EXPLANATION OF SPECIFICATIONS

Part Number: The catalog number for the individual shock absorber.

Extended Length*: The length of the shock absorber when it is fully extended. See “How to Measure” instructions.

Collapsed Length*: The length of the shock absorber when it is fully collapsed. See “How to Measure” instructions.

Stroke: This is the approximate length of the stroke of the individual shock absorber being described.

Mounting Codes: Indicates the type of mounting ends for the upper and lower end of each shock absorber. They are listed as follows:

Top mounts (“TM”)
Eye ring and bushing with sleeve mounts (“ES”)
Stud type mounts (“S” & “DS”)
Eye ring and bushing with bar pin mounts (“BP”)
Special mounting codes (“SP”)
Eye ring and bushing mounts (“EB”)
Clevis mounts (“CL”)
Pinch socket mounts (“LP”)
U joint mounts (“LU”)

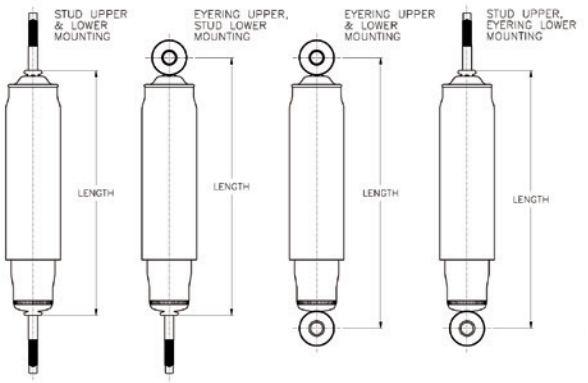
CONVERSION CHART

Fraction (Inches)	Decimal (Inches)	Metric (MM)	Fraction (Inches)	Decimal (Inches)	Metric (MM)
1/64	0.016	0.397	33/64	0.516	13.097
1/32	0.031	0.794	17/32	0.531	13.494
3/64	0.047	1.191	35/64	0.547	13.891
1/16	0.063	1.588	9/16	0.563	14.288
5/64	0.078	1.984	37/64	0.578	14.684
3/32	0.094	2.381	19/32	0.594	15.081
7/64	0.109	2.778	39/64	0.609	15.478
1/8	0.125	3.175	5/8	0.625	15.875
9/64	0.141	3.572	41/64	0.641	16.272
5/32	0.156	3.969	21/32	0.656	16.669
11/64	0.172	4.366	43/64	0.672	17.066
3/16	0.188	4.763	11/16	0.688	17.463
13/64	0.203	5.159	45/64	0.703	17.859
7/32	0.219	5.556	23/32	0.719	18.256
15/64	0.234	5.953	47/64	0.734	18.653
1/4	0.250	6.350	3/4	0.750	19.050
17/64	0.266	6.747	49/64	0.766	19.447
9/32	0.281	7.144	25/32	0.781	19.844
19/64	0.297	7.541	51/64	0.797	20.241
5/16	0.313	7.938	13/16	0.813	20.638
21/64	0.328	8.334	53/64	0.828	21.034
11/32	0.344	8.731	27/32	0.844	21.431
23/64	0.359	9.128	55/64	0.859	21.828
3/8	0.375	9.525	7/8	0.875	22.225
25/64	0.391	9.922	57/64	0.891	22.622
13/32	0.406	10.319	29/32	0.906	23.019
27/64	0.422	10.716	59/64	0.922	23.416
7/16	0.438	11.113	15/16	0.938	23.813
29/64	0.453	11.509	61/64	0.953	24.209
15/32	0.469	11.906	31/32	0.969	24.606
31/64	0.484	12.303	63/64	0.984	25.003
1/2	0.500	12.700	1	1.000	25.400

METRIC CONVERSION CHART

MILLIMETERS	INCHES	MILLIMETERS	INCHES	MILLIMETERS	INCHES
1	0.03937	10	0.39370	19	0.74803
2	0.07874	11	0.43307	20	0.78740
3	0.11811	12	0.47244	21	0.82677
4	0.15748	13	0.51181	22	0.86614
5	0.19685	14	0.55118	23	0.90551
6	0.23622	15	0.59055	24	0.94488
7	0.27559	16	0.62992	25	0.98425
8	0.31496	17	0.66929		
9	0.35433	18	0.70866		

HOW TO MEASURE EXTENDED & COLLAPSED LENGTHS OF SHOCK ABSORBERS

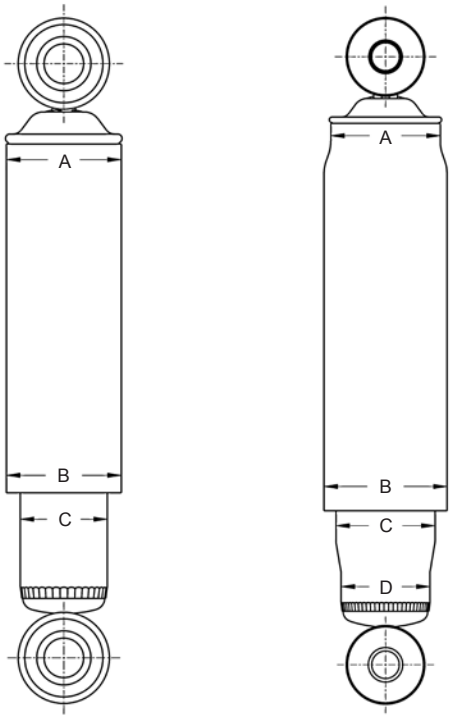


Instructions

1. Using the proper measuring points as shown above find the nearest replacement shock absorber from the listing increments of extended length.
2. Identify the proper mounting form the mounting codes and match these requirements by carefully measuring the mounting dimensions (top and bottom) of the shock absorber to be replaced.
3. Carefully take note of the following requirements:
   a. **Mounting Accessories** - Contents and descriptions of parts are shown in this manual.
   b. **Dust tubes** - This requirement should be noted in comparison with the shock absorber to be replaced. Shock absorber environment in its application makes this requirement necessary for piston rod protection and extended shock absorber life.
   c. **Recoil Cutoff and Compression Bumper** - Carefully note these specifications-deviation of length requirements should not exceed ±½". These shock absorber designs are footnoted for easy identification.
   d. **Limited Environment Application** - Most conventional shock absorbers are offered in "straight" construction to fit limited environment applications. These shock absorber designs are footnoted.

SHOCK ABSORBER DIAMETERS

Shown below are measuring points for diameters by type of shock absorber. Refer to the chart below which lists diameters for the various bore sizes available for each type.



STRAIGHT (CS) BULGED (CB)

BORE SIZE	SHOCK ABSORBERS	TYPE (Shown Above)	Diameters			
			A	B	C	D
1 3/16"	Classic, Guardian, Ultra Pass. Car	CS	2.06	2.00	1.63	NA
1 3/16"	Classic, Guardian, Ultra Pass. Car	CB	2.06	2.19	1.81	1.63
1 3/8"	Ultra Truck	CS	NA	2.37	2.00	NA
1 3/8"	Ultra Truck	CB	2.37	2.50	2.19	2.00

MOUNTING CODE "TM" TOP MOUNT

T M # # #

1st & 2nd digit - "Top Mount"
3rd digit - Part type/shape from the five categories listed below
4th digit - Number of studs / bolts (the amount of mounting points to the vehicle (see example below)
5th digit - Design of the mounting point - Stud (S) Bolt (B) Clip (C) (see example below)

TOP MOUNT DESIGN SHAPES

Triangle

Square

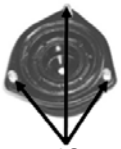
Circle

Oval

Unique

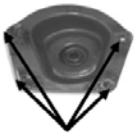
EXAMPLES

The fourth digit will note how many mounting points to the vehicle body exist.
The final digits indicate the type of mounting point **Stud (S)** **Bolt (B)** **Clip(C)**
(a combination is used for multiple mounting points)


3S
3 mounting points
stud type

2C
2 mounting points
clip type

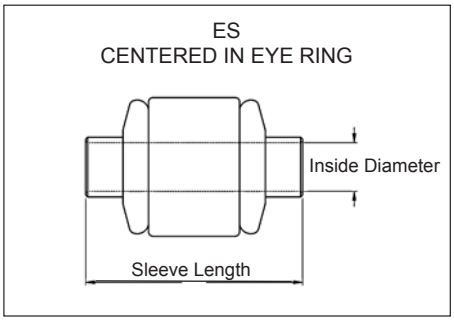
4S
4 mounting points
stud type


2S2B
2 mounting points, stud type
2 mounting points, bolt type

TOP MOUNT CODE	TOP MOUNT DESIGN	MOUNTING TYPE
TMC0	Circle	
TMC2B	Circle	2 Bolt
TMC2S	Circle	2 Stud
TMC2S1B	Circle	2 Stud, 1 Bolt
TMC3B	Circle	3 Bolt
TMC3S	Circle	3 Stud
TMC4B	Circle	4 Bolt
TMC4S	Circle	4 Stud
TMC5S	Circle	5 Stud
TMO2B	Oval	2 Bolt
TMO2S	Oval	2 Stud
TMO3S	Oval	3 Stud
TMO4B	Oval	4 Bolt
TMR2S	Rectangle	2 Stud
TMR3S	Rectangle	3 Stud
TMR4S	Rectangle	4 Stud
TMS3S	Square	3 Stud

TOP MOUNT CODE	TOP MOUNT DESIGN	MOUNTING TYPE
TMS3S1B	Square	3 Stud 1 Bolt
TMS4S	Square	4 Stud
TMT3B	Triangle	3 Bolt
TMT3S	Triangle	3 Stud
TMU2B	Unique	2 bolt
TMU2B1S	Unique	2 Bolt, 1 Stud
TMU2S	Unique	2 Stud
TMU2S1B	Unique	2 Stud, 1 Bolt
TMU2S2B	Unique	2 Stud, 2 Bolt
TMU3B	Unique	3 Bolt
TMU3B1S	Unique	3 Bolt, 1 Stud
TMU3S	Unique	3 Stud
TMU3S1B	Unique	3 Stud 1 Bolt
TMU4B	Unique	4 Bolt
TMU4S	Unique	4 Stud
TMU5S	Unique	5 Stud

MOUNTING CODE “ES” EYE RING AND BUSHING WITH STEEL SLEEVE

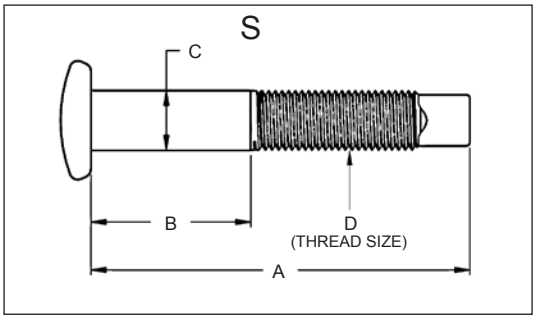


MOUNTING CODE	DIMENSION			
	Inside Diameter		Sleeve Length	
	(inches)	(mm)	(inches)	(mm)
ES3	0.39	10.00	1.56	39.62
ES9	0.44	11.11	1.31	33.27
ES10	0.44	11.11	1.38	35.05
ES13	0.56	14.29	1.89	48.01
ES17	0.47	12.00	1.25	31.75
ES18	0.47	12.00	1.65	41.91
ES19	0.47	12.00	1.88	47.75
ES20	0.47	12.00	1.95	49.53
ES22	0.50	12.70	1.25	31.75
ES24	0.50	12.70	1.38	35.05
ES25	0.50	12.70	1.50	38.10
ES26	0.50	12.70	1.56	39.62
ES27	0.50	12.70	1.62	41.15
ES29	0.39	10.00	2.95	74.93
ES30	0.47	12.00	2.57	65.28
ES31*	0.50	12.70	2.25	57.15
ES34	0.56	14.29	1.66	42.16
ES35	0.63	15.88	1.38	35.05
ES36	0.75	19.05	1.75	44.45
ES41	0.47	12.00	3.48	88.39
ES42	0.47	12.00	3.77	95.76
ES45	0.51	13.00	1.68	42.67
ES47	0.51	13.00	2.50	63.50
ES48	0.55	14.00	1.42	36.07
ES49	0.55	14.00	1.66	42.16
ES51	0.55	14.00	1.89	48.01
ES53	0.39	10.00	1.38	35.05
ES56	0.55	14.00	1.58	40.13
ES61	0.47	12.00	1.76	44.70
ES64	0.63	16.00	1.25	31.75
ES65	0.47	12.00	1.38	35.05
ES66	0.63	16.00	1.38	35.05
ES67	0.63	16.00	1.56	39.62
ES69	0.47	12.00	1.58	40.13
ES75	0.63	16.00	2.04	51.82
ES82	0.48	12.30	1.53	38.86
ES83	0.47	12.00	1.48	37.59
ES84	0.39	10.00	1.62	41.15
ES85	0.47	12.00	2.36	59.94
ES86	0.55	14.00	2.44	61.98
ES87	0.48	12.30	1.65	41.91
ES88	0.47	12.00	1.81	45.97
ES90	0.63	15.88	2.00	50.80
ES99	0.55	14.00	1.42	36.07
ES110	0.63	16.00	1.61	40.89
ES115	0.39	10.00	2.02	51.31
ES120	0.75	19.05	2.76	70.10
ES126	0.50	12.70	2.44	61.98
ES128	0.50	12.70	1.66	42.16
ES136	0.63	15.88	1.75	44.45
ES141	0.47	12.00	1.61	40.89
ES145	0.44	11.11	2.25	57.15
ES147	0.47	12.00	1.97	50.04
ES149	0.50	12.70	2.36	59.94
ES150	0.75	19.05	2.24	56.90
ES152	0.79	20.00	1.69	42.93

MOUNTING CODE	DIMENSION			
	Inside Diameter		Sleeve Length	
	(inches)	(mm)	(inches)	(mm)
ES153	0.55	14.00	1.55	39.37
ES158	0.75	19.05	3.80	96.52
ES160	1.00	25.40	2.01	51.05
ES161	0.63	16.00	3.95	100.33
ES162	0.63	16.00	2.60	66.04
ES163	0.44	11.11	2.50	63.50
ES164	0.50	12.70	2.26	57.40
ES166	0.63	15.88	2.97	75.44
ES167	0.55	14.00	2.31	58.67
ES168	0.55	14.00	2.62	66.55
ES171	0.50	12.70	1.88	47.75
ES173	0.88	22.23	2.28	57.91
ES174	0.63	15.88	3.25	82.55
ES175	0.63	16.00	1.96	49.78
ES176	0.63	16.00	3.72	94.49
ES177	0.63	16.00	3.55	90.17
ES178	0.75	19.05	1.96	49.78
ES179	0.79	20.00	1.75	44.45
ES182	0.79	20.00	1.96	49.78
ES183	0.79	20.00	3.80	96.52
ES185	0.47	12.00	2.44	61.98
ES187	1.00	25.40	1.75	44.45
ES188	0.63	16.00	1.81	45.97
ES190	0.87	22.00	1.75	44.45
ES194	0.88	22.23	2.28	57.91
ES201	0.57	14.40	1.94	49.28
ES206	0.50	12.70	3.13	79.50
ES210	0.73	18.50	1.87	47.50
ES216	0.57	14.50	3.15	80.00

***** 1” / 25.4mm Offset

“S” STUD MOUNT



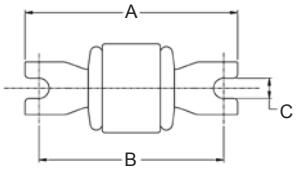
MOUNTING CODE	DIMENSION						
	A		B		C		D
	(inches)	(mm)	(inches)	(mm)	(inches)	(mm)	(thread)
S1	2.37	60.20	1.00	25.40	0.38	9.53	3/8-24
S2	2.06	52.32	1.00	25.40	0.38	9.53	3/8-24
S3	2.67	67.82	1.37	34.80	0.39	10.00	3/8-16
S4	1.85	46.99	1.00	25.40	0.38	9.53	3/8-24
S5	1.29	32.77	1.14	28.96	0.51	13.00	3/8-24
S8	1.75	44.45	1.00	25.40	0.39	10.00	3/8-24
S9	1.84	46.74	1.05	26.67	0.44	11.11	3/8-24
S10	2.37	60.20	1.33	33.78	0.44	11.11	3/8-24
S11	3.00	76.20	1.12	28.45	0.38	9.53	3/8-24
S12	2.37	60.20	1.15	29.21	0.44	11.11	3/8-24
S15	3.29	83.57	1.98	50.29	0.38	9.53	3/8-24
S16	2.95	74.93	1.45	36.83	0.63	16.00	M16x1.5
S17	2.15	54.61	1.03	26.16	0.44	11.11	3/8-24
S18	2.67	67.82	1.81	45.97	0.39	10.00	M10x1.25
S19	1.34	34.04	0.41	10.41	0.44	11.11	M10x1
S20	1.34	34.04	0.41	10.41	0.39	10.00	M10x1
S21	3.28	83.31	1.75	44.45	0.63	15.88	5/8-18
S22	0.75	19.05	0.35	8.89	0.39	10.00	M10x1
S25	1.81	45.97	1.50	38.10	0.38	9.53	M10x1
S26	2.02	51.31	0.82	20.83	0.47	12.00	M10x1
S27	2.36	59.94	1.14	28.96	0.39	10.00	M10x1
S29	2.99	75.95	1.87	47.50	0.38	9.53	3/8-24
S30	2.59	65.79	1.41	35.81	0.39	10.00	M10x1
S32	2.31	58.67	1.38	35.05	0.55	14.00	M12x1.25
S33	3.44	87.38	2.17	55.12	0.39	10.00	M10x1
S34	1.06	26.92	0.59	14.99	0.31	7.94	M8x1.25
S36	2.49	63.25	1.33	33.78	0.44	11.11	3/8-24
S37	3.18	80.77	1.41	35.81	0.47	12.00	M10x1
S38	2.75	69.85	1.70	43.18	0.55	14.00	M12x1.25
S40	2.52	64.01	1.33	33.78	0.44	11.11	3/8-24
S42	3.50	88.90	2.00	50.80	0.63	15.88	5/8-18
S43	2.75	69.85	1.25	31.75	0.63	15.88	5/8-18
S44	1.57	39.88	0.39	9.91	0.39	10.00	M10x1.25
S45	2.36	59.94	1.00	25.40	0.39	10.00	M10x1.25
S46	1.57	39.88	1.18	29.97	0.39	10.00	M10x1.25
S47	2.20	55.88	1.31	33.27	0.39	10.00	M10x1.25
S48	2.55	64.77	1.51	38.35	0.39	10.00	M10x1.25
S49	2.67	67.82	1.29	32.77	0.39	10.00	M10x1.25
S50	2.95	74.93	1.57	39.88	0.39	10.00	M10x1.25
S51	3.00	76.20	1.65	41.91	0.39	10.00	M10x1.25
S52	1.18	29.97	0.74	18.80	0.39	10.00	M10x1.5
S53	2.16	54.86	1.89	48.01	0.39	10.00	M10x1.5
S54	2.42	61.47	1.28	32.51	0.59	15.00	M10x1.5
S55	2.51	63.75	1.39	35.31	0.39	10.00	M10x1.5
S56	2.67	67.82	1.53	38.86	0.43	11.00	M10x1.5
S57	2.95	74.93	1.40	35.56	0.42	10.72	M10x1.5
S58	2.98	75.69	1.68	42.67	0.39	10.00	M10x1.5
S59	2.98	75.69	1.68	42.67	0.47	12.00	M10x1.5
S60	3.46	87.88	1.96	49.78	0.56	14.29	M10x1.5
S61	3.11	78.99	1.45	36.83	0.55	14.00	M12x1.25
S62	3.24	82.30	1.70	43.18	0.56	14.29	M12x1.25
S63	3.54	89.92	2.24	56.90	0.67	17.00	M12x1.25
S64	2.36	59.94	1.18	29.97	0.47	12.00	M12x1.5
S65	2.89	73.41	1.65	41.91	0.47	12.00	M12x1.5
S66	1.39	35.31	0.15	3.81	0.47	12.00	M12x1.75
S67	2.40	60.96	1.53	38.86	0.56	14.29	M14x1.5

“S” STUD MOUNTS CONT’D

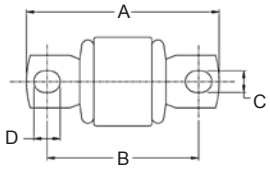
MOUNTING CODE	DIMENSION						
	A		B		C		D
	(inches)	(mm)	(inches)	(mm)	(inches)	(mm)	(thread)
S68	2.95	74.93	1.45	36.83	0.63	15.88	M16x1.5
S69	1.32	33.53	1.37	34.80	0.61	15.48	M16x2
S70	1.88	47.75	0.90	22.86	0.44	11.11	M8x1.25
S71	1.42	36.07	0.71	18.03	0.39	10.00	M10x1.5
S74	2.66	67.50	1.24	31.50	0.39	10.00	M10x1
S75	1.57	40.00	0.47	12.00	0.39	10.00	M10x1.25
S80	1.18	30.00	0.39	10.01	0.47	12.00	M12x1.25
S81	2.80	71.12	1.53	38.89	0.47	12.00	M12x1.25
S82	3.70	94.00	1.54	39.00	0.39	10.00	M10x1.5
S83	3.17	80.52	2.14	54.36	0.39	10.00	M10x1.25
S84	1.18	30.00	0.20	5.00	0.47	12.00	M12x1.5
S85	3.35	85.00	1.85	47.00	0.43	11.00	M10x1
S86	2.90	73.66	1.65	41.91	0.39	10.00	M10x1.25
S87	3.21	81.53	2.09	53.06	0.39	10.00	M10x1.25
S88	2.55	64.64	1.30	33.02	0.47	12.00	M12x1.25
S89	3.35	85.09	2.18	55.25	0.39	10.00	M10x1.25
S90	3.08	78.23	2.00	50.70	0.39	10.00	M10x1.25
S91	1.20	30.50	0.79	20.00	0.39	10.00	M10x1.25
S92	1.42	35.99	0.63	16.00	0.41	10.50	M12x1.25
S95	2.52	64.00	1.34	34.00	0.47	12.00	M12x1.25
S96	2.56	65.00	0.98	25.00	0.39	10.00	M10x1.25
S97	1.50	38.00	0.51	13.00	0.47	12.00	M12x1.75
S98	2.72	69.00	1.34	34.00	0.47	12.00	M12x1.5
S99	3.07	78.00	1.61	41.00	0.47	12.00	M10x1
S100	1.89	48.00	1.38	35.00	0.47	12.00	M12x1.25
S101	1.77	45.00	1.22	31.00	0.39	10.00	M10x1.5
S102	2.72	69.20	1.18	30.00	0.55	14.00	M10X1.25
S103	1.50	38.00	0.59	15.00	0.55	14.00	M14X1.5
S104	0.98	25.00	0.08	2.00	0.47	12.00	M12X1.25
s105	2.19	55.50	1.02	26.00	0.55	14.00	M14x2
S106	1.54	39.00	1.22	31.00	0.55	14.00	M14X2
S107	2.36	60.00	1.30	33.00	0.67	17.00	M16X2
S108	1.69	43.00	1.46	37.00	0.87	22.00	M14X2
S109	1.93	49.00	0.63	16.00	0.55	14.00	M12X1.5
S110	1.10	28.00	0.08	2.00	0.87	22.00	M14X1.5
S111	2.72	69.09	1.26	32.00	0.87	22.00	M14x2
S112	2.73	69.27	1.47	37.21	0.87	22.00	M14x1.5
S113	3.30	83.82	0.20	5.08	0.87	22.00	M15x2.00
S114	1.38	35.00	0.01	0.35	0.87	22.00	M14x1.5
S115	3.96	100.48	1.47	37.26	0.79	20.00	M12x1.75
S116	1.71	43.51	0.85	21.49	0.87	22.00	M14x1.5
S117	1.16	29.36	0.84	21.34	0.79	20.00	M14x2
S118	2.08	52.76	1.78	45.26	0.79	20.00	M12X1.75
S118	3.40	86.36	3.15	80.01	0.87	22.00	M16x2
S119	2.95	74.93	1.38	35.00	0.98	25.00	M16X2
S120	2.05	52.00	1.10	28.00	0.47	12.00	M12X1.25
S121	1.46	37.00	1.34	34.00	0.87	22.00	M14x1.25
S122	3.05	77.50	1.26	32.00	0.63	16.00	M14x1.5

MOUNTING CODE “BP” EYE RING AND BUSHING WITH BAR PIN

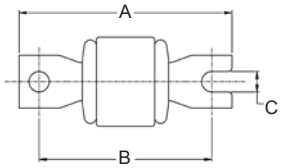
TYPE 1



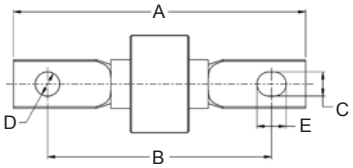
TYPE 2



TYPE 3



TYPE 4



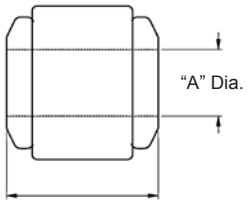
MOUNTING CODE	TYPE	DIMENSION									
		A		B		C		D		E	
		(inches)	(mm)	(inches)	(mm)	(inches)	(mm)	(inches)	(mm)	(inches)	(mm)
BP4	**1**	3.19	81.03	2.38	60.45	0.33	8.38	--	--	--	--
BP6	**1**	4.25	107.95	3.62	91.95	0.33	8.38	--	--	--	--
BP7	**2**	3.13	79.50	2.50	63.50	0.35	8.89	0.42	10.67	--	--
BP8	**2**	3.50	88.90	2.87	72.90	0.35	8.89	0.42	10.67	--	--
BP10	**2**	3.50	88.90	2.74	69.60	0.50	12.70	0.50	12.70	--	--
BP12	**1**	3.75	95.25	3.14	79.76	0.33	8.38	--	--	--	--
BP13	**1**	3.45	87.63	3.00	76.20	0.33	8.38	--	--	--	--
BP14	**2**	3.43	87.12	2.87	72.90	0.45	11.43	--	--	--	--
BP15	**4**	4.56	115.82	3.62	91.95	0.39	9.91	0.47	11.94	0.39	9.91
BP18	**1**	3.75	95.25	3.14	79.76	0.39	9.91	--	--	--	--
BP19	**1**	3.19	81.03	2.62	66.55	0.33	8.38	--	--	--	--
BP20	**1**	3.59	91.19	3.12	79.25	0.33	8.38	--	--	--	--
BP27	**2**	4.00	101.60	2.95	74.93	0.52	13.21	0.50	12.70	--	--
BP31	**3**	3.50	88.90	2.87	72.90	0.35	8.89	--	--	--	--
BP34	**1**	3.81	96.77	2.99	75.95	0.41	10.41	--	--	--	--
BP36	**2**	4.72	119.89	3.38	85.85	0.52	13.21	0.52	13.21	--	--

MOUNTING CODE “SP” SPECIAL MOUNTS

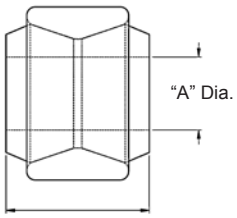
Part numbers with “SP” mounting codes are unique to the application.
Please reference the specific OE or Gabriel part for dimensions. If you have any further questions or concerns, contact the Gabriel® Answerman at 1.800.999.3903.

MOUNTING CODE “EB” EYE RING AND BUSHING

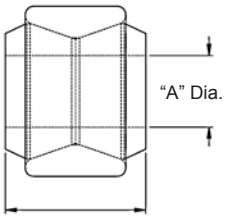
EB1



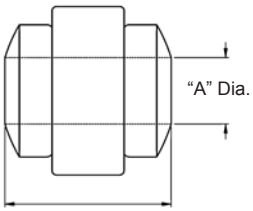
EB2



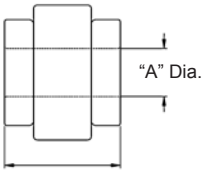
EB3



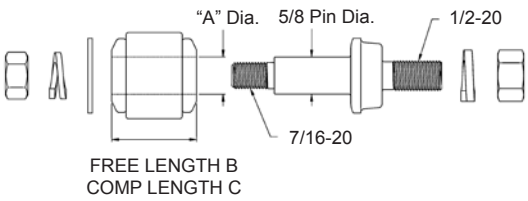
EB4



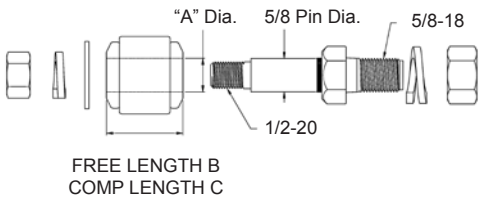
EB5



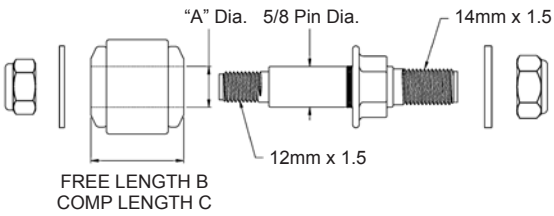
EB6



EB7

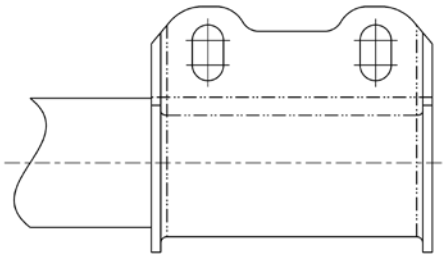


EB8

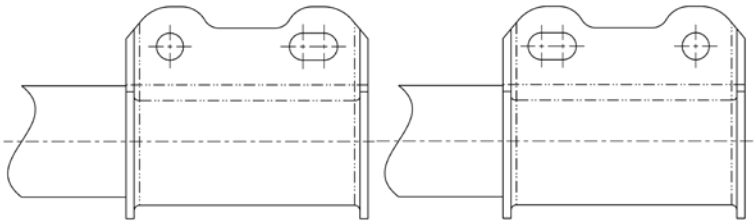


MOUNTING CODE	A DIAMETER	B FREE LENGTH	C COMP. LENGTH	VEHICLE MOUNTING PIN DIAMETER
EB1	5/8	1.44	1.31	5/8
EB2	3/4	1.75	1.50	3/4
EB3	1.00	1.91	1.75	1.00
EB4	11/16	1.72	1.55	11/16
EB5	5/8	1.51	1.25	5/8
EB16	16MM	1.5	--	16MM
EB19	20MM	1.75	1.25	20MM

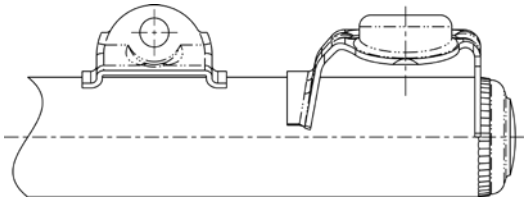
MOUNTING CODE “CL” CLEVIS



CL1
2 oblong mounting holes

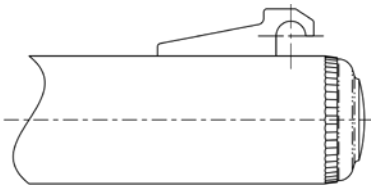


CL3
1 oblong mounting hole

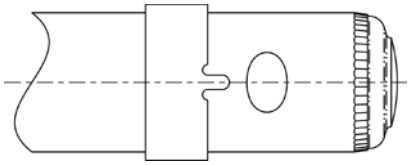


CL5

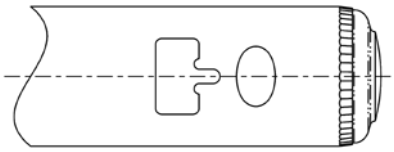
MOUNTING CODE “LP” PINCH SOCKET



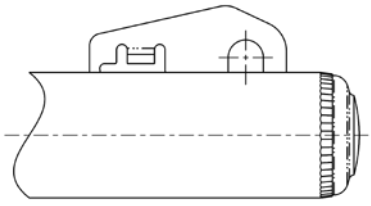
LP1



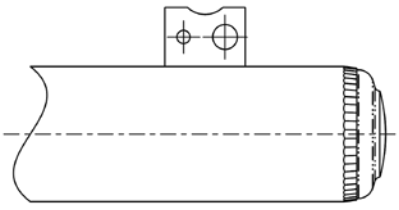
LP2



LP3



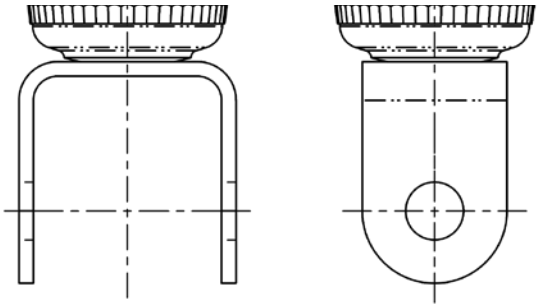
LP4



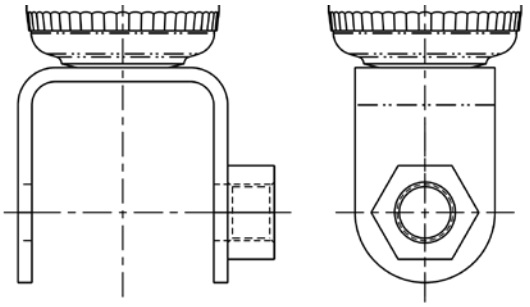
LP5

LP6

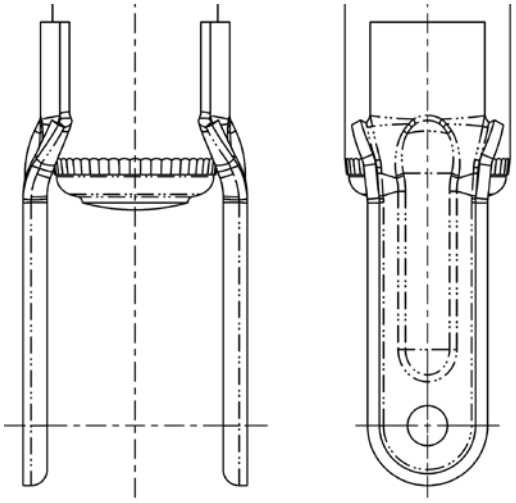
MOUNTING CODE “LU” U JOINT



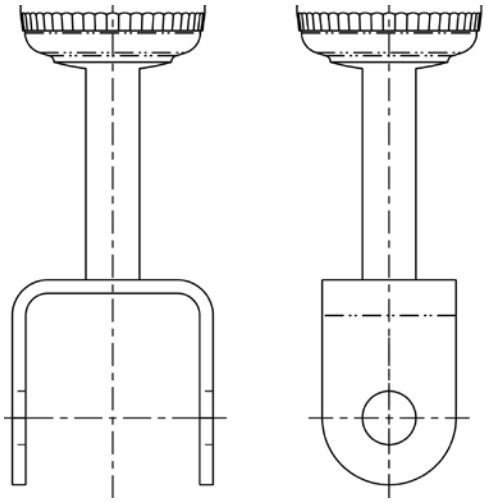
LU1



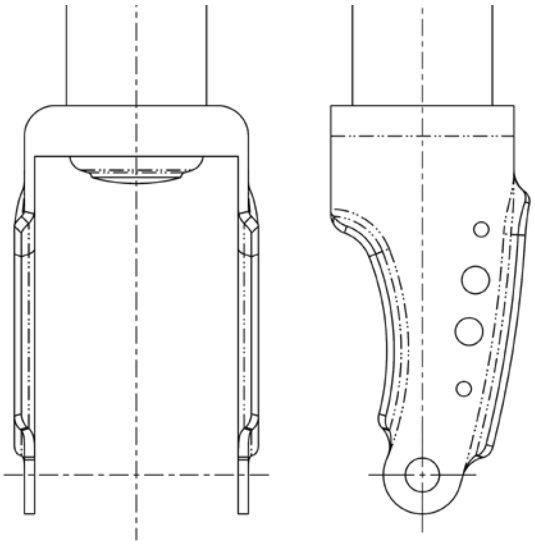
LU2



LU4



LU3



LU5