AHS PRODUCT CATALOGUE

AHS
ALMEK HYDRAULIC SERVICES

CONTENTS

04 ABOUT AHS

06 CABLE CAROUSELS

08 CABLE TENSIONERS AND DEPLOYMENT MACHINES

10 CABLE STORAGE & HANDLING SOLUTIONS

- Cable Winches
- Spoolers
- Cable Storage Rack
- Reel Handling Units
- Under-Roller
- Sheaves
- Cable Chutes

16 MARINE SEISMIC PRODUCTS

- High Pressure Air Valve Panels
- Streamer Tow Clamps
- Containerized Streamer Storage

22 SEAFLOOR CABLE DEPLOYMENT LINES

24 HPR SHAFT / DEPLOYMENT MACHINE / PINGER SHAFT

26 HYDRAULIC COMPONENTS

- Hydraulic Power Units (HPU)
- Hydraulic Engineering
- Hydraulic Valve Blocks
- Drive Solutions
- Hydraulic Cylinders

28 DECOMMISSIONING

30 RENTAL EQUIPMENT

AHS
ALMEK HYDRAULIC SERVICES

Photo: Magseis

AHS

Almek Hydraulic Services is a Norwegian company established in 1999. Since the start we have offered leading competence on hydraulic, electrical and mechanical systems. We supply quality equipment with main focus on cable handling to the maritime and seismic industry, cable manufacturers onshore and grid operators worldwide.

With our experience and commitment, we have become a problem solver and developed highly specialized machines and solutions for a wide range of customers and applications. We deliver functional and cost efficient quality equipment and solutions.

In AHS we offer turnkey solutions, but we also provide engineering, manufacturing and testing services. We are a trusted company with many years of experience in design and production of specialized equipment for the offshore and onshore industry. The number of returning customers is to us the proof of us being a preferred partner.

We are located in new and effective facilities near Tønsberg, just south of Oslo.

Martin Mikkelsen
General Manager

WE DELIVER:

Engineering // Electrical // Mechanical

Hydraulic // Turnkey solutions // Cable handling

CABLE CAROUSELS

Cable carousels or turn-tables are used during production, storage and installation of large cables and umbilicals.

AHS designs and manufactures turntables for both permanent installations and mobile units. Our turntables for permanent installations are rail systems for 200-6000 T cable. Triangular sections supported by wheel boxes are connected to form a circle to run on circular rail tracks. The distributed electrical drive system typically powers one third of the wheels. Each powered wheel has its own motor with frequency converter.

Our mobile turntables are slewing ring based for easy and flexible installation. They are available for cables from 200-1200 T. Electrical or hydraulic drive system is available.
All our turntables can be split into sections for transportation by road or sea. We deliver lying arms, control stations, cable rollers, tension machines, and other cable handling equipment, according to customer requirements.

	200 T	600 T	1200 T	2000 T	4000 T	6000 T
Typical diameter	8 m	10 m	12 m	20 m	35 m	50 m
Power requirements	10 kW	30 kW	60 kW	100 kW	200 kW	300 kW

Typical size and power requirements for our permanent installation Cable Carousels

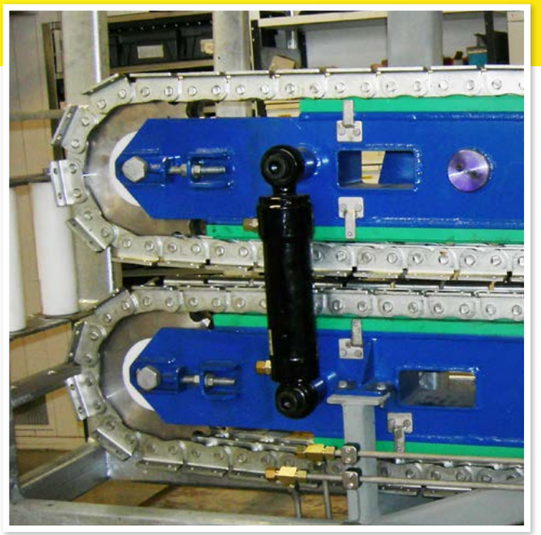
Cable Tensioners & Deployment Machines

AHS supplies a wide range of cable tensioners, cable transporters and deployment machines for power, communication and sensor cables. These are either wheel based or belt based, often referred to as linear cable engines and tracked engines. We call them Wheel Machines and Belt Machines.

In general a Wheel Machine is more gentle to the cable, while a Belt Machine is more compact and will provide more cable tension in the same unit length. Depending on the application, the machines can be adopted for horizontal or vertical operation, hydraulic or electric drive system. We can help you find the best machine for your cable and application.

Cable type, friction coefficient, operation environment, modes of operation, speed and tension range, size and cost are key parameters. Typical operation range for our Wheel and Belt Machines:

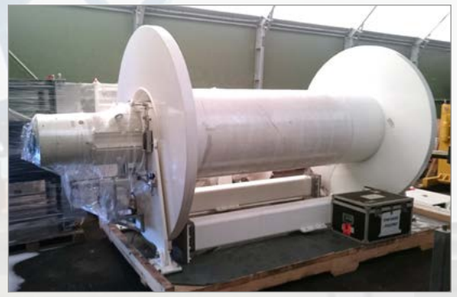
Belt Machines	2–20 tons
Wheel Machines	1–6 tons



CABLE WINCHES

AHS designs and builds winches for a wide range of applications, both onshore and offshore: Cable or wire/rope winches, streamer winches, storage winches, and auxiliary winches.
From simple standard winches, to highly customised winches.

We supply hydraulic or electric drive systems with regular AC induction motors or Permanent Magnet (PM) motors. Control system for tension, speed and spooling can also be provided.



10 T Spooler

The 10 T Spooling Stand from AHS supports and turns cable reels up to 10 tons. It is compatible with wooden-, steel- or aluminium reels, runs on 230 V AC power, and can achieve cable tensions up to 600 kg (depending on friction between tire and reel flange). The speed is adjustable from 0 - 40 meters/minute.

Included in each delivery:
- Spooler shaft, Ø85 x 2400 mm
- Adaptors to accommodate center-hole diameters of Ø100, Ø110 and Ø130 mm
- Spooler shaft locking rings
- Manual hydraulic jacks
- Stainless steel electrical cabinet with frequency converter
- Electric motor and gear
- Spare tire
- Remote control

Technical Specifications:

Total weight	530 kg
Shipping dimensions	1.6 x 0.9 x 1.7 m (1/3)
	1.6 x 0.7 x 1.7 m (2/3)
	Ø 0.085 x 2.4 m (3/3)
Max drum width	2.0 m
Max drum diameter	3.0 m
Speed	0-40 m/min
Max cable tension	600 kg
Power requirements	230V AC 50/60Hz, 16A
Remote control cable length	10 m
Brake resistor	0.8 kW
Material	Galvanized steel

30 T Spooler

The 30 T Spooling Stand from AHS supports and turns cable reels up to 30 tons. It is compatible with wooden-, steel- or aluminium reels. It has two drive units that run on 220 V or 380 V 50 Hz power, and can achieve cable tension up to 450 kg (depending on friction between the tires and reel flanges).
The speed is adjustable from 0 - 25 meters/minute.

Included in each delivery:
- Spooler shaft
- Adaptors to accommodate center-hole diameters of Ø100, and Ø130 mm
- Spooler shaft locking rings
- Manual hydraulic jacks
- Stainless steel electrical cabinet with frequency converter
- 2 x electric motor and gear
- Spare tire
- Remote control
- 25 m supply cable
- Grease, leveller, spare jack, spanner, sledge hammer

Technical Specifications:

Drum width	1 - 2.5 m
Drum diameter	2 - 4.5 m
Speed	0 - 25 m/min
Max cable tension	450 kg
Power requirements	230V AC 50/60Hz, 16A
Remote control cable length	10 m
Material	Galvanized steel

Cable Storage Rack

The Cable Storage Rack from AHS is an efficient and space-saving method of cable storage, which can be used for any type of cable. The common drive solution for all four reels makes the Cable Storage Rack very flexible and cost efficient.

The rack is often used to store damaged cable to be shipped off. The reels are easily replaceable, so there is no need to spool off the cable. Simply replace the reel with a new one. This makes the Cable Storage Rack ideal for rotating damaged cable sections with new ones. The rack can be shipped in a 20-foot container. Support legs with cranks jacks for use on the key side are optional.

The rack comes with all hydraulics pre-installed and ready for use (including the control valve). Just connect it to an HPU and start spooling. With optional lifting harness, the rack can be lifted with full reels. A canvas hood can be supplied, for protection.

Technical Specifications:

Total weight	3000 kg
Physical dimensions	4 x 3.8 x 2 m (HxWxD)
Power	Hydraulic motor
Oil consumption	30 l/min max
Storage capacity	4 reels
Max flange diameter	Ø1.8 m
Reel width (outside)	1.12 m
Max weight per reel	4000 kg
Material	Galvanized/stainless steel

Reel Handling Units

Reel handling units are supplied in a number of configurations for any reel size. With or without spooling, electric or hydraulic drive motor, with diesel power pack, single or dual configuration, on container skids etc. These are ideal for spooling on and off cable from larger reels, and can also provide back tension when spooling off cable/wire.

130 T cable and reel carrier

The AHS reel carrier is an oversized hand pallet truck for transportation of cable reels in-between production area and storage area. It can lift and carry reels up to 130 tons with maximum diameter of 7.5 m.

The reel carrier has hydraulic lifting and steering, and can be pulled by a tractor or a forklift. It is dependent on a smooth surface, but is a very versatile tool for reel transportation compared to craning.

The concept is developed by AHS and is scalable to virtually any reel- or load size.

Under-roller

AHS has built several types of under-rollers for reels, in fixed or mobile configurations. The mobile systems can be mounted directly onto the parked reel, and allows for mounting, lifting, rotating and lowering the reel in a safe way without the need of a crane.

We deliver both electric and hydraulic drive systems, and effort has been put into noise reduction. Noise level is typically 64 dBa.

- Reel weight (full): 40 to 600 tons
- Reel diameter: 6 - 16 meters
- Cable force (adjustable): 1 - 14 tons

Sheaves

AHS designs and manufactures custom sheaves for umbilicals, wires and ropes. We have delivered sheaves for floor, ceiling and wall mounting, shackle suspension, and in-sea-sheaves.

Rollers and roller windows

AHS manufactures rollers and roller windows to aid cable handling. These can be bolted or welded onto existing structures. We deliver rollers according to our customers' cable/wire type and specific application. Typically this means low-maintenance oil-filled rollers with stainless shafts, with PE-HD, PA6 or stainless steel contact area.

Cable chutes

Over the years, AHS has engineered and manufactured numerous cable chutes for all types of cable. We have in depth knowledge of design requirements, strength, materials, size, fastening points, suitable lining materials, water lubrication and more.

By cooperating closely with our customers, we can provide chutes to meet almost any requirements.

Marine Seismic Products

AHS delivers equipment and services to all major seismic companies worldwide. Since the start, we have had close cooperation with the industry.

Together with our customers, we have solved problems and developed solutions and innovations that set today's standard. This chapter contains some of our most popular products.

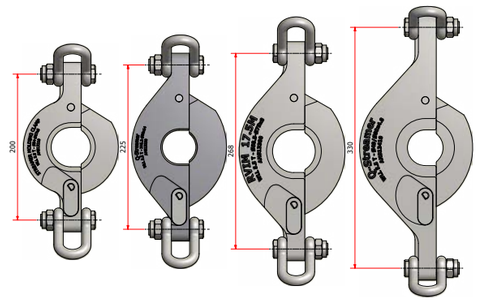
Photo: PGS

HIGH PRESSURE AIR VALVE PANELS

Manually operated air valves for controlling the air supply to the seismic air guns, are known to cause explosions and damage in high pressure air systems, due to adiabatic compression of air or water hammer. In addition, the operator is put in a high risk position when operating the manual air valves.

AHS' High Pressure Air Valve Panel (HP-AVP) is a completely new way of thinking regarding control of high pressure air to the air guns. The new compact block design gives the HP-AVP a great HSE and maintenance advantage over a standard pipe-design. All main functions can be monitored and controlled remotely from a safe position. Opening and closing times complies with the new DNV standards to prevent explosions in high pressure air systems. The valves are special air-valves with protective erosion rings and seals resistant to explosive decompression, for improved reliability and long service life. The system is operated from a 15" touch panel.

STREAMER TOW CLAMPS



The unique AHS Streamer Tow Clamp has been supplied to the seismic industry for 15 years. It is now in use by most seismic companies for de-tensioning of the streamer cable before splitting it, or for towing the workboat.

The design has evolved over many years, and has become a very mature product. Each individual clamp undergoes strict testing and is issued with an individual test certificate. The clamps are manufactured in Super Duplex steel.

The Streamer Tow Clamp comes in four standard sizes: 200 mm, 225 mm, 268 mm and 330 mm. The size represents the width between the shackles. Each size can be adapted to any streamer cable.

Please include a drawing of your connector with your request and we will recommend a type that will fit your cable. We keep stock of several of the most common types of clamps. AHS also do re-certification of clamps. Most seismic companies have a two-year re-certification interval for their Streamer Tow Clamps.

Containerized Streamer Storage 35 T

The Containerized Streamer Storage Winch has been developed by AHS for safer, more efficient streamer transfers with minimal damage to the streamer sections. Transferring large amounts of streamer sections during yard stays can be a time consuming and labour intensive task, raising many HSE issues.

With the Containerized Streamer Storage Winch the job can be done safely by two winch operators at a third of the time compared to manually coiling the streamers in containers. Minimum cable bend radius is maintained and kinks in the streamer is avoided.

The winch can be shipped as a standard 20' container. The winch is self-contained with a diesel HPU and requires no additional power. It is also equipped with work lights for around the clock operations. Tools, lifting harness and other equipment are packed in rugged galvanized steel crates during transportation.

Technical Specifications:

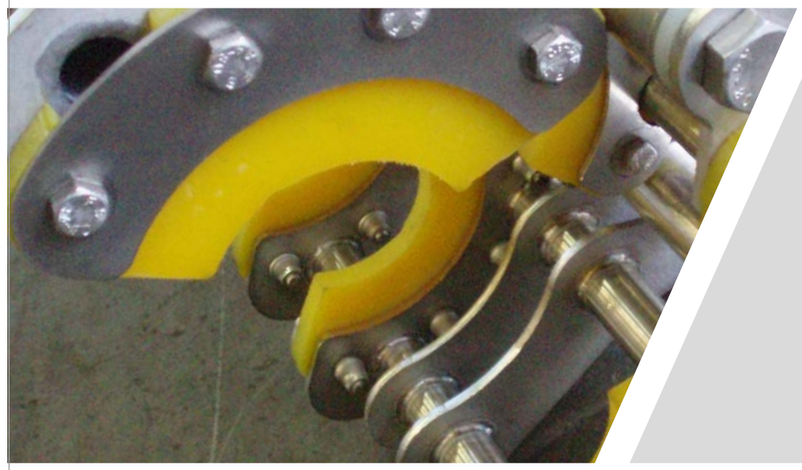
Shipping weight	10 tons
Shipping dimensions	20' container
Core diameter	1.6 m
Flange diameter	3.8 m
Drum width	4.5 m
Streamer capacity	35 tons
Speed	0-15 rpm
Cable tension	0-600 kg
Power	Hydraulic. 22 kW diesel HPU
Fuel consumption	4 l/h

HYDRAULIC MOTOR SOLUTIONS

Many seismic streamer vessels are experiencing high failure rates for Poclain MS/MSE18 hydraulic motors with certain bearing solutions on streamer and wide tow winches. AHS have developed and tested an alternative bearing and cooling system to avoid the problems associated with these drive units.

STREAMER HANDLING UNIT XL

The Streamer Handling Unit XL is designed for handling spider type mini streamer reels. It can be used for pulling and continuous dynamic braking when paying out. Hydraulic cylinders are used to lift the reels from the deck/ground. It can be supplied for connection to an external HPU or ships hydraulic system, or with a built in power pack and cooler for operation on 230 V 50/60 Hz 16 A.



BARNACLE SCRAPER

We supply barnacle scrapers for all streamer sizes.

SEAFLOOR CABLE DEPLOYMENT LINES

Over the last 10 years, AHS has become a world leader in design and manufacturing of cost effective handling equipment to the seafloor seismic companies.

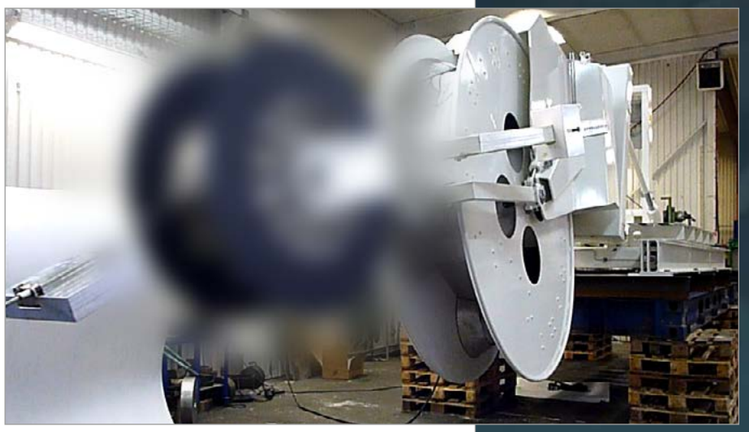
We have a large record of accomplishments and have supplied complete deployment systems or parts to RXT, GeoRXT, GeoRadar, OceanGeo, CGG, Seabed Geosolutions, Magseis and more.

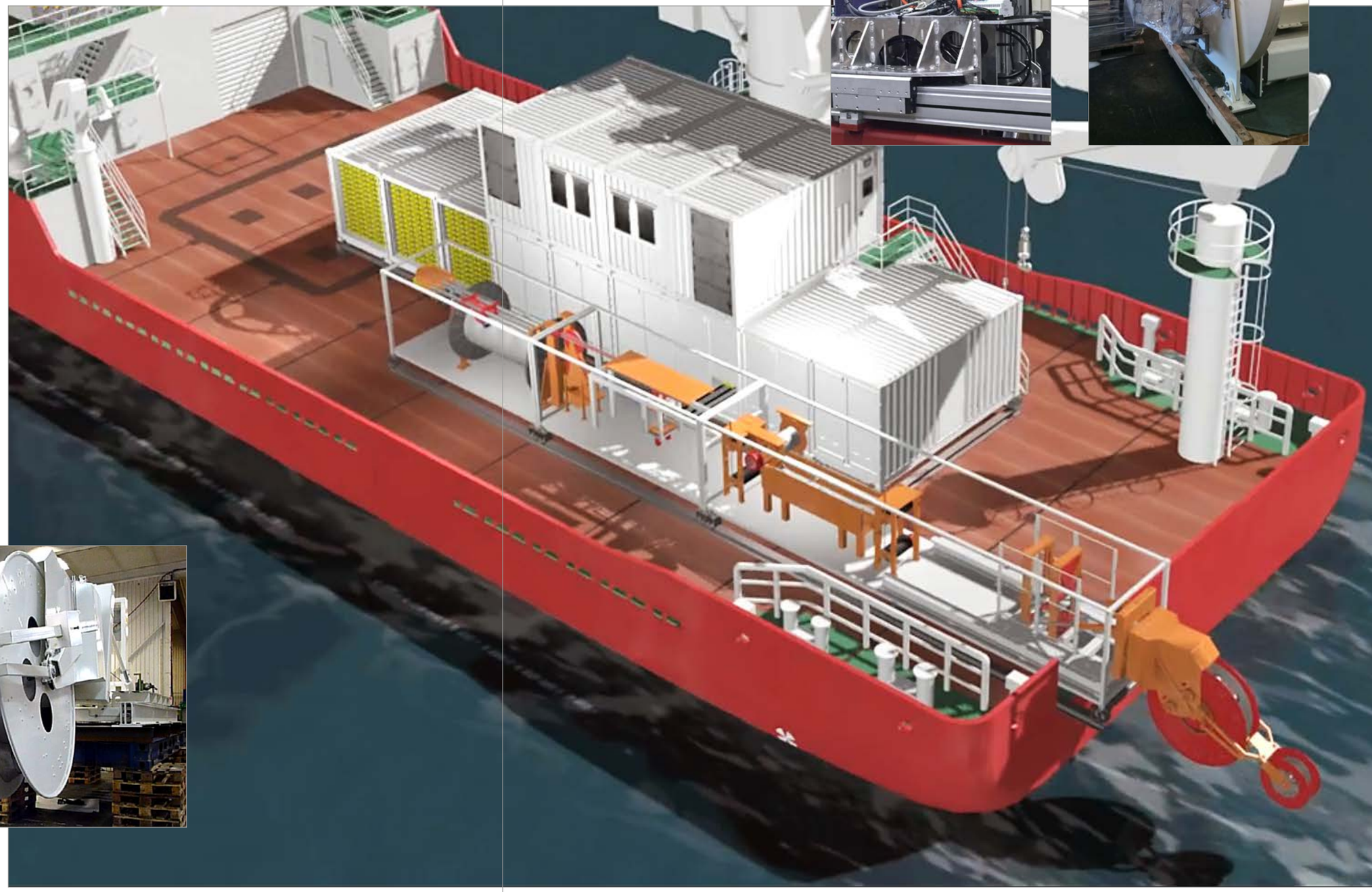
Typically, a complete seafloor deployment line can consist of the following units:

- Overboard Wheel
- Cable Cutter
- Cable Clamper/Stopper
- Cable Rollers
- Node installation unit
- Washing machine
- Control system
- Cable winch

AHS designs and manufactures all of the machines above. In close cooperation with our customers, we seek optimal and cost effective solutions, made to match the customer's cable and nodes.

AHS is familiar with both electric, hydraulic, and pneumatic systems. Accurate tension control is often a key issue to maximize deployment speed and equipment lifetime.





HPR SHAFT // DEPLOYMENT MACHINE

The AHS HPR shafts are through-hull deployment machines for acoustic positioning instruments on vessels, such as acoustic ranging systems, USBL/ HiPAP, echo sounders, current profilers, sonars, etc. The HPR shaft is typically 4.5 m long, and can lower the instrument through the vessel hull using a gate valve.

A sea chest provides easy access for servicing the instrument when retracted. The HPR shaft can be supplied with hydraulic or electrical drive system, and one or more remote control panels.

The machines are delivered metalized/galvanized and painted. The retractable shaft is made of AISI 316 stainless steel. The HPR shafts are available for gate valves up to Ø 700 mm. The shaft length, size and interface is adapted to the vessel and instrument type. Operational speeds up to 8 knots.

PINGER SHAFT

HYDRAULIC POWER UNITS

The Hydraulic Power Unit (HPU) is the power source in a hydraulic drive solution. We design and build HPUs in all sizes, adopted to nearly any environmental conditions, duty cycles, or requirements with respect to for example noise and reliability.

HYDRAULIC , ELECTRICAL AND MECHANICAL ENGINEERING

AHS has long and wide experience in hydraulic, mechanical and electrical engineering. Since 1999, we have delivered products, system development, testing and turnkey solutions to our customers. We have in-house knowledge in all these areas, and highly skilled suppliers to develop control systems based on our specifications.

HYDRAULIC VALVE BLOCKS

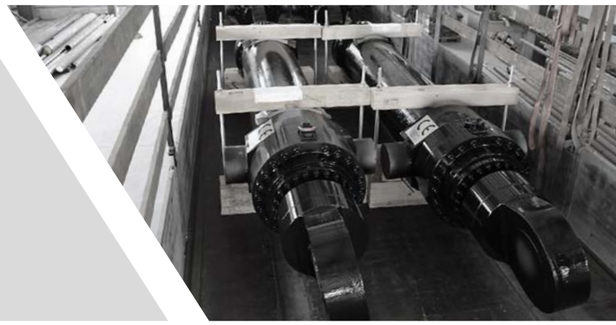
AHS designs and supplies hydraulic valve blocks in all sizes and materials, for machinery, maritime and subsea applications. We supply system solutions based on standard components to highly customized solutions for all types of environments.

DRIVE SOLUTIONS

AHS designs, manufactures and supplies engineered electric and hydraulic drive solutions for almost any application. Contact us to discuss your requirements.

HYDRAULIC CYLINDERS

AHS designs and builds custom cylinders for any purpose. For standard range cylinders, AHS has a large supplier base and can provide very competitive prices and lead times.



DECOMMISSIONING

AHS has designed and manufactured a pipe-crushing unit for recycling of multi-string conductors from decommissioned oil platforms.

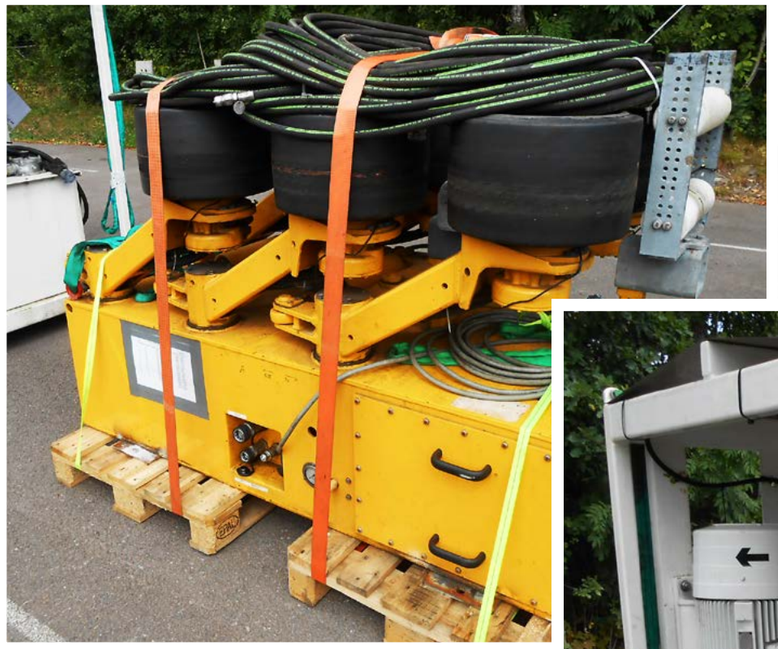
These pipes are typically multi-layered, with thick layers of grouting cast in between the steel pipes. In the recycle process, the grouting has to be separated from the steel. For this project, it was a requirement to separate the steel and grouting without hot work.

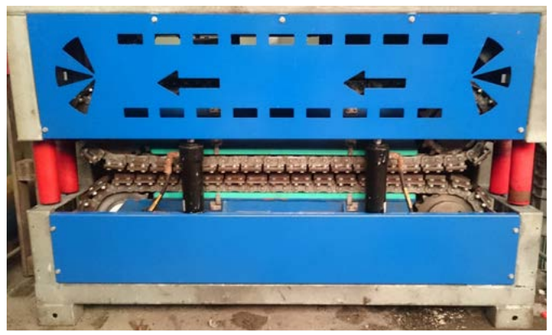
We have many ideas on how to solve decommissioning challenges, so contact us to discuss your problems and ideas and we can work out a solution for you. Technical specifications for this particular unit:

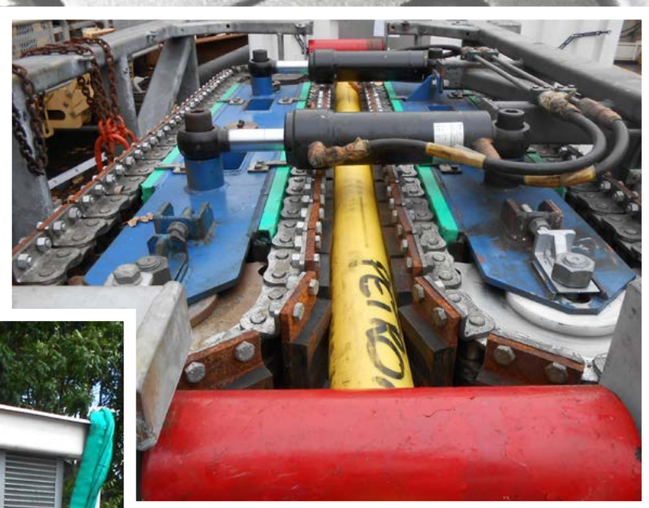
- Pipe length: 4 - 8 m
- Pipe diameter: 600 - 2500 mm
- Maximum pipe weight: 40 tons
- Maximum crushing force: 1500 tons

rental equipment

«Having the right equipment could be the difference between having the job done properly in time or not»







For short time and project based needs, AHS offers rental cable handling equipment. We design and manufacture all our rental equipment ourselves, so we can make modifications and adaptions to fit your purpose.

We have wide experience with cable handling operations, so please contact us for more detailed information and solutions.

Here are some of our rental equipment:

2 pcs	3 T Wheel Tensioners
1 pcs	4 T Wheel Tensioner
1 pcs	5 T Belt Tensioner
1 pcs	HPU diesel
2 pcs	HPU electric
1 pcs	Under Roller 10 T
1 pcs	Reel carrier 10 T
1 pcs	Reel carrier 70 T
1 pcs	Reel carrier 4 x 5 T

Almek Hydraulic Services AS

Borgeskogen 16
N-3160 Stokke
Norway

post@alhyd.no
+47 33 33 89 70

CERTIFIED ISO 9001:2008 COMPANY

AHS
ALMEK HYDRAULIC SERVICES