

3000 P.S.I. Rated Tie-Rod

3 / 7 Warranty

3 year warranty on standard products means you can confidently utilize equipment year after year. RoyalPlate Plus® rods are warranted against rust and corrosion for 7 years.

RoyalPlate Plus® Plating – A & B Versions

Prevents rust and corrosion more than twice as long as hard chrome plating and gas nitride treated steel bar.

Flexible Configurations

Cylinders are easily configured by available options such as port size and location, stroke length, pin size and paint color.

Exceptional Paint Performance

Aircraft quality two-part chemical cure polyester urethane paint will not fade and will outperform powder coating for the life of the cylinder.



Prince



Standard Tie-Rod Options

TIE-ROD MODEL CODE IDENTIFICATION MATRIX

MODEL CODE SYSTEM B 350 160 ABAAA07B

MODELS:

B=B SERIES-3000 PSI w/ROYAL PLATE
 A=ASAE VERSION OF B SERIES
 w/ROYAL PLATE (8" & 16" Strokes
 only, 8" stroke not available
 in 4.5" & 5" bore size.)
 F=F SERIES - 3000 PSI with Chrome
 E=ASAE VERSION OF F SERIES
 with Chrome

BORE SIZE:

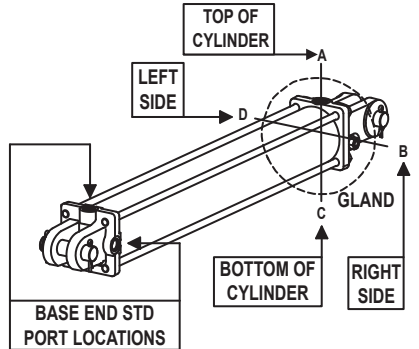
200=2.00" Bore 400=4.00" Bore
 250=2.50" Bore 450=4.50" Bore
 300=3.00" Bore 500=5.00" Bore
 350=3.50" Bore

STROKE: (Inches)

First two digits are in inches
 Consult Prince for over 48"

GLAND PORT LOCATIONS: (See Pictorial Below)

A=(Top Port, STD)
 B=(R. Side Port)
 C=(Bottom Port)
 D=(L. Side Port)



PORT LOCATION DETERMINED FROM VIEWING
 CYLINDER FROM BASE END.

(See Table Below) **PORT STYLE & SIZE:**

CODE	PORT TYPE & SIZE	CYLINDER BORE SIZE (Inch)						
		2.00	2.50	3.00	3.50	4.00	4.50	5.00
A	#6 SAE ORB (9/16-18)	O	O	O	O	O	O	O
B	#8 SAE ORB (3/4-16)	S	S	S	S	S	O	O
C	#10 SAE ORB (7/8-14)						S	S
D	NPTF 3/8	O	O	O	O	O	O	O
E	NPTF 1/2	O	O	O	O	O	O	O
F	NPTF 3/4							O

Table Identifiers: (For Tables Above)

S-STANDARD O-OPTIONAL BLANK-NOT AVAILABLE

CARTON & DECAL CODE

A=No carton-Std decals, Installed
 B=Carton-Std decals, Installed (STD)
 C=No carton-Std decals, Loose
 D=Carton-Std decals, Loose
 E=No carton-Std decals, customer I.D. decal, Installed

PAINT:

00=No Paint
 01=Gloss Red
 03=Highway Yellow
 05=Green
 07=Gloss Black (STD)

CLEVIS PIN INSTALLATION & RETAINER OPTIONS:

A=Cotter Pins & Clevis Pin(s) Shipped Loose (STD)
 B=Cotter Pins & Clevis Pin(s) Installed
 C=No Retainers, Clevis Pin(s) Shipped Loose if Selected

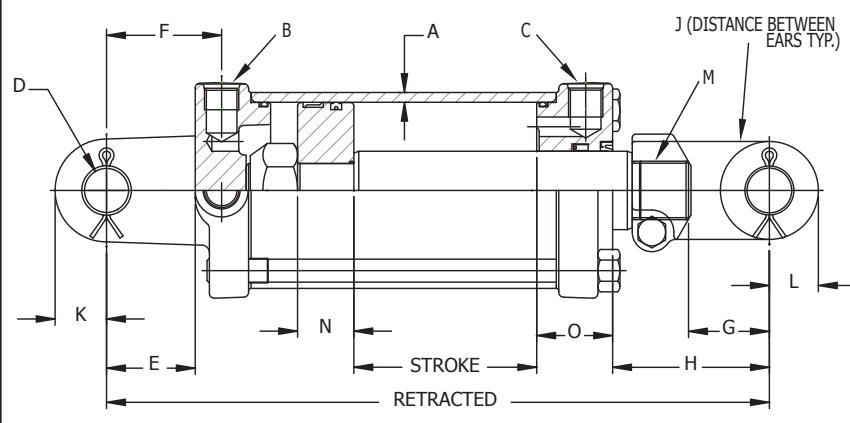
AVAILABLE CLEVIS PIN OPTIONS	CYLINDER BORE SIZE (Inch)						
	2.00	2.50	3.00	3.50	4.00	4.50	5.00
1.00"Ø PIN	S	S	S	S			
1.00"Ø HARDENED PIN	O	O	O	O	S		
1.25"Ø HARDENED PIN					O	S	S

CLEVIS PIN OPTIONS & AVAILABILITY: (See Table Above)

A=2-1.00"Ø Pins
 B=Reserved
 C=2-1.00"Ø Hardened Pins
 D=2-1.25"Ø Hardened Pins
 E=1-1.00"Ø Pin
 F=Reserved
 G=1-1.00"Ø Hardened Pin
 H=1-1.25"Ø Hardened Pin
 J= No Pins

END FITTING OPTIONS: (See Table Above)

A=Ø1.00" Pin Holes, Both Ends
 B=Ø1.00" Base End Pin Hole, No Rod Clevis
 C=Ø1.00" Pin Holes, Both Ends, Stroke Control Assy *
 D=Ø1.25" Pin Holes, Both Ends
 E=Ø1.25" Base End Pin Hole, No Rod Clevis
 *(ASAE Version 2.0-3.5" Bore with 8" stroke only)



FEATURES:

- Heavy duty, high strength tie-rods
- Induction hardened piston rods plated with RoyalPlate Plus® (piston rods on 2" bore not hardened)
- Ductile iron piston, butt, gland & clevis
- Urethane u-cup & metal encased wiper 2 1/2" bore & larger models
- Crown seal on piston
- Pins & cotter pins (Hardened pins on 4", 4 1/2" & 5" models)
- Standard color is gloss black
- Stroke control may be installed on 8" strokes (2" - 3.5" bore, A models only)
- Side ports available on request
- Nylon bearing ring on 4", 4 1/2" & 5" bore models
- 3000 PSI continuous operating pressure

2 INCH BORE CYLINDERS

A & B Series Royal Plate Rod	E & F Series Chrome Rod	Stroke	Wt	Column Load (lbs)	Retract	Tare Dist. (H)	Standard Dimensions of 2 Inch Bore Cylinders
B200040ABAAA07B	F200040ABAAA07B	4"	17	9425 lbs	14 1/4	3 1/2	Note: 1 1/8" rod diameter Outside Sq. Dim. Butt - 2.875, Gland 2.875 A 3/16" cylinder tube wall thickness B, C SAE 3/4-16 extend & retract ports D 1.015" clevis pin hole size E, F 1 13/16" base clevis throat depth with 2 3/8" from pin center to port center G 1 13/16" rod clevis throat depth J 1.06" min. distance between ears at pin center line K 1 13/16" base clevis ear radius L 1 1/8" rod clevis ear radius M 1 1/8" - 12 UNF-3 piston rod clevis thread size N 7/8" piston width O 2 3/16" gland width
B200060ABAAA07B	F200060ABAAA07B	6"	19	9425 lbs	16 1/4	3 1/2	
B200080ABAAA07B	F200080ABAAA07B	8"	20	9425 lbs	18 1/4	3 1/2	
A200080ABAAA07B	E200080ABAAA07B	8"	21	9425 lbs	20 1/4	ASAE 5 1/2	
B200100ABAAA07B	F200100ABAAA07B	10"	22	9425 lbs	20 1/4	3 1/2	
B200120ABAAA07B	F200120ABAAA07B	12"	23	9425 lbs	22 1/4	3 1/2	
B200140ABAAA07B	F200140ABAAA07B	14"	25	9425 lbs	24 1/4	3 1/2	
B200160ABAAA07B	F200160ABAAA07B	16"	28	9425 lbs	26 1/4	3 1/2	
A200160ABAAA07B	E200160ABAAA07B	16"	28	7630 lbs	31 1/2	ASAE 8 3/4	
B200180ABAAA07B	F200180ABAAA07B	18"	28	9200 lbs	28 1/4	3 1/2	
B200200ABAAA07B	F200200ABAAA07B	20"	30	7760 lbs	30 1/4	3 1/2	
B200240ABAAA07B	F200240ABAAA07B	24"	33	5730 lbs	34 1/4	3 1/2	
B200300ABAAA07B	F200300ABAAA07B	30"	37	3910 lbs	40 1/4	3 1/2	

Seal Kits: Seal Kit for A, B, E, F & SAE-320XX Cylinder Models = PMCK-B200000
 Universal Seal Kit for SAE-90XX, SAE-320XXX, A, B, E & F Cylinder Models = 240040022

2.5 INCH BORE CYLINDERS

A & B Series Royal Plate Rod	E & F Series Chrome Rod	Stroke	Wt	Column Load (lbs)	Retract	Tare Dist. (H)	Standard Dimensions of 2.5 Inch Bore Cylinders
B250060ABAAA07B	F250060ABAAA07B	6"	22	14730 lbs	16 1/4	3 5/16	Note: 1 1/4" rod diameter Outside Sq. Dim. Butt - 3.375, Gland 3.375 A 3/16" cylinder tube wall thickness B, C SAE 3/4-16 extend & retract ports D 1.015" clevis pin hole size E, F 1 1/8" base clevis throat depth with 2 13/16" from pin center to port center G 1 13/16" rod clevis throat depth J 1.06" min. distance between ears at pin center line K 1 13/16" base clevis ear radius L 1 1/8" rod clevis ear radius M 1 1/8" - 12 UNF-3 piston rod clevis thread size N 1" piston width O 2 3/8" gland width
B250080ABAAA07B	F250080ABAAA07B	8"	25	14730 lbs	18 1/4	3 5/16	
A250080ABAAA07B	E250080ABAAA07B	8"	25	14730 lbs	20 1/4	ASAE 5 5/16	
B250100ABAAA07B	F250100ABAAA07B	10"	26	14730 lbs	20 1/4	3 5/16	
B250120ABAAA07B	F250120ABAAA07B	12"	28	14730 lbs	22 1/4	3 5/16	
B250140ABAAA07B	F250140ABAAA07B	14"	30	14730 lbs	24 1/4	3 5/16	
B250160ABAAA07B	F250160ABAAA07B	16"	25	14730 lbs	26 1/4	3 5/16	
A250160ABAAA07B	E250160ABAAA07B	16"	34	11520 lbs	31 1/2	ASAE 8 9/16	
B250180ABAAA07B	F250180ABAAA07B	18"	34	13880 lbs	28 1/4	3 5/16	
B250200ABAAA07B	F250200ABAAA07B	20"	36	11720 lbs	30 1/4	3 5/16	
B250240ABAAA07B	F250240ABAAA07B	24"	41	8670 lbs	34 1/4	3 5/16	
B250300ABAAA07B	F250300ABAAA07B	30"	47	5930 lbs	40 1/4	3 5/16	

Seal Kits: Seal Kit for A, B, E, F & SAE-325XX Cylinder Models = PMCK-B250000
 Universal Seal Kit for SAE-91XX, SAE-325XXX, A, B, E & F Cylinder Models = 240040023

3 INCH BORE CYLINDERS

A & B Series Royal Plate Rod	E & F Series Chrome Rod	Stroke	Wt	Column Load (lbs)	Retract	Tare Dist. (H)	Standard Dimensions of 3 Inch Bore Cylinders
B300060ABAAA07B	F300060ABAAA07B	6"	26	21210 lbs	16 1/4	3 3/4	Note: 1 3/8" rod diameter Outside Sq. Dim. Butt - 3.875, Gland 3.875 A 3/16" cylinder tube wall thickness B, C SAE 3/4-16 extend & retract ports D 1.015" clevis pin hole size E, F 1 1/8" base clevis throat depth with 2 7/16" from pin center to port center G 1 13/16" rod clevis throat depth J 1.06" min. distance between ears at pin center line K 1 13/16" base clevis ear radius L 1 1/8" rod clevis ear radius M 1 1/8" - 12 UNF-3 piston rod clevis thread size N 1" piston width O 1 15/16" gland width
B300080ABAAA07B	F300080ABAAA07B	8"	29	21210 lbs	18 1/4	3 3/4	
A300080ABAAA07B	E300080ABAAA07B	8"	29	21210 lbs	20 1/4	ASAE 5 3/4	
B300100ABAAA07B	F300100ABAAA07B	10"	30	21210 lbs	20 1/4	3 3/4	
B300120ABAAA07B	F300120ABAAA07B	12"	33	21210 lbs	22 1/4	3 3/4	
B300140ABAAA07B	F300140ABAAA07B	14"	35	21210 lbs	24 1/4	3 3/4	
B300160ABAAA07B	F300160ABAAA07B	16"	29	21210 lbs	26 1/4	3 3/4	
A300160ABAAA07B	E300160ABAAA07B	16"	40	16730 lbs	31 1/2	ASAE 9	
B300180ABAAA07B	F300180ABAAA07B	18"	40	20120 lbs	28 1/4	3 3/4	
B300200ABAAA07B	F300200ABAAA07B	20"	42	17010 lbs	30 1/4	3 3/4	
B300240ABAAA07B	F300240ABAAA07B	24"	47	12620 lbs	34 1/4	3 3/4	
B300300ABAAA07B	F300300ABAAA07B	30"	54	8640 lbs	40 1/4	3 3/4	
B300360ABAAA07B	F300360ABAAA07B	36"	61	6290 lbs	46 1/4	3 3/4	
B300480ABAAA07B	F300480ABAAA07B	48"	75	3760 lbs	58 1/4	3 7/8	

Seal Kits: Seal Kit for A, B, E, F & SAE-330XX Cylinder Models = PMCK-B300000
 Universal Seal Kit for SAE-92XX, SAE-330XXX, A, B, E & F Cylinder Models = 240040024

3.5 INCH BORE CYLINDERS

A & B Series Royal Plate Rod	E & F Series Chrome Rod	Stroke	Wt	Column Load (lbs)	Retract	Tare Dist. (H)	Standard Dimensions of 3.5 Inch Bore Cylinders
A350080ABAAA07B	E350080ABAAA07B	8"	35	28860 lbs	20 1/4	ASAE 5 3/4	Note: 1 3/8" rod diameter Outside Sq. Dim. Butt - 4.313, Gland 4.313 A 3/16" cylinder tube wall thickness B, C SAE 3/4 -16 extend & retract ports D 1.015" clevis pin hole size E, F 1 7/8" base clevis throat depth with 27/16" from pin center to port center G 1 13/16" rod clevis throat depth J 1.06" min. distance between ears at pin center line K 1 1/4" base clevis ear radius L 1 1/4" rod clevis ear radius M 1 5/16" - 12 UNF-3 piston rod clevis thread size N 1" piston width O 1 15/16" gland width
B350080ABAAA07B	F350080ABAAA07B	8"	35	28860 lbs	18 1/4	3 3/4	
B350100ABAAA07B	F350100ABAAA07B	10"	37	28860 lbs	20 1/4	3 3/4	
B350120ABAAA07B	F350120ABAAA07B	12"	39	28860 lbs	22 1/4	3 3/4	
B350140ABAAA07B	F350140ABAAA07B	14"	42	28860 lbs	24 1/4	3 3/4	
A350160ABAAA07B	E350160ABAAA07B	16"	46	16900 lbs	31 1/2	ASAE 9	
B350160ABAAA07B	F350160ABAAA07B	16"	35	25000 lbs	26 1/4	3 3/4	
B350180ABAAA07B	F350180ABAAA07B	18"	47	20400 lbs	28 1/4	3 3/4	
B350200ABAAA07B	F350200ABAAA07B	20"	49	17240 lbs	30 1/4	3 3/4	
B350240ABAAA07B	F350240ABAAA07B	24"	54	12780 lbs	34 1/4	3 3/4	
B350300ABAAA07B	F350300ABAAA07B	30"	62	8760 lbs	40 1/4	3 3/4	
B350360ABAAA07B	F350360ABAAA07B	36"	69	6370 lbs	46 1/4	3 3/4	
B350480ABAAA07B	F350480ABAAA07B	48"	85	3800 lbs	58 1/4	3 3/4	

Seal Kits: Seal Kit for A, B, E, F & SAE-335XX Cylinder Models = PMCK-B350000
 Universal Seal Kit for SAE-93XX, SAE-335XXX, A, B, E & F Cylinder Models = 240040025

4 INCH BORE CYLINDERS

A & B Series Royal Plate Rod	E & F Series Chrome Rod	Stroke	Wt	Column Load (lbs)	Retract	Tare Dist. (H)	Standard Dimensions of 4 Inch Bore Cylinders
A400080ABACA07B	E400080ABACA07B	8"	48	37700 lbs	20 1/4	ASAE 5 1/4	Note: 1 3/4" rod diameter Outside Sq. Dim. Butt - 5.063, Gland 5.063 A 3/16" cylinder tube wall thickness B, C SAE 3/4 -16 extend & retract ports D 1.015" clevis pin hole size E, F 1 3/4" base clevis throat depth with 27/16" from pin center to port center G 1 7/8" rod clevis throat depth J 1.06" min. distance between ears at pin center line K 1 1/4" base clevis ear radius L 1 1/4" rod clevis ear radius M 1 1/2" - 12 UNF-3 piston rod clevis thread size N 1 1/4" piston width O 1 13/16" gland width
B400080ABACA07B	F400080ABACA07B	8"	48	37700 lbs	18 1/4	3 1/4	
B400100ABACA07B	F400100ABACA07B	10"	50	37700 lbs	20 1/4	3 1/4	
B400120ABACA07B	F400120ABACA07B	12"	54	37700 lbs	22 1/4	3 1/4	
B400140ABACA07B	F400140ABACA07B	14"	57	37700 lbs	24 1/4	3 1/4	
A400160ABACA07B	E400160ABACA07B	16"	64	37700 lbs	31 1/2	ASAE 8 1/2	
B400160ABACA07B	F400160ABACA07B	16"	48	37700 lbs	26 1/4	3 1/4	
B400180ABACA07B	F400180ABACA07B	18"	64	37700 lbs	28 1/4	3 1/4	
B400200ABACA07B	F400200ABACA07B	20"	68	37700 lbs	30 1/4	3 1/4	
B400240ABACA07B	F400240ABACA07B	24"	75	33710 lbs	34 1/4	3 1/4	
B400300ABACA07B	F400300ABACA07B	30"	85	22990 lbs	40 1/4	3 1/4	
B400360ABACA07B	F400360ABACA07B	36"	95	16680 lbs	46 1/4	3 1/4	
B400480ABACA07B	F400480ABACA07B	48"	116	9920 lbs	58 1/4	3 1/4	

Seal Kits: Seal Kit for A, B, E, F & SAE-340XX Cylinder Models = PMCK-B400000
 Universal Seal Kit for SAE-94XX, SAE-340XXX, A, B, E & F Cylinder Models = 240040026

4.5 INCH BORE CYLINDERS

A & B Series Royal Plate Rod	E & F Series Chrome Rod	Stroke	Wt	Column Load (lbs)	Retract	Tare Dist. (H)	Standard Dimensions of 4.5 Inch Bore Cylinders
B450080ACDDA07B	F450080ACDDA07B	8"	60	47710 lbs	20 1/4	4	Note: 2" rod diameter Outside Sq. Dim. Butt - 5.5, Gland 5.5 A 1/4" cylinder tube wall thickness B, C SAE 7/8 -14 extend & retract ports D 1.265" clevis pin hole size E, F 2 1/2" base clevis throat depth with 2 5/16" from pin center to port center G 2" rod clevis throat depth J 1.13" min. distance between ears at pin center line K 1 5/16" base clevis ear radius L 1 1/4" rod clevis ear radius M 1 1/2" - 12 UNF-3 piston rod clevis thread size N 1 7/16" piston width O 1 15/16" gland width
B450120ACDDA07B	F450120ACDDA07B	12"	69	47710 lbs	24 1/4	4	
B450140ACDDA07B	F450140ACDDA07B	14"	74	47710 lbs	26 1/4	4	
B450160ACDDA07B	F450160ACDDA07B	16"	60	47710 lbs	28 1/4	4	
A450160ACDDA07B	E450160ACDDA07B	16"	81	47710 lbs	31 1/2	ASAE 7 1/4	
B450180ACDDA07B	F450180ACDDA07B	18"	83	47710 lbs	30 1/4	4	
B450200ACDDA07B	F450200ACDDA07B	20"	87	47710 lbs	32 1/4	4	
B450240ACDDA07B	F450240ACDDA07B	24"	97	44710 lbs	36 1/4	4	
B450300ACDDA07B	F450300ACDDA07B	30"	110	37530 lbs	42 1/4	4	
B450360ACDDA07B	F450360ACDDA07B	36"	124	27430 lbs	48 1/4	4	
B450480ACDDA07B	F450480ACDDA07B	48"	152	16470 lbs	60 1/4	4	

Seal Kits: Seal Kit for A, B, E, F & SAE-345XX Cylinder Models = PMCK-B450000
 No Universal Seal Kit offered

5 INCH BORE CYLINDERS

A & B Series Royal Plate Rod	E & F Series Chrome Rod	Stroke	Wt	Column Load (lbs)	Retract	Tare Dist. (H)	Standard Dimensions of 5 Inch Bore Cylinders
B500080ACDDA07B	F500080ACDDA07B	8"	72	58900 lbs	20 1/4	4	Note: 2" rod diameter Outside Sq. Dim. Butt - 5.875, Gland 5.875 A 1/4" cylinder tube wall thickness B, C SAE 7/8 -14 extend & retract ports D 1.265" clevis pin hole size E, F 1 3/4" base clevis throat depth with 2 5/8" from pin center to port center G 2" rod clevis throat depth J 1.13" min. distance between ears at pin center line K 1 3/8" base clevis ear radius L 1 1/4" rod clevis ear radius M 1 1/2" - 12 UNF-3 piston rod clevis thread size N 1 7/16" piston width O 2 1/2" gland width
B500120ACDDA07B	F500120ACDDA07B	12"	83	58900 lbs	24 1/4	4	
B500140ACDDA07B	F500140ACDDA07B	14"	88	58900 lbs	26 1/4	4	
A500160ACDDA07B	E500160ACDDA07B	16"	96	58900 lbs	31 1/2	ASAE 7 1/4	
B500160ACDDA07B	F500160ACDDA07B	16"	96	58900 lbs	28 1/2	4	
B500180ACDDA07B	F500180ACDDA07B	18"	98	58900 lbs	30 1/4	4	
B500200ACDDA07B	F500200ACDDA07B	20"	103	58900 lbs	32 1/4	4	
B500240ACDDA07B	F500240ACDDA07B	24"	113	54510 lbs	36 1/4	4	
B500300ACDDA07B	F500300ACDDA07B	30"	129	37620 lbs	42 1/4	4	
B500360ACDDA07B	F500360ACDDA07B	36"	144	27520 lbs	48 1/4	4	
B500480ACDDA07B	F500480ACDDA07B	48"	175	16550 lbs	60 1/4	4	

Seal Kits: Seal Kit for A, B, E, F & SAE-350XX Cylinder Models = PMCK-B500000
 Universal Seal Kit for SAE-95XX, SAE-350XXX, A, B, E & F Cylinder Models = 240040027