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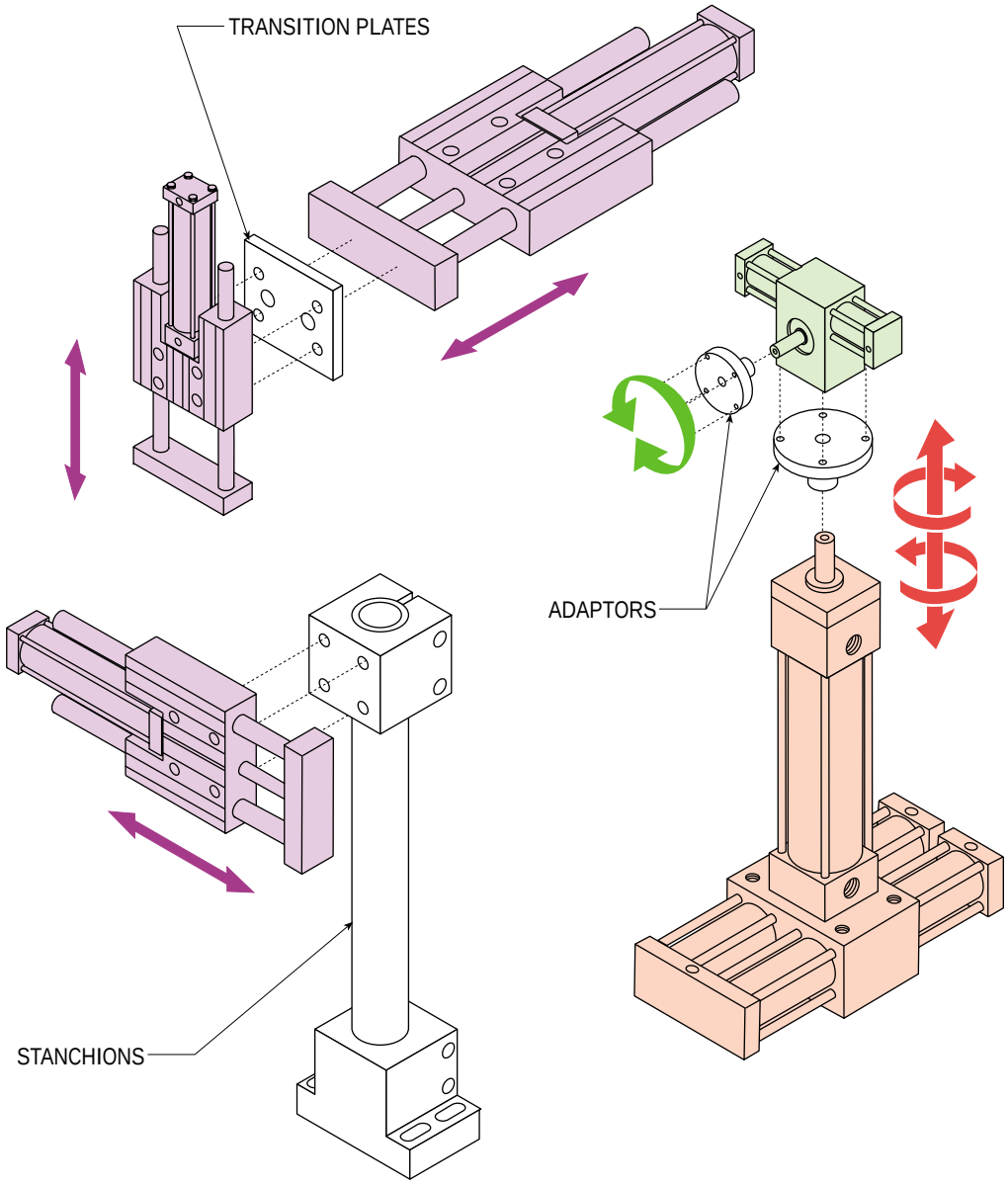
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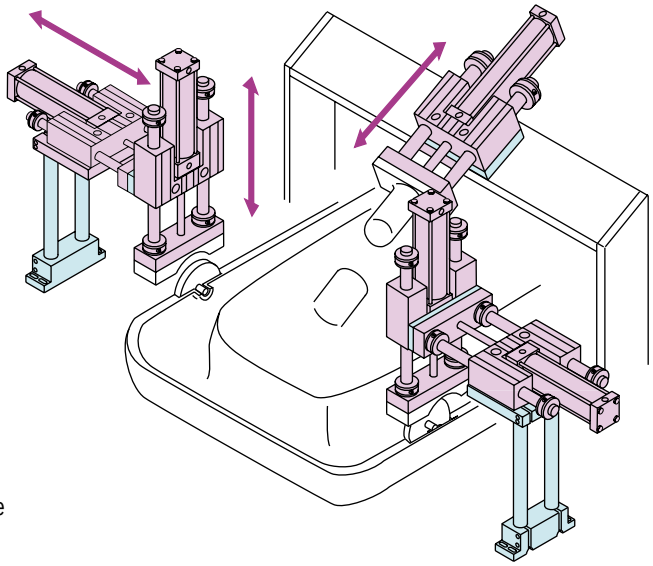
ADAPTORS, TRANSITION PLATES, AND STANCHIONS

FOR EASE OF CONNECTING PHD PRODUCTS TOGETHER, PROVIDING THE MOST VERSATILE SOLUTION IN THE INDUSTRY.



Adaptors, Transition Plates, and Stanchions For Modular Automation

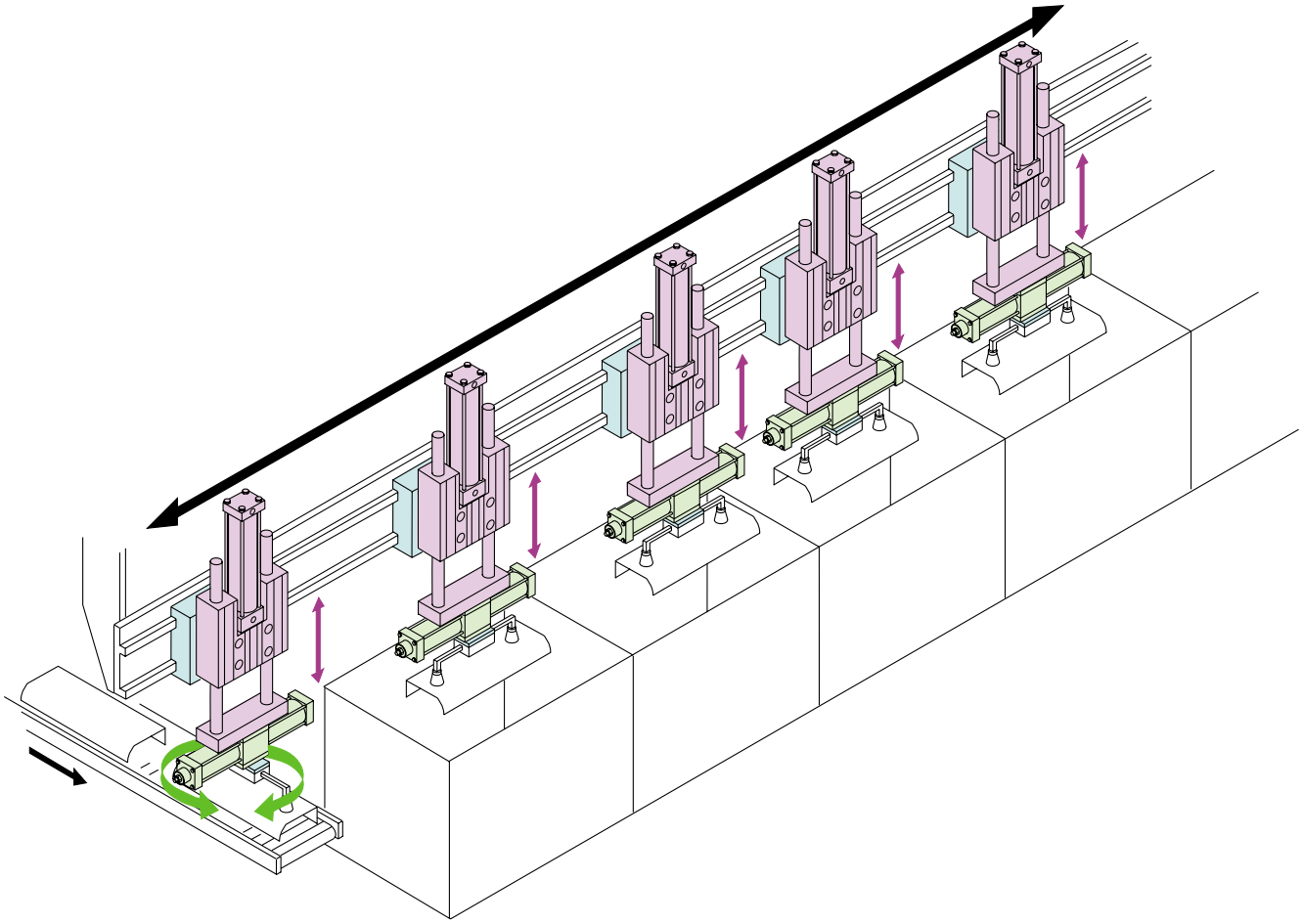
- **REDUCES ENGINEERING TIME**
- **SIMPLIFIES DESIGN**
- **COST-EFFECTIVE**
- **ELIMINATES FABRICATION**



Simplify the design of your automation solutions using PHD's wide range of adaptors, transition plates, and stanchions. The use of standard hardware makes it easy to combine axes of motion. The hardware provides an efficient means of assembling individual actuators into a complete automation device. An unlimited number of combinations can be achieved to satisfy your specific motion requirements.

A complete line of stanchions are also offered. Stanchions provide a rigid support for mounting the assembled device above the work surface. Additionally, PHD stanchions are easily adjustable for achieving specific height requirements.

Integrating devices using standard PHD actuators and hardware will add greatly to the cost effectiveness of your design.



HOW TO USE THIS SECTION

This section covers available hardware for the creation of PHD Modular Automation Devices.

Each hardware subsection contains a grid layout showing the most common combinations of PHD actuators together with the proper Adaptor, Transition Plate, or Stanchion, and hardware to facilitate interconnection.

The proper sizing of PHD actuators is derived from the individual product catalog sections.

Follow the sequence below when selecting mechanical components for a parts handling or other automation device.

STEP 1: Determine the weight of the part to be moved.

STEP 2: Determine the best path(s) of motion within a complete cycle.

STEP 3: Determine cycle and intermediate dwell times to arrive at actual transfer velocities.

STEP 4: Select the proper components for weight, path(s), and velocities beginning with the component closest to the part to be moved (e.g., gripper or vacuum cup). Then determine the size and type of the next component or actuator based on the same parameters, but including the mass of all components supported by this member and so on until the stationary member is determined.

PHD components and capacities are shown in the following sections:

Device	Section
Cylinders	1
Slides	2
Escapements	3
Grippers	4
Rotary Actuators	5
Multi-Motion Actuators	6

Consult PHD for technical assistance to aid in choosing the proper components and control (electronic) interfaces.

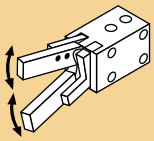
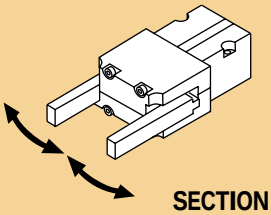
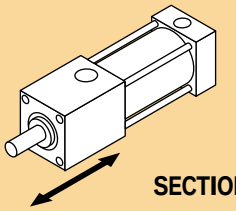
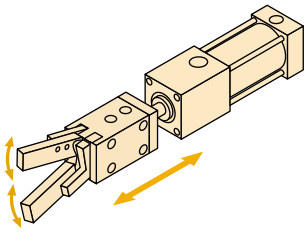
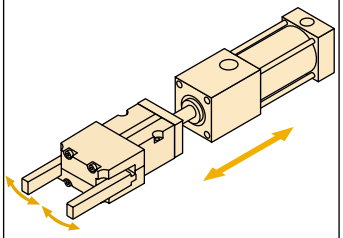
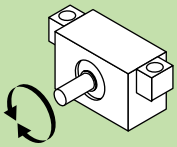
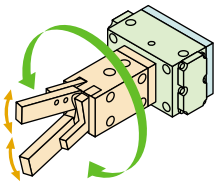
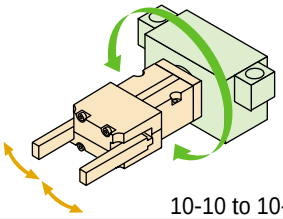
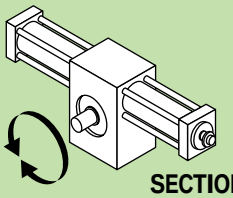
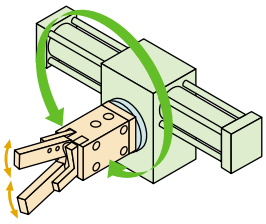
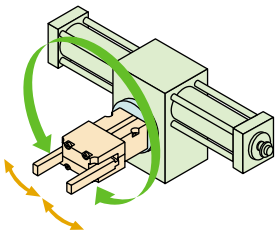
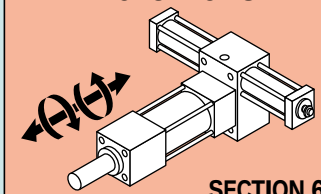
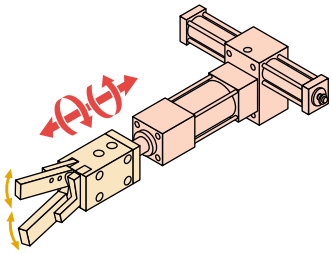
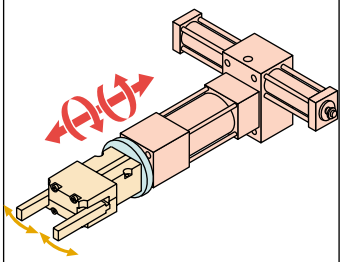
HOW TO ESTABLISH PRIMARY/ SECONDARY UNITS

When a product is a “primary unit,” the transition plate will be mounted to the “dynamic component” of that product (tool plate, saddle, shaft, etc.)

When a product is a “secondary unit,” the transition plate will be mounted to the “stationary component” of that product (end blocks, body, housing, etc.)

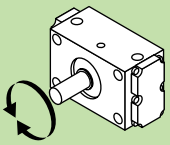
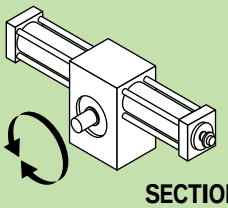
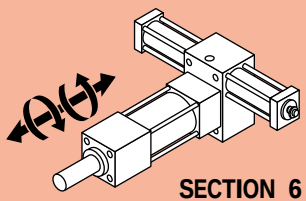
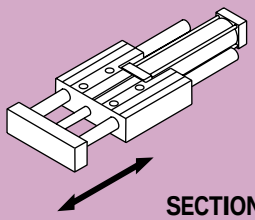
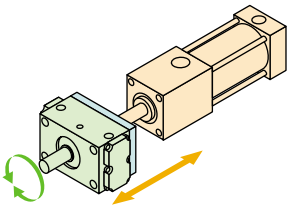
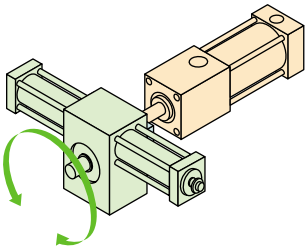
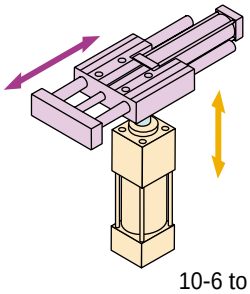
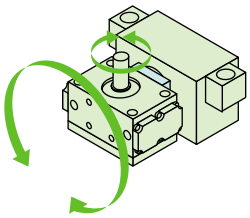
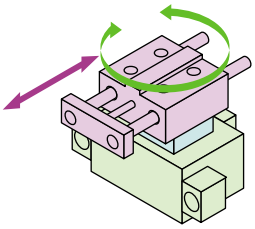
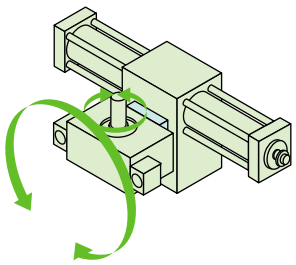
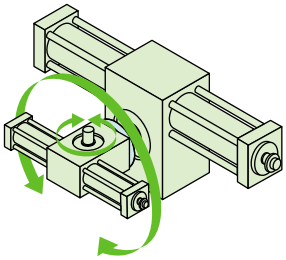
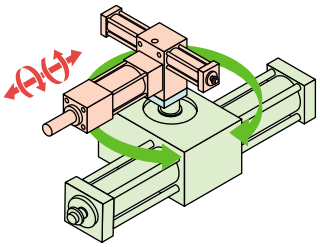
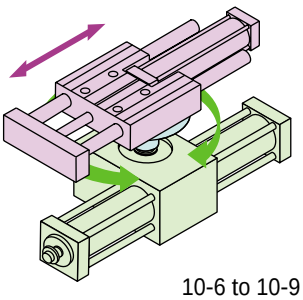
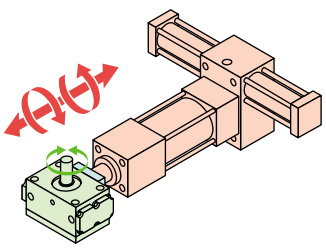
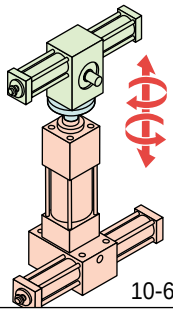
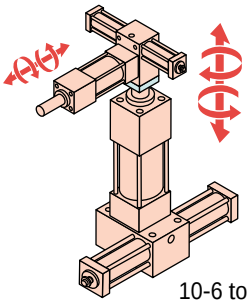
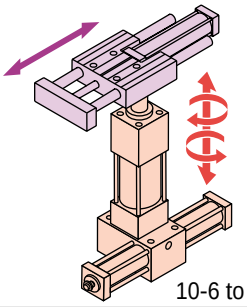
If dowel pin holes are required, consult PHD.

ADAPTOR/ACTUATOR COMBINATIONS

PRIMARY UNIT	SEE REFERENCED PAGES FOR PROPER ADAPTOR SIZE AND KIT NUMBER	SECONDARY UNIT: MINIATURE GRIPPERS	SECONDARY UNIT: LARGER GRIPPERS
		 SECTION 4	 SECTION 4
	NON-ROTATING ROD CYLINDERS  SECTION 1	 10-6 to 10-13	 10-6 to 10-9
	MINIATURE ROTARY ACTUATORS  SECTION 5	 10-10 to 10-13	 10-10 to 10-13
	LARGER ROTARY ACTUATORS  SECTION 5	 10-6 to 10-13	 10-6 to 10-9
	MULTI-MOTION ACTUATORS  SECTION 6	 10-6 to 10-13	 10-6 to 10-9

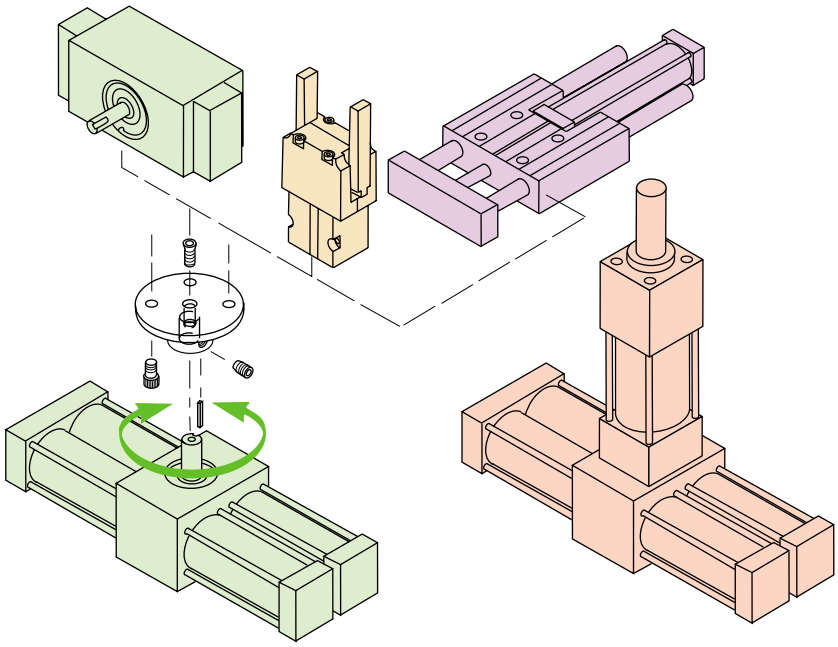
ADAPTOR/ACTUATOR COMBINATIONS

SECONDARY UNIT

MINIATURE ROTARY ACTUATORS	LARGER ROTARY ACTUATORS	MULTI-MOTION ACTUATORS	SLIDES
 SECTION 5	 SECTION 5	 SECTION 6	 SECTION 2
 10-6 to 10-13	 10-6 to 10-9	NOT AVAILABLE	 10-6 to 10-9
 10-10 to 10-13	NOT AVAILABLE	NOT AVAILABLE	 10-10 to 10-13
 10-6 to 10-13	 10-6 to 10-9	 10-6 to 10-9	 10-6 to 10-9
 10-6 to 10-13	 10-6 to 10-9	 10-6 to 10-9	 10-6 to 10-9

PHD Adaptors also provide an easy means of attaching tooling, fixturing, and arms for the creation of pick and place devices. They provide a bolt pattern on the end of various PHD Actuator shafts making it easy to mount other PHD products and customer-provided tooling.

HUB ADAPTORS: IMPERIAL UNITS



HUB ADAPTORS ALLOW COMBINING ACTUATORS TO A ROUND OUTPUT SHAFT

ORDERING DATA

HUB SIZE

SHAFT DIA.	SIZE NO.	SHAFT DIA.	SIZE NO.
1/2	= 10811	1-1/8	= 10814
3/4	= 10812	1-3/4	= 10815
7/8	= 10813		

HOLE PATTERN
Select proper 4 digit number from matrix on 10-7 & 10-8.

10812 - 00 - 0051

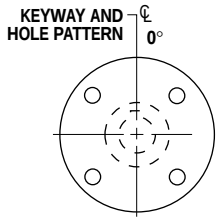
HOLE PATTERN ORIENTATION
Relationship of the hole pattern centerline to centerline of the keyway. The pattern may be rotated clockwise in 5° increments.
00 - Hole pattern centerline is the same as the keyway
01 - Hole pattern centerline, 5° clockwise of keyway
02 - Hole pattern centerline, 10° clockwise of keyway
Etc… See below

To order specify:
Hub Size, Hole Pattern Orientation, and Hole Pattern Number.

NOTES:
1) Hub Adaptor must be used with -PK Rod End on series 1-8000 Multi-Motion Actuators, -H option on Non-Rotating Rod Cylinders, and -K Shaft on Series 1-8000 Rotary Actuators.
2) Hub adaptor kit includes all hardware to mount component to hub, and hub to shaft.
3) Stroke or travel related secondary units require a customer provided plate (NP Cylinders, SM Slides).

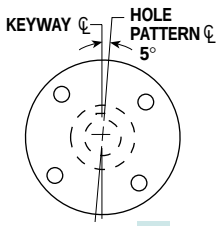
HOLE PATTERN ORIENTATION

EXAMPLE 1



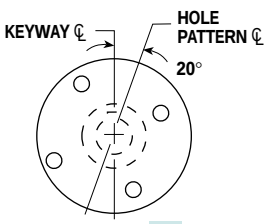
KIT NO. 10812-00-0051

EXAMPLE 2



KIT NO. 10812-01-0051

EXAMPLE 3



KIT NO. 10812-04-0051

NOTE: Square hole pattern may be rotated in 5° increments up to 85°. Rectangular hole patterns may be rotated in 5° increments up to 175°.

			PRIMARY UNIT				
	PHD UNIT	MOUNTING HOLE PATTERN LOCATION	10811 1-1/8" BORE NON-ROTATING ROD CYLINDER 1-2000 ROTARY & MULTI-MOTION ACTUATOR	10812 1-3/8" BORE NON-ROTATING ROD CYLINDER 3-4000 MULTI-MOTION ACTUATOR	10813 3-4000 ROTARY ACTUATORS	10814 5-6000 ROTARY & MULTI-MOTION ACTUATORS	10815 7-8000 ROTARY & MULTI-MOTION ACTUATORS
	SHAFT DIAMETER		1/2	3/4	7/8	1-1/8	1-3/4
SECONDARY UNIT — GRIPPERS	19032 19x9x	BOTTOM (OPPOSITE OF JAWS)	-0981	-0981	-0981	-0981	
	8430		-0041				
	862x 1532x 1536x		-0041				
	863x 1533x 1537x		-0051	-0051	-0051	-0051	
	864x 1534x 1538x		-0061	-0061	-0061	-0061	
	865x 1535x 1539x					-0071	-0071
	GRBx3x						
	GRBx41						
	GRBx51						
	GRBx61			-1521	-1521	-1521	
	GRBx71						-1531
	GRCx31		-1601	-1601			
	GRCx4x						
	GRCx5x			-1621	-1621	-1621	
	GRCx6x				-1631	-1631	-1631
	GRDx3x						
	GRDx4x						
	GRDx5x						
	GRDx6x						
SECONDARY UNIT — POWERED SLIDES	SAx114 SBx114	BOTTOM (SURFACE PERPENDICULAR TO TOOL PLATE POS. #3)					
	SAx120 SBx120		-0951				
	SAx132 SBx132		-1601	-1601			
	SDxx2 SExx2		-1731	-1731	-1731	-1731	-1731
	SDxx3		-1741	-1741	-1741	-1741	-1741
	SExx3			-1781	-1781	-1781	-1781
	SDxx4		-1751	-1751	-1751	-1751	-1751
	SExx4			-1791	-1791	-1791	-1791
	SDxx5			-1761	-1761	-1761	-1761
	SExx5			-1801	-1801	-1801	-1801
	SDxx6			-1771	-1771	-1771	-1771
	SExx6						-1811
	BLANK HUB ADAPTOR FOR CUSTOMER TOOLING		-0001	-0001	-0001	-0001	-0001

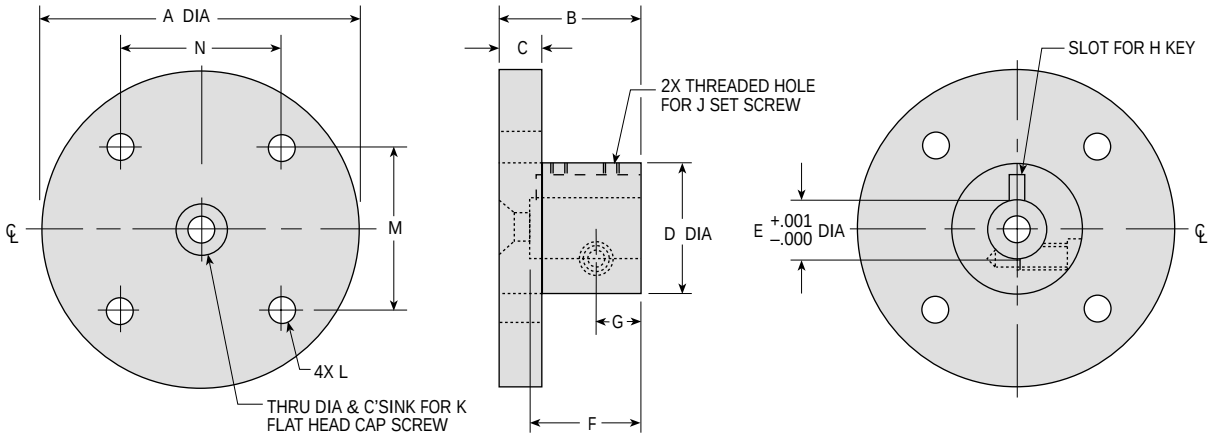
NOTE: For shaded areas or units not listed, see page 10-9 to see if required mounting pattern is available. If not, consult PHD.

			PRIMARY UNIT				
	PHD UNIT	MOUNTING HOLE PATTERN LOCATION	10811 1-1/8" BORE NON-ROTATING ROD CYLINDER 1-2000 ROTARY & MULTI-MOTION ACTUATOR	10812 1-3/8" BORE NON-ROTATING ROD CYLINDER 3-4000 MULTI-MOTION ACTUATOR	10813 3-4000 ROTARY ACTUATORS	10814 5-6000 ROTARY & MULTI-MOTION ACTUATORS	10815 7-8000 ROTARY & MULTI-MOTION ACTUATORS
	SHAFT DIAMETER		1/2	3/4	7/8	1-1/8	1-3/4
SECONDARY UNIT	RAS120	FRONT & BACK (PARALLEL TO SHAFT POS. #2 & #4)	-2581				
	RAS125		-2601				
	RAS132			-2621	-2621		
	RAS140			-2641	-2641	-2641	
	RAS150					-2661	
	RAS120	BOTTOM (PERP. TO SHAFT POS. #3)		-2481	-2481	-2481	-2481
	RAS125			-2501	-2501	-2501	-2501
	RAS132			-2521	-2521	-2521	-2521
	RAS140						-2541
	RAS150						-2561
	ROTARY ACTUATORS ***RLS112	FRONT & BACK (PARALLEL TO SHAFT POS. #2 & 4)					
	***RLS116						
	***RLS120						
	***RLS125		-3491				
	***RLS132			-3511	-3511		
	***RLS140					-3531	
	***RLS150						
	***RLS163						
	RLS112	BOTTOM (PERP. TO SHAFT POS. #3)	-3771				
	RLS116		-3791				
	RLS120		-3811				
	RLS125		-3831	-3831	-3831		
	RLS132		-3851	-3851	-3851	-3851	
	RLS140			-3871	-3871	-3871	
	RLS150					-3891	-3891
	RLS163					-3911	-3911
	018050	TOP & BOTTOM (PERP. TO SHAFT POS. #1 & #3)	-0161	-0161	-0161		
	018075		-0181	-0181	-0181	-0181	
	Rx1x 1000 Rx1x 2000		-0051	-0051	-0051	-0051	
	Rx1x 3000 Rx1x 4000			-0221	-0221	-0221	-0301**
	Rx1x 5000 Rx1x 6000			-0241	-0241	-0241	-0321**
	BLANK HUB ADAPTOR FOR CUSTOMER TOOLING		-0001	-0001	-0001	-0001	-0001

NOTES:

1) For shaded areas or units not listed, see page 10-9 to see if required mounting pattern is available. If not, consult PHD.
2) ** Requires Rotary Actuator to be mounted to the bottom mounting flanges. See *Options* in the Rotary Actuator section.
3) *** Patterns in RLS bodies are not centered to pinion shaft.

DIMENSIONS: HUB ADAPTORS



NOTES:
1) EACH HUB ADAPTOR KIT CONTAINS ALL HARDWARE REQUIRED TO MOUNT COMPONENTS TOGETHER
2) ALL MOUNTING PATTERNS ARE CENTERED ON CENTERLINE AND SHAFT EXCEPT WHERE NOTED
3) 2 HOLE PATTERNS ON HORIZONTAL CENTERLINE OF HUB
4) SEE CHART BELOW FOR AVAILABLE PATTERNS FOR EACH HUB SIZE. IF DESIRED PATTERN IS NOT IN CHARTS, CONSULT PHD FOR AVAILABILITY

MOUNTING HOLE PATTERN DIMENSIONS

10811
1/2 SHAFT DIAMETER

HUB KIT DASH NO.	LETTER DIMENSIONS N	M	ØL
-000x	—	—	—
-004x	1.250	1.250	.204 THRU
-005x	1.500	1.500	.281 THRU
-006x	1.750	1.750	.344 THRU
-012x	2.250	1.250	.204 THRU
-016x	1.500	1.000	.177 THRU
-018x	2.000	1.500	.204 THRU
-042x	1.000	1.000	10-24 UNC THRU
-045x	1.500	1.500	1/4-20 UNC THRU
-048x	1.750	1.750	5/16-18 UNC THRU
-054x	2.000	—	.406 THRU
-095x	1.250	1.250	.281 THRU
-098x	1.535	1.535	.206 THRU
-110x	1.688	1.688	1/4-20 UNC THRU
-122x	1.102	1.102	.189 THRU
-160x	1.181	1.181	.206 THRU
-161x	1.457	1.457	.281 THRU
-173x	1.625	—	1/4-20 UNC THRU
-174x	1.875	—	5/16-18 UNC THRU
-175x	2.000	—	3/8-16 UNC THRU
-240x	1.339	1.339	.281 THRU
-258x	1.574	1.180	.204 THRU
-260x	1.772	1.378	.206 THRU
-349x	1.378	1.398	.204 THRU
-377x	.630	1.378	.136 THRU
-379x	.650	1.535	.136 THRU
-381x	.906	1.516	.154 THRU
-383x	1.182	1.968	.204 THRU
-385x	1.260	2.202	.204 THRU

10812
3/4 SHAFT DIAMETER

HUB KIT DASH NO.	LETTER DIMENSIONS N	M	ØL
-000x	—	—	—
-005x	1.500	1.500	.281 THRU
-006x	1.750	1.750	.344 THRU
-012x	2.250	1.250	.204 THRU
-013x	2.750	1.500	.281 THRU
-016x	1.500	1.000	.177 THRU
-018x	2.000	1.500	.204 THRU
-022x	2.000	2.000	.344 THRU
-024x	2.500	2.000	.406 THRU
-042x	1.000	1.000	10-24 UNC x .500 DP
-045x	1.500	1.500	1/4-20 UNC THRU
-048x	1.750	1.750	5/16-18 UNC THRU
-061x	2.250	1.250	.281 THRU
-062x	2.750	1.500	.344 THRU
-077x	1.250	1.250	10-24 UNC x .500 DP
-098x	1.535	1.535	.206 THRU
-152x	1.457	2.677	.344 THRU
-160x	1.181	1.181	.206 THRU
-161x	1.457	1.457	.281 THRU
-162x	1.968	1.968	.344 THRU
-173x	1.625	—	1/4-20 UNC x .500 DP
-174x	1.875	—	5/16-18 UNC x .500 DP
-175x	2.000	—	3/8-16 UNC THRU
-176x	2.375	—	3/8-16 UNC THRU
-177x	3.125	—	1/2-13 UNC THRU
-178x	1.875	1.875	5/16-18 UNC THRU
-179x	2.000	2.000	3/8-16 UNC THRU
-180x	2.375	2.375	3/8-16 UNC THRU
-228x	2.375	2.375	5/16-18 UNC THRU
-248x	1.496	2.166	10-24 UNC THRU
-250x	2.362	1.772	10-24 UNC THRU
-252x	2.165	2.952	1/4-20 UNC THRU
-262x	2.166	1.772	.281 THRU
-351x	1.614	1.850	10-24 UNC THRU
-383x	1.182	1.968	.204 THRU
-385x	1.260	1.768	.204 THRU
-387x	1.534	2.874	.281 THRU
-472x	1.535	1.535	.281 THRU

10813
7/8 SHAFT DIAMETER

HUB KIT DASH NO.	LETTER DIMENSIONS N	M	ØL
-000x	—	—	—
-005x	1.500	1.500	.281 THRU
-006x	1.750	1.750	.344 THRU
-012x	2.250	1.250	.204 THRU
-013x	2.750	1.500	.281 THRU
-016x	1.500	1.000	.177 THRU
-018x	2.000	1.500	.204 THRU
-022x	2.000	2.000	.344 THRU
-024x	2.500	2.000	.406 THRU
-042x	1.000	1.000	10-24 UNC x .500 DP
-045x	1.500	1.500	1/4-20 UNC THRU
-048x	1.750	1.750	5/16-18 UNC THRU
-061x	2.250	1.250	.281 THRU
-062x	2.750	1.500	.344 THRU
-077x	1.250	1.250	10-24 UNC x .500 DP
-098x	1.535	1.535	.206 THRU
-152x	1.457	2.677	.344 THRU
-161x	1.457	1.457	.281 THRU
-162x	1.968	1.968	.344 THRU
-173x	1.625	—	1/4-20 UNC x .500 DP
-174x	1.875	—	5/16-18 UNC x .500 DP
-175x	2.000	—	3/8-16 UNC THRU
-176x	2.375	—	3/8-16 UNC THRU
-177x	3.125	—	1/2-13 UNC THRU
-178x	1.875	1.875	5/16-18 UNC-2B THRU
-179x	2.000	2.000	3/8-16 UNC THRU
-180x	2.375	2.375	3/8-16 UNC THRU
-224x	1.500	2.000	.281 THRU
-228x	2.375	2.375	5/16-18 UNC-2B THRU
-248x	1.496	2.166	10-24 UNC THRU
-250x	2.362	1.772	10-24 UNC THRU
-252x	2.165	2.952	1/4-20 UNC THRU
-262x	2.166	1.772	.281 THRU
-264x	2.164	2.558	.344 THRU
-353x	1.614	1.850	10-24 UNC THRU
-383x	1.182	1.968	.204 THRU
-385x	1.260	1.768	.204 THRU
-387x	1.534	2.874	.281 THRU
-566x	2.244	1.380	1/4-20 UNC THRU
-741x	1.870	1.535	M8 x 1.25 x THRU

10814
1 1/8 SHAFT DIAMETER

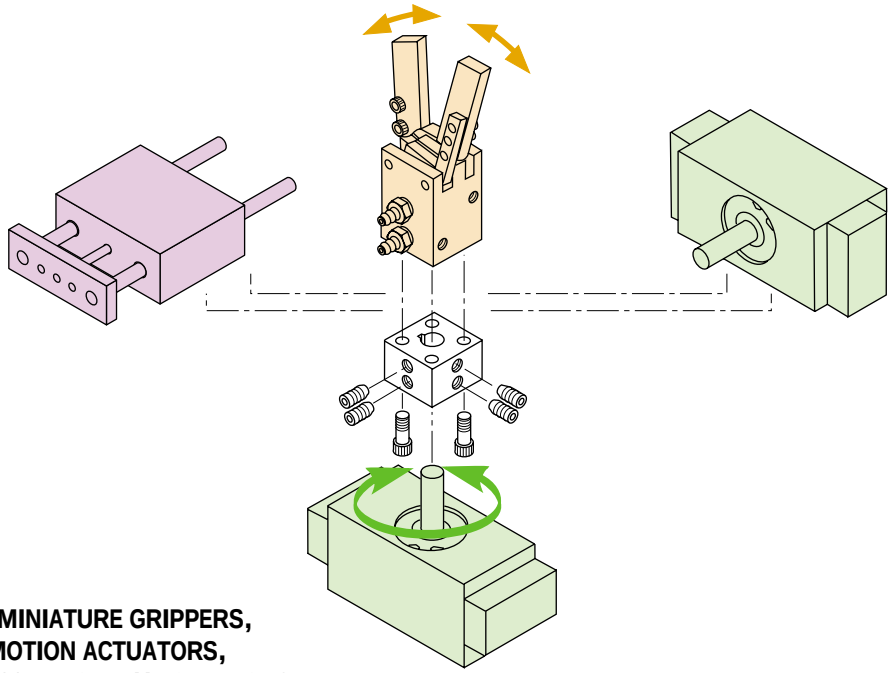
HUB KIT DASH NO.	LETTER DIMENSIONS N	M	ØL
-000x	—	—	—
-005x	1.500	1.500	.281 THRU
-006x	1.750	1.750	.344 THRU
-007x	2.750	2.750	.406 THRU
-012x	2.250	1.250	.204 THRU
-013x	2.750	1.500	.281 THRU
-014x	3.375	1.750	.344 THRU
-018x	2.000	1.500	.204 THRU
-022x	2.000	2.000	.344 THRU
-024x	2.500	2.000	.406 THRU
-042x	1.000	1.000	10-24 UNC x .500 DP
-045x	1.500	1.500	1/4-20 UNC x .562 DP
-048x	1.750	1.750	5/16-18 UNC THRU
-062x	2.750	1.500	.344 THRU
-063x	3.375	1.750	.406 THRU
-098x	1.535	1.535	.206 THRU
-152x	1.457	2.677	.344 THRU
-162x	1.968	1.968	.344 THRU
-163x	2.992	2.992	.406 THRU
-173x	1.625	—	1/4-20 UNC x .562 DP
-174x	1.875	—	5/16-18 UNC THRU
-175x	2.000	—	3/8-16 UNC x .562 DP
-176x	2.375	—	3/8-16 UNC THRU
-177x	3.125	—	1/2-13 UNC THRU
-178x	1.875	1.875	5/16-18 UNC THRU
-179x	2.000	2.000	3/8-16 UNC THRU
-180x	2.375	2.375	3/8-16 UNC THRU
-192x	2.750	2.750	.344 THRU
-228x	2.375	2.375	5/16-18 UNC THRU
-248x	1.496	2.166	10-24 UNC THRU
-250x	2.362	1.772	10-24 UNC THRU
-252x	2.165	2.952	1/4-20 UNC THRU
-264x	2.164	2.558	.344 THRU
-266x	2.952	2.362	.406 THRU
-353x	2.028	2.146	.281 THRU
-385x	1.260	1.768	.204 THRU
-387x	1.534	2.874	.281 THRU
-389x	1.850	3.380	.344 THRU
-391x	2.204	3.544	.344 THRU

10815
1 3/4 SHAFT DIAMETER

HUB KIT DASH NO.	LETTER DIMENSIONS N	M	ØL
-000x	—	—	—
-007x	2.750	2.750	.406 THRU
-014x	3.375	1.750	.344 THRU
-030x	3.875	2.125	3/8-16 UNC THRU
-032x	3.875	3.375	3/8-16 UNC THRU
-048x	1.750	1.750	5/16-18 UNC x .750 DP
-113x	4.000	1.500	3/8-16 UNC THRU
-153x	4.016	1.693	.406 THRU
-163x	2.992	2.992	.406 THRU
-170x	2.992	2.992	.433 THRU
-173x	1.625	—	1/4-20 UNC x .562 DP
-174x	1.875	—	5/16-18 UNC x .500 DP
-175x	2.000	—	3/8-16 UNC x .562 DP
-176x	2.375	—	3/8-16 UNC x .625 DP
-177x	3.125	—	1/2-13 UNC x .750 DP
-178x	1.875	1.875	5/16-18 UNC x .750 DP
-179x	2.000	2.000	3/8-16 UNC x .750 DP
-180x	2.375	2.375	3/8-16 UNC x .750 DP
-181x	3.125	3.125	1/2-13 UNC THRU
-248x	1.496	2.166	10-24 UNC x .75 DP
-250x	1.772	2.362	10-24 UNC x .75 DP
-252x	2.165	2.952	1/4-20 UNC THRU
-254x	2.756	3.346	5/16-18 UNC THRU
-256x	3.071	3.936	3/8-16 UNC THRU
-389x	1.850	3.308	.344 THRU
-391x	2.204	3.544	.344 THRU

SHAFT DIA.	HUB WEIGHT (lb)	HUB KIT NO.	LETTER DIMENSION A	B	C	D	E	F	G	H	J	K
1/2	.30	10811-xx-xxxx	2.900	1.125	.375	1.250	.501	.812	.438	1/8 x .81 DP	8-32	#10
3/4	.75	10812-xx-xxxx	3.900	1.750	.500	1.625	.751	1.375	.563	3/16 x 1.27 DP	10-32	5/16
7/8	.70	10813-xx-xxxx	3.900	1.750	.500	1.625	.876	1.375	.563	3/16 x 1.27 DP	10-32	5/16
1-1/8	1.25	10814-xx-xxxx	4.700	1.875	.562	1.950	1.126	1.437	.625	1/4 x 1.38 DP	1/4-20	3/8
1-3/4	3.25	10815-xx-xxxx	5.950	3.000	.750	3.250	1.751	2.375	.875	3/8 x 2.31 DP	3/8-16	1/2

All dimensions are reference only unless specifically toleranced.



FOR USE WITH PHD MINIATURE GRIPPERS, MINIATURE MULTI-MOTION ACTUATORS, SERIES 018050 & 018075 ROTARY ACTUATORS, AND SMALL SLIDES.

To order, choose the proper Adaptor Kit from the matrix on page 10-11 to 10-13. The shaft that the Adaptor is to be mounted on must be a Plain Rod End or Standard Keyed Shaft. Adaptor Kit includes all hardware to mount the adaptor and component to the shaft.

NOTE: Miniature Adaptors are designed for mounting to the bottom surface of the component. For mounting in other orientations or surfaces, consult PHD.

Miniature Adaptors allow the gripper to be mounted flush to the end of the pinion shaft. The width and length of the adaptor are normally the same size as the component body. To calculate the dimensions of the combined units, see each component catalog section and assume the mounting surface of the component body to be flush with the end of the shaft.

PRIMARY UNIT (IMPERIAL SHAFTS TO IMPERIAL UNITS)

SECONDARY UNIT		PHD UNIT: SHAFT DIAMETER	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	3/8-24 THD
	GRIPPERS	8400 BOTTOM & SIDE 8410 BOTTOM & SIDE		8853-04		8853-06					
		8420 BOTTOM & SIDE		58561-04		8852-06	8852-08	8852-10			8854-02
		8430 BOTTOM & SIDE				53464-06	53464-08	53464-10	53464-12		
		19002 BOTTOM & SIDE 19x6x BOTTOM & SIDE		53308-04		53308-06	53308-08				
		19012 BOTTOM & SIDE 19x7x BOTTOM & SIDE	62662-03	51424-04		51424-06	51424-08				
		19022 BOTTOM 19x8x BOTTOM		51395-04		51395-06	51395-08	51395-10			
		19022 SIDE 19x8x SIDE				54217-06		54217-10			
		19032 BOTTOM 19x9x BOTTOM				51876-06	51876-08	51876-10	51876-12		
		19032 SIDE 19x9x SIDE				55884-06					
		8624 BOTTOM				10765-06					
		GRB11-2-12 BOTTOM		53293-04		53293-06					
		GRB11-2-16 BOTTOM					63565-08				
		GRB11-2-20 BOTTOM				53806-06					
		GRC13x BOTTOM			10764-03	56473-06					
		GRDx6x BOTTOM				64187-06					
	ROTARIES	0180502				10764-06	10764-08	10764-10			
	SLIDES	SAx108 BOTTOM SBx108 BOTTOM				51508-06					
		SAx110 BOTTOM SBx110 BOTTOM				51508-06					

NOTES: FOR SHADED AREAS OR FOR UNITS NOT LISTED, CONSULT PHD FOR AVAILABILITY.

MATRIX: MINIATURE ADAPTORS-IMPERIAL SHAFT & METRIC UNIT

PRIMARY UNIT (IMPERIAL SHAFTS TO METRIC UNIT)

SECONDARY UNIT		SHAFT DIAMETER	PHD UNIT 3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
	GRIPPERS	8402 BOTTOM 8422 BOTTOM		58561-04						
		19002 BOTTOM & SIDE 19x6x BOTTOM & SIDE		50482-04		50482-06				
		19012 BOTTOM & SIDE 19x7x BOTTOM & SIDE		52925-04		52925-06	52925-08			
		19022 BOTTOM 19x8x BOTTOM				51483-06	51483-08	51483-10		
		19022 SIDE 19x8x SIDE								
		19032 BOTTOM 19x9x BOTTOM				19933-06	19933-08			
		19032 SIDE 19x9x SIDE								
		GRB11-6-12				56896-06				
		GRC53x						59066-10		
	ROTARIES	0185502				16270-06				

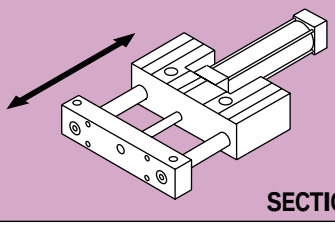
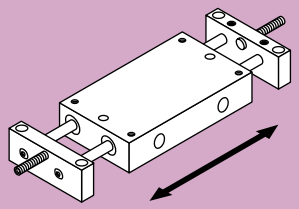
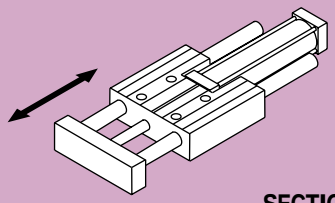
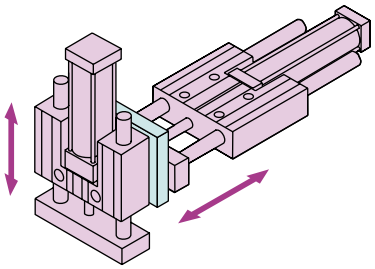
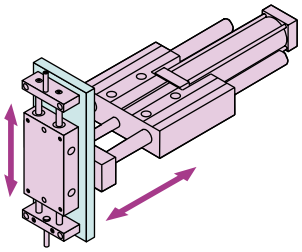
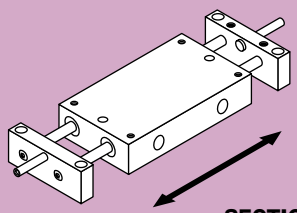
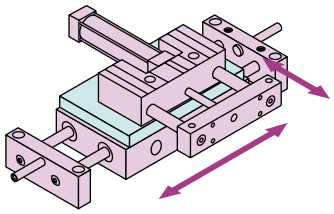
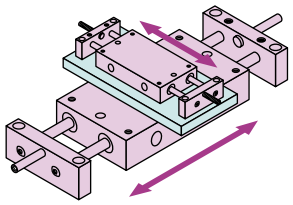
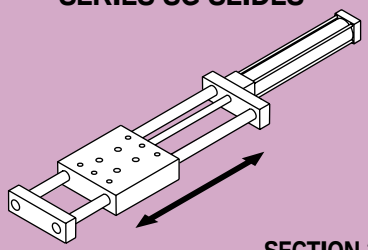
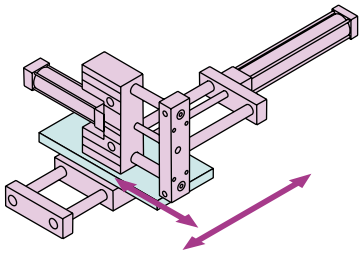
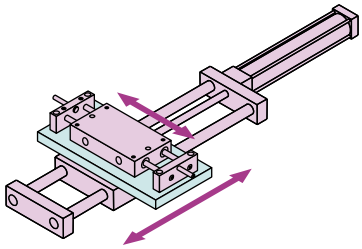
NOTE: FOR SHADED AREAS OR FOR UNITS NOT LISTED, CONSULT PHD FOR AVAILABILITY.

PRIMARY UNIT (METRIC SHAFTS TO METRIC UNITS)

SECOND UNIT		SHAFT DIAMETER	PHD UNIT: 6 mm	8 mm	10 mm	12 mm	14 mm	16 mm	20 mm	30 mm	M8 x 1.25 THREAD
	GRIPPERS	19002 BOTTOM & SIDE 19x6x BOTTOM & SIDE	68653								
		19012 BOTTOM & SIDE 19x7x BOTTOM & SIDE	61838-06								58464
		19022 BOTTOM 19x8x BOTTOM			59093-10	60928-12					58467
		19022 SIDE 19x8x SIDE									
		19032 BOTTOM 19x9x BOTTOM			60643-10						
		19032 SIDE 19x9x SIDE									
	ROTARIES	RAS520			68704						

NOTE: FOR SHADED AREAS OR FOR UNITS NOT LISTED, CONSULT PHD FOR AVAILABILITY.

TRANSITION PLATE/ACTUATOR COMBINATIONS

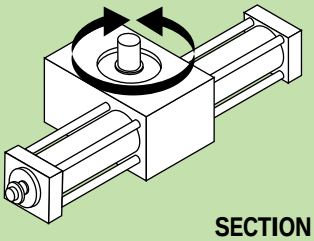
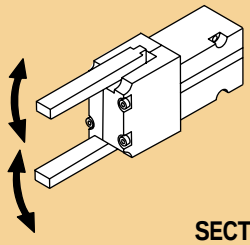
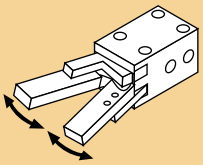
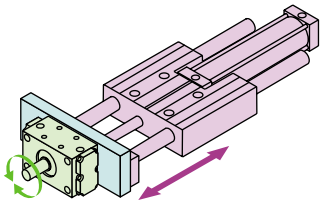
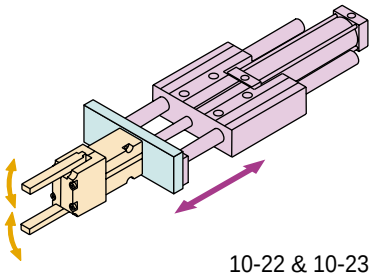
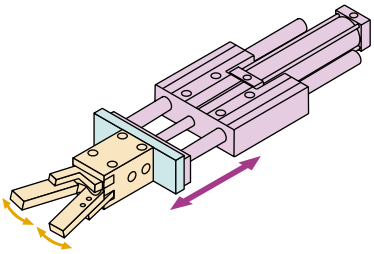
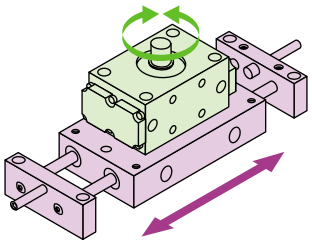
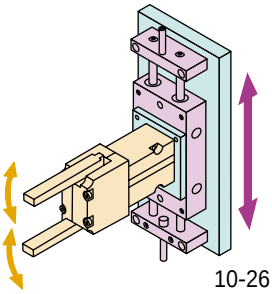
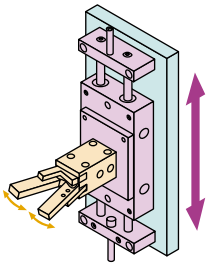
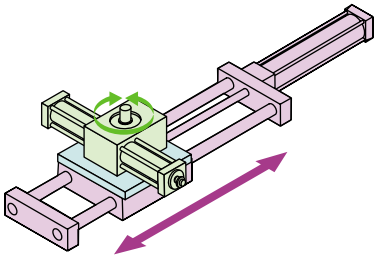
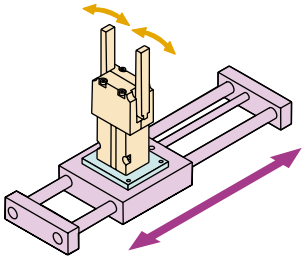
		SECONDARY UNIT	
	SEE REFERENCED PAGES FOR DIMENSIONS, APPLICATIONS, AND ORDERING DATA. FOR VARIOUS COMBINATION EXAMPLES, SEE PAGE 10-34.	SERIES SAx & SBx, SK & SL, SD & SE SLIDES  SECTION 2	SERIES M & C SLIDES  SECTION 2
PRIMARY UNIT	SERIES SAx & SBx, SK & SL, SD & SE SLIDES  SECTION 2	 10-18 & 10-19	 10-28 & 10-29
	SERIES M & C SLIDES  SECTION 2	 10-30 & 10-31	 10-32 & 10-33
	SERIES SG SLIDES  SECTION 2	 10-30 & 10-31	 10-32 & 10-33

ADAPTORS, TRANSITION

phd SOLUTIONS FOR INDUSTRIAL AUTOMATION

TRANSITION PLATE/ACTUATOR COMBINATIONS

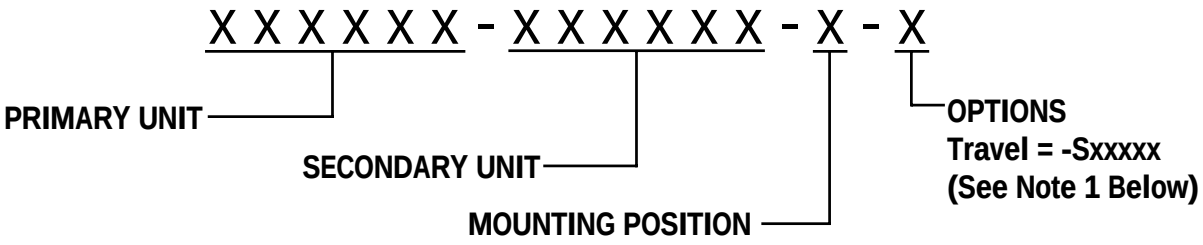
SECONDARY UNIT

ROTARY ACTUATORS	LARGER GRIPPERS	MINIATURE GRIPPERS
 SECTION 5	 SECTION 4	 SECTION 4
 10-20 & 10-21	 10-22 & 10-23	 10-22, 10-23, 10-34, & 10-35
 10-24 & 10-25	 10-26 & 10-27	 10-26 & 10-27
 10-24 & 10-25	 10-26 & 10-27	Consult PHD

TRANSITION PLATE MASTER ORDER CODES

All transition plates will be ordered as follows:

When a product is the primary unit, the transition plate will always be mounted to the moving component of that product (tool plate, saddle, shaft etc.). When a product is a secondary unit, the transition plate will always be mounted to the stationary component of that product (end blocks, body, housing, etc.).



OLDER SLIDES

SERIES	IMPERIAL	METRIC
SDx22	SD22	—
SDx23	SD23	—
SDx24	SD24	—
SDx25	SD25	—
SDx26	SD26	—
SEx22	SE22	—
SEx23	SE23	—
SEx24	SE24	—
SEx25	SE25	—
SEx26	SE26	—
SGxx1	SG11	SG51
SGxx2	SG12	SG52
SGxx3	SG13	SG53
SGxx4	SG14	SG54
SGxx5	SG15	SG55
SGxx6	SG16	SG56
SKx71	—	SK71
SKx72	—	SK72
SKx73	—	SK73
SKx74	—	SK74
SKx75	—	SK75
SKx76	—	SK76
SLx71	—	SL71
SLx72	—	SL72
SLx73	—	SL73
SLx74	—	SL74
SLx75	—	SL75
SLx76	—	SL76

OLDER ROTARY ACTUATORS

SERIES	IMPERIAL	METRIC
1-2000	R200	R205
3-4000	R400	R405
5-6000	R600	R605
7-8000	R800	R805
018x50	R050	RE50
018x75	R075	RE75
RAx20	RAS120	RAS520
RAx25	RAS125	RAS525
RAx32	RAS132	RAS532
RAx40	RAS140	RAS540
RAx50	RAS150	RAS550
RLx12	RLS112	RLS512
RLx16	RLS116	RLS516
RLx20	RLS120	RLS520
RLx25	RLS125	RLS525
RLx32	RLS132	RLS532
RLx40	RLS140	RLS540
RLx50	RLS150	RLS550
RLx63	RLS163	RLS563

CTS

SERIES	IMPERIAL	METRIC
CTSxx12	CTS112	CTS512
CTSxx16	CTS116	CTS516
CTSxx20	CTS120	CTS520
CTSxx32	CTS132	CTS532
CTSxx40	CTS140	CTS540
CTSxx50	CTS150	CTS550
CTSxx63	CTS163	CTS563

GRIPPERS

SERIES	IMPERIAL	METRIC
GRBx2x-1	GRB121	GRB521
GRBx3x-1	GRB131	GRB531
GRBx4x-1	GRB141	GRB541
GRBx5x-1	GRB151	GRB551
GRBx6x-1	GRB161	GRB561
GRBx7x-1	GRB171	GRB571
GRB11-x-12	GRB121	GRB521
GRB11-x-16	GRB131	GRB531
GRB11-x-20	GRB141	GRB541
GRB11-x-32	GRB151	GRB551
GRB11-x-40	GRB161	GRB561
GRB11-x-50	GRB171	GRB571

OLDER GRIPPERS

Series 8600 Grippers use the four-digit model number as the transition plate code (8624, etc.).

For Series 15000 & 19000 Grippers, use last four digits in the five-digit base model number and omit the “1” at the beginning (15350 = 5350, 15351 = 5351, etc.).

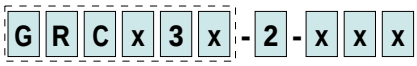
NOTE:

1) Travel must be specified when SG, SM or other slide units are secondary units that are being mounted to the end blocks or travel related mounting pattern.
   Example: S02500 = 2.500 travel
   S12500 = 12.500 travel

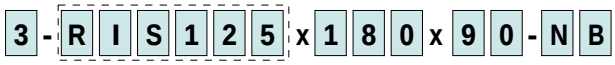
ALL NEW PRODUCTS

Transition plates codes for all future products or products not shown in previous charts where the size and design number are incorporated in the model number will use the base model number as their order code. (GRC, GRD grippers, RIS, etc.)

Example:



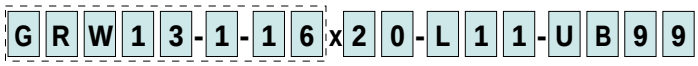
ORDER CODE = GRCx3x



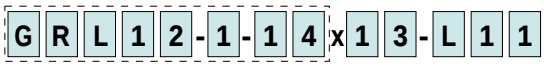
ORDER CODE = RIS125

Transition plates codes for all future products or products not shown in previous chart where the size and design number are not incorporated in the model number and are a separate call out will use the base model number, design, and size as their order code (GRW, GRL, etc...)

Example:



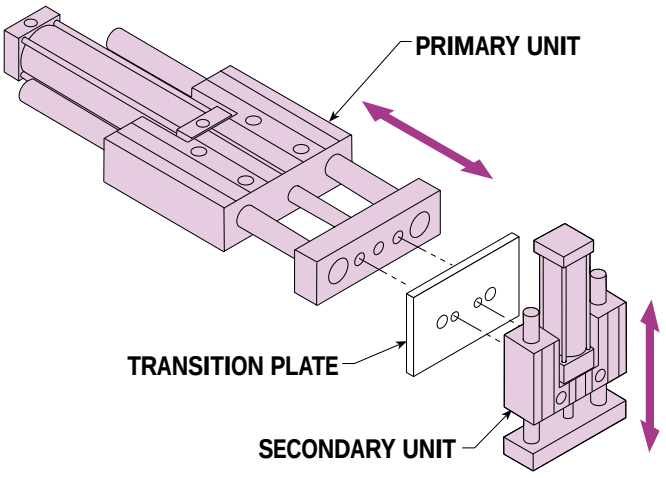
ORDER CODE = GRW13116



ORDER CODE = GRL12114

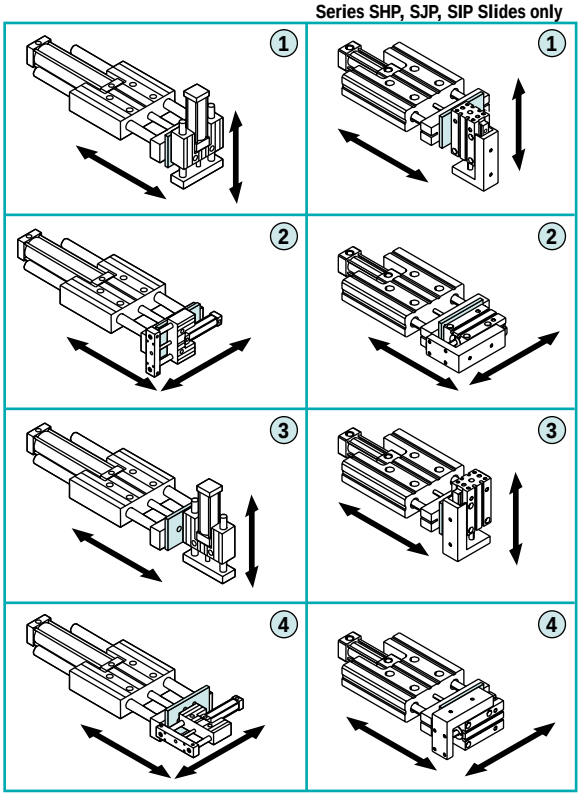
RASxxx units can be used as a primary unit if the Q10 and Q19 options are ordered with the unit.

TRANSITION PLATES: CANTILEVER TYPE & CANTILEVER TYPE



MOUNTING POSITION

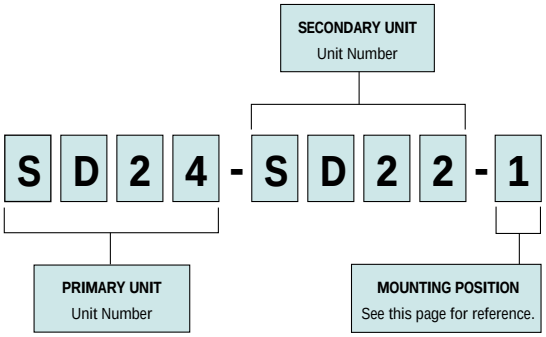
Series SHP, SJP, SIP Slides only



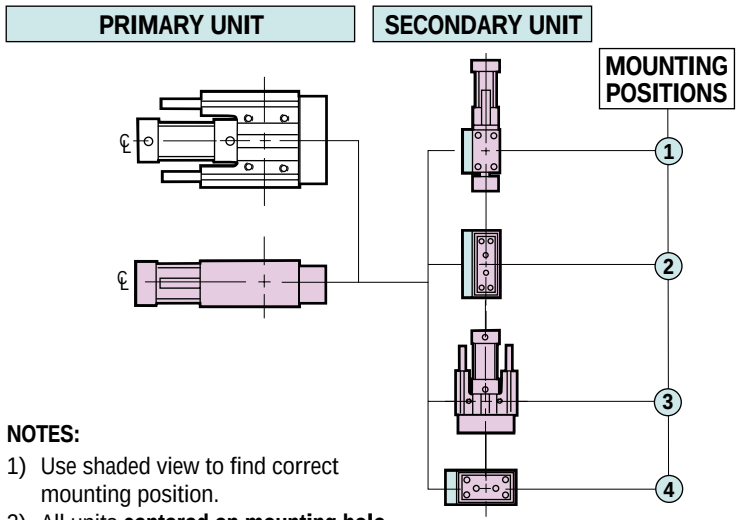
COMBINATIONS FOR SERIES SxL & SxH, SK & SL, SD & SE, STP AND SCV SLIDES

ORDERING DATA

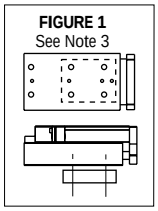
TO ORDER SPECIFY:
Primary Unit Number, Secondary Unit Number and Mounting Position.

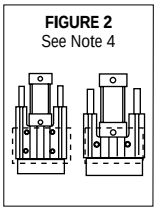


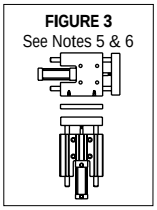
NOTES:
1) These numbers apply regardless of unit travel.
2) All required mounting hardware is included with the Transition Plate.
3) SD and SE Slides as secondary units positions 3 and 4 require -GV option
4) SxL/SxH, SCV, and STP Slides as secondary units are available in positions 1 and 2 only
5) If dowel pin holes are required, consult PHD.



NOTES:
1) Use shaded view to find correct mounting position.
2) All units **centered on mounting hole pattern of housing and tool plate.**
3) STP Slides as secondary units mounted on transition plate are centered on first 4 hole pattern on slide body. (see figure 1)
4) SD, SE, SK & SL Slides as secondary units in positions 1 and 2 are always "centered" on the thru and counterbored mounting hole pattern. (see figure 2)
5) SD & SE Slides as secondary units in positions 3 and 4 will be "centered" on the -GV Option mounting hole pattern. (see figure 3)
6) SK/SL Slides as secondary units in positions 3 and 4 are "centered" on side mounting pattern in position 2 on unit. (see figure 3)







POSSIBLE COMBINATIONS: *SLIDE & SLIDE*

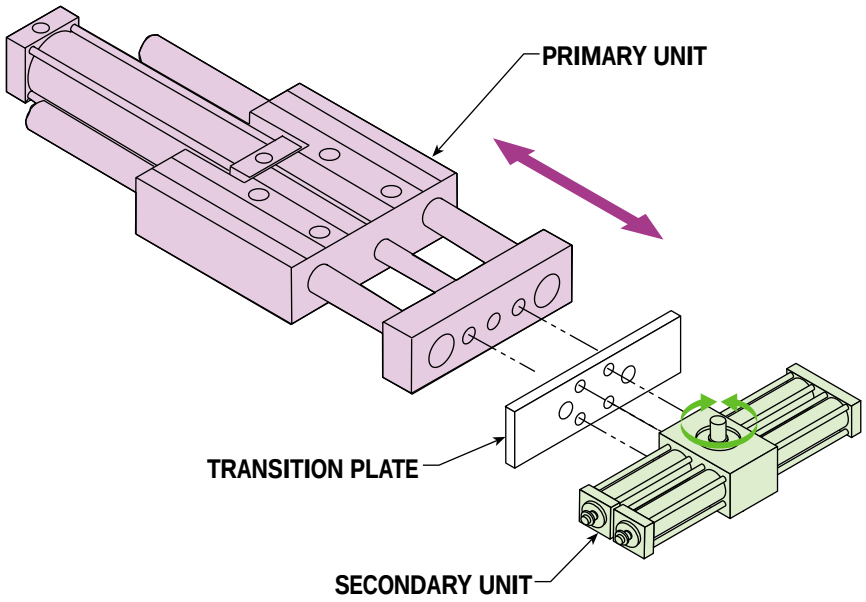
PRIMARY UNIT		SECONDARY UNIT → SLIDES (See Notes)																																								
		UNIT NO.	SAx108 [SAx508] SBx108 [SBx508]	SAx110 [SAx510] SBx110 [SBx510]	SAx114 [SAx514] SBx114 [SBx514]	SAx120 [SAx520] SBx120 [SBx520]	SAx132 [SAx532] SBx132 [SBx532]	SD22 SE22	SD23 SE23	SD24 SE24	SD25 SE25	SD26 SE26	SK71 SL71	SK72 SL72	SK73 SL73	SK74 SL74	SK75 SL75	SK76 SL76	SHP108 [SHP508]	SHP112 [SHP512]	SHP116 [SHP516]	SIP512	SIP516	SIP520	SJP508	SJP512	SJP516	STP108 [STP508]	STP112 [STP512]	STP116 [STP516]	STP120 [STP520]	STP125 [STP520]	SCVx12 [SCV52]	SCVx13 [SCV53]	SCVx14 [SCV54]	SCVx15 [SCV55]	SCVx16 [SCV56]	SCVx17 [SCV57]	SCVx18 [SCV58]	SCVx19 [SCV59]
	SERIES SBx SLIDES	SBx108 [SBx508]	2					2					2																													
		SBx110 [SBx510]	2	2				2					2						2						2																	
		SBx114 [SBx514]	2	2	2			2					2						2	2		2			2	2		3	3													
		SBx120 [SBx520]	2	2	2	2		2	2				2	2					3	3		3			3	3		3	3	3	3		3	3							
		SBx132 [SBx532]	3	3	3	3	3	3	3	3			3	3	3				3	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	3						
	SERIES SD & SE SLIDES	SD22 SE22	3	3				3					3						3						3			2	2												
		SD23 SE23	3	3	3	3		3	3				3	3					3	3		3			3	3		2	2				3								
		SD24 SE24	3	3	3	3	3	3	3	3			3	3	3				3	3	3	3	3		3	3	3	3	3	3	3	5	3	3							
		SD25 SE25	3	3	3	3	3	3	3	3	3		3	3	3	3			3	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	3	4					
		SD26 SE26	3	3	3	3	3	3	3	3	3	5	3	3	3	3			5	5	5	5	5	5	5	5	5	3	3	3	3	5	3	3	3	4	5				
	SERIES SK & SL SLIDES	SK71 SL71	3	3				3					3	3					2						2																
		SK72 SL72	3	3	3	3		3	3				3	3	3				2	2		2			2	2		3	3				3								
		SK73 SL73	3	3	3	3	3	3	3	3			3	3	3	3			3	3	3	3	3		3	3	3	3	3	3	3		3	3	3						
		SK74 SL74	3	3	3	3	3	3	3	3	3		3	3	3	3	3		3	3	3	3	3	3	3	3	3	3	3	3	3		3	3	3	4					
		SK75 SL75	3	3	3	3	3	3	3	3	3		3	3	3	3	*		3	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	3	4	5				
		SK76 SL76	5	5	5	5	5	5	5	5	5		5	5	5	5	5		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5			
	SERIES SCV SLIDES	SCV12 [SCV52]	2	2															2						2																
		SCV13 [SCV53]	3	3	3														3	3		3			3	3															
		SCV14 [SCV54]	3	3	3														3	3	3	3	3		3	3	3						3								
		SCV15 [SCV55]	4	4	4	4		4					4						3	3	3	3	3	3	3	3	3	4	4	4	4		4	4							
		SCV16 [SCV56]	5	5	5	5		5	5				5	5	5				5	5	5	5	5	5	5	5	5	5	5	5	5		5	5	5						
		SCV17 [SCV57]	5	5	5	5		5	5				5	5	5				5	5	5	5	5	5	5	5	5			5	5	5	5	5	5	5					
		SCV18 [SCV58]	6	6	6	6	6	6	6	6			6	6	6	6			5	5	5	5	5	5	5	5	5			6	6	6	6	6	6	6	6				
		SCV19 [SCV59]	6	6	6	6	6	6	6	6			6	6	6	6			5	5	5	5	5	5	5	5	5					6	6	6	6	6	6	6			

PLATE THICKNESS KEY

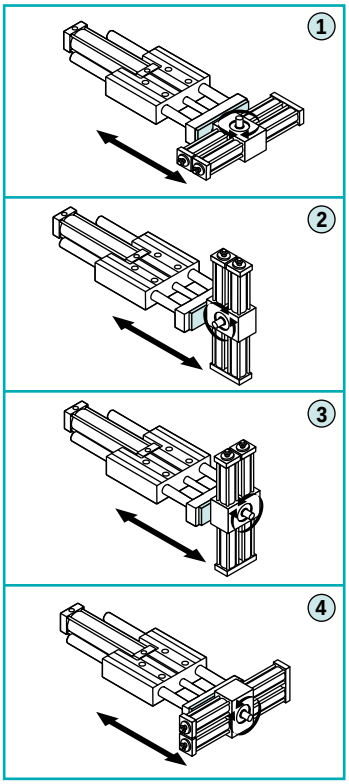
1 = .312 = [7.9] 2 = .375 = [9.5] 3 = .500 = [12.7] 4 = .625 = [15.9] 5 = .750 = [19] 6 = 1.250 = [31.8]

NOTES:
1) SHADED AREAS - CONSULT PHD FOR AVAILABILITY
2) METRIC NUMBERS ARE IN [ ]
3) * = POSITION 1 & 2 = 3, POSITION 3 & 4 = 5
4) MODEL NUMBERS IN CHART ARE FOR REFERENCE SEE CODE CHART FOR ACTUAL ORDER CODE

TRANSITION PLATES: CANTILEVER TYPE & ROTARY ACTUATOR



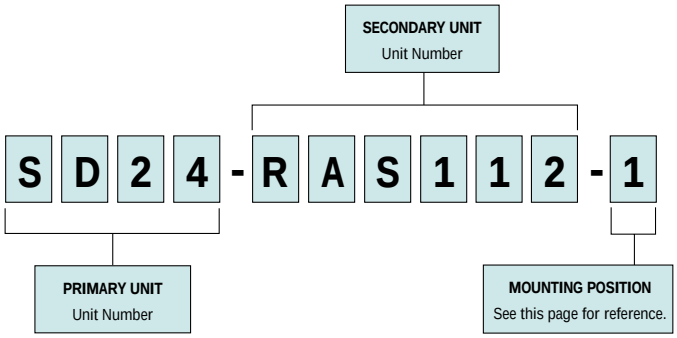
MOUNTING POSITION



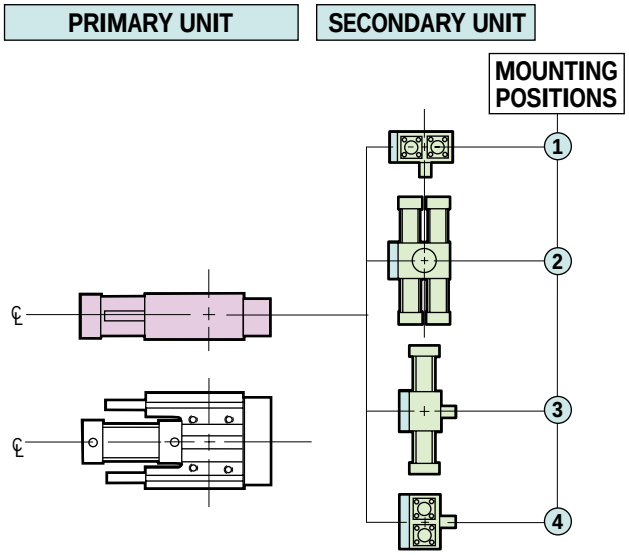
COMBINATIONS OF ROTARY ACTUATORS TO SERIES SBx, SK & SL, SD & SE, AND SCV SLIDES

ORDERING DATA

TO ORDER SPECIFY:
Primary Unit Number, Secondary Unit Number, and Mounting Position.



NOTES:
1) These numbers apply regardless of unit travel and rotation.
2) All required mounting hardware is included with the Transition Plate.
3) RLS shafts are **not centered with the mounting hole pattern of the body**. (See section 5 for shaft offset dimensions.) Consult PHD if shafts are required to be centered with tool plate or housing mounting patterns.
4) For RLS units as secondary units in positions 3 & 4, the -GX option must be specified on the RLS unit.
5) RIx Rotaries as secondary units are available in position 3 & 4 only.
6) If dowel pin holes are required, consult PHD.



NOTES:
1) Use shaded view to find correct mounting position.
2) All units are **centered on mounting hole pattern of body and tool plate**.

ADAPTORS, TRANSITION

POSSIBLE COMBINATIONS: SLIDE & ROTARY ACTUATOR

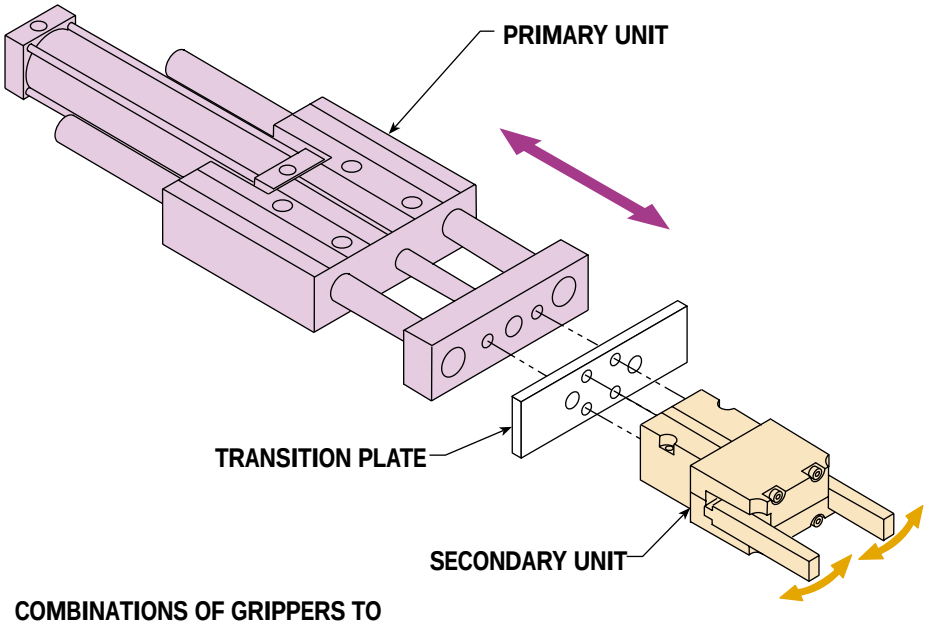
PRIMARY UNIT			SECONDARY UNIT: ROTARY ACTUATORS																										
		UNIT NO.	R200 [R205]	R400 [R405]	R600 [R605]	R800 [R805]	RAS120 [RAS520] RAS125 [RAS525]	RAS132 [RAS532]	RAS140 [RAS540]	RAS150 [RAS550]	RLS112 [RLS512]	RLS116 [RLS516]	RLS120 [RLS520]	RLS125 [RLS525]	RLS132 [RLS532]	RLS140 [RLS540]	RLS150 [RLS560]	RLS163 [RLS563]	RFS114 [RFS514]	RFS120 [RFS520]	RFS125 [RFS525]	RIx25	RIx32	RIx50	RCx08	RCx12	RCx16
	SERIES SBx SLIDES	SBx108 [SBx508]																							2		
		SBx110 [SBx510]									2								3						2		
		SBx114 [SBx514]					3				3	3	3	3					3	3					2	3	
		SBx120 [SBx520]	3				3				3	3	3	3					3	3	3				3	3	3
		SBx132 [SBx532]	3	3			3	3			3	3	3	3	3					3	3					3	3
	SERIES SD & SE SLIDES	SD22 SE22	3				3				3	3	3	3					3	3					3	3	3
		SD23 SE23	3				3	3	5		3	3	3	3	3				3	3	3				3	3	3
		SD24 SE24	3	3			3	3	5	5	3	3	3	3	3	3	5		3	3	3				3	3	3
		SD25 SE25	3	5	5		3	3	5	5	3	3	3	3	3	3	5		3	3	3					3	3
		SD26 SE26	3	5	5	6	3	3	5	5	3	3	3	3	3	3	5	5	5	5	5	5	6				5
	SERIES SK & SL SLIDES	SK71 SL71	3				3				3	3	3	3					3						2	3	3
		SK72 SL72	3				3	3			3	3	3	3	3				3	3					2	3	3
		SK73 SL73	3	3			3	3	5	5	3	3	3	3	3	5	5		3	3	3				3	3	3
		SK74 SL74	3	5	5		3	3	5	5	3	3	3	3	3	5	5		3	3	3				3	3	3
		SK75 SL75	3	5	5	6	3	3	5	5	3	3	3	3	3	5	5	5	3	3	3					3	3
		SK76 SL76	5	5	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5					5
	SERIES SCV SLIDES	SCVx12 [SCV52]																	3						2		
		SCVx13 [SCV53]																	3	3					3	3	
		SCVx14 [SCV54]																	3	3	3				3	3	3
		SCVx15 [SCV55]					4				4	4	4						3	3	3				3	3	3
		SCVx16 [SCV56]					5				5	5	5						5	5	5	5				5	5
		SCVx17 [SCV57]					5	5			5	5	5	5						5	5	5					5
		SCVx18 [SCV58]					6	6	6		6	6	6	6	6						5	5	6				
		SCVx19 [SCV59]	6				6	6	6	6	6	6	6	6	6	6	6					5	6	6			

PLATE THICKNESS KEY

1 = .312 = [7.9] 2 = .375 = [9.5] 3 = .500 = [12.7] 4 = .625 = [15.9] 5 = .750 = [19] 6 = 1.250 = [31.8]

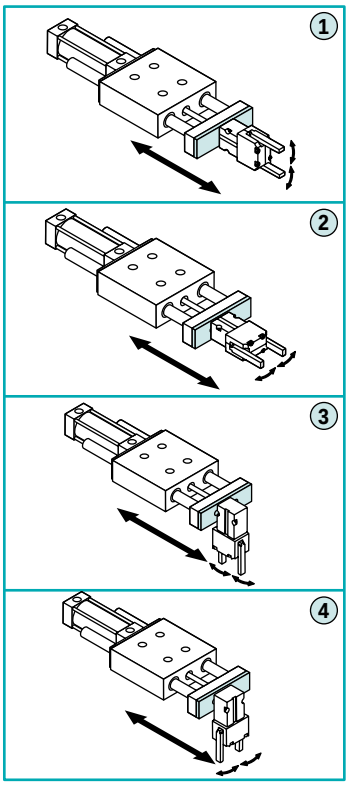
NOTES:
1) SHADED AREAS – CONSULT PHD FOR AVAILABILITY
2) METRIC NUMBERS ARE IN [ ]
3) RLS SHAFTS ARE **NOT CENTERED** ON ITS MOUNTING HOLE PATTERN.
4) MODEL NUMBERS IN CHART ARE FOR REFERENCE. SEE CODE CHART FOR ACTUAL ORDER CODE

TRANSITION PLATES: CANTILEVER TYPE & GRIPPER



COMBINATIONS OF GRIPPERS TO SERIES SBx, SK & SL, SD & SE, AND SCV SLIDES

MOUNTING POSITION



ORDERING DATA

TO ORDER SPECIFY:
Primary Unit Number, Secondary Unit Number, and Mounting Position.

SECONDARY UNIT
Unit Number

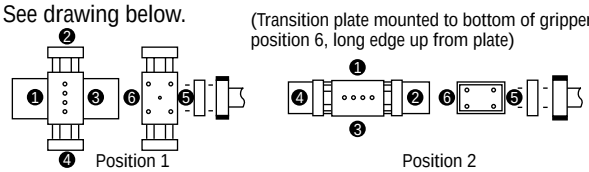
S	D	2	6	-	G	R	B	1	1	2	3	2	-	1

PRIMARY UNIT
Unit Number

MOUNTING POSITION
See this page for reference.

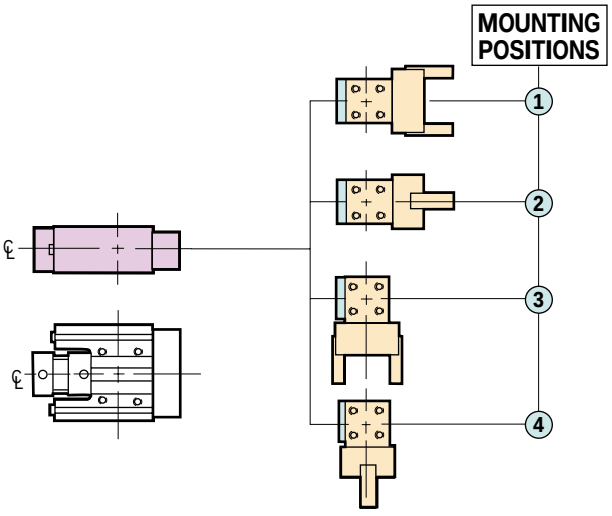
NOTES:
1) These numbers apply regardless of unit travel.
2) All required mounting hardware is included with the Transition Plate.
3) Mounting position 3 not available with Series GRC or GRB Grippers.
4) GRL & GRT Grippers as secondary units are available in position 1 & 2 only.
5) GRW Grippers as secondary units are available in position 1 & 2 only. See drawing below.

(Transition plate mounted to bottom of gripper position 6, long edge up from plate)



6) If dowel pin holes are required, consult PHD.

PRIMARY UNIT | **SECONDARY UNIT**



NOTES:
1) Use shaded view to find correct mounting position.
2) All units are **centered on mounting hole pattern of body and tool plate.**
3) Series GRC, GRB, 5300, & 190 Grippers in position #4 as secondary units are always centered on the thru and counterbored mounting hole pattern.

POSSIBLE COMBINATIONS: SLIDE & GRIPPER

SECONDARY UNIT — GRIPPERS

PRIMARY UNIT	UNIT NO.	8400	8410	8420	8430	9x6x 9x6x 9x6x	9x7x 9x7x 9x7x	9x8x 9x8x 9x8x	9x9x 9x9x 9x9x	GRB11x12	GRB11x16	GRB11x20	GRB11x32	GRB11x40	GRB11x50	GRCx3x	GRCx4x	GRCx5x	GRCx6x	GRDx3x	GRDx4x	GRDx5x	GRDx6x	GRSx27	GRSx28	GRSx32	GRSx50	GRSx63	GRTx1	GRTx2	GRTx3	GRTx4	GRTx5	GRTx6	GRTx7	GRTx8	GRLx14	GRLx16	GRW16	GRW25	GRW32	GRW40	GRW50	GRFxx19	GRFxx25	GRFxx28	GRFxx32
SERIES SBx SLIDES	SBx108 [SBx508]	1	2			1	2			3	3	3								1	2								2	3							2	2	3								
	SBx110 [SBx510]	1	2	2		2	2	2		3	3	3								1	2	2							2	3	3						2	2	3								
	SBx114 [SBx514]	2	2	2		2	2			3	3	3								2	2	2							3	3	3						3	3	3								
	SBx120 [SBx520]	2	2	2	3	2	2	2	2	3	3	3	3			3				2	2	2	3	3					3	3	3	5	5				3	3	3	3				3	3	3	
	SBx132 [SBx532]	3	3	3	3	3	3	3	3	3	3	3	3	5		3	3			3	3	3	3	3	3				3	3	3	5	5	5	5		5	5	5	5				3	3	3	
SERIES SD & SE SLIDES	SD22 SE22	2	2	3	3	2	2	2	3	3	3	3								2	2	3	3						2	3	3								3	3	3			3			
	SD23 SE23	2	2	3	3	2	2	3	3	3	3	3	3			3				2	2	3	3	3	3				2	3	3	5							3	3	3	5		3			
	SD24 SE24	3	3	3	3	3	3	3	3	3	3	3	3	5		3	3			3	3	3	3	3	3	3			2	3	3	5	5	5	5				3	3	3	5	5	3	3	3	
	SD25 SE25	3	3	3	3	3	3	3	3	3	3	3	3	5	5	3	3	5		3	3	3	3	3	3	3	5		3	3	3	5	5	5	5	5			3	3	5	5	5	3	3	3	3
	SD26 SE26	3	3	3	3	3	3	3	3	3	3	3	3	5	5	3	3	5	5	3	3	3	3	5	5	5	5	5	5	5	5	5	5	5	5	5			5	5	5	5	5	5	5	5	5
SERIES SK & SL SLIDES	SK71 SL71	2	2	3	3	2	2	3	3	3	3	3								2	2	3	3						2	3	3								3	3	5			2			
	SK72 SL72	2	2	3	3	2	2	3	3	3	3	3	3			3				2	2	3	3	3					2	3	3	5							3	3	5			2			
	SK73 SL73	2	2	3	3	2	2	3	3	3	3	3	3			3				2	2	3	3	3	3				2	3	3	5	5						3	3	5	5		3	3		
	SK74 SL74	3	3	3	3	3	3	3	3	3	3	3	3	5		3	3			3	3	3	3	3	3	3			2	3	3	5	5	5					3	3	5	5		3	3	3	
	SK75 SL75	3	3	3	3	3	3	3	3	3	3	3	3	5	5	3	3	5		3	3	3	3	3	3	3	5	5	3	3	3	5	5	5	5	5			3	3	5	5	5	3	3	3	3
	SK76 SL76	3	3	3	3	3	3	3	3	3	3	3	3	5	5	3	3	5	5	3	3	3	3	5	5	5	5	5	3	3	3	5	5	5	5	5			5	5	5	5	5	5	5	5	5
SERIES SCV SLIDES	SCV12 [SCV52]	2	2	2	2	2				3														3	3				2	3	3						2	2	3	3							
	SCV13 [SCV53]	3	3	3	3	3	3			3	3													3	3				2	3	3	5					2	2	3	3							
	SCV14 [SCV54]	3	3	3	3	3	3			3	3									3				3	3				2	3	3	5					2	2	3	3				3			
	SCV15 [SCV55]	4	4	4	4	4	4	4		4	4	4								4	4			3	3	3			3	3	3	5	5						3	3	5			3	3		
	SCV16 [SCV56]	5	5	5	5	5	5	5	5	5	5	5								5	5			5	5	5			5	5	5	5	5						5	5	5	5		5	5	5	
	SCV17 [SCV57]	5	5	5	5	5	5	5	5	5	5	5				5				5	5			5	5	5	5		5	5	5	5	5	5					5	5	5	5	5	5	5	5	5
	SCV18 [SCV58]	6	6	6	6	6	6	6	6	6	6	6	6			6				6	6	6		5	5	5	5	5	5	5	5	5	5	5	5				5	5	5	5	5	5	5	5	5
	SCV19 [SCV59]	6	6	6	6	6	6	6	6	6	6	6	6	6		6	6			6	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5				5	5	5	5	5	5	5	5	5

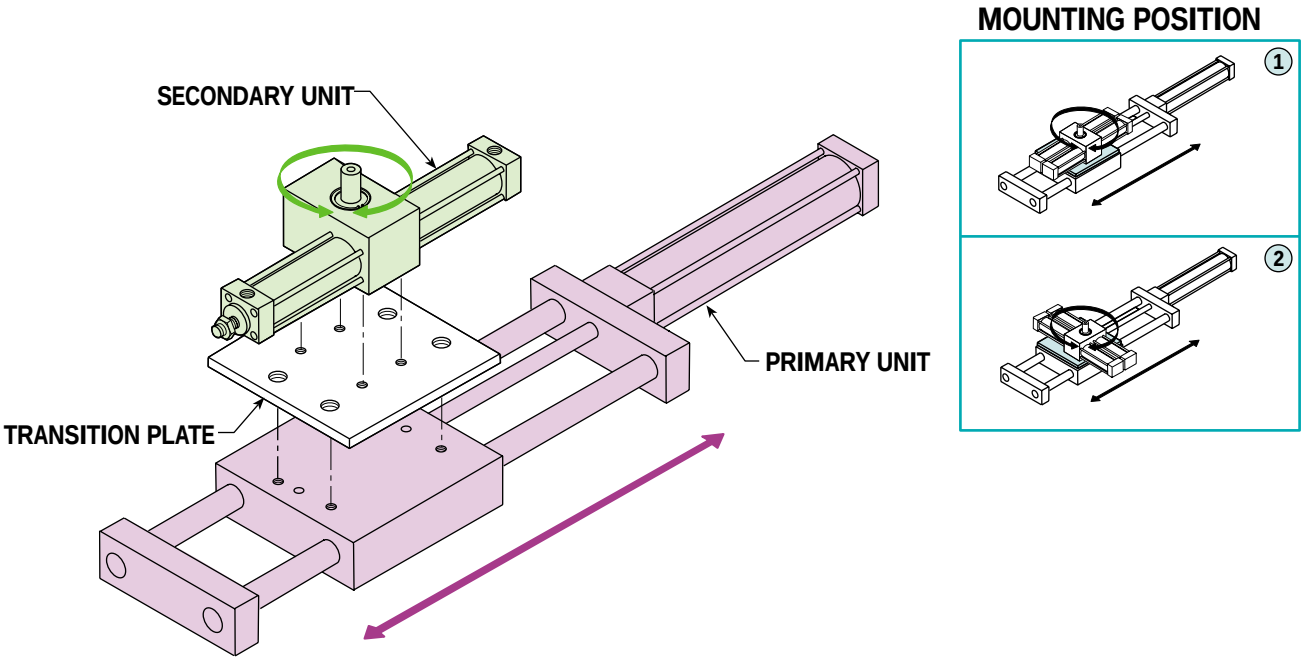
PLATE THICKNESS KEY

1 = .312 = [7.9]
2 = .375 = [9.5]
3 = .500 = [12.7]
4 = .625 = [15.9]
5 = .750 = [19]
6 = 1.250 = [31.8]

NOTES:
1) SHADED AREAS – CONSULT PHD FOR AVAILABILITY
2) METRIC NUMBERS ARE IN [ ]
3) MODEL NUMBERS IN CHART ARE FOR REFERENCE, SEE CODE CHART FOR ACTUAL ORDER CODE

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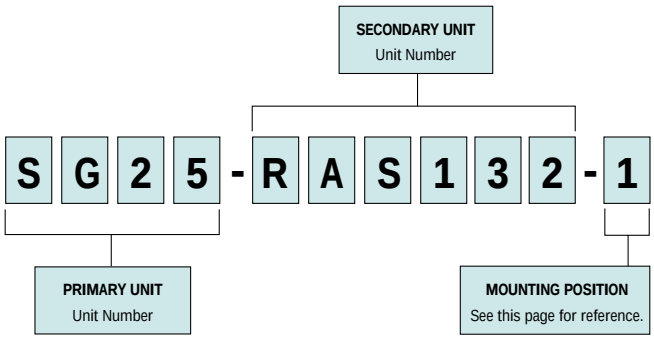
TRANSITION PLATES: *SADDLE TYPE & ROTARY ACTUATOR*



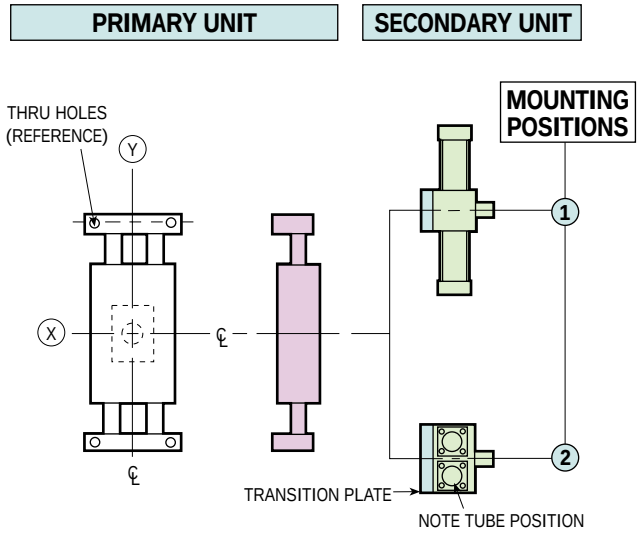
COMBINATIONS OF ROTARY ACTUATORS TO SERIES SG, SM, & SFP SLIDES

ORDERING DATA

TO ORDER SPECIFY:
Primary Unit Number, Secondary Unit Number, and Mounting Position.



NOTES:
1) These numbers apply regardless of unit travel and rotation.
2) All required mounting hardware is included with the Transition Plate.
3) RLS shafts are **not centered with the mounting hole pattern.** (See section 5 for shaft offset dimensions.) Consult PHD if shafts are required to be centered with tool plate or housing mounting patterns.
4) For RLS units as secondary unit in positions 1 & 2, the -GX option must be specified on the RLS unit.
5) If dowel pin holes are required, consult PHD.



NOTES:
1) Use shaded view to find correct mounting position.
2) On Series SG, Rotary Actuator tube may interfere with cylinder port (in Position 1 only) in retracted position.
3) All units are **centered on mounting hole pattern of body and saddle.**

			SECONDARY UNIT																										
			ROTARY ACTUATORS																										
		UNIT NO.	R200 [R205]	R400 [R405]	R600 [R605]	R800 [R805]	RAS120 [RAS520]	RAS125 [RAS525]	RAS132 [RAS532]	RAS140 [RAS540]	RAS150 [RAS550]	RLS112 [RLS512]	RLS116 [RLS516]	RLS120 [RLS520]	RLS125 [RLS525]	RLS132 [RLS532]	RLS140 [RLS540]	RLS150 [RLS550]	RLS163 [RLS563]	RIx25	RIx32	RIx50	RFS114 [RFS514]	RFS120 [RFS520]	RFS125 [RFS525]	RCCx108 [RCCx508]	RCCx112 [RCCx512]	RCCx116 [RCCx516]
PRIMARY UNIT	SERIES SG SLIDES	SG21 [SG61]					3	3	3			3	3	3	3	3							3	3		3	3	
		SG22 [SG62]					3	3	3	3		3	3	3	3	3	3						3	3	3	3	3	3
		SG23 [SG63]	4				4	4	4	4	4	4	4	4	4	4	4	5	5				3	3	3	3	3	3
		SG24 [SG64]	4	4			4	4	4	4	4	4	4	4	4	4	4	5	5				3	3	3	3	3	3
		SG25 [SG65]	5	5	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5				5	5			5
		SG26 [SG66]	5	5	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6				5			5
	SERIES SM SLIDES	SM108 [SM508]										2	2													2		
		SM112 [SM512]					3					3	3	3									3			3	3	
		SM116 [SM516]	3				3	3				3	3	3	3					3			3	3		3	3	3
		SM125 [SM525]	3				3	3	3	3		3	3	3	3	3	3			3	3		3	3	3	3	3	3
		SM132 [SM532]	5	5			5	5	5	5	5	5	5	5	5	5	5	5		5	5	5	5	5	5		5	5
	SERIES SFP SLIDES	SFP527	9*	9*	7*	*	9*	9*	9*	9*	6*	9*	9*	9*	9*	9*	9*	9*	9*	6*	10*	10*		5	5		3	3
		SFP540	7*	7*	7*	8*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	8*	8*			5			

PLATE THICKNESS KEY

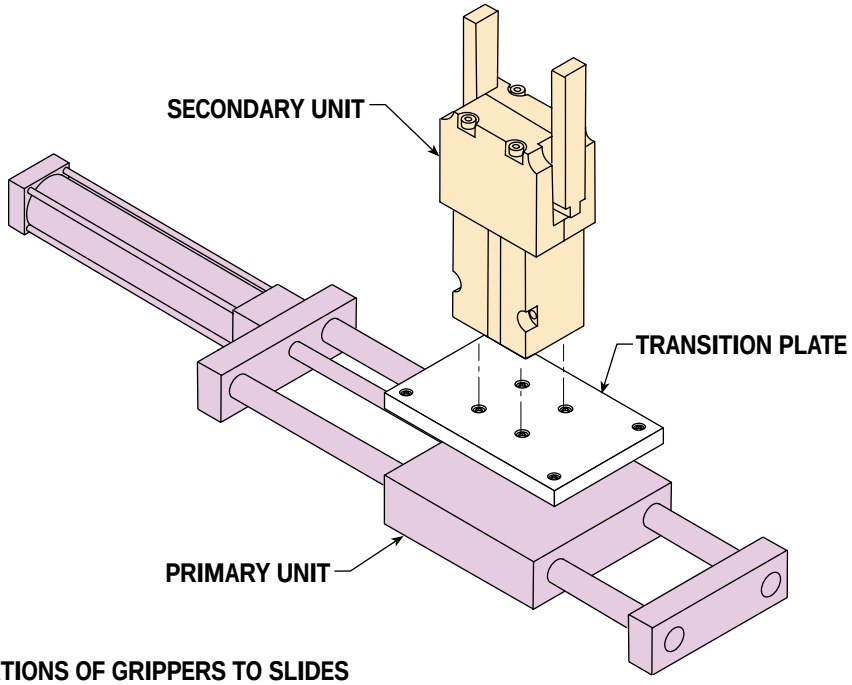
1	= .313 [7.9]	6	= 1.250 [31.8]
2	= .375 [9.5]	7	= 1.500 [38.1]
3	= .500 [12.7]	8	= 2.000 [50.8]
4	= .625 [15.9]	9	= 1.000 [25.4]
5	= .750 [19.0]	10	= 1.750 [44.5]

* = Numbers indicate the total thickness of two plates, required due to design reasons

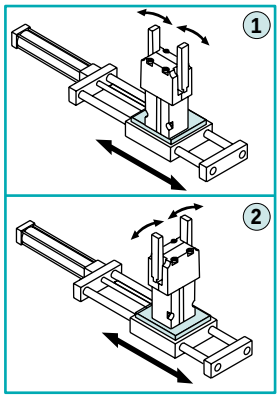
Example:
9* = 1.000 total thickness of two .500 plates

NOTES:
1) SHADED AREAS – CONSULT PHD FOR AVAILABILITY
2) METRIC NUMBERS ARE IN [ ]
3) RLS SHAFTS ARE **NOT CENTERED** ON ITS MOUNTING HOLE PATTERN.
4) MODEL NUMBERS IN CHART ARE FOR REFERENCE, SEE CODE CHART FOR ACTUAL ORDER CODE

TRANSITION PLATES: *SADDLE TYPE & GRIPPER*



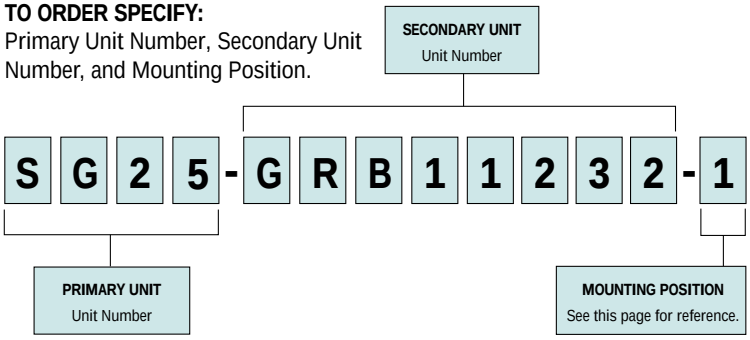
MOUNTING POSITION



COMBINATIONS OF GRIPPERS TO SLIDES

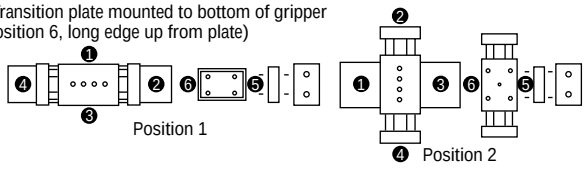
ORDERING DATA

TO ORDER SPECIFY:
Primary Unit Number, Secondary Unit Number, and Mounting Position.

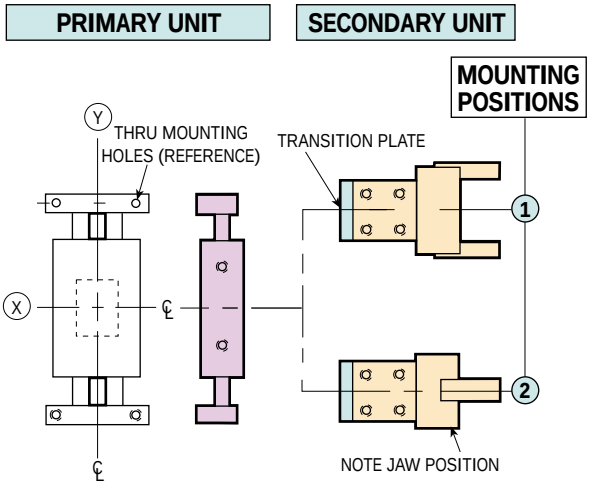


NOTES:
1) These numbers apply regardless of unit travel.
2) All required mounting hardware is included with the Transition Plate.
3) GRW Grippers as secondary units, see drawing below.

(Transition plate mounted to bottom of gripper position 6, long edge up from plate)



4) If dowel pin holes are required, consult PHD.



NOTES:
1) Use shaded view to find correct mounting position.
2) All units are **centered on mounting hole pattern of body and saddle.**

ADAPTORS, TRANSITION

POSSIBLE COMBINATIONS: SLIDE & GRIPPER

PRIMARY UNIT		UNIT NO.	SECONDARY UNIT – GRIPPERS																							
			8400	8410	8420	8430	9x6x	9x7x	9x8x	9x9x	GRBx2x	GRBx3x	GRBx4x	GRBx5x	GRBx6x	GRBx7x	GRCx3x	GRCx4x	GRCx5x	GRCx6x	GRDx3x	GRDx4x	GRDx5x	GRDx6x	GRRx50
	SERIES SG SLIDES	SG21 [SG61]	2	2	2	2	2	2	2			2	2	2							2	2	2	2	
		SG22 [SG62]	2	2	2	2	2	2	2	3		2	3	3	3			3	3		2	2	2	2	
		SG23 [SG63]	3	3	3	3	3	3	3	3		3	3	3	3			3	3	3	3	3	3	3	
		SG24 [SG64]		3	3	3		3	3	3		3	3	3	3		4	3	3	4		3	3	3	
		SG25 [SG65]											4	4	4		4	3	4	4					
		SG26 [SG66]													5		5	4	5	5					
	SERIES SM SLIDES	SM108 [SM508]	2	2			2	2			3										2	2			
		SM112 [SM512]	3	3			3	3			3										3	3	3		
		SM116 [SM516]	3	3	3		3	3	3		3	3					3				3	3	3		
		SM125 [SM525]	3	3	3	3	3	3	3	3	3	3	3	3			3	3	3		3	3	3	3	
		SM132 [SM532]	5	5	5	5	5	5	5	5	5	5	5	5	5		5	5	5		5	5	5	5	
	SERIES SFP SLIDES	SFP527	9*	9*	9*	9*	9*	9*	9*	9*	9*	9*	9*	9*	7*	7*	9*	9*	9*	*	9*	9*	9*	9*	
		SFP540			7*	7*			7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	7*	

PRIMARY UNIT		UNIT NO.	SECONDARY UNIT – GRIPPERS																							
			GRSx27	GRSx28	GRSx32	GRSx50	GRSx63	GRTx1	GRTx2	GRTx3	GRTx4	GRTx5	GRTx6	GRTx7	GRTx8	GRLx14	GRLx16	GRWx16	GRWx25	GRWx32	GRWx40	GRWx50	GRFxx19	GRFxx25	GRFxx28	GRFxx32
	SERIES SG SLIDES	SG21 [SG61]						2	3	3	5							3	3	5			3			
		SG22 [SG62]	3					2	3	3	5							3	3	5			3	3		
		SG23 [SG63]	3	3				2	3	3	5							3	3	5			3	3		
		SG24 [SG64]	3	3	3			2	3	3	5	5						3	3	5	5		3	3	3	
		SG25 [SG65]	5	5	5	5	5	3	3	3	5	5	5					3	3	5	5	5	5	5	5	5
		SG26 [SG66]	5	5	5	5	5	5	5	5	5	5	5	5				5	5	5	5	5	5	5	5	5
	SERIES SM SLIDES	SM108 [SM508]						2								2										
		SM112 [SM512]	3					3	3							3	3	3					3			
		SM116 [SM516]	3	3				3	3	3						3	3	3	3				3			
		SM125 [SM525]	3	3	3	3		3	3	3	3	3				3	3	3	3	3	3		3	3		
		SM132 [SM532]	5	5	5	5	5	5	5	5	5	5	5	5		5	5	5	5	5	5	5	5	5	5	5
	SERIES SFP SLIDES	SFP527	9*	9*				9*	9*	9*	9*					9*	9*	9*	9*				9*	9*		
		SFP540	7*	7*	7*			7*	7*	7*	7*	7*						7*	7*	7*			7*	7*	7*	7*

PLATE THICKNESS KEY

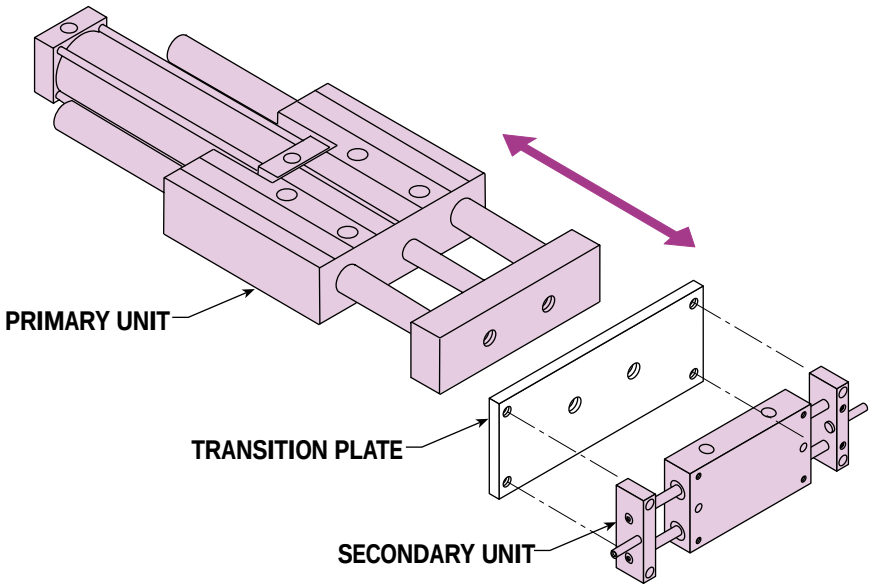
1	= .313 [7.9]	6	= 1.250 [31.8]
2	= .375 [9.5]	7	= 1.500 [38.1]
3	= .500 [12.7]	8	= 2.000 [50.8]
4	= .625 [15.9]	9	= 1.000 [25.4]
5	= .750 [19.0]	10	= 1.750 [44.5]

* = Numbers indicate the total thickness of two plates, required due to design reasons

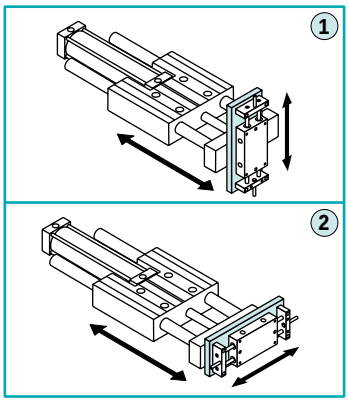
Example:
9* = 1.000 total thickness of two .500 plates

NOTES:
1) SHADED AREAS – CONSULT PHD FOR AVAILABILITY
2) METRIC NUMBERS ARE IN [ ]
3) MODEL NUMBERS IN CHART ARE FOR REFERENCE, SEE CODE CHART FOR ACTUAL ORDER CODE

TRANSITION PLATES: CANTILEVER TYPE & SADDLE SLIDE



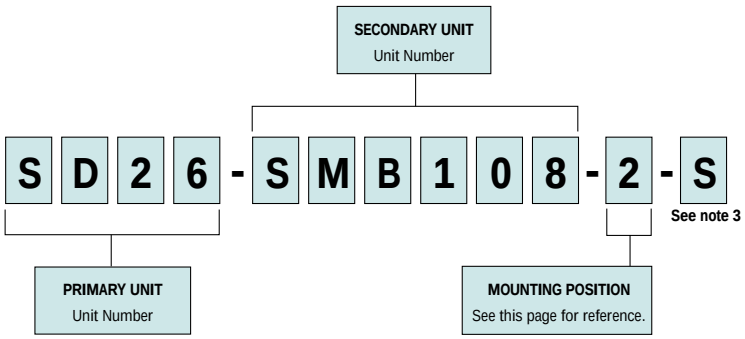
MOUNTING POSITION



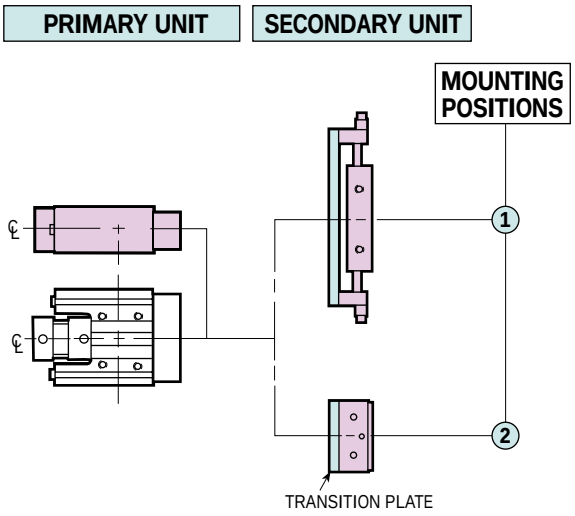
COMBINATIONS OF SERIES SM TO SERIES SBx, SD & SE, SK & SL, AND SCV SLIDES

ORDERING DATA

TO ORDER SPECIFY:
Primary Unit Number, Secondary Unit Number, and Mounting Position.



NOTES:
1) These numbers apply regardless of unit travel and rotation.
2) All required mounting hardware is included with the Transition Plate.
3) When a Series SM Slide is the secondary unit, the travel must be specified when ordered. (6-Digit long code after standard call out is required with assumed decimal points 3 places from right)
   Example: S02000 = 2.000 Travel
   S03500 = 3.500 Travel
   Option -S_ _ _ _ _ stroke required for SM Slides as secondary unit.
4) If dowel pin holes are required, consult PHD.



NOTES:
1) Use shaded view to find correct mounting position.
2) All units are **centered on mounting hole pattern of end blocks and tool plate.**

POSSIBLE COMBINATIONS: SLIDE & SLIDE

PRIMARY UNIT		UNIT NO.	SECONDARY UNIT – SLIDES: SM108 [SM508]	SM112 [SM512]	SM116 [SM516]	SM125 [SM525]	SM132 [SM532]
	SERIES SBx SLIDES	SBx108 [SBx508]					
		SBx110 [SBx510]					
		SBx114 [SBx514]	2				
		SBx120 [SBx520]	3	3	3		
		SBx132 [SBx532]	3	3	3	3	
	SERIES SD & SE SLIDES	SD22 [SE22]					
		SD23 [SE23]	3	3	3		
		SD24 [SE24]	3	3	3	3	
		SD25 [SE25]	3	3	3	3	
		SD26 [SE26]	5	5	5	5	5
	SERIES SK & SL SLIDES	SK71 SL71	2				
		SK72 SL72	2	2	3		
		SK73 SL73	3	3	3	3	
		SK74 SL74	3	3	3	3	
		SK75 SL75	3	3	3	3	
		SK76 SL76	5	5	5	5	
	SERIES SCV SLIDES	SCV12 SCV52	2				
		SCV13 SCV53	3				
		SCV14 SCV54	3	3			
		SCV15 SCV55	3	3	3		
		SCV16 SCV56	5	5	5	5	
		SCV17 SCV57	5	5	5	5	5
		SCV18 SCV58	5	5	5	5	5
		SCV19 SCV59	5	5	5	5	5

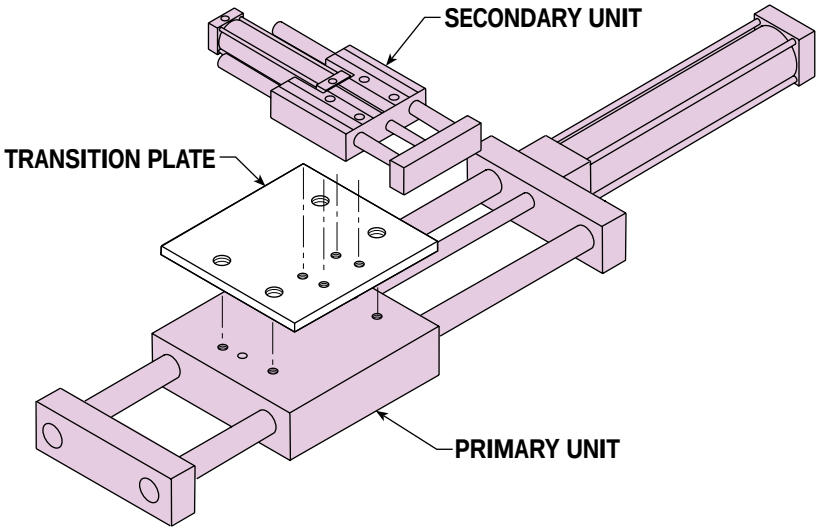
PLATE THICKNESS KEY

1 = .312 = [7.9] 2 = .375 = [9.5] 3 = .500 = [12.7] 4 = .625 = [15.9] 5 = .750 = [19] 6 = 1.250 = [31.8]

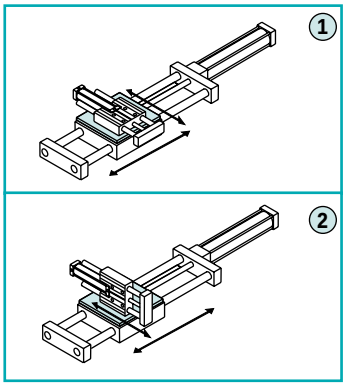
NOTES:

1) SHADED AREAS – CONSULT PHD FOR AVAILABILITY
2) METRIC NUMBERS ARE IN [ ]
3) MODEL NUMBERS IN CHART ARE FOR REFERENCE, SEE CODE CHART FOR ACTUAL ORDER CODE

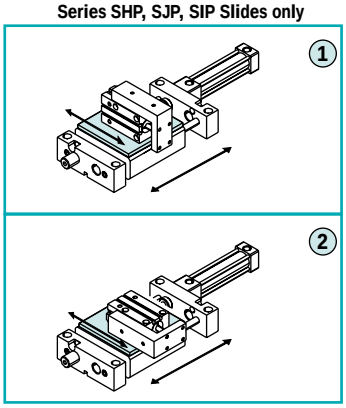
TRANSITION PLATES: *SADDLE TYPE & CANTILEVER SLIDE*



MOUNTING POSITION



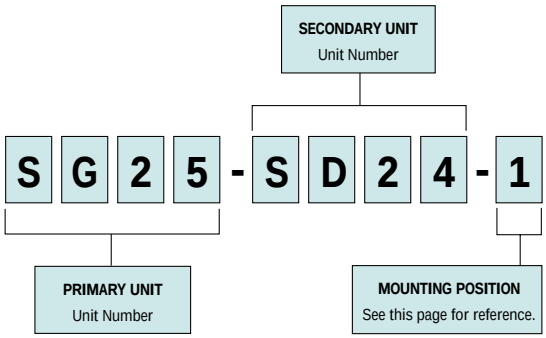
Series SHP, SJP, SIP Slides only



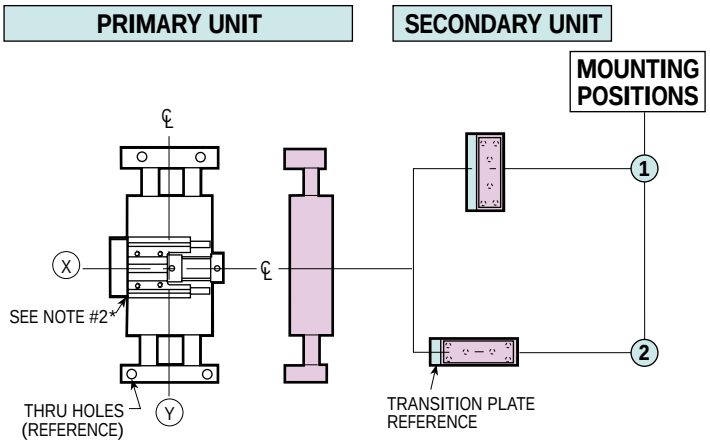
COMBINATIONS OF SERIES SAx & SBx, SD & SE, SK & SL, SHP, SIP, SJP, STP, AND SCV TO SERIES SG AND SM SLIDES

ORDERING DATA

TO ORDER SPECIFY:
Primary Unit Number, Secondary Unit Number, and Mounting Position.



NOTES:
1) These numbers apply regardless of unit travel.
2) All required mounting hardware is included with the Transition Plate.
3) SD/SE Slides as secondary units in position 2 require -GV option.
4) STP, SAx, & SBx Slides are not available in position 2.
5) If dowel pin holes are required, consult PHD.



NOTES:
1) Use shaded view to find correct mounting position.
2) *Unless otherwise specified, **the front edge of the secondary unit bearing housing is flush with the primary slide saddle side.**

POSSIBLE COMBINATIONS: *SLIDE & SLIDE*

PRIMARY UNIT	UNIT NO.	SECONDARY UNIT – SLIDES																																								
		SAx108 [SAx108] SBx108 [SBx108]	SAx110 [SAx110] SBx110 [SBx110]	SAx114 [SAx114] SBx114 [SBx114]	SAx120 [SAx120] SBx120 [SBx120]	SAx132 [SAx132] SBx132 [SBx132]	SD22 SE22	SD23 SE23	SD24 SE24	SD25 SE25	SD26 SE26	SK71 SL71	SK72 SL72	SK73 SL73	SK74 SL74	SK75 SL75	SK76 SL76	SHP108 SHP508	SHP112 SHP512	SHP116 SHP516	SIP512	SIP516	SIP520	SJP508	SJP512	SJP516	STP108 STP508	STP112 STP512	STP116 STP516	STP120 STP520	STP125 STP525	SCVx12 [SCV52]	SCVx13 [SCV53]	SCVx14 [SCV54]	SCVx15 [SCV55]	SCVx16 [SCV56]	SCVx17 [SCV57]	SCVx18 [SCV58]	SCVx19 [SCV59]
SERIES SG SLIDES	SG21 [SG61]	3	3	3			3	3					3	3				3	3	3	3	3	3	3	3	3						3	3	4					
	SG22 [SG62]	3	3	3			3	3					3	3				3	3	3	3	3	3	3	3	3						3	3	4	5				
	SG23 [SG63]	3	3	3	4		3	4	4				3	3	3			3	3	3	3	3	3	3	3	3	3					3	3	4	5	5			
	SG24 [SG64]	4	4	4	4	4	4	4	4	4		4	4	4	4	4		3	3	3	3	3	3	3	3	3	3	3	3			4	4	4	5	5	6		
	SG25 [SG65]	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6	6	
	SG26 [SG66]	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6	6	6
SERIES SM SLIDES	SM108 [SM508]	2																2						2			2													
	SM112 [SM512]	3										3						3	3		3			3	3		3	3				3							
	SM116 [SM516]	3	3				3	3				3	3					3	3	3	3	3		3	3	3	3	3	3			3	3						
	SM125 [SM525]	3	3	3	3		3	3	3			3	3	3	3			3	3	3	3	3	3	3	3	3	3	3	3	3		3	3	5	5				
	SM132 [SM532]	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5					
SERIES SFP SLIDES Position #1	SFP527	3	3	3	3	3	3	3	3	3	5	3	3	3	5			9*	9*	9*	9*	9*	9*	9*	9*	9*	3*	3*	3*	3*	3*	3*	3*	5*					
	SFP540			5	5	5	5	5	5	5	5	5	5	5	5	5											5	5	5	5	5		5	5	5	5	5		
SERIES SFP SLIDES Position #2	SFP527						9*	9*	9*	9*	7*	9*	9*	9*	7*			3	3	3	3	3	3	3	3	3													
	SFP540						7*	7*	7*	7*	7*	7*	7*	7*	7*	7*																							

PLATE THICKNESS KEY

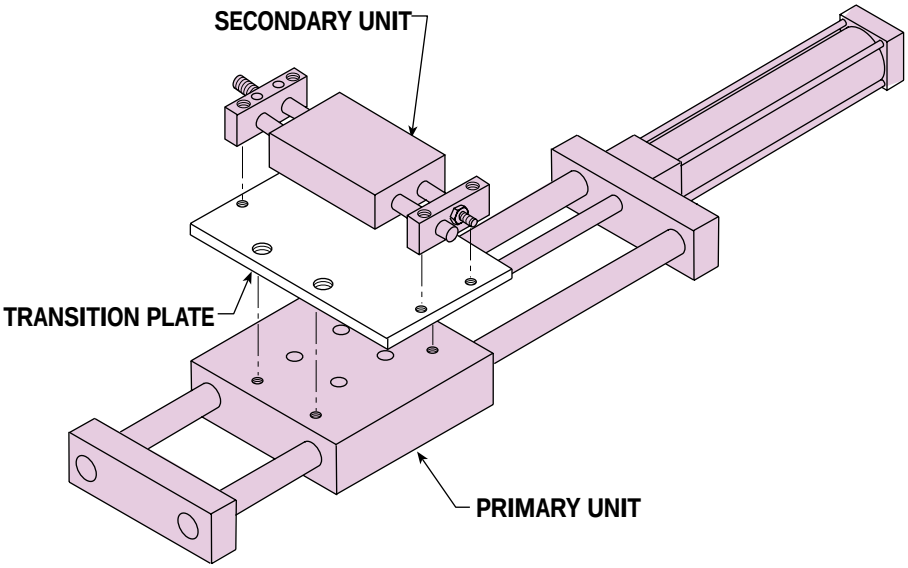
1	= .313 [7.9]	6	= 1.250 [31.8]
2	= .375 [9.5]	7	= 1.500 [38.1]
3	= .500 [12.7]	8	= 2.000 [50.8]
4	= .625 [15.9]	9	= 1.000 [25.4]
5	= .750 [19.0]	10	= 1.750 [44.5]

* = Numbers indicate the total thickness of two plates, required due to design reasons

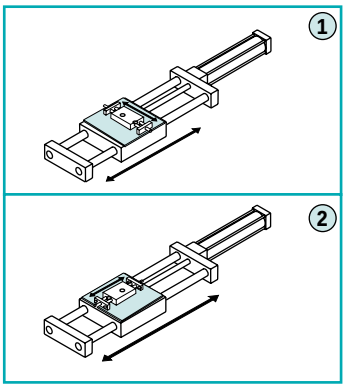
Example:
9* = 1.000 total thickness of two .500 plates

NOTES:
1) SHADED AREAS – CONSULT PHD FOR AVAILABILITY
2) METRIC NUMBERS ARE IN [ ]
3) MODEL NUMBERS IN CHART ARE FOR REFERENCE, SEE CODE CHART FOR ACTUAL ORDER CODE

TRANSITION PLATES: SADDLE TYPE & SADDLE TYPE



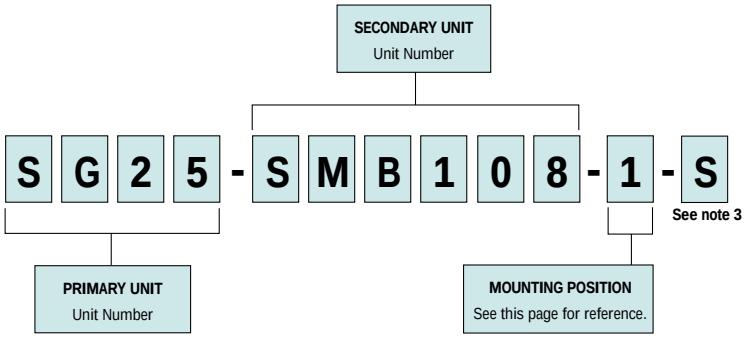
MOUNTING POSITION



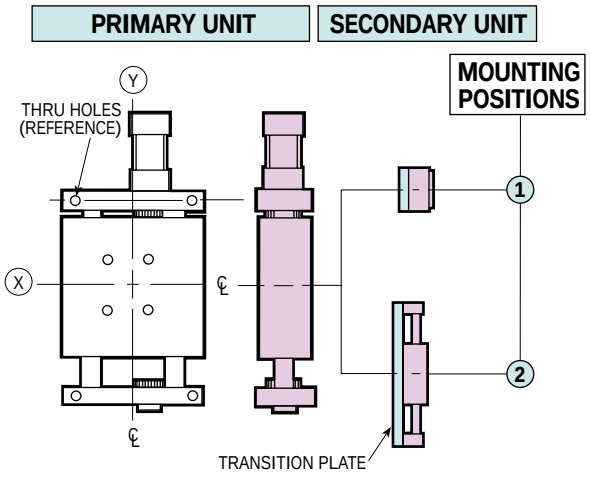
COMBINATIONS OF SERIES SG, SM, & SFP SLIDES

ORDERING DATA

TO ORDER SPECIFY:
Primary Unit Number, Secondary Unit Number, and Mounting Position.



NOTES:
1) These numbers apply regardless of unit travel.
2) All required mounting hardware is included with the Transition Plate.
3) When Series SG & SM Slides are a secondary unit, the travel must be specified when ordered.
(6-Digit long code after standard call out is required with assumed decimal points 3 places from right)
Example: S02000 = 2.000 Travel
S03500 = 3.500 Travel
Option -S_ _ _ _ _ stroke required for SG and SM Slides as secondary unit.
4) If dowel pin holes are required, consult PHD.



NOTES:
1) Use shaded view to find correct mounting position.
2) All units are **centered on mounting hole pattern of the end blocks and saddle.**
4) On Series SG & SFP Slides, the secondary unit may interfere with the cylinder port of the primary unit in position 2.

POSSIBLE COMBINATIONS: SLIDE & SLIDE

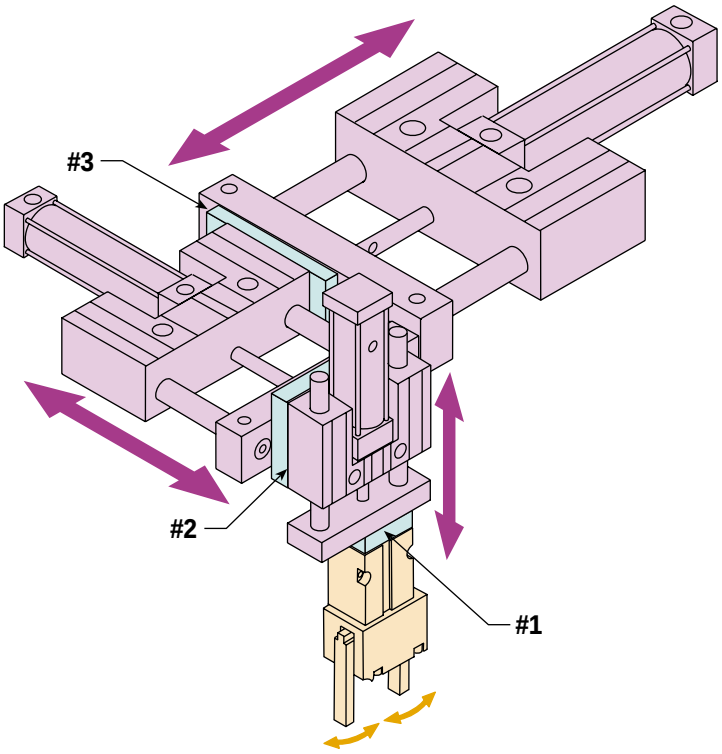
PRIMARY UNIT		UNIT NO.	SECONDARY UNIT: SLIDES SG21 [SG61]	SG22 [SG62]	SG23 [SG63]	SG24 [SG64]	SG25 [SG65]	SG26 [SG66]	SM108 [SM508]	SM112 [SM512]	SM116 [SM516]	SM125 [SM525]	SM132 [SM532]
	SERIES SG SLIDES	SG21 [SG61]	3						3	3			
		SG22 [SG62]	3	3					3	3	3		
		SG23 [SG63]	3	3	3				3	3	3		
		SG24 [SG64]	4	4	4	4	4		3	3	3	3	
		SG25 [SG65]	5	5	5	5	5	5	5	5	5	5	5
		SG26 [SG66]	5	5	5	5	5	5	5	5	5	5	5
	SERIES SM SLIDES	SG108 [SG508]							2				
		SG112 [SG512]							3	3			
		SG116 [SG516]	3	3					3	3	3		
		SG125 [SG525]	3	3	3				3	3	3	3	
		SG132 [SG532]	5	5	5	5			5	5	5	5	5
	SERIES SFP SLIDES	SFP527	3	3	3	3			3	3	3	3	
		SFP540	5	5	5	5	5		5	5	5	5	5

PLATE THICKNESS KEY

1 = .312 = [7.9] 2 = .375 = [9.5] 3 = .500 = [12.7] 4 = .625 = [15.9] 5 = .750 = [19] 6 = 1.250 = [31.8]

NOTES:
1) SHADED AREAS – CONSULT PHD FOR AVAILABILITY
2) METRIC NUMBERS ARE IN [ ]
3) MODEL NUMBERS IN CHART ARE FOR REFERENCE, SEE CODE CHART FOR ACTUAL ORDER CODE

COMBINATION EXAMPLES: TRANSITION PLATES



3 TRANSITION PLATES
Ordering Example:

#1 SD23-GRB121-2

PRIMARY UNIT	SECONDARY UNIT	MOUNTING POSITION
SD23	GRB121	2

See pages 10-22 & 10-23.

#2 SD24-SD23-1

PRIMARY UNIT	SECONDARY UNIT	MOUNTING POSITION
SD24	SD23	1

See pages 10-18 & 10-19.

#3 SD26-SD24-4

PRIMARY UNIT	SECONDARY UNIT	MOUNTING POSITION
SD26	SD24	4

See pages 10-18 & 10-19.

2 TRANSITION PLATES
1 HUB ADAPTOR USED
Ordering Example:

#1 HUB ADAPTOR
(See pages 10-6 to 10-9 for details.)

#2 SD24-R200-4

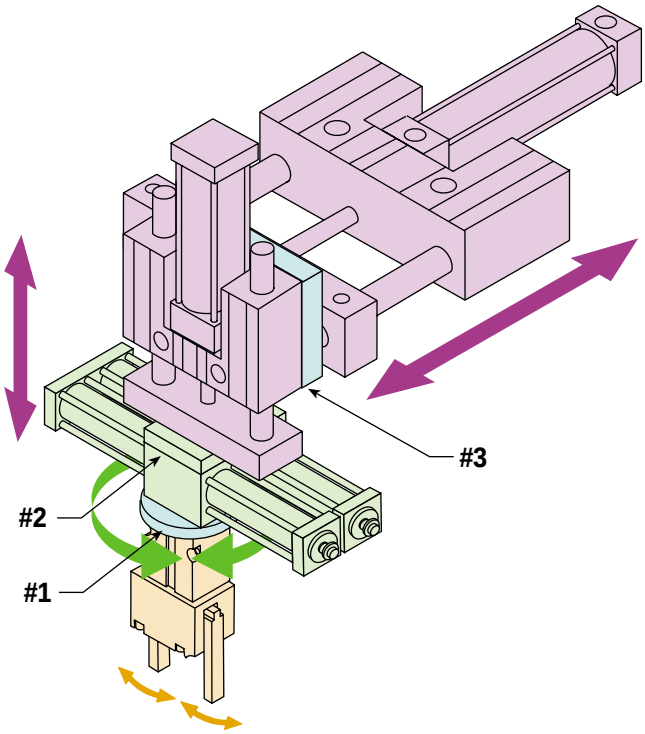
PRIMARY UNIT	SECONDARY UNIT	MOUNTING POSITION
SD24	R200	4

See pages 10-20 & 10-21.

#3 SD26-SD24-1

PRIMARY UNIT	SECONDARY UNIT	MOUNTING POSITION
SD26	SD24	1

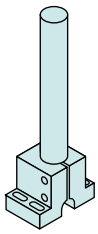
See pages 10-18 & 10-19.



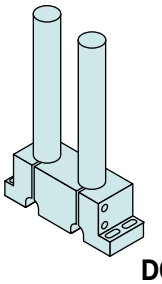
STANCHION BASE AND SHAFT(S)

pages 10-36 & 10-37

Specifications, Ordering Data, and Base Dimensions.



SINGLE

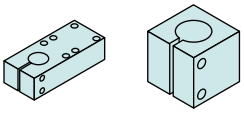


DOUBLE

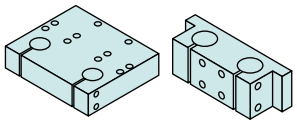
MOUNTING PLATE(S) AND BLOCK(S)

pages 10-38 & 10-39

Envelope and mounting hole dimensions for universal plates, blocks, and blank mounting plates listed.



SINGLE

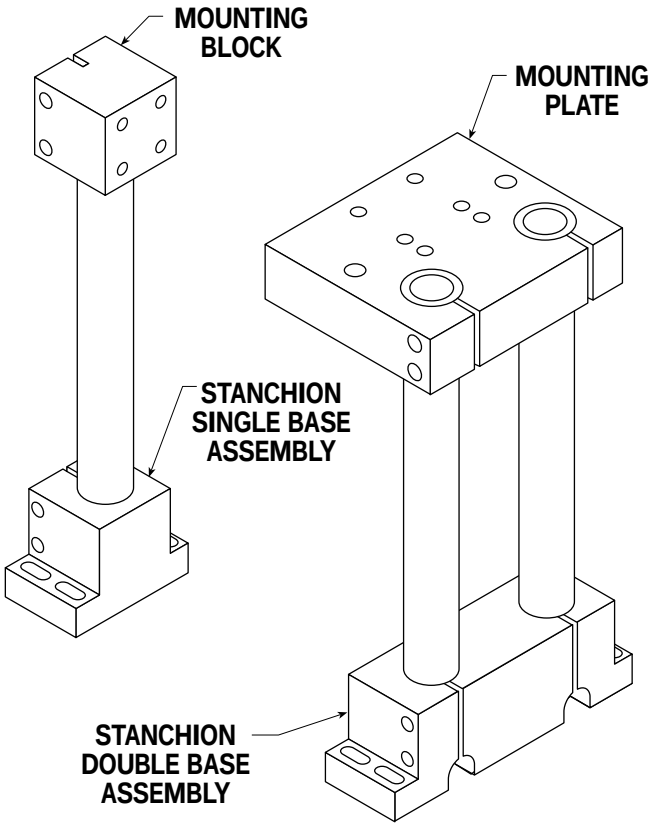


DOUBLE

STANCHION ENGINEERING DATA

page 10-40

Bending moments, torque limitations, and shaft deflections.



NOTES:
1) Mounting blocks, mounting plates, and stanchion base assemblies must be ordered separately. See below.
2) For specific product mounting patterns consult factory.

SPECIFICATIONS

SPECIFICATIONS	SERIES 132xx
MODELS	Single or Double Shafts
SHAFTS	1", 1-1/2", and 2" Dia.
	Hollow, Brite Zinc Plated
	Available in 1" increments
	up to 60 inch Maximum Length
	(Consult PHD for longer shaft lengths)
BASE	Anodized Aluminum
MOUNTING PLATES AND BLOCKS	Anodized Aluminum
REINFORCEMENT	Zinc Plated Steel

ORDERING DATA: STANCHIONS

STANCHION BASE ASSEMBLY

To order specify:
Model Base, Design No., Shaft(s) Type, and Height.

DESIGN NO.

HEIGHT
To the top of the shaft(s) in 1" increments

13230 - 1 - 1 - 06

MODEL BASE
1" Single Shaft - 13210
1" Double Shaft - 13220

1-1/2" Single Shaft - 13230
1-1/2" Double Shaft - 13240

2" Single Shaft - 13250
2" Double Shaft - 13260

SHAFT TYPE
1 - Hollow
5 - Hollow with Electroless Nickel Plate

NOTE:
1) All mounting hardware is provided with each stanchion base assembly.
2) Series 13250, 13260 minimum 2" height.

MOUNTING PLATE AND MOUNTING BLOCK KIT NUMBERS

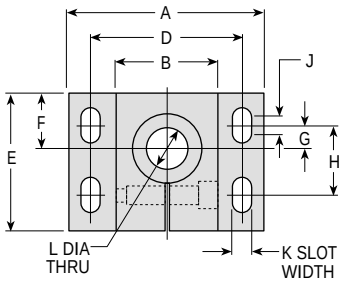
To order Mounting Plates and Mounting Blocks, specify proper kit number.

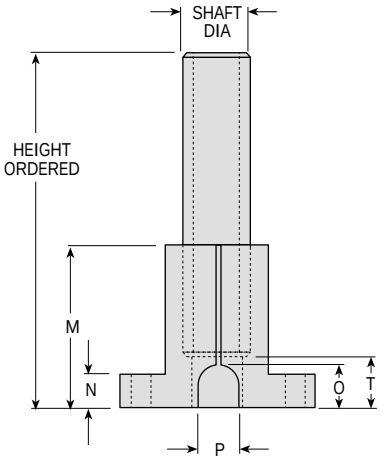
SHAFT DIA.	DESCRIPTION	SINGLE #	DOUBLE #
1	Blank Mounting Plate	12625-04	12624-04
	Universal Mounting Plate Kit*	13175	13172
	Mounting Block Kit*	13181	13178
1-1/2	Blank Mounting Plate	12625-05	12624-05
	Universal Mounting Plate Kit*	13176	13173
	Mounting Block Kit*	13182	13179
2	Blank Mounting Plate	12625-06	12624-06
	Universal Mounting Plate Kit*	13177	13174
	Mounting Block Kit*	13183	13180

*All mounting holes are predrilled for attaching PHD Slides, Rotary Actuators, and Multi-Motion Actuators. (See individual sections for sizing.)

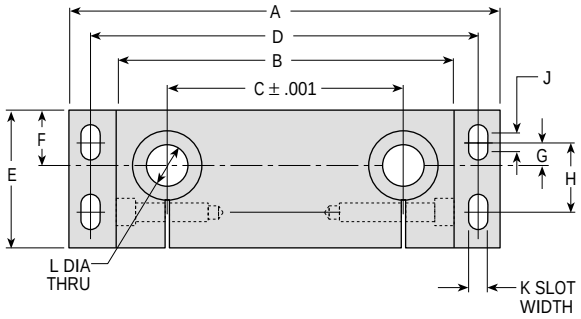
DIMENSIONS: STANCHION BASES

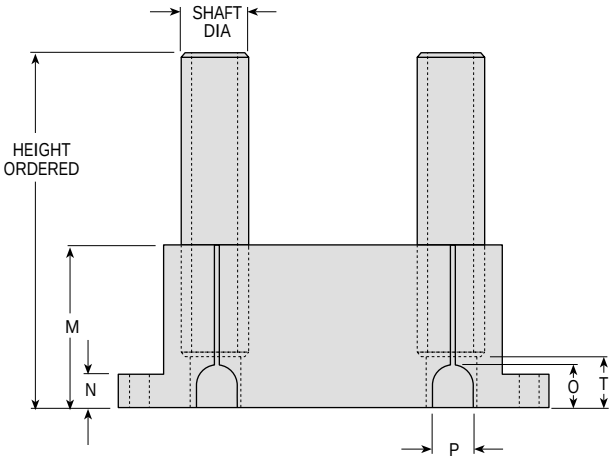
SINGLE STANCHION BASE

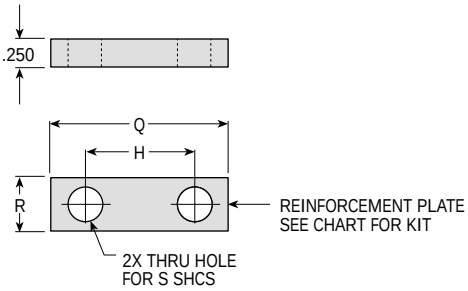




DOUBLE STANCHION BASE







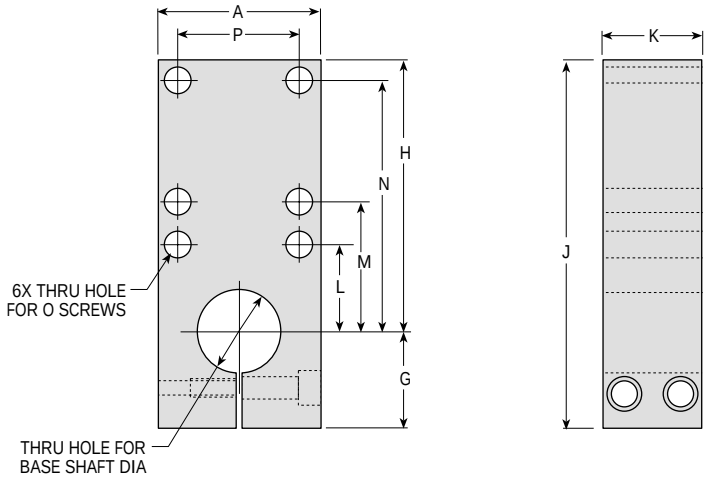
SHAFT DIA.	BASE TYPE	KIT NO.	REINFORCEMENT PLATE KIT NO.	LETTER DIMENSION																		
				A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
1	SINGLE	13210-1-1-xx	12243	2.880	1.500	N/A	2.250	1.970	.795	.310	1.000	.220	.280	.687	2.400	.500	.620	.620	1.620	.500	1/4	.750
	DOUBLE	13220-1-1-xx		6.370	5.000	3.500	5.750															
1-1/2	SINGLE	13230-1-1-xx	12247	3.880	2.240	N/A	3.125	2.450	1.120	.565	1.375	.250	.380	.875	2.900	.750	.810	.880	2.250	.620	5/16	.880
	DOUBLE	13240-1-1-xx		7.750	6.115	3.875	7.000															
2	SINGLE	13250-1-1-xx	12264	4.750	2.760	N/A	3.750	3.180	1.465	.750	1.750	.440	.440	1.250	3.900	1.000	1.000	1.250	2.750	.750	3/8	1.120
	DOUBLE	13260-1-1-xx		9.500	7.510	4.750	8.500															

EACH STANCHION BASE ASSEMBLY KIT CONTAINS:

1 BASE
2 REINFORCEMENT PLATES
REQUIRED NO. OF SHCS
REQUIRED NO. OF SHAFTS (HOLLOW SHAFT IS STANDARD)

DIMENSIONS: STANCHION MOUNTING PLATES

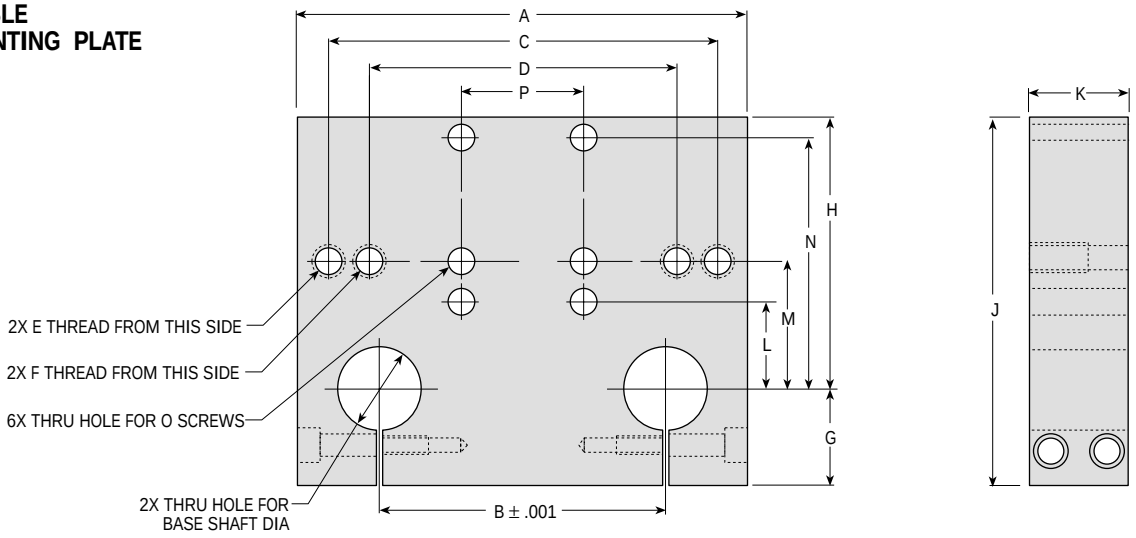
SINGLE MOUNTING PLATE



SHAFT DIA.	BASE TYPE	KIT NO.	LETTER DIMENSION									
			A	G	H	J	K	L	M	N	O	P
1	BLANK	12625-04	2.000	1.190	3.310	4.500	1.200	NA	NA	NA	NA	NA
	UNIVERSAL	13175						1.060	1.560	3.060	1/4	1.500
1-1/2	BLANK	12625-05	3.000	1.380	5.120	6.500	1.450	NA	NA	NA	NA	NA
	UNIVERSAL	13176						1.620	2.620	4.620	5/16	2.000
2	BLANK	12625-06	4.000	1.750	6.000	7.750	1.950	NA	NA	NA	NA	NA
	UNIVERSAL	13177						2.000	3.500	5.500	3/8	2.500

EACH KIT CONTAINS REQUIRED HARDWARE TO MOUNT TO BASE UNIT AND PHD COMPONENT.

DOUBLE MOUNTING PLATE

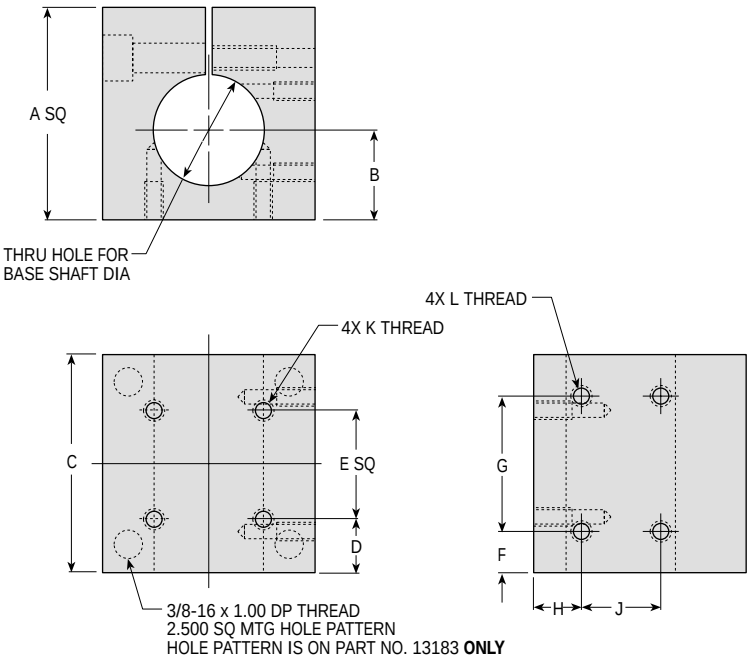


SHAFT DIA.	BASE TYPE	KIT NO.	LETTER DIMENSION														
			A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
1	BLANK	12624-04	5.500	3.500	NA	NA	NA	NA	1.190	3.310	4.500	1.200	NA	NA	NA	NA	NA
	UNIVERSAL	13172			4.750	3.750	5/16-18 x .70 DP	5/16-18 x .70 DP					1.060	1.560	3.060	1/4	1.500
1-1/2	BLANK	12624-05	7.000	3.875	NA	NA	NA	NA	1.380	5.120	6.500	1.450	NA	NA	NA	NA	NA
	UNIVERSAL	13173			6.250	4.750	3/8-16 x .62 DP	5/16-18 x .62 DP					1.620	2.620	4.620	5/16	2.000
2	BLANK	12624-06	8.500	4.750	NA	NA	NA	NA	1.750	6.000	7.750	1.950	NA	NA	NA	NA	NA
	UNIVERSAL	13174			7.500	6.250	7/16-14 x .62 DP	3/8-16 x .62 DP					2.000	3.500	5.500	3/8	2.500

EACH KIT CONTAINS REQUIRED HARDWARE TO MOUNT TO BASE UNIT AND PHD COMPONENT.

DIMENSIONS: STANCHION MOUNTING BLOCKS

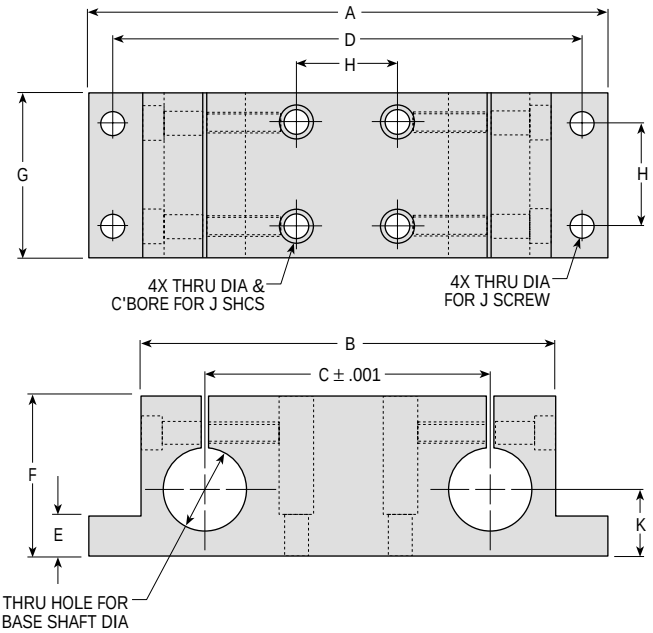
SINGLE MOUNTING BLOCK



SHAFT DIA.	KIT NO.	LETTER DIMENSION										
		A	B	C	D	E	F	G	H	J	K	L
1	13181	1.950	.810	2.000	.500	1.000	.380	1.250	.430	.750	10-24 x .38 DP	10-24 x .38 DP
1-1/2	13182	2.450	1.200	2.450	.475	1.500	.475	1.000	.700	1.000	1/4-20 x .50 DP	10-24 x .38 DP
2	13183	3.200	1.500	3.250	.750	1.750	.750	1.500	.750	1.500	5/16-18 x .50 DP	1/4-20 x .50 DP

EACH KIT CONTAINS REQUIRED HARDWARE TO MOUNT TO BASE UNIT AND PHD COMPONENT.

DOUBLE MOUNTING BLOCK



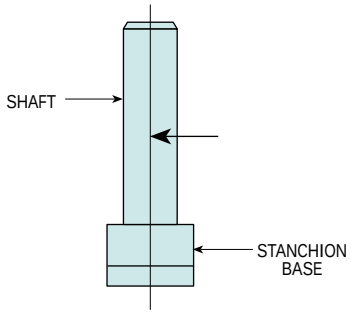
SHAFT DIA.	KIT NO.	LETTER DIMENSION									
		A	B	C	D	E	F	G	H	J	K
1	13178	6.370	5.060	3.500	5.750	.500	1.950	1.970	1.250	1/4	.810
1-1/2	13179	7.750	6.115	3.875	7.000	.750	2.450	2.450	1.500	5/16	1.120
2	13180	9.500	7.510	4.750	8.500	1.000	3.180	3.180	1.750	3/8	1.500

EACH KIT CONTAINS REQUIRED HARDWARE TO MOUNT TO BASE UNIT AND PHD COMPONENT.

BENDING MOMENT

MAXIMUM DYNAMIC BENDING MOMENT IMPOSED ON THE BASE (Single or Double)

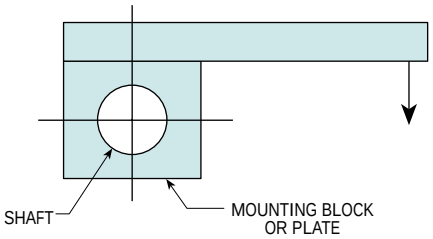
SHAFT DIA.	in-lb OF FORCE
1	500
1-1/2	1600
2	3000



TORQUE LIMITATIONS ON SINGLE SHAFT UNITS

MAXIMUM TORQUE ON SHAFTS

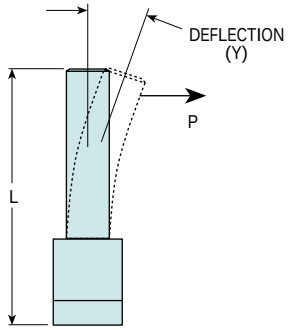
SHAFT DIA.	in-lb
1	60
1-1/2	200
2	375



SHAFT DEFLECTION

$$Y = \frac{P \times L^3}{M}$$

Y = Deflection in inches
L = Length in inches
P = Load in pounds



MAXIMUM TORQUE ON SHAFTS

	M	
SHAFT DIA.	SINGLE SHAFT	DOUBLE SHAFT
1	3.74×10^6	7.47×10^6
1-1/2	1.97×10^7	3.95×10^7
2	5.98×10^7	1.19×10^8

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