

# ADAPTORS, TRANSITION PLATES, AND STANCHIONS FOR MODULAR AUTOMATION

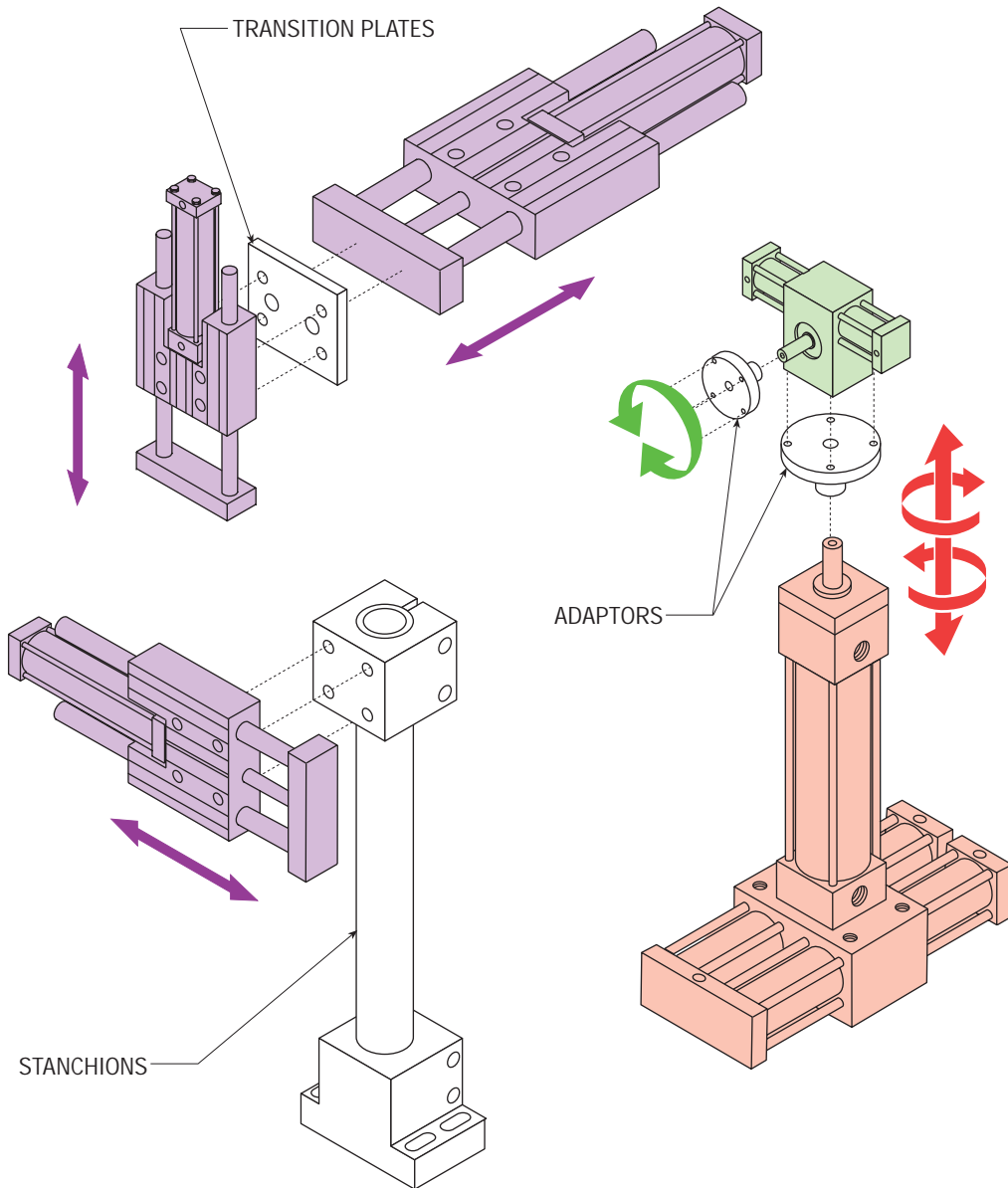
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# GUIDELINES FOR MODULAR AUTOMATION

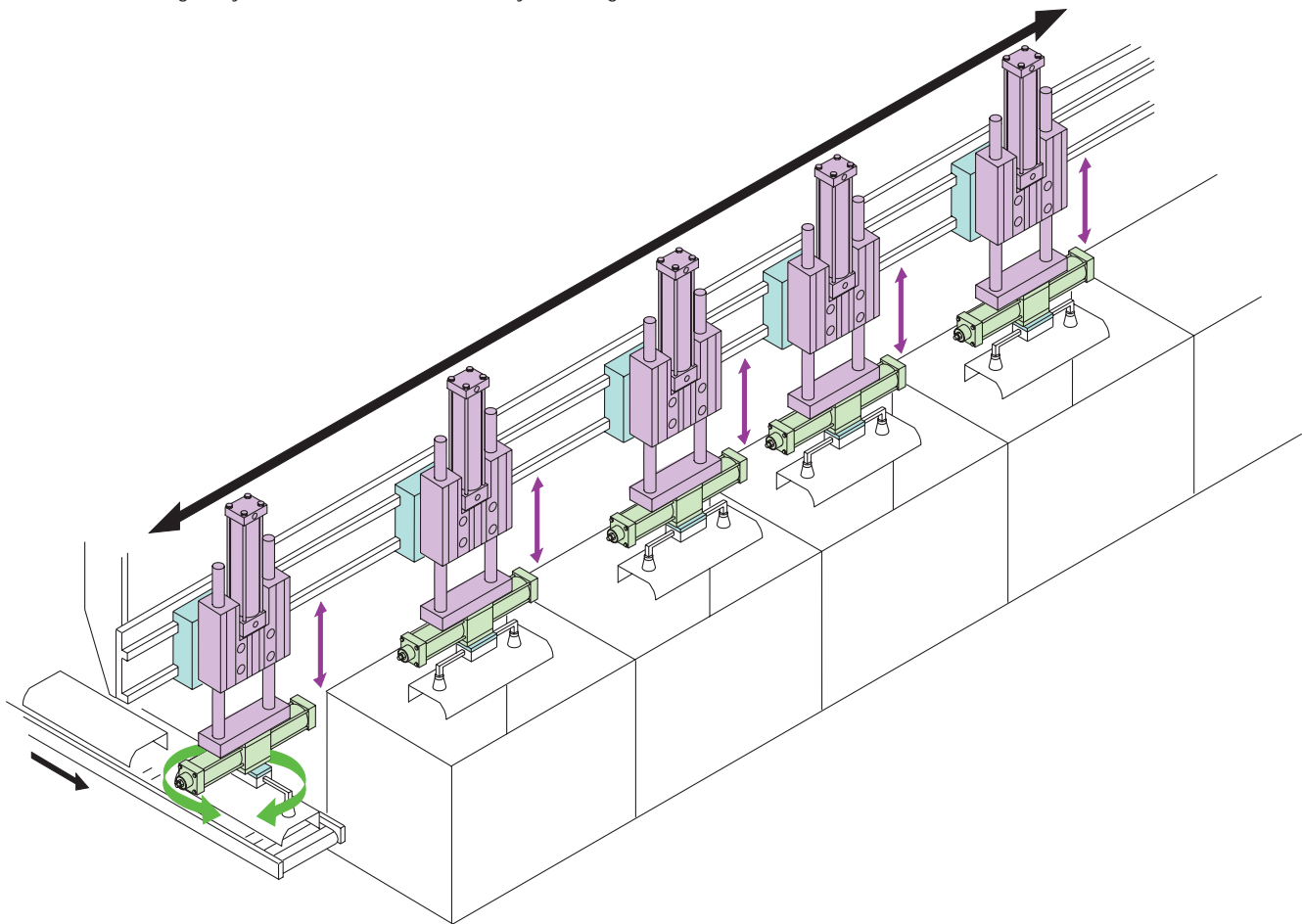
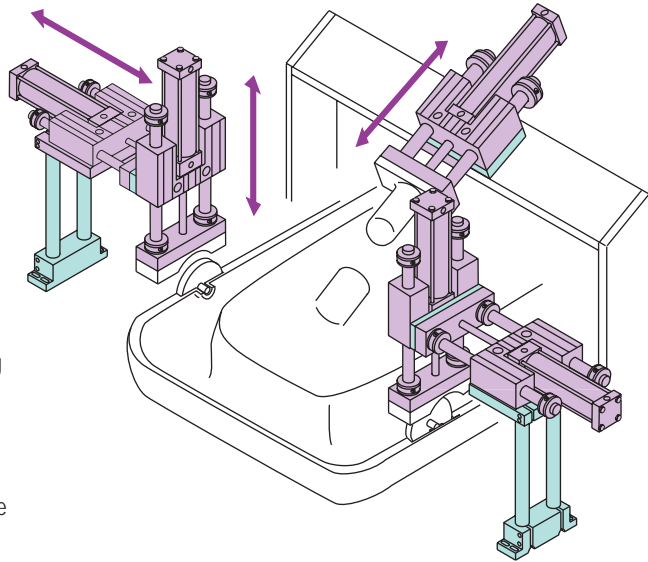
## Adaptors, Transition Plates, and Stanchions For Modular Automation

- 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 loose 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.



# GUIDELINES FOR MODULAR AUTOMATION

## 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
Escapements	2
Rotary Actuators	3
Multi-Motion Actuators	4
Slides	5
Grippers	6

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

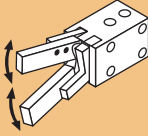
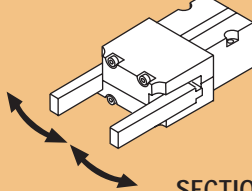
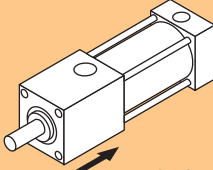
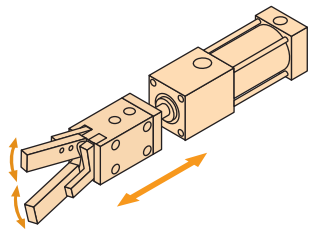
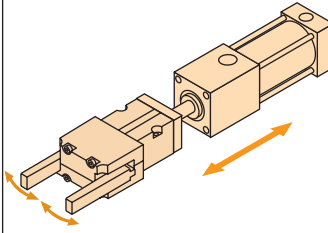
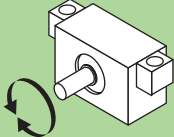
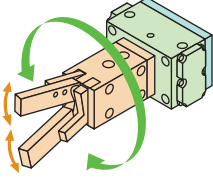
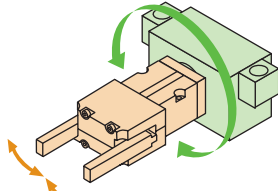
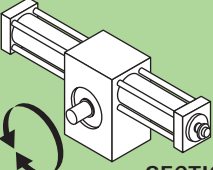
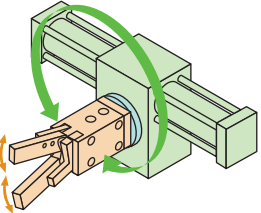
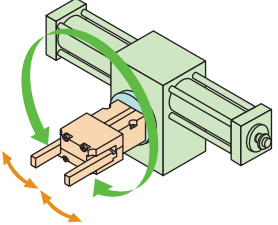
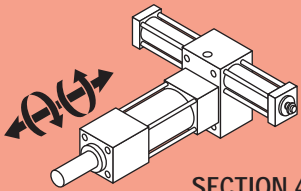
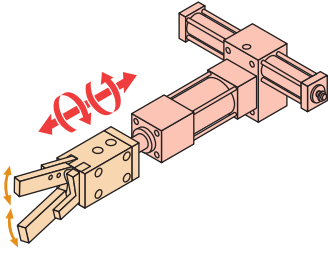
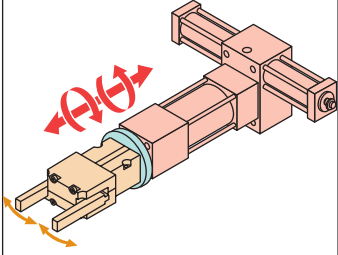
## HOW TO ESTABLISH PRIMARY/ SECONDARY UNITS

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.)

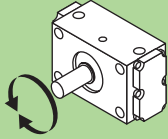
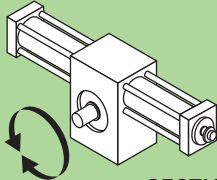
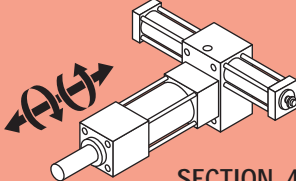
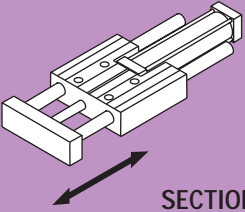
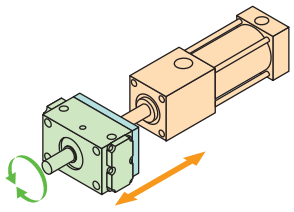
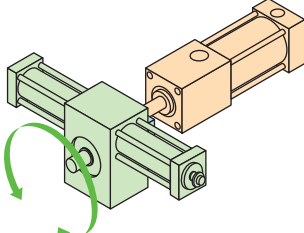
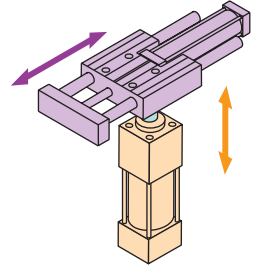
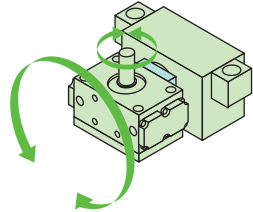
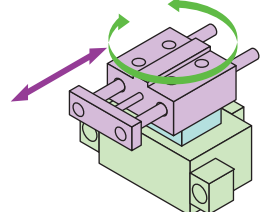
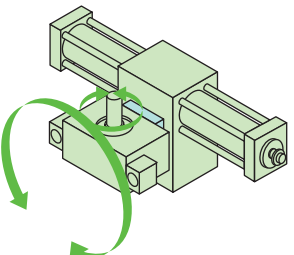
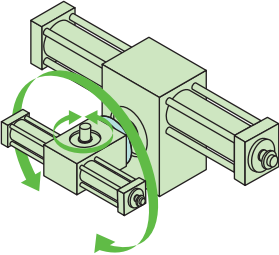
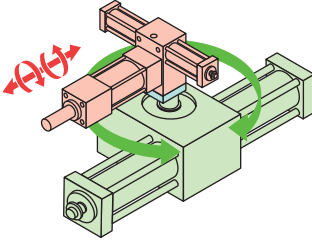
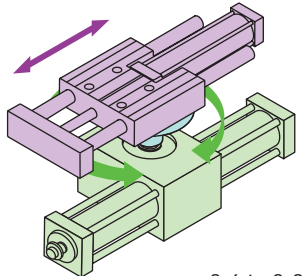
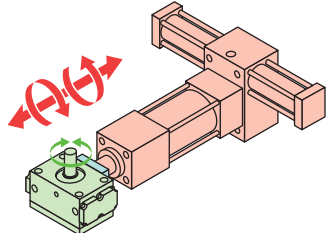
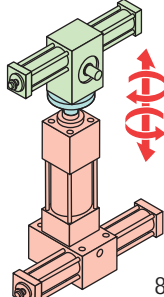
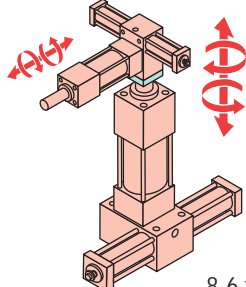
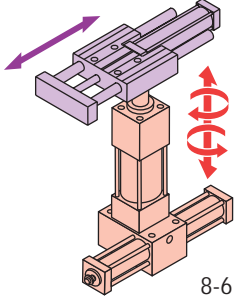
When a product is a “secondary unit,” the transition plate will be mounted to the “stationary component” of that product (end blocks, body, noosing, etc.)

If dowel pin holes are required, consult PHD.

# ADAPTOR/ACTUATOR COMBINATIONS

		SECONDARY UNIT	
		MINIATURE GRIPPERS	LARGER GRIPPERS
SEE REFERENCED PAGES FOR PROPER ADAPTOR SIZE AND KIT NUMBER		 <p>SECTION 6</p>	 <p>SECTION 6</p>
P R I M A R Y  U N I T	<b>NON-ROTATING ROD CYLINDERS</b>  <p>SECTION 1</p>	 <p>8-6 to 8-13</p>	 <p>8-6 to 8-9</p>
	<b>MINIATURE ROTARY ACTUATORS</b>  <p>SECTION 3</p>	 <p>8-10 to 8-13</p>	 <p>8-10 to 8-13</p>
	<b>LARGER ROTARY ACTUATORS</b>  <p>SECTION 3</p>	 <p>8-6 to 8-13</p>	 <p>8-6 to 8-9</p>
	<b>MULTI-MOTION ACTUATORS</b>  <p>SECTION 4</p>	 <p>8-6 to 8-13</p>	 <p>8-6 to 8-9</p>

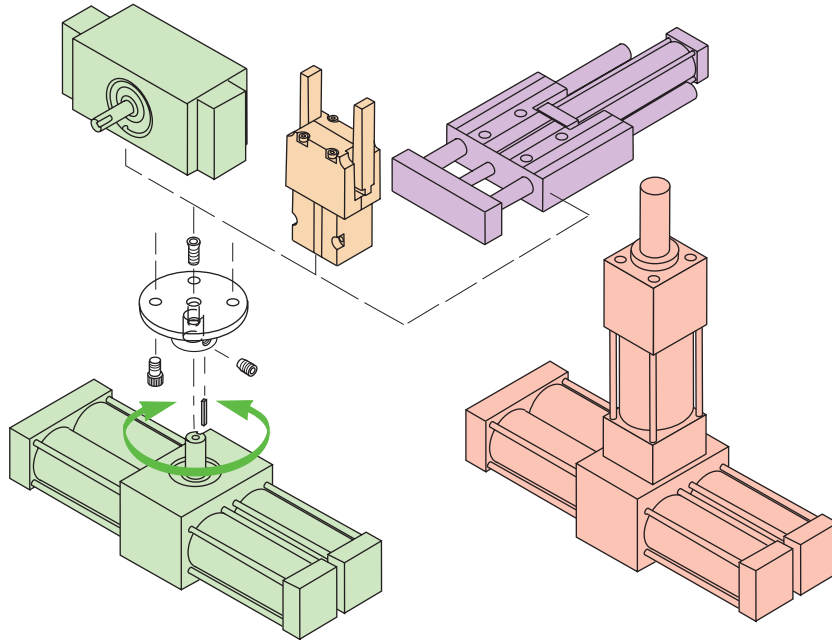
# ADAPTOR/ACTUATOR COMBINATIONS

SECONDARY UNIT			
MINIATURE ROTARY ACTUATORS  SECTION 3	LARGER ROTARY ACTUATORS  SECTION 3	MULTI-MOTION ACTUATORS  SECTION 4	SLIDES  SECTION 5
 8-6 to 8-13	 8-6 to 8-9	NOT AVAILABLE	 8-6 to 8-9
 8-10 to 8-13	NOT AVAILABLE	NOT AVAILABLE	 8-10 to 8-13
 8-6 to 8-13	 8-6 to 8-9	 8-6 to 8-9	 8-6 to 8-9
 8-6 to 8-13	 8-6 to 8-9	 8-6 to 8-9	 8-6 to 8-9

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		HOLE PATTERN
SHAFT DIA.	SIZE NO.	
1/2	10811	Select proper 4 digit number from matrix on 8A-7 & 8A-8.
3/4	10812	
1-1/8	10814	
1-3/4	10815	
7/8	10813	

### To order specify:

Hub Size, Hole Pattern Orientation, and Hole Pattern Number.

**10812 - 00 - 0051**

### NOTES:

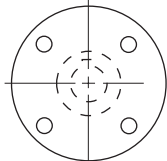
- 1) Hub Adaptor must be used with -PK Rod End on series 1-8000 Multi-Motion Actuators, -H option on Non-Rotating Rod Cylinders, and -K Shaft series 1-8000 on Rotary Actuators.
- 2) Hub adaptor kit includes all hardware to mount component to hub, and hub to shaft.

**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

## HOLE PATTERN ORIENTATION

### EXAMPLE 1

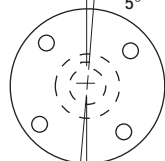
KEYWAY AND HOLE PATTERN 0°



KIT NO. 10812-00-0051

### EXAMPLE 2

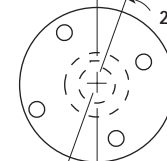
KEYWAY HOLE PATTERN 5°



KIT NO. 10812-01-0051

### EXAMPLE 3

KEYWAY HOLE PATTERN 20°



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°.

# MATRIX: HUB ADAPTORS-IMPERIAL UNITS

		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
SHAFT DIAMETER			1/2	3/4	7/8	1-1/8	1-3/4
SECONDARY UNIT	GRIPPERS	19x90 19x92 19x91	-0981	-0981	-0981		
		8430	-0041				
		862x 1532x 1536x	-0041				
		863x 1533x 1537x	-0051	-0051	-0051		
		864x 1534x 1538x		-0061	-0061	-0061	
		865x 1535x 1539x				-0071	-0071
		GRBx3x					
		GRBx41					
		GRBx51					
		GRBx61		-1521	-1521	-1521	
		GRBx71					-1531
		GRCx31* GRCx32*		-1601	-1601		
		GRCx41 GRCx42					
		GRCx51 GRCx52			-1621	-1621	
	GRCx61 GRCx62					-1631	
	GRDx31						
	GRDx41						
	GRDx51						
	GRDx61						
	POWERED SLIDES	SA33 SB33					
		SA44 SB44	-0951				
		SA63 SB63	-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	-1761
SExx5					-1801	-1801	
SDxx6		-1771	-1771	-1771	-1771	-1771	
SExx6						-1811	
*BLANK HUB ADAPTOR FOR CUSTOMER TOOLING			-0001	-0001	-0001	-0001	-0001

SHADED AREAS –  
CONSULT PHD FOR AVAILABILITY  
\* Mounting of a Non-rotating Rod  
Cylinder requires a customer provided  
mounting plate.



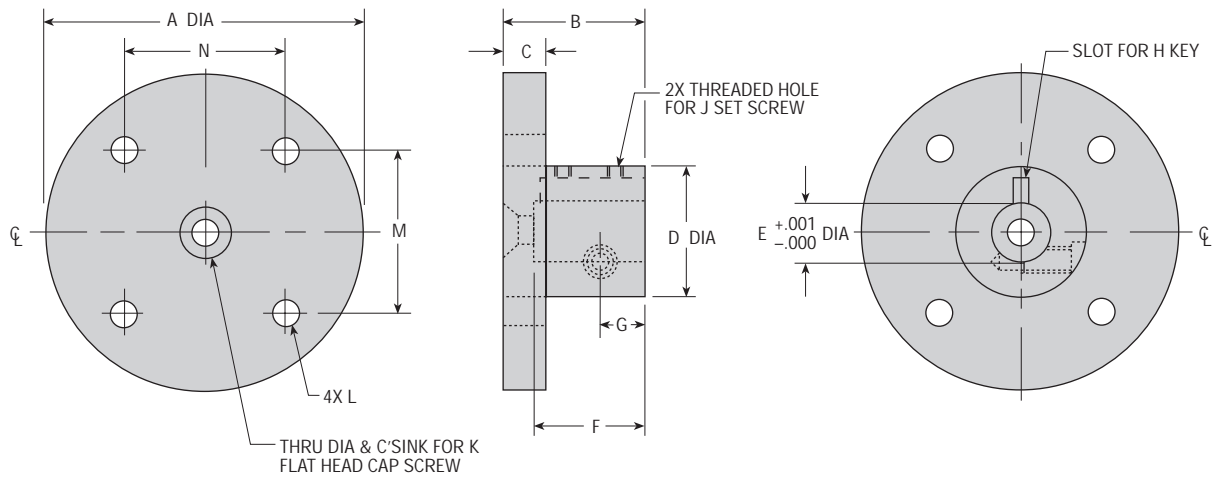
# MATRIX: HUB ADAPTORS-IMPERIAL UNITS

		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		
<b>S E C O N D A R Y  U N I T</b>	ROTARY ACTUATORS	RAS120	FRONT & BACK	-2581	-2581	-2581		
		RAS125		-2601	-2601	-2601		
		RAS132	(PARALLEL TO SHAFT POS. #2 & #4)		-2621	-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	
	RAS140						-2541	
	RAS150						-2561	
	***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	
1000 2000			-0051	-0051	-0051			
3000 4000				-0221	-0221	-0221	-0301**	
5000 6000						-0241	-0321**	
*BLANK HUB ADAPTOR FOR CUSTOMER TOOLING			-0001	-0001	-0001	-0001	-0001	

SHADED AREAS – CONSULT PHD FOR AVAILABILITY

- \* Mounting of a Non-Rotating Rod Cylinder requires a customer provided mounting plate.
- \*\* Requires Rotary Actuator to be mounted to the bottom mounting flanges. See *Options* in the Rotary Actuator section.
- \*\*\*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

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-xxx1	2.900	1.125	.375	1.250	.501	.812	.438	1/8 x .81 DP	8-32	#10
3/4	.75	10812-xx-xxx1	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-xxx1	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-xxx1	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-xxx1	5.950	3.000	.750	3.250	1.751	2.375	.875	3/8 x 2.31 DP	3/8-16	1/2

## MOUNTING HOLE PATTERN DIMENSIONS

### PLAIN THRU HOLES

HUB KIT DASH NO.	LETTER DIMENSION			HUB KIT DASH NO.	LETTER DIMENSION		
	L	M	N		L	M	N
-016	#8	1.500	1.000	-1611	1/4	1.4570	1.4570
-054*	3/8	—	2.000	-1621	5/16	1.9680	1.9680
-061	1/4	2.250	1.250	-1631	3/8	2.9920	2.9920
-062	5/16	2.750	1.500	-2581	#10	1.180	1.574
-063	3/8	3.375	1.750	-2601	#10	1.378	1.772
-095	1/4	1.250	1.250	-2621	1/4	1.772	2.166
-152	5/16	2.677	1.456	-2641	5/16	2.164	2.558
-160	#10	1.181	1.181	-2661	3/8	2.362	2.952
-224	1/4	2.000	1.500	-3431*	#4	.866	1.062
-240	1/4	1.339	1.339	-3451*	#4	1.004	1.142
-0001	NO MTG. HOLES			-3471*	#6	1.102	1.220
-0011	#4	.500	.500	-3491*	#10	1.378	1.397
-0041	#10	1.250	1.250	-3511*	#10	1.614	1.850
-0051	1/4	1.500	1.500	-3531*	1/4	2.028	2.146
-0061	5/16	1.750	1.750	-3551*	5/16	2.480	2.677
-0071	3/8	2.750	2.750	-3571*	5/16	2.716	3.248
-0121	#10	1.250	2.250	-3771	#4	.630	1.378
-0131	1/4	1.500	2.750	-3791	#4	.650	1.536
-0141	5/16	1.750	3.375	-3811	#6	.906	1.516
-0181	#10	1.500	2.000	-3831	#10	1.182	1.968
-0221	5/16	2.000	2.000	-3851	#10	1.260	2.204
-0241	3/8	2.000	2.500	-3871	1/4	1.534	2.874
-0981	#10	1.535	1.535	-3891	5/16	1.850	3.308
-1531	3/8	1.6930	4.0158	-3911	5/16	2.204	3.544

\*PATTERN IN RLS BODY IS NOT CENTERED TO PINION SHAFT

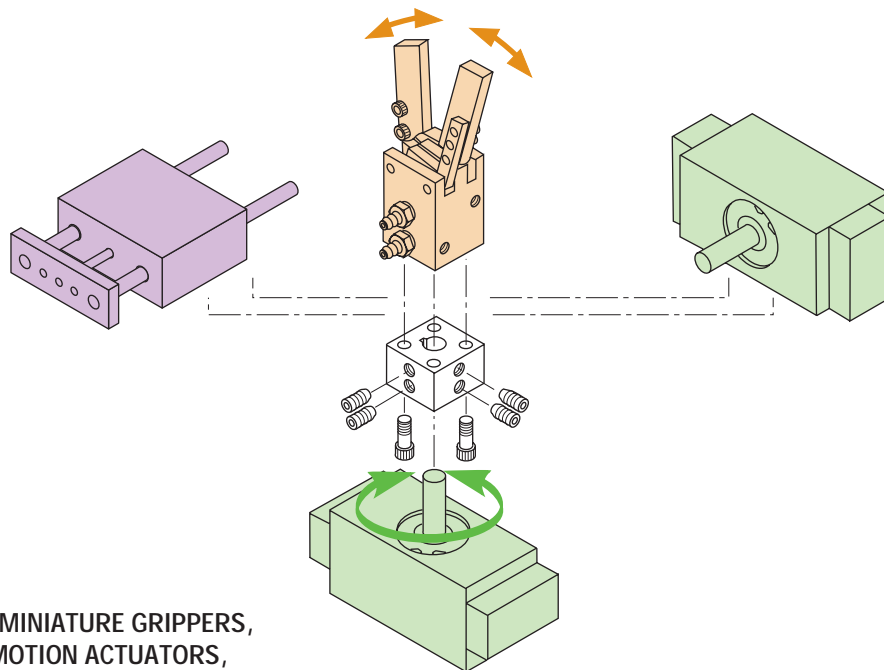
### THREADED THRU HOLES

HUB KIT DASH NO.	LETTER DIMENSION		
	L	M	N
-077	10-24	1.250	1.250
-110	1/4-20	1.688	1.688
-113	3/8-16	4.000	1.500
-170**	1/2-13	—	6.500
-228	5/16-18	2.375	2.375
-0301	3/8-16	2.125	3.875
-0321	3/8-16	3.375	3.875
-0421	10-24	1.000	1.000
-0451	1/4-20	1.500	1.500
-0481	5/16-18	1.750	1.750
-1731**	1/4-20	—	1.625
-1741**	5/16-18	—	1.875
-1751**	3/8-16	—	2.000
-1761**	3/8-16	—	2.375
-1771**	1/2-13	—	3.125
-1781	5/16-18	1.875	1.875
-1791	3/8-16	2.000	2.000
-1801	3/8-16	2.375	2.375
-1811	1/2-13	3.125	3.125
-2481	10-24	1.496	2.166
-2501	10-24	1.772	2.362
-2521	1/4-20	2.165	2.952
-2541	5/16-18	2.756	3.346
-2561	3/8-16	3.071	3.936

\*\* 2 HOLE PATTERN ON HORIZONTAL CENTERLINE OF HUB

All dimensions are reference only unless specifically toleranced.

# ORDERING DATA: MINIATURE ADAPTORS



**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 8-11 to 8-13. 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.

# MATRIX: MINIATURE ADAPTORS-IMPERIAL SHAFT & IMPERIAL UNIT

PRIMARY UNIT (IMPERIAL SHAFTS TO IMPERIAL UNITS)									
PHD UNIT									
SHAFT DIAMETER	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	3/8-24 THD
840x*		8853-04		8853-06					
841x*									
842x*				8852-06	8852-08	8852-10			8854-02
843x*				53464-06	53464-08	53464-10	53464-12		
19x6 BOTTOM		53308-04		53308-06	53308-08				58464
19x7 BOTTOM	62662-03	51424-04		51424-06	51424-08				58467
19x8 BOTTOM		51395-04		51395-06	51395-08	51395-10			
1908 SIDE				54217-06					
19x9 BOTTOM				51876-06	51876-08	51876-10	51876-12		
1909 SIDE				55884-06					
862x*				10765-06					
GRB12*		53293-04		53293-06					
GRB13*									
GRB14*				53806-06					
GRC13*			10764-03	56473-06					
GRC14*									
GRDx3* GRDx5*									
GRDx4* GRDx6*									
018x50*									
Rotary Actuator									
RLS12* RLS20*				10764-06	10764-08	10764-10			
RLS16* RAS20*									
SA12*									
SB12*									
SA22*				51508-06					
SB22*				51508-06					

## SECONDARY UNIT

GRIPPERS

ROTARIES

SLIDES

SHADED AREAS – CONSULT PHD FOR AVAILABILITY  
\* BOTTOM MOUNTING PATTERN ONLY (SURFACE OPPOSITE JAWS OR POS.# 3 ON SLIDES)

# MATRIX: MINIATURE ADAPTORS-IMPERIAL SHAFT & METRIC UNITS

		PRIMARY UNIT (IMPERIAL SHAFTS TO METRIC UNIT)							
		PHD UNIT							
SHAFT DIAMETER		3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
GRIPPERS	840x* 841x*		58561-04						
	842x*								
	19x6 BOTTOM		50482-04		50482-06				
	19x7 BOTTOM		52925-04		52925-06	52925-08			
	19x8 BOTTOM				51483-06	51483-08	51483-10		
	1908 SIDE								
	19x9 BOTTOM				19933-06	19933-08			
	1909 SIDE								
	862x*								
	GRB52*				56896-06				
GRB53*									
GRB54*							59066-10		
GRC53*									
GRC54*									
GRDx3* GRDx5* GRDx4* GRDx6*									
ROTARIES	018x50* Rotary Actuator						16270-06		
	RLS12* RLS20* RLS16* RAS20*								
SLIDES	SA16* SB16* SA26* SB26*								

SHADED AREAS – CONSULT PHD FOR AVAILABILITY  
 \* BOTTOM MOUNTING PATTERN ONLY (SURFACE OPPOSITE JAWS OR POS. #3 ON SLIDES)

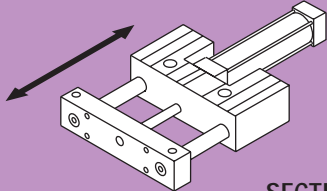
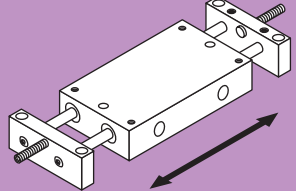
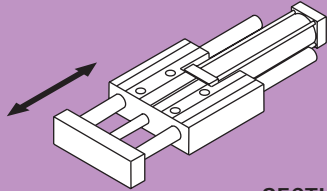
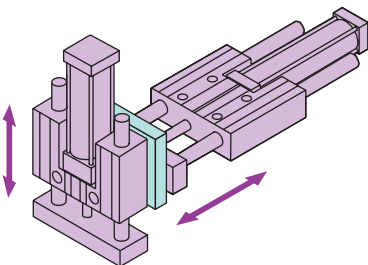
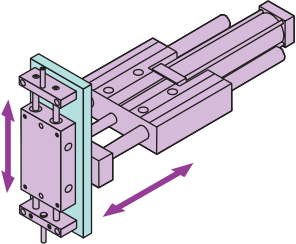
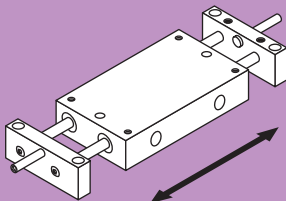
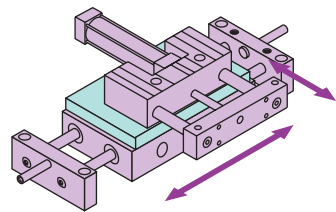
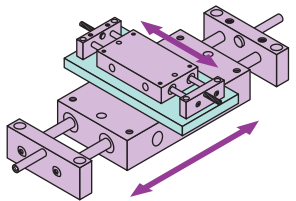
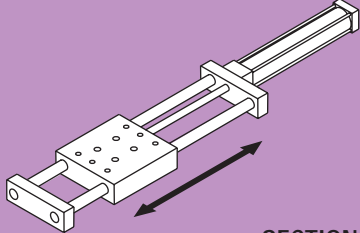
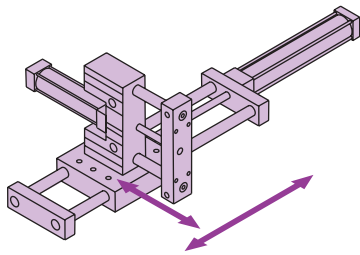
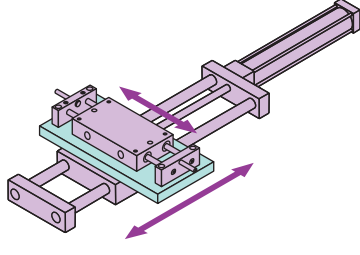
## SECONDARY UNIT

# MATRIX: MINIATURE ADAPTORS-METRIC SHAFT & METRIC UNITS

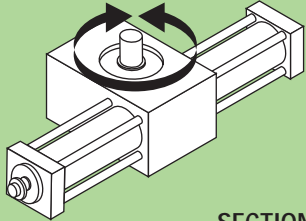
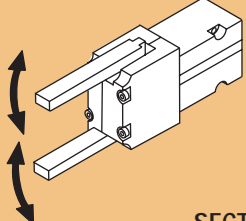
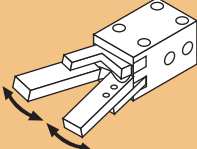
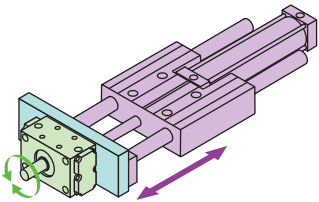
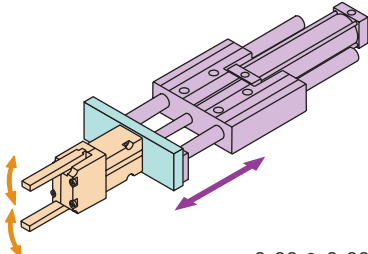
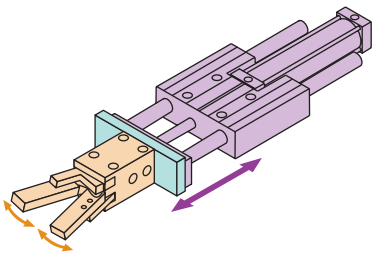
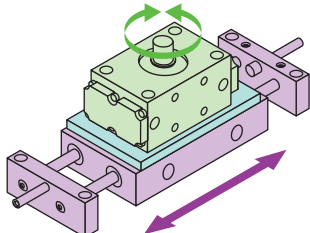
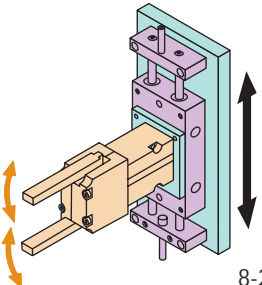
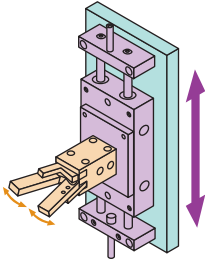
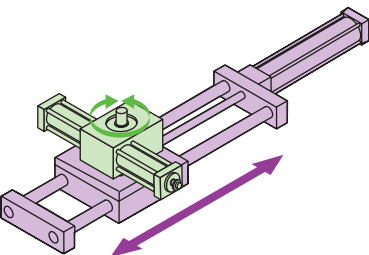
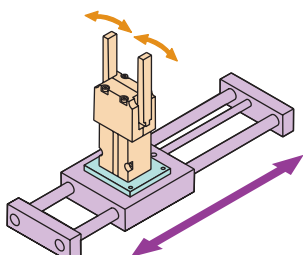
		PRIMARY UNIT (METRIC SHAFTS TO METRIC UNITS)							
		PHD UNIT							
SHAFT DIAMETER		6 mm	8 mm	10 mm	12 mm	14 mm	16 mm	20 mm	30 mm
GRIPPERS	840x*								
	841x*								
	842x*								
	19x6 BOTTOM								
	19x7 BOTTOM	61838-06							
	19x8 BOTTOM			59093-10					
	1908 SIDE								
	19x9 BOTTOM			60643-10					
	1909 SIDE								
	862x*								
	GRB52*								
	GRB53*								
	GRB54*								
GRC53*									
GRC54*									
GRDX3* GRDX5*									
GRDX4* GRDX6*									
018x50* Rotary Actuator									
RLS12* RLS20*									
RLS16* RAS20*									
SA16*									
SB16*									
SA26*									
SB26*									
SLIDES									
ROTARIES									
GRIPPERS									
SECONDARY UNIT									

SHADED AREAS – CONSULT PHD FOR AVAILABILITY  
 \* BOTTOM MOUNTING PATTERN ONLY (SURFACE OPPOSITE JAWS OR POS. #3 ON SLIDES)

# TRANSITION PLATE/ACTUATOR COMBINATIONS

		SECONDARY UNIT	
SEE REFERENCED PAGES FOR DIMENSIONS, APPLICATIONS, AND ORDERING DATA. FOR VARIOUS COMBINATION EXAMPLES, SEE PAGE 8-34.		SERIES SA & SB, SK & SL, SD & SE SLIDES  SECTION 5	SERIES M & C SLIDES  SECTION 5
PRIMARY UNIT	SERIES SA & SB, SK & SL, SD & SE SLIDES  SECTION 5	 8-18 & 8-19	 8-28 & 8-29
	SERIES M & C SLIDES  SECTION 5	 8-30 & 8-31	 8-32 & 8-33
	SERIES SG SLIDES  SECTION 5	 8-30 & 8-31	 8-32 & 8-33

# TRANSITION PLATE/ACTUATOR COMBINATIONS

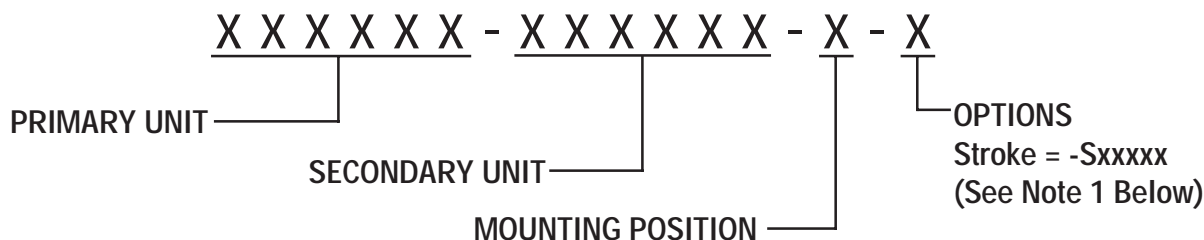
SECONDARY UNIT		
ROTARY ACTUATORS	LARGER GRIPPERS	MINIATURE GRIPPERS
 <p>SECTION 3</p>	 <p>SECTION 6</p>	 <p>SECTION 6</p>
 <p>8-20 &amp; 8-21</p>	 <p>8-22 &amp; 8-23</p>	 <p>8-22, 8-23, 8-34, &amp; 8-35</p>
 <p>8-24 &amp; 8-25</p>	 <p>8-26 &amp; 8-27</p>	 <p>8-26 &amp; 8-27</p>
 <p>8-24 &amp; 8-25</p>	 <p>8-26 &amp; 8-27</p>	<p>Consult PHD</p>



# 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.)



## SLIDES

SERIES	IMPERIAL	METRIC	SERIES	IMPERIAL	METRIC
Cx03x	C031	C035	SEx22	SE22	—
Cx04x	C041	C045	SEx23	SE23	—
Cx06x	C061	C065	SEx24	SE24	—
Mx02x	M022	M026	SEx25	SE25	—
Mx03x	M032	M036	SEx26	SE26	—
Mx04x	M042	M046	SGxx1	SG11	SG51
Mx06x	M062	M066	SGxx2	SG12	SG52
SA01x	SA12	SA17	SGxx3	SG13	SG53
SA02x	SA22	SA27	SGxx4	SG14	SG54
SA03x	SA33	SA38	SGxx5	SG15	SG55
SA04x	SA44	SA49	SGxx6	SG16	SG56
SA06x	SA63	SA68	SKx71	—	SK71
SB01x	SB12	SB17	SKx72	—	SK72
SB02x	SB22	SB27	SKx73	—	SK73
SB03x	SB33	SB38	SKx74	—	SK74
SB04x	SB43	SB48	SKx75	—	SK75
SB04x	SB44	SB49	SKx76	—	SK76
SB06x	SB63	SB68	SLx71	—	SL71
SDx22	SD22	—	SLx72	—	SL72
SDx23	SD23	—	SLx73	—	SL73
SDx24	SD24	—	SLx74	—	SL74
SDx25	SD25	—	SLx75	—	SL75
SDx26	SD26	—	SLx76	—	SL76

## 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

## OLDER GRIPPERS

Series 8400 and 8600 Grippers use the four-digit model number as the transition plate code. (8400, 8402, etc.)

For Series 15000 & 19000 Grippers, use last four digits in the five-digit base model number and omit the "1" at the beginning. (1530 = 5350, 15351 = 5351, etc.)

### NOTE:

- 1) Stroke must be specified when C, SG or other slide units are secondary units that are being mounted to the end blocks or stroke related mounting pattern.

Example: S02500 = 2.500 stroke  
S12500 = 12.500 stroke

# TRANSITION PLATE MASTER ORDER CODES

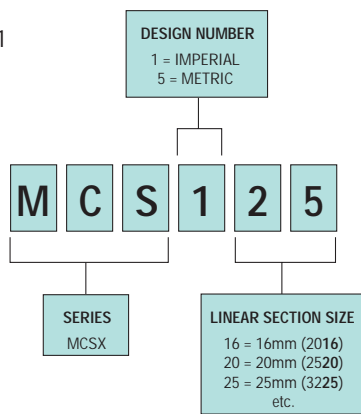
## MCS MULTI-MOTION ACTUATORS

On a Series MCS Multi-Motion, if a primary unit, the transition plate would mount to the tool plate and the size specified in the ordering code would be that of the linear section. If a secondary unit, the transition plate would mount to the body and the size specified in the ordering code would be that of the rotary section.

On these units, the transition plates are being designed so the mounting hole pattern of the transition plate and the mounting hole pattern of the unit are centered to each other and not the mounting hole pattern of the plate to the centerline of the shaft. NOTE: The RLS shafts are not centered on respective mounting hole pattern centerlines.

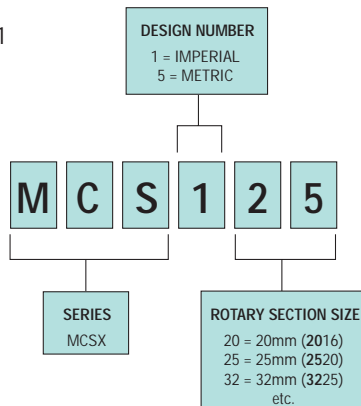
### MCS PRIMARY UNIT CODE

MCS125 - SD21 - 1



### MCS SECONDARY UNIT CODE

SD26 - MCS125 - 1



## ALL NEW PRODUCTS

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

Example:

**G R B x 2 x - 1 - x x x**

ORDER CODE = GRBx2x

**G R C x 3 x - 2 - x x x**

ORDER CODE = GRCx3x

**3 - R I S 1 2 5 x 1 8 0 x 9 0 - N B**

ORDER CODE = RIS125

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

Example:

**G R W 1 3 - 1 - 1 6 x 2 0 - L 1 1 - U B 9 9**

ORDER CODE = GRW13116

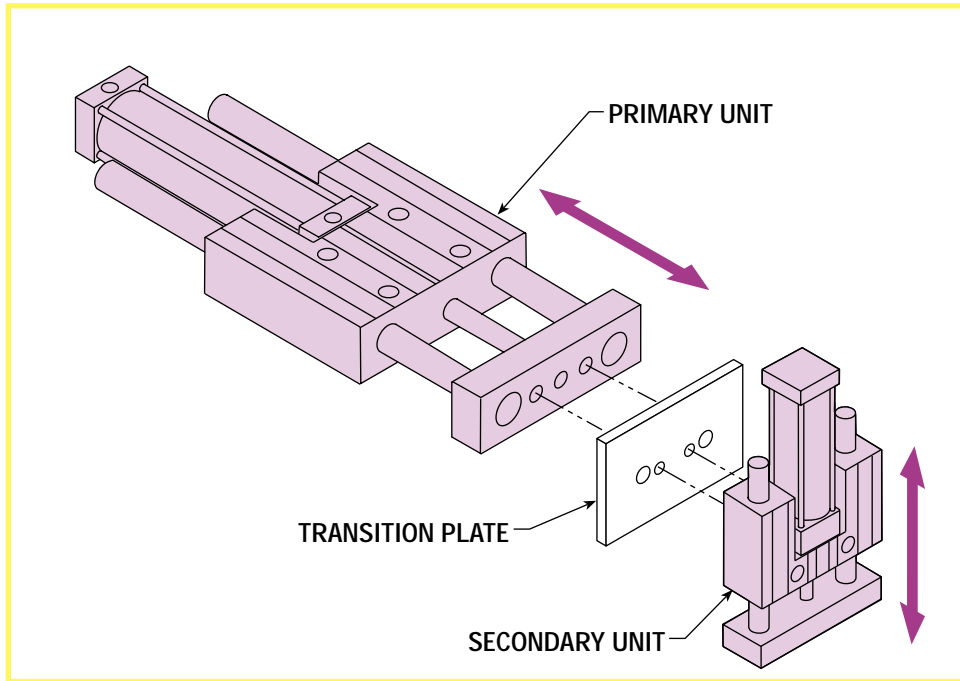
**G R L 1 2 - 1 - 1 4 x 1 3 - L 1 1**

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

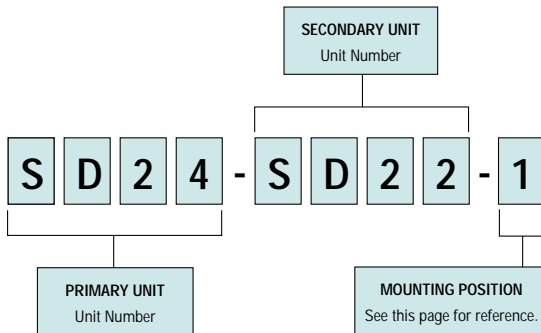


COMBINATIONS FOR SERIES SA & SB,  
SK & SL, SD & SE, STP AND SCV SLIDES

## ORDERING DATA

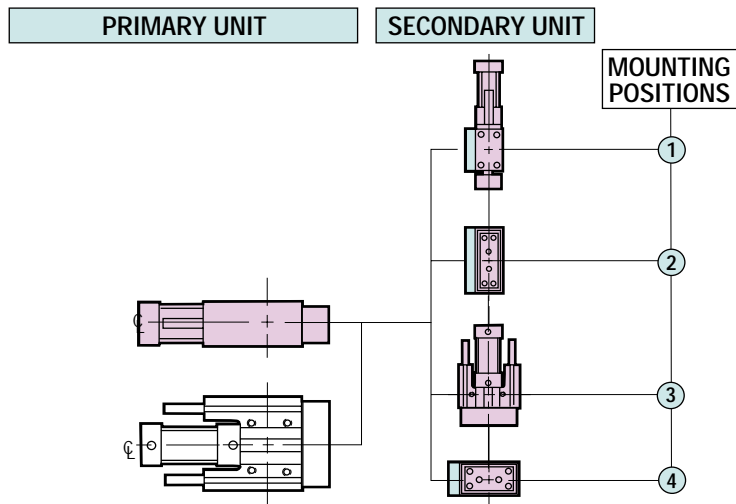
### TO ORDER SPECIFY:

Primary Unit Number, Secondary Unit Number and Mounting Position.



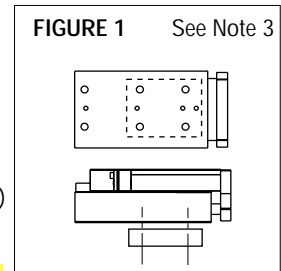
### NOTES:

- 1) These numbers apply regardless of unit travel.
- 2) All required mounting hardware is included with the Transition Plate.
- 3) SK, SL, SD, and SE Slides as secondary units positions 4 and 3 require -GV option
- 4) SB/SA Slides as secondary units in positions 3 and 4 are not available.
- 5) SCV and STP Slides as secondary units are available in positions 1 and 2 only
- 6) If dowel pin holes are required, consult PHD.



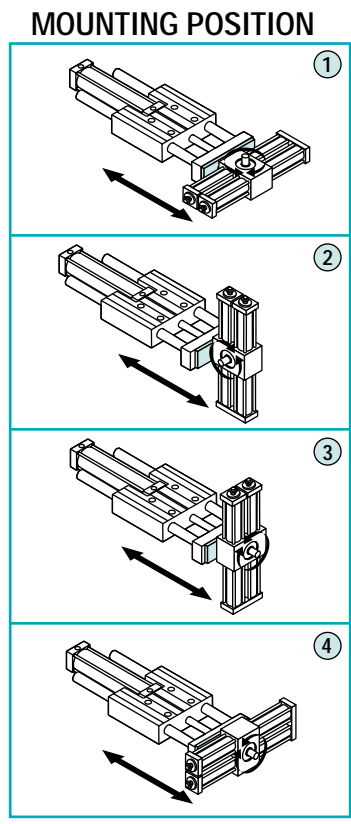
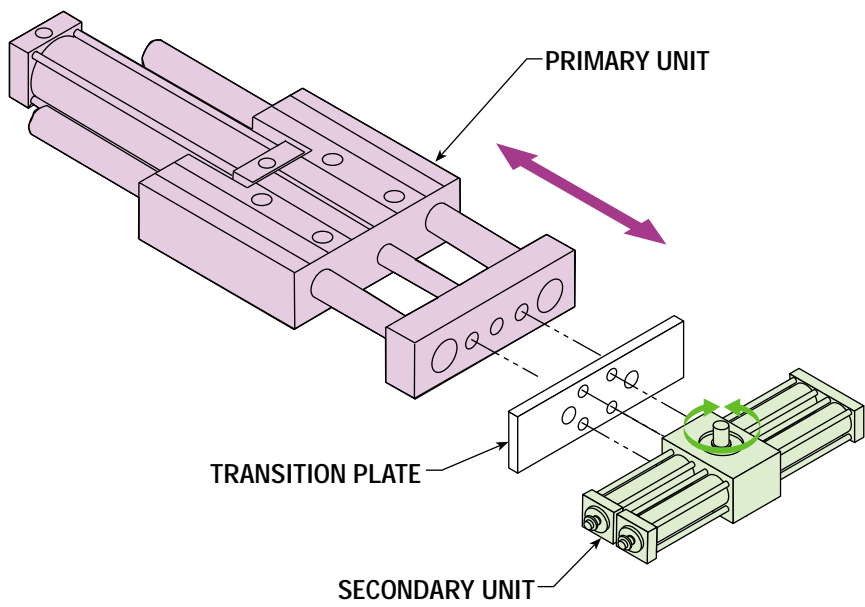
### NOTES:

- 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 are always "centered" on the thru and counterbored mounting hole pattern.





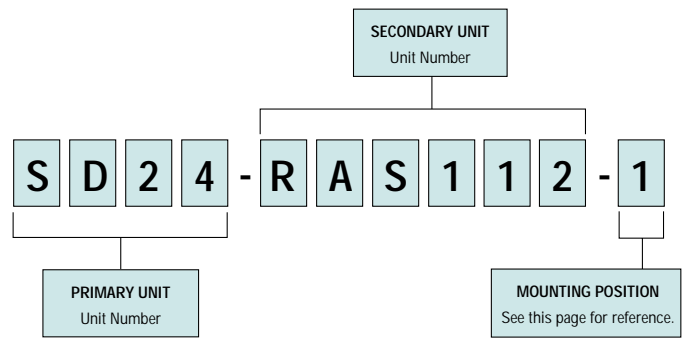
# TRANSITION PLATES: CANTILEVER TYPE & ROTARY ACTUATOR



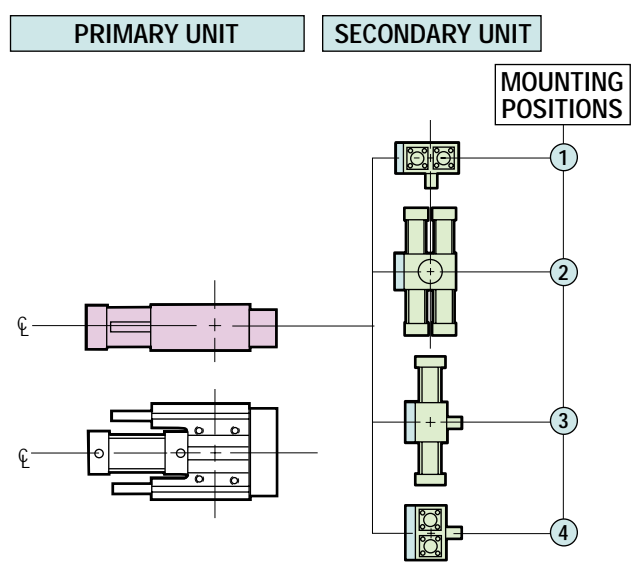
COMBINATIONS OF ROTARY ACTUATORS TO SERIES SB, SK & SL, SD & SE, AND SCV SLIDES

## 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 3 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) Rlx 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**.

# POSSIBLE COMBINATIONS: SLIDE & ROTARY ACTUATOR

NOTE: METRIC NUMBERS ARE IN [ ]		SECONDARY UNIT																						
		ROTARY ACTUATORS																						
		UNIT NO.	R050 [RE50]	R075 [RE75]	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]	Rlx25	Rlx32	Rlx50	
P R I M A R Y  U N I T	SERIES SB SLIDES	SB22 [SB27]	2									2												
		SB33 [SB38]	3	3					3				3	3	3	3								
		SB44 [SB49]	3	3	3				3				3	3	3	3								
		SB63 [SB68]	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									
		SD23 SE23	3	3	3			3	3	5		3	3	3	3	3								
		SD24 SE24	3	3	3	3		3	3	5	5	3	3	3	3	3	3	3	5					
		SD25 SE25	3	3	3	5	5		3	3	5	5	3	3	3	3	3	3	5					
		SD26 SE26	3	3	3	5	5	6	3	3	5	5	3	3	3	3	3	3	5	5	5	6		
	SERIES SK & SL SLIDES	SK71 SL71	3	3	3			3				3	3	3	3									
		SK72 SL72	3	3	3			3	3			3	3	3	3	3								
		SK73 SL73	3	3	3	3		3	3	5	5	3	3	3	3	3	3	5	5					
		SK74 SL74	3	3	3	5	5		3	3	5	5	3	3	3	3	3	5	5					
		SK75 SL75	3	3	3	5	5	6	3	3	5	5	3	3	3	3	3	5	5	5				
		SK76 SL76	5	5	5	5	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5			
	SERIES SCV SLIDES	SCVx12 [SCV52]																						
		SCVx13 [SCV53]	3																					
		SCVx14 [SCV54]	3																					
		SCVx15 [SCV55]	4	4				4				4	4	4										
		SCVx16 [SCV56]	5	5				5				5	5	5							5			
		SCVx17 [SCV57]	5	5				5	5			5	5	5	5						5			
		SCVx18 [SCV58]	6	6				6	6	6		6	6	6	6	6					5	6		
		SCVx19 [SCV59]	6	6	6			6	6	6	6	6	6	6	6	6	6	6	6		5	6	6	

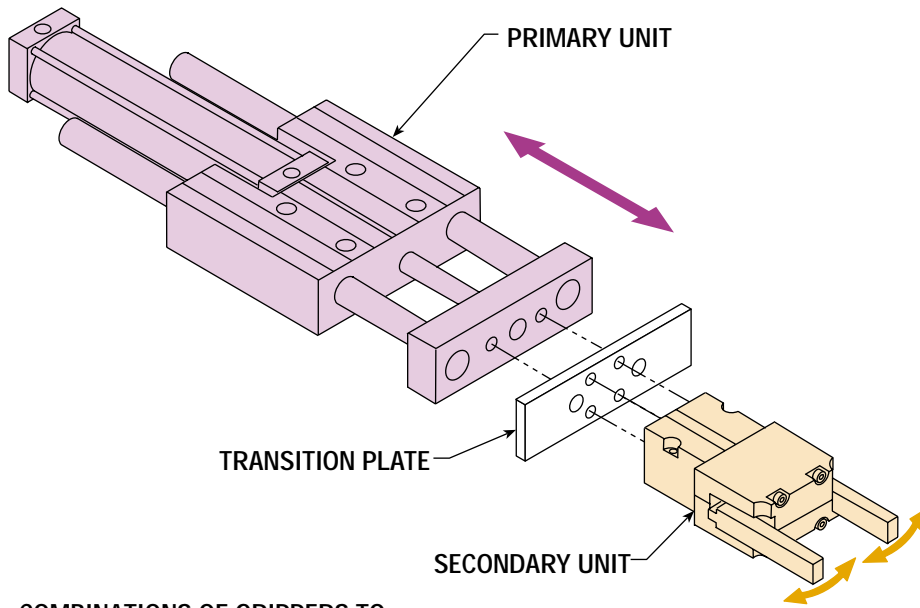
SHADED AREAS – CONSULT PHD FOR AVAILABILITY  
 PLATE THICKNESS KEY

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

NOTE: RLS SHAFTS ARE NOT CENTERED ON ITS MOUNTING HOLE PATTERN.

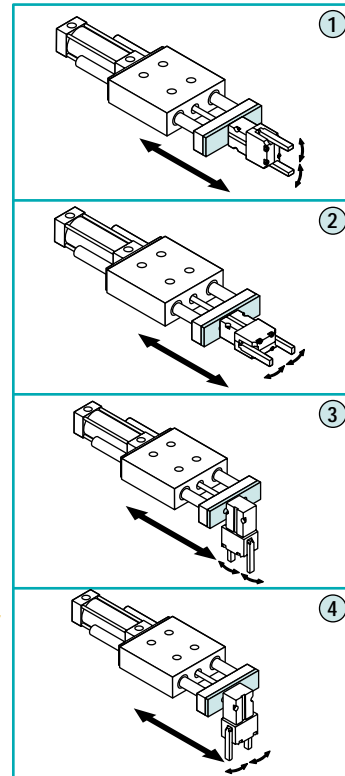


# TRANSITION PLATES: CANTILEVER TYPE & GRIPPER



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

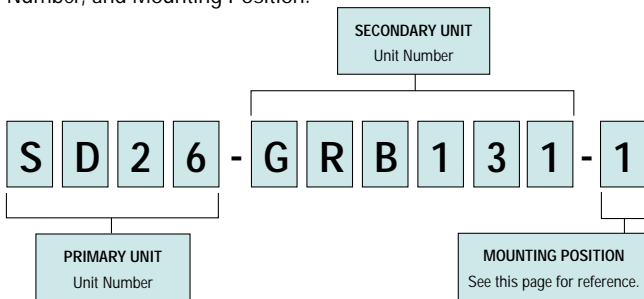
## MOUNTING POSITION



## ORDERING DATA

### TO ORDER SPECIFY:

Primary Unit Number, Secondary Unit Number, and Mounting Position.

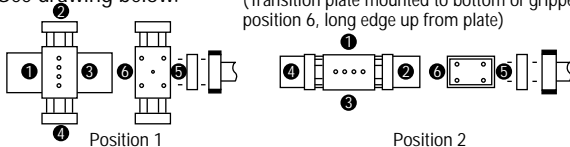


### NOTES:

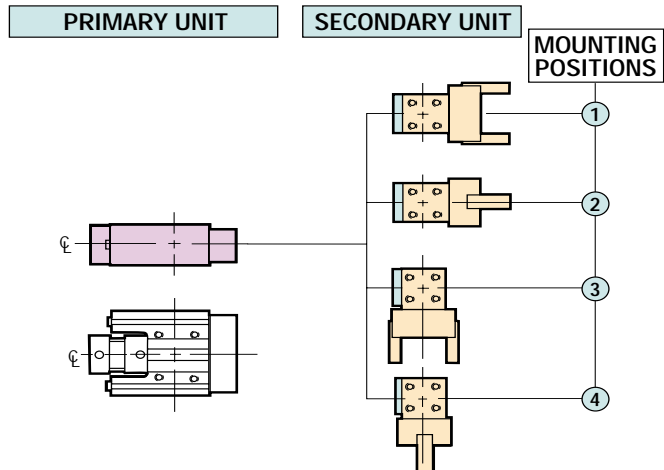
- 1) These numbers apply regardless of unit travel.
- 2) All required mounting hardware is included with the Transition Plate.
- 3) Mounting position 3 not available with Series GRC or GRB Grippers.
- 4) GRT Grippers as secondary units are available in position 1 & 2 only.
- 5) GRW Grippers as secondary 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) GRL Grippers as secondary units are available in position 1 & 2 only.
- 7) If dowel pin holes are required, consult PHD.



### NOTES:

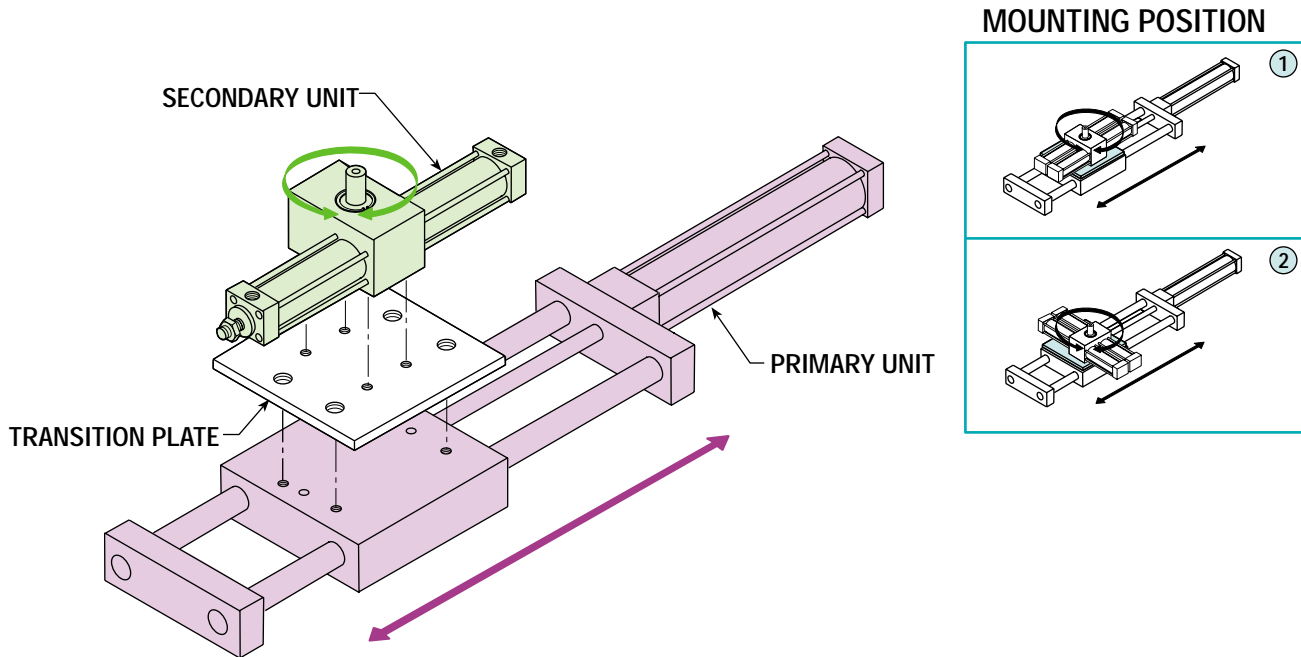
- 1) Use shaded view to find correct mounting position.
- 2) All units are centered on mounting hole patterns of body and tool plate.
- 3) Series GRC & 190 Grippers in position #4 as secondary units are always centered on the thru and counterbored mounting hole pattern.

		SECONDARY UNIT																																												
		GRIPPERS																																												
		UNIT NO.	8400	8410	8420	8430	9x6x9x6x	9x7x9x7x	9x8x9x8x	9x9x9x9x	GRBx2x	GRBx3x	GRBx4x	GRBx5x	GRBx6x	GRBx7x	GRCx3x	GRCx4x	GRCx5x	GRCx6x	GRDx3x	GRDx4x	GRDx5x	GRDx6x	GRTx1	GRTx2	GRTx3	GRTx4	GRTx5	GRTx6	GRTx7	GRTx8	GRLx14	GRLx16	GRW16	GRW25	GRW32	GRW40	GRW50							
PRIMARY UNIT	SERIES SB SLIDES	SB12 [SB17]	1	2			1	2			3	3	3												1	2			2	3						2	2	3								
		SB22 [SB27]	1	2	2		2	2	2			3	3	3												1	2	2		2	3	3					2	2	3							
		SB33 [SB38]	2	2	2		2	2				3	3	3												2	2	2		3	3	3					3	3	3							
		SB44 [SB49]	2	2	2	3	2	2	2	2		3	3	3	3			3								2	2	2	3	3	3	3	5	5			3	3	3	3						
		SB63 [SB68]	3	3	3	3	3	3	3	3	3	3	3	3	3	3	5		3	3						3	3	3	3	3	3	3	5	5	5	5		5	5	5	5					
	SERIES SD & SE SLIDES	SD22 [SE22]	2	2	3	3	2	2	2	3	3	3	3	3												2	2	3	3	2	3	3							3	3	5					
		SD23 [SE23]	2	2	3	3	2	2	3	3	3	3	3	3	3			3								2	2	3	3	2	3	3	5						3	3	5	5				
		SD24 [SE24]	3	3	3	3	3	3	3	3	3	3	3	3	3	5		3	3							3	3	3	3	2	3	3	5	5	5	5			3	3	5	5	5			
		SD25 [SE25]	3	3	3	3	3	3	3	3	3	3	3	3	3	5	5	3	3	5						3	3	3	3	3	3	5	5	5	5	5			3	3	5	5	5	5		
		SD26 [SE26]	3	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		
	SERIES SK & SL SLIDES	SK71 [SL71]	2	2	3	3	2	2	3	3	3	3	3	3												2	2	3	3	2	3	3							3	3	5					
		SK72 [SL72]	2	2	3	3	2	2	3	3	3	3	3	3	3			3								2	2	3	3	2	3	3	5						3	3	5					
		SK73 [SL73]	2	2	3	3	2	2	3	3	3	3	3	3	3			3								2	2	3	3	2	3	3	5	5					3	3	5	5				
		SK74 [SL74]	3	3	3	3	3	3	3	3	3	3	3	3	3	5		3	3							3	3	3	3	2	3	3	5	5	5					3	3	5	5			
		SK75 [SL75]	3	3	3	3	3	3	3	3	3	3	3	3	3	5	5	3	3	5						3	3	3	3	3	3	5	5	5	5	5					3	3	5	5	5	5
	SK76 [SL76]	3	3	3	3	3	3	3	3	3	3	3	3	3	5	5	3	3	5	5					3	3	3	3	3	3	5	5	5	5	5					5	5	5	5	5	5	
	SERIES SCV SLIDES	SCVx12 [SCV52]	2	2	2	2	2					3																																		
		SCVx13 [SCV53]	3	3	3	3	3	3				3	3																																	
SCVx14 [SCV54]		3	3	3	3	3	3					3	3												3																					
SCVx15 [SCV55]		4	4	4	4	4	4				4	4	4																																	
SCVx16 [SCV56]		5	5	5	5	5	5	5	5	5	5	5	5	5																																
SCVx17 [SCV57]		5	5	5	5	5	5	5	5	5	5	5	5	5				5																												
SCVx18 [SCV58]		6	6	6	6	6	6	6	6	6	6	6	6	6				6																												
SCVx19 [SCV59]		6	6	6	6	6	6	6	6	6	6	6	6	6	6				6	6																										

SHADED AREAS - CONSULT PHD FOR AVAILABILITY  
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]

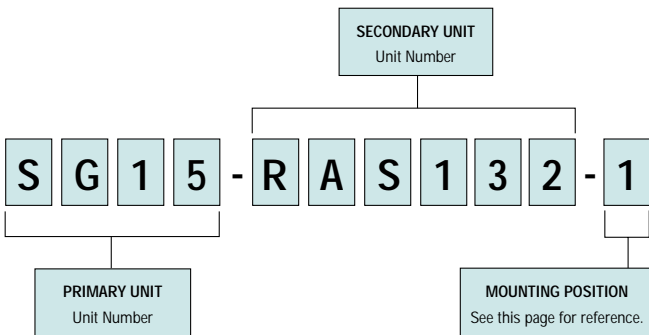
# TRANSITION PLATES: SADDLE TYPE & ROTARY ACTUATOR



COMBINATIONS OF ROTARY ACTUATORS  
TO SERIES M, C, AND SG SLIDES

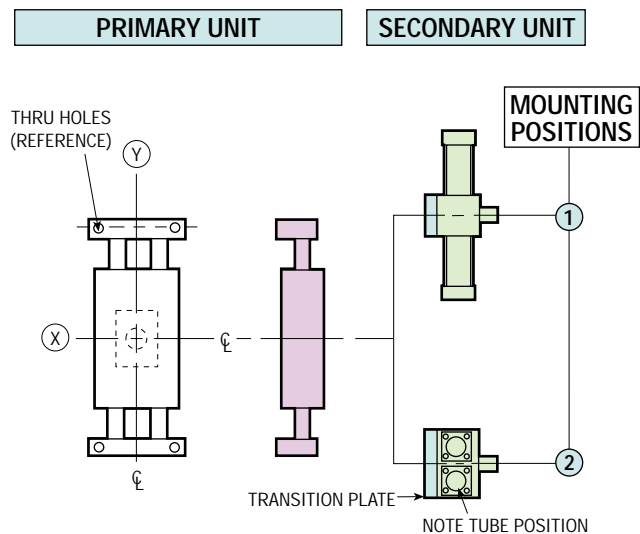
## ORDERING DATA

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 3 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.

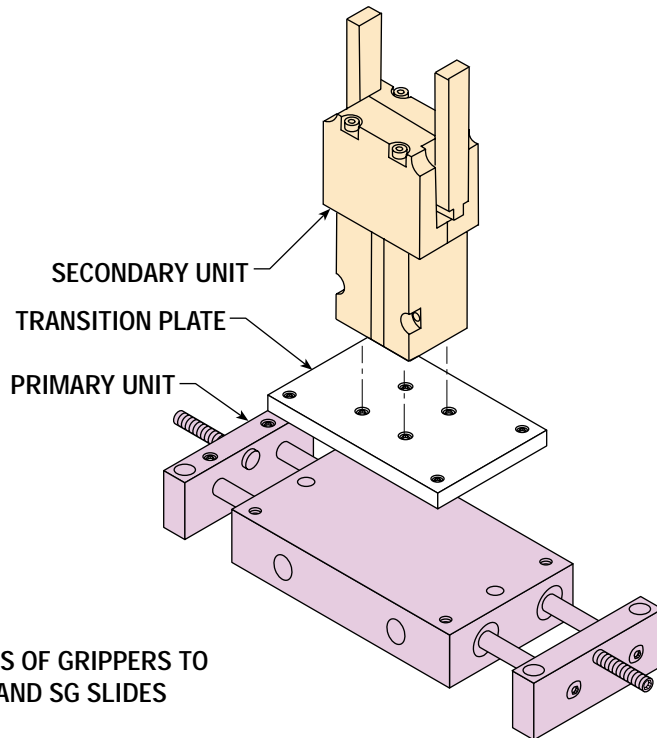
		SECONDARY UNIT																							
		ROTARY ACTUATORS																							
		UNIT NO.	R050 [RE50]	R075 [RE75]	R200 [R205]	R400 [R405]	R600 [R605]	R800 [R805]	RAS120 [RAS520]	RAS125 [RAS525]	RAS132 [RAS532]	RAS140 [RAS540]	RAS150 [RAS550]	RLS112 [RLS512]	RLS116 [RLS516]	RLS120 [RLS520]	RLS125 [RLS525]	RLS132 [RLS532]	RLS140 [RLS540]	RLS150 [RLS550]	RLS163 [RLS563]	Rix25	Rix32	Rix50	
<b>P R I M A R Y  U N I T</b>	<b>SERIES M SLIDES</b>	M022 [M026]	1					3					3	3	3										
		M032 [M036]	2	2	3				3	3				3	3	3	3						5		
		M042 [M046]	3	3	3				3	3	3			3	3	3	3	3					5	6	
		M062 [M066]	3	3	4	4	4		3	3	4	4	5	3	3	3	3	4	4	5			5	6	6
	<b>SERIES C SLIDES</b>	C031 [C035]	3	3	3				3	3				3	3	3	3								
		C041 [C045]	3	3	3	3			3	3	4			3	3	3	3	4					5		
		C061 [C065]	3	3	3	3	4		3	3	4	4	5	3	3	3	3	4	4	5			5	6	
	<b>SERIES SG SLIDES</b>	SG11 [SG51]	3	3					3	3	3			3	3	3	3	3							
		SG12 [SG52]	3	3					3	3	3	3		3	3	3	3	3	3						
		SG13 [SG53]	4	4	4				4	4	4	4	4	4	4	4	4	4	4	5	5				
		SG14 [SG54]	4	4	4	4			4	4	4	4	4	4	4	4	4	4	4	5	5				
		SG15 [SG55]	5	5	5	5	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
		SG16 [SG56]	5	5	5	5	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6	

SHADED AREAS – CONSULT PHD FOR AVAILABILITY  
**PLATE THICKNESS KEY**

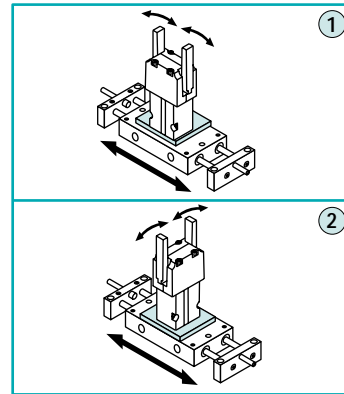
**1** = .312 = [7.9]    **2** = .375 = [9.5]    **3** = .500 = [12.7]    **4** = .625 = [15.9]    **5** = .750 = [19]    **6** = 1.250 = [31.8]

NOTE: RLS SHAFTS ARE NOT CENTERED ON ITS MOUNTING HOLE PATTERN.

# TRANSITION PLATES: SADDLE TYPE & GRIPPER



## MOUNTING POSITION

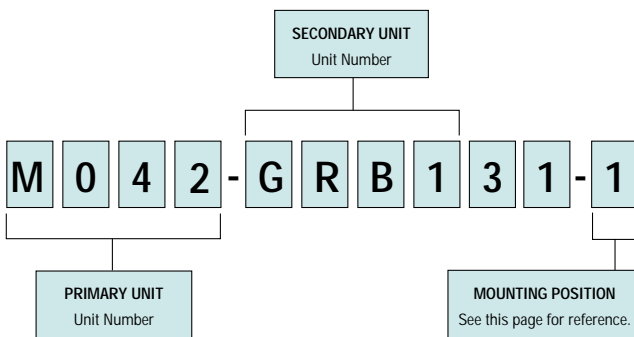


COMBINATIONS OF GRIPPERS TO SERIES M, C, AND SG SLIDES

## ORDERING DATA

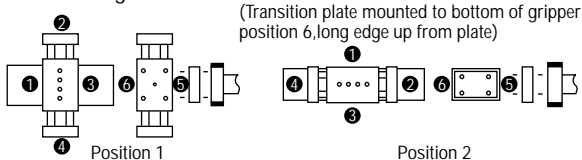
### TO ORDER SPECIFY:

Primary Unit Number, Secondary Unit Number, and Mounting Position.

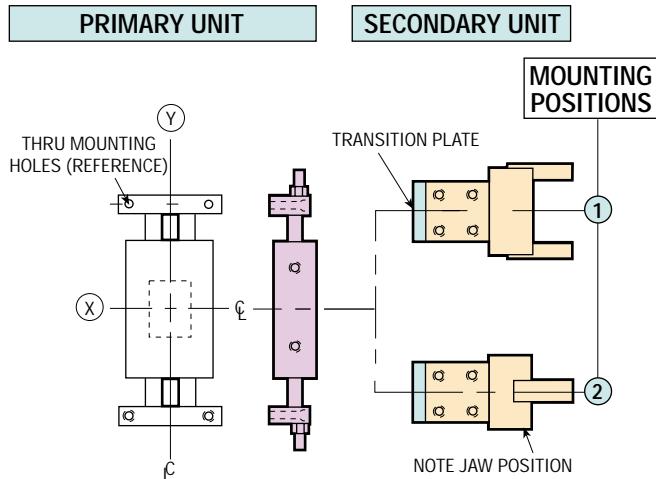


### NOTES:

- 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 are available in position 1 & 2 only. See drawing below.



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

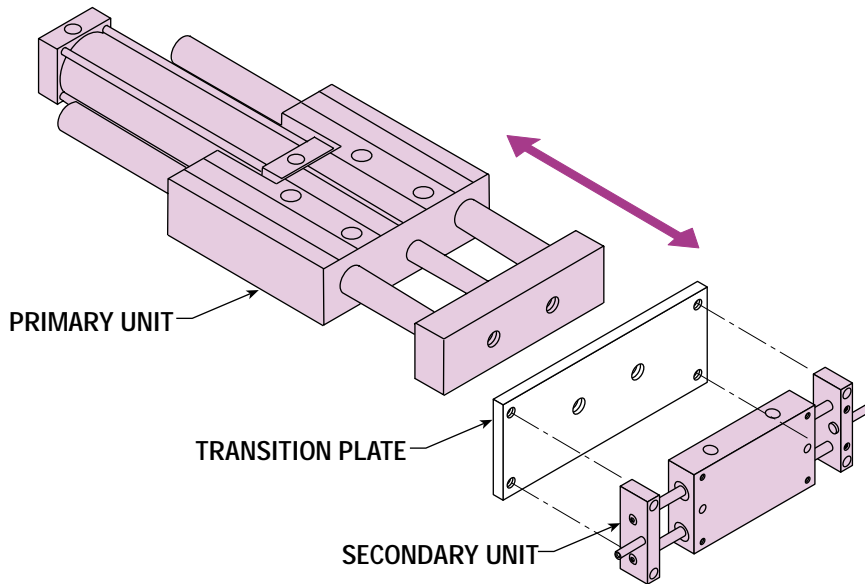


### NOTES:

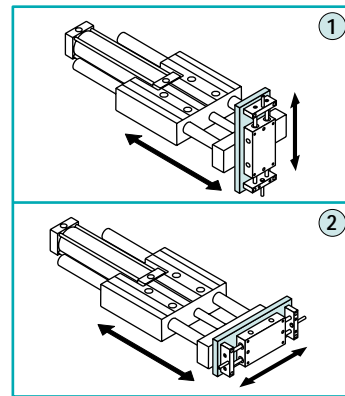
- 1) Use shaded view to find correct mounting position.
- 2) All units are centered on mounting hole pattern of body and saddle.



# TRANSITION PLATES: CANTILEVER TYPE & SADDLE SLIDE



## MOUNTING POSITION

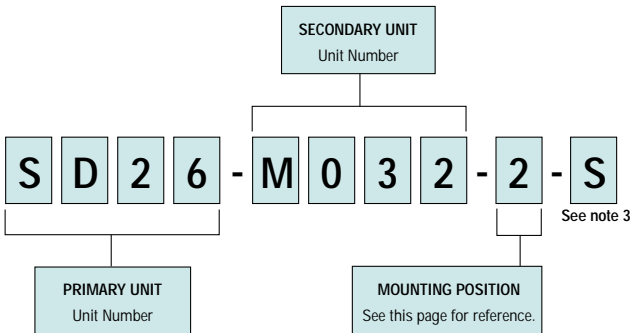


COMBINATIONS OF SERIES M AND C TO SERIES SB, SD & SE, SK & SL, AND SCV SLIDES

## ORDERING DATA

### TO ORDER SPECIFY:

Primary Unit Number, Secondary Unit Number, and Mounting Position.

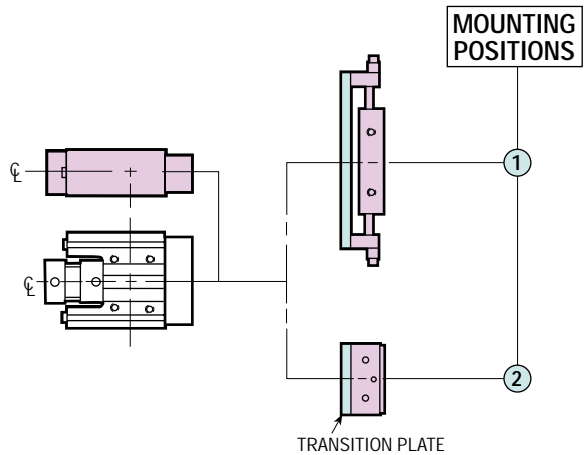


### NOTES:

- 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 C 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: SOD2000 = 2.000 Stroke  
S03500 = 3.500 Stroke  
Option -S\_\_\_\_\_ stroke required for C or SG Slides as secondary unit.
- 4) If dowel pin holes are required, consult PHD.

## PRIMARY UNIT

## SECONDARY UNIT



### NOTES:

- 1) Use shaded view to find correct mounting position.
- 2) The Transition Plates in this section for Series M Slides are manufactured to fit the maximum travel of the unit and constructed of aluminum for easy machining. Machining off the excess material to fit your unit may be required.
- 3) All units are centered on mounting hole pattern of end blocks and tool plate.

# POSSIBLE COMBINATIONS: SLIDE & SLIDE

NOTE: METRIC NUMBERS ARE IN [ ]

		SECONDARY UNIT							
		SLIDES							
P R I M A R Y  U N I T	UNIT NO.	M022 [M026]	M032 [M036]	M042 [M046]	M062 [M066]	C031 [C035]	C041 [C045]	C061 [C065]	
	S E R I E S	S B S L I D E S	SB33 [SB38]	3				3	
SB44 [SB49]			3	3			3		
SB63 [SB68]			3	3	3		3		
S D & S E S L I D E S		SD22 [SE22]	3				3		
		SD23 [SE23]	3	3			3	3	
		SD24 [SE24]	3	3	3		3	3	
		SD25 [SE25]	3	3	3	3	3		
		SD26 [SE26]	3	3	3	3	3		
S K & S L S L I D E S		SK71 SL71	3				3		
		SK72 SL72	3	3			3	3	
		SK73 SL73	3	3	3		3	3	
		SK74 SL74	3	3	3	3	3		
		SK75 SL75	3	3	3	3	3		
		SK76 SL76	3	3	3	3	3	3	3
S C V S L I D E S		SCVx12 SCV52	3						
		SCVx13 SCV53	3				3		
		SCVx14 SCV54	3				3		
		SCVx15 SCV55	4	4			4		
		SCVx16 SCV56	5	5	5		5	5	
		SCVx17 SCV57	5	5	5		5	5	
		SCVx18 SCV58	6	6	6		6	6	
	SCVx19 SCV59	6	6	6		6	6		

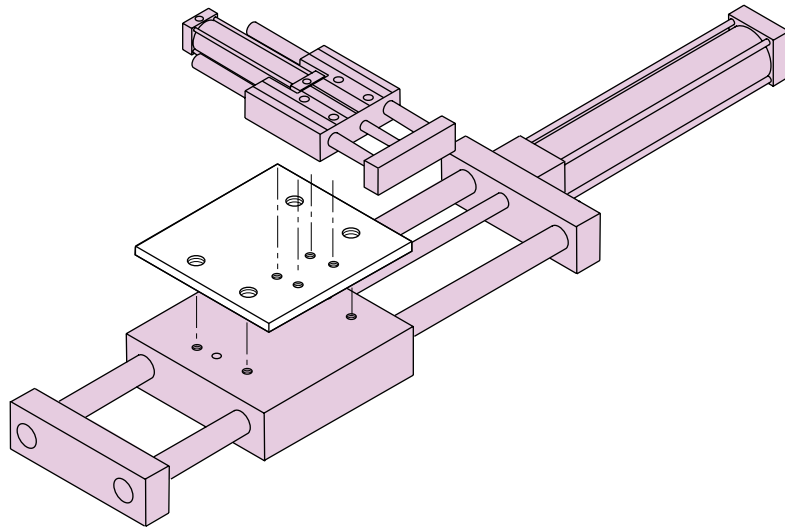
SHADED AREAS – CONSULT PHD FOR AVAILABILITY

### PLATE THICKNESS KEY

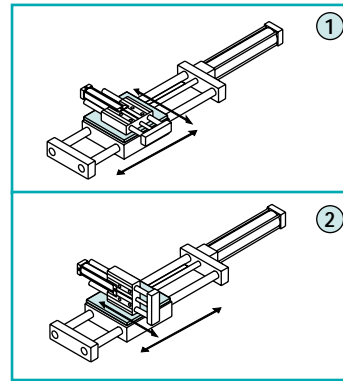
1 = .312 = [7.9]    2 = .375 = [9.5]    3 = .500 = [12.7]    4 = .625 = [15.9]    5 = .750 = [19]    6 = 1.250 = [31.8]



# TRANSITION PLATES: SADDLE TYPE & CANTILEVER SLIDE



## MOUNTING POSITION

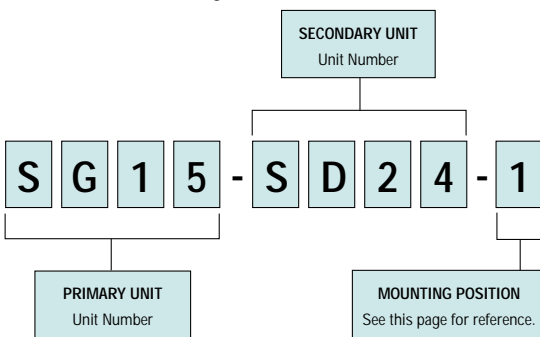


COMBINATIONS OF SERIES SA & SB, SD & SE,  
SK & SL, STP, AND SCV TO SERIES M, C, AND SG SLIDES

## ORDERING DATA

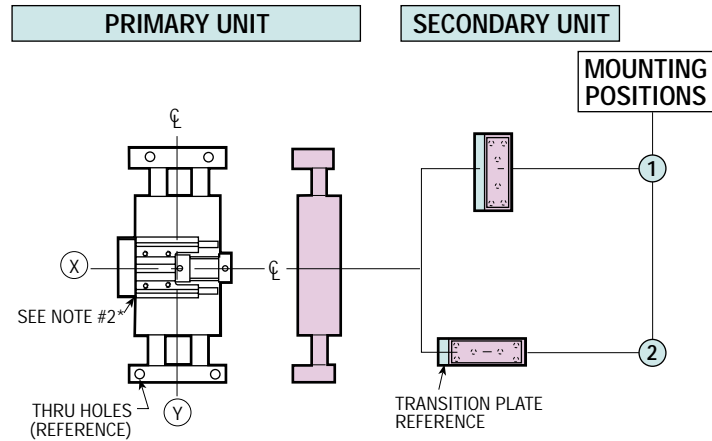
### TO ORDER SPECIFY:

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) SA & SB Slides are not available in position 2.
- 5) STP Slides as secondary units are available in position 1 only.
- 6) If dowel pin holes are required, consult PHD.

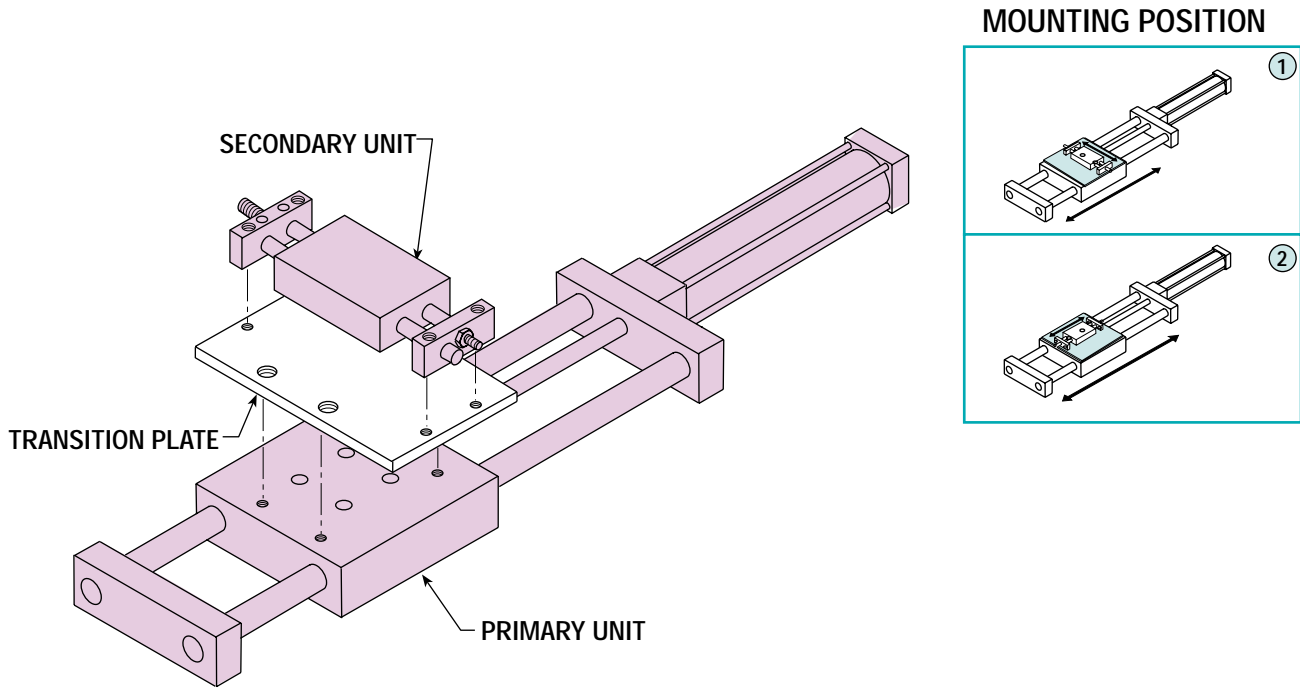


### NOTES:

- 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.



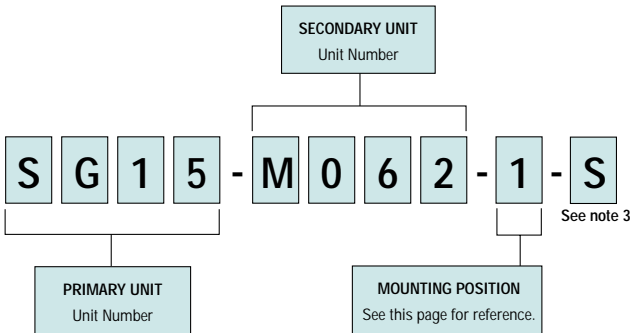
# TRANSITION PLATES: SADDLE TYPE & SADDLE TYPE



COMBINATIONS OF SERIES M, C, AND SG SLIDES

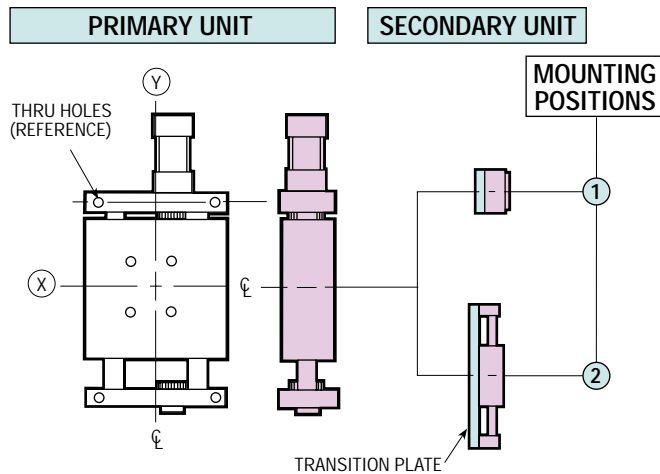
## ORDERING DATA

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 C or SG Slides is 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 Stroke  
S03500 = 3.500 Stroke  
Option -S\_\_\_\_\_ stroke required for C or SG Slides as secondary unit.
- 4) If dowel pin holes are required, consult PHD.



### NOTES:

- 1) Use shaded view to find correct mounting position.
- 2) The Transition Plates in this section for Series M Slides are manufactured to fit the maximum travel of the unit and constructed of aluminum for easy machining. Machining off the excess material to fit the unit may be required.
- 3) All units are centered on mounting hole pattern of the end blocks and saddle.
- 4) On Series SG or C Slides with secondary C or SG Slides, the secondary unit may interfere with the cylinder port of the primary unit in position 2.

# POSSIBLE COMBINATIONS: SLIDE & SLIDE

NOTE: METRIC NUMBERS ARE IN [ ]

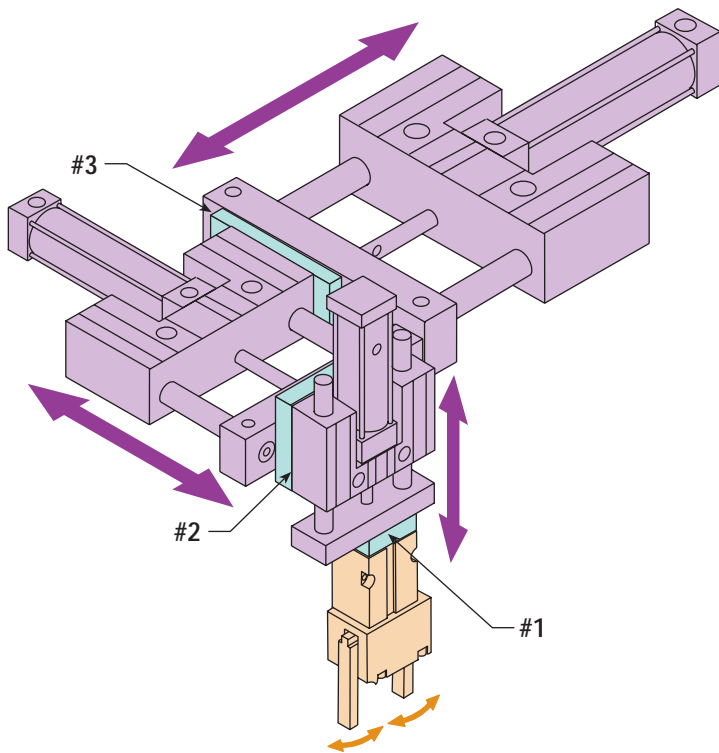
		SECONDARY UNIT													
		SLIDES													
		UNIT NO.	M022 [M026]	M032 [M036]	M042 [M046]	M062 [M066]	C031 [C035]	C041 [C045]	C061 [C065]	SG11 [SG51]	SG12 [SG52]	SG13 [SG53]	SG14 [SG54]	SG15 [SG55]	SG16 [SG56]
PRIMARY UNIT	SERIES M SLIDES	M022 [M026]	1				1			1					
		M032 [M036]	2	2			2			2	2				
		M042 [M046]	3	3	3		3	3		3	3	3			
		M062 [M066]	3	3	3	3	3	3	3	3	3	3	3		
	SERIES C SLIDES	C031 [C035]	3	3			3			3	3				
		C041 [C045]	3	3	3		3	3		3	3	3			
		C061 [C065]	3	3	3	3	3	3	3	3	3	3	3		
	SERIES SG SLIDES	SG11 [SG51]	3							3					
		SG12 [SG52]	3	3			3			3	3				
		SG13 [SG53]	3	3	3		3	3		3	3	3			
		SG14 [SG54]	4	4	4	4	4	4	4	4	4	4	4	4	
		SG15 [SG55]	5	5	5	5	5	5	5	5	5	5	5	5	5
		SG16 [SG56]	5	5	5	5	5	5	5	5	5	5	5	5	5

SHADED AREAS – CONSULT PHD FOR AVAILABILITY  
 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]

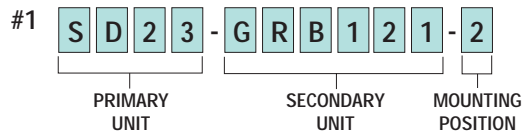


# COMBINATION EXAMPLES: TRANSITION PLATES

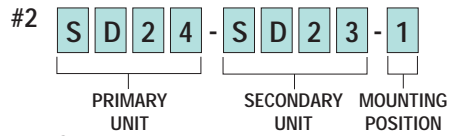


## 3 TRANSITION PLATES

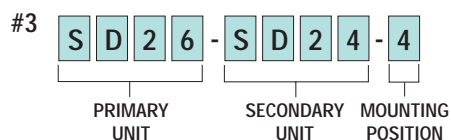
Ordering Example:



See pages 8-22 & 8-23.



See pages 8-18 & 8-19.

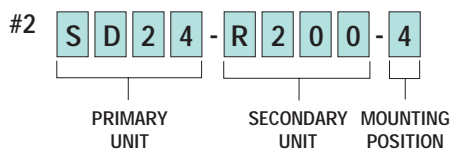


See pages 8-18 & 8-19.

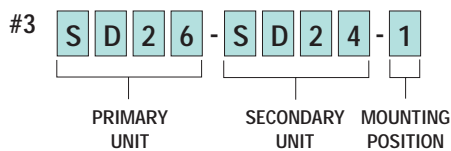
## 2 TRANSITION PLATES 1 HUB ADAPTOR USED

Ordering Example:

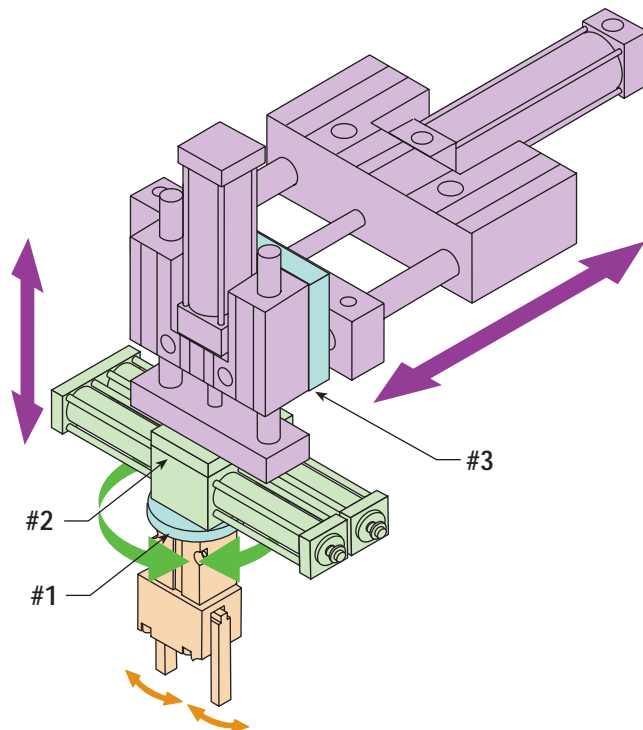
#1 HUB ADAPTOR  
(See pages 8-6 to 8-9 for details.)



See pages 8-20 & 8-21.



See pages 8-18 & 8-19.



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## NOTES

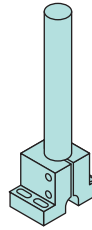


# STANCHIONS

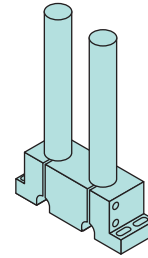
## STANCHION BASE AND SHAFT(S)

pages 8-37 & 8-38

Specifications, Ordering Data, and Base Dimensions.



SINGLE

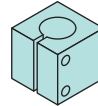
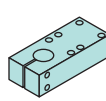


DOUBLE

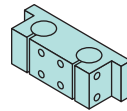
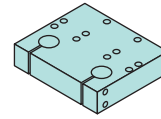
## MOUNTING PLATE(S) AND BLOCK(S)

pages 8-39 & 8-40

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



SINGLE



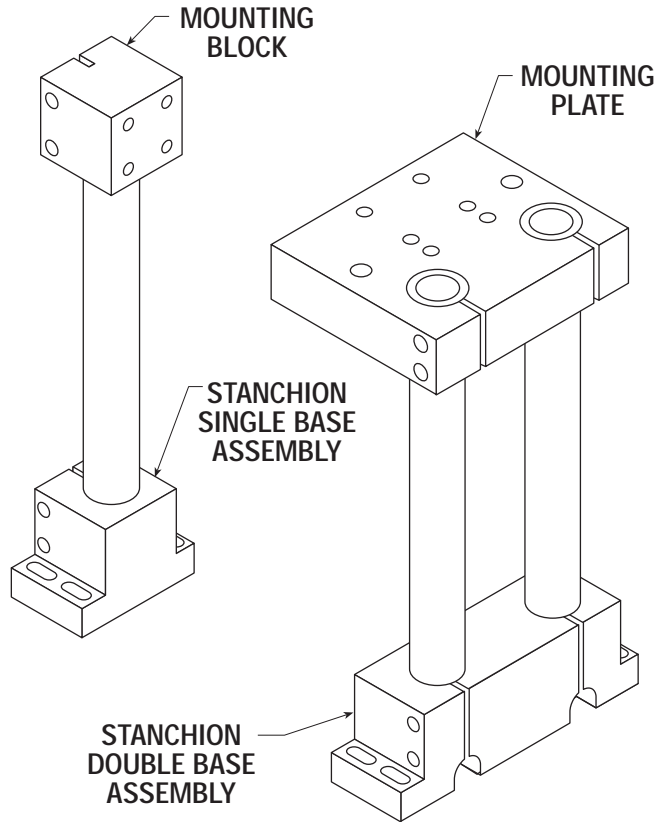
DOUBLE

## STANCHION ENGINEERING DATA

page 8-41

Bending moments, torque limitations, and shaft deflections.

# STANCHIONS



## 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

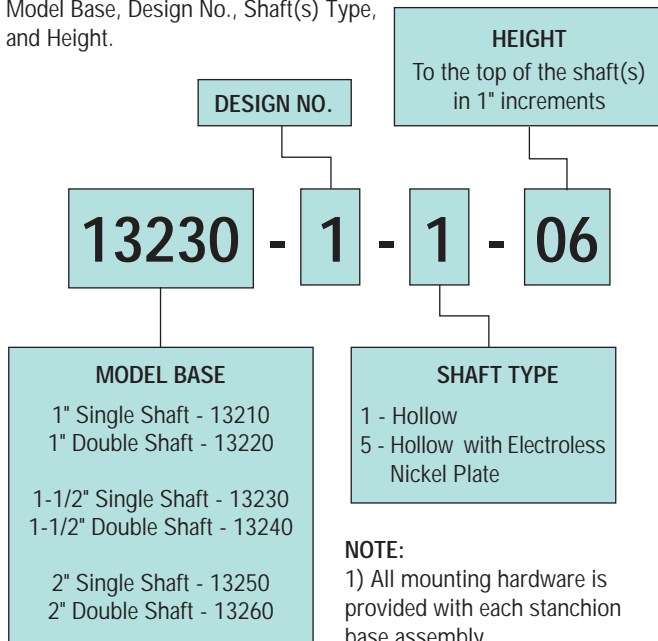
SPECIFICATIONS	SERIES 132xx
MODELS	Single or Double Shafts
SHAFTS	1", 1-1/2", and 2" Dia. Hollow, Brite Zinc Plated Available in 1" increments up to 60 inch Maximum Length (Consult PHD for longer shaft lengths)
BASE	Anodized Aluminum
MOUNTING PLATES AND BLOCKS	Anodized Aluminum
REINFORCEMENT	Zinc Plated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

## ORDERING DATA: STANCHIONS

### STANCHION BASE ASSEMBLY

#### To order specify:

Model Base, Design No., Shaft(s) Type, and Height.



### MOUNTING PLATE AND MOUNTING BLOCK KIT NUMBERS

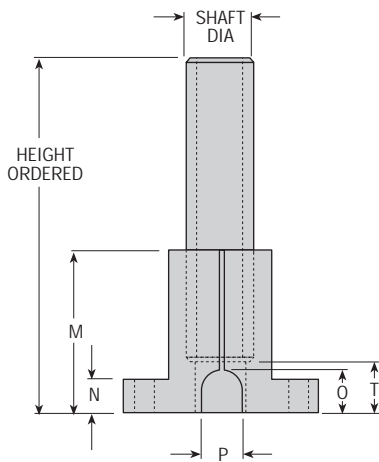
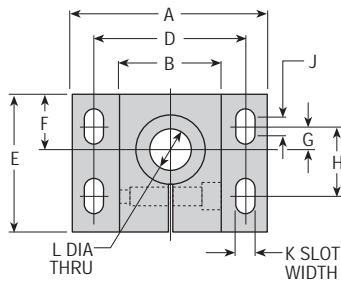
To order Mounting Plates and Mounting Blocks, specify proper kit number.

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

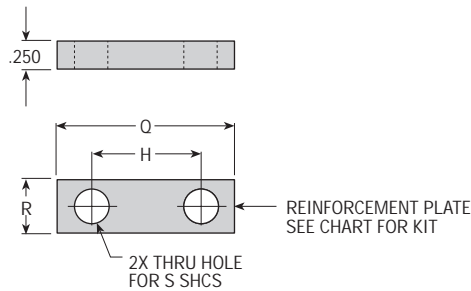
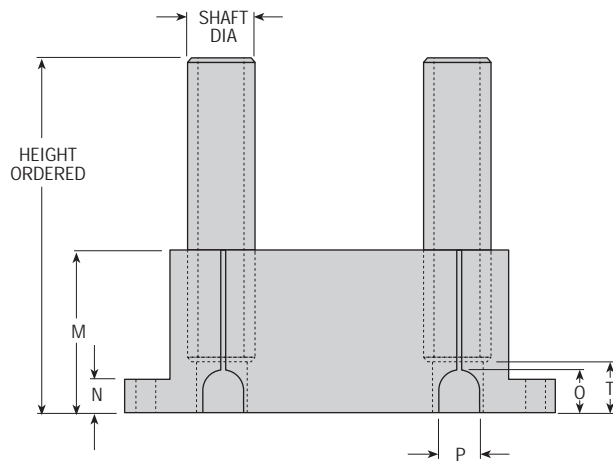
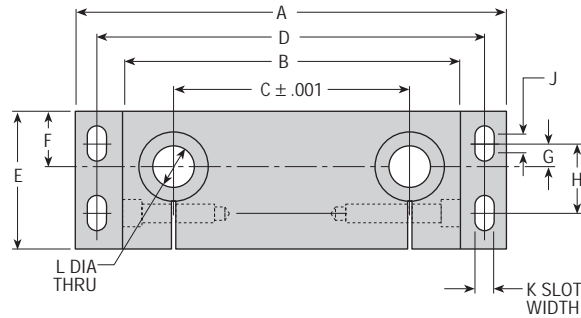
\*All mounting holes are predrilled for attaching PHD Slides, Rotary Actuators, and Multi-Motion Actuators. (See individual sections for sizing.)

# DIMENSIONS: STANCHION BASES

## SINGLE STANCHION BASE



## DOUBLE STANCHION BASE



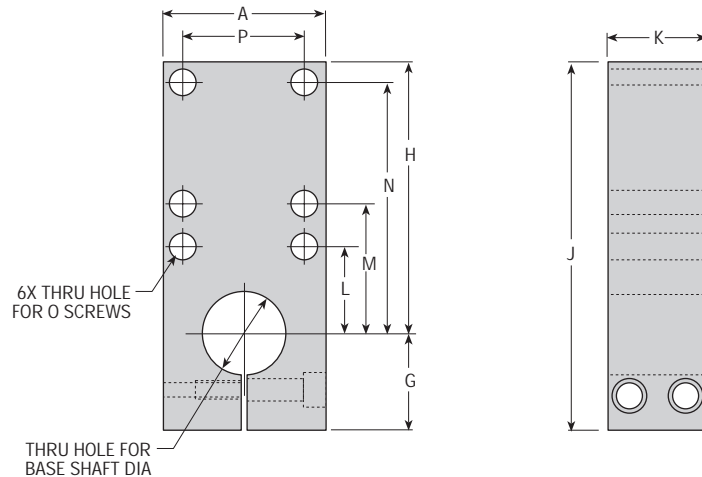
SHAFT DIA.	BASE TYPE	KIT NO.	REINFORCEMENT PLATE KIT NO.	LETTER DIMENSION																		
				A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T
1	SINGLE	13210-1-1-xx	12243	2.880	1.500	N/A	2.250	1.970	.795	.310	1.000	.220	.280	.687	2.400	.500	.620	.620	1.620	.500	1/4	.750
	DOUBLE	13220-1-1-xx		6.370	5.000	3.500	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

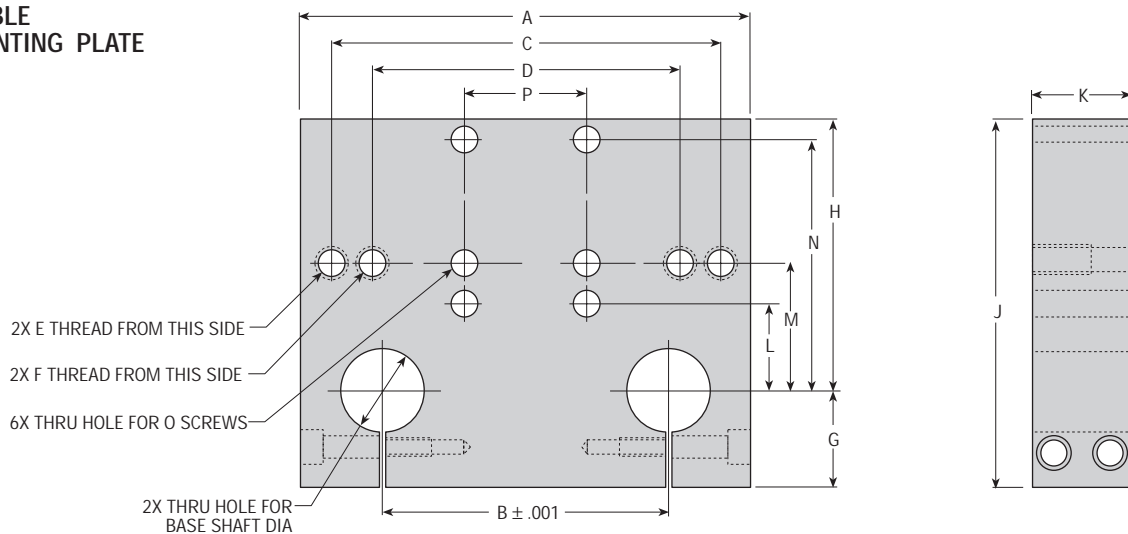
## SINGLE MOUNTING PLATE



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	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	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	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



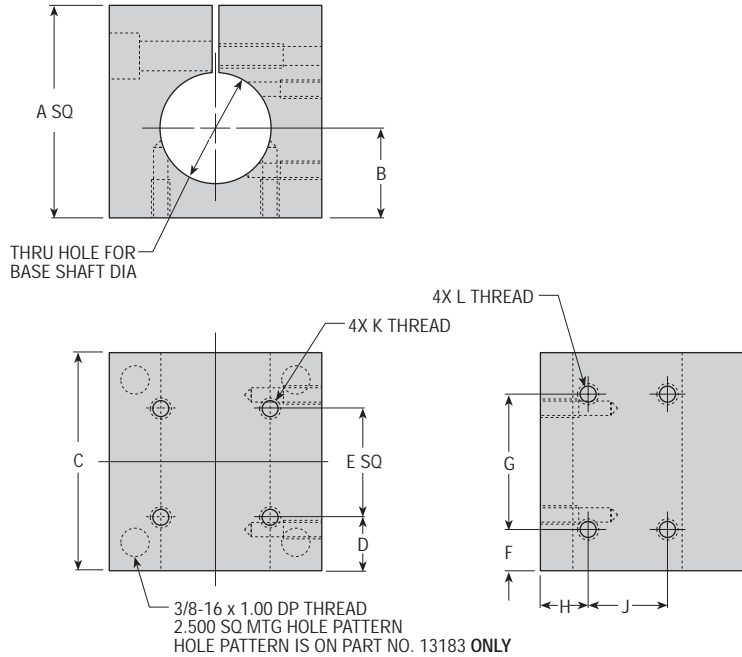
SHAFT DIA.	BASE TYPE	KIT NO.	LETTER DIMENSION															
			A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	
1	BLANK	12624-04	5.500	3.500	NA	NA	NA	NA	1.190	3.310	4.500	1.200	NA	NA	NA	NA	NA	
	UNIVERSAL	13172			4.750	3.750	5/16-18 x .70 DP	5/16-18 x .70 DP					1.060	1.560	3.060	1/4	1.500	
1-1/2	BLANK	12624-05	7.000	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.

All dimensions are reference only unless specifically toleranced.

# DIMENSIONS: STANCHION MOUNTING BLOCKS

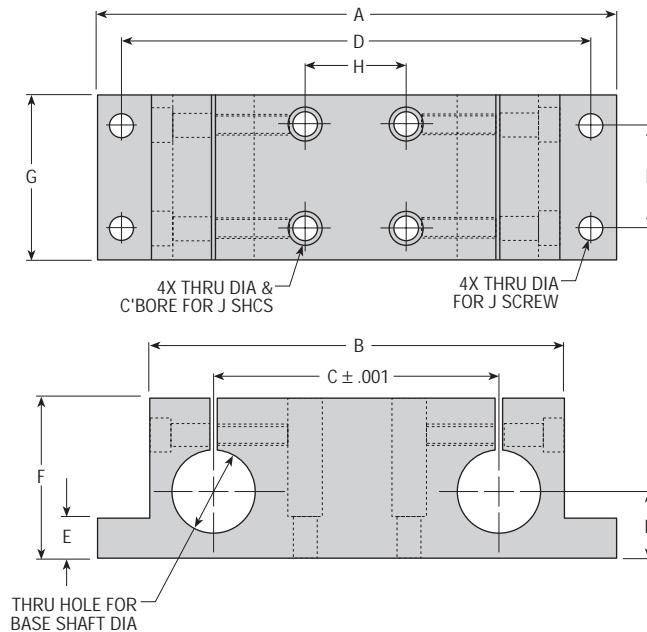
## SINGLE MOUNTING BLOCK



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

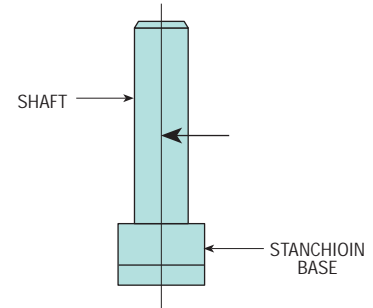
EACH KIT CONTAINS REQUIRED HARDWARE TO MOUNT TO BASE UNIT AND PHD COMPONENT.

# ENGINEERING DATA: STANCHIONS

## BENDING MOMENT

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

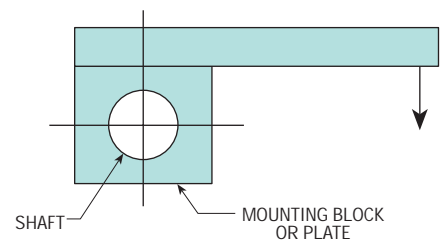
SHAFT DIA.	in-lb OF FORCE
1	500
1-1/2	1600
2	3000



## TORQUE LIMITATIONS ON SINGLE SHAFT UNITS

### MAXIMUM TORQUE ON SHAFTS

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



## SHAFT DEFLECTION

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

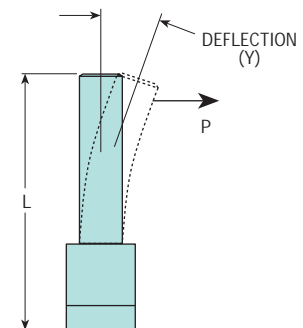
Y = Deflection in inches

L = Length in inches

P = Load in pounds

### MAXIMUM TORQUE ON SHAFTS

SHAFT DIA.	M	
	SINGLE SHAFT	DOUBLE SHAFT
1	3.74 x 10 <sup>6</sup>	7.47 x 10 <sup>6</sup>
1-1/2	1.97 x 10 <sup>7</sup>	3.95 x 10 <sup>7</sup>
2	5.98 x 10 <sup>7</sup>	1.19 x 10 <sup>8</sup>



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