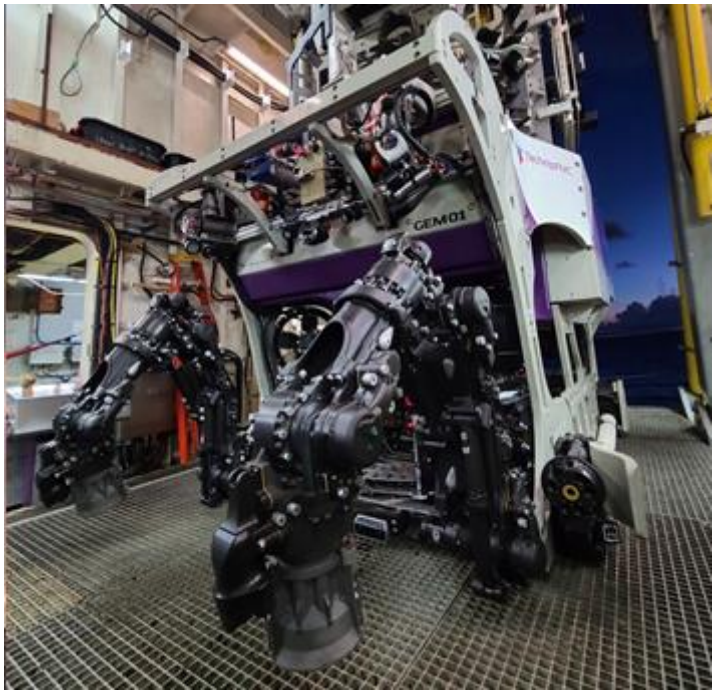
Schilling Robotics Manipulator Systems



Superior Versatility

As subsea Intervention tasks continue to increase In complexity, manipulator systems will continue to be at the forefront, providing the dexterity, strength, and reliability to perform the task at hand. Manipulator arms must range In ability from strong grabber to highly dexterous.

Performance and Efficiency

Schilling Robotics' was founded in 1985 delivering its first manipulator in 1986 and capturing the subsea manipulator market by 1988, today over 3,000 manipulator systems have been delivered. Now an industry standard, Schilling Robotics' manipulators are deployed on virtually every work-class ROV in the world with further systems deployed on electric ROV's and other submersibles including research and exploration submarines.

Service and Support

ROV's and Submersibles operate in a global arena and to support our clients Schilling Robotics provides 24/7 helpline, email technical support, field support engineers plus offers comprehensive spares support through its online ordering portal enabling the customer to price, order and track its shipment through the customers own dedicated access portal. Whether help is needed on-site or offshore, our highly trained field support engineers are experienced in assisting customers.

Options and Accessories

To support client's operational manipulator requirements Schilling Robotics offers:

- Multiple Gripper Configurations
- Extended Depth Ratings (Subject to Manipulator)
- Dual Manipulator Configurations (Subject to Manipulator)
- Standard and Enhanced Spares Kits
- Maintenance and Repair Tool Kits

TITAN 4

The TITAN 4 has the dexterity and accuracy necessary to perform the fine movements needed for complex tasks. When this ability Is combined with the manipulator's reach (1,922mm). payload capacity (122kg at full extension), depth rating (up to 7,000msw), and large operating envelope, the TITAN 4 offers unparalleled performance in a wide range of subsea applications.

ATLAS 7P, 7R

The ATLAS 7P is position-controlled arm with joint position sensing (azimuth through wrist) and a servo control valve pack to provide superior telerobotic performance similar to the TITAN 4. As an alternative the ATLAS 7R rate heavy-duty, seven-function grabber, both 7P & 7R have been designed to lift heavy loads, while being lightweight and easy to control. With six degrees of freedom, a high lift capacity (250kg or 5501b at full extension), and a depth rating of 6,500msw, the ATLAS 7P and 7R provide operators the freedom and strength to perform a wider range of heavy-duty jobs in harsh subsea environments.

CONAN 7P

The CONAN 7P is designed to perform demanding tasks and yet be economical to install, operate, and maintain. Its power, reach, and rugged construction make it the perfect choice for subsea manipulator applications that require a combination of heavy lifting and dexterity.

RigMaster

The RigMaster is a five-function, rate-controlled, heavy-lift grabber arm that can be mounted on a wide range of subsea ROVs. It is engineered for the strength needed to withstand the industry's harsh and repetitive needs day after day. The grabber arm can be used to grasp and lift heavy objects or to anchor the ROV by clamping the gripper around a structural member at the work site.

ORION 7P, 7R, or 4R

The ORION's compact size, light weight, and excellent payload capacity make it the system of choice for light and medium work-class ROVs. The arm's structural segments are fabricated from hard-anodized extruded aluminum for strength and corrosion resistance. Deepwater tasks are no problem for these arms.

Manipulator Comparison Chart

	TITAN 4	ATLAS 7R	ATLAS 7P	CONAN 7P	ORION 7R/P	RIGMASTER	ORION 4R
Category	Heavy work	Heavy work	Heavy work	Heavy work	Medium work	Medium work	Medium work
Power Source	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Control Source	Position	Rate	Position	Position	Position or rate	Rate	Rate
Functions	7	7	7	7	7	5	4
Materials	Primarily Titanium	Anodized Aluminum & Stainless steel	Anodized Aluminum & Stainless steel	Anodized Aluminum & Stainless steel	Anodized Aluminum & Stainless steel	Anodized Aluminum & Stainless steel, Titanium	Anodized Aluminum & Stainless steel
Max. Reach	1.922mm	1.675mm	1.675mm	1,806mm	1,532mm	1,372mm	682mm
Input Device	Master arm	Rate Hand controller	Rate Hand controller	Master arm	Master arm or Rate controller	Rate hand controller	Rate hand controller
Depth Rating Standard	4,000msw 7,000msw option	6,500msw	6,500msw	3,000msw	6,500msw	6.500msw	6,500msw
Lilt al Full Reach	122kQ12701 b	250kgt5501b	250kgt5501b	159kg/3501b	68kg/1501b	181kg/4001b	136kg/3001b
Weight in Air	100kg/2211b	73kg/1601b	73kg/1601b	107kg/2351b	54kg/1201b	64kg/1421b	30kg/671b
Weight in Water	78kg/1741b	50kg/1091b	50kg/1091b	73kg11611b	38kg1831b	48kg110Slb	21kg/461b
Jaw Options	3F Intermeshing 4F Intermeshing 4in Parallel Acting	4F Intermeshing 6in Parallel Acting	4F Intermeshing 6in Parallel Acting	4F Intermeshing 6in Parallel Acting	3F Intermeshing 4in Parallel Acting 6in Parallel Acting	4F Intermeshing 6in Parallel Acting	4F Intermeshing

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