



## Almex Mega™DC Casting Machine

# MEGA

### Delivering the Precision Needed for DC Casting

The DC casting cylinder plays a critical role in the casting process. It supports the entire weight of each cast while keeping tight control over speed and position. And it must maintain pinpoint accuracy over years of service.

As the leading supplier of hard alloy casting equipment, Almex understands the rigorous demands placed on casting machines. The Almex Mega DC Casting Machine not only meets those demands, but it does so while maintaining the highest level of safety, performance and ease of operation.

Almex application engineers customize the casting machine, taking into consideration loads, strokes and casting process. Our commitment doesn't end once your equipment is commissioned. We focus on the entire melting and casting process, and our technology guarantees conformance of casting quality for the most critical end-product applications.

### Primary System Components

- **Casting Cylinder** — Almex offers two styles of internally guided casting cylinders — single-acting or double-acting. The best choice depends on the cast product configuration and alloy. Both styles employ a proprietary ceramic rod coating and the very latest technologies in reduced-bearing friction and leak-free, low-friction sealing. Almex Mega DC Casting Machines are designed to fit each specific application and operating need.
- **Torque Limiting Device** — The torque limiting system protects the internal cylinder anti-rotation mechanism. The breakaway torque limiting device offers protection against damage caused by external forces or by foreign objects that may be in the casting pit.
- **Platen** — The Almex platen is designed to support the starting head base with the necessary strength and rigidity to ensure proper casting operation. Platens are constructed from heavy-duty blanchard-ground structural steel components.
- **Hydraulic Power Unit** — The hydraulic power unit (HPU) includes a fluid reservoir, pumps, valves and industry-leading valve manifold. It is provided in a skid-mounted configuration ready for anchoring to the floor, and is fully wired and piped to convenient interfaces for simple field connections.
- **Water System** — Includes controls and hardware for supply water, return water, water cooling, and water quality management systems.



*The Almex Mega DC Casting Machine meets the industry's rigorous demands while maintaining the highest level of safety, performance and ease of operation.*

*Achieving excellence in aerospace alloy metal treatment and casting has made Almex the leader in DC casthouse technology.*

*Our systems are simpler, cleaner, more flexible and more cost-effective to own and operate than any other leading casting system in the world.*

Almex configures each casting machine for specific drop weight and casting stroke requirements.

Cylinder diameter	As required
Stroke	As required
Operating pressure — typical	650 psi (45 bar)
Test pressure	150% of operating pressure
Cast speed range	0.39 – 9.8 in./min (10-250 mm/min)
Angle of rotation over full stroke without load and torque	+/- 4 minutes
Rod coating	Metal oxide coating — metal bonding layer (Ni/Cr) and ceramic top layer (Cr <sub>2</sub> O <sub>3</sub> /TiO <sub>2</sub> )
Hydraulic fluid	Quintolubric 888-46 or equivalent
Seals and bearings	Suitable for Quintolubric 888-46
Maximum operating temperature	140°F (60°C)

### Application Engineering Support

Almex offers a broad range of engineering support services to ensure your machine is operating at peak efficiency. We provide suggested foundation outline dimensions for the casting pit, including location of the casting cylinder, access ladder, pump and sensors. Anchor bolt loadings are also furnished.

### DC Casting Machines for a Variety of Applications

#### Type 1: Single Acting

This “gravity down” machine is recommended for medium to high number of strands for common alloy applications.

#### Type 2: Double Acting

This “power down” machine is critical for hard alloy applications and small to medium number of strands for common alloy applications.

### Features

Each Almex cylinder is fully tested under rigorous operating conditions. Testing parameters include:

- Internally guided speeds down to .25 in./min. (6 mm/min.) under various loading conditions are certified to be completely free of vibration or any stick-slip conditions.
- Pressures are tested to 150 percent of the design pressures.
- Position repeatability and anti-rotation tolerances are measured during the factory acceptance testing.
- Extended oil leak and seal bypass testing at test pressures.



*Almex hydraulic power units are carefully engineered for precise operation, long life and easy service.*

*For over 15 years, Almex USA has been providing fully integrated casting solutions to aerospace suppliers and common alloy producers. Our proven technical expertise, unique end-product guarantee, and focus on the entire melting and casting process, have made Almex a leader in DC casthouse technology.*