

Tensioners

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Patents: York tensioners are patent pending.

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65 years of manufacturing achievement:

IBM, Charlotte

York received 4 Quality Awards in 4 years

IBM, Endicott

York received 2 Quality Awards in 2 years

Xerox Corp.

York received Multinational Quality Award – three consecutive years

J.I.T. – Just-In-Time delivery.

S.P.C. – Statistical Process Control.

E.D.I. – Electronic Data Interface – in place.

Mechanical Assemblies:

York offers single source responsibility for Drive Assemblies where gears and timing pulleys are the cost driven components, from 4-piece to 100-piece Assemblies, which include clutches, motors, brakes, sheet metal, shafts and stampings.

Upon Your Request: E.S.I. Early Supplier Involvement – Cost reduction at the design level with our OEM's – not after the product is finalized and to market. Bar Code Labels are also available at your request.

Prototypes: One piece or production quantities. We can prototype in a machined-to-print material – steel, aluminum, brass. No multiple sources required. Prototypes are often available in 5 to 15 working days.

Second Source: Would you like an alternate source for a competitor's catalog part number? Call or fax us with that part number and the quantity for quote. We may very well have the part in stock.

INTRODUCTION TO TENSIONERS

York has designed four types of tensioners in two sizes to give you a choice of stock solutions for your drive design.

WHY TENSIONERS?

- Achieve exact center distances with stock belt lengths
- Compensate for wear or slack in the belt
- Prevent belt slippage
- Ease installation and servicing
- Adjust for drive tolerances
- Enable sharp turns in belt layout

WHY YORK TENSIONERS?

Flexible

- Universal - works with any small drive
- Slot and pivot designs available
- Extremely low belt clearance

Convenient

- Drops right into your design
- Small footprint
- Downloadable CAD drawings and models already available
- Stock mounting spacers if needed in your design.

Cost Effective

- Standard catalog item
- Save cost of designing your own
- Save tooling costs

DYNAMIC PIVOT

- Spring adjusts either CW or CCW
- Dual purpose - use static or dynamic
- Fits easily inside or outside the belt



DYNAMIC SLOT

- Spring adjusts as belt ages
- Easy to adjust tension on belt
- Unique installation bushing



STATIC PIVOT

- Smallest footprint
- 44 degree arc of movement
- Wide span of travel



STATIC SLOT

- The classic tensioner
- Linear adjustment
- Small yet very strong



WHICH TYPE TENSIONER SHOULD I USE?

SLOTTED VS. PIVOTING TENSIONERS

The choice of slotted versus pivoting tensioners is usually based on drive geometry, the drive layout, and the available space and mounting structures. Both tensioner types are usually mounted with their direction of travel bisecting the belt path to take full advantage of their range of motion and spring force. Because of their geometry, slotted tensioners rarely find use as inside idler pulleys on short center distance drives unless the drive has large diameter sprockets. Because of a pivoting tensioner's physical construction they can often fit where a slotted tensioner cannot.

STATIC VS. DYNAMIC DESIGN CONSIDERATIONS

Because they are self adjusting, dynamic tensioners are most useful for drives where accessing the drive for tension measurement is difficult or where drive assemblers or field service people do not have accurate tools or jigs to accurately tension the drive.

Note: Dynamic tensioners should generally be locked in place once spring pressure applies the proper tension. Avoid using a non-locked spring loaded tensioner on a reversing drive unless the belt is only lightly loaded in the reverse direction (where the tensioner is on the tight span). Do not use a non-locked dynamic tensioner on applications where high load fluctuations are likely to occur.

TENSIONER PLACEMENT

Tensioners can be placed either inside or outside of the belt, and on any span of a belt drive. Idler pulleys / tensioners will produce additional bending stress to the belt. The negative effects can be minimized with proper sizing and location. It is generally better to place the tensioner on the belt span with the least tension (slack span on a 2-pt drive) and on the inside / tooth side, as belts are manufactured to be shaped more easily in the inward direction. Outside tensioners are useful to increase belt wrap and are generally quieter especially on high speed applications.

After choosing your type of tensioner (slot or pivot and their dynamic or static versions), pick your specific tensioner size use the following chart. Be sure to call York at (800) 354-8466 / (516) 746-3736 with any questions you have.

Size 4 Tensioners

(dimensions in inches)	Min Pulley Height Above Mounting Plate (1)	Range of Adjustment (2)	Tensioner Stroke (3)	Continuous Max Force Against Belt	Peak Shock Loads	Approx Footprint w/o Pulley
SS-4 Static Slot Tensioner	0.18	0.80	n/a	10 lbs	15 lbs	.90 wide x 2.6 long
DS-4 Dynamic Slot Tensioner	0.23	0.80	0.35	5 lbs	15 lbs	.90 wide x 3.1 long
SP-4 Static Pivot Tensioner	0.18	1.25 44 deg	n/a	10 lbs	15 lbs	1.12 wide x 2.25 long
DP-4 Dynamic Pivot Tensioner	0.23	1.25 22 deg	0.50	5 lbs*	15 lbs	1.70 wide x 2.55 long

Size 3 Tensioners

*(8 lbs max available as special order)

(dimensions in inches)	Min Pulley Height Above Mounting Plate (1)	Range of Adjustment (2)	Tensioner Stroke (3)	Continuous Max Force Against Belt	Peak Shock Loads	Approx Footprint w/o Pulley
SS-3 Static Slot Tensioner	0.18	0.50	n/a	8 lbs	10 lbs	.85 wide x 1.81 long
DS-3 Dynamic Slot Tensioner	0.21	0.50	0.25	2.5 lbs	10 lbs	.95 wide x 2.07 long
SP-3 Static Pivot Tensioner	0.18	0.73 44 deg	n/a	8 lbs	10 lbs	.70 wide x 1.36 long
DP-3 Dynamic Pivot Tensioner	0.21	1.20 75 deg	0.73	2.5 lbs*	10 lbs	1.2 wide x 1.5 long

*(5 lbs max available as special order)

- Minimum pulley height** for Size 4 is .05 higher for plastic sleeved bearings, for Size 3 add .03
- Adjustment** is the movement possible when mounting the tensioner to its mounting surface.
- Stroke** is the range of operating travel possible for a mounted, dynamic tensioner from stop to stop of the spring

Maximum pulley height above the mounting surface depends on specific pulley width. Consult factory for details.

York also offers extruded spacers in .38 inch increments up to 1.12 thick for Size 4 tensioners and in .25 inch increments up to .75 inches for Size 3 tensioners to lift the the entire tensioner above its mounting surface yet provide excellent mechanical holding for drive operation. So generally, pulley clearances up to nearly 1 inch from the mounting surface are not a problem.

Size 4 Dynamic Pivot Tensioners

Dynamic pivot tensioners are ideal when you have space limitations and need adjustment for installation and service.

- Small but tough
- Pivots CW or CCW
- 1.12 inch range of adjustment
- Stainless steel spring
- Standard catalog item



FEATURES:

The DP-4 gives you

- .23 inch minimum idler pulley clearance
- Tensioner stroke of .50 inches across a 22 degree arc
- Self contained spring with 5 pounds continuous force, withstands 15 pounds peak
- Engineered and tested for over 1 million cycles

All York tensioners include

- Huge selection of catalog tensioners
- Universal - inside or outside tensioner
- Small footprint yet strong
- Markings to help set belt tension
- Stainless steel construction
- Aluminum or plastic idler pulleys
- Choice of flat pulley or six belt profiles: 2mm GT, 3mm GT, MXL, 3mm HTD, 5mm HTD or XL
- Sealed ball or sleeved plastic bearings
- Captive hardware for easy installation

Engineering Drawings: DP-4

DP- 4 DYNAMIC PIVOT TENSIONER

The Dynamic Tensioner uses just a small space to provide constant pressure against a belt even as wear and stretch occur. Plus the tensioner can be locked statically into place if desired after tension is set.

Operating Characteristics

Tensioner stroke - .50 inches (12.7 mm) over a 22 degree arc

Range of adjustment - 1.12 inches (28.4 mm)

Maximum force against belt - 5 pounds (2.3 kg) continuous, 15 pounds (6.8 kg) peak (10 pounds (4.6 kg) continuous available as a special order)

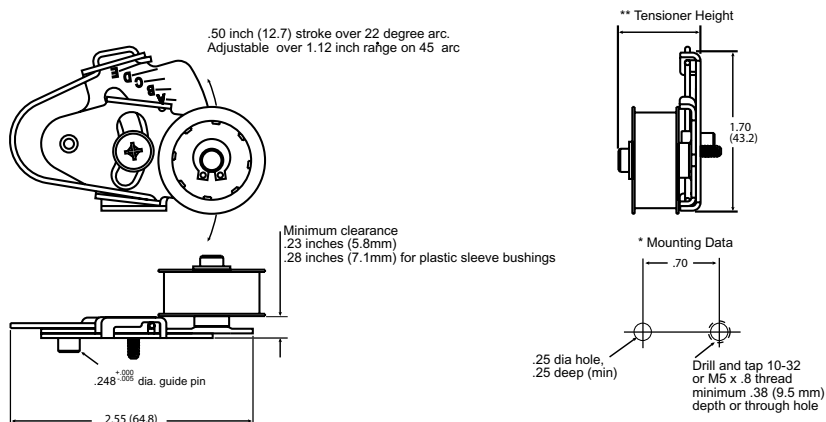
* Mounting Data:

- Approximate footprint without idler pulley of 1.70 inches (43.2 mm) wide by 2.55 inches (64.8 mm) long
- Minimum clearance from mounting surface to bottom of pulley is .23 inches (5.8 mm) except plastic sleeve bearings require .28 inches (7.1 mm) minimum clearance.
- Requires one hole tapped 10-32 or M5 x .8 either through sheetmetal, or blind hole with minimum .38 thread depth. Also needs one .25 diameter by .25 min depth clearance hole. See drawing below.

** Tensioner Height:

To find your tensioner height, determine Pulley Width + Belt Clearance desired = X

- If X is less than or equal to .675 (17.1 mm), tensioner height is 1.000 (25.4 mm)
- If X is between .675 (17.1 mm) and .950 (24.1 mm), tensioner height is 1.275 (32.4 mm)
- If X is larger than .950 (24.1 mm), consult York Engineering.



All York Size 4 Tensioners Include:

301 stainless steel construction for strength and harsh environments	Designs tested to over one million cycles
Operating temperatures possible from -60°F to +185°F	Survives salt spray, dust, and condensing high humidity environments with proper bearings
Choice of idler pulley profiles - flat, 2mm GT, 3mm GT, MXL, XL, 3mm HTD or 5mm HTD	Idler pulleys available with sealed ball bearings, self lubricating plastic sleeves in aluminum pulleys or self lubricating all plastic pulleys
Ease of assembly with self locking, reusable Phillips hardware in 10-32 or M5 x.8 threads	Idler pulley retaining clip withstands minimum of 15 lbs (6.8 kg) pull force
Downloadable CAD files for tensioners and pulleys	Dynamic tensioners reference markings to aid in setting belt tension during assembly and service
Free access to York's engineering staff for answers to design and application questions	Conductive grease (sealed ball bearings) or static dissipative (plastic) to prevent static electricity build-up on belts
Special mounting bushing to aid in setting belt tension.	Idler shafts are 416 stainless steel hardened to Rockwell C 38-42

Operating Environments:

Idler Pulley/Bearing Type	Maximum Operating Temperature	Minimum Operating Temperature	High Dust Environments	High Humidity	Relative Cost	Max Speed in RPM
Aluminum/Ball Bearing	185°F - may be limited by belt max temp	-60°F	Yes - Sealed ABEC Bearings With Conductive Grease	Yes	More Expensive	Limited by belt, not bearing
Aluminum/Plastic Self Lubricating Sleeve	185°F - may be limited by belt max temp	-40°F	OK in most cases	Yes	Moderate good for small and medium volumes	Up to 4,500 RPM continuous with up to 9,000 RPM peak.
One Piece Self Lubricating Carbon Filled Polycarbonate UL V94-0 Flammability	180°F	20°F (consult York for designs down to -40°F)	Generally not for extremely high dust areas	Yes - to 95% but must be non condensing	Least Expensive Need high volumes if custom mold required	Up to 4,500 RPM continuous with up to 7,000 RPM peak

TENSIONERS - SIZE 4 DYNAMIC PIVOT



IN STOCK DP-4 TENSIONERS



MAX. BELT WIDTH
3/8" (9mm)

MAX. SPRING FORCE
5 LBS.

MOUNTING SCREW
10-32 x 1/2

TENSIONER PART NUMBER	PULLEY PITCH	NO.OF GROOVES	PULLEY O.D.	PULLEY MATERIAL	PULLEY HEIGHT	BEARING TYPE	SPRING DIRECTION
DP4UB-F100L42-N23PE-CWS	FLAT	N/A	1"	PLASTIC	.23"	N/A	CW
DP4UB-F100L42-N23PE-ACS	FLAT	N/A	1"	PLASTIC	.23"	N/A	CCW
DP4UB-F100A42-B23PE-CWS	FLAT	N/A	1"	ALUMINUM	.23"	BALL	CW
DP4UB-F100A42-B23PE-ACS	FLAT	N/A	1"	ALUMINUM	.23"	BALL	CCW
DP4UB-F100A42-S28PE-CWS	FLAT	N/A	1"	ALUMINUM	.28"	SLEEVE	CW
DP4UB-F100A42-S28PE-ACS	FLAT	N/A	1"	ALUMINUM	.28"	SLEEVE	CCW
DP4UB-2G40A107-B58PE-CWS	2mm GT	40	.983"	ALUMINUM	5.8mm	BALL	CW
DP4UB-2G40A107-B58PE-ACS	2mm GT	40	.983"	ALUMINUM	5.8mm	BALL	CCW
DP4UB-2G40A107-S71PE-CWS	2mm GT	40	.983"	ALUMINUM	7.1mm	SLEEVE	CW
DP4UB-2G40A107-S71PE-ACS	2mm GT	40	.983"	ALUMINUM	7.1mm	SLEEVE	CCW
DP4UB-3G28A107-B58PE-CWS	3mm GT	28	1.023"	ALUMINUM	5.8mm	BALL	CW
DP4UB-3G28A107-B58PE-ACS	3mm GT	28	1.023"	ALUMINUM	5.8mm	BALL	CCW
DP4UB-3G28A107-S71PE-CWS	3mm GT	28	1.023"	ALUMINUM	7.1mm	SLEEVE	CW
DP4UB-3G28A107-S71PE-ACS	3mm GT	28	1.023"	ALUMINUM	7.1mm	SLEEVE	CCW
DP4UB-MX40A42-B23PE-CWS	MXL (.080")	40	.999"	ALUMINUM	.23"	BALL	CW
DP4UB-MX40A42-B23PE-ACS	MXL (.080")	40	.999"	ALUMINUM	.23"	BALL	CCW
DP4UB-MX40A42-S28PE-CWS	MXL (.080")	40	.999"	ALUMINUM	.28"	SLEEVE	CW
DP4UB-MX40A42-S28PE-ACS	MXL (.080")	40	.999"	ALUMINUM	.28"	SLEEVE	CCW
DP4UB-3M28A107-B58PE-CWS	3mm HTD	28	1.023"	ALUMINUM	5.8mm	BALL	CW
DP4UB-3M28A107-B58PE-ACS	3mm HTD	28	1.023"	ALUMINUM	5.8mm	BALL	CCW

TENSIONER PART NUMBER	PULLEY PITCH	NO.OF GROOVES	PULLEY O.D.	PULLEY MATERIAL	PULLEY HEIGHT	BEARING TYPE	SPRING DIRECTION
DP4UB-3M28A107-S71PE-CWS	3mm HTD	28	1.023"	ALUMINUM	7.1mm	SLEEVE	CW
DP4UB-3M28A107-S71PE-ACS	3mm HTD	28	1.023"	ALUMINUM	7.1mm	SLEEVE	CCW
DP4UB-5M17A107-B58PE-CWS	5mm HTD	17	1.020"	ALUMINUM	5.8mm	BALL	CW
DP4UB-5M17A107-B58PE-ACS	5mm HTD	17	1.020"	ALUMINUM	5.8mm	BALL	CCW
DP4UB-5M17A107-S71PE-CWS	5mm HTD	17	1.020"	ALUMINUM	7.1mm	SLEEVE	CW
DP4UB-5M17A107-S71PE-ACS	5mm HTD	17	1.020"	ALUMINUM	7.1mm	SLEEVE	CCW
DP4UB-XL16A42-B23PE-CWS	XL (1/5")	16	.999"	ALUMINUM	.23"	BALL	CW
DP4UB-XL16A42-B23PE-ACS	XL (1/5")	16	.999"	ALUMINUM	.23"	BALL	CCW
DP4UB-XL16A42-S28PE-CWS	XL (1/5")	16	.999"	ALUMINUM	.28"	SLEEVE	CW
DP4UB-XL16A42-S28PE-ACS	XL (1/5")	16	.999"	ALUMINUM	.28"	SLEEVE	CCW

IF A STOCK TENSIONER DOES NOT MEET YOUR REQUIREMENTS,
 PLEASE CONFIGURE YOUR OWN CUSTOM TENSIONER AT
www.york-ind.com

TENSIONERS - SIZE 4 DYNAMIC PIVOT



Size 3 Dynamic Pivot Tensioners

Dynamic pivot tensioners are ideal for tight spaces and when you need adjustments for installation and service.

- Small but tough
- Pivots CW or CCW
- 1.20 range of adjustment
- Stainless steel spring
- Standard catalog item



FEATURES:

The DP-3 gives you

- .21 inch minimum idler pulley clearance
- Tensioner stroke of .25 inches
- Self contained spring with 2.5 pounds continuous force, withstands 10 pounds peak
- Engineered and tested for over 1 million cycles

All York tensioners include

- Huge selection of catalog tensioners
- Universal - inside or outside tensioner
- Small footprint yet strong
- Markings to help set belt tension
- Stainless steel construction
- Aluminum or plastic idler pulleys
- Choice of flat pulley or four belt profiles: 2mm GT, 3mm GT, .080 (MXL) and 3mm HTD
- Sealed ball or sleeved plastic bearings
- Captive hardware for easy installation

Engineering Drawings: DP-3

DP-3 DYNAMIC PIVOT TENSIONER

Constant belt pressure in a small space, the DP-3 compensates for wear, stretch, and fluctuating load in your drive system. Graduations on the mounting bracket aid in assembly and service. If desired, tensioner can be locked statically into place after tension is set.

Operating Characteristics

Tensioner stroke - .73 inches (18.5 mm)

Range of adjustment - 1.20 inches (30.5 mm) over a 75 degree arc

Maximum force against belt - 2.5 pounds (1.1 kg) continuous, 10 pounds (4.5 kg) peak

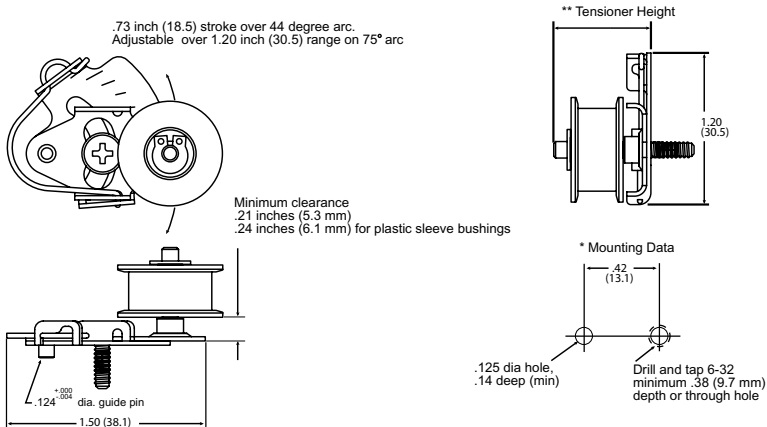
* Mounting Data:

- Approximate footprint without pulley of 1.2 inches (30.5 mm) wide by 1.5 inches (38.1 mm) long
- Minimum clearance from mounting surface to bottom flange of pulley is .21 inches (5.3 mm) for self lubricating pulley or ball bearings. Plastic sleeve bearings require .24 (6.1 mm) minimum clearance.
- Requires one #6-32 threaded hole and one .125 clearance hole. See drawing below

** Tensioner Height:

To determine tensioner maximum height, add total end to end pulley width desired + pulley clearance from mounting surface desired = X

- If X is less than or equal to .687 (17.4 mm), tensioner maximum height is .702 (17.8 mm)
- If X is greater than .687 (17.4 mm), consult York Engineering for available optional shafts and mounting bases.



TENSIONERS - SIZE 3 DYNAMIC PIVOT



TENSIONERS - SIZE 3 DYNAMIC PIVOT

All York Size 3 Tensioners Include:

301 stainless steel construction for strength and harsh environments	Designs tested to over one million cycles
Operating temperatures possible from -60°F to +185°F	Survives salt spray, dust, and condensing high humidity environments with proper bearings
Choice of idler pulley profiles - flat, 2mm GT, 3mm GT, .080 (MXL) or 3mm HTD	Idler pulleys available with sealed ball bearings, self lubricating plastic sleeves in aluminum pulleys or self lubricating all plastic pulleys
Ease of assembly with self locking, reusable Phillips hardware in 6-32 threads	Idler pulley retaining clip withstands minimum of 10 lbs (4.5 kg) pull force/side force on pulley
Downloadable CAD files for tensioners and pulleys	Dynamic tensioners have reference markings for setting belt tension during assembly and service
Free access to York's engineering staff for answers to design and application questions	Conductive grease (sealed ball bearings) or static dissipative (plastic) to prevent static electricity build-up on belts
Special mounting bushing to aid in setting belt tension.	Idler shafts are 416 stainless steel hardened to Rockwell C 38-42

Operating Environments:

Idler Pulley/Bearing Type	Maximum Operating Temperature	Minimum Operating Temperature	High Dust Environments	High Humidity	Relative Cost	Max Speed in RPM
Aluminum/Ball Bearing	185°F - may be limited by belt max temp	-60°F	Yes - Sealed ABEC Bearings With Conductive Grease	Yes	More Expensive	Limited by belt, not bearing
Aluminum/Plastic Self Lubricating Sleeve	185°F - may be limited by belt max temp	-40°F	OK in most cases	Yes	Moderate good for small and medium volumes	Up to 4,500 RPM continuous with up to 9,000 RPM peak.
One Piece Self Lubricating Carbon Filled Polycarbonate UL V94-0 Flammability	180°F	20°F (consult York for designs down to -40°F)	Generally not for extremely high dust areas	Yes - to 95% but must be non condensing	Least Expensive Need high volumes if custom mold required	Up to 4,500 RPM continuous with up to 7,000 RPM peak

IN STOCK DP-3 TENSIONERS



MAX. BELT WIDTH
1/4" (6mm)
MAX. SPRING FORCE
2.5 LBS.
MOUNTING SCREW
6-32 x 1/2

TENSIONER PART NUMBER	PULLEY PITCH	NO.OF GROOVES	PULLEY O.D.	PULLEY MATERIAL	PULLEY HEIGHT	BEARING TYPE	SPRING DIRECTION
DP3UB-F63L29-N21PE-CWS	FLAT	N/A	.625"	PLASTIC	.21"	NONE	CW
DP3UB-F63L29-N21PE-ACS	FLAT	N/A	.625"	PLASTIC	.21"	NONE	CCW
DP3UB-F63A29-S24PE-CWS	FLAT	N/A	.625"	ALUMINUM	.24"	SLEEVE	CW
DP3UB-F63A29-S24PE-ACS	FLAT	N/A	.625"	ALUMINUM	.24"	SLEEVE	CCW
DP3UB-F63A29-B21PE-CWS	FLAT	N/A	.625"	ALUMINUM	.21"	BALL	CW
DP3UB-F63A29-B21PE-ACS	FLAT	N/A	.625"	ALUMINUM	.21"	BALL	CCW
DP3UB-MX24A29-S24PE-CWS	MXL (.080")	24	.591"	ALUMINUM	.24"	SLEEVE	CW
DP3UB-MX24A29-S24PE-ACS	MXL (.080")	24	.591"	ALUMINUM	.24"	SLEEVE	CCW
DP3UB-MX24A29-B21PE-CWS	MXL (.080")	24	.591"	ALUMINUM	.21"	BALL	CW
DP3UB-MX24A29-B21PE-ACS	MXL (.080")	24	.591"	ALUMINUM	.21"	BALL	CCW
DP3UB-2G24A74-S61PE-CWS	2mm GT	24	.582"	ALUMINUM	6.1mm	SLEEVE	CW
DP3UB-2G24A74-S61PE-ACS	2mm GT	24	.582"	ALUMINUM	6.1mm	SLEEVE	CCW
DP3UB-2G24A74-B53PE-CWS	2mm GT	24	.582"	ALUMINUM	5.3mm	BALL	CW
DP3UB-2G24A74-B53PE-ACS	2mm GT	24	.582"	ALUMINUM	5.3mm	BALL	CCW
DP3UB-3G18A74-S61PE-CWS	3mm GT	18	.647"	ALUMINUM	6.1mm	SLEEVE	CW
DP3UB-3G18A74-S61PE-ACS	3mm GT	18	.647"	ALUMINUM	6.1mm	SLEEVE	CCW
DP3UB-3G18A74-B53PE-CWS	3mm GT	18	.647"	ALUMINUM	5.3mm	BALL	CW
DP3UB-3G18A74-B53PE-ACS	3mm GT	18	.647"	ALUMINUM	5.3mm	BALL	CCW
DP3UB-3M18A74-S61PE-CWS	3mm HTD	18	.647"	ALUMINUM	6.1mm	SLEEVE	CW
DP3UB-3M18A74-S61PE-ACS	3mm HTD	18	.647"	ALUMINUM	6.1mm	SLEEVE	CCW
DP3UB-3M18A74-B53PE-CWS	3mm HTD	18	.647"	ALUMINUM	5.3mm	BALL	CW
DP3UB-3M18A74-B53PE-ACS	3mm HTD	18	.647"	ALUMINUM	5.3mm	BALL	CCW

TENSIONERS - SIZE 3 DYNAMIC PIVOT

York can supply modified stock pulleys or complete specials upon request
 email: support@york-ind.com web: www.york-ind.com



Size 4 Dynamic Slot Tensioners

Enhanced slot tensioner design. Self adjusting, easily locks down or let it float to suit your application.

- Linear movement
- Choice of pulleys and bearings
- Spring can push or pull pulley
- Adjusts over .80 inch range
- Standard catalog item



FEATURES:

The DS-4 gives you

- .23 inch minimum idler pulley clearance
- Tensioner stroke of .25 inches
- Self contained spring with 5 pounds continuous force, withstands 15 pounds peak
- Engineered and tested for over 1 million cycles

All York tensioners include

- Huge selection of catalog tensioners
- Universal - inside or outside tensioner
- Small footprint yet strong
- Markings to help set belt tension
- Stainless steel construction
- Aluminum or plastic idler pulleys
- Choice of flat pulley or six belt profiles: 2mm GT, 3mm GT, MXL, 3mm HTD, 5mm HTD or XL
- Sealed ball or sleeved plastic bearings
- Captive hardware for easy installation

Engineering Drawings: DS-4

DS- 4 DYNAMIC SLOT TENSIONER

The Dynamic Slotted Tensioner provides continuous pressure on the belt over the life of the drive system. Assembly and service are often easier and more accurate with a dynamic tensioner. Plus the tensioner can be locked statically into place if desired after tension is set.

Operating Characteristics

Tensioner stroke - .25 inches (6.4 mm)

Range of adjustment - .80 inches (20 mm)

Maximum force against belt - 5 pounds (2.3 kg) continuous, 15 pounds (6.8 kg) peak

Spring can be mounted to push on idler pulley (as shown) or to pull

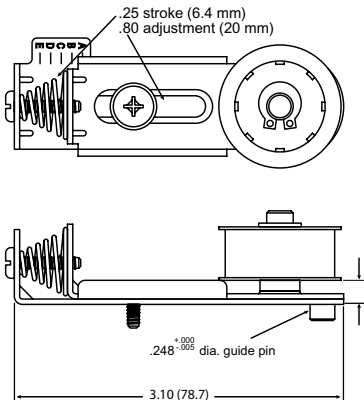
* Mounting Data:

- Approximate footprint without idler pulley of .90 inches (22.9 mm) wide by 3.1 inches (78.7 mm) long
- Minimum clearance from mounting surface to bottom of pulley is .23 inches (5.8 mm) except plastic sleeve bearings require .28 inches (7.1 mm) minimum clearance.
- Requires one hole tapped 10-32 or M5 x .8 either through sheetmetal, or blind hole with minimum .38 thread depth. See drawing below.

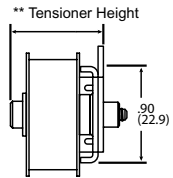
** Tensioner Height:

To find your tensioner height, determine Pulley Width + Belt Clearance desired = X

- If X is less than or equal to .675 (17.1 mm), tensioner height is 1.000 (25.4 mm)
- If X is between .675 (17.1 mm) and .950 (24.1mm), tensioner height is 1.275 (32.4 mm)
- If X is larger than .950 (24.1 mm), consult York Engineering

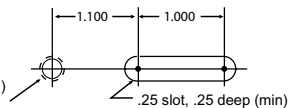


Minimum clearance
 .23 inches (5.8 mm)
 .28 inches / 7.1 mm for plastic sleeve bushings



* Mounting Data

Drill and tap 10-32
 or M5 x .8 thread
 minimum .38 (9.5 mm)
 depth or through hole



All York Size 4 Tensioners Include:

301 stainless steel construction for strength and harsh environments	Designs tested to over one million cycles
Operating temperatures possible from -60°F to +185°F	Survives salt spray, dust, and condensing high humidity environments with proper bearings
Choice of idler pulley profiles - flat, 2mm GT, 3mm GT, MXL, XL, 3mm HTD or 5mm HTD	Idler pulleys available with sealed ball bearings, self lubricating plastic sleeves in aluminum pulleys or self lubricating all plastic pulleys
Ease of assembly with self locking, reusable Phillips hardware in 10-32 or M5 x.8 threads	Idler pulley retaining clip withstands minimum of 15 lbs (6.8 kg) pull force
Downloadable CAD files for tensioners and pulleys	Dynamic tensioners have reference markings for setting belt tension during assembly and service
Free access to York's engineering staff for answers to design and application questions	Conductive grease (sealed ball bearings) or static dissipative (plastic) to prevent static electricity build-up on belts
Special mounting bushing to aid in setting belt tension.	Idler shafts are 416 stainless steel hardened to Rockwell C 38-42

Operating Environments:

Idler Pulley/Bearing Type	Maximum Operating Temperature	Minimum Operating Temperature	High Dust Environments	High Humidity	Relative Cost	Max Speed in RPM
Aluminum/Ball Bearing	185°F - may be limited by belt max temp	-60°F	Yes - Sealed ABEC Bearings With Conductive Grease	Yes	More Expensive	Limited by belt, not bearing
Aluminum/Plastic Self Lubricating Sleeve	185°F - may be limited by belt max temp	-40°F	OK in most cases	Yes	Moderate good for small and medium volumes	Up to 4,500 RPM continuous with up to 9,000 RPM peak.
One Piece Self Lubricating Carbon Filled Polycarbonate UL V94-0 Flammability	180°F	20°F (consult York for designs down to -40°F)	Generally not for extremely high dust areas	Yes - to 95% but must be non condensing	Least Expensive Need high volumes if custom mold required	Up to 4,500 RPM continuous with up to 7,000 RPM peak

IN STOCK DS-4 TENSIONERS



MAX. BELT WIDTH
3/8" (9mm)

MAX. SPRING FORCE
5 LBS.

MOUNTING SCREW
10-32 x 1/2

TENSIONER PART NUMBER	PULLEY PITCH	NO.OF GROOVES	PULLEY O.D.	PULLEY MATERIAL	PULLEY HEIGHT	BEARING TYPE	SPRING DIRECTION
DS4UB-F100L42-N23PE-PS	FLAT	N/A	1"	PLASTIC	.23"	N/A	PUSH
DS4UB-F100A42-B23PE-PS	FLAT	N/A	1"	ALUMINUM	.23"	BALL	PUSH
DS4UB-F100A42-S28PE-PS	FLAT	N/A	1"	ALUMINUM	.28"	SLEEVE	PUSH
DS4UB-2G40A107-B58PE-PS	2mm GT	40	.983"	ALUMINUM	5.8mm	BALL	PUSH
DS4UB-2G40A107-S71PE-PS	2mm GT	40	.983"	ALUMINUM	7.1mm	SLEEVE	PUSH
DS4UB-3G28A107-B58PE-PS	3mm GT	28	1.023"	ALUMINUM	5.8mm	BALL	PUSH
DS4UB-3G28A107-S71PE-PS	3mm GT	28	1.023"	ALUMINUM	7.1mm	SLEEVE	PUSH
DS4UB-MX40A42-B23PE-PS	MXL (.080")	40	.999"	ALUMINUM	.23"	BALL	PUSH
DS4UB-MX40A42-S28PE-PS	MXL (.080")	40	.999"	ALUMINUM	.28"	SLEEVE	PUSH
DS4UB-3M28A107-B58PE-PS	3mm HTD	28	1.023"	ALUMINUM	5.8mm	BALL	PUSH
DS4UB-3M28A107-S71PE-PS	3mm HTD	28	1.023"	ALUMINUM	7.1mm	SLEEVE	PUSH
DS4UB-5M17A107-B58PE-PS	5mm HTD	17	1.020"	ALUMINUM	5.8mm	BALL	PUSH
DS4UB-5M17A107-S71PE-PS	5mm HTD	17	1.020"	ALUMINUM	7.1mm	SLEEVE	PUSH
DS4UB-XL16A42-B23PE-PS	XL (1/5")	16	.999"	ALUMINUM	.23"	BALL	PUSH
DS4UB-XL16A42-S28PE-PS	XL (1/5")	16	.999"	ALUMINUM	.28"	SLEEVE	PUSH

IF A STOCK TENSIONER DOES NOT MEET YOUR REQUIREMENTS,
PLEASE CONFIGURE YOUR OWN CUSTOM TENSIONER AT

www.york-ind.com

Size 3 Dynamic Slot Tensioners

Enhanced dynamic slot tensioner design. Self adjusting, easily locks down or let it float to suit your application.

- Linear movement inside or outside the belt
- Choice of pulleys and bearings
- Spring can push or pull pulley
- Adjusts over .50 inch range with a stroke of .25 inches
- Standard catalog item



FEATURES:

The DS-3 gives you

- .21 inch minimum idler pulley clearance
- Tensioner stroke of .25 inches
- Self contained spring with 2.5 pounds continuous force, withstands 10 pounds peak
- Engineered and tested for over 1 million cycles

All York tensioners include

- Huge selection of catalog tensioners
- Universal - inside or outside tensioner
- Small footprint yet strong
- Markings to help set belt tension
- Stainless steel construction
- Aluminum or plastic idler pulleys
- Choice of flat pulley or four belt profiles: 2mm GT, 3mm GT, .080 (MXL) and 3mm HTD
- Sealed ball or sleeved plastic bearings
- Captive hardware for easy installation

Engineering Drawings: DS-3

DS- 3 DYNAMIC SLOT TENSIONER

Strong for its size, the DS-3 Dynamic Slot tensioner allows continuous, adjustable pressure against the belt during the life of the drivetrain. Dynamic tensioners are often easier to install and improve drive serviceability in the field. Graduations on the mounting bracket allow predetermined loads to be applied during installation. And the tensioner can be locked statically into place if desired after the tension is set.

Operating Characteristics

Tensioner stroke - .25 inches (6.4 mm)

Range of adjustment - .50 inches (12.7 mm)

Maximum force against belt - 2.5 pounds (1.1 kg) continuous, 10 pounds (4.5 kg) peak

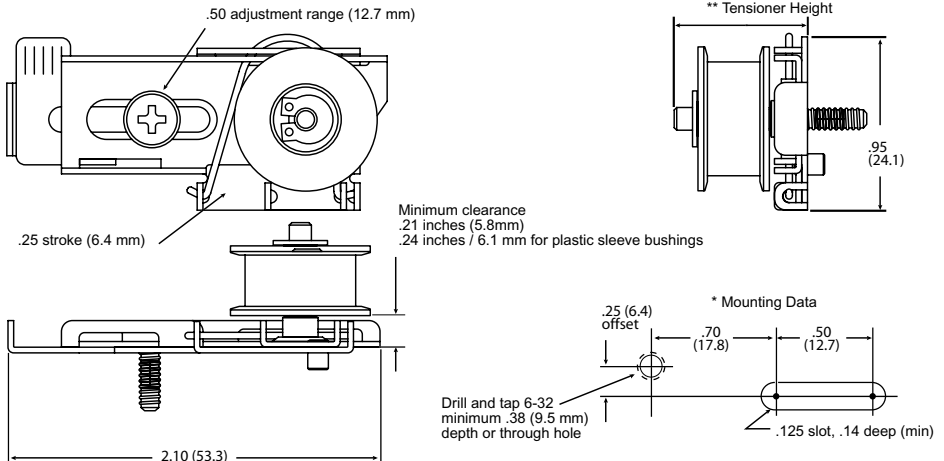
* Mounting Data:

- Approximate footprint without pulley of .95 inches (24.1 mm) wide by 2.1 inches (53.3 mm) length.
- Minimum clearance from mounting surface to bottom of pulley is .21 inches (5.3 mm) for self lubricating pulley or ball bearings. Plastic sleeve bearings require .24 inches (6.1 mm) minimum clearance.
- Requires one #6-32 threaded hole and one .125 by .50 slot. See drawing below.

** Tensioner Height:

To determine tensioner maximum height, add total end to end pulley width desired + pulley clearance from mounting surface desired = X

- If X is less than or equal to .687 (17.4 mm), tensioner height is 0.702 (17.8 mm)
- If X is greater than .687 (17.4 mm), consult York Engineering for available optional shafts and mounting bases.



TENSIONERS · SIZE 3 DYNAMIC SLOT



All York Size 3 Tensioners Include:

301 stainless steel construction for strength and harsh environments	Designs tested to over one million cycles
Operating temperatures possible from -60°F to +185°F	Survives salt spray, dust, and condensing high humidity environments with proper bearings
Choice of idler pulley profiles - flat, 2mm GT, 3mm GT, .080 (MXL) or 3mm HTD	Idler pulleys available with sealed ball bearings, self lubricating plastic sleeves in aluminum pulleys or self lubricating all plastic pulleys
Ease of assembly with self locking, reusable Phillips hardware in 6-32 threads	Idler pulley retaining clip withstands minimum of 10 lbs (4.5 kg) pull force/side force on pulley
Downloadable CAD files for tensioners and pulleys	Dynamic tensioners have reference markings for setting belt tension during assembly and service
Free access to York's engineering staff for answers to design and application questions	Conductive grease (sealed ball bearings) or static dissipative (plastic) to prevent static electricity build-up on belts
Special mounting bushing to aid in setting belt tension.	Idler shafts are 416 stainless steel hardened to Rockwell C 38-42

Operating Environments:

Idler Pulley/Bearing Type	Maximum Operating Temperature	Minimum Operating Temperature	High Dust Environments	High Humidity	Relative Cost	Max Speed in RPM
Aluminum/Ball Bearing	185°F - may be limited by belt max temp	-60°F	Yes - Sealed ABEC Bearings With Conductive Grease	Yes	More Expensive	Limited by belt, not bearing
Aluminum/Plastic Self Lubricating Sleeve	185°F - may be limited by belt max temp	-40°F	OK in most cases	Yes	Moderate good for small and medium volumes	Up to 4,500 RPM continuous with up to 9,000 RPM peak.
One Piece Self Lubricating Carbon Filled Polycarbonate UL V94-0 Flammability	180°F	20°F (consult York for designs down to -40°F)	Generally not for extremely high dust areas	Yes - to 95% but must be non condensing	Least Expensive Need high volumes if custom mold required	Up to 4,500 RPM continuous with up to 7,000 RPM peak

IN STOCK DS-3 TENSIONERS



MAX. BELT WIDTH
1/4" (6mm)

MAX. SPRING FORCE
2.5 LBS.

MOUNTING SCREW
6-32 x 1/2

TENSIONER PART NUMBER	PULLEY PITCH	NO.OF GROOVES	PULLEY O.D.	PULLEY MATERIAL	PULLEY HEIGHT	BEARING TYPE	SPRING DIRECTION
DS3UB-F63L29-N21PE-PS	FLAT	N/A	.625"	PLASTIC	.21"	N/A	PUSH
DS3UB-F63A29-S24PE-PS	FLAT	N/A	.625"	ALUMINUM	.24"	SLEEVE	PUSH
DS3UB-F63A29-B21PE-PS	FLAT	N/A	.625"	ALUMINUM	.21"	BALL	PUSH
DS3UB-MX24A29-S24PE-PS	MXL (.080")	24	.591"	ALUMINUM	.24"	SLEEVE	PUSH
DS3UB-MX24A29-B21PE-PS	MXL (.080")	24	.591"	ALUMINUM	.21"	BALL	PUSH
DS3UB-2G24A74-S61PE-PS	2mm GT	24	.582"	ALUMINUM	6.1mm	SLEEVE	PUSH
DS3UB-2G24A74-B53PE-PS	2mm GT	24	.582"	ALUMINUM	5.3mm	BALL	PUSH
DS3UB-3G18A74-S61PE-PS	3mm GT	18	.647"	ALUMINUM	6.1mm	SLEEVE	PUSH
DS3UB-3G18A74-B53PE-PS	3mm GT	18	.647"	ALUMINUM	5.3mm	BALL	PUSH
DS3UB-3M18A74-S61PE-PS	3mm HTD	18	.647"	ALUMINUM	6.1mm	SLEEVE	PUSH
DS3UB-3M18A74-B53PE-PS	3mm HTD	18	.647"	ALUMINUM	5.3mm	BALL	PUSH

IF A STOCK TENSIONER DOES NOT MEET YOUR REQUIREMENTS,
PLEASE CONFIGURE YOUR OWN CUSTOM TENSIONER AT
www.york-ind.com

Size 4 Static Pivot Tensioners

Radial adjustment, smallest footprint. Ideal for tight clearances and small spaces.

Choice of components.

- Rugged
- Compact
- 44 degree travel
- Small belt clearance
- Standard catalog item



FEATURES:

The SP-4 gives you

- 1.20 inch range of adjustment over 44 degree arc
- .18 inch minimum idler pulley clearance
- Up to 10 pounds of continuous force, withstands 15 pounds peak

All York tensioners include

- Huge selection of catalog tensioners
- Universal - inside or outside tensioner
- Small footprint yet strong
- Markings to help set belt tension
- Stainless steel construction
- Aluminum or plastic idler pulleys
- Choice of flat pulley or six belt profiles: 2mm GT, 3mm GT, MXL, 3mm HTD, 5mm HTD or XL
- Sealed ball or sleeved plastic bearings
- Captive hardware for easy installation

Engineering Drawings: SP-4

SP- 4 STATIC PIVOT TENSIONER

The Static Pivot Tensioner packs up to 10 pounds of force into the smallest area of any York Size 4 tensioner. The tensioner can be used inside or outside the belt and provides up to 44 degrees of motion.

Operating Characteristics

Range of adjustment - 1.25 inches (31.8 mm) over a 44 degree arc

Maximum force against belt - 10 pounds (4.5 kg) continuous, 15 pounds (6.8 kg) peak

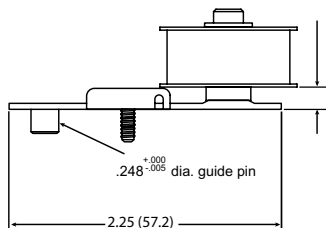
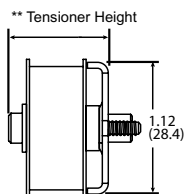
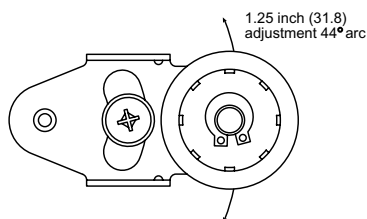
* Mounting Data:

- Approximate footprint without idler pulley of 1.12 inches (28.4 mm) wide by 2.25 inches (57.2 mm) long
- Minimum clearance from mounting surface to bottom of pulley is .18 inches (4.6mm) except plastic sleeve bearings require .23 inches (5.8 mm) minimum clearance.
- Requires one hole tapped 10-32 or M5 x .8 either through sheetmetal, or blind hole with minimum .38 thread depth and one .25 dia by .25 min depth clearance hole. See mounting template drawing below.

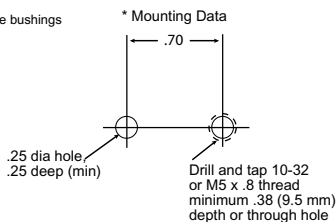
** Tensioner Height:

To find your tensioner height, determine Pulley Width + Belt Clearance desired = X

- If X is less than or equal to .600 (15.2 mm), tensioner height is 0.925 (23.5 mm)
- If X is between .600 (15.2 mm) and .875 (22.2mm), tensioner height is 1.200 (30.5 mm)
- If X is larger than .875 (22.2 mm), consult York Engineering



Minimum clearance
.18 inches (4.6mm)
.23 inches / 5.8 mm for plastic sleeve bushings



All York Size 4 Tensioners Include:

301 stainless steel construction for strength and harsh environments	Designs tested to over one million cycles
Operating temperatures possible from -60°F to +185°F	Survives salt spray, dust, and condensing high humidity environments with proper bearings
Choice of idler pulley profiles - flat, 2mm GT, 3mm GT, MXL, XL, 3mm HTD or 5mm HTD	Idler pulleys available with sealed ball bearings, self lubricating plastic sleeves in aluminum pulleys or self lubricating all plastic pulleys
Ease of assembly with self locking, reusable Phillips hardware in 10-32 or M5 x.8 threads	Idler pulley retaining clip withstands minimum of 15 lbs (6.8 kg) pull force
Downloadable CAD files for tensioners and pulleys	Dynamic tensioners have reference markings for setting belt tension during assembly and service
Free access to York's engineering staff for answers to design and application questions	Conductive grease (sealed ball bearings) or static dissipative (plastic) to prevent static electricity build-up on belts
Special mounting bushing to aid in setting belt tension.	Idler shafts are 416 stainless steel hardened to Rockwell C 38-42

Operating Environments:

Idler Pulley/Bearing Type	Maximum Operating Temperature	Minimum Operating Temperature	High Dust Environments	High Humidity	Relative Cost	Max Speed in RPM
Aluminum/Ball Bearing	185°F - may be limited by belt max temp	-60°F	Yes - Sealed ABEC Bearings With Conductive Grease	Yes	More Expensive	Limited by belt, not bearing
Aluminum/Plastic Self Lubricating Sleeve	185°F - may be limited by belt max temp	-40°F	OK in most cases	Yes	Moderate good for small and medium volumes	Up to 4,500 RPM continuous with up to 9,000 RPM peak.
One Piece Self Lubricating Carbon Filled Polycarbonate UL V94-0 Flammability	180°F	20°F (consult York for designs down to -40°F)	Generally not for extremely high dust areas	Yes - to 95% but must be non condensing	Least Expensive Need high volumes if custom mold required	Up to 4,500 RPM continuous with up to 7,000 RPM peak

TENSIONERS - SIZE 4 STATIC PIVOT

IN STOCK SP-4 TENSIONERS



MAX. BELT WIDTH
3/8" (9mm)

MAX. CONTINUOUS FORCE
10 LBS

MOUNTING SCREW
10-32 x 1/2

TENSIONER PART NUMBER	PULLEY PITCH	NO. OF GROOVES	PULLEY O.D.	PULLEY MATERIAL	PULLEY HEIGHT	BEARING TYPE
SP4LB-F100L42-N18PE	FLAT	N/A	1"	PLASTIC	.18"	N/A
SP4LB-F100A42-B18PE	FLAT	N/A	1"	ALUMINUM	.18"	BALL
SP4LB-F100A42-S23PE	FLAT	N/A	1"	ALUMINUM	.23"	SLEEVE
SP4LB-2G40A107-B46PE	2mm GT	40	.983"	ALUMINUM	4.6mm	BALL
SP4LB-2G40A107-S58PE	2mm GT	40	.983"	ALUMINUM	5.8mm	SLEEVE
SP4LB-3G28A107-B46PE	3mm GT	28	1.023"	ALUMINUM	4.6mm	BALL
SP4LB-3G28A107-S58PE	3mm GT	28	1.023"	ALUMINUM	5.8mm	SLEEVE
SP4LB-MX40A42-B18PE	MXL (.080")	40	.999"	ALUMINUM	.18"	BALL
SP4LB-MX40A42-S23PE	MXL (.080")	40	.999"	ALUMINUM	.23"	SLEEVE
SP4LB-3M28A107-B46PE	3mm HTD	28	1.023"	ALUMINUM	4.6mm	BALL
SP4LB-3M28A107-S58PE	3mm HTD	28	1.023"	ALUMINUM	5.8mm	SLEEVE
SP4LB-5M17A107-B46PE	5mm HTD	17	1.020"	ALUMINUM	4.6mm	BALL
SP4LB-5M17A107-S58PE	5mm HTD	17	1.020"	ALUMINUM	5.8mm	SLEEVE
SP4LB-XL16A42-B18PE	XL (1/5")	16	.999"	ALUMINUM	.18"	BALL
SP4LB-XL16A42-S23PE	XL (1/5")	16	.999"	ALUMINUM	.23"	SLEEVE

IF A STOCK TENSIONER DOES NOT MEET YOUR REQUIREMENTS,
PLEASE CONFIGURE YOUR OWN CUSTOM TENSIONER AT
www.york-ind.com

TENSIONERS - SIZE 4 STATIC PIVOT



Size 3 Static Pivot Tensioners

Radial adjustment, smallest footprint. Ideal for tight clearances and small spaces.

Wide choice of idler pulleys.

- Rugged
- Compact
- 44 degree travel
- Small belt clearance
- Standard catalog item



FEATURES:

The SP-3 gives you

- .73 inch range of adjustment over 44 degree arc
- .18 inch minimum idler pulley clearance
- Up to 8 pounds of continuous force, withstands 10 pounds peak

All York tensioners include

- Huge selection of catalog tensioners
- Universal - inside or outside tensioner
- Small footprint yet strong
- Markings to help set belt tension
- Stainless steel construction
- Aluminum or plastic idler pulleys
- Choice of flat pulley or four belt profiles: 2mm GT, 3mm GT, .080 (MXL) and 3mm HTD
- Sealed ball or sleeved plastic bearings
- Captive hardware for easy installation

Engineering Drawings: SP-3

SP- 3 STATIC PIVOT TENSIONER

The smallest York Size 3 tensioner packs a punch equal to the strongest Size 3 offered. All in about one square inch of space, making this tensioner ideal for constrained areas. Tensioner works equally well inside or outside of the belt.

Operating Characteristics

Range of adjustment - .73 inches (18.5 mm) over a 44 degree arc

Maximum force against belt - 8 pounds (3.6 kg) continuous, 10 pounds (4.5 kg) peak

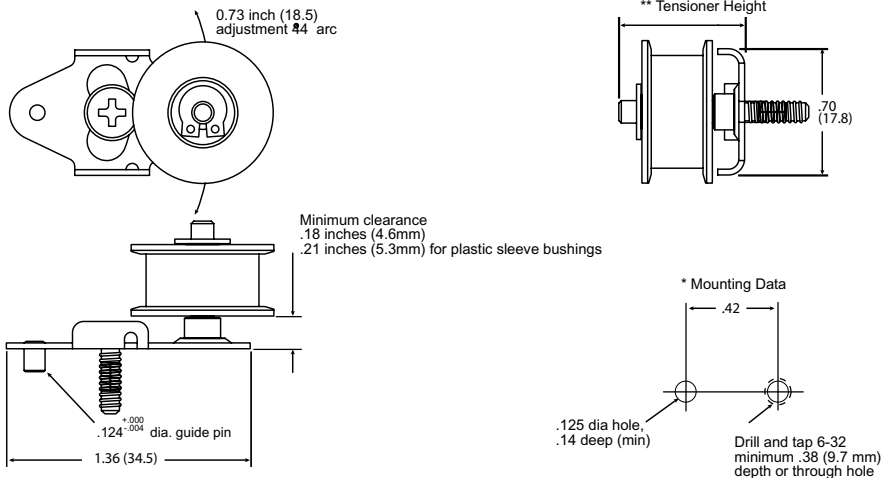
* Mounting Data:

- Approximate footprint without pulley of .70 inches (17.8 mm) wide by 1.36 inches (34.5 mm) long
- Minimum clearance from mounting surface to bottom of pulley is .18 inches (4.6 mm) for self lubricating pulley or ball bearings. Plastic sleeve bearings require .21 inches (5.3 mm) minimum clearance.
- Requires one #6-32 threaded hole and one .125 clearance hole. See drawing below.

** Tensioner Height:

To determine tensioner maximum height, add total end to end pulley width desired + pulley clearance from mounting surface desired = X

- If X is less than or equal to .637 (16.2 mm), tensioner height is 0.652 (16.6 mm)
- If X is greater than .637 (16.2 mm), consult York Engineering for available optional shafts and mounting bases.



All York Size 3 Tensioners Include:

301 stainless steel construction for strength and harsh environments	Designs tested to over one million cycles
Operating temperatures possible from -60°F to +185°F	Survives salt spray, dust, and condensing high humidity environments with proper bearings
Choice of idler pulley profiles - flat, 2mm GT, 3mm GT, .080 (MXL) or 3mm HTD	Idler pulleys available with sealed ball bearings, self lubricating plastic sleeves in aluminum pulleys or self lubricating all plastic pulleys
Ease of assembly with self locking, reusable Phillips hardware in 6-32 threads	Idler pulley retaining clip withstands minimum of 10 lbs (4.5 kg) pull force/side force on pulley
Downloadable CAD files for tensioners and pulleys	Dynamic tensioners have reference markings for setting belt tension during assembly and service
Free access to York's engineering staff for answers to design and application questions	Conductive grease (sealed ball bearings) or static dissipative (plastic) to prevent static electricity build-up on belts
Special mounting bushing to aid in setting belt tension.	Idler shafts are 416 stainless steel hardened to Rockwell C 38-42

Operating Environments:

Idler Pulley/Bearing Type	Maximum Operating Temperature	Minimum Operating Temperature	High Dust Environments	High Humidity	Relative Cost	Max Speed in RPM
Aluminum/Ball Bearing	185°F - may be limited by belt max temp	-60°F	Yes - Sealed ABEC Bearings With Conductive Grease	Yes	More Expensive	Limited by belt, not bearing
Aluminum/Plastic Self Lubricating Sleeve	185°F - may be limited by belt max temp	-40°F	OK in most cases	Yes	Moderate good for small and medium volumes	Up to 4,500 RPM continuous with up to 9,000 RPM peak.
One Piece Self Lubricating Carbon Filled Polycarbonate UL V94-0 Flammability	180°F	20°F (consult York for designs down to -40°F)	Generally not for extremely high dust areas	Yes - to 95% but must be non condensing	Least Expensive Need high volumes if custom mold required	Up to 4,500 RPM continuous with up to 7,000 RPM peak

IN STOCK SP-3 TENSIONERS



MAX. BELT WIDTH
1/4" (6mm)

MAX. CONTINUOUS FORCE
8 LBS

MOUNTING SCREW
6-32 x 1/2

TENSIONER PART NUMBER	PULLEY PITCH	NO. OF GROOVES	PULLEY O.D.	PULLEY MATERIAL	PULLEY HEIGHT	BEARING TYPE
SP3LB-F63L29-N18PE	FLAT	N/A	.625"	PLASTIC	.21"	N/A
SP3LB-F63A29-S21PE	FLAT	N/A	.625"	ALUMINUM	.24"	SLEEVE
SP3LB-F63A29-B18PE	FLAT	N/A	.625"	ALUMINUM	.21"	BALL
SP3LB-MX24A29-S21PE	MXL (.080")	24	.591"	ALUMINUM	.24"	SLEEVE
SP3LB-MX24A29-B18PE	MXL (.080")	24	.591"	ALUMINUM	.21"	BALL
SP3LB-2G24A74-S53PE	2mm GT	24	.582"	ALUMINUM	6.1mm	SLEEVE
SP3LB-2G24A74-B46PE	2mm GT	24	.582"	ALUMINUM	5.3mm	BALL
SP3LB-3G18A74-S53PE	3mm GT	18	.647"	ALUMINUM	6.1mm	SLEEVE
SP3LB-3G18A74-B46PE	3mm GT	18	.647"	ALUMINUM	5.3mm	BALL
SP3LB-3M18A74-S53PE	3mm HTD	18	.647"	ALUMINUM	6.1mm	SLEEVE
SP3LB-3M18A74-B46PE	3mm HTD	18	.647"	ALUMINUM	5.3mm	BALL

IF A STOCK TENSIONER DOES NOT MEET YOUR REQUIREMENTS,
PLEASE CONFIGURE YOUR OWN CUSTOM TENSIONER AT

www.york-ind.com

TENSIONERS - SIZE 3 STATIC PIVOT



Size 4 Static Slot Tensioners

The classic tensioner. Linear motion, cost effective when space permits, and a wide range of component choices.

- Universal tensioner
- Over 3/4 inch of adjustment
- Choice of bearings and pulleys
- Easy installation
- Standard catalog item



FEATURES:

The SS-4 gives you

- .80 inch range of adjustment
- .18 inch minimum idler pulley clearance
- Up to 10 pounds continuous force, withstands 15 pounds peak

All York tensioners include

- Huge selection of catalog tensioners
- Universal - inside or outside tensioner
- Small footprint yet strong
- Markings to help set belt tension
- Stainless steel construction
- Aluminum or plastic idler pulleys
- Choice of flat pulley or six belt profiles: 2mm GT, 3mm GT, MXL, 3mm HTD, 5mm HTD or XL
- Sealed ball or sleeved plastic bearings
- Captive hardware for easy installation

Engineering Drawings: SS-4

SS- 4 STATIC SLOT TENSIONER

The Static Slot Tensioner is the classic tensioner design. It works equally well outside or inside the belt, if there is enough room for an inside installation. Plus it can even function as an idler pulley to change the belt direction or increase the teeth in mesh. York offers an engineered, catalog solution to the need for a tensioner in a belt drive system.

Operating Characteristics

Range of adjustment - .80 inches (20 mm)

Maximum force against belt - 10 pounds (4.5 kg) continuous, 15 pounds (6.8 kg) peak

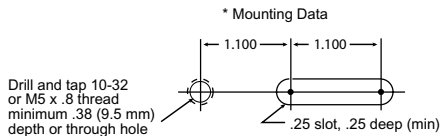
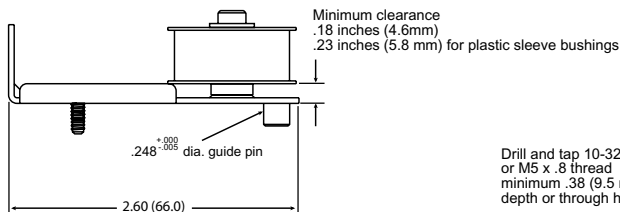
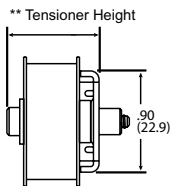
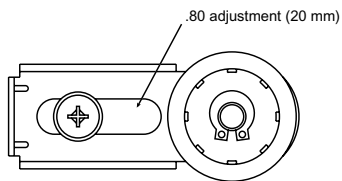
* Mounting Data:

- Approximate footprint without idler pulley of .90 inches (22.9 mm) wide by 2.6 inches (66.0 mm) long
- Minimum clearance from mounting surface to bottom of pulley is .18 inches (4.6 mm) except plastic sleeve bearings require .23 inches (5.8 mm) minimum clearance.
- Requires one hole tapped 10-32 or M5 x .8 either through sheetmetal, or blind hole with minimum .38 thread depth. See drawing below.

** Tensioner Height:

To find your tensioner height, determine Pulley Width + Belt Clearance desired = X

- If X is less than or equal to .600 (15.2 mm), tensioner height is 0.925 (23.5 mm)
- If X is between .600 (15.2 mm) and .875 (22.2 mm), tensioner height is 1.200 (30.5 mm)
- If X is larger than .875 (22.2 mm), consult York Engineering



Drill and tap 10-32 or M5 x .8 thread minimum .38 (9.5 mm) depth or through hole

TENSIONERS - SIZE 4 STATIC SLOT



All York Size 4 Tensioners Include:

301 stainless steel construction for strength and harsh environments	Designs tested to over one million cycles
Operating temperatures possible from -60°F to +185°F	Survives salt spray, dust, and condensing high humidity environments with proper bearings
Choice of idler pulley profiles - flat, 2mm GT, 3mm GT, MXL, XL, 3mm HTD or 5mm HTD	Idler pulleys available with sealed ball bearings, self lubricating plastic sleeves in aluminum pulleys or self lubricating all plastic pulleys
Ease of assembly with self locking, reusable Phillips hardware in 10-32 or M5 x.8 threads	Idler pulley retaining clip withstands minimum of 15 lbs (6.8 kg) pull force
Downloadable CAD files for tensioners and pulleys	Dynamic tensioners have reference markings for setting belt tension during assembly and service
Free access to York's engineering staff for answers to design and application questions	Conductive grease (sealed ball bearings) or static dissipative (plastic) to prevent static electricity build-up on belts
Special mounting bushing to aid in setting belt tension.	Idler shafts are 416 stainless steel hardened to Rockwell C 38-42

Operating Environments:

Idler Pulley/Bearing Type	Maximum Operating Temperature	Minimum Operating Temperature	High Dust Environments	High Humidity	Relative Cost	Max Speed in RPM
Aluminum/Ball Bearing	185°F - may be limited by belt max temp	-60°F	Yes - Sealed ABEC Bearings With Conductive Grease	Yes	More Expensive	Limited by belt, not bearing
Aluminum/Plastic Self Lubricating Sleeve	185°F - may be limited by belt max temp	-40°F	OK in most cases	Yes	Moderate good for small and medium volumes	Up to 4,500 RPM continuous with up to 9,000 RPM peak.
One Piece Self Lubricating Carbon Filled Polycarbonate UL V94-0 Flammability	180°F	20°F (consult York for designs down to -40°F)	Generally not for extremely high dust areas	Yes - to 95% but must be non condensing	Least Expensive Need high volumes if custom mold required	Up to 4,500 RPM continuous with up to 7,000 RPM peak

IN STOCK SS-4 TENSIONERS



MAX. BELT WIDTH
3/8" (9mm)

MAX. CONTINUOUS FORCE
10 LBS

MOUNTING SCREW
10-32 x 1/2

TENSIONER PART NUMBER	PULLEY PITCH	NO.OF GROOVES	PULLEY O.D.	PULLEY MATERIAL	PULLEY HEIGHT	BEARING TYPE
SS4LB-F100L42-N18PE	FLAT	N/A	1"	PLASTIC	.18"	N/A
SS4LB-F100A42-B18PE	FLAT	N/A	1"	ALUMINUM	.18"	BALL
SS4LB-F100A42-S23PE	FLAT	N/A	1"	ALUMINUM	.23"	SLEEVE
SS4LB-2G40A107-B46PE	2mm GT	40	.983"	ALUMINUM	4.6mm	BALL
SS4LB-2G40A107-S58PE	2mm GT	40	.983"	ALUMINUM	5.8mm	SLEEVE
SS4LB-3G28A107-B46PE	3mm GT	28	1.023"	ALUMINUM	4.6mm	BALL
SS4LB-3G28A107-S58PE	3mm GT	28	1.023"	ALUMINUM	5.8mm	SLEEVE
SS4LB-MX40A42-B18PE	MXL (.080")	40	.999"	ALUMINUM	.18"	BALL
SS4LB-MX40A42-S23PE	MXL (.080")	40	.999"	ALUMINUM	.23"	SLEEVE
SS4LB-3M28A107-B46PE	3mm HTD	28	1.023"	ALUMINUM	4.6mm	BALL
SS4LB-3M28A107-S58PE	3mm HTD	28	1.023"	ALUMINUM	5.8mm	SLEEVE
SS4LB-5M17A107-B46PE	5mm HTD	17	1.020"	ALUMINUM	4.6mm	BALL
SS4LB-5M17A107-S58PE	5mm HTD	17	1.020"	ALUMINUM	5.8mm	SLEEVE
SS4LB-XL16A42-B18PE	XL (1/5")	16	.999"	ALUMINUM	.18"	BALL
SS4LB-XL16A42-S23PE	XL (1/5")	16	.999"	ALUMINUM	.23"	SLEEVE

IF A STOCK TENSIONER DOES NOT MEET YOUR REQUIREMENTS,
PLEASE CONFIGURE YOUR OWN CUSTOM TENSIONER AT
www.york-ind.com

TENSIONERS - SIZE 4 STATIC SLOT



Size 3 Static Slot Tensioners

The classic tensioner in a small package. Linear motion, cost effective and a wide range of component choices.

- Universal tensioner
- 1/2 inch of adjustment
- Choice of bearings and pulleys
- Easy installation
- Standard catalog item



FEATURES:

The SS-3 gives you

- .50 inch range of adjustment
- .18 inch minimum idler pulley clearance
- Up to 8 pounds continuous force, withstands 10 pounds peak

All York tensioners include

- Huge selection of catalog tensioners
- Universal - inside or outside tensioner
- Small footprint yet strong
- Markings to help set belt tension
- Stainless steel construction
- Aluminum or plastic idler pulleys
- Choice of flat pulley or four belt profiles 2mm GT, 3mm GT, MXL, or 3mm HTD
- Sealed ball or sleeved plastic bearings
- Captive hardware for easy installation

Engineering Drawings: SS-3

SS- 3 STATIC SLOT TENSIONER

This size Static Slotted Tensioner provides a compact but strong tensioner for designs that have smaller belt widths and tight space constraints. It fits well both inside or outside the belt. It also allows changes in belt direction or increased teeth in mesh in very small areas.

Operating Characteristics

Range of adjustment - .50 inches (12.7 mm)

Maximum force against belt - 2.5 pounds (1.1 kg) continuous, 10 pounds (4.5 kg) peak

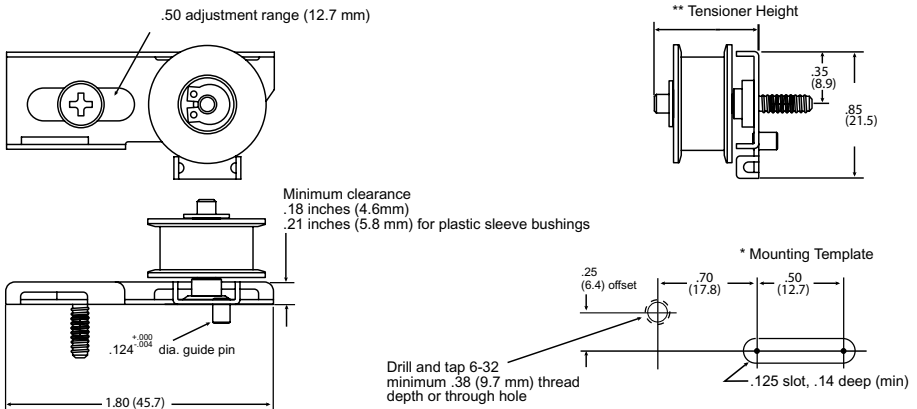
* Mounting Data:

- Approximate footprint without pulley of .85 inches (21.2 mm) wide by 1.8 inches (45.7 mm) length
- Minimum clearance from mounting surface to bottom of pulley is .18 inches (4.6 mm) for self lubricating pulley or ball bearings. Plastic sleeve bearings require .21 inches (5.3 mm) minimum clearance.
- Requires one #6-32 threaded hole and one .125 by .50 slot. See drawing below.

** Tensioner Height:

To determine tensioner maximum height, add total end to end pulley width desired + pulley clearance from mounting surface desired = X

- If X is less than or equal to .637 (16.2 mm), tensioner height is 0.652 (16.6 mm)
- If X is greater than .637 (16.2 mm), consult York Engineering for available optional shafts and mounting bases.



All York Size 3 Tensioners Include:

301 stainless steel construction for strength and harsh environments	Designs tested to over one million cycles
Operating temperatures possible from -60°F to +185°F	Survives salt spray, dust, and condensing high humidity environments with proper bearings
Choice of idler pulley profiles - flat, 2mm GT, 3mm GT, .080 (MXL) or 3mm HTD	Idler pulleys available with sealed ball bearings, self lubricating plastic sleeves in aluminum pulleys or self lubricating all plastic pulleys
Ease of assembly with self locking, reusable Phillips hardware in 6-32 threads	Idler pulley retaining clip withstands minimum of 10 lbs (4.5 kg) pull force/side force on pulley
Downloadable CAD files for tensioners and pulleys	Dynamic tensioners have reference markings for setting belt tension during assembly and service
Free access to York's engineering staff for answers to design and application questions	Conductive grease (sealed ball bearings) or static dissipative (plastic) to prevent static electricity build-up on belts
Special mounting bushing to aid in setting belt tension.	Idler shafts are 416 stainless steel hardened to Rockwell C 38-42

Operating Environments:

Idler Pulley/Bearing Type	Maximum Operating Temperature	Minimum Operating Temperature	High Dust Environments	High Humidity	Relative Cost	Max Speed in RPM
Aluminum/Ball Bearing	185°F - may be limited by belt max temp	-60°F	Yes - Sealed ABEC Bearings With Conductive Grease	Yes	More Expensive	Limited by belt, not bearing
Aluminum/Plastic Self Lubricating Sleeve	185°F - may be limited by belt max temp	-40°F	OK in most cases	Yes	Moderate good for small and medium volumes	Up to 4,500 RPM continuous with up to 9,000 RPM peak.
One Piece Self Lubricating Carbon Filled Polycarbonate UL V94-0 Flammability	180°F	20°F (consult York for designs down to -40°F)	Generally not for extremely high dust areas	Yes - to 95% but must be non condensing	Least Expensive Need high volumes if custom mold required	Up to 4,500 RPM continuous with up to 7,000 RPM peak

IN STOCK SS-3 TENSIONERS



MAX. BELT WIDTH
1/4" (6mm)

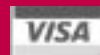
MAX. CONTINUOUS FORCE
8 LBS

MOUNTING SCREW
6-32 x 1/2

TENSIONER PART NUMBER	PULLEY PITCH	NO.OF GROOVES	PULLEY O.D.	PULLEY MATERIAL	PULLEY HEIGHT	BEARING TYPE
SS3LB-F63L29-N18PE	FLAT	N/A	.625"	PLASTIC	.18"	N/A
SS3LB-F63A29-S21PE	FLAT	N/A	.625"	ALUMINUM	.21"	SLEEVE
SS3LB-F63A29-B18PE	FLAT	N/A	.625"	ALUMINUM	.18"	BALL
SS3LB-MX24A29-S21PE	MXL (.080")	24	.591"	ALUMINUM	.21"	SLEEVE
SS3LB-MX24A29-B18PE	MXL (.080")	24	.591"	ALUMINUM	.18"	BALL
SS3LB-2G24A74-S53PE	2mm GT	24	.582"	ALUMINUM	5.3mm	SLEEVE
SS3LB-2G24A74-B46PE	2mm GT	24	.582"	ALUMINUM	4.6mm	BALL
SS3LB-3G18A74-S53PE	3mm GT	18	.647"	ALUMINUM	5.3mm	SLEEVE
SS3LB-3G18A74-B46PE	3mm GT	18	.647"	ALUMINUM	4.6mm	BALL
SS3LB-3M18A74-S53PE	3mm HTD	18	.647"	ALUMINUM	5.3mm	SLEEVE
SS3LB-3M18A74-B46PE	3mm HTD	18	.647"	ALUMINUM	4.6mm	BALL

IF A STOCK TENSIONER DOES NOT MEET YOUR REQUIREMENTS,
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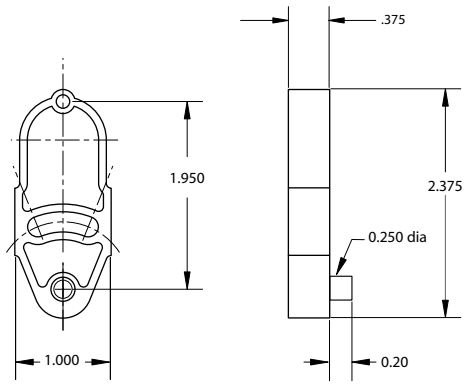
TENSIONERS - SIZE 3 STATIC SLOT



Mounting Your Tensioner With Spacers

York tensioners are designed to mount securely with just a single screw onto a flat surface. The tensioners allow minimal clearance between the belt and mounting surface to allow maximum flexibility in the drive design. Where greater belt clearances are required, York can customize the height of the idler on the shaft, customize the shaft length, or provide standard extruded and machined anodized aluminum spacers to increase the tensioner mounting height. Spacers are available in custom thicknesses while standard catalog spacers of .38 inches thick (9.7mm) for Size 4 and .25 inches (6.4mm) for Size 3 tensioners are always available from stock. Up to 3 spacers can be used under a tensioner when increased height is needed. All spacers are anodized for use in harsh environments and fit within the same footprint as the tensioner itself. Contact York for more details, custom thicknesses, or unique idler pulley heights and clearances. Go to www.york-ind.com/spacers for downloadable spacer drawings and CAD files.

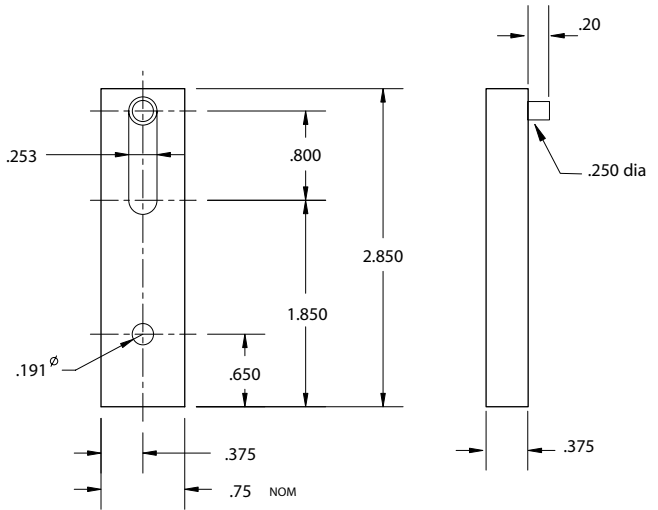
For DP-4 Tensioners



DP-4 Spacer - Type 74-012

Material - Aluminum
Applied Finish - Clear Anodize

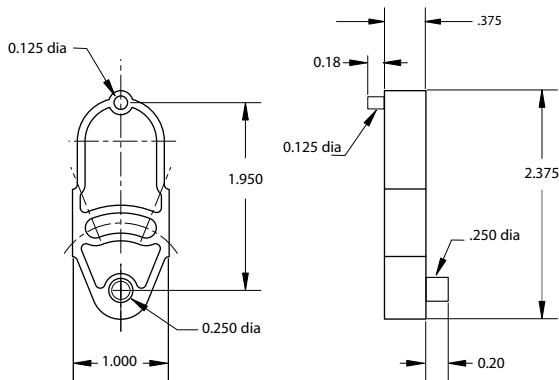
For DS-4 Tensioners



Material - Aluminum
Applied Finish - Clear Anodize

DS-4 Spacer - Type 74-013

For SP-4 Tensioners

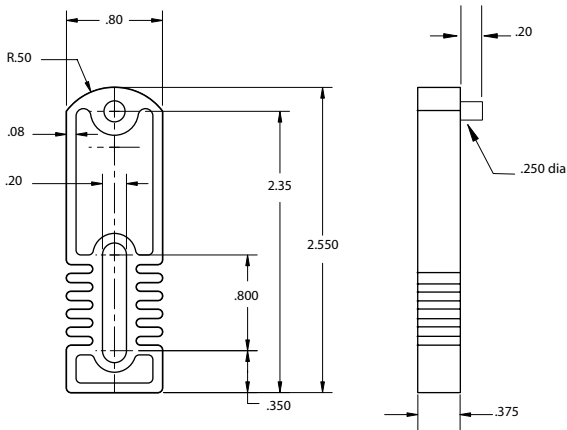


Material - Aluminum
Applied Finish - Clear Anodize

SP-4 Spacer - Type 74-010



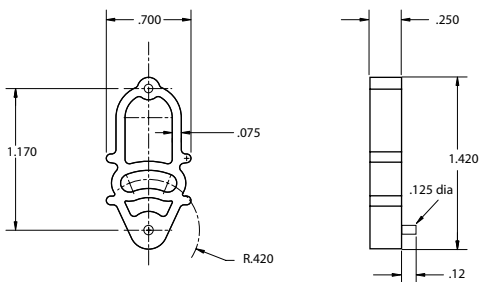
For SS-4 Tensioners



Material - Aluminum
Applied Finish - Clear Anodize

SS-4 Spacer - Type 74-011

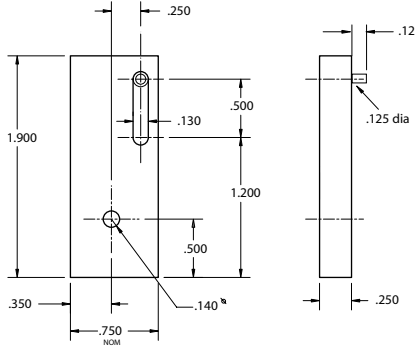
For DP-3 Tensioners



Material - Aluminum
Applied Finish - Clear Anodize

DP-3 Spacer - Type 74-512

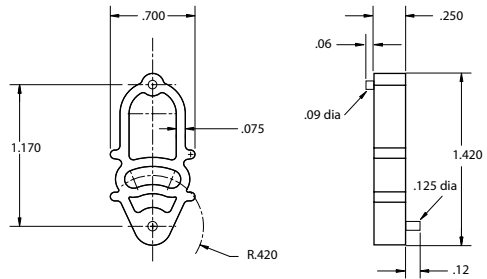
For DS-3 Tensioners



Material - Aluminum
Applied Finish - Clear Anodize

DS-3 Spacer - Type 74-513

For SP-3 Tensioners

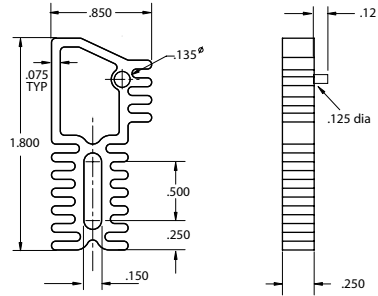


Material - Aluminum
Applied Finish - Clear Anodize

SP-3 Spacer - Type 74-510



For SS-3 Tensioners



Material - Aluminum

Applied Finish - Clear Anodize

SS-3 Spacer - Type 74-511

SPACERS AND MOUNTING