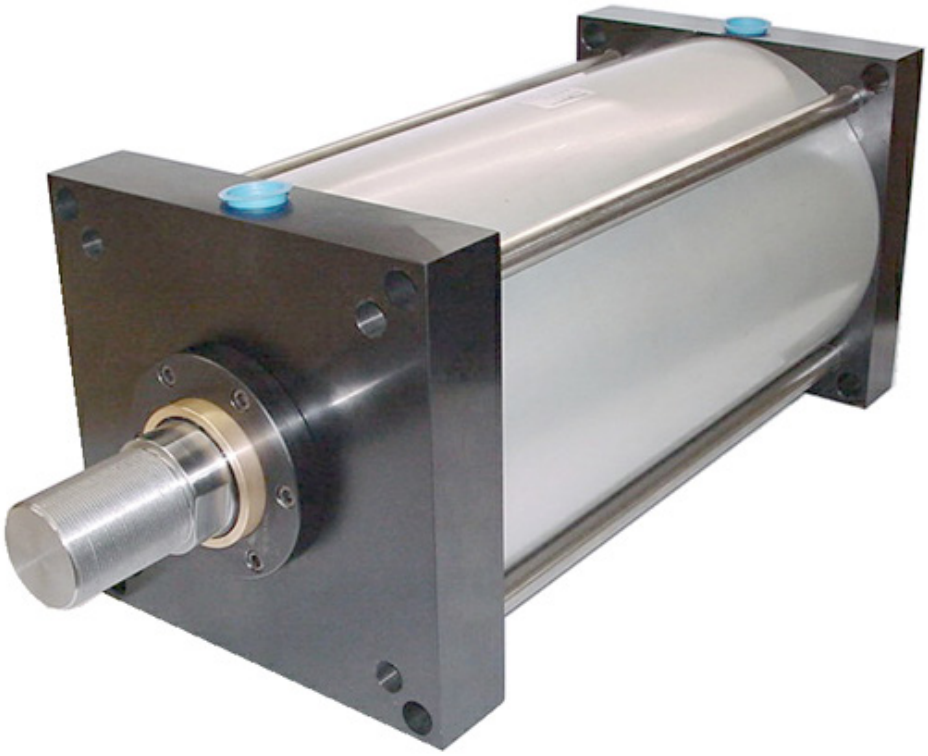
TD Series Tough-Duty Cylinders

Bimba's Tough Duty (TD) line of NFPA pneumatics is specially designed to feature bumper piston seals, reducing overall noise and machine vibration during high velocity applications.

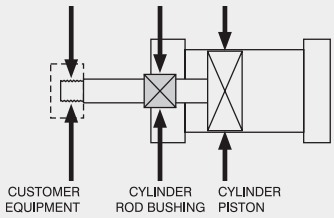


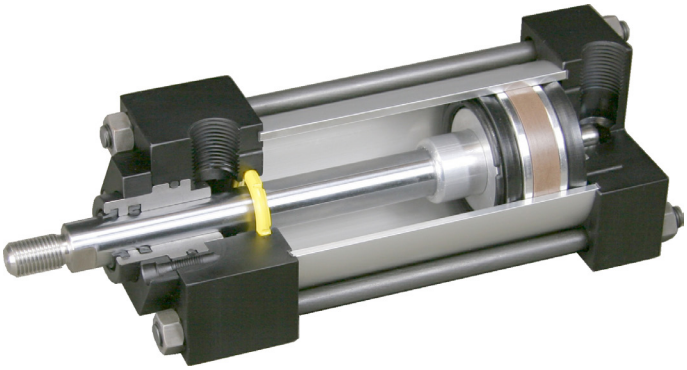
Contents

Floating Rod Bushing

Self Alignment Feature: Rod Bushing is designed to float .002" to improve bearing surface alignment.

> Reduces cylinder drag and erratic operation
> Reduces cylinder wear
> Provides a minimum of 25% longer life than fixed rod bushing designs





Tough-Duty Design

Same construction as 'TA' Series with these performance features STANDARD:

> **Impact Dampening Piston Seals** – BP Seals are designed to reduce machine vibration and noise. Higher piston velocities can be achieved due to the rapid deceleration feature, increasing productivity. Bumper Seals are rated for tough-duty, yet offer quieter operation than standard cylinder designs (refer to Options: BP Seals for performance considerations).
> **Fixed Cushions** – Head and Cap Cushions are standard. The fixed design utilizes an internal orifice for a predetermined flow rate, eliminating the need for adjustments. The fixed cushion design provides tamper-free operation and guarantees a cushion function at each end of full stroke.

Self-Lubricating Cylinder Design

PTFE coated cast iron bushing, PTFE Wear Band, Hard-Chrome Plated Piston Rod, Hard-Coated Aluminum Tube and PTFE based grease provide permanent lubrication and long cylinder life.

Operating Pressure

250 PSI air (17 bar)

Operating Temperature

Carboxilated Nitrile:	-20°F to 200°F (-29°C to 93°C)
Fluorocarbon:	0°F to 400°F (-18°C to 204°C)

Performance Options

Refer to Options for Details.

H or C – Adjustable Cushions allow the cylinder to be adjusted to each application, providing the optimum cushion performance and harmonious motion.

Extended Cushion Lengths – Longer cushions increase the capacity of air cushions, eliminating costly hydraulic shock absorbers in some cases. Choose from three different cushion lengths for maximum performance.

MPR – Magnetic Piston (for position sensing switches).

BSP or SAE Ports – Special ports are available and do not increase delivery time.

Any English or Metric Piston Rod Thread – Non-standard rod threads are available and do not increase delivery time.

TMS Steel Tube – Hydraulic grade chrome plated ID and honed steel tubing, black epoxy paint finish OD.

NFPA Mounts

MF1 1.50”-6.00” Bores	MF2 1.50”-6.00” Bores	ME3 8.00”-12.00” Bores	ME4 8.00”-12.00” Bores	MP1 1.50”-12.00” Bores	MP2 1.50”-6.00” Bores
MP4 1.50”-6.00” Bores	MS1 1.50”-8.00” Bores	MS2 1.50”-8.00” Bores	MS4 1.50”-12.00” Bores	MT1 1.50”-8.00” Bores	MT2 1.50”-8.00” Bores
MT4 1.50”-8.00” Bores	MX0 1.50”-12.00” Bores	MX1 1.50”-12.00” Bores	MX2 1.50”-12.00” Bores	MX3 1.50”-12.00” Bores	

Refer to pages 16-21 for mounting dimensions

TD - MF1 _ - 2.50 x 10 - _ - MPR

Series	
TD	250 PSI air

NFPA Mounts	
MF1	Front Flange (1.50"- 6.00" Bore)
MF2	Rear Flange (1.50"- 6.00" Bore)
ME3	Front Mounting Holes (8.00"- 12.00" Bore)
ME4	Rear Mounting Holes (8.00"- 12.00" Bore)
MP1	Rear Pivot Clevis (1.50"- 12.00" Bore)
MP2	Rear Pivot Clevis (1.50"- 6.00" Bore)
MP4	Rear Pivot Eye (1.50"- 6.00" Bore)
MS1	Front & Rear End Angle (1.50"- 8.00" Bore)
MS2	Side Lug (1.50"- 8.00" Bore)
MS4	Bottom Tapped Holes (1.50"- 12.00" Bore)
MT1	Front Trunnion (1.50"- 8.00" Bore)
MT2	Rear Trunnion (1.50"- 8.00" Bore)
MT4	Intermediate Trunnion (1.50"- 8.00" Bore)
MX0	No Mount (1.50"- 12.00" Bore)
MX1	Extended Tie Rods - Head & Cap (1.50"-12.00" Bore)
MX2	Extended Tie Rods (Cap) (1.50"- 12.00" Bore)
MX3	Extended Tie Rods (Head) (1.50"- 12.00" Bore)

Style	
(Blank)	Single Rod
D	Double Rod End

Bore
1.50
2.00
2.50
3.25
4.00
5.00
6.00
8.00

Stroke
0" to 120" Made-To-Order

Cushions
Non-Adjustable (Fixed) Head & Cap Cushions Are Standard (Leave Blank)

	Optional Adjustable Cushions	
	H	Adjustable Head Cushion Position 2 Is Standard Specify For Positions: 1, 3 & 4
	LH	Adjustable Long Head Cushion Position 2 Is Standard Specify For Positions: 1, 3 & 4
»	ELH	Adjustable Extra Long Head Cushion Position 2 Is Standard Specify For Positions: 1, 3 & 4
	C	Adjustable Cap Cushion Position 6 Is Standard Specify For Positions: 5, 7 & 8
	LC	Adjustable Long Cap Cushion Position 6 Is Standard Specify For Positions: 5, 7 & 8
»	ELC	Adjustable Extra Long Cap Cushion Position 6 Is Standard Specify For Positions: 5, 7 & 8

Notes:
Ordering example for adjustable cushions in non-standard locations: H3C7

Refer to Options for assistance with cushion length selection.

Cushions can be ordered on same side as ports.

"L" and "EL" cushion options can be ordered as fixed cushions. Example: FCLH, FCELH

	Options	
	A	Extended Piston Rod Thread (Example: A = 2")
	AS	Adjustable Stroke - Retract (Specify Length, Example: AS = 4")
	BSPP	British Standard Pipe Taper (Specify Size, Example: BSPP = .250")
	BSPT	British Standard Pipe Parallel (Specify Size, Example: BSPT = .250")
	C	Extended Piston Rod (Example: if C = 0.50", then 1" Rod Extension Is C = 1.50")
	KK2	Large Male Rod Thread
	KK3	Female Rod Thread
	KK3S	Studded Piston Rod (KK3 With Stud, Loctite In Place)
	KK4	Full Diameter Male Rod Thread
	KK5	Blank Rod End (No Threads, "A" = 0")
	MA	Micro-Adjust (12" Max Stroke) Available On Double Rod End Models
	MAB	Micro-Adjust W/ Sound Dampening Bumper (12" Max Stroke)
	MPR	Magnetic Piston for Reed or Solid State Switches (R10, R10P, RAC, RHT & MSS)
	MS	Metallic Rod Scraper (Brass Construction)
	NR	Non-Rotating
	OP	Optional Port Location (Example: Ports @ 3 & 7)
	OS	Oversize Rod Diameter (Specify Size, Example: OS = 1.375")
	SAE	SAE Ports (Specify Size, Example: SAE #10)
	SSA	Stainless Steel Piston Rod, Tie Rods, Nuts & Fasteners
	SSF	Stainless Steel Fasteners
	SSN	Stainless Steel Tie Rod Nuts
	SSR	Stainless Steel Piston Rod
	SST	Stainless Steel Tie Rods
»	ST	Stop Tube - Specify Stop Tube Length (In Inches) Specify Stroke as ES (Effective Stroke) (Example: TA MS4 2 X 24ES-ST=3)
	TMS	Steel Cylinder Tube, Black Epoxy Paint Finish
	TMSS	Stainless Steel Cylinder Tube
	VS	Fluorocarbon Seals
	XX	Special Variation (Specify)

Note: Refer to Options for specifications
*Steel tubes do not work with MPR magnetic pistons. Refer to Balluff end of stroke sensors within Switches.
» Refer to Option Length Adder

About our Part Number System

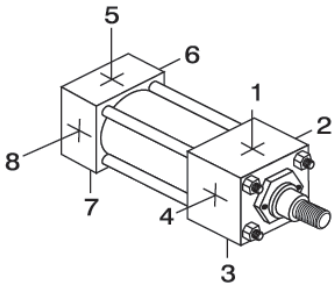
> Simple, easy to understand
> No excessive codes!
> Eliminates mistakes when ordering

Example: A 2.50" bore by 10" stroke NFPA cylinder, Front Flange Mount, (NON-ADJUSTABLE Head & Cap Cushions), and Magnetic Piston for Switches.

Part Number:
TD-MF1-2.50 x 10-MPR

Standard Port and Cushion Adjustment Positions

> Ports - Positions 1 and 5
> Fixed Cushions - No adjustment needle required
> Cushion Adjustment - Positions 2 and 6
> Specify Non-Standard Positions When Ordering



Option Length Adder (Add To Catalog Basic Overall Length Dimensions)

Bore	ELC	ELH	ST* (Stop Tube) Example: ST=2
1.50	1.000	1.000	2
2.00	1.000	1.000	2
2.50	1.000	1.000	2
3.25	1.250	1.250	2
4.00	1.250	1.250	2
5.00	1.250	1.250	2
6.00	1.500	1.500	2
8.00	1.500	1.500	2

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