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
Designed for maximum durability to provide extended service life. Shown are the Endurance Technology features of the RSA-HT.

**IP67 OPTION**
• Ingress protection against water and dust

**ENDURANCE TECHNOLOGY**

**BEARINGS**
• Enhanced high force bearings

**BELT MATERIAL**
• High strength belt material

**LUBRICATION**
• Convenient, patented re-lubrication feature

**SCREW TECHNOLOGY**
• Roller screw and ball screw options

**STEEL THRUST ROD**
• Salt bath nitride treatment for hardness and resistance to adherence of potential contaminants

**YOUR MOTOR HERE®**
• Flexible mounting for popular motors
• Inline & reverse parallel

**ANTI-ROTATE**
• Robust anti-rotation feature also provides screw support

**BUMPERS**
• Heavy duty internal bumpers

**BUMPERS**

**Belt Material**

**Tolomatic's Design Philosophy:**

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

Engineering Tools on www.tolomatic.com
Linear Motion Solutions

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

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

PACKAGING

INSPECTION, SEMICONDUCTOR & ELECTRONICS
- Measurement, Geometry Inspection, Weld Inspection

MEDICAL, PHARMA & LIFE SCIENCE
- Coating, Positioning, Rehabilitation, Injection, Pick & Place

CONVEYING & MATERIAL HANDLING
- Diverting, Sorting, Transfers, Palletizing, Change-Over, Case Packing, Labeling

PAPER & PRINTING
- Camera Positioning, Cutting, Product Feeder, Tensioning, Winding, Unwinding

IMA
- Integrated Servo Actuator

IMA-ST
- Hygienic, 316SS, IP69K

www.tolomatic.com  • 4  • 1-800-328-2174
for Most Industries and Applications

SAWMILL / TIMBER
- Planing, Fencing, Guides, Positioning, Feed Control, Veneer Lathe

FLUID POWER REPLACEMENT
- Replacing Pneumatic Cylinders, Replacing Hydraulic Cylinders

METALS & FABRICATION
- Casting, Cutting, Bending, Punching, Clenching

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

RSX High Force, Hydraulic Class Electric Actuators
- Roller Screw Driven
- Reliable Long Life
- Robust Design

ERD 10-20 Economical, Pneumatic Class Electric Actuators
- Flexible & Efficient
- Full Motion Control Capabilities
- Minimal Maintenance
- Reliable Long Life
- Lowest Total Cost of Ownership

ANIMATION & ENTERTAINMENT
- Animatronics, Camera Positioning, Prop Actuation, Exhibit Automation, Simulators

AEROSPACE, DEFENSE & SECURITY
- 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

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ROD STYLE SCREW DRIVE ACTUATORS

ERD ECONOMICAL

SOLUTION FOR:
- 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:

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ERD STAINLESS STEEL, HYGIENIC

SOLUTION FOR:
- 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:

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RSA INDUSTRIAL: ST/HT

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

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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 and rod-end accessories
- Reed, solid state PNP or NPN switches, quick-connect available

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Patented
**MOTION PRODUCTS**

**DRIVE ACTUATORS**

### GSA GUIDED LOAD

**SOLUTION FOR:**
- 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:**

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### 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 drive manufacturers
- White epoxy, food grade coating with stainless hardware
- IP67 ingress protection
- Holding brake
- Metric mounting & rod-end accessories

**SPECIFICATIONS:**

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### 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
- EHEDG fasteners
- Field replaceable front head & seal
- Internal anti-rotate (IMASA33)
- Holding brake
- Metric mounting & rod-end accessories

**SPECIFICATIONS:**

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### 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
- EHEDG fasteners
- Field replaceable front head & seal
- Internal anti-rotate (IMASA33)
- Holding brake
- Metric mounting

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*Contact Tolomatic for price and lead time*

www.tolomatic.com • 1-800-328-2174
ELECTRIC LINEAR MOTION PRODUCTS

RODLESS SCREW DRIVE ACTUATORS

MXE-S SOLID BEARING

MXE-S
SOLUTION FOR:
• Light to moderate loads & moments

STANDARD FEATURES:
• Self-lubricating solid bearing

OPTIONS:
• Floating mount

MXE-P PROFILED RAIL BEARING

MXE-P
SOLUTION FOR:
• Moderate to high 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

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

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

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*Auxiliary carrier option offers increased load and bending moment capacity

B3S 10 15 20

MAX. STROKE

| in | 136|133|131|
| mm | 3454|3378|3337|
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| in/hr | 1524|1524|1524|
| mm/hr | 1524|1524|1524|
| lb/hr | 591|1454|2008|
| N/mm | 2629|6468|8932|
| lb/min | 60|60|60|

*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

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*Auxiliary carrier option offers increased load and bending moment capacity

MXS-R SMOOTH SCREW DRIVE ACTUATOR
RODLESS BELT DRIVE ACTUATORS

MXB-U NO BEARING

MXB-S SOLID BEARING

MXB-P PROFILED RAIL BEARING

MXB-U SOLUTION FOR:
• Loads that are externally guided and supported

MXB-S SOLUTION FOR:
• Light to moderate loads and moments

MXB-P SOLUTION FOR:
• Moderate to high loads and moments

STANDARD FEATURES:
• Self-lubricating solid bearing

OPTIONS:
• Floating mount
• 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:

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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 carrier • Dual 180° carrier for higher load & moment capacity

STANDARD FEATURES:
• Profiled rail ball bearing

OPTIONS:
• Auxiliary carrier for higher load & moment capacity

SPECIFICATIONS:

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MXB-U MAX.

STROKE max.

FORCE max.

SPEED max.

MXB-S MAX.

STROKE max.

FORCE max.

SPEED max.

MXB-P MAX.

STROKE max.

FORCE max.

SPEED max.

*Auxiliary carrier option offers increased load and bending moment capacity

ACS INTEGRATED MOTOR/DRIVE/CONTROLLER

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/IP™, Profinet®, EtherCAT & Modbus TCP
• 10-60 VDC

ACSI INTEGRATED MOTOR / DRIVE / CONTROLLER

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!
**BC3 INTERNAL BALL BEARING**

**SOLUTION FOR:**
- Guiding and supporting heavy loads
- High speed and precision
- Vertical orientation or cantilevered loads

**STANDARD FEATURES:**
- Reliable, maintenance free bearing system
- Bearing components are sealed and lubricated at the factory
- Stainless steel rail guides for high performance and repeatable accuracy
- 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:**

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* *MAX. LOAD* N 133 156 956 288 311 197 312 667 2531 867 1001 3274 1201 1401 4511 1646 2313 5747

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

**MXP-N INTERNAL BEARING**

**SOLUTION FOR:**
- 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 FEATURES:**
- Non-wear stainless steel bands
- Adjustable internal end-of-stroke cushion

**COMMON OPTIONS:**
- Tube clamps
- Auxiliary carrier
- Adjustable and fixed shock absorbers

**SPECIFICATIONS:**

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* *MAX. LOAD* N 133 156 956 288 311 197 312 667 2531 867 1001 3274 1201 1401 4511 1646 2313 5747

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

**MXP-S SOLID BEARING**

**SOLUTION FOR:**
- 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 STANDARD FEATURES:**
- Tube clamps
- Auxiliary carrier
- Adjustable and fixed shock absorbers

**SPECIFICATIONS:**

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<tr>
<th>BORE SIZE</th>
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* *MAX. LOAD* N 133 156 956 288 311 197 312 667 2531 867 1001 3274 1201 1401 4511 1646 2313 5747

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

**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
- Isolated piston extends service life of the piston seals

**COMMON STANDARD FEATURES:**
- Tube clamps
- Auxiliary carrier
- Adjustable and fixed shock absorbers

**SPECIFICATIONS:**

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* *MAX. LOAD* N 133 156 956 288 311 197 312 667 2531 867 1001 3274 1201 1401 4511 1646 2313 5747

*Auxiliary 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 100 PSI. See www.tolomatic.com for complete performance information.
**ACTUATORS**

**CABLE 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:**

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**TC TRACK- GUIDE RODS & BEARING**

**SOLUTION FOR:**
- 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:**

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**CC DOUBLE-ACTING**

**SA SINGLE-ACTING**

**DP DOUBLE-PURCHASE**

**SOLUTION FOR:**
- 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:**

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**TC10**

**SOLUTION FOR:**
- Loads that are externally guided and supported

**STANDARD FEATURES:**
- Formed steel piston bracket
- Isolated piston extends service life of the piston seals
- Reed position sensors

**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:**

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**BC210**

**TC TRACK- GUIDE RODS & BEARING**

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**SA SINGLE-ACTING**

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**DP DOUBLE-PURCHASE**

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100 PSI. See www.tolomatic.com for complete performance information.
**Roodless Cylinders**

**MG Cylinder**

**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:**
- 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

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**MGC100**

**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:**

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**MGS100**

**PB2 Power-Block2 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:**

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<td>MAX. STROKE</td>
<td>102</td>
<td>150</td>
<td>150</td>
<td>152</td>
</tr>
<tr>
<td>MAX. FORCE</td>
<td>46</td>
<td>132</td>
<td>164</td>
<td>471</td>
</tr>
<tr>
<td>MAX. LOAD</td>
<td>71</td>
<td>169</td>
<td>214</td>
<td>311</td>
</tr>
</tbody>
</table>

**PB217**

**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:**

<table>
<thead>
<tr>
<th>BORE</th>
<th>1.06</th>
<th>1.25</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE</td>
<td>17</td>
<td>20</td>
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<tr>
<td>MAX. STROKE</td>
<td>76</td>
<td>76</td>
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<tr>
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<td>88</td>
<td>123</td>
</tr>
<tr>
<td>MAX. LOAD</td>
<td>78</td>
<td>89</td>
</tr>
</tbody>
</table>

**Bending Moments Diagram**

Reference for all comparison graphs

Mx = Roll
My = Pitch
Mz = Yaw
Fz = Load

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

SLIDE-RITE® GEARBOX

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*

<table>
<thead>
<tr>
<th>SERIES</th>
<th>RATIO</th>
<th>NO. OF MODELS</th>
<th>ENVELOPE SIZE (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compact</td>
<td>1:1</td>
<td>12</td>
<td>3.1 x 3.1 x 3.1</td>
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<tr>
<td>Compact-CR</td>
<td>1:1</td>
<td>6</td>
<td>3.1 x 3.1 x 3.1</td>
</tr>
<tr>
<td>Standard</td>
<td>1:1</td>
<td>24</td>
<td>3.8 x 5.9 x 3.8</td>
</tr>
<tr>
<td>Standard</td>
<td>3:2, 2:1</td>
<td>12, 18</td>
<td>3.8 x 5.9 x 3.8</td>
</tr>
<tr>
<td>Standard-CR</td>
<td>1:1</td>
<td>12</td>
<td>3.8 x 5.9 x 3.8</td>
</tr>
</tbody>
</table>

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*

<table>
<thead>
<tr>
<th>SERIES</th>
<th>RATIOS</th>
<th>NO. OF MODELS</th>
<th>ENVELOPE SIZE (in.)</th>
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</thead>
<tbody>
<tr>
<td>Compact</td>
<td>1:1</td>
<td>18</td>
<td>2.9 x 3.5 x 3.0</td>
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<tr>
<td>Compact-Foot Mount</td>
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<td>3.0 x 3.7 x 3.0</td>
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<tr>
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<td>3.8 x 6.3 x 4.3</td>
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<tr>
<td>Standard-Flat Base</td>
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<tr>
<td>Standard</td>
<td>2.5:1</td>
<td>12</td>
<td>2.9 x 5.1 x 4.2</td>
</tr>
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</table>

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

**Standard Features:**
- 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**

<table>
<thead>
<tr>
<th>No. of Models</th>
<th>Friction Material (cu. in.)</th>
<th>Total Lining Area (sq. in.)</th>
<th>Piston Dia. (in.)</th>
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</thead>
<tbody>
<tr>
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<td>11</td>
<td>0.46</td>
<td>2.00</td>
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<tr>
<td>P20</td>
<td>13</td>
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<td>4.00</td>
</tr>
<tr>
<td>P220</td>
<td>12</td>
<td>1.66</td>
<td>8.00</td>
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</tbody>
</table>

**Performance Overview**

**Dynamic Torque (Max. in.-lbs.)**

<table>
<thead>
<tr>
<th>Disc Dia. (in.)</th>
<th>P10</th>
<th>P20</th>
<th>P220</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.313</td>
<td>174</td>
<td>328</td>
<td>685</td>
</tr>
<tr>
<td>8</td>
<td>33</td>
<td>594</td>
<td>1,184</td>
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<td>10</td>
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**Static Torque (Max. in.-lbs.)**

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<th>P220</th>
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<tbody>
<tr>
<td>6.313</td>
<td>99</td>
<td>164</td>
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<tr>
<td>8</td>
<td>133</td>
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<td>10</td>
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<td>213</td>
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<td>732</td>
</tr>
<tr>
<td>16</td>
<td>293</td>
<td>513</td>
<td>1,038</td>
</tr>
</tbody>
</table>

### 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**

<table>
<thead>
<tr>
<th>No. of Models</th>
<th>Friction Material (cu. in.)</th>
<th>Total Lining Area (sq. in.)</th>
<th>Piston Dia. (in.)</th>
</tr>
</thead>
<tbody>
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<tr>
<td>H20</td>
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**Performance Overview**

**Dynamic Torque (Max. in.-lbs.)**

<table>
<thead>
<tr>
<th>Disc Dia. (in.)</th>
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<td>16</td>
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**Static Torque (Max. in.-lbs.)**

<table>
<thead>
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<th>H20</th>
<th>H220</th>
<th>H441</th>
<th>H660</th>
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</thead>
<tbody>
<tr>
<td>6.313</td>
<td>99</td>
<td>164</td>
<td>343</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>8</td>
<td>133</td>
<td>225</td>
<td>454</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>10</td>
<td>173</td>
<td>297</td>
<td>592</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>12</td>
<td>213</td>
<td>369</td>
<td>732</td>
<td>—</td>
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</tr>
<tr>
<td>16</td>
<td>293</td>
<td>513</td>
<td>1,038</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

### 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**

<table>
<thead>
<tr>
<th>No. of Models</th>
<th>Friction Material (cu. in.)</th>
<th>Total Lining Area (sq. in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME10</td>
<td>8</td>
<td>0.46</td>
</tr>
<tr>
<td>ME20</td>
<td>12</td>
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<td>15</td>
<td>1.66</td>
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<tr>
<td>MB3</td>
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**Performance Overview**

**Dynamic Torque (Max. in.-lbs.)**

<table>
<thead>
<tr>
<th>Disc Dia. (in.)</th>
<th>ME10</th>
<th>ME20</th>
<th>ME220</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3,782</td>
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<td>8</td>
<td>4,024</td>
<td>4,792</td>
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<td>5,236</td>
<td>5,994</td>
<td>25,088</td>
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<td>6,446</td>
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**Static Torque (Max. in.-lbs.)**

<table>
<thead>
<tr>
<th>Disc Dia. (in.)</th>
<th>ME10</th>
<th>ME20</th>
<th>ME220</th>
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</thead>
<tbody>
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<td>2,012</td>
<td>2,497</td>
<td>8,492</td>
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<td>2,618</td>
<td>3,097</td>
<td>10,104</td>
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<td>3,223</td>
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<td>12,816</td>
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<tr>
<td>16</td>
<td>4,433</td>
<td>5,312</td>
<td>18,316</td>
</tr>
</tbody>
</table>

*Numbers are for general comparisons only. Not all models deliver maximum values.*
**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**

<table>
<thead>
<tr>
<th>NO. OF MODELS</th>
<th>FRICTION MATERIAL (cu. in.)</th>
<th>TOTAL LINING AREA (sq. in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS20</td>
<td>6</td>
<td>0.83</td>
</tr>
<tr>
<td>FS220</td>
<td>24</td>
<td>1.66</td>
</tr>
<tr>
<td>FS595</td>
<td>8</td>
<td>4.57</td>
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</tbody>
</table>

**PERFORMANCE OVERVIEW**

**STATIC TORQUE (MAX. in.-lbs.)**

<table>
<thead>
<tr>
<th>DISC</th>
<th>FS20</th>
<th>FS220B</th>
<th>FS220C</th>
<th>FS595</th>
<th>FS595 DUAL</th>
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<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.313</td>
<td>1.061</td>
<td>2.213</td>
<td>4.522</td>
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<td></td>
</tr>
<tr>
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<td>1.453</td>
<td>2.930</td>
<td>5.985</td>
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<td>1.918</td>
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<td>7.809</td>
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<td>2.383</td>
<td>4.724</td>
<td>9.652</td>
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</table>

**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, keyway set screws

**MODELS**

<table>
<thead>
<tr>
<th>NO. OF MODELS</th>
<th>HUB &amp; DISC ASSEMBLY</th>
<th>HUB &amp; DISC ASSEMBLY w/ QUICK DISCONNECT BUSHINGS</th>
<th>QUICK DISCONNECT BUSHINGS</th>
<th>ONE-PIECE HUB &amp; DISC</th>
<th>BLANK DISC</th>
<th>DISC w/ BOLT CIRCLES &amp; PILOT HOLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS20</td>
<td>6</td>
<td></td>
<td>100</td>
<td></td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>FS220</td>
<td>24</td>
<td></td>
<td>66</td>
<td></td>
<td></td>
<td></td>
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<td>8</td>
<td></td>
<td>2</td>
<td></td>
<td>5</td>
<td>6</td>
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</table>

**INTENSIFIER**

**STANDARD FEATURES:**
- Carbon 1010 steel, flatness within 0.010”
- Stress relieved, Blanchard ground to an 80 (RMS) microinch finish
- Socket head cap screw fasteners, keyway set screws

**MODELS**

<table>
<thead>
<tr>
<th>NO. OF MODELS</th>
<th>HUB &amp; DISC ASSEMBLY</th>
<th>HUB &amp; DISC ASSEMBLY w/ QUICK DISCONNECT BUSHINGS</th>
<th>QUICK DISCONNECT BUSHINGS</th>
<th>ONE-PIECE HUB &amp; DISC</th>
<th>BLANK DISC</th>
<th>DISC w/ BOLT CIRCLES &amp; PILOT HOLE</th>
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</thead>
<tbody>
<tr>
<td>FS20</td>
<td>6</td>
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<td>100</td>
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<td>2</td>
<td>5</td>
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<tr>
<td>FS220</td>
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<tr>
<td>FS595</td>
<td>8</td>
<td></td>
<td>2</td>
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<td>5</td>
<td>6</td>
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**PLANETARY ROLLER SCREW SPECIFICATIONS**

<table>
<thead>
<tr>
<th>CONFIG.</th>
<th>SCREW SIZE</th>
<th>LEAD</th>
<th>MAX. STROKE (C)</th>
<th>*MAX. FORCE</th>
<th>DLR (C)</th>
<th>SLR (CO)</th>
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<tbody>
<tr>
<td>15.04</td>
<td>15</td>
<td>4</td>
<td>800.69</td>
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<td>41.1</td>
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<td>800.69</td>
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<td>10</td>
<td>800.69</td>
<td>15.8</td>
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<td>47.3</td>
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<td>28.0</td>
<td>67.2</td>
<td>83.9</td>
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<tr>
<td>20.05</td>
<td>20</td>
<td>5</td>
<td>1036.22</td>
<td>23.6</td>
<td>73.3</td>
<td>70.9</td>
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<td>10</td>
<td>1036.22</td>
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<td>76.4</td>
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<tr>
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<td>65.5</td>
<td>104.6</td>
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<td>96.6</td>
<td>175.3</td>
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</table>

**Lead Accuracy:** 0.01 mm/300 mm  **Backlash:** 0.03 mm

**ELECTROMATE**

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**POWER TRANSMISSION**

**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

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

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**Tolomatic Excellence in Motion**

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