

AMAZING APPLICATION



1st

ROCKET LIFT & RAPID-RETRACT GROUND SUPPORT SYSTEM

SUBMITTED BY:

Chad Burkhardt | Advanced Fluid Systems Inc. | United States

This is Northrop Grumman's (formerly known as Orbital Sciences Corp.) Antares rocket lift and rapid-retract ground support system. Since 2013, Antares rockets have been delivering supplies to the International Space Station from Launch Pad 0A at Wallops Island, Virginia, USA. Advanced Fluid Systems, Inc. (York, Pennsylvania) designed and built the hydraulic and electrical motion control systems responsible for lifting the Antares rocket prior to launch, and then retracting the lift structure away from the rocket during launch.

SUN PRODUCTS USED IN APPLICATION:

Seven custom Sun manifolds (Four unique model codes), 184 cartridge valves (31 unique model codes), 20 Sun bodies (eight unique model codes)

AMAZING APPLICATION

2nd



TUNNEL BORING SAFETY SYSTEM

SUBMITTED BY:

Andre Schwerzmann | ATP Hydraulik AG | Switzerland

Pictured here is a Herrenknecht AG inclined shaft tunnel boring machine. It was used in the construction of a new underground electrical storage plant 600 meters deep into a mountain in the Swiss Alps. ATP Hydraulik AG is responsible for engineering the hydraulic safety mechanisms in this tunnel boring system, and since this tunnel ran at an incline of 45°, the tunnel boring machine must be equipped with an intelligent fallback system. The safety fallback device must be able to withstand 650 tons of weight, and as the power supply in the tunnel is not always guaranteed, it was not possible to secure it with conventional pumps. ATP Hydraulik AG used solutions from Sun Hydraulics to create a way to guarantee the safety against relapse in a simple and effective way. In the event of a power failure, oil is forced into the cylinders with pre-stressed gas accumulators. These extend and press the gripper plates against the tunnel walls, which makes it impossible for the tunnel boring machine to fall back. Also, the whole machine climbs up with a 45° gradient in this way.

AMAZING APPLICATION

3rd



TRITON LOGGING'S SAWFISH™ UNDERWATER TREE HARVESTER

SUBMITTED BY:

Jeff Magnolo | Peerless Engineering Sales Ltd. | United States

The Sawfish™ underwater tree harvester not only navigates precisely by a remote pilot, it can operate to a depth of approximately 1,000 feet. It weighs 7,000 lbs. on land and is slightly buoyant in water. It operates fully-remote with eight video cameras and sonar powered by a 75-HP electric motor, using biodegradable and vegetable oil-based hydraulic fluids. Also equipped with a feller grapple and 55-inch chainsaw, it handles larger trees than any land-based mechanical harvester due to water buoyancy. The harvester uses 37-50 inflatable, reusable airbags to float trees to surface (one bag per tree).

SUN PRODUCTS USED IN APPLICATION:

A50114LF01 - Thruster Manifold, A50115LF01 - Grapple Manifold,
A50116LF01 - Process Manifold

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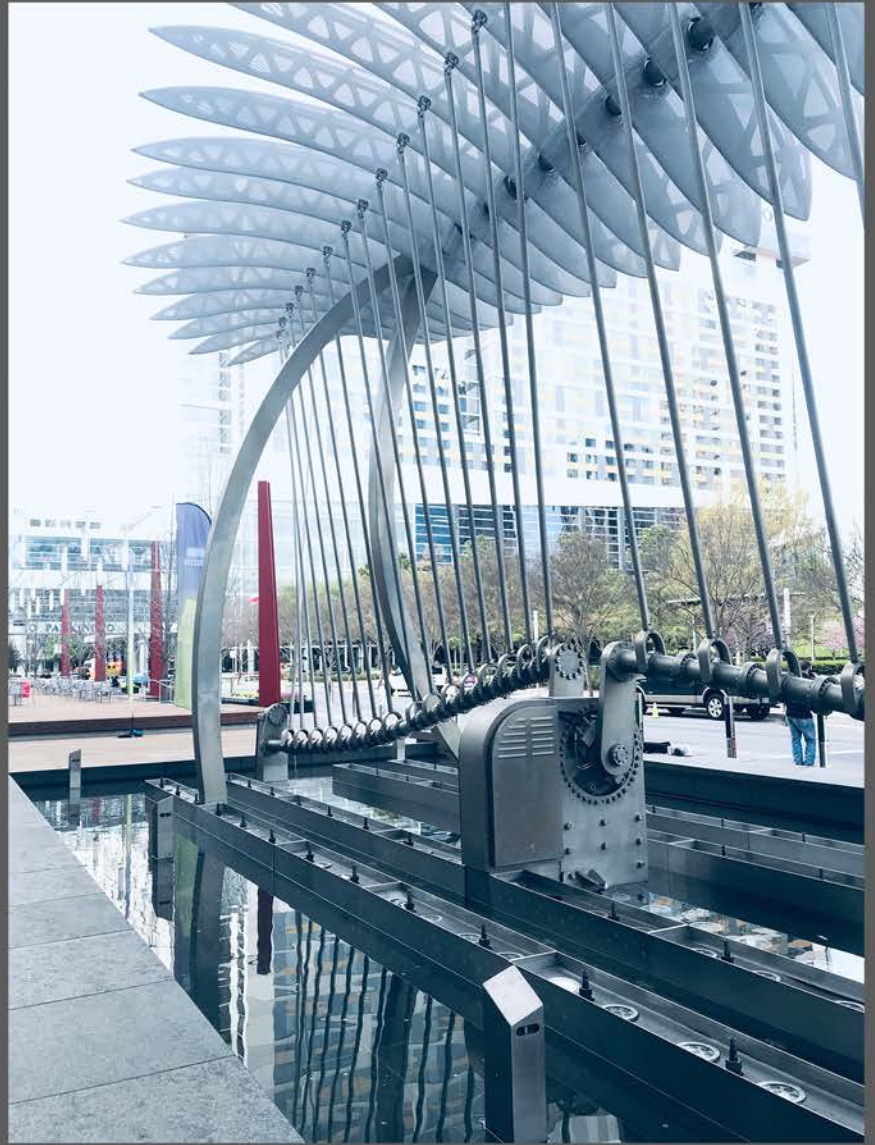
PIPE & RISER CATWALK MACHINE

SUBMITTED BY:

Xiao Yong Zhang | Lanzhou LS Energy Equipment | China

Catwalk Machines are pipe handling systems that are used to transport tubular objects and ancillary equipment to and from the marine drill floor. This machine is used on semi-submersible drilling platforms. Sun Hydraulics valves are used in the hydraulic systems.

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"WINGS OVER WATER" PUBLIC ART INSTALLATION

SUBMITTED BY:

Travis Kuehler | Womack Machine Supply | United States

Pictured here is the "Wings Over Water" public art installation in Houston, Texas, USA. The Sun valves are mounted inside of the fountain, which drives a Häggglunds motor which moves the large wings.

SUN PRODUCTS USED IN APPLICATION:

DFCA Directional Poppet Valve is used in the control stack for a closed-loop pump driving a Häggglunds motor.

AMAZING APPLICATION



RT-1000 AUTONOMOUS SNOW-CLEARING & MOWING SOLUTION

SUBMITTED BY:

Michael Ott | Left Hand Robotics | United States

This self-driving machine is powered by a 37-HP EFI engine driving three hydraulic pumps. The machine is designed to clear snow on sidewalks and pathways reducing the owner's dependence on hard-to-find labor. It uses interchangeable front- and rear-attachments and can be set up with a variety of mower decks for large-area autonomous mowing in the warm weather seasons. The machine is the only one of its kind and has been in use by customers throughout North America since 2018.

SUN PRODUCTS USED IN APPLICATION:

RDBA-LAN Relief Valve, DNDC-XYN912 Solenoid Valve, DNDC-XBN912 Solenoid Valve, DFBD-XHN912L Solenoid Valve, CXBA-XFN Check Valve, B10-4-A8T Body

AMAZING APPLICATION



HYDRAULIC SWING YARDER AND HYDRAULIC GRAPPLE CARRIAGE

SUBMITTED BY:

Chad Orth | Summit Attachments and Machinery | United States

Pictured here is a Summit Attachments and Machinery hydraulic swing yarder and hydraulic grapple carriage for logging applications working in Olympia, Washington. This machine is the first of its kind and takes logging production to a new level.

SUN PRODUCTS USED IN APPLICATION:

FXCA Flow Control Valve, PRDP Electro-Proportional Valve, CWIG 5:1 Counterbalance, CWIL 2:1 Counterbalance

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MILL LINER HANDLER FROM 1987

SUBMITTED BY:

Andy Katakam | McLellan Industries | United States

Pictured here is the mill liner handler's crane lifting a test weight. At McLellan, we greatly depend on Sun Hydraulics to make our machines safer and more efficient. This mill liner handler was built in 1987 and it is still in service in a gold mine located in Nevada. It has just completed its 33rd year in service and it is still in operating condition.

SUN PRODUCTS USED IN APPLICATION:

The crane consists of a CBEA-LAN 3:1 pilot ratio, standard capacity counterbalance valve for holding the position of the crane in the events of hydraulic power loss.

AMAZING APPLICATION



L Aidig Reclaim Auger

SUBMITTED BY:

Michael Cincoski | Laidig Systems | United States

This machine is used for storage and handling of wood pellets. The auger is shown inside a large concrete silo. The hydraulic power unit supplies flow to drive auger rotation. The auger rotates and pivots around the floor to supply the plant with wood pellets.

SUN PRODUCTS USED IN APPLICATION:

The hydraulic system is controlled with Sun's FPHK Electro-Proportional Throttle Valve to vary flow rate and match changing material flow requirements.

AMAZING APPLICATION



TIRE PRESS

SUBMITTED BY:

Jeff Magnolo | Peerless Engineering Sales Ltd. | Canada

Before Sun, this customer had three separate flow divider circuits, which meant many long hoses and fittings, and high pressure drops. Sun's custom solution combines the functions of the original three systems into one block. That meant the customer was able to save space and reduce the number of hoses and fittings being used. This also meant the customer had installation flexibility and saw a reduction in material and labor costs. The Sun solution presented faster response times and less pressure drop. And, using one block provided improved synchronization of flow division and combination for less end-of-stroke errors.

SUN PRODUCTS USED IN APPLICATION:

Sun custom synchronizing flow divider/combiner manifold