

CORPORATE OVERVIEW



Tolomatic A legacy of innovation



Growth powered by innovation Service exceeding customer expectations

WORLD'S FIRST RODLESS CYLINDER

- Burton Toles founded Tolomatic in 1954 by creating an automatic bagging machine for the flour industry in Minneapolis, MN
- Invented Float-A-Shaft® right angle gearboxes
- Invented Cable Cylinders world's first rodless pneumatic cylinder

PNEUMATIC PRODUCT LINE EXPANDS

- First pneumatic rodless band cylinder with load support
- First manufacturer to produce all four types of rodless actuators cable, band, slides, and magnetically coupled

MOTION CONTROL & ELECTRIC ACTUATORS

Since the 1990's, Tolomatic responded to industry demands for improved accuracy, repeatability, and efficiency as well as more advanced motion control technology.

- Products designed for pneumatic & hydraulic replacement
- World's first USDA approved, stainless steel, IP69k, hygienic actuators
- Compact, power dense, high performance integrated servo actuators
- Widest range of rod-style & rodless electric actuators
- Configurable stroke lengths at industry best lead times
- Your Motor Here® program for flexible motor mounting
- Online sizing & selection software designed for OEM & distributor use

COMPACT, HIGH PERFORMANCE INTEGRATED SERVO ACTUATORS

- ServoWeld® Innovative design developed for Automotive industry
- Widest range of integrated models to meet specific industry needs

SMART ACTUATION SOLUTIONS

- Complete single axis actuator solutions with integrated servo motor
- Pre-configured, pre-tuned, tested and available with most popular Ethernet protocols

PLANETARY ROLLER SCREW DESIGNS

• Full in-house production for industry leading delivery and rigorous quality control

CONTINUOUS INVESTMENTS TO SERVE CUSTOMERS

Tolomatic continues to invest in facilities, processes, equipment and people to serve a broad array of customers.

- Quality system certified to ISO 9001:2015 standard
- Corporate headquarters and factory in suburban Minneapolis, MN
- Extensive machine shop, prototype testing lab
- Facilities in China, Europe and Mexico

Innovative motion control products, exceptional quality and service... that's Tolomatic

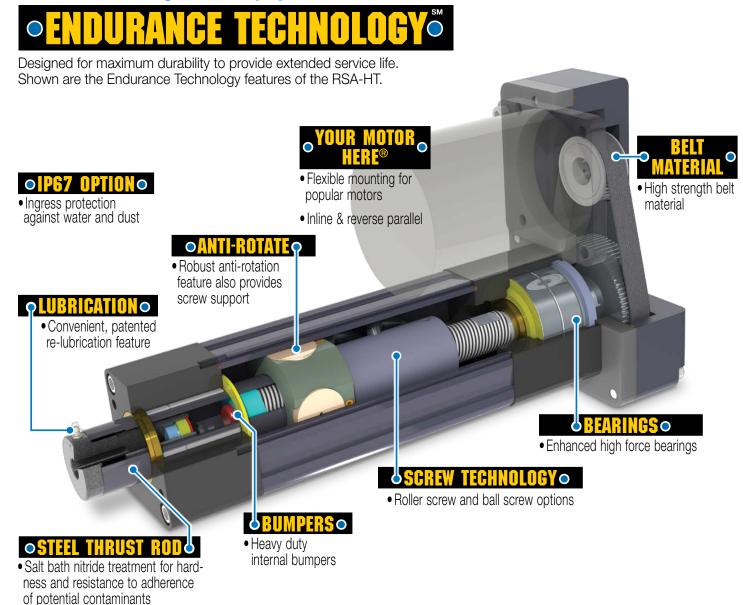






in solving customer needs.

Tolomatic's Design Philosophy:



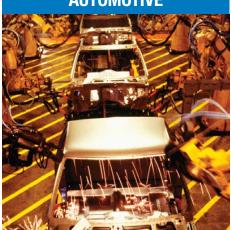
Tolomatic makes it easy to select the right product for most applications



1-800-328-2174

Tolomatic Linear Motion Solutions

AUTOMOTIVE



Resistance Spot Welding, Joining, Pressing, Riveting, Stamping, Nut Placement

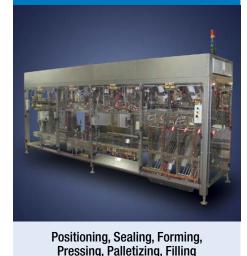
- Compact, Lightweight
- Integrated Servo Motor
- Long Life Roller Screw Design



FOOD & BEVERAGE



Volumetric Filling, Pumping, Cutting, Slicing, Sorting



PACKAGING

- Electric & Pneumatic Rodless Actuators
- Configurable Stroke Lengths
- Wide Array of Load and **Speed Capabilities**
- Flexible Motor Mounting

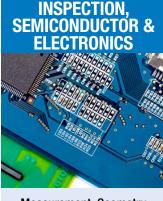




IMA-ST Hygienic, 316SS, IP69K Integrated Servo Actuator







Measurement, Geometry Inspection, Weld Inspection

MEDICAL, PHARMA & LIFE SCIENCE



Coating, Positioning, Rehabilitation, Injection, Pick & Place

CONVEYING &



Diverting, Sorting, Transfers, Palletizing, Change-Over, Case Packing, Labeling

PAPER & PRINTING



Camera Positioning, Cutting, Product Feeder, Tensioning, Winding, Unwinding

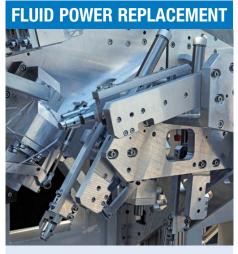
for Most Industries and Applications

SAWMILL/TIMBER

Planing, Fencing, Guides, Positioning, Feed Control, Veneer Lathe



- Clean, Leak-Free Technology
- Rugged, IP67 Designs
- Roller Screw Driven
- Consistent Operation in a Wide Range of Temperatures

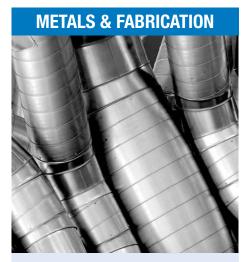


Replacing Pneumatic Cylinders, Replacing Hydraulic Cylinders

- Flexible & Efficient
- Full Motion Control Capabilities
- Minimal Maintenance
- Reliable Long Life
- Lowest Total Cost of Ownership



ERD 10 - 20 Economical, Pneumatic Class Electric Actuators



Casting, Cutting, Bending, **Punching, Clinching**



Robust Design



Animatronics, Camera Positioning, Prop Actuation, **Exhibit Automation, Simulators**



Security Barriers, Flight Simulators, Munitions Assembly, Motion Simulators

OIL, GAS & PROCESS CONTROLS



Well Control, Flow Control, Choke Valve Control, MPD, Rig Automation

MACHINE TOOLS



Door Automation, Positioning, Drilling



ELECTRIC LINEAR

ROD STYLE SCREW



• Pneumatic cylinder replacement

- General automation

STANDARD FEATURES:

- Stainless steel housing & thrust rod
- Ball or Acme screw driven
- Your Motor Here[®] flexible inline or reverse parallel motor mounting

OPTIONS:

- Stainless steel construction upgrade
- IP67 & IP69k ingress protection
- Internal anti-rotate
- External guided tooling plate
- Metric mounting and rod-end accessories
- Reed, solid state PNP or NPN switches, quick-connect available

SPECIFICATIONS:

	ERD	06	10	15	20					
MAX.	in	8	10	24	24					
STROKE	mm	203	254	609	609					
MAX.	lbf	20	100	200	500					
FORCE	N	89	445	890	2224					
MAX.	in	40	40	40	20					
SPEED per sec	mm	1016	1016	1016	508					
• Pater	Patented									



- Pneumatic & hydraulic replacement
- Food & beverage processing

STANDARD FEATURES:

- Full Stainless steel construction
- Roller, Ball or Acme screw driven
- Your Motor Here® flexible inline or reverse parallel motor mounting

OPTIONS:

- Stainless steel protective motor enclosure
- IP69k ingress protection
- •Internal anti-rotate
- Metric mounting and rod-end accessories
- Reed, solid state PNP or NPN switches, quick-connect available

SPECIFICATIONS:

EF	RD	10	15	20	22	25	30			
MAX.	in	10	24	24	39.4	39.4	39.4			
STROKE	mm	254	609	609	1000	1000	1000			
MAX.	lbf	100	200	500	1700	4159	7868			
FORCE	N	445	890	2224	7562	18500	34999			
MAX.	in	40	40	20	50	58	58			
per sec	per sec mm		1016	508	1270	1473	1473			
• Patented										



SOLUTION FOR:

- Pneumatic & hydraulic replacement
- General automation

STANDARD FEATURES:

- Anodized aluminum design
- Roller, Ball or Acme screw driven
- •Internal anti-rotate
- Your Motor Here[®] flexible inline or reverse parallel motor mounting

OPTIONS:

- •IP67 ingress protection
- Metric or US Standard mounting and rod-end accessories
- Reed, solid state PNP or NPN switches, quick-connect available

SPECIFICATIONS:

	R	SA	SA 12 16 24 32		50	64		
	MAX.	in	12	18	24	36	48	60
	STROKE	mm	305	457	610	914	1219	1524
	MAX.	lbf	130	130	1700	4159	7868	13039
	FORCE	N	578	578	7562	18500	34999	58001
	MAX.	in	123	123	50	50	50	58
	per sec	mm	3124	3124	1270	1270	1270	1473
Ι'								

RSX EXTREME FORCE



SOLUTION FOR:

- Hydraulic replacement
- Heavy duty applications

STANDARD FEATURES:

- Steel tie rods and hard coat anodized aluminum design
- Roller screw driven
- Internal anti-rotate
- Your Motor Here[®] flexible inline or reverse parallel motor mounting

OPTIONS:

- IP67 ingress protection
- · Metric mounting and rod-end accessories
- Reed, solid state PNP or NPN switches, quick-connect available

SPECIFICATIONS:

	RSX	080	096	P096
MAX		59.1	59.1	17.7
STROKE	mm	1500	1500	450
MAX	lbf	18000	30000	40000
FORCE	kN	80.1	133.5	178
MAX		27.6	29.9	29.9
SPEED per sec		700	760	760

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MOTION PRODUCTS



DRIVE ACTUATORS



- General automation
- Guided loads

STANDARD FEATURES:

- Anodized aluminum design
- Ball or Acme screw driven
- Hardened guide rods with four bearing surfaces
- Your Motor Here® flexible inline or reverse parallel motor mounting

OPTIONS:

- Composite or linear ball bearings
- Standard, oversized or stainless steel guide rods
- Metric or US Standard mounting
- Reed, solid state PNP or NPN switches, quick-connect available

SPECIFICATIONS:

G	GSA		16	24	32							
MAX.	in	18	24	30	36							
STROKE	mm	457	609	762	914							
MAX.	lbf	130	471	850	950							
FORCE	N	578	2095	3781	4226							
MAX.	lb	400	500	1000	1200							
LOAD	N	1779	2224	4448	5338							
MAX.	in	123	123	50	50							
SPEED per sec	mm	3124	3124	1270	1270							

IMA COMPACT, INTEGRATED SERVO



SOLUTION FOR:

- Pneumatic & hydraulic replacement
- High performance applications

STANDARD FEATURES:

- Anodized aluminum design
- Roller or ball screw driven
- •Integrated servo motor (230 or 460 Vac) with skewed winding
- Grease port (patented) for easy re-lubrication
- IP65 ingress protection

OPTIONS:

- Connector & feedback options for leading servo driv manufacturers
- White epoxy, food grade coating with stainless hardware
- IP67 ingress protection
- Holding brake
- Metric mounting & rod-end accessories

SPECIFICATIONS:

١.										
	IIV	٨	22	3	3	4	4	55		
	IIV	Α	Ball	Ball	Roller	Ball	Roller	Ball	Roller	
	MAX.	in	12	18	18	18	18	18	18	
(STROKE	mm	305	457	457	457	457	457	457	
	MAX.	lbf	325	1000	2500	2000	4000	3000	6875	
	FORCE	kN	1.45	4.45	11.1	8.90	17.8	13.35	30.6	
•	MAX. Speed	in	28	48	24	52.5	23	31.4	15.7	
	per sec	mm	711	1219	610	1334	584	787	399	

IMA-ST HYGIENIC, INTEGRATED SERVO



SOLUTION FOR:

Food & beverage processing

STANDARD FEATURES:

- 316 stainless steel construction
- Hygienic design
- Roller or ball screw driven
- Integrated servo motor (230 or 460 Vac) with skewed winding
- Food grade lubrication and grease port (patented) for easy re-lubrication
- IP69k ingress protection

OPTIONS:

- Cabling, connector & feedback options for leading servo drive / control manufacturers
- FHFDG fasteners
- Field replaceable front head & seal
- Internal anti-rotate (IMASA33)
- Holding brake
- Metric mounting & rod-end accessories

SPECIFICATIONS:

IMA-	ет	22	3	3	33SA		
IIVIA-	31	Ball	Ball	Roller	Roller		
MAX.	in	12	18	18	12		
STROKE	mm	305	457	457	305		
MAX.	lbf	325	1000	2500	2500		
FORCE	kN	1.45	4.45	11.1	11.1		
MAX. SPEED	in	19.6	19.6	19.6	19.6		
J	mm	500	500	500	500		

SWA/B* RESISTANCE SPOT WELDING



SOLUTION FOR:

- •7th axis robotic resistance spot welding
- Pedestal / projection welding

STANDARD FEATURES:

- Anodized aluminum design
- Roller screw driven
- •Integrated servo motor (230 or 460 Vac) with skewed winding
- IP65 ingress protection

OPTIONS:

- Feedback device & connector integration for leading robot manufacturers
- Holding brake
- Metric mounting

SPECIFICATIONS:

		SW	A/B	GSWA											
		3	4	33	44/04	55									
MAX.	in	6	12	18	18/6	18									
STROKE	mm	152	305	457	457/152	457									
MAX.	lbf	2500	4950	2100	3300	5500									
FORCE	kN	11.1	22.0	9.3	14.7	24.5									
MAX.	in	23	23	24	23	15.7									
SPEED per sec	mm	584	584	610	584	399									
*Conta	act T	Toloma	tic for	nrice	*Contact Tolomatic for price and lead time										

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ELECTRIC LINEAR

RODLESS SCREW DRIVE ACTUATORS



MXE-S SOLUTION FOR:

• Light to moderate loads & moments

STANDARD FEATURES:

Self-lubricating solid bearing

OPTIONS:

Floating mount

MXE-P SOLUTION FOR:

- Moderate to high loads & moments
- •Stable, precision load guidance

STANDARD FEATURES:

Profiled rail ball bearing

COMMON STANDARD FEATURES:

- Anodized aluminum design
- Stainless steel dust band
- Ball or Acme screw driven
- · Large mounting pattern for high load stability
- Your Motor Here® flexible motor mounting

COMMON OPTIONS:

- Auxiliary carrier for higher load & moment capacity
- Metric or US Standard mounting
- Reed, solid state PNP or NPN switches

SPECIFICATIONS:

		1	6	2	5	3	2	4	0	5	0	6	3
MAX.	in	3	31		134 1:		33	131		178		125	
STROKE	mm	78	37	34	04	33	78	33	27	45	21	31	75
MAX.	lbf	4	5	17	70	17	'0	800		27	00	43	00
FORCE	Ν	20	200		756 		35	3559 12		010	191	127	
MAX. Speed -	in	42	2	6	0	6	0	60		6	0	5	0
per sec	mm	10	67	15	24	15	24	1524		1524		1270	
		16S	16P	25S	25P	32S	32P	40S	40P	50S	50P	63S	63P
*MAX.	lb	35	217	70	449	150	569	225	736	315	1014	520	1292
LOAD	N	156	966	311	1996	667	2531	1001	3274	1401	4510	2313	5745

^{*}Auxiliary carrier option offers increased load and bending moment capacity

B3S INTERNAL RE-CIRCULATING BALL BEARING



SOLUTION FOR:

- Moderate to high loads & moments
- Stable, precision load guidance

STANDARD FEATURES:

- Anodized aluminum design
- Load bearing carrier design with internal re-circulating ball bearings
- Hardened steel rail guides
- Stainless steel sealing band
- Ball or Acme screw driven
- Your Motor Here® flexible motor mounting

OPTIONS:

- Auxiliary carrier
 Dual 180 carrier
 for higher load & moment capacity
- Metric or US Standard mounting
- Reed, solid state PNP or NPN switches

SPECIFICATIONS:

JI EUII IUMITUITUI										
В	38	10	15	20						
MAX.	in	136	133	131						
STROKE	mm	3454	3378	3337						
MAX.	lbf	170	800	2700						
FORCE	N	756	3559	12010						
*MAX.	lb	591	1454	2008						
LOAD	N	2629	6468	8932						
MAX.	in	60	60	60						
SPEED per sec	mm	1524	1524	1524						

*Dual 180° & auxiliary carrier options offer increased load and bending moment capacity

TKS DUAL PROFILE RAIL BEARING



SOLUTION FOR:

- High requirements for flatness, straightness & accuracy
- Moderate loads & moments

STANDARD FEATURES:

- Anodized aluminum design
- •Dual profile rail linear table design
- •Ball screw driven
- •Inline or reverse-parallel motor mount

OPTIONS:

- Auxiliary carrier
- Reed, solid state PNP or NPN switches

SPECIFICATIONS:

	TKS	10	25	75
MAX.	in	96	96	96
STROKE	mm	2438	2438	2438
MAX.	lbf	230	1590	3260
FORCE	N	1023	7073	14501
*MAX.	lb	100	250	750
LOAD	N	445	1112	3336
MAX.	in	30	30	40
SPEED per sec	mm	762	762	1016

*Auxiliary carrier option offers increased load and bending moment capacity

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MOTION PRODUCTS



RODLESS BELT DRIVE ACTUATORS



MXB-U **SOLUTION FOR:**

· Loads that are externally guided and supported

STANDARD FEATURES:

 Low profile mounting plate

MXB-S **SOLUTION FOR:**

 Light to moderate loads and moments

STANDARD FEATURES:

 Self-lubricating solid bearing

OPTIONS:

- Floating mount
- Auxiliary carrier for higher load & moment capacity

MXB-P **SOLUTION FOR:**

- Moderate to high loads and moments
- •Stable, precision load guidance

STANDARD FEATURES:

Profiled rail ball bearing

OPTIONS:

 Auxiliary carrier for higher load & moment capacity

COMMON STANDARD FEATURES:

- Anodized aluminum design
- Belt driven: High power polyurethane HTD tooth profile with steel tensile members
- Large mounting pattern for high load stability
- High Speed External bumpers
- Your Motor Here® flexible motor mounting

COMMON OPTIONS:

- Metric or US Standard mounting
- · Reed, solid state PNP or NPN switches

SPECIFICATIONS:

		16	6	2	5	3/	2	4	0	5	0	6	3
MAX.	in	20	200		200		200		10	16	60	100	
STROKE	mm	508	80	50	80	50	80	50	80	40	64	25	40
MAX.	lbf	38	38		i1	20	9	25	i0	32	25	41	8
FORCE	N	16	9	67	72	93	930 1112		1446		1859		
		16S	16P	258	25P	32S	32P	408	40P	508	50P	63S	63P
*MAX.	lb	35	217	70	449	150	569	225	736	315	1014	520	1292
LOAD	N	156	966	311	1996	667	2531	1001	3274	1401	4510	2313	5745
MAX.	in/sec	MXB	-U = 2	00 in/se	ec •	MXE	3-S = 1	100 in/s	ec •	M)	(B-P =	150 in/	sec
SPEED	mm/sec	MXB	-U = 5	080 mr	n/sec	• MXB-S = 2540 mm/sec •			MXB-P = 3810 mm/sec				

*Auxiliary carrier option offers increased load and bending moment capacity

B3W RE-CIRCULATING BALL BEARING



SOLUTION FOR:

- Moderate to high loads & moments
- Stable, precision load guidance

STANDARD FEATURES:

- Anodized aluminum design
- Load bearing carrier design with internal re-circulating ball bearings
- Hardened steel rail guides
- Stainless steel sealing band
- Belt driven: steel reinforced belts
- Your Motor Here® flexible motor mounting

OPTIONS:

- Auxiliary carrierDual 180 carrier for higher load & moment capacity
- Metric or US Standard mounting
- · Reed, solid state PNP or NPN switches

SPECIFICATIONS:

В	3W	10	15	20
MAX.	in	207	204	156
STROKE	mm	5258	5182	3962
MAX.	lbf	150	250	325
FORCE	N	667	1112	1446
*MAX.	lb	591	1454	2008
LOAD	N	2629	6468	8932
MAX.	in	157	200	200
SPEED per sec	mm	3988	5080	5080

*Dual 180° & auxiliary carrier options offer increased load and bending moment capacity

DRIVES & MOTORS

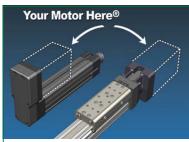


STANDARD FEATURES:

- Integrated servo motor/drive
- NEMA 23 & 34 frame sizes
- Single axis smart actuation solution
- Mounted, configured, tuned & tested as an actuator system
- Dual Ethernet ports: EtherNet/IPTM, ProfiNET®, EtherCAT & Modbus TCP
- 10-60 VDC



SELECT A COMPLETE SYSTEM FROM TOLOMATIC OR ADD ANY MOTION SYSTEM TO TOLOMATIC'S ACTUATORS



YOUR MOTOR HERE® MADE-TO-ORDER MOTOR MOUNTS.

• Tolomatic will provide a motor-specific interface for nearly any motor.

Visit www.tolomatic.com/ymh to find your motor/actuator match!





PNEUMATIC

RODLESS

BAND CYLINDERS



Guiding and supporting light loads

• Good for vertical applications or with externally guided loads

STANDARD FEATURES:

• Durable self-lubricating internal bearing performance tested for millions of cycles

COMMON STANDARD

• Single piece high

competition

strength piston up to

28% stronger than

FEATURES:

steel bands

Non-wear stainless

Adjustable internal

end-of-stroke cushion



· Guiding and supporting medium loads

 Loads requiring increased moment capacity

STANDARD FEATURES:

- Increased moment capacity carrier design with self-lubricating bearings
- Trapezoidal bearing design maximizes bearing surface area for less pressure & less wear on bearing surfaces
- Isolated piston extends service life of the piston seals

COMMON OPTIONS:

Adjustable and fixed

shock absorbers

• Tube clamps

· Auxiliary carrier

MXP-P PROFILED RAIL BEARING

SOLUTION FOR:

- Guiding and supporting heavy loads
- High speed and precision
- Vertical orientation or cantilevered loads

STANDARD FEATURES:

- Long life recirculating ball bearings
- Largest moment load capacity
- Low carrier height

Single end porting

Foot mount

• Isolated piston extends service life of the piston seals

• Reed or solid state position sensors

Metric or US Standard mounting



SOLUTION FOR:

• Guiding and supporting heavy loads

STANDARD FEATURES:

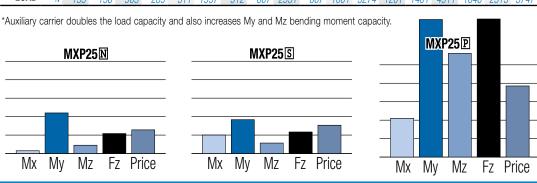
- Reliable, maintenance free bearing system
- Bearing components are sealed and lubricated at the factory
- Hardened steel rail guides for high performance and repeatable accuracy
- Stainless steel sealing band system
- Adjustable internal end-of-stroke cushion
- Integral mounting system
- Isolated piston extends service life of the piston seals

OPTIONS:

- Auxiliary carrier Dual 180° carrier
- Adjustable shock absorbers Foot mount
- Single end porting Tube supports
- Reed or solid state position sensors
- Metric or US Standard mounting

SPECIFICATIONS:

			16			25			32			40			50			63	
BORE	in		0.63			1.00			1.25			1.50			2.00			2.50	
SIZE	mm		16			25			32			38			50			64	
MAX.	in		206			206			205			203			203			103	
STROKE	mm		5232			5232			5207			5156			5156			2616	
MAX.	lbf		30.7			78.5			123			177			305			491	
FORCE	N		136			349			546			786			1356			2184	
		16N	16S	16P	25N	25S	25P	32N	328	32P	40N	40S	40P	50N	50S	50P	63N	63S	63P
*MAX.	lb	30	35	217	65	70	449	115	150	569	195	225	736	270	315	1014	370	520	1292
LOAD	N	133	156	965	289	311	1997	512	667	2531	867	1001	3274	1201	1401	4511	1646	2313	5747



SPECIFICATIONS:

		10	15	20
BORE_	in	1.00	1.50	2.00
SIZE	mm	25	32	50
MAX.	in	205	202	142
STROKE	mm	5207	5130	3606
MAX.	lbf	78	176	310
FORCE	Ν	347	783	1379
*MAX.	lb	591	1454	2008
LOAD	N	2629	6468	8932

*Auxiliary and dual 180° carrier doubles the load capacity and also increases My and Mz bending moment capacity.



Graphs are general performance comparisons between cylinders of similar (1" bore) sizes with 12" stroke. Maximum force is based on air pressure of

ACTUATORS

FAST DELIVERY **BUILT-TO-ORDER**

CYLINDERS

BC2 SOLID BEARING

SOLUTION FOR:

· Guiding and supporting medium loads

STANDARD FEATURES:

- Increased moment capacity carrier design w/ self-lubricating bearings
- · Adjustable carrier for maintaining consistent bearing surfaces
- Stainless steel sealing band system
- Adjustable internal end-of-stroke cushion
- · Formed steel piston bracket
- Isolated piston extends service life of the piston seals

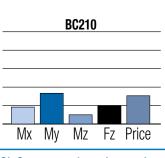
OPTIONS:

- Auxiliary carrier
- Four ported head Floating mount
- Foot mount Tube support
- Adjustable shock absorbers
- Reed or solid state position sensors
- Metric or US Standard mounting

SPECIFICATIONS:

		05	10	12	15	20	25
BORE	in	0.50	1.00	1.25	1.50	2.00	2.50
SIZE	mm	12	25	32	40	50	63
MAX.	in	171	350	288	298	274	163
STROKE	mm	4343	8890	7315	7569	6959	4140
MAX.	lbf	16	78	120	176	310	495
FORCE	N	71	347	534	783	1379	2202
*MAX.	lb	5.0	60	120	180	300	400
LOAD	N	22	267	534	801	1334	1779

*Auxiliary carrier doubles the load capacity and also increases My and Mz bending moment capacity.



CABLE CYLINDERS



· Guiding and supporting light loads

STANDARD FEATURES:

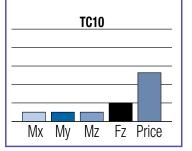
- · Nylon jacketed aircraft grade cables
- · Lightweight aluminum design
- Unique gland seals provide leak free seal for cables
- Adjustable internal end-of-stroke cushion

OPTIONS:

- · Automatic tensioner
- Caliper disc brake
- 3 ported head
- Pneumatic or hydraulic power
- Steel tube
- Seals of Viton® material
- Reed position sensors

SPECIFICATIONS:

		05	07	10	15
BORE	in	0.50	0.75	1.00	1.50
SIZE	mm	13	19	25	38
MAX.	in	67	78	78	78
STROKE	mm	1702	1981	1981	1981
MAX.	lbf	19	43	78	174
FORCE	N	85	191	347	774
MAX.	lb	60	60	60	15
LOAD	N	267	267	267	67



SA SINGLE-ACTING **DP** DOUBLE-PURCHASE **CC** DOUBLE-ACTING

SOLUTION FOR:

 Loads that are externally guided and supported

SOLUTION FOR: Used where gravity

- supplies return force Loads that are
- externally guided and supported

SOLUTION FOR:

- Effectively doubles stroke length and speed
 - Loads that are externally guided and supported

STANDARD FEATURES:

- Nylon jacketed aircraft grade cables
- Unique gland seals provide leak free seal for cables
- Adjustable internal end-of-stroke cushions
- Actuator may be located remotely from load and contamination
- Stroke lengths up to 60 feet with optional tube couplers

OPTIONS:

- Pneumatic or hydraulic power
- 3 ported head Steel tube
- Seals of Viton® material
- Reed position sensors
- Automatic tensioner***
- Caliper disc brake***
- Tube coupler***
- ***Not available for SA

SPECIFICATIONS:

	CC	05	07	10	15	20	25	30	40	50	52
	SA	_	07	10	15	20	25	30	40	50	52
	DP	1		_	15	20	25	30	40	_	52
BORE	in	0.50	0.75	1.00	1.50	2.00	2.50	3.00	4.00	5.00	2.00
SIZE	mm	13	19	25	38	51	64	76	102	127	51
MAX.	in	54	138	282	280	281	281	280	279	134	280
STROKE	mm	1372	3505	7163	7112	7137	7137	7112	7087	3404	7112
MAX.	lbf	19	43	78	174	618	972	1398	1249	1919	1532
FORCE	Ν	85	191	347	774	2749	4324	6219	5556	8536	6815



BENDING MOMENTS DIAGRAM

Reference for all comparison graphs Mx = RollMy = Pitch

100 PSI. See www.tolomatic.com for complete performance information.

PNEUMATIC ACTUATORS

(CONTINUED)



RODLESS CYLINDERS

MAG CYLINDERS



- Environmentally sensitive applications that require low contamination
- If magnetic coupling strength is exceeded the piston and carrier will decouple - a safety benefit in many applications

STANDARD FEATURES:

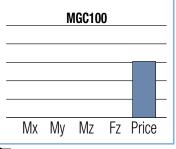
- Field repairable to minimize downtime
- Fully enclosed design keeps contaminants from entering or lubricants from exiting actuator body
- Three coupling strengths available
- Stainless steel tubing

OPTIONS:

- Pneumatic or hydraulic power
- Floating mount Foot mount
- Reed or solid state position sensors

SPECIFICATIONS:

		025	038	062	100
BORE	in	0.25	0.38	0.62	1.00
SIZE	mm	6	10	16	25
MAX.	in	26	32	39	56
STROKE	mm	660	813	991	1422
MAX.	lbf	5	11	30	78
FORCE	N	22	49	133	347
MAGNETIC	lb	5	14	38	100
STRENGTH	Ν	22	62	169	445



MGS SLIDE

SOLUTION FOR:

- Environmentally sensitive applications that require low contamination
- If magnetic coupling strength is exceeded the piston and carrier will decouple - a safety benefit in many applications

STANDARD FEATURES:

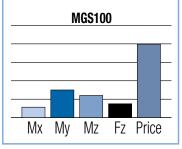
- Fully enclosed design keeps contaminants from entering or lubricants from exiting actuator body
- Low profile rigid design
- Stainless steel tubing
- Hardened steel shafts

OPTIONS:

- Pneumatic or hydraulic power
- Choose either sintered bronze or linear ball bearings
- Shock absorbers Proximity sensors
- Reed or solid state position sensors

SPECIFICATIONS:

		038	062	100
BORE	in	0.38	0.63	1.00
SIZE	mm	10	16	25
MAX.	in	30	60	80
STROKE	mm	762	1524	2032
MAX.	lbf	11	30	78
FORCE	Ν	49	133	347
MAX.	lb	14	40	90
LOAD	Ν	62	178	400



ROD CYLINDER SLIDES

PB2 POWER-BLOCK2 SLIDE

SOLUTION FOR:

- Withstands heavy side loads
- Great for conveyor line stops
- Load lifting applications

STANDARD FEATURES:

- Internal urethane bumpers
- Operating pressure up to 150 PSI
- 10,000,000 cycle rating
- Standard internal piston magnet for switch sensing
- Lightweight aluminum design

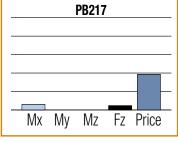
OPTIONS:

- Choose composite or linear ball bearings
- Reed or solid state position sensors

SPECIFICATIONS:

		10	17	20	32			
BORE	in	0.63	1.06	1.25	2.00			
SIZE	mm	16	27	32	51			
MAX.	in	4	6	6	6			
STROKE	mm	102	152	152	152			
**MAX.	lbf	46	132	184	471			
FORCE	N	205	587	818	2095			
MAX.	lb	16	38	48	70			
LOAD	N	71	169	214	311			
** Maximum force at 150 PSI								

** Maximum force at 150 PS



PB POWER-BLOCK SLIDE



SOLUTION FOR:

- Withstands heavy side loads
- Great for conveyor line stops
- · Load lifting applications

STANDARD FEATURES:

- Internal urethane bumpers
- Composite bearings
- Standard internal piston magnet for switch sensing
- Lightweight aluminum design

OPTIONS:

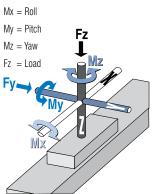
- Stop collars and bumpers
- Dual tooling plate option
- Reed or solid state position sensors

SPECIFICATIONS:

		17	20
BORE	in	1.06	1.25
SIZE	mm	27	32
MAX.	in	3	
STROKE	mm	76	76
MAX.	lbf	88	123
FORCE	N	391	547
MAX.	lb	20	25
LOAD	N	76	89

BENDING MOMENTS DIAGRAM

Reference for all comparison graphs



Graphs are general performance comparisons between cylinders of similar (1" bore) sizes with 12" stroke (PB2 6" stroke).

Maximum force is based on air pressure of 100 PSI (PB2 rated up to 150 PSI). See www.tolomatic.com for complete performance information.

POWER TRANSMISSION



GEARBOXES



STANDARD FEATURES:

- Designed to slide along the shaft, limited only by the length of the keyway
- One-piece housing, one-piece geared sleeve and sealed bearings eliminate leakage
- Shaft speeds up to 1200 RPM
- Backlash < 1°
- Prelubricated and ready for installation
- Bore sizes: Compact; .5" & .625"
 12 & 15mm
 Standard; .75", 1" & 1.25"
 20, 25 & 30mm

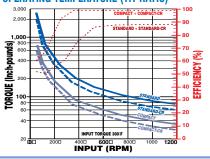
OPTIONS:

- Corrosion resistant (CR) option
 - Electroless nickel-plated geared sleeves, keys and retaining rings
 - Stainless-steel bearings
 - Clear anodized aluminum case
- 3:2, 2:1 gear ratios

SPECIFICATIONS*

SERIES	RATIO	NO. OF Models	ENVELOPE SIZE (in.)
Compact	1:1	12	3.1 x 3.1 x 3.1
Compact-CF	1:1	6	3.1 x 3.1 x 3.1
Standard	1:1	24	3.8 x 5.9 x 3.8
Standard	3:2, 2:	1 12, 18	3.8 x 5.9 x 3.8
Standard-CF	₹ 1:1	12	3.8 x 5.9 x 3.8

TORQUE AND EFFICIENCY VS RPM AT MAXIMUM OPERATING TEMPERATURE (1:1 RATIO)*



FLOAT-A-SHAFT® GEARBOX



STANDARD FEATURES:

- Designed to slide along the shaft, limited only by the length of the keyway
- Shaft speeds up to 500 RPM
- 3° to 5° of backlash
- Die-cast aluminum gear case, hardened steel gears
- Bore Sizes: Compact; .5", .625", 12mm & 15mm
 Standard; .75", 1", 1.25", 1.5",
 20mm, 25mm & 30mm

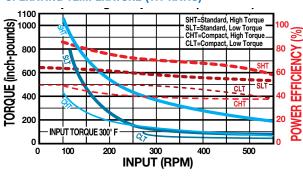
OPTIONS:

- Flat base and foot mount styles
- 3:2, 2:1, 2.5:1 gear ratios
- Low torque journal bearings or high torque roller bearings

SPECIFICATIONS*

or con loveron		NO. OF	ENVELOPE
SERIES	RATIOS	MODELS	SIZE (in.)
Compact	1:1	18	2.9 x 3.5 x 3.0
Compact-Foot Mount	1:1	18	3.0 x 3.7 x 3.0
Standard	1:1, 3:2, 2:1	44, 22, 36	3.8 x 6.3 x 4.3
Standard-Flat Base	1:1, 3:2, 2:1	44, 22, 24	3.8 x 6.3 x 4.0
Standard	2.5:1	12	2.9 x 5.1 x 4.2

TORQUE AND EFFICIENCY VS RPM AT MAXIMUM OPERATING TEMPERATURE (1:1 RATIO)*



*NUMBERS ARE FOR GENERAL COMPARISONS ONLY. Not all models deliver maximum values listed. See catalog or contact Tolomatic for complete specifications.





POWER

CALIPER DISC

PNEUMATIC



- Double acting or single acting
- Replaceable, high-grade friction material
- Aluminum construction with zinc plated bolts, Buna-N seals

OPTIONS:

- EPR seals, Viton® seals
- Retractable pistons, floating bracket

SPECIFICATIONS*

	NO. OF Models	FRICTION Material (cu. in.)	TOTAL Lining Area (sq. in.)	PISTON DIA. (in.)
P10	11	0.46	2.00	1.125
P20	13	0.83	4.00	1.625
P220	12	1.66	8.00	1.625

PERFORMANCE OVERVIEW*

DYNAMIC TORQUE (MAX. in.-lbs.)

DISC DIA. (in.)	P10	P20	P220
6.313	174	328	685
8	233	450	907
10	303	594	1,184
12	373	738	1,463
16	513	1,026	2,076

STATIC TORQUE (MAX. in.-lbs.)

DISC DIA. (in.)	P10	P20	P220
6.313	99	164	343
8	133	225	454
10	173	297	592
12	213	369	732
16	293	513	1,038

HYDRAULIC



STANDARD FEATURES:

- Double acting or single acting
- Replaceable, high-grade friction material
- Aluminum or cast iron construction with zinc plated bolts, bleeder screws, Buna-N seals

OPTIONS:

- EPR seals, Viton® seals
- Retractable pistons, floating bracket

SPECIFICATIONS*

	NO. OF Models	FRICTION Material (cu. in.)	TOTAL Lining Area (sq. in.)	PISTON DIA. (in.)	
H10	14	0.46	2.00	1.125	
H20	23	0.83	4.00	1.625	
H220	52	1.66	8.00	1.625	
H441	4	3.71	9.14	2.50	
H960	6	8.00	32.0	3.50	

PERFORMANCE OVERVIEW*

DYNAMIC TORQUE (MAX. in.-lbs.)

DISC DIA. (in.) H10	H20	H220	H441	H960
6.313	1,737	3,285	10,282	_	_
8	2,328	4,500	13,608	_	_
10	3,028	5,940	17,755	19,539	_
12	3,728	7,380	21,946	24,834	45,672
16	5,128	10,260	31,147	35,424	66,432

STATIC TORQUE (MAX. in.-lbs.)

n.) H10	H20	H220	H441	H960
993	1,642	5,141	_	_
1,330	2,250	6,804	_	_
1,730	2,970	8,878	11,679	_
2,130	3,690	10,973	14,844	26,664
2,930	5,130	15,574	21,174	38,784
	993 1,330 1,730 2,130	993 1,642 1,330 2,250 1,730 2,970 2,130 3,690	993 1,642 5,141 1,330 2,250 6,804 1,730 2,970 8,878 2,130 3,690 10,973	993 1,642 5,141 — 1,330 2,250 6,804 — 1,730 2,970 8,878 11,679 2,130 3,690 10,973 14,844

MECHANICAL



STANDARD FEATURES:

- Single acting
- Replaceable, high-grade friction material
- Aluminum or cast iron construction with zinc plated bolts

OPTIONS:

• Choose from 2 different lever lengths (available on some models)

SPECIFICATIONS*

	NO. OF Models	FRICTION Material (cu. in.)	TOTAL Lining Area (sq. in.)
ME10	8	0.46	2.00
ME20	12	0.83	4.00
ME220) 15	1.66	8.00
MB3	1	6.06	9.69

PERFORMANCE OVERVIEW*

DYNAMIC TORQUE (MAX. in.-lbs.)

DISC DIA. (in.)	ME10	ME20	ME220	
6.313	3,004	2,762	11,702	
8	4,024	3,782	15,488	
10	5,236	4,994	20,208	
12	6,446	6,204	24,978	
16	8,866	8,624	35,452	

STATIC TOROUE (MAX. in.-lbs.)

DISC	iiqor (ii		1001)	
DIA. (in.)	ME10	ME20	ME220	MB3
6.313	1,502	1,381	5,851	_
8	2,012	1,891	7,744	
10	2,618	2,497	10,104	19,893
12	3,223	3,102	12,489	24,506
16	4,433	4,312	17,726	33,733

*NUMBERS ARE FOR GENERAL COMPARISONS ONLY. Not all models deliver maximum

TRANSMISSION

SPRING APPLIED/HYDRAULIC RELEASE



STANDARD FEATURES:

- Braking is applied when hydraulic pressure is released
- Single acting with Belleville® spring washers
- Replaceable, high-grade friction material
- Aluminum or cast iron construction with zinc plated bolts, Buna-N seals

OPTIONS:

- EPR seals
- Manual lining wear compensators

SPECIFICATIONS*

	NO. OF Models	FRICTION Material (cu. in.)	TOTAL Lining Area (sq. in.)
FS20	6	0.83	4.00
FS220	24	1.66	8.00
FS595	8	4.57	9.14

PERFORMANCE OVERVIEW*

STATIC TOROUE (MAX. in.-lbs.)

.) FS20	F\$220B	FS220C	FS595	FS595 Dual
1,061	2,213	4,522	_	_
1,453	2,930	5,985	_	
1,918	3,822	7,809	_	
2,383	4,724	9,652	_	_
3,313	6,705	13,699	31,046	62,093
	1,061 1,453 1,918 2,383	1,061 2,213 1,453 2,930 1,918 3,822 2,383 4,724	1,061 2,213 4,522 1,453 2,930 5,985 1,918 3,822 7,809 2,383 4,724 9,652	1,9 FS20 FS220B FS220C FS595 1,061 2,213 4,522 — 1,453 2,930 5,985 — 1,918 3,822 7,809 — 2,383 4,724 9,652 —

DISCS



STANDARD FEATURES:

- Carbon 1010 steel, flatness within 0.010"
- Stress relieved, blanchard ground to an 80 (RMS) microinch finish
- Socket head cap screw fasteners. kevwav set screws

MODELS	MODELS
HUB & DISC ASSEMBLY	29
HUB & DISC ASSEMBLY w/ QUICK DISCONNECT BUSHINGS	100
QUICK DISCONNECT BUSHINGS	66
ONE-PIECE HUB & DISC	2
BLANK DISC	5
DISC w/ BOLT CIRCLES & PILOT HOLE	6

INTENSIFIER



	(1770-0000)						
INPUT:							
Pneumatic pressure max.:	100 PSI						
Piston seal:	U-cup design						
Cylinder material:	Hard coated aluminum						
Input to output ratio:	1:10						
OUTPUT:							
Hydraulic pressure max.:	1,000 PSI						
Hydraulic fluid displacement:	0.44 cu. in.						
Cylinder seal:	O-ring, Buna-N, opt. EPR						
Cylinder material:	Aluminum						
1/8 NPT Port:	Standard						



SCREW SPECIFICATIONS:

CONFIG.	SCREW SIZE	LEAD	MAX. STROKE	*MAX. FORCE	DLR (C)	SLR (CO)
15.04	15	<u>mm</u> 4	800.69	12.9	41.1	<u>kN</u> 38.7
15.05	15	5	800.69	11.6	53.6	34.9
15.10	15	10	800.69	15.8	47.2	47.3
20.04	20	4	1036.22	28.0	67.2	83.9
20.05	20	5	1036.22	23.6	73.3	70.9
20.10	20	10	1036.22	24.7	76.4	74.0
30.05	30	5	1691.37	34.9	65.5	104.6
30.10	30	10	1691.37	35.0	116.1	105.0
36.05	36	5	1665.67	58.4	96.6	175.3
36.10	36	10	1665.67	53.4	160.8	160.1
39.10	39	10	1622.67	71.4	182.7	214.3
48.12	48	12	1565.72	161.9	269.3	485.6

Lead Accuracy: 0.01 mm/300 mm Backlash: 0.03 mm *Max Force is guidance for achieving maximum life. Consult Tolomatic for higher force

CONFIG.	SCREW SIZE	LEAD	MAX. Stroke	*MAX. FORCE	DLR (C)	SLR (CO)
		in	in	<u>lbf</u>	lbf	lbf
15.04	15	0.157	31.52	2,900	9,240	8,700
15.05	15	0.197	31.52	2,615	12,050	7,846
15.10	15	0.394	31.52	3,544	10,611	10,633
20.04	20	0.157	40.80	6,287	15,107	18,861
20.05	20	0.197	40.80	5,313	16,478	15,939
20.10	20	0.394	40.80	5,545	17,175	16,636
30.05	30	0.197	66.59	7,838	14,725	23,515
30.10	30	0.394	66.59	7,868	26,100	23,605
36.05	36	0.197	65.58	13,136	21,716	39,409
36.10	36	0.394	65.58	11,997	36,149	35,992
39.10	39	0.394	63.88	16,059	41,072	48,176
48.12	48	0.472	61.64	36,389	60,541	109,167

Lead Accuracy: 0.0004 in/ft Backlash: 0.0012 in

values listed. See catalog or contact Tolomatic for complete specifications.



Long Lasting, Precision Roller Screw Electric Actuators





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