

It's what's on the
INSIDE
that counts!



NEW
An Equipment
Evolution



Digital Series **MANIPULATORS**

Severe-duty construction for durability in rugged environments and applications.
High performance digital controls that are operator friendly.

Action® Manipulators have undergone a major evolution, driven by reliability, maintainability, efficiency and cost of ownership. At every turn, we have minimized the component count, maximizing commonality and availability, and ensuring ease of maintenance.

Combining the input of our customer base with the best of industrial technology in all areas, we have created the new world standard for severe duty manipulators.

Optimized for Severe-duty

- Increased Reliability
- High Efficiency
- Simplified, Digital Controls
- Highly Responsible & Robust
- Easy Maintenance
- Built-In Diagnostics

Digital Series MANIPULATORS

Central manifold and control valve stack mounted on base of machine-no control valves on boom.

Action® Advantage: Valves are easily accessible, protected from heat and shock; plumbing is simplified.

High-response proportional valves with servo spools (for closed - loop axes) have less pressure loss and less vulnerability to contamination than servo valves.

Action® Advantage: Increased reliability, higher efficiency.

Control valves for closed-loop axes feature integral electronics; no external driver cards are needed.

Action® Advantage: Simpler controls, higher reliability. No proprietary board necessary.

Linear Feedback (Common Size) for fast, accurate position sensing.

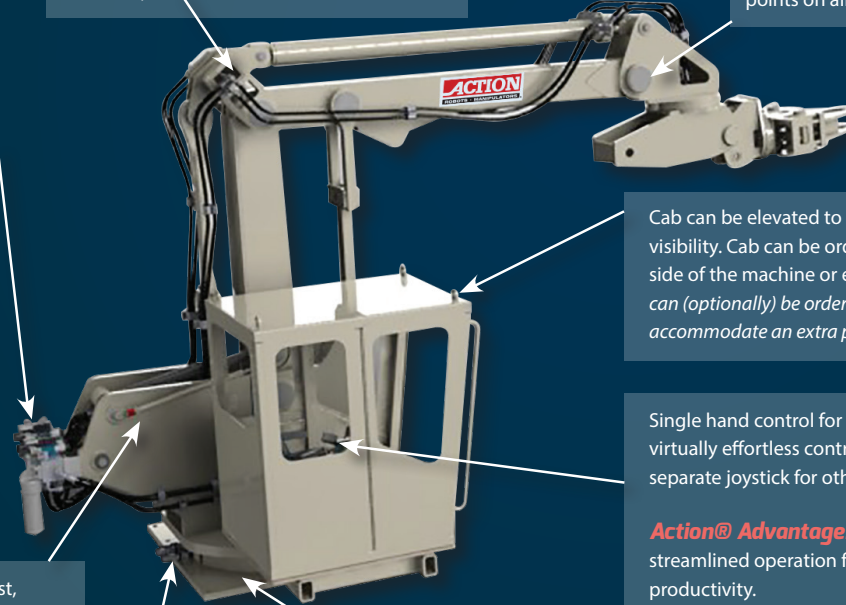
Action® Advantage: Highly responsive, no potentiometers to calibrate.

Engineered hydraulic plumbing, minimizing hose vulnerability and stress on connections; all hose fittings industry-standard.

Action® Advantage: Higher reliability and easier maintenance. (More readily workable)

Integral shock absorber for impact resistance.

Large spherical roller bearings in all pivot joints. Extraction points on all pins.



Cab can be elevated to maximize operator visibility. Cab can be ordered to fit on either side of the machine or even off board. Cab can (optionally) be ordered with extra space to accommodate an extra person.

Single hand control for highly intuitive, virtually effortless control of most-used axes; separate joystick for other axes.

Action® Advantage: Simplified and streamlined operation for maximum productivity.

High-Capacity turntable bearing selected for maximum availability and superior reliability.

Hard-stops and deceleration sensors on slew axis.

Control Advantages

- Open-architecture control system utilizing industry-standard commercially available components.
Action® Advantage: No proprietary hardware, highly customizable.
- Complete control system utilizing network I/O.
Action® Advantage: Increased reliability, Ethernet connectivity.
- System status, error/fault indications plainly displayed on the HMI.
Action® Advantage: Intuitive diagnostics, with no error codes or LEDs to decipher for diagnostics.
- PLC controls all valves directly.

- Motion control tuning is performed entirely from the cab with GUI on HMI.
Action® Advantage: No external driver cards or proprietary boards; fewer connections; simplified maintenance/optimization.
- Optional "Soft" limits can be easily programmed from HMI for the closed-loop axes.
Action® Advantage: Envelope can be constrained to avoid collision with other objects.
- Network I/O connection at HPU and customizable HMI in cab.
Action® Advantage: Virtually infinite possibilities for monitoring/controlling peripheral equipment from the manipulator cab.

Overall Advantages

- Extensive use of FEA and 3D computer modeling to optimize structural geometry, joints and members, resulting in low unit stresses, minimum power consumption and maximum reliability.
- Non-proprietary components used throughout, based on design allowances.
- Bearings, valves, electronics, and other non-proprietary components are readily available from multiple sources for cost-effectiveness.
Action® Advantage: Best of both worlds... superior performance and reliability, with industrial-standard components.