

Schilling Robotics Atlas™ 7P and 7R Manipulators

The subsea industry relies on hundreds of Schilling Robotics' manipulators every day. The Atlas™ series of manipulators is suited to work with today's highest-performing vehicles under the most demanding conditions. Features include:

- ▶ Extraordinary lift-to-weight ratio
- ▶ Premium dexterity allows for more effective positioning while grasping wellheads, panels, or tools
- ▶ Long reach and high degree of agility provides a large operating envelope
- ▶ Built for durability and reliability in harsh subsea environments
- ▶ Low operating cost
- ▶ Standard depth rating of 6,500 msw
- ▶ Available in position-controlled or rate-controlled models
- ▶ Left-hand and right-hand mounting configuration options



Tough and Durable

With seven degrees of freedom and a high lift capacity (250 kg or 550 lb at full extension), the Atlas™ gives operators the freedom and strength to perform a wider range of heavy-duty jobs in harsh subsea environments.

Schilling Robotics took the best technological advances in manipulator structure, design, and actuation, and applied them to the Atlas™ to accomplish harsh and demanding ROV intervention tasks involving heavy lifting jobs. It has

been structurally optimized to withstand prolonged use without excess material and weight. It uses similar actuators in all locations, which are made of titanium for high strength, long life, and superior corrosion resistance. Its structure utilizes the optimal strength-to-weight ratio of 6061-T6 aluminum extrusions and billet, ensuring unparalleled durability and toughness.

Models

The Atlas™ is available in both position-controlled and rate-controlled models. Each model can be configured for left-hand or right-hand installations.

Position-Controlled Model

The Atlas™ 7P position-controlled model adds joint position sensing (azimuth through wrist) and a servo-control valve pack to provide superior telerobotic performance similar to the TITAN™ 4. Operation of the manipulator is simple, comfortable, and intuitive with the Schilling Robotics topside controller. The topside controller features a scale-model pendant arm for controlling the manipulator, as well as function keys for selecting menu options and a display for viewing diagnostic and status information. Advanced operational features are standard, including individual joint freeze, position scaling, password security, programmable stow/ deploy routines, individual joint movement limits, incremental gripper movement, individual joint diagnostics, and automatic error checking.

Rate-Controlled Model

A lower-cost alternative than the position-controlled model, the Atlas™ 7R is controlled by two hydraulic hoses, supplying each joint or functions that are operated by customer-supplied

valves and switches. The Atlas™ 7R requires no electrical connections and is designed for ROVs with onboard hydraulic power interfaces. With seven functions and a high lift-to-weight ratio, it is a premium option over traditional 5-function grabbers (such as the RigMaster) and is particularly effective when paired with a TITAN™ 4 or Atlas™ 7P manipulator.

Operating Envelope

A large operating envelope establishes the Atlas™ series as a dual-role grabber with the dexterity to access tool skids and supplemental equipment, giving an operator needed flexibility in the field. Additionally, having a slim cross-section allows it to reach into restrictive openings. If it needs to be interchanged between a left and right mounting position, this can be done quickly in the field and without the need for additional parts.

Options and Accessories

The following options and accessories are available for the Atlas™ series manipulators:

- ▶ 6-in (152 mm) parallel-acting titanium gripper
- ▶ 7.8-in (198 mm) four-finger intermeshing titanium gripper
- ▶ 11.2-in (284 mm) four-finger intermeshing titanium gripper
- ▶ Spares kit and seal installation tool kit

Specifications

Reach:	1.675m
Type:	Position or Rate-Controlled
Functions:	7
Materials:	Anodized aluminum, stainless steel, titanium

Arm Specifications

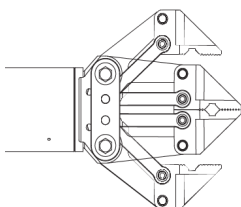
Standard Depth:	6,500 msw
Weight in Air:	73 kg
Weight in Water:	50 kg
Lift at Full Extension:	250 kg
Maximum Lift, Nominal:	500 kg
Standard Gripper Opening:	198 mm
Grip Force, Nominal:	4,448 N
Wrist Torque, Nominal:	205 Nm
Wrist Rotate, Continuous:	6-35 rpm

Actuator Function

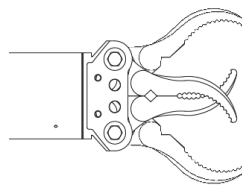
Azimuth:	Linear, 120°
Shoulder Pitch:	Linear, 135°
Elbow Pitch:	Linear, 135°
Wrist Pitch:	Linear, 120°
Wrist Yaw:	Linear, 120°
Wrist Rotate:	Gerotor, 360°
Gripper, Standard:	Linear, 198 mm

Hydraulic Requirements

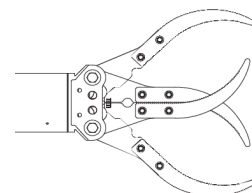
Fluid:	Mineral, Glycol, or Synthetic
Viscosity:	10-200 cSt
Available Flow:	5.7 - 19 lpm
Max. Pressure:	3,000 psi
Max. Fluid Temperature:	54°C
Fluid Cleanliness:	ISO 4406 14/11



6-in Parallel

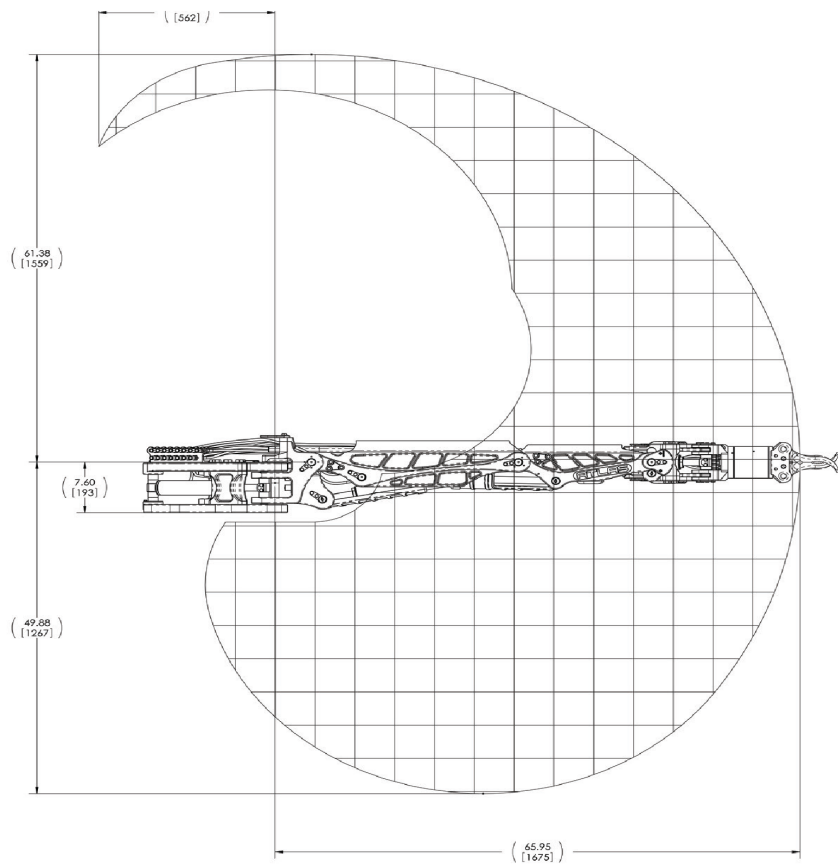


7.8-in Four Finger Intermeshing



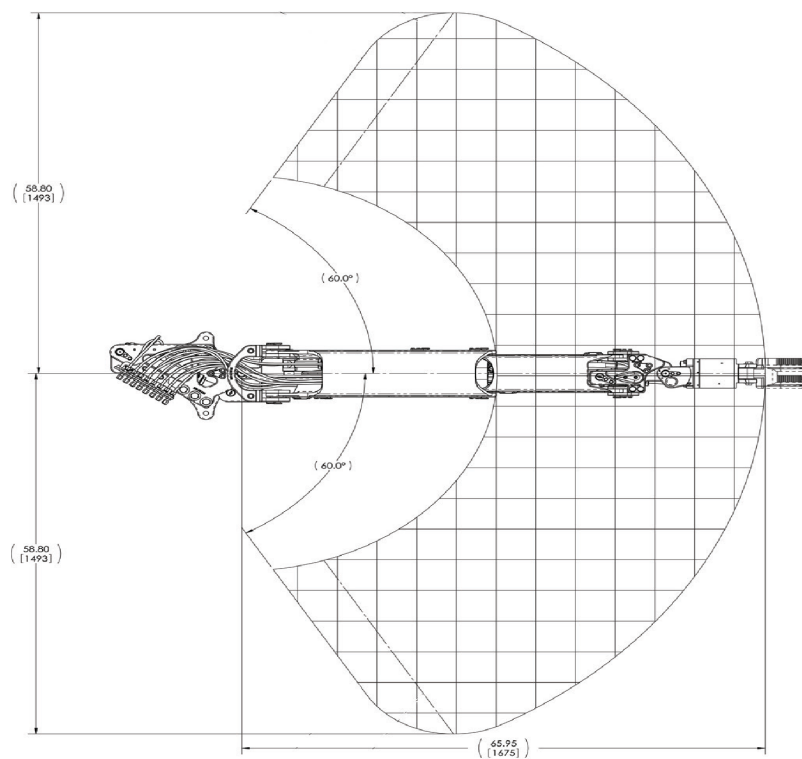
11.2-in Four Finger Intermeshing

Gripper Options

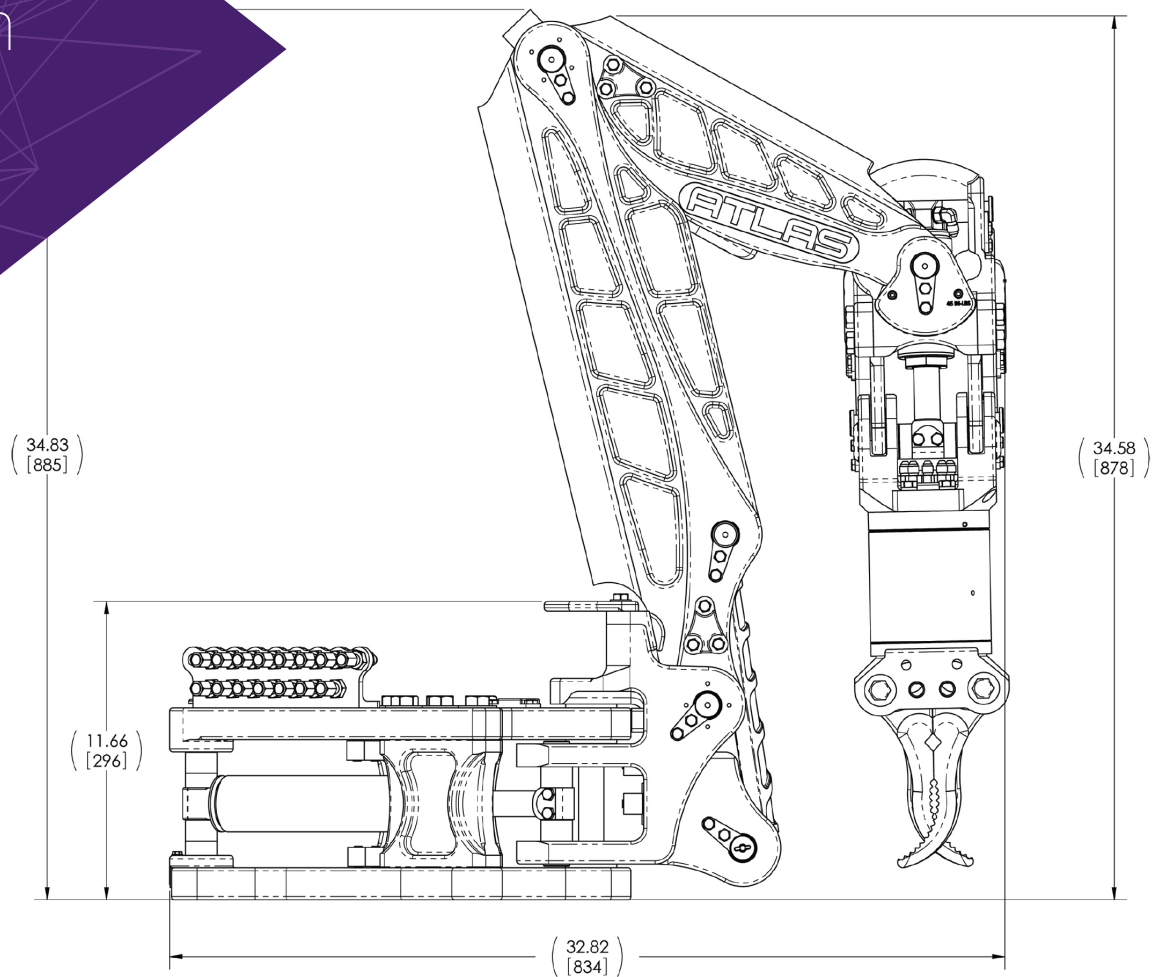


Range
of Motion,
Side View

Range
of Motion,
Top View



Dimensions with Arm Stowed



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