Cable and pipe lay solutions
Rental equipment and engineering services
Sparrows Group’s Cable and Pipe Lay Solutions (CPLS) division offers both new-build and rental services to the global subsea pipe and cable laying industries.

Over the past 25 years, our CPLS division has become a trusted supplier of hydraulic and electric cable and pipe lay equipment to the energy industry. Our range of products covers all Subsea Umbilicals, Risers and Flowlines (SURF), as well as other cable and pipe forms.

Formerly known as Baricon Systems, we utilise the extensive engineering expertise we have in-house at Sparrows to supply a comprehensive service.

Our innovative and bespoke back deck equipment and product handling systems are designed for onshore product spooling and offshore lay or recovery operations and can be rapidly mobilised around the world.

**Engineering**
- Design and manufacture of SURF and cable laying equipment
- FEM analysis, feasibility studies
- Dynamic analysis for subsea pipelines, SURF and cables installation
- FMECA studies

**Products**
- SURF and cable laying equipment:
  - Reel drive systems, under-rollers, level winders etc.
  - Tensioners
  - Carousels
  - Readers
  - Ancillary equipment, chutes, roller boxes, cable highways
- Pipe handling systems
- Well intervention deployment systems

**Services**
- Rental of SURF and cable laying equipment
- Operation and maintenance of the equipment
- Survey and expediting
- Offshore personnel
- Inspection and integrity management, vessel assurance audits
- 25+ years knowledge and experience

Sparrows Group’s Cable and Pipe Lay Solutions (CPLS) division offers both new-build and rental services to the global subsea pipe and cable laying industries.
Engineering and services

**DESIGN SERVICES**

- Finite Element Analysis (FEA) structural, mechanical, hydraulic design of:
  - Any handling equipment such as: carousels, loading towers, deployment systems, roller high ways, chutes etc.
  - Hydraulic / electrical powered machinery
  - Mechanical clamps
- Sea fastening and underdeck strengthening
- Deck layout studies
- Orcaflex analysis
- Failure Mode, Effects And Criticality Analysis (FMECA)
- Late life analysis, life extension studies
- Lay procedures development
- Lifting studies, mechanical handling
- Front End Engineering Design (FEED) and conceptual studies.

**PROJECT MANAGEMENT SERVICES**

**Personnel available**

- SURF equipment construction managers:
  - Third party consultancy for equipment design
  - Equipment build expediting
- Project engineers:
  - Offshore activities
  - Vessel mobilisations
  - SURF equipment maintenance plans.

Sparrows personnel have the breadth and depth of experience to quickly and effectively provide the best way forward in the specification, build and mobilisation of your new equipment. We can also provide global on-site support with personnel seconded to your project.

**OFSHORE PERSONNEL SUPPORT AND OPERATIONS**

**Personnel available**

- Cable lay equipment operators and supervisors:
  - All trade disciplined technicians
  - Hydraulic
  - Mechanical
  - Electrical
  - Automation and control engineers.

**Activities**

- Equipment operation
- Equipment mobilisation and assembly
- Maintenance activities
- Fault finding.

We also provide global on-site support with personnel seconded to your project.

**VESSEL ASSURANCE AUDITS**

When hiring a vessel and equipment, it can be difficult to know how it will perform, what condition the equipment is in and mitigate against downtime. We offer vessel assurance audits to provide an independent, third party evaluation on the condition, reliability and performance capability of lay systems to assess any shortfalls in compliance of equipment prior to major lay projects.

As an Original Equipment Manufacturer (OEM) for lay equipment, we can deliver:

- Expert insight into the operational condition of the equipment
- Review of all required certification
- Operational review of the system for the planned project
- Witness of sea trials (where applicable)
- Fully documented report of equipment current state of readiness and recommendations to ensure performance.
### TENSIONERS

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Drive Type</th>
<th>No. of Tracks</th>
<th>Track Orientation</th>
<th>Track Length (m)</th>
<th>Total Max Grip (Te)</th>
<th>Speed Mode</th>
<th>Render Mode</th>
<th>Haul Mode</th>
<th>Constant Tension Mode</th>
<th>Series Mode</th>
<th>HPU / EPU</th>
<th>Control Cabin</th>
<th>Data Logging</th>
<th>Remote Display</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Te</td>
<td>BS056</td>
<td>Hydraulic</td>
<td>2</td>
<td>Vertical</td>
<td>1.2</td>
<td>16.67</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
<td>Vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
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<tr>
<td>5Te</td>
<td>BS184</td>
<td>Hydraulic</td>
<td>2</td>
<td>Vertical</td>
<td>1.4</td>
<td>15 or 30</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
<td>Vertical &amp; inclined 45°</td>
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<td>Possible</td>
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<tr>
<td>10Te</td>
<td>BS216</td>
<td>Hydraulic</td>
<td>2</td>
<td>Vertical</td>
<td>1.8</td>
<td>40</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
<td>Vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
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<tr>
<td>10Te</td>
<td>BS216</td>
<td>Hydraulic</td>
<td>2</td>
<td>Vertical</td>
<td>1.8</td>
<td>80</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
<td>Vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
</tr>
<tr>
<td>10Te</td>
<td>BS219</td>
<td>Hydraulic</td>
<td>2</td>
<td>Vertical</td>
<td>1.8</td>
<td>84</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
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<td>Yes</td>
<td>Possible</td>
<td></td>
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<tr>
<td>15Te</td>
<td>BS199</td>
<td>Hydraulic</td>
<td>2</td>
<td>Horizontal</td>
<td>2.4</td>
<td>80</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
<td>Vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
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<tr>
<td>15Te</td>
<td>BS213</td>
<td>Hydraulic</td>
<td>2</td>
<td>Horizontal</td>
<td>2.4</td>
<td>80</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
<td>Vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
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<tr>
<td>15Te</td>
<td>BS214</td>
<td>Electric</td>
<td>2</td>
<td>Horizontal</td>
<td>2.4</td>
<td>80</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>EPU</td>
<td>Vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
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<tr>
<td>36Te</td>
<td>BS177</td>
<td>Hydraulic</td>
<td>4</td>
<td>4-track</td>
<td>2.4</td>
<td>400</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
<td>Horizontal, vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
</tr>
<tr>
<td>36Te</td>
<td>BS179S</td>
<td>Hydraulic</td>
<td>4</td>
<td>4-track</td>
<td>2.4</td>
<td>400</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
<td>Horizontal, vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
</tr>
<tr>
<td>36Te</td>
<td>BS179M</td>
<td>Hydraulic</td>
<td>4</td>
<td>4-track</td>
<td>2.4</td>
<td>400</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>HPU</td>
<td>Horizontal, vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
</tr>
<tr>
<td>62.5Te</td>
<td>BS215</td>
<td>Electric</td>
<td>4</td>
<td>4-track</td>
<td>4.1</td>
<td>696</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>U</td>
<td>EPU</td>
<td>Horizontal, vertical &amp; inclined 45°</td>
<td>Yes</td>
<td>Possible</td>
<td></td>
</tr>
</tbody>
</table>

### REEL DRIVE SYSTEM

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Drive Type</th>
<th>Lifting</th>
<th>Skidding</th>
<th>Track System</th>
<th>Modular</th>
<th>Torque (Te*m)</th>
<th>Speed Mode</th>
<th>Torque Mode</th>
<th>HPU / EPU</th>
<th>Control Cabin</th>
<th>Data Logging</th>
<th>Remote Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>700Te</td>
<td>Innodrive 700</td>
<td>Electric</td>
<td>Hydraulic</td>
<td>Any length</td>
<td>140</td>
<td>Both</td>
<td>10ft EPU / CC</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800Te</td>
<td>Innodrive 800</td>
<td>Electric</td>
<td>Hydraulic</td>
<td>Any length</td>
<td>140</td>
<td>Both</td>
<td>10ft EPU / CC</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Level Winder</td>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ancillary equipment is available on request including chutes, roller boxes and cable highways.
# 3Te hydraulic tensioner

Model number: BS056

## IDEAL FOR
- Wire rope spooling
- Cable and umbilical spooling / lay
- Carousel loading towers / level winders

## FEATURE

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-track vertical type</td>
<td>Entry and exit guidance level remains the same with varying product diameters</td>
</tr>
<tr>
<td>Small footprint</td>
<td>Less deck space required</td>
</tr>
<tr>
<td>Hydraulic drive complete with Hydraulic Power Unit (HPU) and control station</td>
<td>Simple system to control and operate, reliable and compact providing excellent low tension control for delicate products</td>
</tr>
<tr>
<td>Fail safe grip application</td>
<td>Power failure results in grip being maintained</td>
</tr>
<tr>
<td>Removable tilt down guide rollers and outer grip cylinders</td>
<td>Allows easier side loading of product into tensioner if required</td>
</tr>
<tr>
<td>Easily fits inside a shipping container</td>
<td>Cost effective shipment worldwide</td>
</tr>
</tbody>
</table>

HPU
# Tensioners

## 5Te Hydraulic Tensioner

Model number: BS184

### IDEAL FOR

- Wire rope spooling
- Cable and umbilical spooling / lay
- Carousel loading towers / level winders

### Feature and Benefit Table

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-track vertical type</td>
<td>Entry and exit guidance level remains the same with varying product diameters</td>
</tr>
<tr>
<td>Small footprint</td>
<td>Less deck space required</td>
</tr>
<tr>
<td>Hydraulic drive complete with Hydraulic Power Unit (HPU) and remote control unit</td>
<td>Simple system to control and operate, reliable and compact providing excellent low tension control for delicate products</td>
</tr>
<tr>
<td>Fail safe grip application</td>
<td>Power failure results in grip being maintained</td>
</tr>
<tr>
<td>Removable tilt down guide rollers and outer grip cylinders</td>
<td>Allows easier side loading of product into tensioner if required</td>
</tr>
<tr>
<td>Easily fits inside a shipping container</td>
<td>Cost effective shipment worldwide</td>
</tr>
<tr>
<td>Accepts variance in product diameter through pivoting top track</td>
<td>Differing diameters can pass through in continued operations saving time</td>
</tr>
<tr>
<td>Data logging available</td>
<td>Allows analysis of data for verification post operations</td>
</tr>
</tbody>
</table>

HPU
10Te hydraulic tensioner

Model numbers: BS216 / BS219

FEATURE | BENEFIT
--- | ---
2-track vertical type | Entry and exit guidance level remains the same
Small footprint | Less deck space required
Hydraulic drive complete with Hydraulic Power Unit (HPU) and remote control unit | Simple to operate, reliable and compact with Human Machine Interface (HMI)
Control cabin with Heating Ventilation and Air Conditioning (HVAC) and internal domestic supply | Comfortable working conditions and excellent visibility for operators
Fail safe grip application | Power failure results in grip being maintained
Removable tilt down guide rollers and outer grip cylinders | Allows easier side loading of product into tensioner if required
Accepts variance in product diameter through pivoting top track | Differing diameters can pass through in continued operations saving time
Data logging available | Allows analysis of data for verification post operations
External communications | Control system can be tied into other equipment for synchronisation
Remote display option | Improves safety of operations
Suitable for offshore lifts (DNV GL 2.7.3) | Time saving offshore

IDEAL FOR

- Cable and umbilical spooling / lay
- Offshore wind
- Carousel loading towers / level winders
15Te hydraulic tensioner

Model numbers: BS199 / BS213

IDEAL FOR
Flexible / rigid lay and spooling
Offshore wind
Oil and gas
Decommissioning

FEATURE

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>BENEFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-track horizontal type</td>
<td>Both tracks move to maintain centre line</td>
</tr>
<tr>
<td>Hydraulic drive complete with Hydraulic Power Unit (HPU) and remote control unit</td>
<td>Simple to operate, reliable and compact</td>
</tr>
<tr>
<td>Control cabin with Heating Ventilation and Air Conditioning (HVAC) and internal domestic supply</td>
<td>Comfortable working conditions and excellent visibility for operators</td>
</tr>
<tr>
<td>Fail safe grip application</td>
<td>Power failure results in grip being maintained</td>
</tr>
<tr>
<td>Removable end guide rollers and outer grip cylinders</td>
<td>Top loading of product into tensioner and cross hauling of product umbilical termination assemblies</td>
</tr>
<tr>
<td>Accepts variance in product diameter through pivoting top track</td>
<td>Differing diameters can pass through in continued operations saving time</td>
</tr>
<tr>
<td>Data logging available</td>
<td>Allows analysis of data for verification post operations</td>
</tr>
<tr>
<td>External communications</td>
<td>Control system can be tied into other equipment for synchronisation</td>
</tr>
<tr>
<td>Remote display option</td>
<td>Improves safety of operations</td>
</tr>
<tr>
<td>Series mode in constant tension</td>
<td>Machines can be used together in constant tension mode</td>
</tr>
</tbody>
</table>
15Te electric tensioner

Model number: BS214

IDEAL FOR
- Flexible / rigid lay and spooling
- Offshore wind
- Oil and gas
- Decommissioning

FEATURE

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>BENEFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-track horizontal type</td>
<td>Both tracks move to maintain centre line with differing product diameters</td>
</tr>
<tr>
<td>Electrical drive complete with mini Hydraulic Power Unit (HPU) and remote control unit</td>
<td>Very accurate speed and tension control throughout full speed range</td>
</tr>
<tr>
<td>Control cabin with Heating Ventilation and Air Conditioning (HVAC) and internal domestic supply built into Electrical Power Unit (EPU)</td>
<td>Comfortable working conditions and excellent visibility for operators</td>
</tr>
<tr>
<td>Fail safe grip application</td>
<td>Power failure results in grip being maintained</td>
</tr>
<tr>
<td>Removable end guide rollers and outer grip cylinders</td>
<td>Allows top loading of product into tensioner and cross hauling of product umbilical termination assemblies</td>
</tr>
<tr>
<td>Accepts variance in product diameter through pivoting top track</td>
<td>Differing diameters can pass through in continued operations saving time</td>
</tr>
<tr>
<td>Data logging</td>
<td>Allows analysis of data for verification post operations</td>
</tr>
<tr>
<td>External communications</td>
<td>Control system can be tied into other equipment for synchronisation</td>
</tr>
<tr>
<td>Remote display option</td>
<td>Improves safety of operations</td>
</tr>
</tbody>
</table>
36 / 40Te hydraulic tensioner

Model numbers: BS177 / BS179M / BS179S

IDEAL FOR
Flexible / rigid lay and spooling, pipe in pipe
Deepwater
Oil and gas
Decommissioning

FEATURE

<table>
<thead>
<tr>
<th>BENEFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-track top track pivots open</td>
</tr>
<tr>
<td>Hydraulic drive complete with Hydraulic Power Unit (HPU) and remote control unit</td>
</tr>
<tr>
<td>Control cabin with Heating Ventilation and Air Conditioning (HVAC) and internal domestic supply built into Electrical Power Unit (EPU)</td>
</tr>
<tr>
<td>Fail safe grip application</td>
</tr>
<tr>
<td>Data logging</td>
</tr>
<tr>
<td>External communications</td>
</tr>
<tr>
<td>Remote display option</td>
</tr>
<tr>
<td>Vertical Lay System (VLS) compatible (BS177 model)</td>
</tr>
<tr>
<td>Series mode (BS179 models)</td>
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</tbody>
</table>

Tensioner in VLS
62.5Te electric tensioner

Model number: BS215

**FEATURE**

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>BENEFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-track top track pivots open</td>
<td>Allows top loading of product into tensioner and cross hauling of product umbilical termination assemblies</td>
</tr>
<tr>
<td>Electrical drive complete with mini Hydraulic Power Unit (HPU) and remote control unit</td>
<td>Simple to operate, reliable and compact with Human Machine Interface (HMI). Very accurate speed and tension control throughout full speed range</td>
</tr>
<tr>
<td>Control cabin with Heating Ventilation and Air Conditioning (HVAC) and internal domestic supply built into Electrical Power Unit (EPU)</td>
<td>Comfortable working conditions and excellent visibility for operators</td>
</tr>
<tr>
<td>Fail safe grip application</td>
<td>Power failure results in grip being maintained</td>
</tr>
<tr>
<td>Data logging</td>
<td>Allows analysis of data for verification post operations</td>
</tr>
<tr>
<td>External communications</td>
<td>Control system can be tied into other equipment for synchronisation</td>
</tr>
<tr>
<td>Remote display option</td>
<td>Improves safety of operations</td>
</tr>
<tr>
<td>Vertical Lay System (VLS) compatible (@50Te)</td>
<td>Allows vertical mounting of tensioner</td>
</tr>
</tbody>
</table>

**IDEAL FOR**

Flexible / rigid lay and spooling, pipe in pipe

Deepwater

Oil and gas

Decommissioning
Sparrows and Innovo have formed a partnership to deliver the largest capacity fully electric-drive flexible cable and pipe lay system to the rental market.

**PRODUCTS**

- Innodrive RDS from Innovo, up to 800Te gross product capacity with reel size up to 14m overall diameter
- Tensioners from Sparrows Group, up to 62.5Te, 2/4 track
- Combines EPU and control cabins
- Tracking system for multiple reels
- Level winder
- Overboarding chute
- Winches

**FEATURES**

- A safe, fast and economical installation
- Suitable for a number of vessels
- Automatic control system between Reel Drive System (RDS) and tensioner
- Product lay or recovery
- One control station for all equipment
- Robust, reliable and technically advanced

**BENEFITS**

- Usable with varying sizes of reels on same firing line
- Remote access and remote screen share allows best surveillance of operations
- Sophisticated system allows for very accurate speed and tension control
- Drive failure does not pose risk of contamination or system failure
- Two people required to operate complete system per shift
- Faster, safer spooling of multiple reels

**ELECTRICAL DRIVE LAY SPREAD SYSTEM**

**Electrical Drive Lay Spread System (EDLS)**

Supplied in collaboration with Innovo®
Innolive 700
700Te Reel Drive System (RDS) and track system

IDEAL FOR
Flexible lay and spooling
Offshore wind
Oil and gas
Decommissioning

FEATURE
Outside diameter of reels from 5m to 14m
Electrical drive complete with Electrical Power Unit (EPU) / control cabin and Hydraulic Power Unit (HPU) for lifting
External communications
Data logging
Track system any length
High capacity with 70/30 load share
Modular for shipping in 40ft containers
Lloyd's Register approved
Reel lay up to 15Te tensioner (reel dependant)

BENEFIT
Suitable for many project large or small reels
Simple to operate, reliable and compact with Human Machine Interface (HMI). Very accurate speed and tension control throughout full speed range
Integration with Sparrows Group tensioners. Control system can be tied into other equipment for synchronisation
Allows analysis of data for verification post operations
Allows multi-reel spooling offshore
Allows spooling of out-of-balance reels
Reduces shipping costs
Provides assurance of design for client requirements
Reduces equipment required saving costs
Innolive 800
800Te Reel Drive System (RDS) and track system

IDEAL FOR
Flexible / rigid lay
and spooling,
pipe in pipe
Offshore wind
Oil and gas
Decommissioning

FEATURE
Outside diameter of reels from 5m to 14m
Electrical drive complete with Electrical Power Unit (EPU) / control cabin and Hydraulic Power Unit (HPU) for lifting
External communications
Data logging
Track system any length
High capacity with 70/30 load share
Modular for shipping in 40ft containers
Lloyd's Register approved
Reel lay up to 15Te tensioner (reel dependant)

BENEFIT
Suitable for many project large or small reels
Simple to operate, reliable and compact with Human Machine Interface (HMI). Very accurate speed and tension control throughout full speed range
Integration with Sparrows Group tensioners. Control system can be tied into other equipment for synchronisation
Allows analysis of data for verification post operations
Allows multi-reel spooling offshore
Allows spooling of out-of-balance reels
Reduces shipping costs
Provides assurance of design for client requirements
Reduces equipment required saving costs

Supplied in collaboration with INNOVO®
Level winder

IDEAL FOR
Flexible lay and spooling
Offshore wind
Oil and gas
Decommissioning

FEATURES
• Product range 50-330mm
• Electrical drive
• Max speed 0.5m/min (laying)
• Max trolley stroke 8m
• Controlled by Reel Drive System (RDS) Programmable Logic Controller (PLC)

BENEFITS
• Suitable for use with Innodrive RDS series
• Auto-spooling mode
• Suitable for shipping by container

Supplied in collaboration with INNOVO®
Local knowledge, global network

- **SPARROWS HEAD OFFICE**
- **SPARROWS LOCATION**

**INTEGRATED SOLUTIONS**
- Crane and lifting services management
- Deck operations management
- Reliability centred maintenance
- Mechanical handling
- Equipment upgrade
- Fault finding and repair
- Hydraulic system management

**CAPABILITIES / SERVICES**
- Multi-discipline engineering / design
- Crane operations
- Rigging / lifting
- Maintenance / servicing / refurbishment
- Inspection / testing / rope access
- Fluid power / hydraulics
- Site surveys
- Training / coaching

**EQUIPMENT SALE AND RENTAL**
- Cranes
- Crane technology
- Cable / pipe handling systems
- Fluid power / hydraulic systems
- Rigging / lifting equipment
- Mechanical handling equipment
- Spare parts / components
- Access systems

Please visit [www.sparrowsgroup.com/contact](http://www.sparrowsgroup.com/contact) to find your nearest office

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