Puma Magnetic Drives

PDC Machines' PUMA line of magnetic drives is designed to suit most mixing requirements. Our agitators have been used in batch and continuously stirred vessels (CSTR's) operation in laboratories, pilot-plant and small scale production applications for many years.

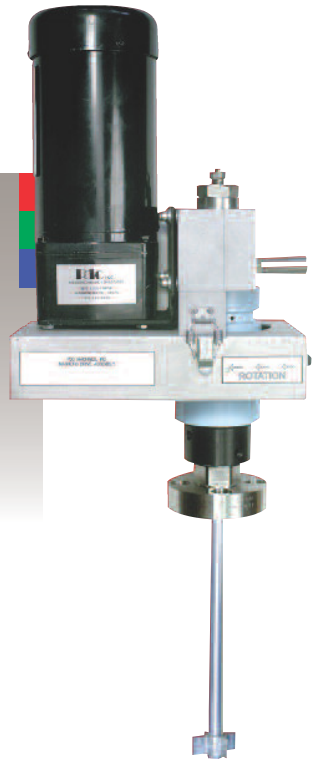
Our magnetic mixer technology assures leak-free, contamination-free and emissions-free mixing at high pressures and temperatures. **It also protects the health of your personnel and the environment and ensures the integrity of your product.** PUMA magnetic drives are an ideal choice when working with toxic, hazardous, highly corrosive or high-purity materials.

Belt Drive vs. Direct Drive

PUMA's **quick, easy maintenance means lower costs and less down time.** Within minutes, the PDC PUMA belt driven magnetic drive can be **very easily serviced**, which includes disassembly, tube and shaft cleaning, replacement of three bearings, and reassembly. By contrast it is cumbersome and time consuming to perform the same maintenance functions on a direct drive.

Compatibility to Meet Your Processing Needs

PDC PUMA Drives can be manufactured from most machinable alloys to ensure compatibility with the intended process media. These include:



70 in. lb. magnetic mixer assembly complete with the magnetic drive, stirrer, electric motor, belt, belt-guard and flat blade impeller.

Arizona Public Service

A Wide Spectrum of Mixing Solutions

PUMA Drives offer an extensive selection of custom-designed impellers to meet your mixing needs.

- Propeller
- Turbine
- Anchor
- Helical Ribbon
- Specially Designed Impellers and Accessories

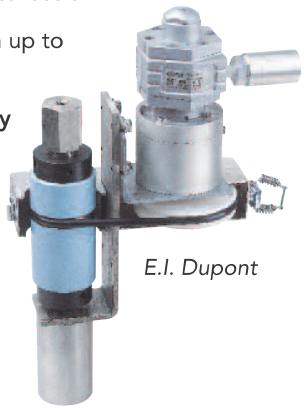
Nova Chemicals

Exceptional Value

Based on our extensive experience in magnetic drive technology, PDC provides technically optimal, high-quality and cost-effective agitation systems. This results in low maintenance, high reliability and dependable operation for many years. The benefits of our inherent design advantages include:

- **Through Bore PUMA Drive**:
  - Utilization of three identical support bearings, eliminating the need for multiple spare parts
  - Excellent alignment for extended bearing life and reduced maintenance costs
  - Ease in cleaning, assembly and maintenance

- **Air-cooled drive tube design** provides for cooling the heat generated by the eddy currents of the unit. This feature retains the dynamic torque rating of the drive throughout its operation
- **PUMA Drives** eliminate the need for drive lubrication, due to the lack of rotary and mechanical seals
- **High-speed vibration-free operation** up to 5000 RPM (only on designated units)
- **Proprietary speed sensor technology** measures the speed of the drive internals. This ensures accurate measurement of drive movement in the event of a magnetic coupling failure
- **Drive systems** are available with AC, DC, or air-driven motors, with either fixed or variable speeds

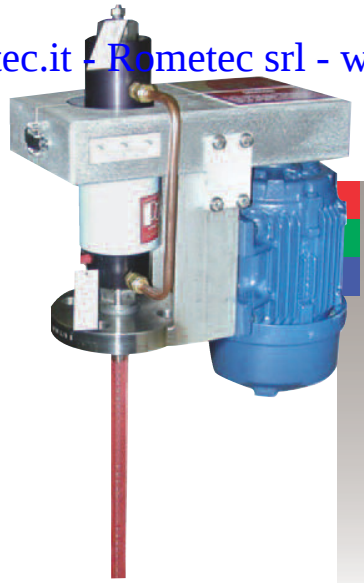


E.I. Dupont

PUMA Drives are Ideal for a Vast Array of Applications

PUMA Drive agitators can be used in conjunction with reactors manufactured by both PDC and other companies. Our mixing systems are ideal for:

- Liquids
- Solvents
- Lacquers
- Oils
- Synthetic materials
- Specialty chemicals
- Biotech
- Food products
- Polymers
- Blends
- Fuels
- Slurries
- Starches
- Pulp and paper
- Particle synthesis
- Catalyst preparation
- Multiphase catalytic reactions



For mounting our PUMA magnetic drives on our customers reactors or pressure vessels, PDC Machines can provide suitable flanges.

Michelman

The Flexible Connection: With PUMA Drives, the Options are Endless…

We work hand in hand with our customers to provide the optimal mounting solution. PUMA Drives come with standard, threaded vessel connections that must be machined into an existing vessel. PDC will custom manufacture alternative mounting solutions to accommodate specific customer requirements.

These include, but are not bound by:

- ANSI flanged mounting arrangements
- Custom flanged or threaded arrangements to adapt to existing openings or nozzle styles
- Sanitary connections

Magnetic drive with single helical ribbon impeller

ExxonMobil

Installation & Specifications Table

Model No.	Static Torque in lb [Nm]	Max Speed RPM	Max Press PSIG [BAR]	Max Temp. °F [°C]	"A" ø in [ø mm]	"B" OAL in [OAL mm]	"C" Thread Size	"D" ø in [ø mm]
P8	8 [0.9]	5,000	10,000 [690]	650 [343]	2-1/4 [57.1]	8-1/2 [215.9]	1"–14UN-2A	5/16 [7.92]
P16	16 [1.8]	5,000	40,000* [690]	650 [343]	5 [127]	13 [330.20]	1-7/8"-12UN-2A	5/8 [15.87]
P70	70 [7.9]	5,000	40,000* [690]	650 [343]	5 [127]	13 [330.20]	1-7/8"-12UN-2A	5/8 [15.87]
P160	160 [18.1]	3,600	7,000 [483]	650 [343]	5-1/2 [139.7]	16-1/4 [412.75]	2-1/2"-12UN-2A	1.00 [25.4]
P300	300 [33.9]	3,600	7,000 [483]	650 [343]	5-1/2 [139.7]	16-1/4 [412.75]	2-1/2"-12UN-2A	1.00 [25.4]
P350	350 [39.6]	1,000	3,000 [207]	650 [343]	7 [177.8]	17-7/8 [454.02]	3-1/4"-12UN-2A	1-1/2 [38.1]
P1000	1,000 [113]	1,000	3,000 [207]	650 [343]	7 [177.8]	17-7/8 [454.02]	3-1/4"-12UN-2A	1-1/2 [38.1]
P2000	2,000 [226]	500	3,000 [207]	650 [343]	7 [177.8]	38 [965.2]	3-1/4"-12UN-2A	1-1/2 [38.1]

*Drives fabricated in alloys other than 316SS can reach pressures up to 40,000 PSIG (650 BAR).