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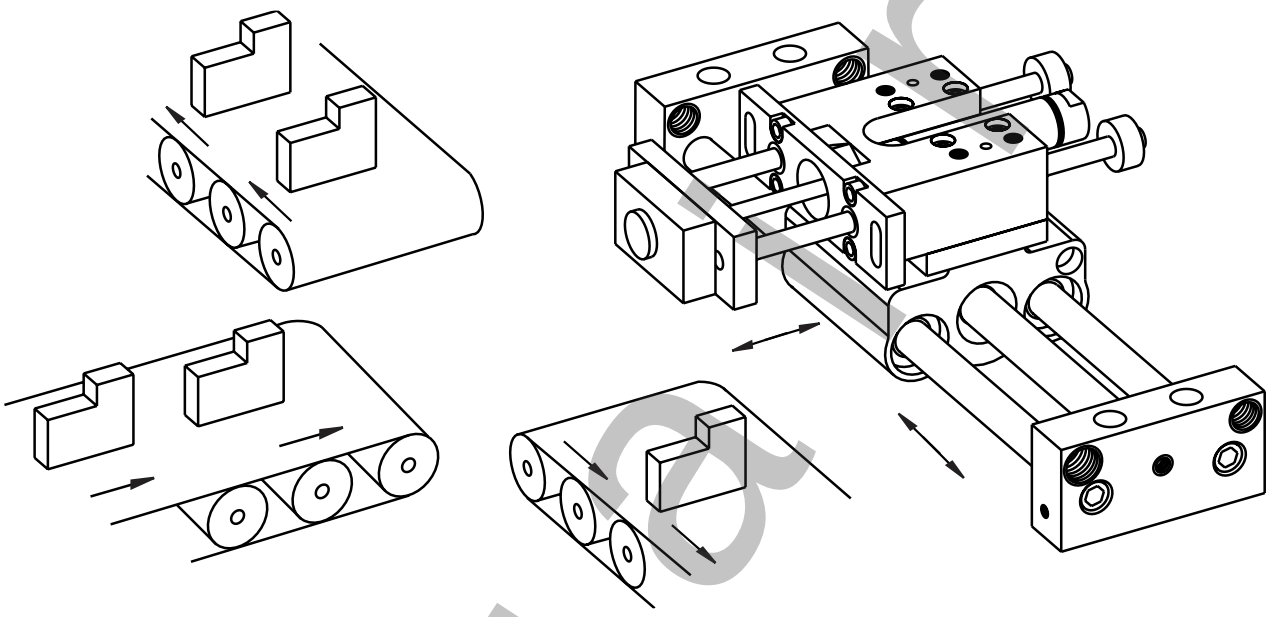
Bimba Transition Plates

Aluminum plates that couple Bimba actuators – Ultran® rodless cylinders, Pneu-Turn® rotary actuators, and Linear Thrusters – into a variety of multi-axis configurations.



The customer's attachment reads a bar code on the product to determine the required paint scheme. The Ultran Slide Rodless Cylinder and Linear Thruster picks the item off the incoming conveyor and places it on the appropriate out-going one.

How to Choose a Transition Plate

Page 93 shows how to build the Transition Plate model numbers.

Choose the configuration (base product and coupled product) that best suits your application and turn to that section. It will describe the valid bore size combinations and provide basic dimensions, weights and prices for those Transition Plates. It will also show alignment of the products to help you determine the outside dimensions of your configuration, and provide information on the options you may need to include when ordering your actuators. Unless otherwise noted, all Transition Plates are designed for mounting hole center to center alignment.

Note: Actuators can be coupled together in the bore size combinations noted in each section. However, critical engineering specifications must be met for each specific application. In addition, for a precision positioning system, the deflection of the components should be compensated for by incorporating external adjustments into the system design. See page 105 and the engineering specifications for the individual actuators for more information. Or, complete the Application Checklist on page 130 and fax it to your Bimba distributor if you'd like us to size your application.

Preview

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How to Order

The model number of all Transition Plates consists of two alphanumeric clusters. The first cluster designates product type, base product and bore size of the base product. The second cluster designates coupled product and bore size of the coupled product, mounting orientation, and an optional character for dowel pins. Please refer to the charts below for an example of model number TPU17-T09PD. This is a transition plate for a 1-1/2" bore Ultran rodless cylinder that will be coupled to a 1-1/16" bore Linear Thruster (ball bearing), in a perpendicular orientation, with dowel pins.

TYPE

TP - Transition Plate

BASE PRODUCT

U	-	Ultran Slide Rodless Cylinder
T[1]	-	Linear Thruster, Ball Bearing
TE[1]	-	Linear Thruster, Composite Bearing
PT[2]	-	Pneu-Turn Rotary Actuator
PM	-	PneuMoment (Imperial)[3]
PMM	-	PneuMoment (Metric)[3]

BASE PRODUCT BORE SIZE[3]

02	-	9/16"
04	-	3/4"
09	-	1-1/16"
17	-	1-1/2"
31	-	2"

TPU17 - T09PD

COUPLED PRODUCT

U	-	Ultran Rodless Cylinder
T[1]	-	Linear Thruster, Ball Bearing
TE[1]	-	Linear Thruster, Composite Bearing
PT[2]	-	Pneu-Turn Rotary Actuator
PM	-	PneuMoment (Imperial)
PMM	-	PneuMoment (Metric)

COUPLED PRODUCT BORE SIZE

02	-	9/16"
04	-	3/4"
09	-	1-1/16"
17	-	1-1/2"
31	-	2"

(FOR PNEU TURN)

006	-	9/16" Single rack
014	-	9/16" Double rack
017	-	3/4" Single rack
033	-	3/4" Double rack
037	-	1-1/16" Single rack
074	-	1-1/16" Double rack
098	-	1-1/2" Single rack
196	-	1-1/2" Double rack
247	-	2" Single rack
494	-	2" Double rack

MOUNTING ORIENTATION[3]

A	-	Axial (parallel)
P	-	Perpendicular

DOWEL PIN[3]

No #	-	No Dowel Pin
D	-	Dowel Pin

Note: See sections on specific configurations for more information on valid product combinations.

1 *As shown on the following pages, use the "T" designation for either T or TE Series Linear Thruster, except where the TE is specifically called out.*

2 *Pneu Turn Rotary Actuator must be ordered with both the ball bearing (-R) and the hardened shaft (-F) options.*

3 *PneuMoment to PneuMoment only. Mounting orientation and dowel pin do not apply. Only available for the 1-1/16" bore.*

Transition Plates are attached to the base and coupled products with socket head cap screws and socket set screws. Screws are included with the Transition Plate. Dowel pins can be ordered as an option for ease of assembly and/or improved shear loading.

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Linear Thruster (Base Product) to Pneu-Turn Rotary Actuator (Coupled Product)

SHAFT PARALLEL*

Pneu-Turn Rotary Actuator	Linear Thruster					
		9/16" (02)	3/4" (04)	1-1/16" (09)	1-1/2" (17)	2" (31)
	9/16" single rack (006) double rack (014)	TPT02-PT006A TPT02-PT014A	TPT04-PT006A TPT04-PT014A			
	3//4" single rack (017) double rack (033)		TPT04-PT017A TPT04-PT033A	TPT09-PT017A TPT09-PT033A		
	1-1/16" single rack (037) double rack (074)			TPT09-PT037A TPT09-PT074A	TPT17-PT037A TPT17-PT074A	
	1-1/2" single rack (098) double rack (196)				TPT17-PT098A TPT17-PT196A	TPT31-PT098A TPTE31-PT098A TPT31-PT196A TPTE31-PT196A
	2" single rack (247)) double rack (494)					TPT31-PT247A TPTE31-PT247A TPT31-PT494A TPTE31-PT494A

Note: Use model numbers shown for both T and TE Series Linear Thrusters through 1-1/2" bore; 2" bore requires specific call-out of TE as shown. Screws and dowel pins (if ordered) are included with the Transition Plate.

Model Number	Dimensions			Weight (includes screws) (lbs)		
	Length (in)	Width (in)	Thickness (in)			
TPT02-PT006A TPT02-PT014A	2.50	2.00	0.28	0.14		
TPT04-PT006A TPT04-PT014A	3.00	2.00	0.28	0.17		
TPT04-PT017A TPT04-PT033A	3.00	2.50	0.36	0.26		
TPT09-PT017A TPT09-PT033A	4.00	2.50	0.36	0.35		
TPT09-PT037A TPT09-PT074A	4.00	3.12	0.47	0.58		
TPT17-PT037A TPT17-PT074A	5.38	3.00	0.47	0.74		
TPT17-PT098A TPT17-PT196A	5.38	4.25	0.72	1.61		
TPT31-PT098A TPT31-PT196A	6.75	4.25	0.72	2.02		
TPT31-PT247A TPT31-PT494A	6.75	5.00	0.72	2.38		
TPTE31-PT098A TPTE31-PT196A	5.75	4.25	0.72	1.72		
TPTE31-PT247A TPTE31-PT494A	5.75	5.00	0.72	2.03		

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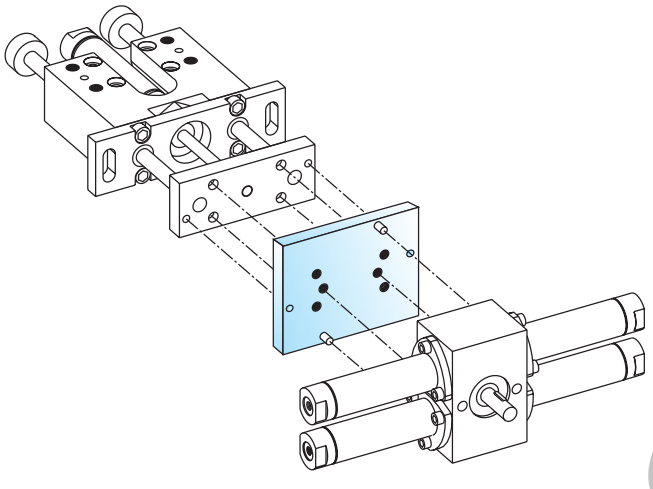
ORDER ONLINE

Linear Thruster (Base Product) to Pneu-Turn Rotary Actuator (Coupled Product)

SHAFT PARALLEL*



Dowel Pins

In addition to ordering a Transition Plate with dowel pin option, dowel pin options must be selected for your Linear Thruster (-D option); and the ball bearing (-R) and hardened shaft (-F) options must be selected for your Pneu-Turn Rotary Actuator (the ball bearing option includes dowel pin holes). For example, your order would include:

T-096-DM
PT-033180-FMR
TPT09-PT017AD

This provides: a 1-1/16" bore, 6" stroke Linear Thruster with dowel pin holes and a magnetic piston; a single rack 3/4" bore, 180° Pneu-Turn with hardened shafts, magnetic piston, and ball bearing (with dowel pin holes); and the appropriate Transition Plate with dowel pins. Refer to individual actuator sections for dowel pin option pricing.

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ORDER ONLINE

Pneu-Turn Rotary Actuator (Base Product) to Linear Thruster (Coupled Product)

SHAFTS PERPENDICULAR*

Linear Thruster	Pneu-Turn Rotary Actuator					
		9/16" (006 or 014)	3/4" (017 or 033)	1-1/16" (037 or 074)	1-1/2" (098 or 196)	2" (247 or 494)
	9/16" (02)	TPPT02-T02P				
	3/4" (04)		TPPT04-T04P	TPPT09-T04P		
	1-1/16" (09)			TPPT09-T09P	TPPT17-T09P	
	1-1/2" (17)				TPPT17-T17P	TPPT31-T17P
	2" (31)					TPPT31-T31P TPPT31-TE31P

Note: Two plates are needed for this configuration. Both plates will be included if part number **TPPT ☐ - T ☐ P** *is ordered. If needed, part* **TPPT ☐** *can be ordered separately. Use model numbers shown for both T and TE Series Linear Thrusters through 1-1/2" bore; 2" bore requires specific call-out of TE as shown.*

Note: Screws and dowel pins (if ordered) are included with the Transition Plate.

Model Number	Dimensions			Weight (includes screws) (lbs)		
	Length (in)	Width (in)	Thickness (in)			
TPPT02-T02P	2.00	2.00	0.28	0.15		
(includes TPPT02)	0.62	0.62	0.50	0.04		
TPPT04-T04P	2.50	2.25	0.36	0.28		
(includes TPPT04)	0.75	0.75	0.75	0.08		
TPPT09-T04P	3.50	3.00	0.47	0.67		
(includes TPPT09)	1.00	1.00	0.94	0.19		
TPPT09-T09P	3.50	3.00	0.47	0.67		
(includes TPPT09)	1.00	1.00	0.94	0.19		
TPPT17-T09P	4.50	4.25	0.72	1.82		
(includes TPPT17)	1.50	1.50	0.94	0.47		
TPPT17-T17P	4.50	4.25	0.72	1.84		
(includes TPPT17)	1.50	1.50	0.94	0.47		
TPPT31-T17P	4.50	4.25	0.72	1.84		
(includes TPPT31)	1.50	1.50	1.12	0.47		
TPPT31-T31P	6.00	3.00	0.72	1.76		
(includes TPPT31)	1.50	1.50	1.12	0.47		
TPPT31-TE31P	5.25	3.00	0.72	1.60		
(includes TPPT31)	1.50	1.50	1.12	0.47		

Note: The key on the Pneu-Turn shaft is mounted in the 12 o'clock position, therefore, rotation of the Linear Thruster will be equal in the clockwise and counterclockwise directions. Please order sufficient angle of rotation, angle adjustment option or a Pneu-Turn rotary actuator with the key mounted in a special position as required for your application.

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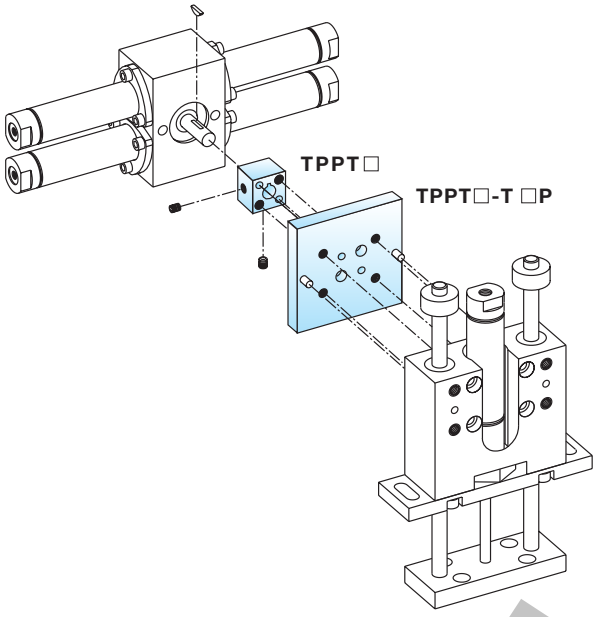
ORDER ONLINE

Pneu-Turn Rotary Actuator (Base Product) to Linear Thruster (Coupled Product)

SHAFTS PERPENDICULAR*



***Shown is 9/16" (02) bore Linear Thruster. Bolt pattern for this size only is offset 1/2" from center axis of housing.**

Dowel Pins

In addition to ordering a Transition Plate with dowel pin option, the ball bearing (-R) and hardened shaft (-F) options must be selected for your Pneu-Turn Rotary Actuator (the -R option includes dowel pin holes), and the dowel pin option (-D) must be selected for your Linear Thruster. For example, your order would include:

PT-247180-FMR
T-096-DM
TPPT31-T17PD

This provides: a single rack 2" bore, 180° Pneu-Turn with hardened shafts magnetic piston, and ball bearing (with dowel pin holes); a 1-1/2" bore, 6" stroke Linear Thruster with dowel pin holes and magnetic piston; and the appropriate Transition Plate with dowel pins. Refer to individual actuator sections for dowel pin option pricing.

Toleranced Clearance Hole Sizes	
TPPT02	.1270/.1280
TPPT04	.1895/.1905
TPPT09	.2520/.2530
TPPT17	.3145/.3155
TPPT31	.3145/.3155

Note: Dowel pins to attach part TPPT□ are not provided, although clearance holes are available for dowel pins.

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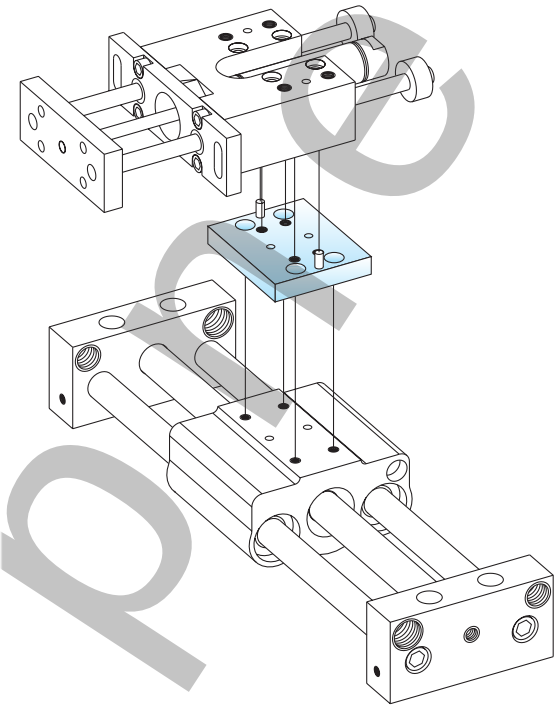
Ultran Rodless Cylinder (Base Product) to Linear Thruster (Coupled Product)

MOUNTED PERPENDICULAR*

Linear Thruster	Ultran Rodless Cylinder				
		9/16" (02)	3/4" (04)	1-1/16" (09)	1-1/2" (17)
	9/16" (02)	TPU02-T02P			
	3/4" (04)		TPU04-T04P	TPU09-T04P	
	1-1/16" (09)			TPU09-T09P	TPU17-T09P
	1-1/2" (17)				TPU17-T17P

Note: Use model numbers shown for both T and TE Series Linear Thrusters. Screws and dowel pins (if ordered) are included with the Transition Plate.

Model Number	Dimensions			Weight (includes screws) (lbs)		
	Length (in)	Width (in)	Thickness (in)			
TPU02-T02P	2.00	2.00	0.28	0.11		
TPU04-T04P	2.50	2.25	0.36	0.20		
TPU09-T04P	3.50	3.00	0.47	0.48		
TPU09-T09P	3.50	3.00	0.47	0.48		
TPU17-T09P	4.50	4.25	0.72	1.35		
TPU17-T17P	4.50	4.25	0.72	1.35		



Dowel Pins

In addition to ordering a Transition Plate with dowel pin option, dowel pin options must be selected for your Ultran rodless cylinder and Linear Thruster (-D option). For example, your order would include:

UGS-0915-ADT
T-096-DM
TPU09-T09PD

This provides: a 1-1/16" bore, 15" stroke Ultran Slide with gold coupling strength, stroke adjustment on both ends, dowel pin holes and switch track; a 1-1/16" bore, 6" stroke, Linear Thruster with dowel pin holes and a magnetic piston; and the appropriate Transition Plate with dowel pins. Refer to individual actuator sections for dowel pin option pricing.

*Shown is 9/16" (02) bore Linear Thruster. Bolt pattern for this size only is offset 1/2" from center axis of housing.

All prices are F.O.B. Monee, Illinois and are subject to change without notice.

Preliminary

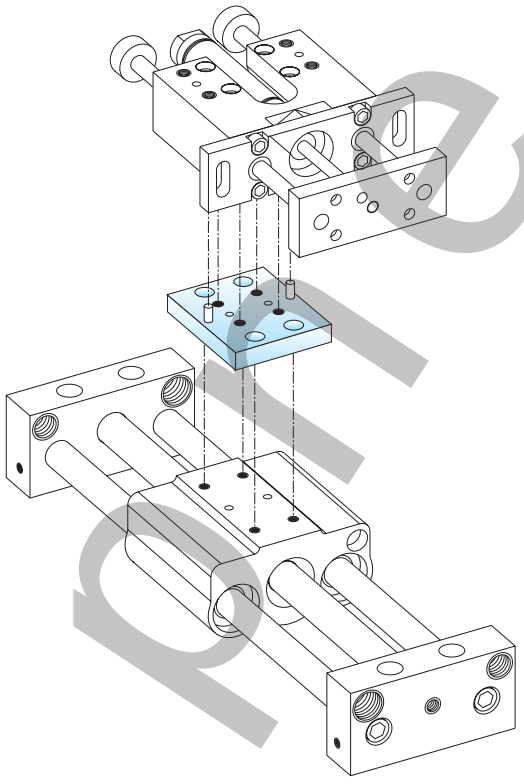
Ultran Rodless Cylinder (Base Product) to Linear Thruster (Coupled Product)

MOUNTED PARALLEL*

Linear Thruster	Ultran Rodless Cylinder				
		9/16" (02)	3/4" (04)	1-1/16" (09)	1-1/2" (17)
	9/16" (02)	TPU02-T02A			
	3/4" (04)		TPU04-T04A	TPU09-T04A	
	1-1/16" (09)			TPU09-T09A	TPU17-T09A
	1-1/2" (17)				TPU17-T17A

Note: Use model numbers shown for both T and TE Series Linear Thrusters. Screws and dowel pins (if ordered) are included with the Transition Plate.

Model Number	Dimensions			Weight (includes screws) (lbs)		
	Length (in)	Width (in)	Thickness (in)			
TPU02-T02A	2.00	2.00	0.28	0.11		
TPU04-T04A	2.50	2.25	0.36	0.20		
TPU09-T04A	3.50	3.00	0.47	0.48		
TPU09-T09A	3.50	3.00	0.47	0.48		
TPU17-T09A	4.50	4.25	0.72	1.35		
TPU17-T17A	4.50	4.25	0.72	1.35		



TPTE31-TE31P 6.00 4.50 0.97 2.57

Dowel Pins

In addition to ordering a Transition Plate with dowel pin option, dowel pin options must be selected for your Ultran rodless cylinder and Linear Thruster (-D option). For example, your order would include:

UGS-0915-ADT
T-096-DM
TPU09-T09AD

This provides: a 1-1/16" bore, 15" stroke Ultran Slide with gold coupling strength, stroke adjustment on both ends, dowel pin holes and switch track; a 1-1/16" bore, 6" stroke, Linear Thruster with dowel pin holes and a magnetic piston; and the appropriate Transition Plate with dowel pins. Refer to individual actuator sections for dowel pin option pricing.

*Shown is 9/16" (02) bore Linear Thruster. Bolt pattern for this size only is offset 1/2" from center axis of housing.

Preliminary

ORDER ONLINE

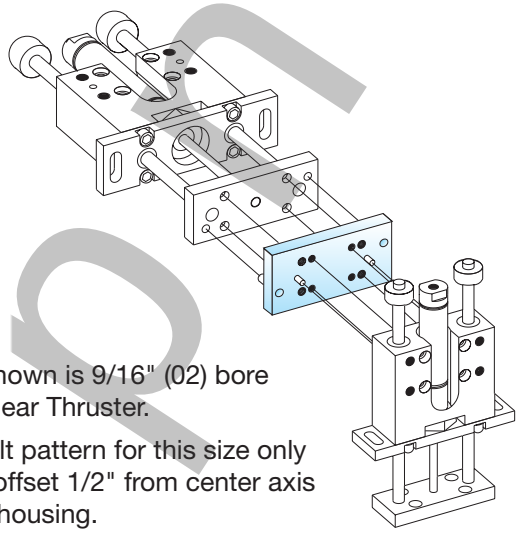
Linear Thruster(Base Product) to Linear Thruster (Coupled Product)

MOUNTED PERPENDICULAR*

Linear Thruster	Linear Thruster					
		9/16" (02)	3/4" (04)	1-1/16" (09)	1-1/2" (17)	2" (31)
	9/16" (02)	TPT02-T02P	TPT04-T02P			
	3/4" (04)		TPT04-T04P	TPT09-T04P		
	1-1/16" (09)			TPT09-T09P	TPT17-T09P	
	1-1/2" (17)				TPT17-T17P	TPT31-T17P TPTE31-T17P
	2" (31)					TPT31-T31P TPTE31-TE31P

Note: Use model numbers shown for both T and TE Series Linear Thrusters through 1-1/2" bore; 2" bore requires specific call-out of TE as shown. Screws and dowel pins (if ordered) are included with the Transition Plate.

Model Number	Dimensions			Weight (includes screws) (lbs)		
	Length (in)	Width (in)	Thickness (in)			
TPT02-T02P	2.50	1.50	0.28	0.10		
TPT04-T02P	3.00	1.50	0.36	0.16		
TPT04-T04P	3.00	1.50	0.36	0.16		
TPT09-T04P	4.25	2.00	0.47	0.39		
TPT09-T09P	4.25	2.00	0.47	0.39		
TPT17-T09P	5.50	3.00	0.72	1.16		
TPT17-T17P	5.50	3.00	0.72	1.16		
TPT31-T17P	7.00	3.00	0.97	2.00		
TPT31-T31P	7.00	4.50	0.97	2.99		
TPTE31-T17P	6.00	3.00	0.97	1.71		
TPTE31-TE31P	6.00	4.50	0.97	2.57		



*Shown is 9/16" (02) bore Linear Thruster.

Bolt pattern for this size only is offset 1/2" from center axis of housing.

Dowel Pins

In addition to ordering a Transition Plate with dowel pin option, dowel pin options must be selected for your Linear Thrusters (-D option). For example, your order would include:

T-096-DM
T-042-DM
TPT09-T04PD

This provides: a 1-1/16" bore, 6" stroke Linear Thruster with dowel pin holes and a magnetic piston; a 3/4" bore, 2" stroke Linear Thruster with dowel pin holes and magnetic piston; and the appropriate Transition Plate with dowel pins. Refer to individual actuator sections for dowel pin option pricing.

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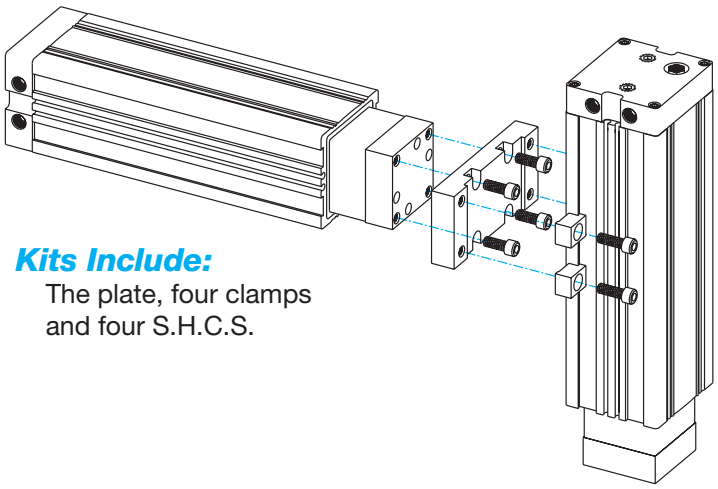
PneuMoment to PneuMoment



Kits Include:
The plate, four clamps and four S.H.C.S.

Mounting Kits

Model Number		
TPPM09-PM09	Imperial	
TPPMM09-PMM09	Metric	

Components

Plates:
Anodized aluminum alloy.
Part TPPT□ , for Rotary Actuator to Linear Thruster configuration, is 303 stainless steel.

Socket head cap screws and socket set screws:
Heat treated high alloy Grade 8 carbon steel with black oxide coating.

Dowel pins:
Hardened and ground carbon steel alloy with black oxide coating.

Recommended Seating Torque

Recommended Seating Torque in Inch/Pounds		
Nominal Diameter-Threads per Inch	Socket Head Cap Screws	Socket Set Screws
8-32	20	15
10-24	35	25
1/4-20	60	50
5/16-18	125	100
3/8-16	225	N/A

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