



Independent Specialists in the Repair, Refurbishment and Installation of all Types of Rotating Equipment

Engineering Excellence

SBT Engineering Services are the North West's largest independent specialists in the repair and refurbishment of industrial gearboxes and mechanical process plant equipment.



Located close to the motorway network in Old Trafford Manchester, our framework support status ensures a **quick, efficient service** that is cost effective with direct contact, allied with out of hours service and technical support.

With provision for on-site services, fabrications and machining, we provide support to a wide cross section of industries from:

- Waste Water & Clean Water
- Petrochemical
- Pharmaceutical
- Manufacturing
- Food Industries
- Agro Chemical

From the repair of the smallest industrial gearbox to the design, manufacture and installation of bespoke applications and large-scale fabrications we can provide a solution that fits. **We deliver a 24/7 service** and never compromise on quality; as such all work we undertake is completed to the ISO 9001:2000 standard and covered by a 12-month warranty.

“ We deliver a **24/7 service** and never compromise on quality ”



Galvanised Access Stairs



New Screw Pump Drives



Air Actuated Valve Manifold



Grit Rake Drive Assembly



Fabrication & Site Services

SBT have a dedicated fabrication team, capable of producing a wide variety of items in a broad range of materials. This team is supported by a full time designer that has over 20 years' experience of fabrication and machine component design.

- Equipment removal and installation
- 2D and 3D CAD Design
- Contract lifting and risk assessment
- Supply and installation of pipework of all material specifications
- Supply, manufacture and installation of handrails and restraints, open tread and Durbar flooring, fixed ladders and steps, fencing and gates
- Supply, manufacture and installation of gratings from materials such as GRP, mild steel, galvanised and stainless steel including brackets, covers and guards
- Large scale and specialist cleaning of tanks and vessels etc.
- Minor civil works
- Mechanical polishing to industrial standards
- Pickling and Passivation of stainless components after manufacture for post engineering cleaning
- Full quality documentation for fabricated pipe work including pressure testing prior to shipping to site
- Insulation and lagging of parts and components on site/workshop
- NDT and X-Ray reports
- Coded welding to ASME standards
- Design and installation of platforms, gantries, supports, frames and brackets, walkways, steps and stairs, pump and gearbox stands etc.



Replacement Scraper System



Bridge Carriage Replacement



Pump and Pipework Replacement



Tank Drive Upgrade



Fabrications

SBT have the capability of fabricating to drawings or samples, a wide range of items, from small guards for drives to large scale access platforms and structural supports. Materials kept in stock include stainless steel sheet, box angle and flat, through to mild steel structural sections, channels, beams, box, flat, angle and a large selection of sheets from 2 - 20mm thick. The range of coatings offered is also large enough to meet even the most stringent requirements, from simple combinations of primer + gloss to powder coated and scotch coatings.

Pipework Solutions

Pipework Design

Pipework installations & alterations can be undertaken from 1/2" upto 48", all designed and fabricated off-site to minimise disruption on site. Complex pipe-work manifolds and complex installations are all modelled & designed on CAD in 3D to ensure a perfect fit whilst minimising the need for site welds & site alterations.

Pumps, valves & fittings can all be supplied at competitive prices and lead times from a wide variety of suppliers, alternatively free issue items can be incorporated in the design & installation where required.



Pipe Manifold



Pipe Manifold



Manifolds Fabricated and Installed



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Services: Gearbox Repair & Refurbishment



Gearbox Repair & Refurbishment

SBT have excellent supplier relationships which means we can source genuine OEM spares for your unit at highly competitive prices. Should your unit be obsolete, or your repair is required urgently, our in-house machine shop facilities allows us to manufacture replacement components to sample, or drawing, thus reducing delivery lead times to an absolute minimum.

Gearbox Supply

As an independent supplier we can specify and supply the correct gearbox for most applications including replacement of obsolete units, direct replacement of units beyond economical repair, new installations and replacement of incompatible units.

We will undertake a detailed assessment, including site visits where necessary and provision of a full report outlining our recommendations.

Due to the vast array of equipment installed across the industries served by SBT we are also extremely experienced in manufacturing adaptors and mountings to allow modern solutions to be retrofitted into older, existing installations. The advantage is that there is minimum disruption to the overall installation and/or any associated electrical or control systems.



Service Exchange Gearbox



New Screw Pump Drives



Worm and Wheel Gearbox



Worm and Wheel Set



Services: Gearbox Repair & Refurbishment



FREE Strip & Report

SBT has always prided itself on its service and competitiveness. With this in mind we offer a 'FREE Strip & Report' on all types and manufactures of gearboxes. This is offered on a non-obligatory basis.

Stock & Service Exchange Units

We offer a service exchange facility on a large range of David Brown and Renold Drives. There is also a large and varied range of gearboxes held in stock at our Manchester facility ready for immediate despatch.

Gearboxes Repaired or Supplied include:

radicon

SIEMENS

FLENDER

RENOLD
Superior Chain Technology

DAVID BROWN

Sumitomo

SEW
EURODRIVE

BAUER

NORD
DRIVESYSTEMS

Bonfiglioli

Chemineer
Reliability & Technology in Mixing

Lenze

SPX
>Lightnin



Faro Arm Measurement Service



Gearbox, Fully Refurbished



Replacement Gear Set

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Hydraulic Actuation Conversion

At SBT we understand that technology improves and older equipment once thought to be leading technology now requires updating and can benefit from technical improvements.

Once an item of equipment has been identified we begin the process of improvement using data from RCAs or completed FMECA studies to best understand how the equipment can benefit from the improvements.

- The typical improvements concentrate around maintenance and operation of the equipment;
- Improving maintenance downtime;
- Installing bearings with greater service factors;
- Improvement and upgrades to sealing design and installation;
- Gearbox upgrades complete with improved installation techniques and tooling;
- Holding of critical long lead time items on stock;
- Modifications to valve actuators;
- Installation of hydraulically operated systems to replace manually operated valves.



Engineering Excellence



Weather Proof St/St Cabinet (Double)



Multiple Penstock Hydraulics



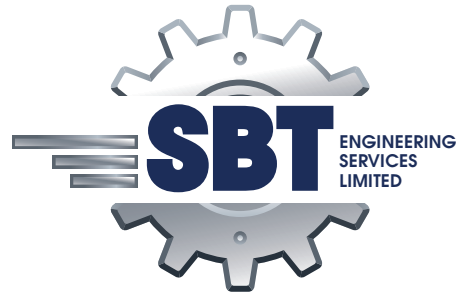
Manually Operated Hydraulic Pump



Direct Penstock Control (Single)



Services: Continuous Improvement Programme



Hydraulic Actuation of Penstocks

SBT have carried out many upgrades to operating penstock valves on water reservoirs as well as inlet flow control gates on WwTW throughout the northwest. These typically involve a single full stroke hydraulic cylinder operated by a local hydraulic pump with simple raise lower control valves. In situations where the valve is remote from any power supplies a robust hand powered pump is installed to provide the motive power.

The Cylinders can be manufactured as a “double” design to incorporate valve position indication on the top of the cylinder.

This type of modification has also been carried out at remote reservoirs reducing the manual handling and manpower issues typically associated with opening large valves against an unbalanced head of water, older valves with manual handwheels are operating the valve through a reduction unit, this type of reduction unit means hundreds of rotations of the hand wheel are required to open the valve, by upgrading the valve and converting valves to a rising stem allows the incorporation of a hydraulic cylinder and handpump system alleviating the manual handling issues associated with the operation.



Hydraulic Control Panel



Hydraulic Cylinders



Refurbished Penstock Gate

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Machining, Grinding, CNC & Conventional Machine Capacity

Supporting our comprehensively equipped workshop our in-house machine shop manufactures general spares and components to your specific requirements from either engineering drawings or samples.

Components and processes include but are not limited to:

- Gear blank turning for all gear types
- Gear blank and plate milling
- Sprockets
- Surface and tooth grinding
- Multi tooth internal and external splines
- Turning and grinding of large shafts
- Vertical and Horizontal boring
- Internal keyway
- Shafts of most sizes and types
- Penstock shafts and nuts
- Flanges
- Rings
- Cylinders
- Housings
- Crankshafts
- Couplings

Materials stocked include;

- Mild steel round bar in grades starting at EN3
- St st round bar in grades starting at 304 st/st
- Diameters from 10mm up to 100mm in full lengths
- Billets from 80mm up to in excess of 400mm diameter
- Also a broad range of alloys are kept in stock from 10mm diameter up to 150mm diameter.



Split Design Re-slurry Bearing



Spiral Bevel Set



Worm Shaft



Grinding To Tight Tolerances



Conventional Machining

- Vertical Boring – up to 52" diameter with profile turning capabilities.
- Centre Lathes – 3.8 meters between centres and up to 1200mm diameter.
- Milling – 1500mm x 500mm table capacity.
- Slotting: 4 machines with varying stroke lengths upto 30.

Grinding

- Internal Grinding – up to 1500mm.
- External Grinding – up to 1400mm.
- Cylindrical Grinding – up to 4.8 metres long x 600mm Dia.

Gear Grinding

- CNC Gear Grinding – 1600mm Dia x 1000mm face width up to 45 MOD to DIN 1. (Hoffler Rapid 1600) including inspection capabilities and graphing for lead, involute and pitch.
- Spline Grinding – 900mm between centres x 200 Dia. Straight & Involute Splines.

Worm Wheels

- Various Machines with sets mating up to 32" Centres

Gear Hobbing

- Modul 3150 (capacity extended to 4250mm Dia. x 30 MOD) with single indexing and internal cutting head capabilities
- Modul ZFWZ 2000/3 – which has 2 cut cycle, single index and crowning facilities, capable of cutting gears up to 2 Meter Dia. x 800mm face up to 25 MOD
- Liebherr ET 1200 (1250mm x 32 MOD)

Bevel Gears - Conventional and CNC

- G & E 60S2 Bevel Gear Rougher.
- 24A Gleason Coniflex Bevel Generator (900mm Dia x 25MOD)
- 54 Bevel Planer (max 1500mm Dia x 40 MOD)

Gear Shaping

- Sykes 5E (1500mm x 16 MOD) equipped with straight and 30 degree double helical guides.
- Sykes 3C (1000mm x 10 MOD) equipped with straight and 30 degree double helical guides.
- MAAG 8H 180/300 (3000mm x 32 MOD) max face width 450 (equipped with STD internal & oblique cutting heads)



Gear Grinding -Worm



Gear Cut
(Replacement Shaft)



Chain Sprocket Set



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**Services: Mechanical Plant Process
Equipment Repairs / Site Service Work**



Mechanical Process Plant & Equipment

SBT have fully equipped service vehicles with teams of trained technicians covering a wide variety of customers and equipment. These include, but are not limited to:

- Compactor Augers and Trough Manufacture & Repairs
- Inlet Screen Repair and Improvements Program
- Pump Civils Removed and Pump bases Fabricated and Installed
- Gate Valve, Butterfly and Non Return Valve Installation
- Storm, Primary and Final Tank Refurbishments
- Tank Scraper and Rubber Replacement & Installation
- Gearbox and Pump Refurbishment Installation and Commission
- Fabrication and Machining of Grit Rakes and Detritors
- Pipework and Manifold Manufacture and Site Installation
- Hydraulic Actuation Bespoke Design and Installation
- Penstock Refurbishments and Hydraulic Conversions
- Mechanical Seal Refurbishment and Installation Service
- Access ladders, Platforms and Stairways In GRP, Galvanised Steel and Stainless Steel,
- Screw Pump Gearbox Repairs,
- Screw Pump Top and Bottom Bearing Repairs
- Installation of Macerators, Munchers, Blowers, Fans and Dryers
- Water Meter Pipework Fabrication & Installation
- Overhaul and Refurbishment of Washpactors and Combi Wash Repairs
- Stainless Steel and Mild Steel Pipework, fabricated and installed from 1" to 36"
- Open Tread Flooring Replacement in GRP, Mild Steel and Stainless Steel



Replacement Grit Rake



RBC - Repairs and New



On-site Crane Lifts



Grit Rake Crank Mechanism



**Services: Mechanical Plant Process
Equipment Repairs / Site Service Work**



Site Work

Within the SBT management team the expertise covers a wide range of industry. This enables SBT to address with confidence every type of job from fabrication repair jobs to large scale equipment refurbishments. The industries & equipment covered includes:

- Pharmaceutical equipment
- Filter beds
- Pressure filters
- Archimedes screws
- Gearboxes
- Penstocks and actuators
- Chemical process equipment
- Fabrications - large & small
- Structural steelwork
- Pumps & valves
- Pipework & manifolds
- Tanks & scapers
- Drive systems design
- Bearings and couplings
- Detritors
- Grit rakes
- Screens and screenings handling
- Bio-digesters
- Heat treatment
- Servo motors
- Hydraulics and actuators
- CSO / storm overflow equipment
- Civils and drainage



Spider Crane Lifting a Spider Crane



Penstock Replacement



Silo Installation (Tandem Lift)



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Screen & Screenings Handling Equipment Refurbishments

SBT Engineering have many years experience repairing, overhauling and commissioning the following equipment:-

- Bar Screens
- Screen Rakes and Brushes
- Compactor/Auger Type Handling Equipment
- Step Screens
- Storm Screens

SBT Engineering carry out a screen inspection and refurbishment program, with dedicated teams who are familiar with all types of screening equipment. Fully stocked vehicles supplement the engineers backed by our workshop and support structure.

All screen inspections are carried out and documented with written reports detailing any additional work required, complete with all necessary parts required to complete the service.

SBT are also able to fabricate and assemble screen bodies if the existing one is beyond economical repair.

Screen Spares

We carry a comprehensive stock of screen spares to ensure the screen is out of service for the minimum amount of time. Standard spares carried as stock items include :-

- Replacement Gearboxes & Motors
- Drive Chain & Wing Plates
- Bottom Bearing Pins & Sprocket Assemblies
- Top Shaft & Drive Sprocket Assemblies C/W Bearings
- Rotating Brushes & Bottom Brushes
- Perforated Stainless Steel Step Elements
- Side Seal, Chain Support Plastics & Invert Crescents
- Main Shaft and Brush Shaft Bearings
- Large selection of Gearbox Seals and Bearings
- Sparge pipes and spray nozzles



New Set of Elements Fitted



Filter Elements Supplied As Spares



New Chain Wheels



Brush Assembly



Services: Screen Support



Screen Innovation

SBT are able to retrofit an innovative improvement to the original escalator screen rotating brush design, The Pivoting Brush Mechanism (PBM).

This enhancement increases the efficiency and effectiveness of screenings removal and can be installed on most applications with the minimum of downtime.

If you require any support for your on site screening equipment then please contact our Screen Program Manager, Peter Schofield on 07738 424 046 or e-mail peter@sbtengineering.co.uk



Pivoting Brush Mechanism



Stainless Steel Auger Assembly



Engineering
Excellence



Wash Unit Refurbishment



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Compactors, Screws & Augers

Screws, Augers, Bodies

SBT have extensive experience of refurbishing, rebuilding and manufacturing augers, screws and bodies for the waste water industry, from small 150mm diameter units to over 1800mm diameter units, at lengths up to 10 metres.

SBT offer repair options for augers typically covering replacement flights, refurbished bearing housings, regrinding of flights, replacement end flights, right through to manufacture of new augers complete.

As for bodies, we have extensive experience of replacing perforated tubes within bodies, thus significantly extending the service life of the unit for significantly less than the cost of a new one. If the original body is beyond refurbishment new bodies can also be fabricated to sample.

Compactor Refurbishment

- Manufacture of new augers
- Re-lining of existing troughs
- Flight replacement and shaft reclamation
- Manufacture of complete trough assembly
- Gearbox service exchange facility
- Fabrication and assembly of screen frame
- Huber Units
- Combi-Wash Units
- Washpactors
- Tapered Discharge Tubes
- Bearing Housing Overhauls



Wash Unit Refurbishment



New Compactor Body



Replacement Auger



New Auger



Services: Compactors, Screws & Augers



Discharge Tubes

Replacement discharge tubes are also frequently fabricated and installed by SBT Engineering. These can be either mild steel or stainless steel, with the correct amount of taper to effectively route the waste to the discharge point. SBT tubes come in manageable flanged sections to aid installation and clearing, once installed thus improving the maintainability of the installation.



Compactor Body Refurbishment

Stock

SBT keep on stock at their facility in Manchester 250mm and 400mm diameter flights, auger tubes & shafts and compactor liner tubes to enable a rapid response to repair and refurbishment requests. As all aspects of this work are in-house, including machining, welding, fabrications and assembly the turnaround time for auger and compactor repairs is kept to a minimum.



Discharge Tube



Worn Archimedes Screw



New Archimedes Screw



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Our Workforce

The SBT workforce is of the highest calibre and we constantly strive to improve the skills of our employees through ongoing staff training and development. All engineering staff possess at least the following qualifications:

- CONSG Safety Passport (including the third day for supervisors)
- Sling and Lift
- First Aid (Emergency)
- Confined Space Operation
- National Water Hygiene Scheme Accreditation
- Management of Lifting Operations (Appointed Person. LOLER Regs)
- Asbestos awareness training



On-site Services



Pipe Fabrication

Workshop Facility

The SBT workshop facility core business is the refurbishment and overhaul of industrial gearboxes, collectively our staff have many years' experience in the field and are able to repair gearboxes of any type; from a standard worm unit produced by such manufacturers as Radicon (David Brown), Kissling, Rossi & Knodler to planetary and cone drive units from manufacturers such as SEW Eurodrive, Lenze, Darimec, Disco, Kopp, Ames, Crosta, Flender, Renold, Highfield, Sumitomo, SEW, Hansen & Nord.

- 18,000 sq ft split over two levels
- Dedicated gearbox repair & rebuilding
- CNC machining, Faro robotic measurement
- Crane lifting capacity exceeding 20 Tonnes
- 1 Tonne beam crane
- Portable engine lifts
- 1.5 Tonne forklift capacity
- Presses from 15 - 100 Tonnes
- Hydraulic pressing & withdrawal equipment
- Portable press up to 100 Tonnes capacity



Manufacturers, Fabricators and Installers of All Types of Mechanical Process Equipment. Industries include Waste & Water Treatment, Petrochemical, Chemical, Pharmaceutical and Manufacturing.



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