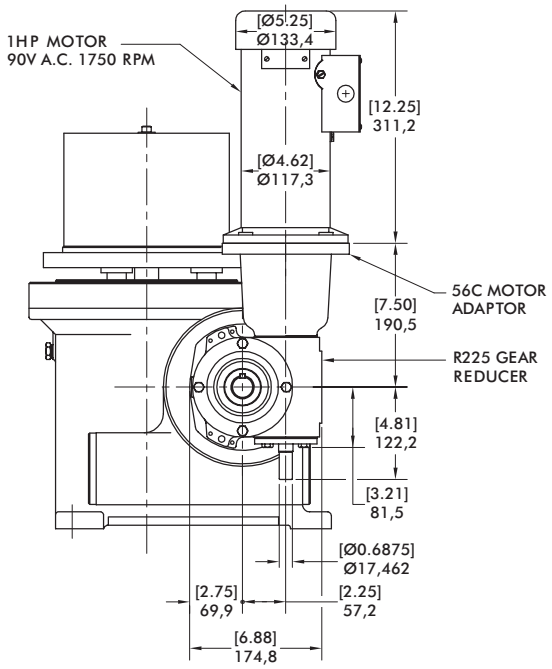
500RPP SERIES

Rotary Part Handler | Configurations









Indexing Motion			
Rotation	**Angle A**	**Lift mm [in]**	**Model**
180°	0°	50,8 [2]	500RPP2H32-2H32
		76,2 [3]	500RPP2H32-3H32
		101,6 [4]	500RPP2H32-4H32
120°	0°	50,8 [2]	500RPP3H32-2H32
		76,2 [3]	500RPP3H32-3H32
		101,6 [4]	500RPP3H32-4H32
90°	0°	50,8 [2]	500RPP4H32-2H32
		76,2 [3]	500RPP4H32-3H32
		101,6 [4]	500RPP4H32-4H32
60°	0°	50,8 [2]	500RPP6H32-2H32
		76,2 [3]	500RPP6H32-3H32
		101,6 [4]	500RPP6H32-4H32

Oscillating Motion			
Rotation	**Angle A**	**Lift mm [in]**	**Model**
120°	0°	50,8 [2]	500RPP120H32-2H32
		76,2 [3]	500RPP120H32-3H32
90°	15°	50,8 [2]	500RPP90H32-2H32
		76,2 [3]	500RPP90H32-3H32
		101,6 [4]	500RPP90H32-4H32
60°	0°	50,8 [2]	500RPP60H32-2H32
		76,2 [3]	500RPP60H32-3H32
		101,6 [4]	500RPP60H32-4H32
45°	22.5°	50,8 [2]	500RPP45H32-2H32
		76,2 [3]	500RPP45H32-3H32
		101,6 [4]	500RPP45H32-4H32

Features

- Standard Indexing or Oscillating Motion
- R225 Reducer (Ratios from 5:1 to 60:1)
  — 56C Motor Adapter and Coupling
- 1 hp AC Drive Package with Inverter Duty Motor and Inverter Drive (up to 60 cpm)

Optional Accessories

- 1 hp DC Motor
- Varipak DC Motor Control (up to 30 cpm)

Capacity:*

Maximum Mass	81,65 kg [180 lbm]
Maximum Inertia	9204 kg-cm² [3145 lb-in²]

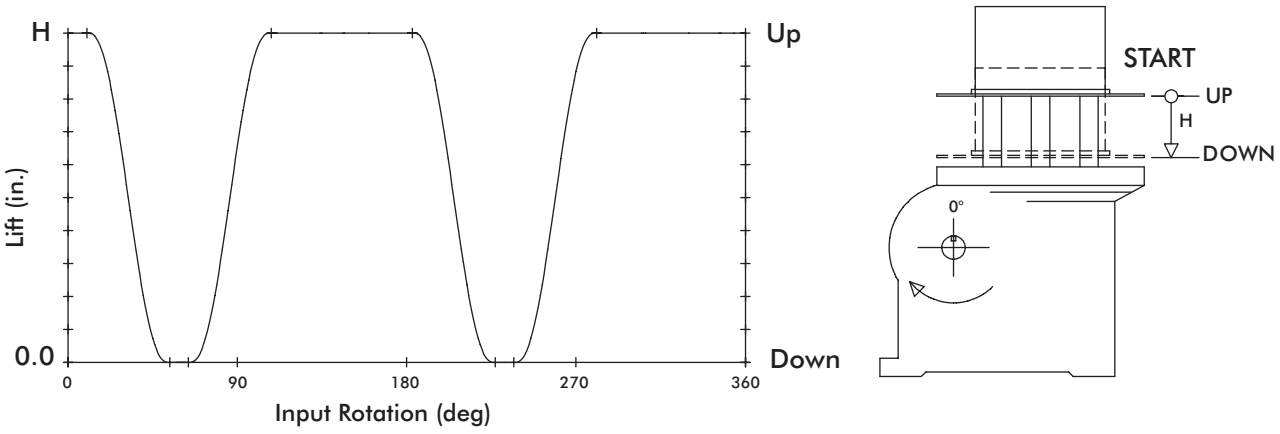
Capacity:*

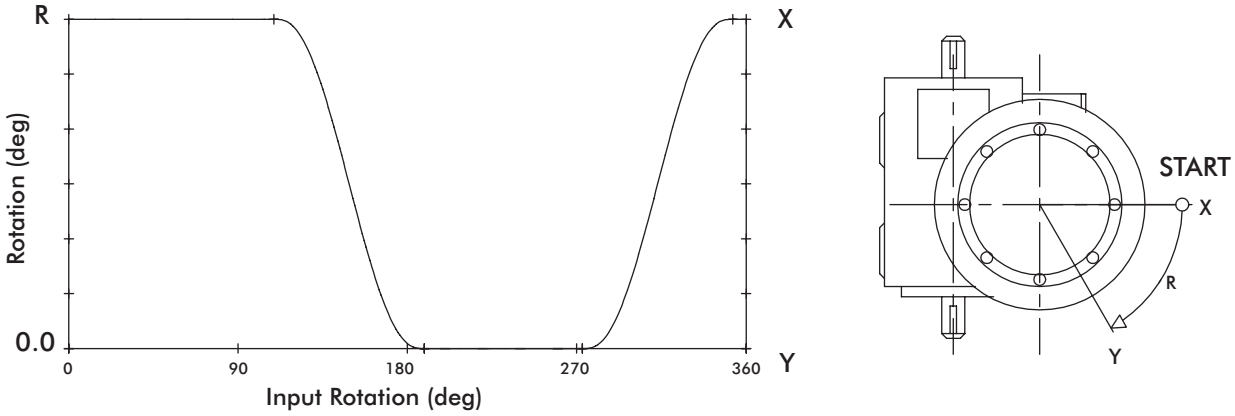
Maximum Mass	180 lbs
Maximum Inertia	3415 lb-in²

* Note: These values are for speeds of less than 30 rpm, the minimum cam time for rise and rotation, and are for reference only. Each application must be reviewed and approved by CAMCO Engineering.

ROTARY PART HANDLER

Oscillator Timing Diagram

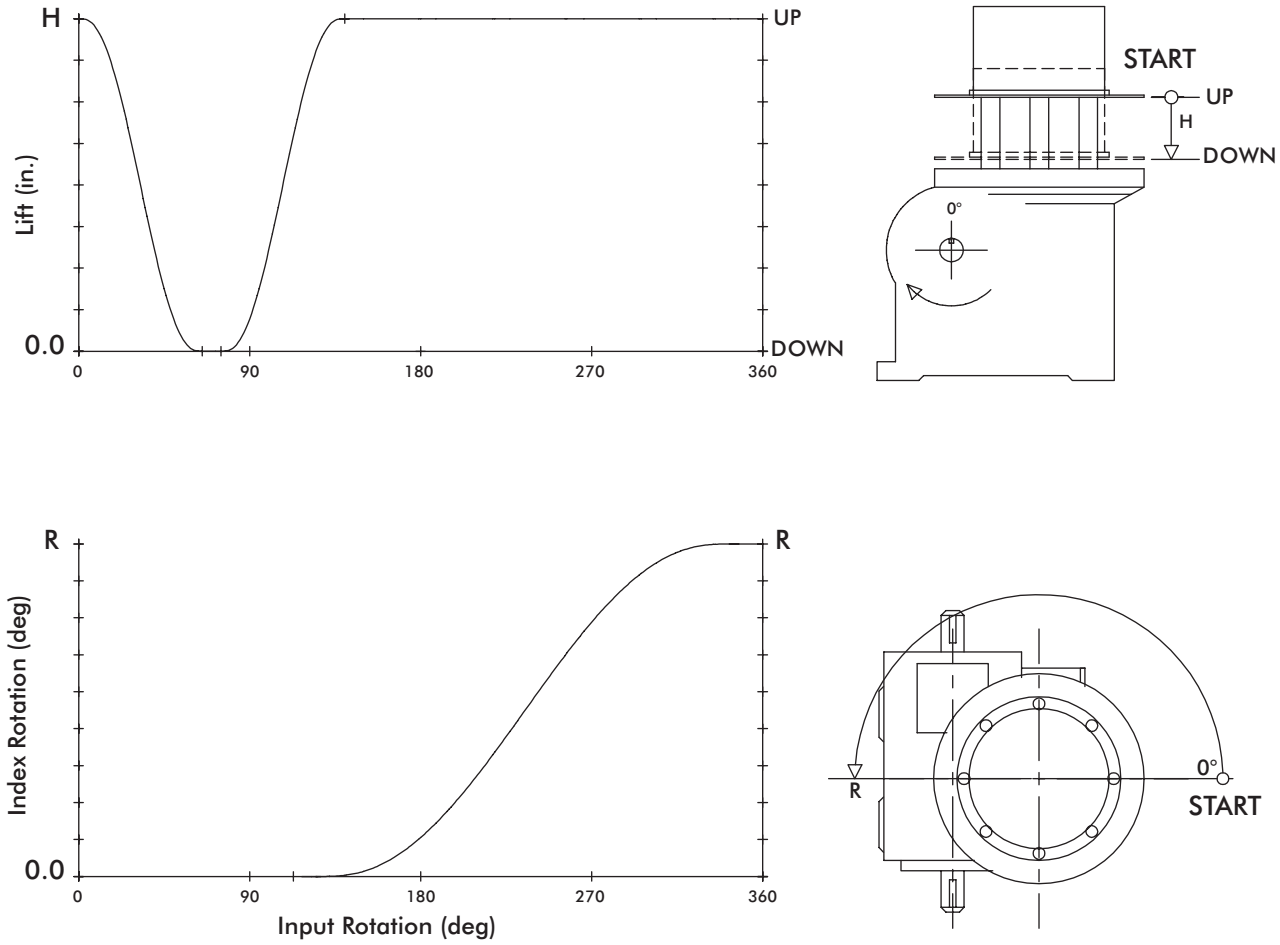




Motion Options

- Standard starting position (home) at time 0 is at maximum rise (up) and at the X rotary position.
- The standard sequence can be mirrored in either the lift, rotary or both:
  - — The mirrored lift starts in the zero elevation or down position
  - — The mirrored rotary motion starts at Y.
- Custom motion times are also available – consult your Sales Agent for more information.

Indexer Timing Diagram



Motion Options

- Standard starting position (home) at time 0 is at maximum rise (up) and at the start of a counter-clockwise index (right-hand cam helix).
- The standard sequence can be mirrored in either the lift, rotary or both:
  - — The mirrored lift starts in the zero elevation or down position
  - — The mirrored rotary motion is a clockwise index (left-hand helix)
- Custom motion times are also available – consult your Sales Agent for more information.