



FEATURES

- *Self-contained electro-hydraulic technology.*
- *Extremely rugged design and construction.*
- *Very low maintenance.*
- *High torque or thrust in a compact package.*
- *100% solid state controls.*
- *Spring and accumulator fail position options.*
- *Linear, rotary and drive configurations.*
- *Discrete operation, motor and pump only operate when motion is required.*
- *Adaptable to virtually any valve, damper or motion control application.*
- *Optional digital communications and diagnostics*

REXA Products for the Metals and Mining Industry



Electraulic Design Principle

All REXA actuators use the same basic micro-processor-based self-contained electro-hydraulic design principle. Each unit includes the motor, pump, oil, actuation cylinder and the logic controls to operate them. The only required inputs are the control signal and power source, with various options available for both. Available outputs include position indication, limit switches and alarm relays.

Stable repeatable control, independent of load variations, is provided through the use of high pressure non-compressible fluid in the actuation cylinder. Our solid state digital controls and direct coupled feedback allow for immediate response and a variety of factory and user-settable attributes. Unlike electric actuators that use mechanical gears to transmit force and tend to wear, the REXA design ensures years of reliable and consistent performance.

Product Offering

The **Xpac** is designed to meet the most demanding control requirements and is often employed in critical or severe service applications. A wide range of sizes and options allow actuator performance to be fine-tuned as required by the application. The control enclosure is remote mountable up to 700 ft from the actuator and driven device.

The **Mpac** is ideal for many routine applications where resolution and response requirements are less demanding. Mpac controls are mounted directly on the actuator as standard (remote mount optional). A limited number of input and output options and accessories are available.

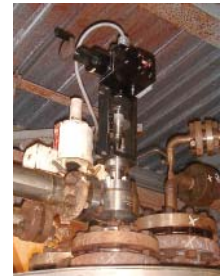
The **Mpac Extended Range** rotary actuators utilize the same basic design principles as the Mpac, but are scaled to meet the needs of high force applications, from 300 000 lb·in to 6 000 000 lb·in.

Applications Served

Some of the most challenging installations for actuators can be found in the mining and metals processing industry. Applications with flashing liquids or slurries demand an actuator with stable control and high output forces. Electraulic actuation provides the stiffness crucial to the continuous operation and longevity of ceramic trims. The rugged self-contained design delivers prolonged service, with minimal maintenance, in the most severe environments. Contact our local representative to see how REXA's time proven products can solve your application needs.

Autoclave Site:

- Autoclave Discharge Isolation
- Autoclave Inlet Isolation
- Autoclave Feed Pump Isolation
- HP Heater Feed Isolation
- HP Heater Discharge Isolation



Slurry Pipeline:

- PD Pump Isolation
- PD Pump Drain
- Main Line Inlet Isolation
- Main Line Outlet Isolation
- Pig Trap Isolation
- Kicker Valve Isolation



Minerals Refining:

- Pump Inlet Isolation
- Pump Discharge Isolation
- Regeneration Dump Valve
- Catalyst Slurry Isolation
- Bypass Isolation
- Overhead Vapor Line Isolation
- Feed Isolation
- Heater Charge Isolation



Power House:

- Boiler Feedwater Pump Isolation
- Feedwater Heater Isolation
- Mainsteam Isolation
- Desuperheater Spray Isolation

Specifications

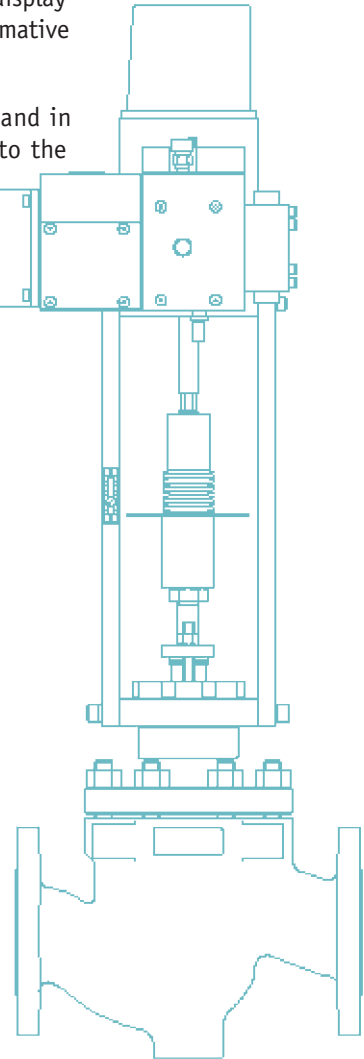
	Xpac	Mpac	Extended Range
Output: Linear Rotary Drive	2 000-120 000 lb (8 896-533 760 N) 600-400 000 lb-in (68-45 194 N-m) 600-100 000 lb-in (68-11 300 N-m)	500-120 000 lb (2 224-533 760 N) 600-100 000 lb-in (68-11 300 N-m) 600-100 000 lb-in (68-11 300 N-m)	on application 300 000-6 000 000 lb-in (33 895-677 909 N-m) —
Control Signal	Analog: 4-20 mA (std) Pulse: 24-120 Vac or Vdc	Single input 24-120 Vac or Vdc, dry contact	Single input 24-120 Vac or Vdc, dry contact
Accuracy	RSS: <0.15% Linearity: <0.05% Repeatability: <0.10%	Within 2%	Within 2%
Failure Mode	Selectable by user	Power open/spring closed	Fail-in-place or Accumulator
Type	Self-contained, Electrolic	Self-contained, Electrolic	Self-contained, Electrolic
Materials of Construction	Anodized aluminum (Electrolic module), anodized aluminum and steel (rack and pinion cylinder/cylinder), steel or iron (D series mounting base)	Anodized aluminum (power module, rotary feedback housing and ML series cylinder), iron and steel (ML, MR and MD series cylinders and MD mounting base)	Cast iron (pumps) and steel (rack and pinion cylinder/cylinder)
Environmental Rating	NEMA 4X (std) CSA approved Cl I, Div 2, grps B, C, & D CSA approved Cl I, Div 1, grps B, C, & D	NEMA 4X	NEMA 4X
Temperature Range	-5 °F (-20 °C) to +200 °F (93 °C) (linear), optional to 300 °F (150 °C) +10 °F (-12 °C) to +200 °F (93 °C) (rotary & drive), optional to 300 °F (150 °C)	0 °F (-18 °C) to +140 °F (+60 °C)	0 °F (-18 °C) to +140 °F (+60 °C)
Motor	Stepping type (B & C) Servo Type (½D - D)	115 Vac - induction, limited to 20 cycles per minute.	230/460 3 phase 60Hz. Totally enclosed, fan cooled motor.
Electronics	Separate Control Enclosure with PCP, motor driver, power supply and termination.	Actuator mounted, self-contained, digital. Solid state motor relays.	Actuator mounted. Remote optional.
Feedback	Integral with cylinder	Thin film potentiometer (10 x 10 ⁶ cycles)	NA (on/off)
Power Requirements B C ½D D	12 Vdc, 24 Vdc, 48 Vdc, 125 Vdc, 120 Vac (std), 208 Vac, 220 Vac, 440 Vac 120 Vac (std), 208 Vac, 220 Vac, 440 Vac 120 Vac (std), 208 Vac, 220 Vac, 440 Vac 120 Vac, 208 Vac, 220 Vac (std), 440 Vac	115 Vac - 4 amp 115 Vac - 12 amp (2C: 115 Vac - 24 amp)	220 Vac – 3 phase 60 Hz 440 Vac – 3 phase 60 Hz
Options			
Failure	Spring - extend or retract Accumulator	Upon loss of power. Includes electrically operated bypass valve and integral spring.	Accumulator
Position Transmitter	Provides 4-20mA output proportional to position. Includes alarm indicator	Provides 4-20mA output proportional to position. Includes alarm indicator	Provides 4-20mA output proportional to position. Includes alarm indicator
Booster Pump	High speed operation.	NA	NA
Enhanced Software	0.05% Deadband Minimum Control Point Two Speed Flow Characterization	NA	NA
Stem Boot	Available	Available	NA
Split Clamp	Available	Available	NA
Auxiliary Control	External - NEMA 4X Remote - manual control station	Actuator mounted - two position rotary switch Remote - manual control station	Actuator mounted - two position rotary switch Remote - manual control station
Limit Switches	Electrical - two relays, SPDT, switched by PCP! Mechanical - 2 or 4, SPDT, yoke mounted	Electrical - two relays, SPDT, electrically switched. Mechanical - 2 or 4, SPDT, Independently switched.	Electrical - two relays, SPDT, electrically switched. Mechanical - 2 or 4, SPDT, Independently switched.
Manual Override	Handwheel/Drill Drive Geared (5:1) Hand Crank	Handwheel/Drill Drive Geared (5:1) Hand Crank	NA
Surge or Trip Control	Available	NA	NA
Electrical Transient	Electronics and power supplies can be isolated to resist electrical damage.	NA	NA
Separate Electronics		Available	Available
REXA is continually improving the design of its products. As such, specifications are subject to change. Refer to individual brochures for more detail.			

About KOSO AMERICA, Inc.

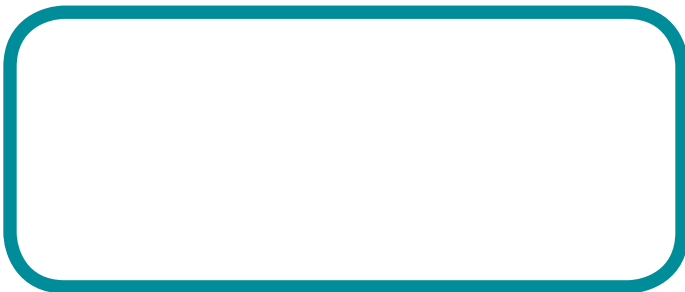
KOSO AMERICA was established in 1993 to manufacture REXA Electraulic™ actuation products. These compact, industrial-grade, self-contained actuators and drives have earned a reputation for high quality and performance excellence in the marketplace since 1985. KOSO AMERICA is ISO 9001:2000 certified.

The Koso America facility provides 11 200 sq ft of office space and 35 426 sq ft for manufacturing. Training classes are also held at the facility. The REXA van tours the U.S. and Canada with five working actuators representative of the broad range REXA has to offer. The twenty foot mobile display is equipped with large monitor and computer setup for presentations, and a supply of informative literature; arrangements can be made for a visit to your area.

Sales representatives are listed on our Web site and located throughout the U.S., Canada, and in many international locations. REXA products and related support services are available to the global market.



REPRESENTED BY



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ELECTRAULIC™ ACTUATORS & DRIVES