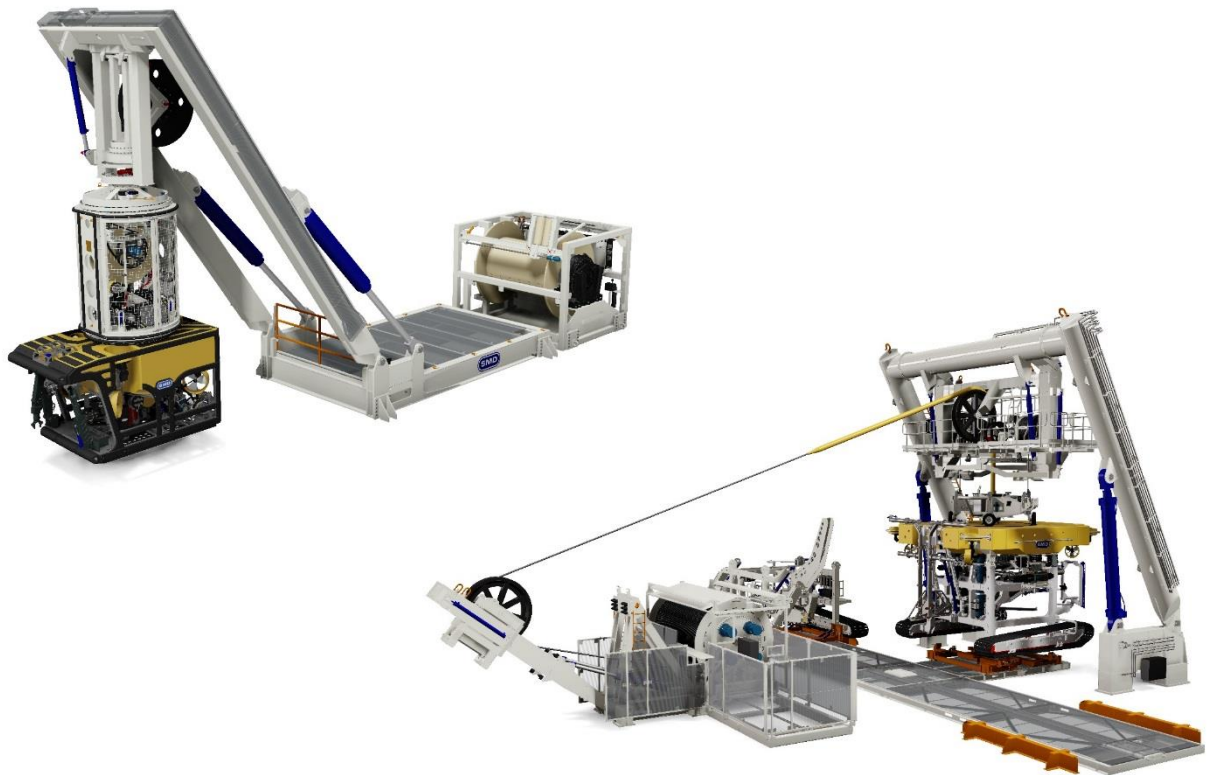




DECK EQUIPMENT SALES BROCHURE



Last Updated: 18/05/2017



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LAUNCH SOLUTIONS FOR ROV'S

SMD bring years of knowledge and experience to the design and manufacture of launch and recovery systems (LARS) to offer a complete range of solutions for operators, system integrators and Original Equipment Manufacturers (OEMs) of ROV systems. Standard SMD LARS systems are manufactured to interface seamlessly with SMD Work Class ROV systems but can be easily interfaced to other equipment suppliers ROV and TMS systems. All SMD turnkey ROV LARS systems are designed for long service life and are available with Lloyds Design or DNV Approval as standard and can be load tested at SMD's in-house production facility according to both standards and IMCA if required. SMD's unique turnkey solutions can include umbilical wind on under back tensions of up to 12Te, mechanical termination of the bullet (with confidence pull test) and facility for a full system electrical and mechanical stack up test (e.g. Control cabin, HPU, Winch, A-Frame and any other accessories). Optional features such as LARS deck lighting, deck cameras and umbilical cooling spray systems are available on request.

GENERAL FEATURES	
<ul style="list-style-type: none"> • Standard 6Te, 8Te, 12Te and 15Te SWL LARS available. • Light weight designs. • Up to sea state 6. 	<ul style="list-style-type: none"> • Bunded skid bases. • Suitable for a wide range of 3rd party ROV's, umbilicals & slip-rings. • Custom designs can be provided.
A-FRAME FEATURES	UMBILICAL WINCH FEATURES
<ul style="list-style-type: none"> • Safe self-erecting designs. • Anti-crush mechanism included as standard. • Integrated Docking Head. • Pivoting sheave wheel. • Umbilical length out sensor. • Fail-safe docking head latch system. • Outboard safety gates. • Main gantry cylinders mounted in-line with legs to improve maintenance access. 	<ul style="list-style-type: none"> • Dual control for remote or local operation. • Closed-loop fleeting control with Manual / Automatic modes. • Adjustable fleeting box to allow different configurations of fleeting entry angles. • Conventional (Transverse) or Axial Fleeting. • Optional bolt-on grooved drum shells. • Integrated crash frame with lift points. • Fail-safe brake. • Quick coupling hydraulic connections.



6Te SWL



8Te SWL



12Te SWL

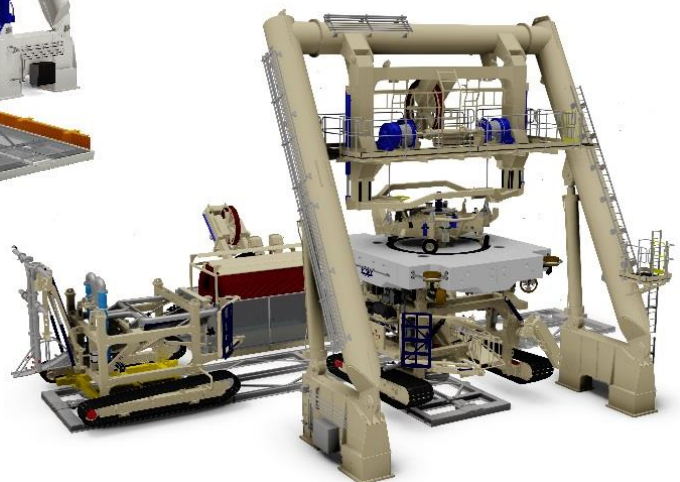
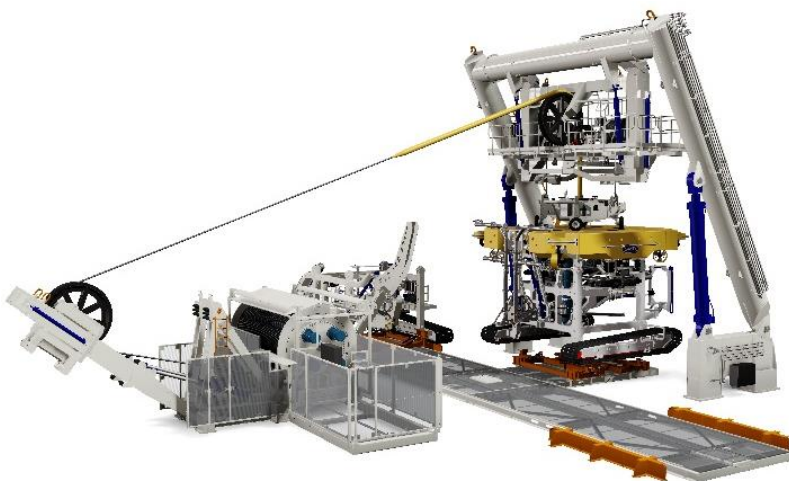


LAUNCH SOLUTIONS FOR TRENCHING ROV'S

SMD bring years of knowledge and experience to the design and manufacture of Launch and Recovery Systems (LARS) to offer a range of complete turnkey launch systems specifically designed for handling subsea trenching vehicles. Standard LARS are manufactured to interface with SMD's range of trenching vehicles to minimise deck space to form a complete vehicle handling system but can be easily interfaced to other trenching vehicles manufactured by other equipment suppliers. All SMD LARS are designed for long service life and are available with Lloyds Design or DNV Approval. SMD's turnkey systems can include umbilical wind-on under back tensions of up to 12Te and mechanical termination of the bullet (with confidence pull test).

FEATURES

- Integrated A-Frame, winch and HPU controls.
- Up to sea state 6.
- Custom designs can be provided.
- Complete turnkey solutions for SMD Q-Trencher 350, 400, 600, 800, 1000 and 1400 models.
- Manufactured from high strength steel for low weight.
- A-Frame Cylinders construction for long life in a marine environment.
- Cursor system docking head with integrated lift winches (with high speed constant tension system), separate lift wire docking system.
- All components accessible from walkways.
- Umbilical winch with moving drum, allowing high power umbilical so be used with constant exit point.
- Slack compensation and constant tension system to protect the umbilical.
- Snatch limiting system for heavier subsea vehicles.





LAUNCH SOLUTIONS FOR PLOUGHS

SMD bring years of knowledge and experience to the design and manufacture of Launch and Recovery Systems (LARS) to offer a range of complete turnkey launch systems specifically designed for handling subsea ploughs. Standard LARS are manufactured to interface with SMD’s range of ploughs to minimise deck space to form a plough handling system but can be easily interfaced with ploughs manufactured by other equipment suppliers. All SMD LARS are designed for long service life and are available with Lloyds Design or DNV Approval. SMD’s turnkey systems can include umbilical wind-on under back tensions of up to 12Te and mechanical termination of the bullet (with confidence pull test). In addition SMD can offer high tension wind of both umbilical’s and tow wires. Optional features such as deck lighting and cameras are available on request.

A-FRAME FEATURES	UMBILICAL WINCH FEATURES
<ul style="list-style-type: none"> • Standard 30Te and 50Te turnkey systems. • Up to sea state 5. • Integrated A-Frame, winch and HPU controls. • A-Frame cylinders construction for long life in a marine environment. • Wide angle for handling and towing the plough on a common wire. • Manufactured from high strength steel for low weight. • Scissor frame, docking system for passive plough stabilisation. • Custom designs can be provided. 	<ul style="list-style-type: none"> • Standard Plough 4Te SWL umbilical winches. • Constant tension system. • Long drum to handle semi and buoyant umbilicals. • Axial fleeing system with load cell for umbilical monitoring. • Option of winch HPU to be mounted on top of the winch to save deck space.





A-FRAMES / GANTRY DATASHEETS

6Te SWL NARROW ANGLE A-FRAME

GENERAL	
Typical Application	ROV LARS
Luffing	6Te
Overboard Rating	7.86Te
DAF	3
Sea-State (Approx.)	6
Certification	
Design	DNV & Lloyds
Environment	Safe Area or Zone II
Weight	
Standard	14Te
Operating Temperature	
Standard	-20°C to +45°C
Deck Mounting	
No. Mount Points	4
Mount Configuration	Bolted plate, welded to deck
Lifting Requirements	
Main Lift	4-point
Sling	4 leg sling compliant to DNV2.7-1
Harness padeyes	Gantry clip in points

DIMENSIONS	
Operational	
Length	6058mm
Width (base)	2438mm
Height (max)	8305mm
Transport (Road Transportable)	
Length	7050mm
Width	2473mm
Height	3871mm
Equipment Handling	
Distance between legs	2028mm
Height under docking head	5479mm

PERFORMANCE	
Deployment (from Pivot)	
Outboard Reach	3690mm
Inboard Reach	To stowed
Umbilical Offlead	
Lateral	12°
Perpendicular	12°
Docking Head	
Latch	Fail safe scissor type
Rotator	270°
Sheave Wheel	
Diameter	1060mm
Umbilical Dia (Typ)	27mm / 35mm
Greasing	
Grease injection points	✓
Cartridge Greasing	✓
Hydraulic	
Supply (min)	250bar/100LPM
Fittings	All Stainless Steel
Connection	Quick release couplings

INSTRUMENTS / CONTROL	
Standalone Control Console	
Controls	Luff In / Out
	Lock / Float
	Manual / Automatic Latch
Indicators / Transducers	
Umbilical Length	✓
System Pressure	✓
Inboard luff limiter	✓
Latch indicators	Physical & Transducer





8Te SWL NARROW ANGLE A-FRAME

GENERAL	
Typical Application	ROV LARS
Luffing	8Te
Overboard Rating	14.7Te
DAF	3
Sea-State (Approx.)	6
Certification	
Design	DNV & Lloyds
Environment	Safe Area or Zone II
Weight	
Standard	17Te
Operating Temperature	
Standard	-20°C to +45°C
Deck Mounting	
No. Mount Points	4
Mount Configuration	Bolted plate, welded to deck
Lifting Requirements	
Main Lift	4-point
Sling	4 leg sling compliant to DNV2.7-1
Harness padeyes	Gantry clip in points

DIMENSIONS	
Operational	
Length	6000mm
Width (base)	3400mm
Height (max)	9386mm
Transport (Road Transportable)	
Length	8122mm
Width	3664mm
Height	4017mm
Equipment Handling	
Distance between legs	2864mm
Height under docking head	5598mm



PERFORMANCE	
Deployment (from Pivot)	
Outboard Reach	4555mm
Inboard Reach	To stowed
Umbilical Offlead	
Lateral	12°
Perpendicular	12°
Docking Head	
Latch	Fail safe scissor type
Rotator	270°
Sheave Wheel	
Diameter	1488mm
Umbilical Dia (Typ)	35mm
Greasing	
Grease injection points	✓
Cartridge Greasing	✓
Hydraulic	
Supply (min)	250bar/100LPM
Fittings	All Stainless Steel
Connection	Quick release couplings
INSTRUMENTS / CONTROL	
Standalone Control Console	
Controls	Luff In / Out
	Lock / Float
	Manual / Automatic Latch
Indicators / Transducers	
Umbilical Length	✓
System Pressure	✓
Inboard luff limiter	✓
Latch indicators	Physical & Transducer





12Te SWL NARROW ANGLE EXTENDING A-FRAME

GENERAL	
Typical Application	ROV LARS
Luffing	12Te
Overboard Rating	17.6Te
DAF	3
Sea-State (Approx.)	6
Certification	
Design	DNV & Lloyds
Environment	Safe Area or Zone II
Weight	
Standard	25Te
Operating Temperature	
Standard	-20°C to +45°C
Deck Mounting	
No. Mount Points	4
Mount Configuration	Bolted plate, welded to deck
Lifting Requirements	
Main Lift	4-point
Sling	4 leg sling compliant to DNV2.7-1
Harness padeyes	Gantry clip in points

DIMENSIONS	
Operational	
Length	7000mm
Width (base)	3630mm
Height (max)	10894mm
Transport (Road Transportable)	
Length	7660mm
Width (base)	4076mm
Height (max)	3394mm
Equipment Handling	
Distance between legs	2900mm
Height under docking head	6828mm

PERFORMANCE	
Deployment (from Pivot)	
Outboard Reach	5663mm
Inboard Reach	To stowed
Telescopic Extension	2200mm
Umbilical Offlead	
Lateral	12°
Perpendicular	12°
Docking Head	
Latch	Fail safe scissor type
Rotator	270°
Sheave Wheel	
Diameter	1488mm
Umbilical Dia (Typ)	42mm
Greasing	
Grease injection points	✓
Cartridge Greasing	✓
Hydraulic	
Supply (min)	250bar/100LPM
Fittings	All Stainless Steel
Connection	Quick release couplings

INSTRUMENTS / CONTROL	
Standalone Control Console	
Controls	Luff In / Out
	Telescopic Extend / Retract
	Lock / Float
	Manual / Automatic Latch
Indicators / Transducers	
Umbilical Length	✓
System Pressure	✓
Inboard luff limiter	✓
Latch indicators	Physical & Transducer





12Te SWL GANTRY

GENERAL	
Typical Applications	ROV LARS
SWL	12Te
Sea-State (Approx.)	6
Certification	
Design	Lloyds
Weight	
Standard	~28Te
Operating Temperature	
Standard	-10°C to +40°C
Deck Mounting	
Mount Configuration	6 Point bolted flange to Vessel Hangar roof
Hydraulics	
Supply (max)	280Bar

CONTROLS	
	Gantry Inboard / Outboard
	Docking head Up / Down
	Docking Head Latch / De-Latch
	Docking Head Rotate
	Docking Head Recovery / Launch / Damping

PERFORMANCE	
Deployment	
Outboard Reach (from full retracted position)	4m
Linear Travel	10m (7.8m with docking head lowered)
Docking System	
Features	Pivoting Docking head for low hanger
SWL	12Te
Docking Head Vertical Travel	2350mm (dependent on hanger clearance)
Sheave	Umbilical 35-40mm and Linksyn™
Hydraulics	
Supply (max)	280Bar
Fittings	All Stainless Steel
Connection	Quick release couplings

INDICATORS	
	Latch - Flag & LED
	Damping On / Off
	Emergency Stop activated
	Gantry stowed position
	Docking head position
	HPU Run
	HPU Fault



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12Te WIDE ANGLE A-FRAME

GENERAL	
Typical Application	ROV LARS
SWL	12Te
Sea-State (Lloyds)	5
Certification	
Design	Lloyds
Environment	Safe Area
Weight	
Standard	~29Te
Operating Temperature	
Standard	-10°C to +40°C
Deck Mounting	
Mount Configuration	4 bolted footings for attachment to deck stools
Installation	
Main Lift	Lift points to enable A-Frame to be lifted as a complete assembly
Individual components	Provided with load tested lift points.
Hydraulic	
Supply Pressure	280bar
Supple Flow	To suit speed requirements

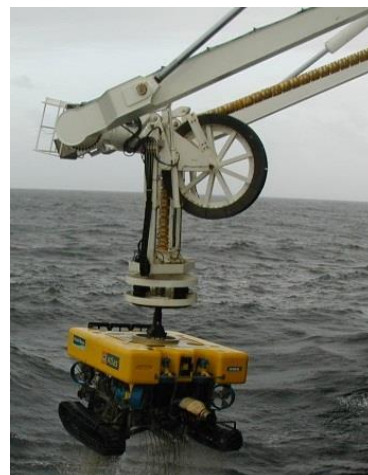
CONTROLS	
Docking Frame Inboard/outboard	
Latch Open / Close	
Latch Float/Fixed	
A-Frame Luff, Joystick Proportional Control	
Docking head rotate	
Docking head swing fixed/float	
Lower Frame Up/Down	
Lower Frame Fixed/Float	
Emergency Stop	

PERFORMANCE	
Deployment (from Pivot)	
Outboard Reach	7000mm
Inboard Reach	4250mm
Distance between legs	6668mm(designed to suit installation)
Free Height (below docking head when inboard)	3000mm (Dependent on stool height)
Working Arc	
Outboard (from vertical)	110°
Inboard (from vertical)	37°
Operation arc (to allow maintenance)	160°
Docking System	
Arrangement	Docking head with sheave arrangement and telescope
SWL	12Te
Max. Telescope Down reach	1000mm
Sheave	Umbilical typ 35 – 45mm and Linksyn™
Docking Head Damping	
Arrangement	Hydraulic cylinder
Motion	10° beyond inboard and 15° beyond outboard
Latch System	
Arrangement	Hydraulic driven fail safe latch system

INDICATORS	
Docking Head swing Float/Fixed	
Lower frame Float/Fixed	
Lower frame retracted limit	
A-Frame inboard stop	
Latch Engaged	
HPU Fault	
HPU Run	



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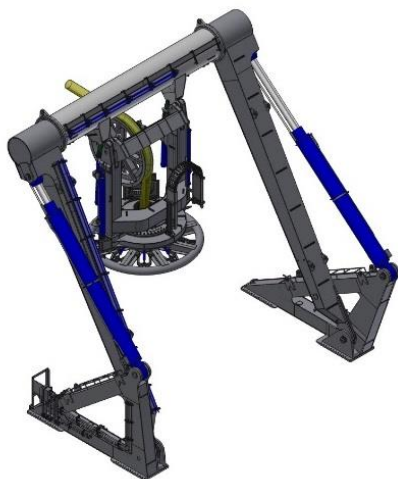


18Te-25Te SWL WIDE ANGLE A-FRAMES

GENERAL	
Typical Application	ROV LARS
SWL	18Te -25Te
Wide Angle	Allows vehicle to be docked closer to the surface
Sea-State (Approx.)	5-6
Certification	
Design	Lloyds
Weight	
Standard	~45Te
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
Mount Configuration	4 Bolted footings for attachment to deck stools
Lifting Requirements	
Main Lift	Lift points to allow complete A-Frame to be lifted
Item lift points	Each item has lift points to allow installation
Harness padeyes	Gantry clip in points
Hydraulics	
Supply (max)	280 Bar
Fittings	Stainless Steel
Connection	SAE bolted flanges

CONTROLS	
	Gantry In/Out
	Telescope Up / Down / Float
	Inboard over ride
	Latch Engage / Release / Float
	Rotate Left / Right
	Damping On / Off

PERFORMANCE	
Deployment (from Pivot)	
Outboard Reach	7950mm (@90° outboard)
Inboard Reach	4050mm (To stowed)
Working Arc	
Outboard (from vertical)	110°
Inboard (from vertical)	37°
Range of movement	160°
Docking System	
Features	Telescopic Docking Head
SWL	25Te
Telescope reach	1500mm
Rotation	±175°
Sheave	Umbilical 43 -53mm and Linksyn™
Working Range	37° inboard to 60° outboard
Equipment Handling	
Distance between legs	7600mm (can be change to suit requirements)
Free Height	~2800mm (dependent on deck stool height)
Docking Frame Valve Tank Functions	
	Swing Damping
	Telescopes
	Latches
	Rotate



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25Te SWL CURSOR LAUNCH A-FRAME

GENERAL	
Typical Application	ROV LARS
SWL	25Te
Feature	Narrow angle A-Frame with cursor docking head for latching and de latching below the water level.
Sea-State (Approx.)	6
Certification	
Design	Lloyds
Weight	
Standard	~95Te with docking head and cursor
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
Mount Configuration	4 Bolted footings for attachment to deck stools
Lifting Requirements	
Main Lift	Lift points to allow complete A-Frame to be lifted
Item Lift Points	Each item has lift points to allow installation
Harness padeyes	Gantry clip in points
Docking Frame Valve Tank Functions	
	Cursor winch up / down
	Cursor winch constant tension
	Swing Damping
	Telescopes
	Latches
	Rotate

CONTROLS	
	Gantry In/Out
	Telescope Up / Down / Float
	Cursor Winch Raise / Lower
	Latch Engage / Release / Float
	Rotate Left / Right
	Damping On / Off
	Cursor winch constant tension
	Cursor locked / free



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PERFORMANCE	
Deployment (from Pivot)	
Outboard Reach	7660mm (@ full outboard)
Inboard Reach	3450mm (@ full inboard)
Working Arc	
Outboard (from vertical)	47°
Inboard (from vertical)	30°
Docking System	
Features	Telescopic Docking Head with cursor lift winches and cursor
SWL	25Te
Telescope reach	1500mm
Rotation	±180°
Sheave	Umbilical 53mm and Linksyn™
Swing In / Out (when A-Frame fully outboard)	20°
Cursor winch range	30m (below A-Frame docking head)
Equipment Handling	
Distance between legs	10320mm
Free Height	~5800mm (dependent on deck stool height)
Hydraulics	
Supply (max)	280Bar
Fittings	Stainless steel
Connection	SAE bolted flanges

INDICATORS	
	Latch - Flag & LED
	Damping On / Off
	Cursor Winch Fixed / Float
	Emergency Stop activated





40Te SWL CURSOR LAUNCH A-FRAME

GENERAL	
Typical Application	ROV LARS
SWL	40Te
Sea-State (Approx.)	6
Certification	
Design	Lloyds
Environment	Safe Area
Weight	
Standard	~105Te with docking head and Cursor
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
Mount Configuration	4 Bolted footings for attachment to deck stools
Lifting Requirements	
Main Lift	Lift points to allow complete A-Frame to be lifted
Item Lift Points	Each item has lift points to allow installation
Harness padeyes	Gantry clip in points
Hydraulics	
Supply (max)	280Bar
Fittings	All Stainless Steel
Connection	SAE bolted flanges

CONTROLS	
	Gantry In/Out
	Telescope Up / Down / Float
	Cursor winch raise / lower
	Cursor winch constant tension
	Latch Engage / Release / Float
	Rotate Left / Right
	Damping On / Off
	Cursor locked / free



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PERFORMANCE	
Deployment (from Pivot)	
Outboard Reach	8800mm (@ fulloutboard) 4640mm (@full inboard)
Working Arc	
Outboard (from vertical)	48°
Inboard (from vertical)	28°
Docking System	
Features	Telescopic Docking Head with cursor lift winches and cursor
SWL	40Te
Telescope reach	1500mm
Rotation	±180°
Sheave	Umbilical 55mm and Linksyn™
Swing In / Out (when A-Frame fully outboard)	20°
Cursor winch range	40m (below A-Frame docking head)
Equipment Handling	
Distance between legs	10325mm
Free Height	6700mm dependent on deck stool height
Docking Frame Valve Tank Functions	
Cursor winch up / down	Swing Damping
Cursor winch constant tension	Telescopes
	Latches
	Rotate

INDICATORS	
	Latch - Flag & LED
	Damping On / Off
	Cursor Winch Fixed / Float
	Emergency Stop activated





30Te SWL WIDE ANGLE A-FRAME

GENERAL	
Typical Application	Plough LARS
SWL	35Te
Below Docking Frame and Roller	30Te
Sea-State (Lloyds)	5
Certification	
Design	Lloyds
Environment	Safe Area
Weight	
Standard	~42Te
Operating Temperature	
Standard	-10°C to +40°C
Deck Mounting	
Mount Configuration	4 bolted footings for attachment to deck stools
Installation	
Main Lift	Lift points to enable A-Frame to be lifted as a complete assembly
Individual components	Provided with load tested lift points.
Hydraulic	
Supply Pressure	280bar
Supple Flow	To suit speed requirements

PERFORMANCE	
Deployment (from Pivot)	
Outboard Reach	11000mm
Inboard Reach	8150mm
Distance between legs	12000mm (designed to suit installation)
Free Height (below roller)	12000mm (Dependent on stool height)
Working Arc	
Outboard (from vertical)	80°
Inboard (from vertical)	45°
Operation arc (to allow plough towing)	160°
Docking System	
Roller arrangement	1400mm dia. Roller, hanging from traversing carriage
SWL	30Te
Weight	~4Te
Maximum Downreach	5600mm
Tow Wire Diameter (Typical)	38 – 55mm
Docking Frame Support	Optional
Traversing System	
Arrangement	Hydraulic cylinder driven carriage
Travel	±2500mm (can be varied dependent on deck layout)
Latch System	
Arrangement	Hydraulic cylinder operation, Latch operates against plough bridle apex

CONTROLS
Docking Frame Port / Starboard travel
Latch Open / Close
Auxiliary Winch In / Out
A-Frame luff Joystick Proportional Control
A-Frame 45° inboard override
Emergency Stop

INDICATORS
A-Frame 45° inboard
A-Frame outboard over-travel
Docking Frame Port / Starboard Travel Limit
Latch Engaged
HPU Fault
HPU Run





50Te SWL WIDE ANGLE A-FRAME

GENERAL	
Typical Application	Plough LARS
SWL	50Te
Below Docking Frame and Roller	44Te
Sea-State (Lloyds)	5
Certification	
Design	Lloyds
Environment	Safe Area
Weight	
Standard	~80Te
Operating Temperature	
Standard	-10°C to +40°C
Deck Mounting	
Mount Configuration	4 bolted footings for attachment to deck stools
Installation	
Main Lift	Lift points to enable A-Frame to be lifted as a complete assembly
Individual components	Provided with load tested lift points.
Hydraulic	
Supply Pressure	250bar
Supple Flow	To suit speed requirements

PERFORMANCE	
Deployment (from Pivot)	
Outboard Reach	12500mm
Inboard Reach	6500mm
Distance between legs	10200mm (Designed to suit installation)
Free Height (below roller)	11200mm (Dependent on stool height)
Working Arc	
Outboard (from vertical)	80°
Inboard (from vertical)	45°
Operation arc (to allow plough towing)	160°
Docking System	
Roller arrangement	1600mm dia. Roller, hanging from traversing carriage
SWL	44Te
Weight	~5Te
Maximum Downreach	5100mm
Tow Wire Diameter (Typical)	45 – 65mm
Docking Frame Support	Optional
Traversing System	
Arrangement	Hydraulic cylinder driven carriage
Travel	±2200mm (can be varied dependent on deck layout)
Latch System	
Arrangement	Hydraulic cylinder operation, Latch operates against plough bridle apex

CONTROLS
Docking Frame Port / Starboard travel
Latch Open / Close
Auxiliary Winch In / Out
A-Frame luff, Joystick Proportional Control
A-Frame 45° inboard override
Upper Frame Up/Down
Lower Frame Up/Down
Scissor frame fixed /float
Emergency Stop

INDICATORS
A-Frame 45° inboard
A-Frame outboard over-travel
Docking Frame Port / Starboard Travel Limit
Latch Engaged
Scissor frame fixed /float
Lower Frame Up/Down
HPU Fault
HPU Run





UMBILICAL WINCH DATASHEETS

4Te SWL UMBILICAL WINCH

GENERAL	
Typical Application	Plough LARS
Design	Lloyds
Environment	Safe Area
Weight	
Standard (Empty Drum)	11Te
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
No. Mount Points	4
Mount Configuration	Bolted plate, welded to deck
Padeyes	
Main Lift	4-point to DNV 2.7-3 with sling set
Hydraulic Power Unit	
Motor rating	37kW @ 380-440VAC, 3-Phase, 60Hz
Filtration	Pressure and Return with by-pass
Reservoir	Integral to Frame with Air Breather and Drain
HPU Mounting	Can be mounted on top of the winch or on the deck.

DIMENSIONS	
Extremities	
Length	5166mm
Width	3320mm
Height (HPU mounted on top)	4507mm
Drum	
Length (between flanges)	3200mm
Core Diameter	1600mm
Flange Diameter	2420mm



PERFORMANCE	
Line Pull	
Rendering	Up to 5Te
Line Tension (Top Layer)	4Te
Winch Speed	
Render Speed	Up to 30m/min
Umbilical capacity	
40mm (Typical) (Plain drum to allow for change of umbilical size)	4000m
Drive	
Hydraulic	Bosch Rexroth (Hagglund)
Brake	Direct Acting
Spooling	
Fleeting Carriage	Lead screw driven along drum, cable exit position constant
Hydraulic	
Supply (max)	250bar/400LPM
Fittings	All Stainless Steel
Connection	Quick release couplings
Cooling	Overhead Deluge System (Spray bar and nozzles)
Drip Tray	Integral to winch frame base with drain ports / plugs
Secondary Cooling	Air blast cooler

CONTROL	
Winch Control & Indicators	
Remote operation possible	Proportional In / Out
Pay-Out Length	Emergency Stop / Reset Interlocked with HPU
Umbilical Cable Tension	Hydraulic System Pressure
Hydraulic Brake Pressure	Hydraulic Render Pressure
	Optional IP67 CCD Observation Camera
HPU Controls & Indicators	
Motor Start / Stop (panel control only)	System Pressure / Flow Adjust
Solenoid A/B Active (Pendant Control only)	High Oil Temperature Shutdown
Low Oil Level Automatic Cut-off	High Oil Level Automatic Shutdown
Low oil Level	Oil Level Sight Gauge
System Pressure Gauge	High Oil Temperature Indicator
Hours Run Meter	Motor Running Indicator
	E-Stop Indicator



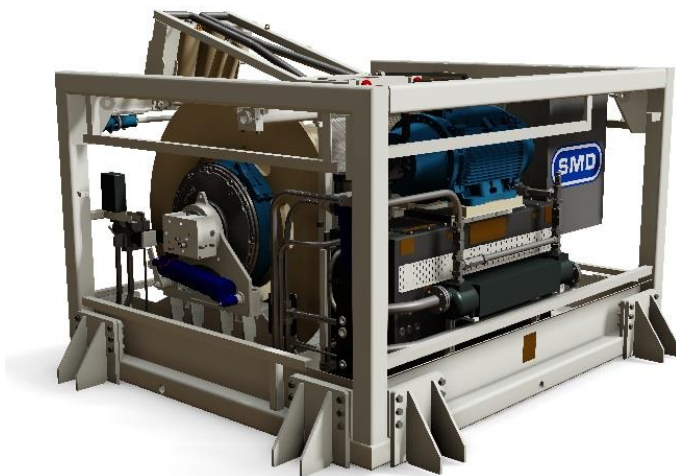
6Te SWL UMBILICAL WINCH

GENERAL	
Typical Application	ROV LARS
Design	DNV & Lloyds
Environment	Safe Area or Zone II
Weight	
Standard (Empty Drum)	10.25Te
Operating Temperature	
Standard	-20°C to +45°C
Deck Mounting	
No. Mount Points	4 (2 optional orientations)
Mount Configuration	Bolted plate, welded to deck
Padeyes	
Main Lift	4-point to DNV 2.7-3 with sling set

DIMENSIONS	
Extremities	
Length (across drum)	3400mm
Width	2900mm
Height (includes fleeting)	2679mm
Drum (with int. grooves on drum, 27mm Umbilical)	
Length	2196.2mm
Core Diameter (Bottom of groove)	1223mm
Flange Diameter	1900mm

PERFORMANCE	
Line Pull	
Bottom layer	7.86Te
Top Layer	6Te
Winch Speed	
Range	32m/min – 49m/min (Depends on layer and hydraulic power available)
Umbilical capacity	
27mm (int. grooves on drum)	3500m
35mm (with Lebus Shell attached)	1300m
Drive	
Hydraulic	Bosch Rexroth (Hagglund)
Brake	Band Type, Direct Acting
Spooling	
Fleeting Carriage	Closed Loop
Hydraulic	
Supply (max)	250bar/400LPM
Fittings	All Stainless Steel
Connection	Quick release couplings

CONTROL	
Standalone Control Console	
Controls	Proportional In / Out Remote operation possible





8Te SWL UMBILICAL WINCH

GENERAL	
Typical Application	ROV LARS
Design	DNV & Lloyds
Environment	Safe Area or Zone II
Weight	
Standard (Empty Drum)	17Te
Operating Temperature	
Standard	-20°C to +45°C
Deck Mounting	
No. Mount Points	4 (2 optional orientations)
Mount Configuration	Bolted plate, welded to deck
Padeyes	
Main Lift	4-point to DNV 2.7-3 with sling set

DIMENSIONS	
Extremities	
Length (across drum)	3612mm
Width	2965mm
Height (includes fleeting)	3222mm
Drum	
Length (between flanges)	2180mm
Core Diameter	1270mm
Flange Diameter	2200mm

PERFORMANCE	
Line Pull	
Bottom layer	12.65Te
Top Layer	8Te
Winch Speed	
Range	28m/min – 60m/min (Depends on layer and hydraulic power available)
Umbilical capacity	
35mm (Typical) (Lebus Shell to allow for change of umbilical size)	3500m
Drive	
Hydraulic	Bosch Rexroth (Hagglund)
Brake	Band Type, Direct Acting
Spooling	
Fleeting Carriage	Closed Loop
Hydraulic	
Supply (max)	250bar/400LPM
Fittings	All Stainless Steel
Connection	Quick release couplings

CONTROL	
Standalone Control Console	
Controls	Proportional In / Out Remote operation possible





12Te SWL UMBILICAL WINCH

GENERAL	
Typical Application	ROV LARS
Design	DNV & Lloyds
Environment	Safe Area or Zone II
Weight	
Standard (Empty Drum)	17Te
Operating Temperature	
Standard	-20°C to +45°C
Deck Mounting	
No. Mount Points	4 (2 optional orientations)
Mount Configuration	Bolted plate, welded to deck
Padeyes	
Main Lift	4-point to DNV 2.7-3 with sling set

DIMENSIONS	
Extremities	
Length (across drum)	3400mm
Width	2890mm
Height (includes fleeting)	3344mm
Drum	
Length	2260mm
Core Diameter	1500mm
Flange Diameter	2530mm

PERFORMANCE	
Line Pull	
Bottom layer	15Te
Top Layer	12Te
Winch Speed	
Range	35m/min – 55m/min (Depends on layer and hydraulic power available)
Umbilical capacity	
41.2mm (Typical) (Lebus Shell to allow for change of umbilical size)	3500m
Drive	
Hydraulic	Brevini
Brake	External multi-disk type
Spooling	
Fleeting Carriage	Closed Loop
Hydraulic	
Supply (max)	250bar/400LPM
Fittings	All Stainless Steel
Connection	Quick release couplings

CONTROL	
Standalone Control Console	
Controls	Proportional In / Out Remote operation possible



12Te SWL AXIAL UMBILICAL WINCH

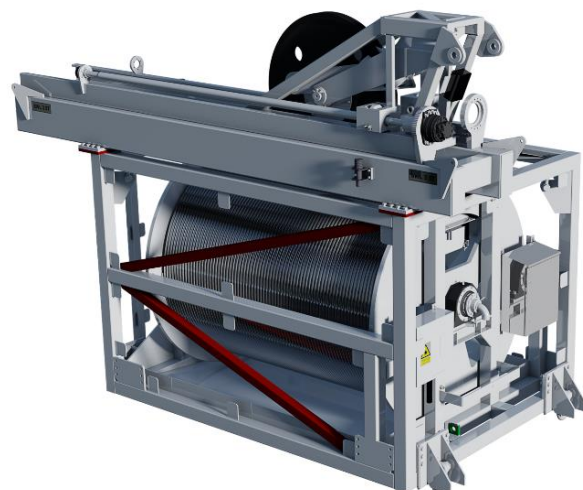
GENERAL	
Typical Application	ROV LARS
Design	Lloyds
Environment	Safe Area
Weight	
Standard (Empty Drum)	23Te
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
Deck Mount Points	4
Mount Configuration	Bolted plate, welded to deck
Padeyes	
Main Lift	4-point to DNV 2.7-3 with sling set

DIMENSIONS	
Extremities	
Length (across drum)	4800mm
Width	2890mm
Height (includes fleeting)	4200mm
Drum (Lebus Shell)	
Length (Between flanges)	2900mm
Core Diameter	1800mm
Flange Diameter	2530mm

NOTES	
•	Axial fleeting system
•	Optional spray bar and canopy
•	Optional deck observation camera

PERFORMANCE	
Line Pull	
Bottom layer	14Te
Top Layer	12Te
Winch Speed	
Range	Variable to 45m/min (Depends on layer and hydraulic power available)
Umbilical capacity	
40mm (Typical)	2800m on 6 layers
Sheave	40mm umbilical and Linksyn™
Drive	
Drive	Bosch Rexroth (Hagglund) direct drive
Brake	Integral band brake
Spooling	
Fleeting Carriage	Mounted axial to the winch drum to give constant fleeting exit point
Hydraulic	
Supply (max)	280bar
Fittings	All Stainless Steel
Connection	Quick release couplings

CONTROL	
Standalone Control Console	
Controls	Pick-Up / Pay-Out
	Fleeting Left / Right
	Fleeting Auto / Manual
	Constant Tension Enable
	Constant Tension Setpoint
	Remote operation possible
Winch Instrumentation	System Pressure
	Length Out



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15Te SWL AXIAL UMBILICAL WINCH

GENERAL	
Typical Application	ROV LARS
Design	Lloyds
Environment	Safe Area or Zone II
Weight	
Standard (Empty Drum)	16.5Te
Operating Temperature	
Standard	-20°C to +45°C
Deck Mounting	
Transport Mounting	Twist Lock
Deck Mount Points	4
Mount Configuration	Bolted plate, welded to deck
Padeyes	
Main Lift	4-point to DNV 2.7-3 with sling set

DIMENSIONS	
Extremities	
Length (across drum)	6058mm
Width	2438mm
Height (includes fleeting)	3652mm
Drum	
Length (Between flanges)	4160mm
Core Diameter	1180mm
Flange Diameter	2140mm

PERFORMANCE	
Line Pull	
Bottom layer	21.7Te
Top Layer	15Te
Winch Speed	
Range	39m/min – 60m/min (Depends on layer and hydraulic power available)
Umbilical capacity	
41.2mm (Typical)	4300m
Drive	
Hydraulic	Bosch Rexroth (Hagglund)
Brake	Band Type, Direct Acting
Spooling	
Fleeting Carriage	Closed Loop
Hydraulic	
Supply (max)	250bar/400LPM
Fittings	All Stainless Steel
Connection	Quick release couplings

CONTROL	
Standalone Control Console	
Controls	Proportional In / Out
	Remote operation possible

NOTES	
	• Axial fleeting featuring diverter sheave for inline umbilical exit
	• Suitable for both shallow and deep water operations
	• 20ft ISO container footprint featuring twist lock corners for ease of road transport



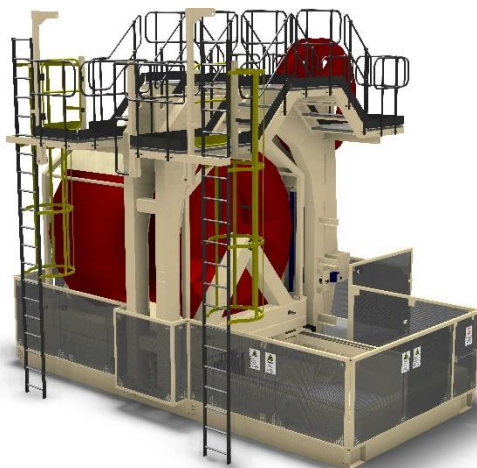


18Te SWL CONSTANT EXIT HIGH POWER UMBILICAL WINCH

GENERAL	
Typical Application	Plough & Trenching LARS
Design	Lloyds
Environment	Safe Area
Weight	
Standard (Empty Drum) includes motion compensator	45Te
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
Deck Mount Points	6
Mount Configuration	Bolted to deck stools welded to deck
Padeyes	
Main Lift	Lifted via a spreader beam via the winch drum

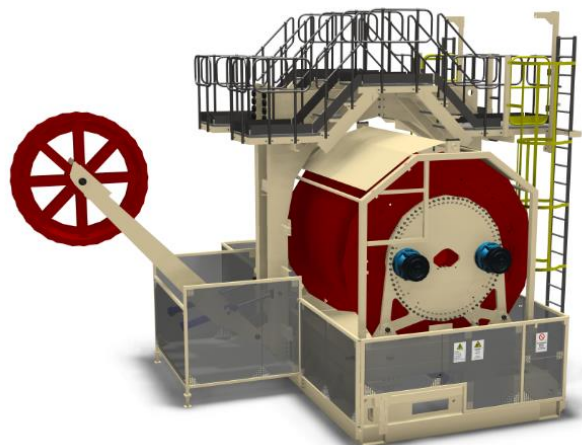
DIMENSIONS	
Extremities	
Length (across drum)	10800mm
Width	7800mm
Height (includes fleeting)	6200mm
Drum (with Lebus grooving)	
Length (Between flanges)	2730mm
Core Diameter	2640mm
Flange Diameter	3250mm

NOTES	
•	Spray nozzle umbilical cooling (200LPM @2-3bar (10bar max))
•	Optional deck camera and pan and tilt assembly suitable for deck installation
•	Brakes released flashing beacon
•	Fleeting error audible alarm



PERFORMANCE	
Line Pull	
Bottom layer	21Te
Top Layer	18Te
Winch Speed	
Range	Variable to 45m/min (Depends on layer and hydraulic power available)
Umbilical capacity	
45mm (Typical)	3500m
Sheave	45mm umbilical and Linksyn™
Spooling	
Fleeting Drum	Drum is moved via a hydraulic cylinder to give constant exit to the motion compensator
Drive	
Drive	Plug in motors to drive plate and Slew Ring
Brake	Integral band brake
Tension Mode	Variable set, constant tension mode
Hydraulic	
Supply (max)	280bar
Fittings	All Stainless Steel
Connection	SAE Bolted Flange

CONTROL	
Standalone Control Console	
Controls	Pick-Up / Pay-Out
	Fleeting Left / Right
	Fleeting Auto / Manual
	Constant Tension Enable
	Constant Tension Setpoint
	Remote operation possible
Winch Instrumentation	System Pressure
	Motion comp arm position
	Length Out

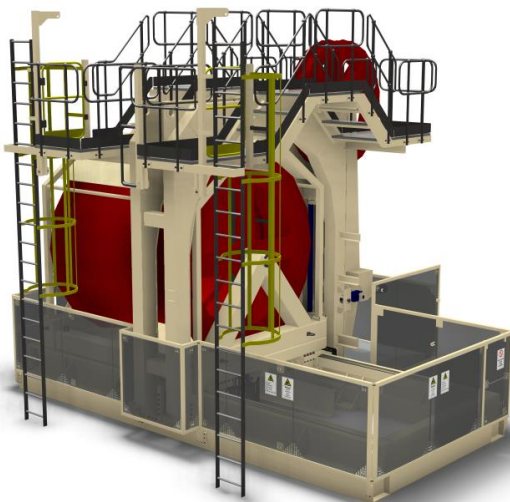


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25Te SWL CONSTANT EXIT HIGH POWER UMBILICAL WINCH WITH SLACK ARM

GENERAL	
Typical Application	Plough & Trenching LARS
Design	Lloyds
Environment	Safe Area
Weight	
Standard (Empty Drum)	38Te
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
Deck Mount Points	6
Mount Configuration	Bolted plate, welded to deck
Padeyes	
Main Lift	Lifted via a spreader beam via the winch drum
Snatch Limiter	
SWL	25Te
Weight (approx.)	6Te
Gas Spring	Nitrogen backed hydraulic cylinder

DIMENSIONS	
Extremities	
Length (across drum)	7520mm
Width (Including snatch limiter)	8100mm
Height (includes sheave arm)	5360mm
Drum (with Lebus Grooves)	
Length (Between flanges)	2761mm
Core Diameter	2600mm
Flange Diameter	3250mm



PERFORMANCE	
Line Pull	
Bottom layer	30Te
Top Layer	25Te
Winch Speed	
Range	Variable to 45m/min (Depends on layer and hydraulic power available)
Umbilical capacity	
53mm (Typical)	2200m
Sheave	53mm umbilical and Linksyn™
Drive	
Drive	Plug in motors to drive plate and Slew Ring
Brake	Integral fail safe
Tension Mode	Variable set, constant tension mode
Spooling	
Fleeting Carriage	Drum is moved via a hydraulic cylinder to give constant exit to the motion compensator
Hydraulic	
Supply (max)	280bar
Fittings	All Stainless Steel
Connection	SAE Bolted Flanges

CONTROL	
Control Console	
Controls	Pick-Up / Pay-Out Fleeting Left / Right Fleeting Auto / Manual Constant Tension Select / Adjust Touchscreen control interface Remote operation possible
Winch Instrumentation	System Pressure Length Out Low boost pressure Emergency Stop activated Motion compensator movement Umbilical tension

NOTES	
•	Spray nozzle umbilical cooling (200LPM @2-3bar (10bar max)
•	Optional deck camera and pan and tilt assembly suitable for deck installation
•	Brakes released flashing beacon
•	Fleeting error audible alarm

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26Te SWL CONSTANT EXIT HIGH POWER UMBILICAL WINCH WITH SLACK ARM / SNATCH LIMITER

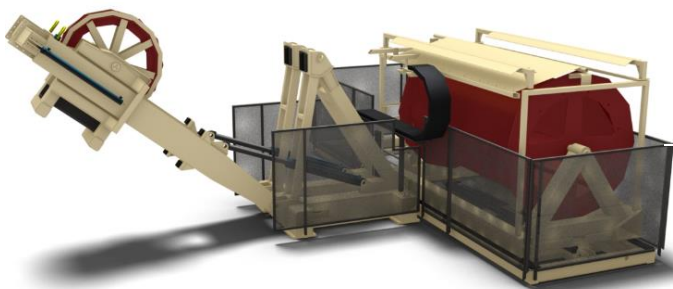
GENERAL	
Certification	
Design	Lloyds
Environment	Safe Area
Weight	
Standard (Empty Drum)	47.5Te
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
Deck Mount Points	4
Mount Configuration	Bolted to deck stools, welded to deck
Padeyes	
Main Lift	Lifted via a spreader beam via the winch drum
Motion Compensator	
SWL	45Te (when collapsed)
Weight (approx.)	17Te
Slack Control	Low Tension 1-3Te, ~2m take-up
Snatch Control	High Tension 20-34Te, ~2m take-up
Spring rate	Adjustable

DIMENSIONS	
Extremities	
Length (motion compensator in operating position)	11934mm
Width	11785mm
Height (motion compensator in transport position)	7159mm
Drum	
Length (Between flanges)	4580mm
Core Diameter	2500mm
Flange Diameter	3150mm

NOTES	
<ul style="list-style-type: none"> • Optional deck camera • Anti-cavitation accumulators 	

PERFORMANCE	
Line Pull	
Bottom layer	30Te
Top Layer	26Te
Winch Speed	
Range	Variable to 45m/min (Depends on layer and hydraulic power available)
Umbilical capacity	
55mm (Typical)	1800m
Sheave	55mm umbilical and Linksyn™
Drive	
Drive	4x Hydraulic Motors, Single Ring Gear
Brake	Hydraulic Motor Parking Brakes
Tension Mode	Variable set, constant tension mode
Spooling	
Fleeting Carriage	Drum is moved via a hydraulic cylinder to give constant exit to the motion compensator
Hydraulic	
Supply (max)	280bar
Fittings	All Stainless Steel
Connection	SAE Bolted Flanges

CONTROL	
Control Console	
Controls	Pick-Up / Pay-Out
	Fleeting Left / Right
	Fleeting Auto / Manual
	Constant Tension Select / Adjust
	Touchscreen control interface
	Remote operation possible
Winch Instrumentation	Pickup Pressure
	Constant Tension Command Pressure
	Brake Pressure
	Displacement Shift Pressure
	Umbilical Temperature
Motion Compensator Instrumentation	Hydraulic Charge Pressure Snatch & Anti-Cavitation
	Hydraulic Charge Pressure Slack & Anti-Cavitation
	Cable out length encoder
	Position Transducer Snatch & Slack Cylinders



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MISC. DECK EQUIPMENT

35Te / 50Te SWL TOW WINCH

SMD bring years of knowledge and experience from the design and manufacture of deck equipment to offer a range of Tow Winches. Standard SMD Tow Winches are manufactured to interface with SMD LARS and subsea plough packages to maximise operational performance and minimise deck space required. Tow Winches are designed for seamless integration with the full range of SMD deck equipment. They can also be easily interfaced to other launch systems and subsea equipment manufactured by other independent suppliers. All SMD Tow Winches are designed for long service life and are available with Lloyds Design Approval or optional DNV approval.

GENERAL	
Typical Application	Plough Tow Winch
Design	Lloyds
Environment	Safe Area or Zone II
Weight	
Standard (including 3,500m of 50mm rope)	~31Te
Operating Temperature	
Standard	-20°C to +45°C
Deck Mounting	
No. Mount Points	4
Mount Configuration	Bolted to deck stools welded to deck
Padeyes	
Main Lift	Via spreader beam to drum flanges

DIMENSIONS	
Extremities	
Length (across drum)	4820mm
Width (includes fleeting)	4491mm
Height	3260mm
Drum (Lebus Grooving)	
Length (between flanges)	2286mm
Core Diameter (to bottom of groove)	1818mm
Flange Diameter	3240mm



PERFORMANCE	
Line Pull	
Bottom layer	35Te or 50Te
Render Tension	Variable to 60 or 80Te
Winch Speed	
Maximum Pull In Speed	30m/min (at mid layer level)
Render Speed	60m/min at 100kN-800kN
Drum Capacity	
Capacity (50mm diameter rope)	3500m
Drive	
Hydraulic	Multi hydraulic motors with integral brakes via ring bearing
Brake	Integral motor brakes
Spooling	
Fleeting Carriage	On floating wide angle fleeting arm to match wide angle A-Frame
Hydraulic	
Main Supply (max)	280bar
Water Cooling (max)	300LPM
Water Cooling Flow	4bar – 10bar maximum
Fittings	Stainless Steel
Connection	SAE bolted flanges

CONTROL	
Standalone Control Console	
Controls	Proportional In / Out
	Level Wind Manual / Automatic
	Level Wind Left / Right
	Render / Lift Mode Select
Displays / Indicators	Tow Rope Length Out
	Tow Rope Tension
	Render Mode Active
	Render Setting
	A-Frame 45° Inboard Stop
	HPU Running
	HPU Fault

DECK HYDRAULIC POWER UNITS

SMD bring years of knowledge and experience to the design and manufacture of launch and recovery systems to offer a range of deck Hydraulic Power Units (HPU's) specifically designed for integration with Winch and A-Frame LARS equipment. Standard SMD HPU's are manufactured to interface with SMD A-Frames and Umbilical Winches to minimise deck space to form a complete vehicle handling system. HPU's are designed for easy integration with other SMD deck equipment but can be easily interfaced to other A-Frames and winches manufactured by other equipment suppliers. All SMD HPU's are designed for long service life and are available with DNV or Lloyds Design Approval.

HPU FEATURES

- 110kW, 150kW and 250kW models available as standard
- Active Heave Compensation (AHC) suitable versions available
- Standard Safe Area or optional Zone II
- Dual motor for redundancy
- Light weight open frame design suitable for road transportation



110kW (Twin 55kW) HPU

GENERAL	
Certification	
Design	DNV & Lloyds
Environment	Safe Area or Zone II
Weight	
Standard (inc. oil)	5500kg
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
No. Mount Points	4 (2 optional orientations)
Mount Configuration	Bolted plate, welded to deck
Dimensions¹	
Length	2300mm
Width	1750mm
Height	2670mm
Padeyes	
Main Lift	4-point to DNV 2.7-3 with sling set

PERFORMANCE	
Power	
Total Power Output	110kW
Motors	2x 55kW 440-480VAC or 690VAC 50Hz or 60Hz, 3-Phase
Instrumentation	
Low Level Indicator with automatic cut-off	✓
High / Low Oil Temperature Indicator	✓
System Pressure Gauge	✓
Motor Running Indicator	✓
Filter Blocked Indicator	✓
Hours Run Meter	✓
Hydraulic	
Supply (max)	250bar/400LPM
Fittings	All Stainless Steel
Connection	Quick release couplings
Cooling	
Seawater Cooling	✓



150kW (Twin 75kW) HPU

GENERAL	
Certification	
Design	DNV & Lloyds
Environment	Safe Area or Zone II
Weight	
Standard (inc. oil)	5500kg
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
No. Mount Points	4 (2 optional orientations)
Mount Configuration	Bolted plate, welded to deck
Dimensions¹	
Length	2300mm
Width	1750mm
Height	2670mm
Padeyes	
Main Lift	4-point to DNV 2.7-3 with sling set

PERFORMANCE	
Power	
Total Power Output	150kW
Motors	2x 75kW 440-480VAC or 690VAC 50Hz or 60Hz, 3-Phase
Instrumentation	
Low Level Indicator with automatic cut-off	✓
High / Low Oil Temperature Indicator	✓
System Pressure Gauge	✓
Motor Running Indicator	✓
Filter Blocked Indicator	✓
Hours Run Meter	✓
Hydraulic	
Supply (max)	250bar/400LPM
Fittings	All Stainless Steel
Connection	Quick release couplings
Cooling	
Seawater Cooling	✓

250kW (Twin 125kW) HPU

GENERAL	
Certification	
Design	DNV & Lloyds
Environment	Safe Area or Zone II
AHC	None AHC or AHC Versions Available
Weight	
Standard (inc. oil)	8000kg
Operating Temperature	
Standard	-10°C to +45°C
Deck Mounting	
No. Mount Points	4 (2 optional orientations)
Mount Configuration	Bolted plate, welded to deck
Dimensions¹	
Length	2920mm
Width	2220mm
Height	2905mm
Padeyes	
Main Lift	4-point to DNV 2.7-3 with sling set

PERFORMANCE	
Power	
Total Power Output	250kW
Motors	2x 125kW 440-480VAC or 690VAC 50Hz or 60Hz, 3-Phase
Instrumentation	
Low Level Indicator with automatic cut-off	✓
High / Low Oil Temperature Indicator	✓
System Pressure Gauge	✓
Motor Running Indicator	✓
Filter Blocked Indicator	✓
Hours Run Meter	✓
Hydraulic	
Supply (max)	250bar/400LPM
Fittings	All Stainless Steel
Connection	Quick release couplings
Cooling	
Seawater Cooling	✓

Notes:

¹Dimensions exclude deck mounting brackets. Standard dimensions shown, actual dimensions of final product are dependent on options selected.



CABLE LAY DECK EQUIPMENT



CABLE LAY EQUIPMENT SOLUTIONS

SMD bring years of knowledge and experience to the design and manufacture of Cable Lay equipment solutions. SMD can provide bespoke solutions tailored to specific customer requirements incorporating a range of equipment including Linear Cable Engines (LCE's), self-fleeting Cable Drum Engines (CDE's), Knife fleeting Drum Engine (KDE's) Draw-Off/Hold Back Cable Engines (DOHB's), Diversers, Cable Transporters, together with a fully integrated SMD Cable Lay control system. The Cable lay equipment can be provided with electric or hydraulic drive systems.



CABLE LAY CONTROL SYSTEM

SMD Cable Lay systems can be supplied with an ergonomically designed operator control console. PC based control with cable deck and bridge mounted control options and video display system can also be provided. Cable parameter monitoring, logging and alarm facilities can also be incorporated to provide a fully integrated cable lay control system. Auto seabed slack control of cable engines can be provided by 3rd party cable management software (e.g. Makai / Racal).

CONTROL SYSTEM FEATURES

- PC Based control system
- Ergonomic operator console.
- Video monitor array options.
- Cable parameter logging and alarms.





LINEAR CABLE ENGINES

SMD can offer a range of standard hydraulic or servo driven Linear Cable Engine (LCE) systems, the systems are available with a broad range of ancillary equipment and software to give a comprehensive cable lay solution. The servo motor driven system achieves unparalleled control and flexibility, with permanent magnet servo motors to produce a high torque which are able to stall at full torque for long periods without generating excessive heat. Motors are lower noise compared with induction motors and are water cooled, requiring no external cooling fan, making it more suitable for operation in high ambient temperatures. Due to the increased torque, servo motors are able to run at 2/3 of an induction motor speed to produce the same power, producing proportionately less heat through churning losses in the gearbox. The servo motor is also shorter and approximately half the mass when compared to an equivalent power induction motor, which significantly reduces shock loading on repeaters if handled at any speed.

LCE FEATURES

- Low mass/inertia guides
- Wheel arm geometry minimises repeater impact loads when laying
- Drives provide excellent anti-slip and load sharing performance
- Repeater handling mode to auto sequence guide opening ahead of repeaters.
- Modular design to suit Customer requirements.



TYPICAL LCE SPECIFICATION

GENERAL	
Typical Configuration	20-wheel pairs (or multiples of 4-wheel pairs)
Dimensions	17.5m (L) x 2m (W) x 1.8m (H)
Weight	~17.6Te
Deck Mounting	6x Load cells
Drives	AC Servo

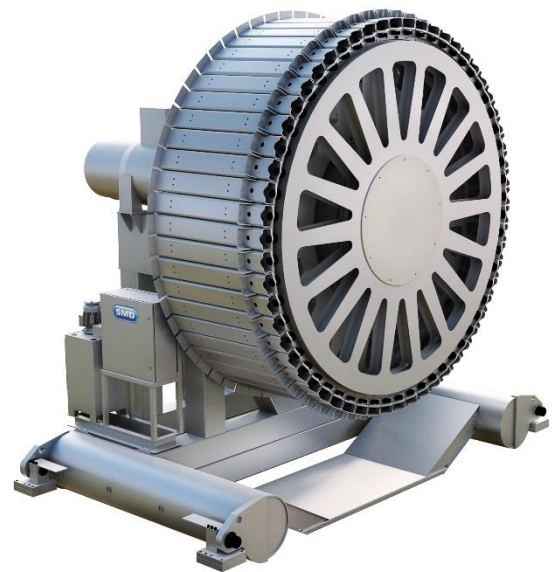
PERFORMANCE	
Pick-Up/Pay-Out Max Tension	18Te
Maximum Speed	8 knts
Cable Size Range	14mm dia. Lightweight to 150mm dia. armoured
Repeater	Max 400mm dia, up to 2m long
Mechanical Brake	25Te

CABLE DRUM ENGINES

SMD can offer a range of Cable Drum Engines (CDE's) including a unique knife-free Self-Fleeting Drum, which incorporates multiple drum staves which translate independently allowing the cable to travel across the drum automatically. The staves motion is controlled by electric drives giving flexible cable spacing, ideal for operations with large diameter repeaters. Elimination of cable knives increases the lay speed and reduces the opportunity for cable damage during lay operations especially for large diameter power cables and together with multiple wraps, large cable tensions are achievable. Drum engine designs are lower weight compared to equivalent designs and are suitable for both cable laying and repair operations. Designs include variable speed AC transmission with integral hydraulic service pack and hydraulic drive transmission options. SMD CDE's have reduced rolling resistance compared with conventional drum engines, which improve slow speed control and low tension render performance.

CDE FEATURES

- Knife-free self-fleeting drum design available.
- Safe fleeting system simplifies drum operation when handling repeaters.
- Infinitely variable fleeting pitch to enable fleet to be optimised for cable/repeaters.
- Fleeting process can be automated, enabling fully automatic cable laying.



TYPICAL SELF-FLEETING CDE SPECIFICATION

GENERAL		PERFORMANCE	
Typical Configuration	4m/4.5m Top / Bottom Entry	Pick-Up/Pay-Out Max Tension	40 / 50Te
Dimensions	6.6m (L) x 4m (W) x 5.9m / 6.5m (H)	Maximum Continuous / Intermittent Speed	6 knts / 8knts
Weight	~32 / 38Te	Cable Size Range	14mm dia. Lightweight to 150mm dia. armoured
Deck Mounting	4x Load cells	Repeater	400mm dia, up to 2m long
Drives	AC Induction	Mechanical Brake	50 / 60Te



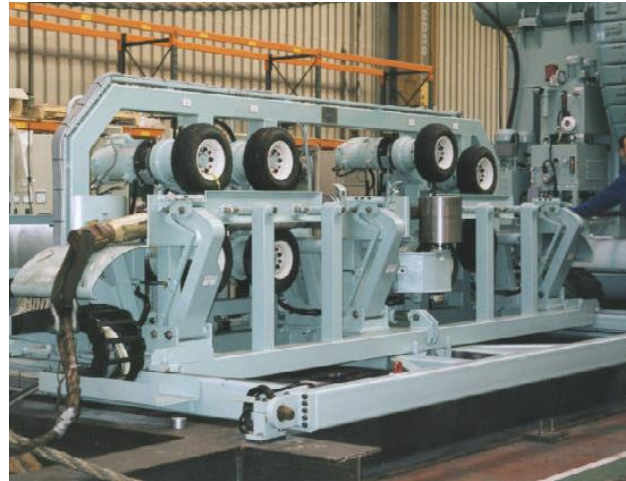


DRAW OFF / HOLD BACK CABLE ENGINE

SMD can offer a range of Draw-Off / Hold-back (DOHB) Cable Engines that incorporate AC servo motor driven system for unparalleled control and flexibility, providing excellent anti-slip cable handling performance. The SMD design DOHB uses a 4-wheel pair layout with stretched centre section providing easy repeater handling. Vertical and horizontal guide and wheel arm design avoids potential shackle traps. The design also includes an integral sub-frame containing cable engine traversing guidance and actuation system.

DOHB FEATURES

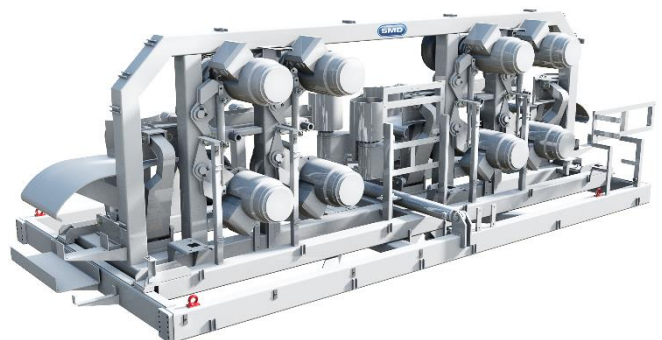
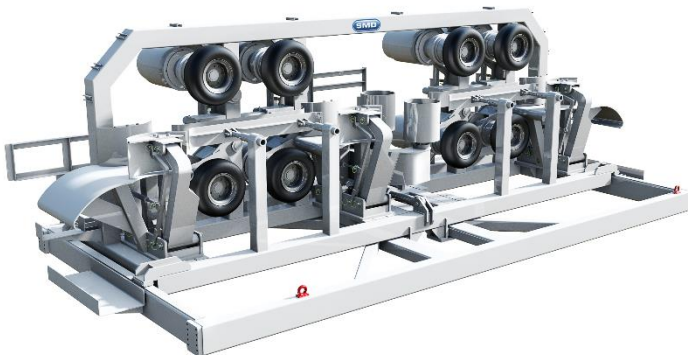
- AC servo motor low inertia drives.
- 4-wheel pair layout.
- Twin vertical axis rotometers.
- Low inertia cable guides.
- Cable engine traversing guidance and actuation system.



TYPICAL DOHB SPECIFICATION

GENERAL	
Typical Configuration	4-wheel pairs
Dimensions	6m (L) x 1.6m (W) x 1.9m (H)
Weight	~8Te
Deck Mounting	4x Load cells
Drives	AC Servo

PERFORMANCE	
Pick-Up/Pay-Out Max Tension	4Te
Maximum Speed	8 knts
Cable Size Range	14mm dia. Lightweight to 150mm dia. armoured
Repeater	400mm dia, up to 2m long
Mechanical Brake	4Te





CABLE TRANSPORTER

SMD Cable Transporters can be supplied in 1 and 2-wheel pair hydraulic drive options. SMD units feature self-contained Hydraulic Power Unit (HPU) requiring electrical ships supply only for ease of installation and operation. Other options include local and remote control and instrumentation panel options.

CABLE TRANSPORTER FEATURES

- 1 or 2 wheel-pair
- Hydraulically driven with sprung top-opening wheel arm and entry/exit guide rollers.
- Self-contained HPU.



TYPICAL CABLE TRANSPORTER SPECIFICATION

GENERAL	
Typical Configuration	2-wheel pairs
Dimensions	2.2m (L) x 1.6m (W) x 1.8m (H)
Weight	~2.7Te
Deck Mounting	Castors
Drives	Hydraulic

PERFORMANCE	
Pick-Up/Pay-Out Max Tension	1.1Te
Maximum Speed	6 knts
Cable Size Range	14mm dia. Lightweight to 150mm dia. armoured
Repeater	400mm dia, up to 2m long
Mechanical Brake	1.5Te





NOTES



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