



Norway@CERN

May 10

2017



Company overview

(Click the links to get directly to the company description)

[Mechanical manufacturing services](#)

In general Norwegian mechanical industry has a modern machine park with skilled workers. Most of the companies do a lot of jobs in series below 20 with high complexity in all materials.

Alloyance	Mechanical cluster of 14 companies
Bandak Lunde	Large workshop for turning, milling, grinding, inspection and welding
Berget	High precision CNC. Also makes cables, harnesses and PCB assemblies
Dalen mekasniske	CNC producer specialized on copper. Also do gold and silver plating.
DSM	Small high precision machining specialized on prototypes and small series
GMV	High precision machining and drilling up to 6m.
HMR Mikromekanikk	High precision machining up to 3m. Also have advanced welding capabilities.
HSM	High precision machining up to 5m
HTS Maskinteknikk	Large machining company with high precision machining up to 1,5m
Intermec	Machining company with high precision machining up to 1,2m
Jæren Maskinering	Machining of mainly prototypes and single parts up to 2,5m
Lilaas	Ultra high precision machining of small parts. Can do electromechanical assemblies and testing
AS Metallteknikk	Metal fabrication. Sheet metal, frames, pressure vessels, fire doors
Norse	Machining of larger components, heat treatment and welding
Olvondo	Engineering, fabrication and machining company for heavy and high precision products/components. Machining up to 23m
Partner Maskinering	High precision machining of metal and plastic parts up to 2m
Rush maskinering	High precision machining up to 3m
Se-Tech	High precision machining
Timech	Small company specialized on difficult prototypes and small series
Ultra Technology	High precision machining up to 1,5m

Steelworks

[Stavanger Steel](#) Specialized manufacturer of steel forge and cast products. Can produce 316LN



Electronics Manufacturing Services (EMS)

[Axxe](#)

[Kitron](#)

[Norbit](#)

[Simpro](#)

[Westcontrol](#)

[Berget](#)

[Norautron](#)

Cables and harnesses

[Berget](#) Manufacturer of cable assemblies and harnesses. Also fiber cables.

Custom connectors and assemblies

[Benestad](#) Producer of custom penetrator and connection products for extreme environments. Use metal-to-glass sealing. Power, signal or fiber connectors

[Fosstech](#) Producer of cables/connectors/penetrators for extreme environments. Assemblies/wiring of racks/cabinets/control Systems

Switchboards:

[Mongstad Tavleteknikk](#) Producer of switchboards, MCC's, distribution boards, control panels and network panels

Cranes:

[Munck Cranes](#) Producers and suppliers of cranes and lifting equipment



Company Name:

Web: www.alloyance.com

Alloyance AS



Address:

Hetlandsgata 9
PB 353
4349 Bryne
NORWAY

Telephone number:

48153424

Contact person	E-mail	Telephone	Mobile phone
Arne Borg Pedersen	arne@alloyance.com	+4748153424	+4748153424
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Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 800 Turnover MNOK (2016) 1 300 000 000

Description of Company

Mechanical cluster of 14 companies covering machining, deep hole drilling, licensed threading, sheet forming, coating, assembly & test

Relevant certification

ISO 9001:2008, ISO 14001-2005, ISO 3834-2:2006, OHSAS 18001:2007

The individual companies will have their own individual certification

Areas of interest:

i) Assembly & Test - larger projects - hydraulic solutions, assembly work, state of the art facilities - Depro is the relevant shop to do this. Here we have an advantage as other members of Alloyance can manufacture components, whilst Depro can assemble, test and certify the final product.

ii) Sheet forming: Mostly covered separately by Metallteknik, Facades - if relevant, can be covered by Nordic Steel

iii) Norsk Overflateteknikk - Coating: a) Hot dip galvanizing b) Powder Coat c) Paint & Varnish d) Grit and bead blasting e) Acid washed stainless steel, XYLAN and other finishes

iv) Deep hole drilling - up to 10 meters from Ø 7 mm to Ø 500 mm

v) Machined components: From Ø 5 mm up to 2500 mm - can take forgings up to 15-16 tons and 6 meter length

AARBAKKE, Unimek, Årdal Maskinering, JB Maskinering, NORSE, Ole G



Unimek's production hall - can machine small to medium size components. A small and very flexible machinshop counting 15-17 employees. This is a small shop within the cluster who can take on machining of single components.

They can do milling, lathe

CMM is in place

3D milling prototyping - molds and models in plastic, aluminum, and steel

<http://www.unimek.no/unimek-maskinering>



Company Ole G

Thickness 35 mm, width 2000 mm, lowest diam 565 mm

Ole G can manufacture single components or be a subsupplier to other companies in Alloyance AS



Depero has a state of the art assembly shop, where they can assemble and test equipment.

Depero is your complete EPC partner, enabling your company to focus on its core business. At Depero, we use high level competence within the organization to deliver customized equipment in accordance with project/equipment specifications.

In order to execute the EPC, Depero uses SAPBI with an integrated project/planning module. The planning system allows each project manager to perform suitable actions in accordance with client requirements and Depero's requirements.

<http://www.depero.no/about-us>



At the Depero facilities



Company Name:

Web: www.axxe.com

Axxe AS

Address:

Isebakkeveien 25
1787 Halden
NORWAY

Telephone number:

+47 69 17 38 00



Contact person	E-mail	Telephone	Mobile phone
Øystein Back	oystein.back@axxe.com	+47 69173811	+47 90866552
Preben Nøhr	preben.nohr@axxe.com	+47 69173841	+47 90561637
Trine Signebøen	trine.signeboen@axxe.com	+47 69173866	+47 41629450

Number of Employees 40 Turnover MNOK (2016) 7 MEUR

Description of Company

AXXE is a electronics contract manufacturer with main focus on hi tech companies with complex products operating in harsh environments and that have special needs when it comes to flexibility, interaction and workmanship. We specialize in small batches, ususally between 1 and 500 ex.

AXXE has a large and updated instrument portfolio and dedicated test development engineers with broad skill sets. Tailor made test solutions by utilizing Boundary Scan, AOI, X-ray, semi-automatic optical inspection and photo documentation system, and functional tests on both board and system level. Also dynamic burn-in and temperature cycling.

Leading manufacturer when it comes to hi-temp electronics and IPC-A-610 Class 3/"3+".

Relevant equipment and systems:

Soldering: Vapour phase, vapour phase vacuum, reflow, selective robot, wave soldering (leaded and unleaded), BGA rep. stations.

Coating: Selective coating robot, PCB cleaner and clean tester.

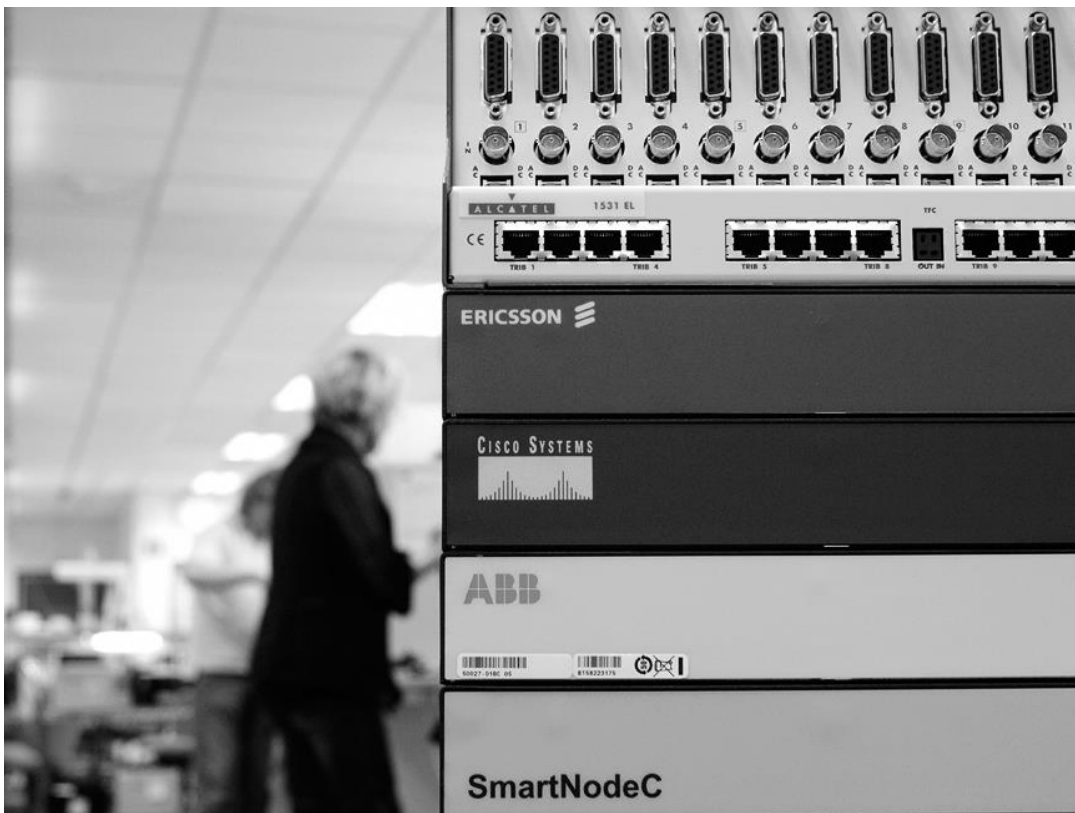
Traceability: Full traceability including material, test, processes and surveillance of MSL.

Relevant certification

ISO 9001 , ISO 14001, BS OHSAS 18001 (ISO 45001), EX Factory Quality Assurance Statement and Certified instructors for IPC-A-610.



Some of our SMD equipment



Some of our customers



Our facilities



Our vapour phase vacuum machine



Company Name:

Bandak AS

Address:

Hantovegen 328
3825 Lunde
Norway

Telephone number:

+47 35 10 11 11

Web: www.bandak.no



Contact person	E-mail	Telephone	Mobile phone
Joar Ajer	joar.ajer@bandak.no	Number	+4790689534
Julia Gan	Julia.gan@bandak.no	Number	+4794025630
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 83 Turnover MNOK (2016) 100MNOK

Description of Company

Bandak was established in Kongsberg in 1938 and moved to Lunde in 1963. Bandak has since developed into a high technology company with a highly skilled workforce that takes pride in meeting customers' needs. The company has approximately 80 employees.

Complex details and system deliveries are supplied worldwide from modern and well-equipped production premises measuring 12,000 m². The business has a fully equipped workshop for turning, milling and grinding, together with a well-developed inspection, assembly, flushing and testing department. In addition to its own welding department with plasma welding, the company also has a large surface department, which supplies thermal coating. A modern ERP system and CAD/CAM systems are used to plan and control the overall operation.

The bulk of the products supplied by the company are supplied to the Oil & Gas industry, but it is also a much valued supplier of highly complex products for the maritime-, defence- and general/onshore industry.

Bandak is, for many, synonymous with Taut Wire; a product developed and produced in Lunde and which can be found in all of the world's oceans. The Taut Wire from Bandak ensures that vessels maintain their exact position, e.g. diver support vessels, cable laying vessels and supply ships.

All of Bandak's employees have a focus on 5S and continuous improvements in their everyday work.

Relevant certification

ISO9001 and ISO14001



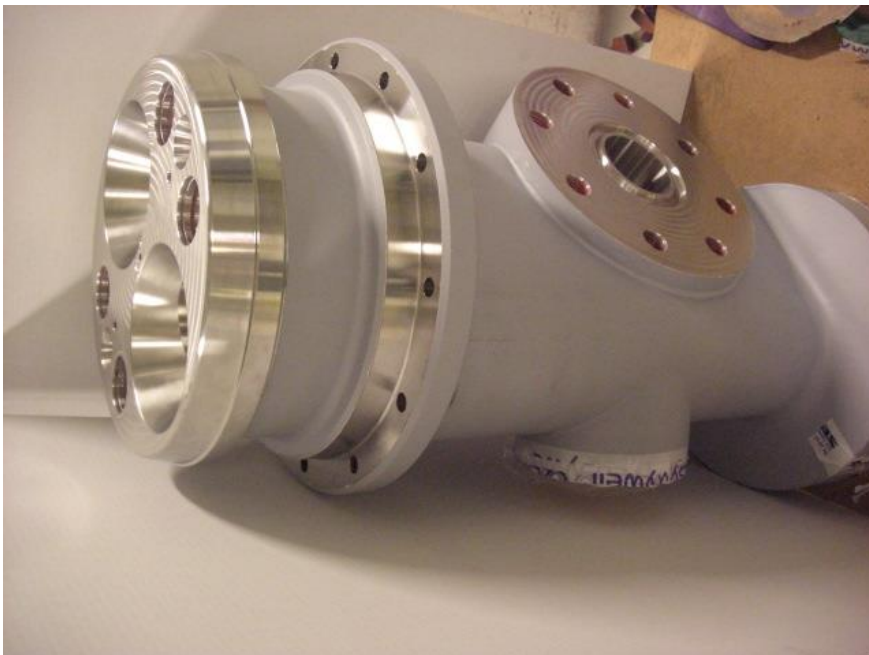
Office Building



Production area



Extruder tools



MultiBor HUB in Super Duplex



MACHining list

	No	Type	Max length (mm)	Max width (mm)
Mill-Turn Centers	3	Mori Seiki NT4300-NT6600	4 070	
Turn/Mill Centre	1	AXA	400	
Lathes	9	Doosan, MAS, Mori Seiki	5 000	
Milling machines	10	CME, MTE, ShinNippon	5 000	1 200
CMM	2		2 200	1 200
Faro Arm	1		600	600



Company Name:

Web: www.benestad.com

Benestad Solutions AS

Address:

Gamle Drammensvei 157
P.O. Box 123
NO-3421 Lierskogen
NORWAY



Telephone number:

+47 32 24 27 00

Contact person	E-mail	Telephone	Mobile phone
Odd R. Gilinsky	odd.gilinsky@benestad.com	+47 99523404	+47 99523404
Bjørn Simen Ljønes	bsl@benestad.com	+47 99363808	+47 99363808
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 40 Turnover MNOK (2016) 40

Description of Company

Benestad is a leading, innovative supplier of high end penetrator and connection products. The technology is based on our Glass-To-Metal sealing technology and Physical Vapour Deposition

For decades, Benestad has delivered advanced Products and Solutions for demanding applications in extreme environments. Benestad is 100% owned by Aker Solutions, but is seen as an autonomous entity.

Product ranges:

- Power penetrators for high temperature/pressure, typical applications in large compressors and pumps
- Custom designed signal penetrators, multi pin, coax, etc used in different applications from subsea electronics to torpedoes
- Optical penetrators and feedthroughs, new product line with pure metal/glass sealing, i.e. without any organic compounds. Extreme temperature range.
- Instrumentation for fluid detection (oil, water, level detection)

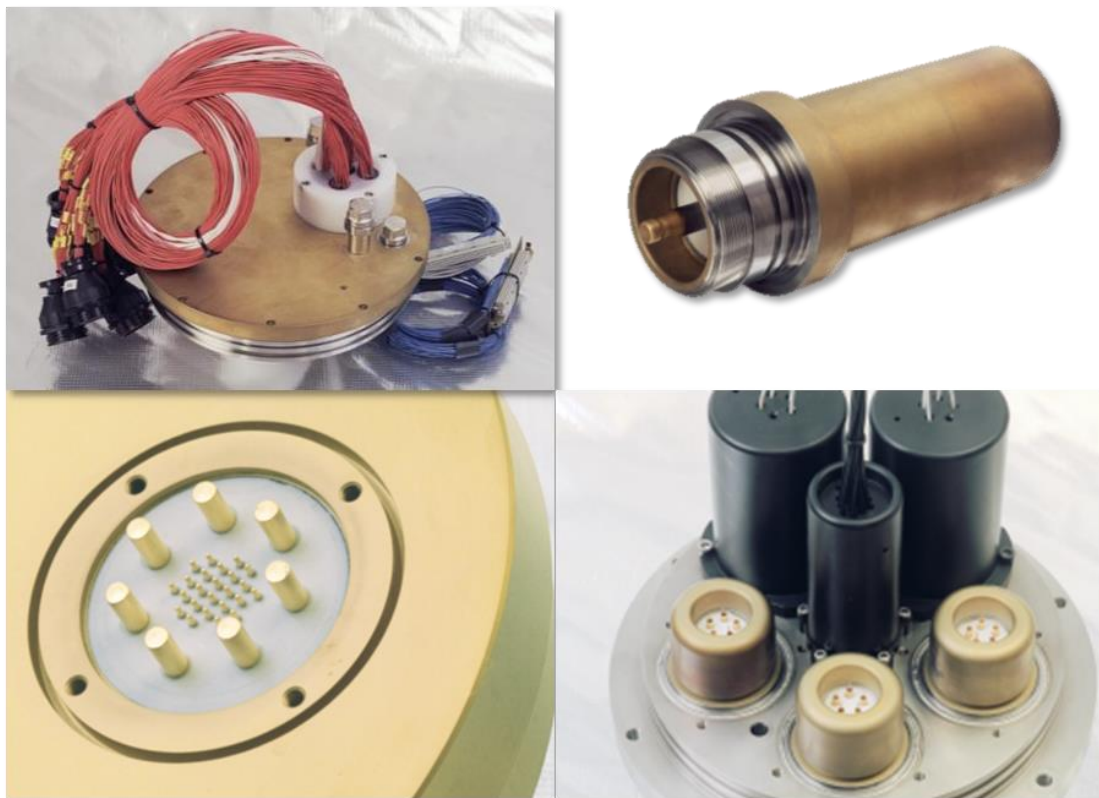
Relevant certification

ISO 9001

ATEX



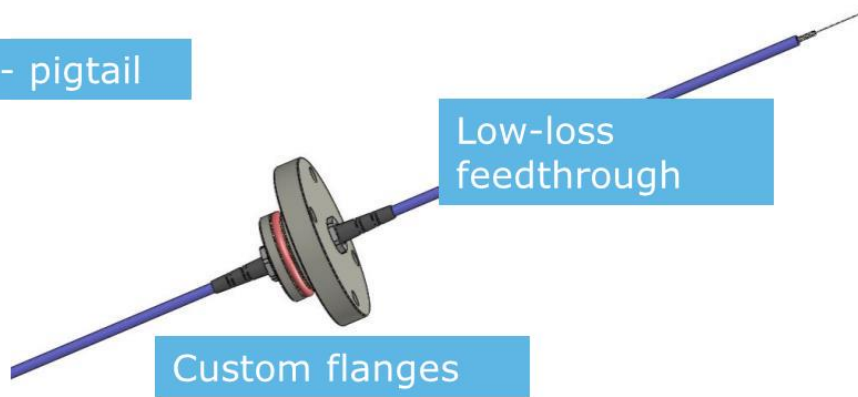
High temperature glass sealing, Additional PVD options, assembly, wiring, soldering



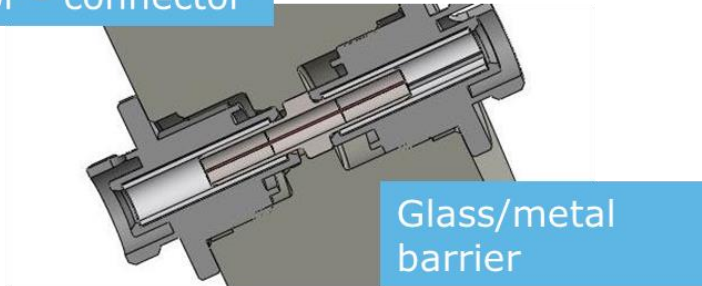
Examples of signal penetrators



Pigtail - pigtail



Connector - connector



Example: Optical penetrators and feedthroughs, hermetical seal, wide temperature range, custom variants



Example: Power penetrators



Company Name:

Berget AS

Address:

Bjønnåsveien 34
Semsveien 51
Notodden
NORWAY

Telephone number:

+47 35027300

Web: www.berget.no



Contact person	E-mail	Telephone	Mobile phone
Arnstein Frømyr	arnstein.fromyr@berget.no	Number	+4790012227
Halvar Kaasa	halvard.kaasa@berget.no	Number	+4747243167
Sverre Ulland	Sverre.ulland@berget.no	Number	+4793057250

Number of Employees 110 Turnover MNOK (2016) 140

Description of Company

We manufacture mechanical high precision parts, cables and harnesses (internal and external cabling including fiber) for the defence, aerospace, maritime and civilian market. We do both prototypes and serial production.

In addition to built to print, we also do electromechanical assembly and test

Within the mechanical production, we typically manufacture parts within the size up to 500mm

Our revenue is 50/50 cable&harness towards mechanical. We can also do electronics (PCB)

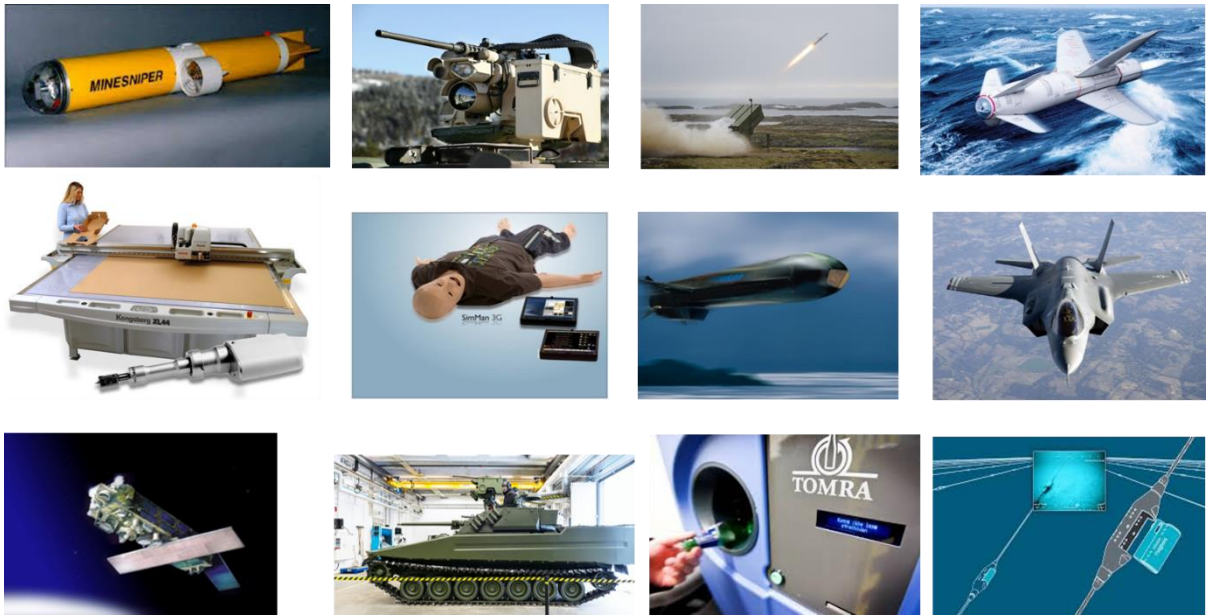
Relevant certification

ISO 9001

AS9100

UL Wiring Harness ZPFW2340225

All operators are certified according to: IPC-standards, IPC/WHMA-A-620 and J-STD-001 (equivalent to IPC-A-610)



Typical end-products



Main customers



Typical products within Cable & Harnesses



Typical high complex machined products



Berget Capabilities & Equipment

Fine Mechanics

5 axis machining centers:

- 1 pcs Matsuura MAM 72-63V 5 axis machining center in Fastems 10 palettes \varnothing 630x450mm
- 2 pcs Matsuura MAM72-3VM 5 axis machining centers with 90 palettes \varnothing 300x250mm
- 1 pcs Makino 5 axis machining centre in Fastems 10 palettes 600x500x450mm

4 axis horizontal machining centers:

- 3 pcs Mori Seiki NH5000 Horizontal 4 axis machining centers in Fastems 800x800x800mm
- 2 pcs Mori Seiki SH-50 Horizontal 4 axis machining centers 630x630x630mm
- 1 pcs Mori Seiki NHX5000 4 axis machining centers 800x800x800mm

3 axis machining centers:

- 1 pcs Mori Seiki MV-653 1530x660x650mm

Multiaxis machining lathe/ milling:

- 1 pcs Nakamura WT 250 with rod feed \varnothing 60 \varnothing 200x400mm
- 1 pcs Nakamura super NTJ with rod feed \varnothing 60 \varnothing 200x400mm
- 1 pcs Mori Seiki ZT 1500Y with rod feed \varnothing 42 \varnothing 150x300mm
- 1 pcs Nakamura super NTX with gantry (\varnothing 210 max 20kg) 120 tools \varnothing 250x600mm

CNC lathes:

- 1 pcs Mori Seiki SL25 \varnothing 250x400mm
- 1 pcs Harrison Alpha \varnothing 150x300mm

CNC measuring machines:

- DA Global 09-15-08 900x1500x800mm
- DA Global 07-10-05 700x1000x500mm

Materials:

- Carbon steel , Aluminium/Brass/copper, All plastic alloy, Stainless steel, Duplex / Super Duplex, Inconel 625 og 718, Titanium Grade2 and Grade5, etc



Cable & Harnesses

- Cable systems from single wire to multi cable
- Printed Circuit Board Assembly
- Fiber-optic systems
- Electromechanical assembly
- **Certified according to: AS9100, ISO 9001-2008, ISO 14001-2004 and UL Wiring Harness ZPFW2340225**
- **All operators are certified according to: IPC-standards, IPC/WHMA-A-620 and J-STD-001 (equivalent to IPC-A-610)**



Electronics:

Test equipment

Continuity tester	Cablescan series 90
PC based test systems	LabVIEW 8.2
Boundary Scan	JT3710 and Pod
	JT2137/12
Functional test systems	Custom specified
Burn-in chambers	Heraus Vörtsch
RF/Microwave instruments	Various
DMMS, Oscilloscopes, powers, etc	Various
mΩ Hi Tester	Hioki 3540
Hi Insulationtester	Hioki 3455
Converter AC AC 0-270V/45-500Hz	Elgar CW801
Power DC 200V/4A – 400V/2A	Delta Elektronika SM400
Pulse Generator 165-330MHz	Agilent 8110A
Function Generator 2,5kHz-1,5GHz	R&S SMT 02
Radio Test Set	IFR 2965
RF Network Analyzer	Agilent 8712ET
Protocol Analyzer	LineEye L2500
Spectrum analyzer, Rohde & Schwarz	FSP 9kHz - 3GHz
Programmer Stand Alone	Superpro 3000U
Coating thickness	PosiTector 6000

Plant

One floor facility 1200 sqmeters.

SMD technology

Pick & Place (Line 1)	FUJI FCP-43E
Pick & Place with Tray Unit	FUJI FIP-3
Pick & Place (Line 2)	FUJI AIM
Reflow soldering system	QUAD QRS-SC
Reflow Soldering System	Heller EXL1800
Solder paste screenprinter	Speedprint
Solder paste screenprinter	Reprint
Glue dispensing system	FUJI GL541E
Desolder station	Zevac DRS 21
Desolder/Solder BGA	Metcal APR5000
Solder equipment	Weller
Solder equipment	Pace
Solder equipment	Metcal
Solder equipment	JBC
Microscopes	Nikon, Mantis
Microscopes 12-100X w/pc and monitor	Leica / PSP
Microscope	Magnus HD
Automatic Optical Inspection	TRION 2340

Conventional Technology

Solder equipment	Weller
Wave soldering system	SEHO 2240B
Wave soldering system Lead Free	SEHO NGW 10/100
Board handling system	SHEO
Cleaning system water	Aqueous
Cleanliness tester	Aqueous Zero-Ion
Equipment for component leg preparation	GPD
Desolder station	Zevac PCBRM-10
Heating Chambers	Termaks TS 4115
Conformal Coating system	Asymtek C-740
Parylene Coating System	Comelec C50S
Vacum Heating Chambers	Vacucell 55



Company Name:

Web: www.dalen-mekaniske.no

Dalen Mekaniske Produksjon AS

Address:

Åse Stålekleivs veg 8
3880 Dalen
NORWAY

Telephone number

+47 35077213



Contact person	E-mail	Telephone	Mobile phone
Hermann Betten	Hermann@dalen-mekaniske.no	+47 35077213	+47 91183778
Geir Roger Stange	Geir.Roger@dalen-mekaniske.no	+47 35077213	+47 91635187
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 10 Turnover MNOK (2016)Click here to enter text.

Description of Company

We are a mechanical factory and our main products are copper production for Electro industry,our production capasety the last years have been around 250 tonn copper, this puts us in the position to be one of the biggest copper producer in Norway.

Beside of copper production are we producing some spesial components for the seismic industry and spare parts for Wartsila ships engine.

We are doing selective plating of silver and gold in to the most known material.

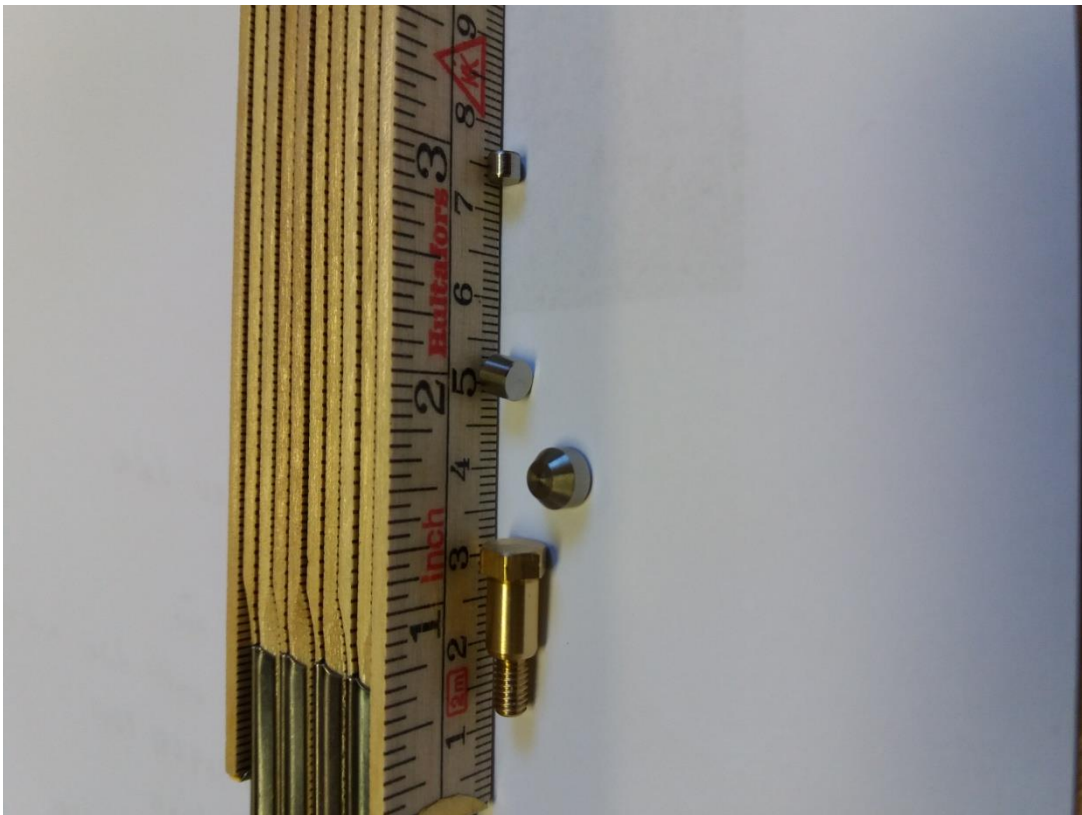
We are using Robots in our serial production.

Relevant certification

NS-EN ISO 9001 : 2008



Legg til bilde av produksjonslokale eller relevante produkt



Parts made of steel and brass



20mm Copper



Special Copper connection.



OKUMA LT 15 MY, CNC Lathe: X, Z, C and Y-AXIS

2 spindles, 2 turrets with rotating tools.

Control System OSP 7000L.

Rod feeder and part collector, port charger.

Dimension: Ø280 x 1000mm

Mod.1996.

OKUMA LR 15-MW, CNC Lathe.

Rotating tools.

Dimension: Ø330 x 500mm

DOOSAN HM 630, CNC milling machine.

2 paletter 630 x 630 mm.

Max H: 700 mm

80 tools.

Control System: Fanuc MB18i

Mod. 2008

PUMA 700 LM, CNC Lathe.

Dimension: Ø 950 x L 3000mm

Rotating tools.

Controll system: Fanuc

Mod. 2007

PUMA TT 1800 SY, CNC Lathe with: X,Z,C and Y-AXIS

2 spindles, 2 turrets with rotating tools.

Robot to do the in and out loading of parts.

Control system: Fanuc

Dimension: Ø220 x 2400mm

Mod. 2005

2 Stk. MAZAK QUICK TURN 6G, CNC Lathe

Rod feeder and part collector.

Control system: Mazatroll

Dimension: Ø32 x 300mm

Speed: 7000 O/min.

Mod. 2004

MORI SEIKI DL 150, CNC Lathe

2 spindles, 2 Turrets with rotating Tools

4 meter rod feeder and part collector

Control system: Fanuc MSD518

Dimension: Ø40 x 500mm

Mod. 1998

EHRT BENDING MACHINE.

Max. thickness 10mm, Max. width 200mm (Copper)

Max. length from bends 1400mm

Mod. 2015

EHRT PUNCH PRESS.

8 tools stations, with use of 4 tools for each station, max diameter 22mm.

With use of 1 tool for each station are the max. diameter 56mm

Max.thickness for material: 25mm kopper, 15mm steel.

Marking station (serial number)

Mod. 2015

DOOSAN Puma 3100LY, CNC Lathe

Y-axis, +/- 65mm, 300mm chuck, Center pointer, Turrets with rotating Tools.

Dimension: 400 x 1000mm

Production setup, done in cooperation with the costumer:

Robot, Punch Press, Pipe bender and cutting machine.

Control Room

Faro measuring tools.

Measurement Radius: R=600mm, Precision:6µ



Company Name:

DSM AS

Address:

Skurvebakkane 22
4330 Ålgård
NORWAY

Telephone number:

0047 950 59 945

Web: www.dsm-as.no



Contact person	E-mail	Telephone	Mobile phone
Daniel Seldal	Daniel@dsm-as.no	950 59 945	950 59 945
Click here to enter text.	Click here to enter text.	Number	Number
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 1 Turnover MNOK (2016) 3

Description of Company

DSM AS is a small company that specializes in advanced precision machining, well suited production for us is turning parts with milled details, holes, threads, etc. We Prefer Prototypes or small series in size Ø50-Ø400 mm up to 2500mm length. Vi have good experience of most metal-based material.

Our biggest weakness is a lack of capacity to take on larger production packages.

Relevant certification

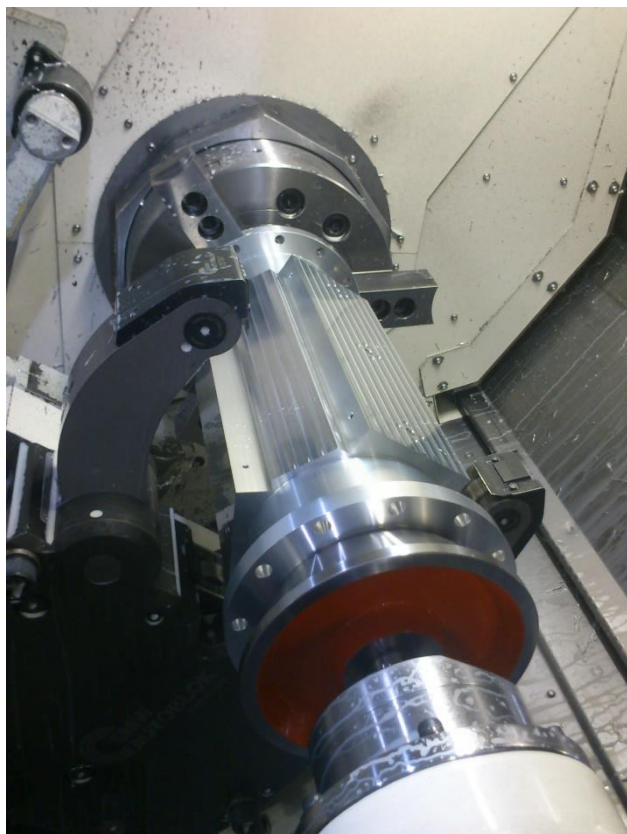
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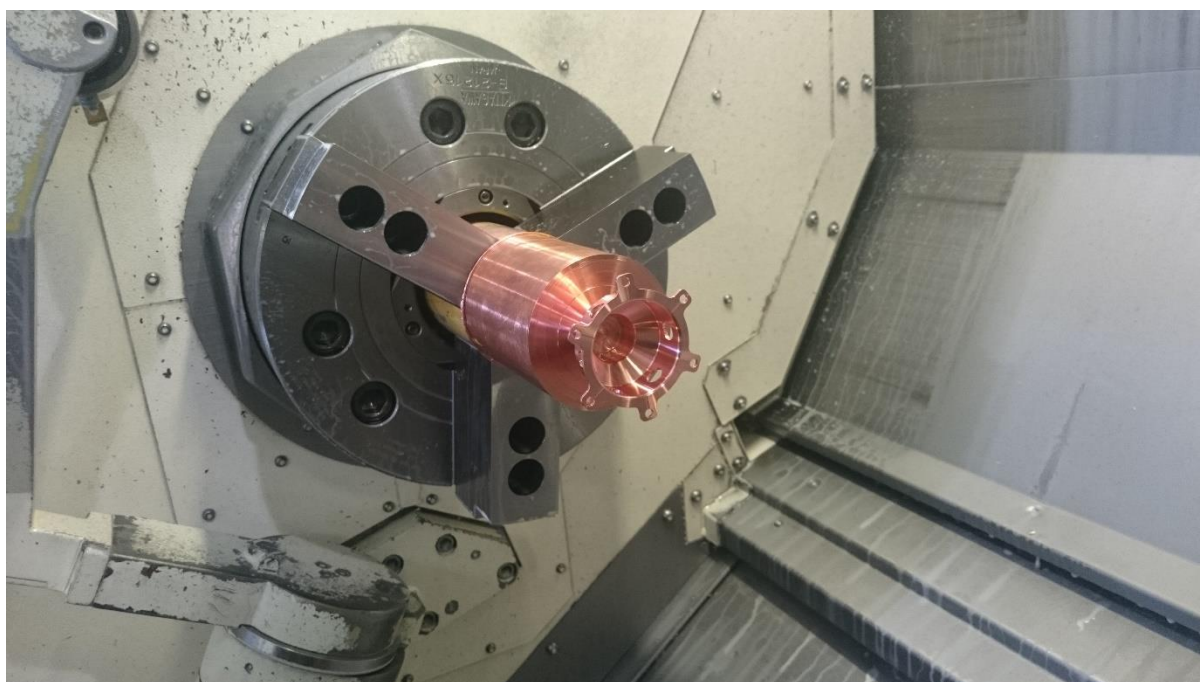
Legg til bilde av produksjonslokale eller relevante produkt



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Company Name:

Web: www.fosstech.no

FossTech AS

Address:

Borgeskogen 7
3160 Stokke
NORWAY



Telephone number

+47 33335300

Contact person	E-mail	Telephone	Mobile phone
Steven Foss	Steven.foss@fosstech.no	+47 92201608	+47 92201608
Geir Henninen	Geir.henninen@fosstech.no	+47 91835159	+47 91835159
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Number of Employees 50 Turnover MNOK (2016) 60

Description of Company

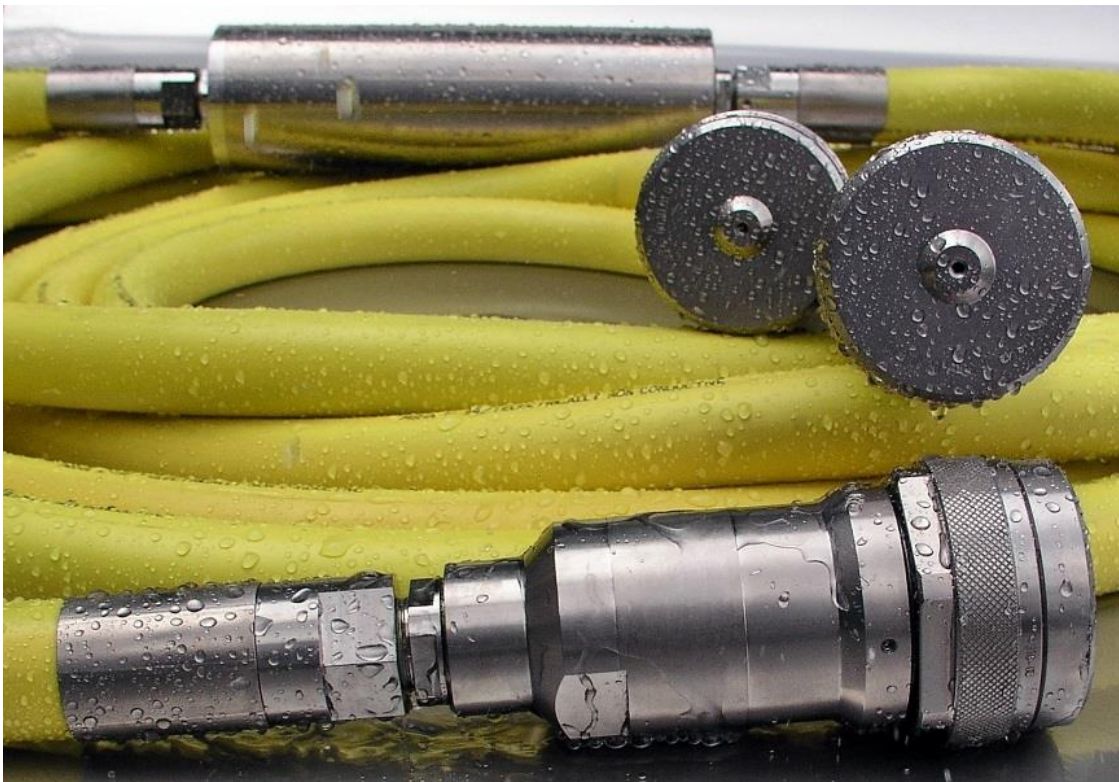
Molding of Cable/Connectors and electronics for extreme environments. High Pressure View ports (675 bar). Assembly/wiring of Racks/cabinets/Control Systems. 3D print lab. Solutions for extreme environments.

Relevant certification

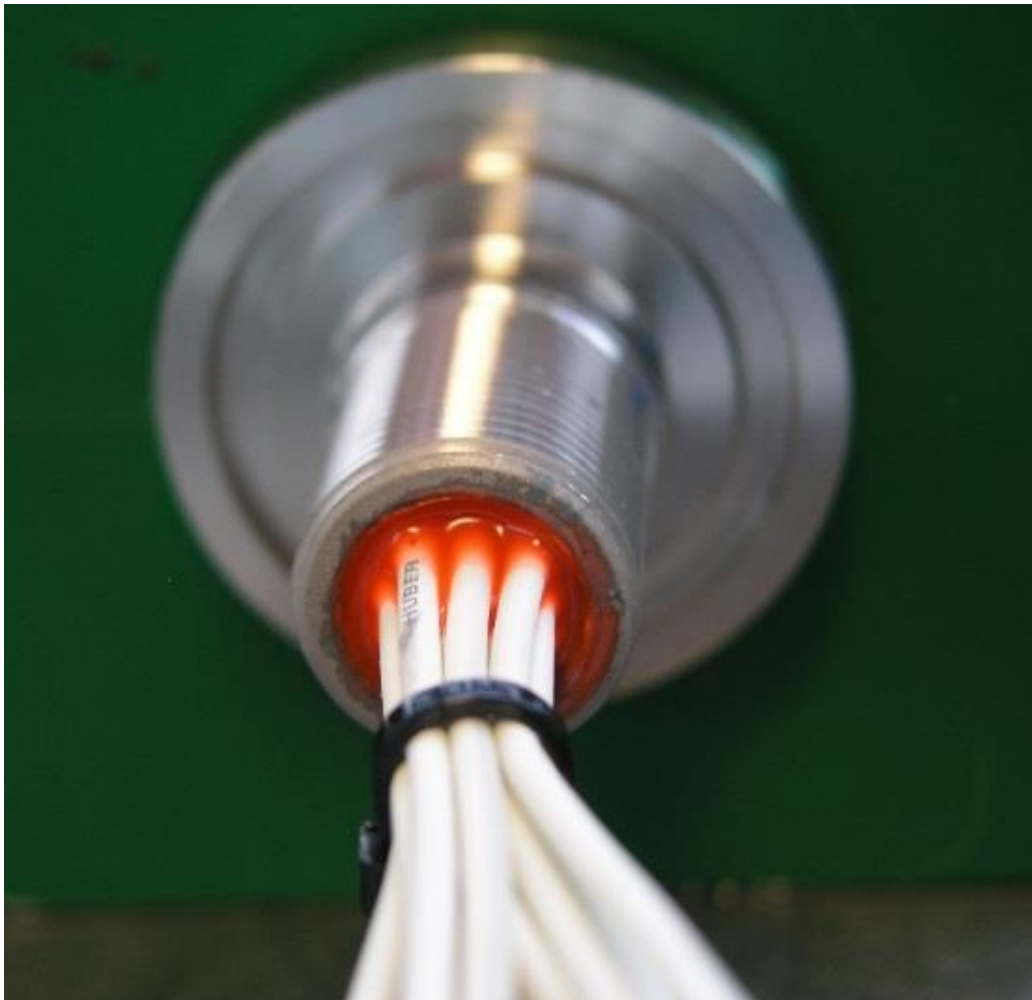
ISO9001-2015, Achilles JQS, EX/ATEX production (EXR-01)



Molding, encapsulation of electronics.



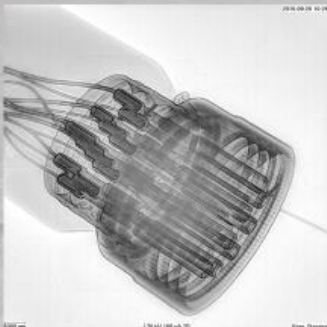
Subsea cables rated to 6.000 meters



Penetrators rated to 600bar

Accelerated life time testing and verification

- Salt Water Mist Chamber
- Pressure test up to 650 bar
- Temperature chamber
- 2D and 3D X-ray



Analysis





Environmental test lab.

Company Name:

Web: www.gmv.as

GMV AS

Address:

Koppholen 9
4313 Sandnes
Norway



Telephone number:

+47 913 60 917

Contact person	E-mail	Telephone	Mobile phone
Ådne Kvalbein	akv@gmv.as	+47 91 36 09 17	+47 913 60 917
Nedzad Arifagic	nedzad@gmv.as	+47 40 20 09 12	+47 40 20 09 12
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 53 Turnover MNOK (2016) 54 mill Nok

Description of Company

GMV AS was founded in 1988 and is a leading company within CNC machining and assembly of high-technological quality products supplied to the oil & gas industry, defence and to the renewable energy industry. Our strong focus on service, cost-effective systems, safety, environment, quality and on-time delivery makes us a preferred long-term business partner in new future markets.

GMV can machine components up to 6 meter long with a maximum diameter of 1,8 meter. We are performing machining within most materials.

Relevant certification

ISO 9001:2008



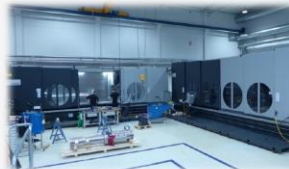
Production

Overview

Overview

Multi-task Machines	14
Milling Machines	3
Turning Machines	9
Gun drilling Machines	1
Band saw	2
Measurement Machine	1

Max work piece
L=6000mm
Ø=1800mm



Product Samples



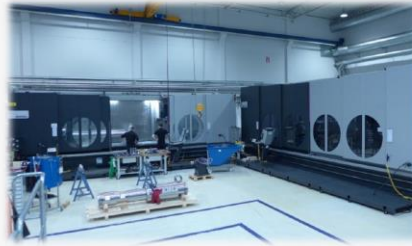
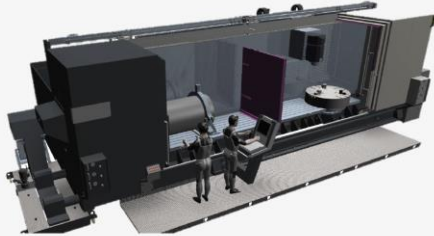


Production

Overview

2 IBARMIA ZVH58L6000 MULTIPROCESS

Max work piece
L=6000mm
Ø=1800mm



Production

Gun Drilling

Overview

Workspace
Max L= 6000mm
Min Ø2 Max Ø40mm



Production

Overview

Overview

5 Spark Eroding Machines
3 Wire Eroding Machines

Max work piece
L=10 meter
Ø=2 meter





Quality Control





MASKINOVERSIKT GMV AS	FØRSTEHJELPSUTSTYR	PLASTER/OYESKYLL/MEDISINNSKAP	HJERTESTARTER/MANNSKAPSBÅRE	MILJØSTASJON
DATO Januar 2017				
REVISJON I				



Company Name

Web: www.hmr.no

NMR Mikromekanikk AS

Address

Toppemyr 3
N-5136 Mjoelkeraaen
NORWAY



Telephone number

Contact person	E-mail	Telephone	Mobile phone
Øystein Johnsen	Oystein.johnsen@hmr.no	+47 55199800	+47 47816427
Cathrine Selliken	Cathrine.selliken@hmr.no	+47 55199800	+47 40054024
Irene Grindheim	Irene.grindheim@hmr.no	+47 55199800	+47 92416933

Number of Employees 20, 200 total HMR) Turnover MNOK (2016) 25

Description of Company

MACHINING OF COMPLEX PARTS,

HMR Mikromekanikk is a company that specializes in machining of the advanced mechanical components. We focus on the customers in the industrial sector, such as oil and gas, motor industry, seismic, medical equipment and other branches that require high quality components.

Milling department – With several state-of-the-art CNC-machines with a work range reaching up to the following dimensions/axis: X 3000 mm / Y 850 mm / C 360 deg. / B +/-96 deg., and with a tool-magazine holding up to 90 tools.

Turning department – With modern lathe machines and turning centres with 3, 4 and 11(13) axis, work range up to Ø350 (750) and lengths Z=1500 mm. It also contains Y-axis with a range of +/-95 mm, and a full B and C-axis, complimented with tool-magazine containing 80 tools.

Prototype department – Highly qualified personnel with modern machines, advanced engineering and 3D modelling, to assist us in the entire process from the sketch to the final product

Relevant certification

Quality inspection, documentation, training, HSE and continuous improvement program are part of everyday life. We are ISO 9001:2008 certified.



HMR mikromekanikk AS
HIGH-TECH COMPONENTS



Quality delivered on time at an competitive price

MACHINING



HMR Mikromekanikk is a company that specializes in machining of the advanced mechanical components. We focus on the customers in the industrial sector, such as oil and gas, motor industry, seismic, medical equipment and other branches that require high quality components.

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Prototype department – Highly qualified personnel with modern machines, advanced engineering and 3D modelling, to assist us in the entire process from the sketch to the final product.

Supplier of high-tech machined components

HMR Mikromekanikk is proud to be known as a company with exceptional expertise in designing and manufacturing of complex high-tech products. We continuously upgrade our varied machine-park with over 20 modern CNC-machines. This makes us capable to produce advanced devices and parts and to meet the most sophisticated customers' demands and expectations.

Our experienced operators know how to turn and mill all variety of components, from a simple to the most complex equipment in both small and large volumes. Deliveries are completed by assembly, laser engraving, welding, surface treatment, documentation, logistics, etc.

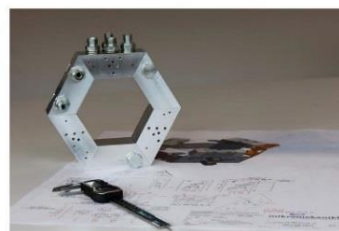
Quality inspection, documentation, training, HSE and continuous improvement program are part of everyday life. We are ISO 9001:2008 certified, too.





Engineering – Projects – Prototypes – Automation

HMR Mikromekanikk is well known for its leading-edge expertise in engineering, prototyping and automation. Over the last 30 years we have delivered a wide range of complete solutions to our long-term customers. We design and develop innovative devices using 3D modelling tools. On this basis we can produce everything from single parts to large and complex systems with multi-part assemblies.



Inspection – Quality – HSE – Documentation – Maintenance

HMR Mikromekanikk has a modern and well equipped measuring department, including a CNC-controlled measuring machine. We put high focus on quality and HSE at every stage of the production. Our advanced system for the documentation and tracking of serial numbers and material certificates ensures traceability through the entire production and delivery. We have contracts with our service partners to inspect, maintain and calibrate our CNC-machines, making sure that we always are ready to handle your production in the most professional way.



ISO certified - QA - HSE



HMR mikromekanikk AS
HIGH-TECH COMPONENTS

Address: Toppemyr 3 - N-5136 Mjølkeråen
Tlf. +47 55 19 98 00

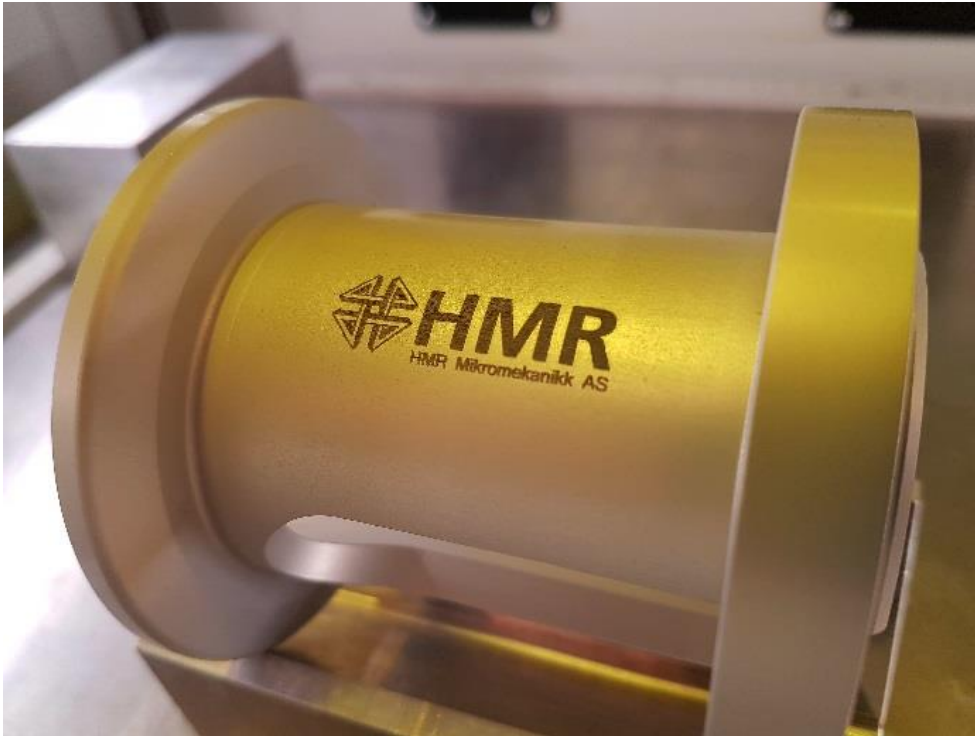
E-mail: ordre.mikromekanikk@hmr.no

Website: www.mikromekanikk.no

HMR Group: www.hmr.no



[Click here to enter text.](#)



We lazermark the parts with your logo if requested



Part machined for CERN



Machine list:

Machine	Years mod	CNC Control	Lathe L	Lathe dia	Spindle bore	X-Axis	Y-Axis	Z-Axis	Max Rev.
Milling Department									
Dahlih 1020 - 1	2014	Heidenhain 530i				1020	500	560	10000
Dahlih 1020 - 2	2014	Heidenhain 530i				1020	500	560	10000
Dahlih 1020	1998	Fanuc 18M				1020	510	560	6000
Matec	2005	Heidenhain 530i				3000	800	600	12000
DMC 1035	2006	Heidenhain 530i				1035			12000
Dmc 60H	2001	Simens 840 D				600	560	560	15000
Okuma MB56VA	2015	Okuma				1050	560	460	8000
Hedelius RS 605KM	2012	Heidenhain 530i				580/520/1220	650	520	12000
Lathe Department									
Okuma Multus	2007	Okuma OSP P200L	1500	400	70		plus/minus 95.gr		3800
Okuma LB 300	2004	Okuma OSP U100L	1000	300	70				4500
Okuma LB 300	2006	Okuma OSP P200L	1000	300	70				4500
Gildemeister CTX Beta 800	2013	Heidenhain	855	300	65		Plus/minus 60mm		5000
Gildemeister CTX400	2000	Heidenhain	600	255	65				
Moriseiki NZ2000	2008	MSX-701 III	810	320	65	210	Plus65/minus45	300 (810)	5000
Topper TNL 100 TLS	2007	Fanuc Oi Tc	500	240	50				4500
Dosan LYNX 220 LM	2009	Fanuc i serie	450	170	61	175		550	
Mazak 200	2006	Nexus (Mazak)	600	230	65	190	Plus/minus 50mm	575	4500
Mazak 250	2008	Matrix (Mazak)	538	276	77	230	Plus/minus 50mm	575	4000
Prototype Machines									
Milling:									
Kunzmann	2014	Heidenhain				600	400	400	4500
Lathe:									
DMG	2014	Heidenhain	1330	400	81				3000
Various									
Laser Marking Machine	2014	Epilog FiberMark		Max height difference 63mm		800	500	330	
Saw small									
Saw Big									

Updated 28/03-2017

HMR Mikromekanikk

AS

Øystein



Johnsen

Company Name

High Speed Machining AS

Address

Breivikvegen 16

4120 Tau

Telephone number

0047 46 41 92 90

Web: www.hsm.as



Contact person	E-mail	Telephone	Mobile phone
Ove Dahle	ove@hsm.as	Number	004794784680
Click here to enter text.	Click here to enter text.	Number	Number
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 13

Turnover MNOK (2016) 22

Description of Company

Machining company

Relevant certification

ISO9001/2015

ISO 14001/2015



Legg til bilde av produksjonslokale eller relevante produkt



Mazak Integrex 400i

-Multimaskin med 5 akser og brille
-Arbeidsområde: ϕ 400 og lengde 1500mm



Mazak Nexus 450

-Dreiebank med y-akse, 1000mm LBB og brille
-Arbeidsområde: ϕ 500 og lengde 3000mm



Okuma B200-W

-Multimaskin med 5 akser og subspindle
-Arbeidsområde: ϕ 250 og lengde 250mm



Okuma LB-4000EX

-Dreiebank med y-akse og roterende verktøy
-Arbeidsområde: ϕ 350mm og lengde 1400mm



Okuma LB-25 II M

-Dreiebank med x-akse og roterende verktøy
-Arbeidsområde: ϕ 300 og lengde 1200mm



Okuma Multus B400

-Multimaskin med 5 akser og subspindel
-Arbeidsområde: ϕ 700 og lengde 1500mm



Okuma LR-45

-2 stk revolvere, brille og x-akse
-Arbeidsområde: ϕ 500 og lengde 1600mm



Okuma MX-55

-4 akser
-Arbeidsområde: X: 1200mm Y: 560mm Z: 500mm



Doosan Puma 700 XLY

-Dreiebank med Y akse, 150 mm LBB og brille
-Arbeidsområde: ϕ 750 og lengde 5050mm -
innvendig maks 3000mm lengde



AXA VHC3-5000 XTS50 FD

-5 aksset fres; B akse, horisontalt og vertikalt
rundbord.
-Arbeidsområde: X=5000mm, Y=900mm, Z=850mm



DEA Global *Silver Performance*

-3D CMM med scanning funksjon
-Måleområde X700, Y1000, Z700
-Tech spec: http://www.dea.it/DEA-GLOBAL-Silver-Performance_541.htm#.Umgi0DQ4WUk



Okuma Multus B400 II

-Multimaskin med 5 akser og brille
-Arbeidsområde: ϕ 500 og lengde 2000mm



Company Name:

Web: www.htsm.no

HTS maskinteknikk

HTS maskinteknikk

Address:

Ingeniør Rybergs gate 97
3024 Drammen
NORWAY

Telephone number

+47 32 23 46 00

Contact person	E-mail	Telephone	Mobile phone
Lars-A. HARVIK	lars@htsm.no	+4732234600	+4797113670
Arnulf AANNESTAD	arnulf@htsm.no	+4732234600	+4793218358
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 75 Turnover MNOK (2016) 119

Description of Company

At HTS maskinteknikk we combine cutting-edge technology, capacity and human capital, to deliver flawless quality products with an impressive time-to-market speed.

HTS maskinteknikk is a leading manufacturer and global supplier of high quality mechanical precision components to the subsea-, aerospace- and defense industry. We are specialized in critical machining and welding of advanced materials such as all sorts of Inconel, Super Duplex, A316's, Titanium, and offer a range of professional production technology advisory services.

We are located in Drammen, Norway, and with a production facility over 6000 square meters featuring more than 50 CNC operated machines we provide the latest within production technological solutions. Size range up to Ø400 mm in the lathes, and 800mm X/Y/Z in the milling. Please see attached machine list for further details.

You can also find more details and info on www.htsm.no

Relevant certification

Our quality assurance program ensures supreme quality through all stages of the HTS maskinteknikk value chain. From our cutting-edge inspection facility, to documentation and an extensive continuous improvement program – quality is in our back bone. Why? Because quality matters!

HTS maskinteknikk is certified against ISO 9001:2008

No incidents. It's as simple as that. At HTS maskinteknikk we put Health, Safety and the Environment first in everything we do.

We are certified against BS OHSAS 18001, and constantly work proactive to minimize the risk of incidents occurring.



Gildemeister turning machine with bar feeder for larger series



2 x Deckel Maho 80 (each with 240 tools) attached to 24 pallet Fastems systems. High efficiency for production in different sorts of aluminum, and other metals.



Assembly dept



Nakamura lathe with 3 turrets for optimal efficiency, stability and quality when machining demanding materials.



MACHINE OVERVIEW - HTS MASKINTEKNIKK AS

LATHES / MACHINES AND CENTRES

BRAND	MODEL	NBR.	Turn dia	Turn length	MAX Ø BAR-FEEDER (mm)	ROTARY TOOLS	AXIS	COMMENTS
MAZAK	INTEGREX 400-IV ST	1	400	1034	100	YES	5	Gantry-robot
MAZAK	NEXUS 350 MY	1	330	1500	100	YES	Y	Tailstock
MAZAK	NEXUS 350 MY	1	330	1500	100	YES	Y	Tailstock and steady rest
MAZAK	QUICK TURN NEXUS 200-II MY	2	380	675	65	YES	Y	Tailstock
MAZAK	NEXUS 200 MSY	1	380	538	65	YES	Y	Subspindle
MAZAK	NEXUS 200 MS	1	380	538	65	YES	C	Subspindle
MAZAK	NEXUS 200 M	2	380	538	65	YES	C	Tailstock
MAZAK	NEXUS 100	1	280	305	42			Tailstock
MAZAK	SUPER QUICK TURN 100 M	2	120	120	50	YES	C	Tailstock
MAZAK	QUICK TURN 30 N	1	310	980	70			Tailstock
MAZAK	QUICK TURN 10	4	120	200	40			1 with Motoman robot-feeder
MAZAK	QUICK TURN 8 N	3	120	200	40			Tailstock
NAKAMURA-TOME	WT 300	2	270	500	100	YES	7	2 Turrets & 2 Spindles
NAKAMURA-TOME	SUPER NTM 3	1	200	950	51	YES	11	3 Turrets & 2 Spindles
NAKAMURA-TOME	WY 250 Super Mill	1	215	580	65	YES	7	2 Turrets & 2 Spindles
NAKAMURA-TOME	WT-100	2	190	503	42	YES	7	2 Turrets & 2 Spindles
NAKAMURA-TOME	TW-20	2	200	750	51	YES	6	2 Turrets & 2 Spindles
NAKAMURA-TOME	TW-20 Y	1	200	750	66	YES	7	2 Turrets & 2 Spindles
NAKAMURA-TOME	AS-200	1	340	300	65	YES	Y	Tailstock
NAKAMURA-TOME	WT-150 Super Mill	2	170	515	51	Yes	7	2 Turrets & 2 Spindles
GILDEMEISTER	Sprint 42 Linear	2	42	320	42	YES	4+2 and Y	Subspindle

MILLING CENTRES

BRAND	MODEL	X (mm)	Y (mm)	Z (mm)	PALLETS	AXIS	COMMENTS
DECKEL MAHO	DMC 80 U	800	800	800	Linked together in Fastems 24 pallet-system	5	Simultant
DECKEL MAHO	DMC 80 U	800	800	800		5	Simultant
DECKEL MAHO	DMC 80 U	800	800	800		5	Simultant
DECKEL MAHO	DMC 60 U	600	700	600	6	5	Simultant
DECKEL MAHO	DMC 60 U	600	700	600	2	5	Simultant
DECKEL MAHO	DMC 635 V	635	510	460		3	
DECKEL MAHO	DMU 60 eVO	600	500	500	2	5	Simultant
MATSUURA	MAM72-63V	760	845	610	17	5	Simultant
ENSHU	EV-650 TYPE B	1300	650	980		3	
TAKEDA	TK-S-4030MV-TS	400	300	310		3	

CROSSCUT SAWS

BRAND	MODEL
MEGA	H-460 GA
MEGA	BS-250 HAS
MEGA	H-330 A
TRENNJAEGER	TEBA 361 A

WELDING

BRAND	MODEL
MICATRONIC	Special Design with robot and 2 work-stations
MICATRONIC	Special Design with robot and 2 work-stations
MICATRONIC	Special Design with robot and 2 work-stations
MICATRONIC	Special Design with robot optimized for tubing weld
MICATRONIC	
ESAB	

CMM-MEASURING EQUIPMENT

BRAND	MODEL	X (mm)	Y (mm)	Z (mm)
C.E. Johansson	Topaz 7	700	450	450
C.E. Johansson	Topaz 7-6-6	700	600	600
DEA	Global Performance	700	1000	700

OTHER EQUIPMENT

BRAND/MODEL	FUNCTION
Tesa-Scan 53	Skanner
Mitutoyo	Profil Measuring
Hommelwerke Tester T2000	Roughness/profile measuring
Mitutoyo RA-114	Circularity, roundness
Trimos Labconcept 1000	Calibration
Mitutoyo PJ-A3000	Profile Projector
Gravograph Lasertop	Laser Marking
Tecnifor Lasertop 410	Laser Marking
3 ea. Pro Pen	Vibro marking
SIC marking C153	Vibro marking
Mitutoyo Wizhard	Hardness Testing

Updated: January 2017

HTSmaskinteknikk





Company Name:

Web: www.inter.no

Intermec AS

Address:

Kleppevegen 75
5300 Kleppestø, Bergen
Norway



Telephone number

56 15 29 30

Contact person	E-mail	Telephone	Mobile phone
Stig Berge	stig@inter.no	+47 56152947	+47 97652607
Einar Andreassen	einar@inter.no	+47 56152943	+47 95121900
Bjørn Andreassen	bjorn@inter.no	+47 56152942	+47 90107828

Number of Employees 35 Turnover MNOK (2016) 40

Description of Company

Intermec as, established in 1991, is a modern mechanical machining company that specializes in producing high quality products in demanding materials such as Aisi303 - 316L, Duplex, Super Duplex, Titanium, Hastelloy, Inconel, etc. We possess a modern machine park and highly qualified staff of skilled workers who do their utmost to meet and exceed our customers expectations.

Intermec want to be in the forefront of production technology and continuously invests in the latest production equipment and software for CAD / CAM. We use SolidWorks and GibbsCam as drawing/programming aid. The last 10 years the company has invested approximately € 5mill in machinery and equipment. Our machines are normal replace after 10 years of operation. A modern and stable machine park is absolutely necessary when machining in high-alloy materials.

Machining dimensions:

- 3-4 axis Lathes for parts up to 550mm in diameters, and lengths up to 1000mm.
- 5 axis turning center for parts up to 390mm in diameters, and lengths up to 1000mm.
- 3-4 axis Vertical machining centers with table sizes 1200 x 500mm.
- 5 axis vertical machining center with 500mm table size.
- 4 axis Horizontal machining centers with 500 x 500mm pallet size.
- 3 axis Wire-EDM for workpiece dimensions up to 820 x 680 x 250mm.

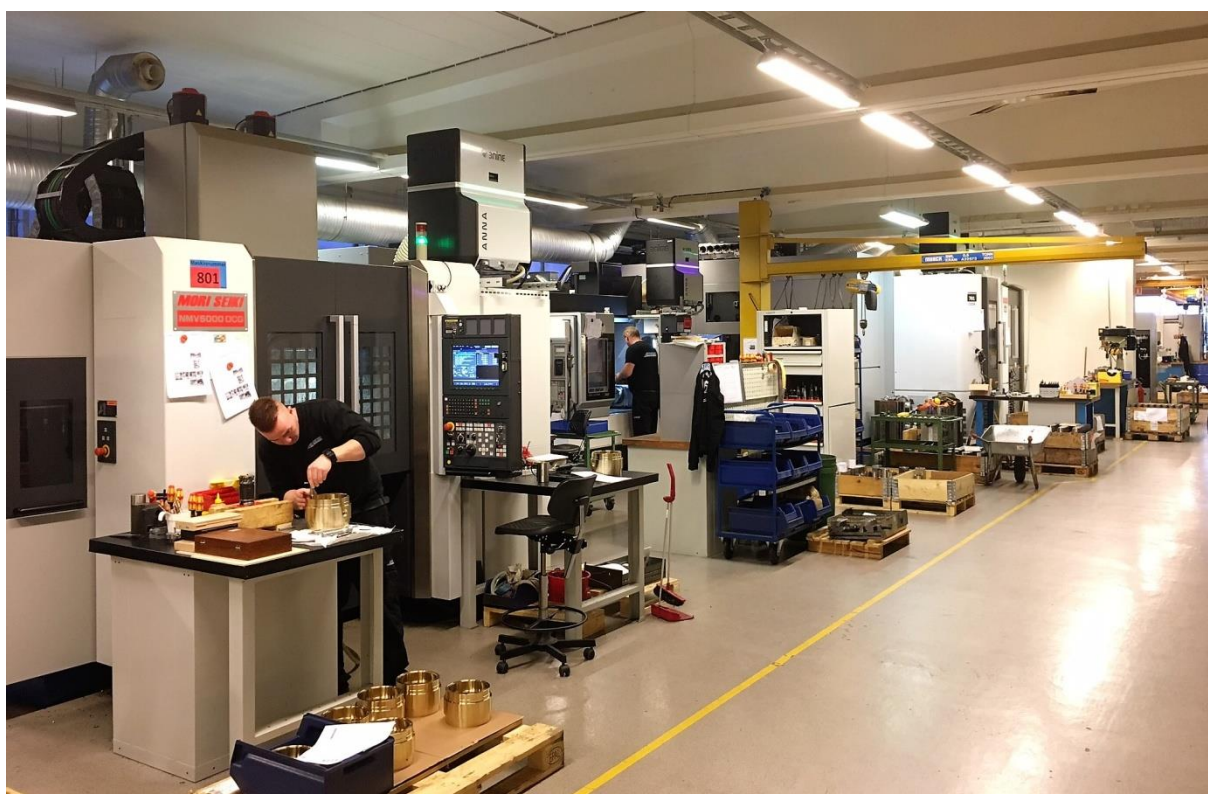
See attached machine inventory list for more information.

Relevant certification

Intermec is EN/ISO 9001-2008 certified and listed in Achilles JQS



Intermec AS are proud to have been a supplier to CERN since 2012!





Part of production area.



Intermec offer buffer stock for customer specific products. We have 4 Leanlifts installed, each 8 meters tall, with a total storage capacity of 140 metric tons.





Measuring report from our CMM (Coordinate measuring machine) is a important part of our documentation service to our customers.

Intermec AS Machine Inventory List 2017

- **2014 Victor Vturn-P16 CNC Lathe**
- **2008 Doosan Lynx 220A CNC Lathe**
- **2008 Doosan Lynx 220MB CNC Lathe**
- **2008 Doosan Puma 240MA CNC Lathe**
- **2008 Doosan Puma 280M CNC Lathe**
- **2002 Victor Vtplus-15 CNC Lathe**
- **2001 Victor Vturn-16 CNC Lathe**
- **2013 Victor Vturn-A20CV CNC Lathe**
- **2001 Victor Vturn-26 CNC Lathe**
- **2014 Mori Seiki NLX2500Y/1250 Turn Mill Center**
- **2016 Mori Seiki NLX2500Y/700 Turn Mill Center**
- **2013 Victor Vturn-36 CNC Lathe**
- **1995 Biglia B42S Turn Center**
- **2011 Biglia B446 Turn Center**
- **2008 Biglia B445YSM Turn Mill Center**
- **2008 Biglia B470YSM Turn Mill Center**
- **2012 Mori Seiki NTX2000 Turn Mill Center**
- **2014 Mori Seiki NVX5080 Vertical Machining Center**
- **2006 Doosan Mynx 540 Vertical Machining Center**
- **2013 Mori Seiki NH5000 Horizontal Machining Center**
- **2014 Mori Seiki NHX5500 Horizontal Machining Center**
- **2009 Mori Seiki NMV5000 5-axis Machining Center**
- **2013 AgieCharmilles Cut20P Wire-EDM**
- **2010 Kasto Twin A3 Bandsaw (2 machines)**
- **2011/2013 Laserberg Vega, YAG-Lsaer for marking (2 machines)**
- **2013 Carl Zeiss Contura, Coordinate Measuring Machine**
- **Hanel Leanlifts (4 lifts)**



Company Name:

Web: www.jaerenmasinering.no

Jæren Maskinering AS

Address:

Bjørhaugslettå 17
4365 Nærbø
NORWAY



Telephone number:

+47 51 43 88 10

Contact person	E-mail	Telephone	Mobile phone
Gaute Bøe	gaute@jaerenmasinering.no	+47 51 43 88 10	+47 900 78 330
Gabriel Nærland	gabriel@jaerenmaskinering.no	Number	+47 996 03 119
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 9 Turnover MNOK (2016) 6 500 000 NOK

Description of Company

We are mainly producing parts for offshore companys.

We have chosen to focus on high quality and accuracy, that provides high quality and good finish on our products. We produce parts in most materials, from plastic to Super Duplex and Inconel 718. Complicated parts we see as a challenge, and we solve the challenge with close cooperations between customer and employees.

Our production is mainly prototypes and single parts, but also small series.

Relevant certification

We are not certified, but we have internal procedures to maintain high quality and safety.



Legg til bilde av produksjonslokale eller relevante produkt



[Click here to enter text.](#)





Machine list for Jæren Maskinering AS

Milling machines:

Mazak VTC 300C vertical milling machine
X axis 1740 mm.
Y axis 760 mm.
Z axis 660 mm. Total height from table to spindle 840 mm.
Rotary table with senter height 180 mm.
Table size 2000x760 mm.



Mazak VC Smart 430A vertical milling machine
X axis 560 mm.
Y axis 430 mm.
Z axis 510 mm.
Table size 900x430 mm.

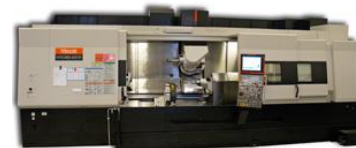


Mazak VC Smart 530C vertical milling
X axis 1050 mm.
Y axis 530 mm.
Z axis 510 mm.
Rotary table with senter height 180 mm.
Table size 1300x550 mm.



Multi machine:

Mazak IG 400 x2500 mm. Multi operation machine with Y axis and B axis.
Max working diameter about 450 mm. (turning dia. 760 mm.)
Max work length 2500 mm.
Y axis ± 115 mm.
B axis 225 degrees
Spindle drilling 102 mm.
Steady $\varnothing 60-280$ mm.
High pressure cooling 70 bar.
Toolmagasin: 40 tools



Lathe machines:

Mazak QTN 250 MY lathe machine with Y axis and rotary tools
Max working diameter about 280 mm. (turning dia. 380 mm.)
Max work length 538 mm.
Y axis ± 50 mm.
Spindle drilling $\varnothing 77$ mm.



Mazak QTN 350 MY lathe machine with Y axis and rotary tools
Max working diameter 450 mm. (turning dia. 760 mm.)
Max work length 1538 mm.
Y axis ± 75 mm.
Spindle drilling $\varnothing 102$ mm.
Steady $\varnothing 60-280$ mm.





Company Name:

Lilaas AS

Address

P.O. Box 705

N-3196 Horten

Norway

Telephone number

+47 416 33 000

Web: www.lilaas.no

lilaas[®]

Contact person	E-mail	Telephone	Mobile phone
Øyvind Lilaas	oyvind.lilaas@lilaas.no	-	+47 90108658
Espen B. Hoff	espen.hoff@lilaas.no	-	+47 90640618
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 35 Turnover MNOK (2016) 45000000

Description of Company

Lilaas AS is an industrial technology and a high-tech production company with years of experience.

The company owns a lot of expertise in machining a wide range of materials, developing and assembling mechanics, electronics and software. We have skilled operators and engineers and state of the art equipped departments for mechanical production, control and manual assembly. We operate with products in the field of precision mechanics in the dimension-range from less than 1 mm up to hand-held units and are familiar with tolerances down to few thousands of a millimeter.

Lilaas AS was established as Lilaas Finmekaniske back in 1961. The company is located in the town of Horten, Norway, and has customers within the fields of space/satellite related industry, science, defence, maritime, underwater technology, offshore, medical and industry in general. We operates as subcontractor of small, fine- and precision-mechanical components, assembled products and/or readymade products with integrated electronics and software – configured, tested and certified due to customer specifications/regulations.

The company has as well a range of own products which are different kinds of MMIs, control levers and joysticks. Our control levers and joysticks are mainly delivered shipbuilders, maritime and offshore related industry. Most of our products are certified by DNV GL, and Lilaas AS is certified under NS-EN ISO 9001-2015.



Lilaas AS has production of precision mechanics; as details, as assembled units and as system solutions. The company is well known as a creative partner for ideas and problem solving on different fields. We have received a handful awards of design excellence, both national and international. We cooperate with demanding customers and many well-known companies are on our reference list.

Our company manufactures small and medium sized details in a wide range of materials, such as stainless/acid-proof steel, titan, inconel, covar, hasteloy, copper- and brass-alloys, aluminum and various plastic materials.

Our advanced machinery makes us capable to cope with stringent grades of tolerances, a characteristic force of our production. Our highly skilled operators operate 15 CNC machines. Our control department ensures the same high quality for prototypes, single details, batch production and repair.

The development department for mechanics, electronics and SW are staffed with highly qualified engineers and offers closely integrated cooperation with clients, from ideas to prototype and finished products.

Our strategy for the future include growth and development in precision mechanics, both capacity and capability, with investments in machinery and crew/human resources.

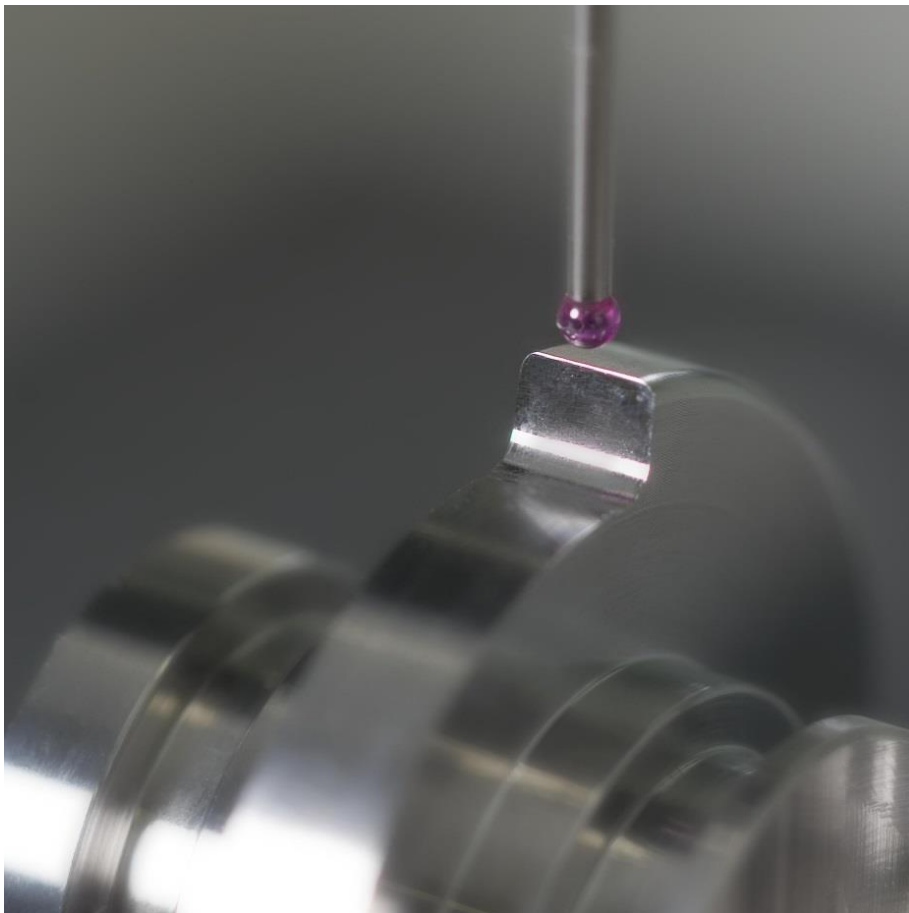
Relevant certification

NS-EN ISO 9001-2015

IQNet



Lilaas AS, Horten, Norway. Main entrance.





Precision part being verified in the CMM-machine.



Some examples of precision parts made.



Precision parts for ultrasonic probe



List of CNC machines:

Multitask machines (5 axis):

3 x Mazak Integrex 200 ST, 2 spindles, portal-robots and part-magazines
DMG Mori Seiki NTX 2000, 2 spindles, UR Robot

Milling machines:

Kitamura Mycenter H300SL, 40 pallets, 5 axis
Enchu HMC-40 with 10 pallets, 4 axis
Dahlih MCV 610, 4 axis
Matsuura FX1, spindle speed 30.000 rpm, 4 axis
Matsuura MC 510VGM, spindle speed 15.000 rpm, 4 axis
Dechel Maho DMC 835V, spindle speed 15.000 rpm, 4 axis

Turning machines/lathes:

Nakamura-Tome WY-250, 2 turrets, 2 spindles, bar-feeder
Schaublin 110 CNC
Schaublin 125 CCN
Takahashi TNC-LM2, bar-feeder

Marking and engraving:

Rofin-Sinar PowerLine E laser

Measuring machine:

Sheffield D-8 discovery II CMM with Renishaw PH10M



Company Name:

AS Metallteknikk

Address:

Vardheiveien 60
NO-4349 Bryne
NORWAY

Telephone number:

+47 51 77 00 00

Web: www.metallteknikk.no



AS Metallteknikk

Contact person	E-mail	Telephone	Mobile phone
Ronny Reiestad	ronny@metallteknikk.no	+47 51 77 00 00	+47 489 90 220
Arve Haaland	arve@metallteknikk.no	+47 51 77 00 00	+47 934 79 985
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 38 Turnover MNOK (2016) 90

Description of Company

Metal fabrication. Sheet metal, frames, pressure vessels, fire doors, atm. vessels

Relevant certification

ISO 9001, ISO 3834-2, Achilles



Factory at Bryne. Indoor workshops totally 6700m². Sheet metal, "White" steel, and carbon steel dept. Outdoor 12000² 10 ton crane-capacity.



Mariner Chemical Injection Skid. Carbon steel frame, AISI 316L, 22Cr Duplex, and Titanium vessels. Aluminium railings and grating.



Johan Sverdrup Pressure vessels. 22 Cr Duplex



A60 and B15 Firedoors. 6 different certificates.



Company Name:

Kitron AS

Address:

Tverrdalsøyveien 100
4920 STAUBØ
NORWAY

Telephone number:

+47 3707 1300

Web: www.kitron.com



Contact person	E-mail	Telephone	Mobile phone
Frode Ilebekk	frode.ilebekk@kitron.com	+4790863702	+4790863702
Click here to enter text.	Click here to enter text.	Number	Number
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 1350 Turnover MNOK (2016) 2093

Description of Company

A leading international supplier of electronics manufacturing services – providing the entire value chain. Serving professional customers mainly with high complexity manufacturing. Focus on the following market segments: Defence/Aerospace, Energy, Industry, Medical equipment, Offshore/Marine and Telecoms. More than 50 years of manufacturing professional electronics for professional customers have given us unique experience in manufacturing. Our knowledge will improve the producibility, quality and total cost for your products.

Relevant certification

ISO 9001:2000
ISO13485:2003
ISO 14001:2004
AQAP 2120
AS/EN 9100:2009
QSR (FDA)



Kitron AS location in Kilsund, Norway



Ultrasound System



Fire Control Unit





Kitron is a supplier for the F-35 JSF

Company Name:

Web: munck-cranes.no

Munck Cranes AS

Address:



Kokstadveien 30
5257 Kokstad
Norway

Telephone number:

+47 55 59 80 00

Contact person	E-mail	Telephone	Mobile phone
Rune Vabø	rune.vabo@munck-cranes.no	+47 55598000	+47 90579721
Guro Fjelhaug	guro.fjellhaug@munck-cranes.no	+47 55598000	+47 48189509

Number of Employees 113 (31.12.2016) Turnover MNOK (2016) 188 464 000

Description of Company

Total supplier - Munck is considered as a total supplier of cranes and material handling equipment for all types of industry, both in Norway and abroad.

We supply standard stand alone hoisting machineries with or without trolleys, standard single and double girder cranes and tailor fit custom designed cranes. Jib cranes & wall mounted cranes are also included in our scope of supply

Our cranes are two speed contactor controlled cranes or inverter controlled cranes. The inverter controlled cranes can be preset to required speed(s) or have stepless speeds for required movements. Operation is most commonly from radio remote controls, and push button stations and/or cabin control are supplied on client request

Our cranes can be controlled to operate within or outside specified zones based on for instance safety requirements. Zones can be arranged by limit switches, encoders & lasers pending the requirements.

Overload systems are included in our cranes and weighing systems with displays can be included on request. Displays can be included in radio remote control or mounted on crane bridge

Safety features, interlocks and gates with interlocks can be included on our cranes

Relevant certification

Management System certificate acc. to NS-EN ISO 9001:2008. Certificate no: 040

All cranes are delivered with CE certificate

Enterprise of Competence for control of work equipment. Certificate no: SV-002



Enterprise of Competence for safety training for use of work equipment. Certificate no: SO-014



Crane transport & production outside Munck workshop



Explosion proof crane shipped by air to South Korea



K11307 & K11308 - 2 only 35/5 tonnes double girder cranes, LKAB Norway



K11193 70/10 tonnes double girder crane being shipped from workshop



Company Name:

Mongstad TavleTeknikk AS

Address:

Storemyra 285
5954 Mongstad
Norway

Telephone number:

+4756167480

Web: www.mott.no



Contact person	E-mail	Telephone	Mobile phone
Baste Tveito	bt@mott.no	+4791669641	+4791669641
Geir-Håkon Gotaas	ghg@mott.no	+4791874581	+479187459
Kenneth Sjo Samuelsen	kss@mott.no	+4791334840	+4791334840

Number of Employees 50 Turnover MNOK (2016) 50

Description of Company

Designing, engineering, production, installation, commissioning, modifications and service of: Switchboards, MCC's, Distribution boards, Control panels automation, Control panels electrical, Network panels, Server cabinets, Marshalling panels, Vibration monitoring panels, F&G, PSD, ESD, & DSC panels, Hazardous areas panels, Junction boxes. Highly competent and experienced engineering staff. High quality production; automated mechanical, copper and wiring processes

Relevant certification

NS-EN ISO9001:2008 certified, Achilles certified, Sellihca certified, DNV/Presafe certified for hazardous areas, Rockwell Power Partner, Sivacon S8 franchise partner, Løgstrup Certified panel builder



Production of Saturn 2P/2S in MTT Factory



Sirius P2P ready for delivery after MTT Factory production



MTT Production facilities



Sivacon withdrawable system



Company Name:

Web: www.norautron.com

Norautron as

Address:

Nedrevei 8
N-3192 Horten
Norway



Telephone number

+47 3303 0400

Contact person	E-mail	Telephone	Mobile phone
Jan Erik Strøm	jan.erik.strom@norautron.com	3303 0415	9091 7120
Click here to enter text.	Click here to enter text.	Number	Number
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 600 Turnover MNOK (2016) app 1000

Description of Company

A full service electronics and machining manufacturer with 4 sites; Norway, Sweden, Poland and China. Focus on Special and High End production, class 3. Flexible production set up; High mix - Low/medium volume. Expertise on prototyping and rapid prototypes. Ease of transfer of products and production between sites.

Laboratory (3D x-ray, metallography, microscopes etc.)

Global sourcing of components.

Relevant certification

ISO 9001 - 2015 rev, ISO 14001 (All sites)

AQAP 2120 ed 3. (Norway)

Industry compliance; IPC J-STD-001, IPC-A-600, IPC-A-610 (all sites)



The SMT lines at Noratron in Horten - two lines, one line is dedicated New Product Implementation / Prototyping.



- Client: BAE Systems, Sweden
- Product:
 - HLA for Combat Vehicle (CV 90)
- Technology:
 - Housing – machining & painting
 - PCBA
 - Assembly of electronics
 - Assembly of cable harness
 - Functional testing



For more Information on BAE Systems
www.baesystems.com

High Level Assembly for combat vehicle to BAE Systems.

This was an upgrade project for the Norwegian Army. Noratron's scope of delivery contained sourcing, machining and painting of electronic housings (enclosures), manufacturing of PCBA and assembly of high-level box build. More than 6300 electronic assemblies and electromechanical units were supplied during the project (Jan 2013 - Sep 2016).



ZAPTEC

- Client: Zaptec AS, Norway
- Product: 10A / (16A) portable EV charger
- Technology:
 - First portable charger to contain a electr. trafo
 - True galvanic isolation
 - Can be used on any electrical grid in the world
 - Weight, only 6kg
 - 10x less weight than other technology
 - Small size
 - IP 65
 - Remote control (GPRS)

For more information on Zaptec
www.zaptec.com



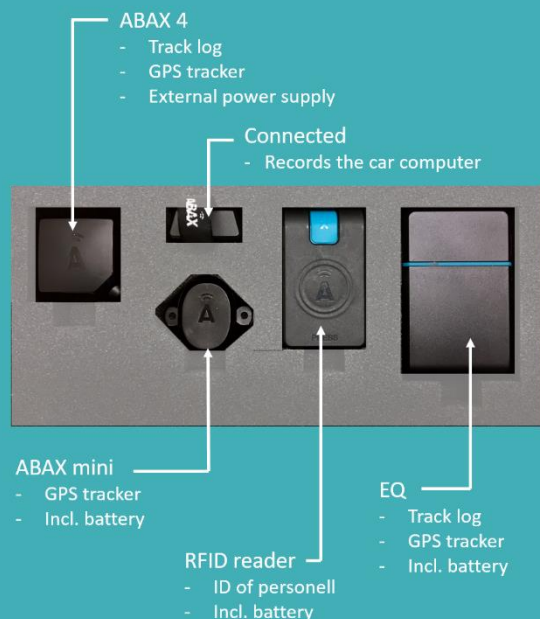
Charger for Electric Vehicle. End client Renault.

Noratron was involved in the design for manufacturing and industrialisation project phase. We are also the series production partner.

ABAX

- Client: ABAX AS, Norway
- Products:
 - Triplog
 - Equipment Control
- Technology:
 - GPS tracker – GSM network
 - Battery or external power supply
 - IP 65

For more information on Abax
www.abax.no



ABAX is a software/hardware company offering tracking devices and software for management of the companies vehicles and equipment. High-volume 60-100' units p.a. / high degree of automation.



PCBA Process related equipment	
Process	Equipment
Laser marking	ASYS Insignum 2000
Paste Printing	DEK Horizon 03i EKRA Serio 4000
Paste Inspection (3D-SPI)	SAKI BF-3Si
Pick & Place	ASM Siplace X
Placement Inspection (AOI)	Cyberoptics QX600
Reflow Soldering	REHM VX Nitro 3500
Soldering Inspection (3D-AOI)	SAKI BF-3di-L1
Selective Soldering	ERSA Versaflow 3/45
Wave Soldering	ERSA N-Wave 330
Press-fit	HARTING CPM-Prestige
Washing	MB TECH NC25
Conformal coating	NORSON Asymtek
De-Paneling	SHUNK SAR-1300 Uni

Equipment at Norautron, Norway – equipment at the other sites are compatible.

Laboratory related equipment	
Process	Equipment
3D X-ray inspection	GE Phoenix micromex
Cleanliness tester	Alphametals IONOGRAPH 500 M SMD 2
Microscopy	Leica M60 Olympus SZ51
Conformal coating repair system	CRYSTAL MARK SWAM-BLASTER TURBO
BGA repair system	ERSA PL 650



Company Name:

Web: www.norbit.com

Norbit EMS



Address:

Øybergveien 15
7580 SELBU
NORWAY

Telephone number:

+47 73 81 00 81

Contact person	E-mail	Telephone	Mobile phone
Lars Rolseth	Lars.rolseth@norbit.com	+47 73810078	+4748136456
Click here to enter text.	Click here to enter text.	Number	Number
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 113 Turnover MNOK (2016) 230 MNOK

Description of Company

Norbit EMS is stationed in Sør-Trøndelag, Trondheim area. We have a product range which includes pure circuit board assembly, Cable and Wire harness & Fabrication of complete modules and systems. The company has 4 departements...:

Norbit EMS Selbu - 50 employees. Focus areas are Prototypes, NPI, Small to Medium production batches, Electromechanical manufacturing of complete products and systems incl. Test & calibration.

Norbit EMS Røros - 50 employees. Focus areas are High Volume production batches, Industrialization, Automation, Thick Film Applications, Automotive applications.

Norbit EMS Kabelpartner - 11 employees. Forcus areas are Cables and Wire harness assemblies and Electromechanical manufacturing.

Norbit Sourcing - 2 employees. Main focus is providing custom parts from high quality manufacturers in East Asia to the 3 EMS companies. Mainly PCBs, inductive components, housings, etc.

In addition, we can offer SW/HW & Test development resources through our sister company Norbit ODM.

Norbit EMS has since 2015 supplied CERN with a serie of complete assembled CUNCUN converters. We have also delivered pure PCB Assemblies to different CERN departments.

Norbit EMS can offer washing of PCBA's and cleanliness testing according to IPC-J-STD-001F 8.3.6.2.



Norbit EMS can offer class 3 production according to IPC-J-STD-001. All employees in the manufacturing departments of Selbu/Røros are certified to this standard.

Relevant certification

NS_EN ISO 9001:2008 since 2003 at NORBIT EMS Selbu

NS_EN ISO 9001:2008 at NORBIT KABELPARTNER

NS_EN ISO 14001:2004 at NORBIT KABELPARTNER

ISO 13485:2003 (Medical) since 2006 at NORBIT EMS Selbu

ISO TS 16949 (Automotive) since 2004 at NORBIT EMS Røros

ISO 14001 since 2001 at NORBIT EMS Røros

ISO 9001 since 1993 at NORBIT EMS Røros

Achilles at NORBIT EMS Selbu

Achilles at NORBIT KABELPARTNER



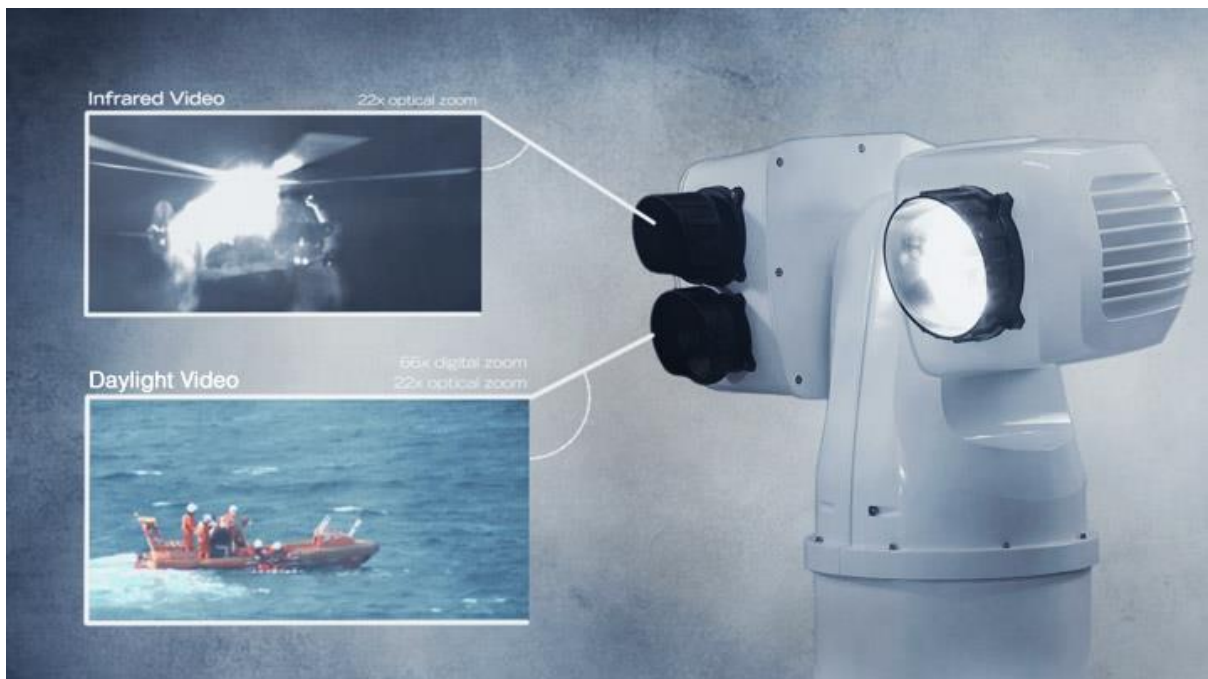
Production hall manual assembly, Norbit EMS Selbu



High speed SMT line, Norbit EMS Rørros



SonoWand Neurosurgery 3D Ultrasound equipment



Aptomar Sequrus System



Equipment overview Norbit EMS

SMT line 1

- Fuji GPX Printer
- Cyberoptics SE600 SPI
- 11pc Fuji NXT Pick-and-Place
- Cyberoptics QX600 AOI
- SMT Quattro Peak L Reflow Owen

SMT line 2

- EKRA Serio 4000 Printer
- 2pc Fuji AIMEX II Pick-and-Place
- SMT Quattro Peak L Reflow Owen

SMT line 3

- DEK Horizon 03i Printer
- 2pc Assembleon Gemline Pick-and-Place
- Heller 1809 MKIII Reflow Owen

SMT line 4

- DEK Horizon 03i Printer
- 3pc Assembleon Gemline Pick-and-Place
- Seho Maxireflow 2.1 Reflow Owen

Selective Soldering

- ERSA Versaflow
- 2pc. Ebso SPA400

Wave Soldering

- Vitronics Soltec Delta Wave
- lemme Wave Solder

Coating Line 1

Coating Line 2

- Asymtek C740

Cleaning/Defluxing systems

- Aqueous Trident
- Miele PCB Cleaner
- PBT Stencil Cleaner

Stand-alone AOI Systems

- Marantz 22X
- Cyberoptics QX500
- Cyberoptics Q250i

PCB Lasermarker

- Asys insignium 3000

Depanelizers

- Asys Divisio 5100
- 4pc. CAB PCB separators



- Asymtek SL940E
- Asymtek UV-9 Curing Oven



Company Name:

Web: www.norse-os.no

Norse Oilfield Services AS

Address:

Hamrasletta 9
4056 Tananger
NORWAY



Telephone number:

51646500

Contact person	E-mail	Telephone	Mobile phone
Jone Refsnes	jone@norse-os.no	Number	91874307
Click here to enter text.	Click here to enter text.	Number	Number
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 55 Turnover MNOK (2016) 110

Description of Company

We are a production company located in Tananger , in south west of Norway. We are 10min from Sola Airport, and 3minutes from Risavika Harbor.

We do in general larger machining, from Ø400mm up to Ø3000mm. We have some multi machines, wercal late, and a big milling machine. We have test facilityes for preassure testing, we have welding with warios prosedures, both manual, and 2 welding collums for inlay cladding.

Relevant certification

ISO 9001-2008

ISO 3834

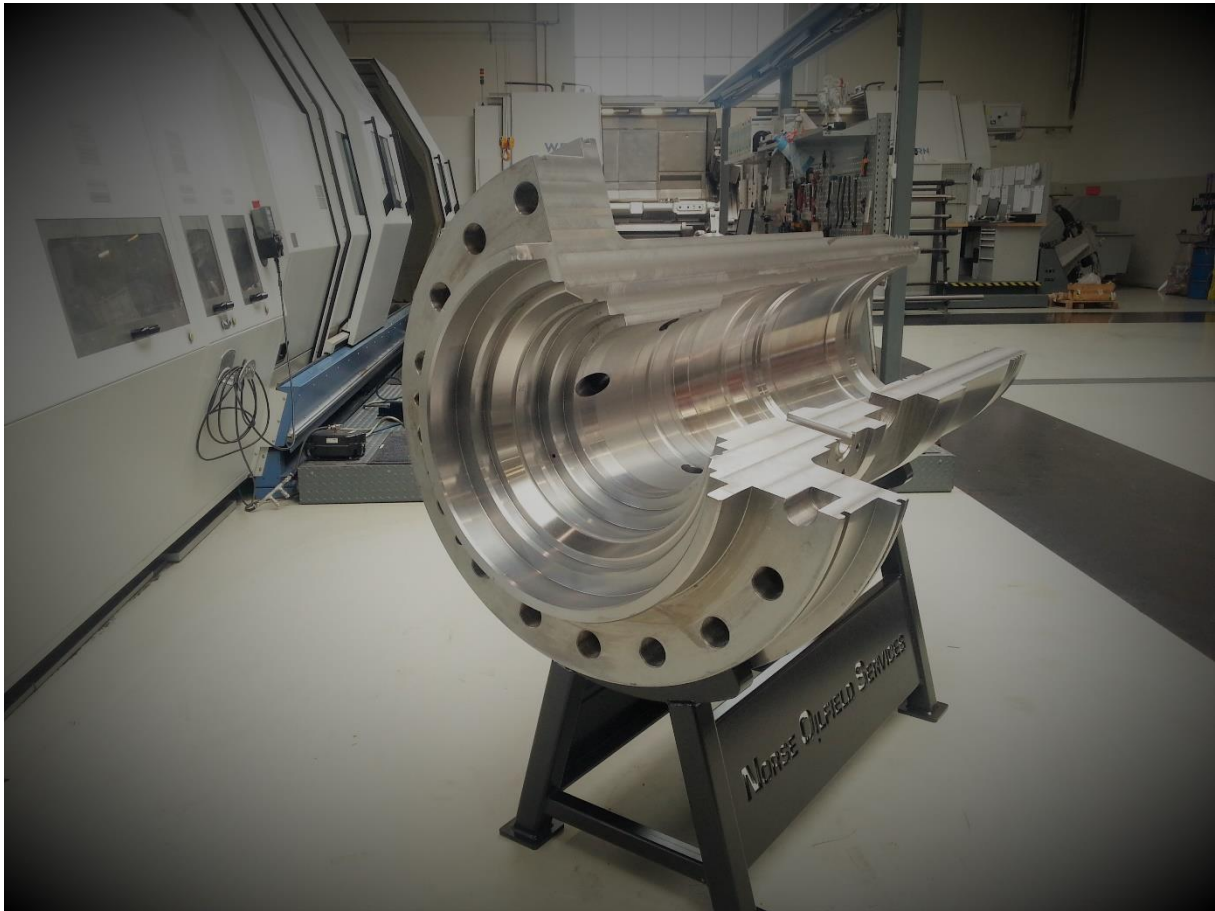
Acillies



Legg til bilde av produksjonslokale eller relevante produkt



Some test assemblies made for Aker Solitions



A test that was made for Aker \ Statoil



Company Name:

Olvondo Industries AS

Address:

Wichmannvegen 3
5420 Rubbestadneset
NORWAY

Telephone number:

+47 992 29 603

Web: www.olvondo.no



Contact person	E-mail	Telephone	Mobile phone
Torstein Rasmussen	Torstein.rasmussen@olvondo.no	+47 99229603	+47 99229603
Click here to enter text.	Click here to enter text.	Number	Number
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 70 Turnover MNOK (2016) 75

Description of Company

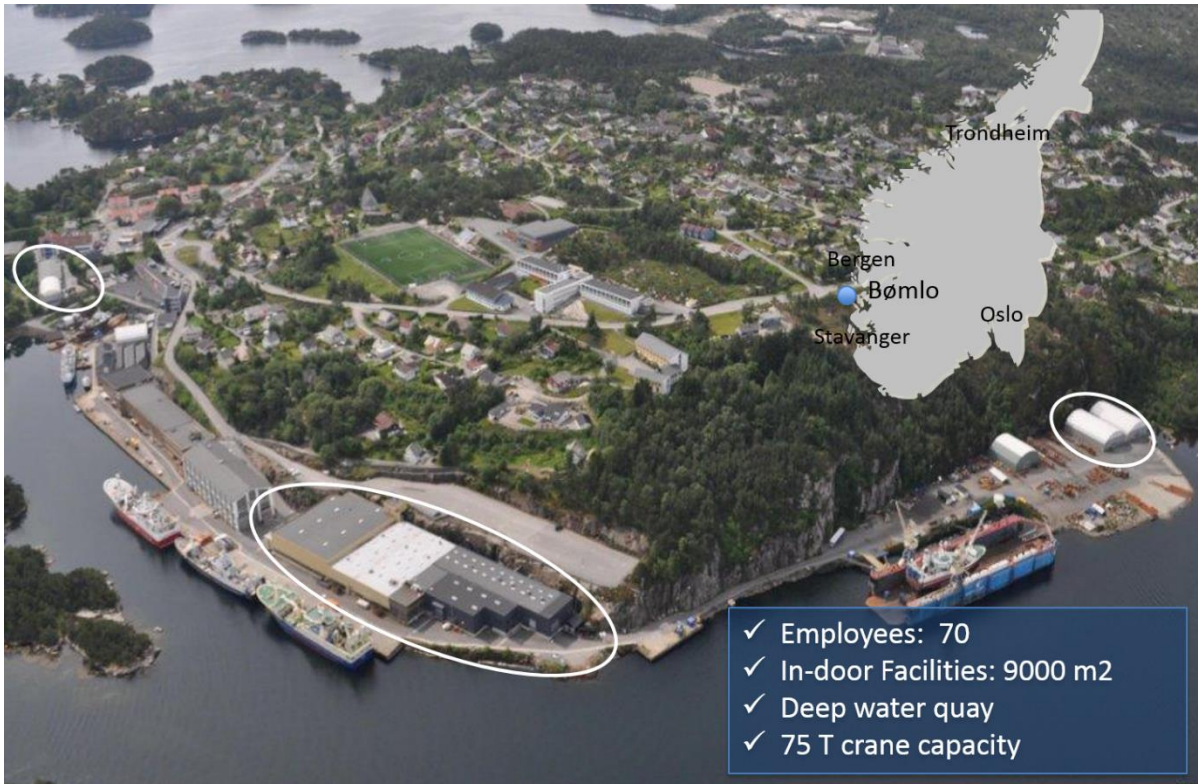
One stop shop, Engineering, fabrication and machining company for heavy and high precision products/components. Long industrial background from Maritime- and Oil/Gas industry. Located West Coast of Norway, 10m from deep water quay.

Relevant certification

Quality Management System: ISO9001

Environmental Management System: ISO14001

Occupational Health and Safety Management System: OHSAS18001



Olvondo is located inside an industrial cluster called Rubbestadneset.no. This is very useful when/if local subcontracting activities are needed. For more info about our cluster, see: www.rubbestadneset.no





We have a long history within maritime industry, rotating machinery with high quality standards, supplying our products to a world wide market, from Navy, Fishing, Supply vessels to Containers, RO-RO and Cruise vessels. Our name of the company then was called Wichmann Diesel, later on Wärtsilä Corporation until 2012 when our private owned company, Olvondo Industries was established.



Olvondo Industries has become a major production partner within Subsea industry at short time. Pilot production with high quality standards is one of our strong competitive edge. The product shown in picture is a Work Over Riser System for Aker Solution, one of the major subsea equipment suppliers in the world. This system is connecting the Oil Platform to the subsea production well at the seabed. The equipment is tested up to 15000 psi in our factory, operating at 1350m depth.



Examples from our machine shop:

- upper left corner: Milling machine, Type FPT ARX 120, with facing head, 50 tons, 2 palletes
- upper right corner: New Mazak Turning centre, E670HII, 6 tons capacity, length 4000mm
- lower left corner: Lathe machining, turning and drilling, 23 metres, 50 tons capacity
- lower right corner: Horizontal turning combined with a milling machine, 7 pallets, 9-15 tons cap.

For more detailed information about our machine shop capabilities, please see our web site:

<http://www.olvondo.no/services/machine-shop>



Olvondo Equipment list

No	Machine type	Manufacturer	Type	Max	Max	Max	Chuch						Tools	Other capacities
				Height	Length	Width	Axes	size	Length	Dia	Load cap			
				mm	mm	mm	no	inch/mm	mm	mm	kg	no		
6054	Lathe Horizontal Medium	Georg Fischer	NDM-22	N/A	N/A	N/A	3	25"	1 500	720	N/A	8		
6055	Lathe Horizontal Small	Yamazaki	Mazak slant turn 25	N/A	N/A	N/A	3	10"	945	300	N/A	8		
6056	Lathe Horizontal Small	Yamazaki	Mazak slant turn 15	N/A	N/A	N/A	3	8"	1 000	210	N/A	5		
6058	Lathe Horizontal Huge	Innse	160 - 04H - 02 x 2050 CNC	N/A	N/A	N/A	4	48"	20 500	1 600	35 000	10		
6059	Lathe Horizontal Big	Ryazan	RT 436 F3 x 8000	N/A	N/A	N/A	3	40"	4 500	1 200	12 000	4		
6060	Lathe Horizontal Big	Safop	Leonard – 60/180-CNC TMD	N/A	N/A	N/A	4	32"	4 800	1 700	18 000	60	Deep hole drilling	
6062	Lathe Horizontal Medium	Daewoo	Puma 700 LM	N/A	N/A	N/A	3	28"	3 200	1 030	NA	12		
6065	Lathe Horizontal Huge	Tacchi	800X24000 Series 120H	N/A	N/A	N/A	4	48"	24 000	1 425	49 000	4	Deep hole drilling	
6070	5 axes machining centre	Mazak	Integrex e670HII	N/A	N/A	N/A	5	800 mm	4 000	1 070	6 000	40	Mazatrol Matrix 2 dialog	
6202	Lathe Vertical Big	Carnaghi	AC 16 TM – Å	N/A	N/A	N/A	4	1300mm	1 830	1 700	7 000	80	Integr w/mach. 7506, 9 pallets	
7504	Mill Horizontal/Vertical Small	Deckel	FP5CCT	800	600	500	4	1300mm	N/A	N/A	300	40	2 pallets	
7505	Mill Vertical/Horizontal Huge	Giddings& Lewis	G60 - FX	2 921	9 144	500	6	N/A	N/A	N/A	40 000	144	3 pallets	
7506	Mill Horizontal	Colgar	PROG 213 TR 120 - 90	1 750	1 750	2 000	6	N/A	N/A	N/A	7 000	90	Integr.w/mach.6202, 9 pallets	
7507	Mill Vertical/Horizontal	FPT	M-ARX 120	3 500	12 000	2 500	5	N/A	N/A	N/A	50 000	248	3 pallets	
7508	Mill Vertical Medium	Toshiba	BTD – 130.R16	1 800	1 450	2 000	5	N/A	N/A	N/A	4 500	240	5 pallets	



7400	Horizontal Deep hole Drilling	Wholenberg	B 1000N	1 400	18 000	870	N/A	48"	18 000	N/A	40 000	1	Deep hole drilling
2010	CNC Cold pipe bender	Herber	76/CNC	N/A	N/A	N/A	N/A	N/A	3 000	76	N/A	N/A	190 degr. Dupl, Super dupl.
2011	CNC Cold pipe bender	Herber	25/CNC	N/A	N/A	N/A	N/A	N/A	3 000	25	N/A	N/A	190 degr. Dupl, Super dupl.
2012	CNC Cold pipe bender	Robiteck	30/CNC	N/A	N/A	N/A	N/A	N/A	3 000	30	N/A	N/A	190 degr. Dupl, Super dupl.
3500	Pressuretesting unit	Test	Testrigg type 100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Pressure test, water, 1400 bar
6041	Small manual lathe	VDF	48 D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chuck Ø380mm, length 1000mm.
6042	Small manual lathe	VDF	48 S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chuck Ø380mm, length 1500mm.
6066	Lathe	Ravensburg		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	For surface treatment /coating
4203	Weld Cladding Machines	Wellmax	ESAB	1 500	16 000	2 000	N/A	N/A	N/A	N/A	N/A	N/A	2 cladding machines, 3 stations
208	Heating oven	Nor.Ind.Ovner	1629	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Heating oven 0-210C
4210	PWHT Heating oven	Electroheat	TS -7212	4 000	2 500	3 000	N/A	N/A	N/A	N/A	N/A	N/A	800 \CELSIUS
4210	PWHT, heating with mats	Electroheat	Tf-4056	N.A.	N.A.	N.A.	N/A	N/A	N/A	N/A	N/A	N/A	Local PWHT equip. up to 700 C
2210	5 axes CMM measuring	Wenzel	Wenzel LH 1512	1 200	4 000	1 500	5	N/A	N/A	N/A	N/A	N/A	Revo technologi (5 axis)



Company Name:

Web: www.partner-maskinering.no

Partner-Maskinering AS

PARTNER
MASKINERING

Address:

Smålonane 22, Straume Næringspark
N-5353 Straume
Postboks 327
N-5343 Straume
NORWAY

Telephone number

+47 56 33 66 40

Contact person	E-mail	Telephone	Mobile phone
Svein Johnsen	svein@partner-maskinering.no	+47 56336645	+47 47904754
Einar L. Eriksen	einar@partner-maskinering.no	+47 56336647	+47 41649270
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 12 Turnover MNOK (2016) 4,14 MNOK (from september to december)

Description of Company

Partner-Maskinering AS was founded in 1996 and re-established 13.07.2016. Our workshop is 2500 square meters and we have 16 Okuma CNC and machining centre.

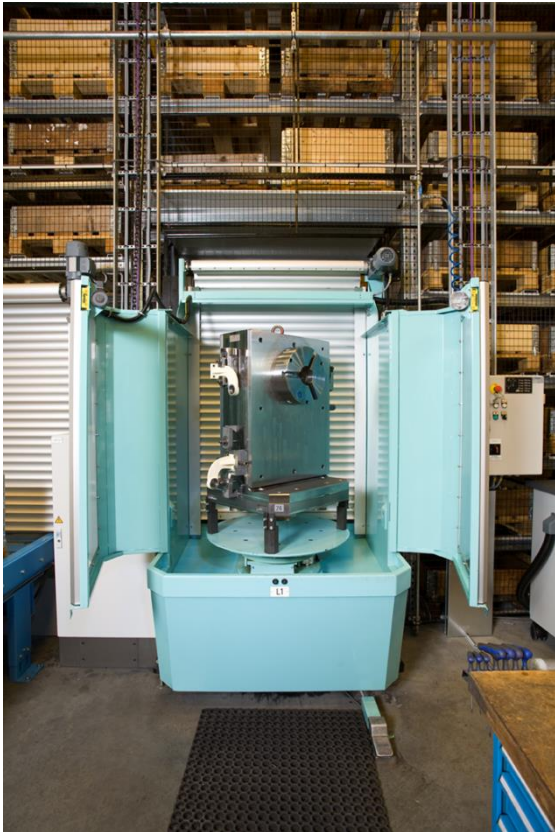
We produce metal and plastic parts from dimension \varnothing 5mm to 670mm, length up to 2000mm. Our customers are among others Rolls Royce, SFF and AkerSolutions.

Our CNC equipment is well suited for both prototype and serial production. We produce parts in all kind of materials as Carbon, Aluminium, AISI 316, S165M, Duplex, Superduplex, Hastelloy, Inconell, 6Mo, Titanium, POM, PTFE, PEEK etc

Relevant certification

Certified to ISO 9001:2008

Achilles approved ID: 27032



Work station for fastems interlinking system consisting of 3 Okuma MA600 horizontal machining centre.





Okuma MacTurn 550



Misc parts in alloy materials





Multifunksjonelt utstyr gir meget god effektivitet

God kapasitet sikrer kritiske leveranser.

Maskinparken er moderne og det meste av utstyret er mellom 1-5 år. Alle våre produksjonsmaskiner er av fabrikk Okuma, som er et av markedets mest driftssikre produksjonsutstyr, med et godt serviceapparat i Norge og rask tilgang til reservedeler fra Tyskland. Dette gjør at vårt utstyr er driftssikkert og har høy oppetid.

FMS - SENTER

FMS-senteret tilrettelegger for fleksible leveranser; enten seriene er store eller små.

FASTEM		MASKIN 1	MASKIN 2	MASKIN 3
Fastem MLS-MD FMS anlegg	Modell	MA600	MA600	MA600
40stk palettstasjoner	Pallett	630x630mm	630x630mm	630x630mm
196 plasser for EUR paller med 350mm høyde	Maks. bordbelastning	1200 kg	1200 kg	1200 kg
136 plasser for EUR paller med 550mm høyde	X,Y,Z-akse	1000/900/1000mm	1000/900/1000mm	1000/900/1000mm
Kran DCM-MD, kapasitet 1500kg	Spindelurtall	6000 o/min	6000 o/min	6000 o/min
2 stk arbeidstasjoner	Spindelkon	ISO50	ISO50	ISO50
1 stk materialstasjon	Spindelmotor	30/22 KW	30/22 KW	30/22 KW
1 stk Teijo vaskemaskin	Ilgang	60 m/min	60 m/min	60 m/min
	Verktøymagasin	200 stk	200 stk	200 stk
	Tillegg	U-akse	Turn-cut	Turn-cut



Modell: **LT300M**

2-spindlet CNC dreiesenter med 2 verktøyrevolvere. Med Frai robot mating.

Sving ø/vange	550mm
Maks. dreiedia	350mm
Avstand m. spindler	1200mm
Spindelurtall*	5000 o/min
Spindelboring	80mm
Spindelmotor*	22/15 KW

*begge spindler



Modell: **MA60**

Okuma horisontalt maskineringscenter. Med 6 stk palletter.

Pallett	630x630mm
Maks. bordbelastning:	1200 kg
X,Y,Z-akse:	1000/800/810mm
Spindelurtall	12000 o/min
Spindelkon	ISO50
Spindelmotor	30/22 KW
Ilgang	40 m/min
Verktøymagasin	150 stk
Palettmagasin	6 palletter



Modell: **MA600**

Okuma horisontalt maskineringscenter. Med 2 stk palletter.

Pallett	630x630mm
Maks. bordbelastning:	1200 kg
X,Y,Z-akse:	1000/900/1000mm
Spindelurtall	6000 o/min
Spindelkon	ISO50
Spindelmotor	30/22 KW
Ilgang	60 m/min
Verktøymagasin	200 stk



Modell: **LB45II**

2-akse CNC dreiesenter med 1 verktøyrevolver

Sving o/vange	900mm
Maks. dreiedia	660mm
Dreielengde	2000mm
Spindelrtall	2800 o/min
Spindelboring	110mm
Spindelmotor	37/30 KW



Modell: **LB300-M**

3-akse CNC dreiesenter med 1 verktøyrevolver

Sving o/vange	530mm
Maks. dreiedia	340mm
Dreielengde	1000mm
Spindelrtall	4500 o/min
Spindelboring	62mm
Spindelmotor	15/11 KW



Modell: **LB3000-M**

3-akse CNC dreiesenter med 1 verktøyrevolver

Sving o/vange	580mm
Maks. dreiedia	340mm
Dreielengde	1000mm
Spindelrtall	5000 o/min
Spindelboring	91mm
Spindelmotor	22/15 KW



Modell: **LU300M**

4-akset CNC dreiesenter med 2 verktøyrevolvere

Sving o/vange	530mm
Maks. dreiedia	370mm
Dreielengde	1000mm
Spindelrtall	5000 o/min
Spindelboring	80mm
Spindelmotor	22/15 KW



Modell: **MACTURN50**

Multifunksjon CNC dreiesenter med verktøymagasin, Y-akse, B-akse

Sving o/vange	610mm
Maks. dreiedia	580mm
Dreielengde	1500mm
Spindelrtall	3200 o/min
Spindelrtall*	3000 o/min
Spindelboring	90mm
Spindelmotor	30/22 KW
Effekt*	11/7,5 KW
Verktøymagasin	50 stk

*roterende verktøy



Modell: **MACTURN350**

Multifunksjon CNC dreiesenter med verktøymagasin, Y-akse, B-akse, m/Frai robot mating system

Sving o/vange	550mm
Maks. dreiedia	530mm
Dreielengde	1500mm
Spindelrtall	3800 o/min
Spindelrtall*	6000 o/min
Spindelboring	80mm
Spindelmotor	22/15 KW
Effekt*	11/7,5 KW
Verktøymagasin	80 stk

*roterende verktøy



Modell: **MACTURN550**

Multifunksjon CNC dreiesenter med verktøymagasin, Y-akse, B-akse

Sving o/vange	720mm
Maks. dreiedia	720mm
Dreielengde	2000mm
Spindelrtall	2800 o/min
Spindelrtall*	5000 o/min
Spindelboring	110mm
Spindelmotor	37/30 KW
Effekt*	22/11 KW
Verktøymagasin	180 stk

*roterende verktøy



Modell: **MULTUS B400**

Multifunksjon CNC dreiesenter med verktøymagasin, Y-akse, B-akse

Sving o/vange	710mm
Maks. dreiedia	710mm
Dreielengde	1500mm
Spindelrtall	3800 o/min
Spindelrtall*	6000 o/min
Spindelboring	80mm
Spindelmotor	30/22 KW
Effekt*	14/10 KW
Verktøymagasin	80 stk

*roterende verktøy



Company Name:

Web: www.subseaservices.no

Rush Maskinering

Address:

Ryfylkeveien 781
4100 Jørpeland
NORWAY

Telephone number:

+47 51 74 08 00



Contact person	E-mail	Telephone	Mobile phone
Arvid Sundheim	a.sundheim@subseaservices.no	Number	+4793209126
Jostein Kvamme	j.kvamme@subseaservices.no	Number	+4791881419
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 20 Turnover MNOK (2016) 18

Description of Company

Rush Machining is, with more than 30 years experience in the market, among the leading high-precision machining service providers in Norway. We have achieved this through high degree resposiveness and flexibility, excellent product quality, and short lead times. In our modern facilities from 2012 we have a high-tech CNC machine park, and our core products are custom fitted steel parts. Our employees are very quality conscious and we have well-established routines for QC, documentation and continuous improvement. Each and every part manufactured by us is of a very high standard. This is essential because both our products and services must comply with our customers' needs, and the high demands set by the natural and technological challenges in the environments where our products are used.

In total we have 14 CNC machines, see attached machine list for more details.

- Lathes
- Multi-function-machines
- Mills
- Drill and milling machines
- Vertical lathes

Sizes:

Our lathes can handle material up to 3 meters long, and 15 tons weight. Our mills can handle up to 15 tons. However, smaller parts are produced with the same precision and efficiency as large parts.

Materials:

Rush Machining delivers products within a wide range of materials, ranging from carbon steel, low and high alloy steel, stainless steel, to plastics.



All together our CNC-machines can perform 40.000 work hours per year.

Rush Maskinering has produced and delivered products to CERN in 2016. A CERN representative did also make a visit to Rush Machining in June 2015 to inspect the facilities.

Relevant certification

ISO 9001:2008



Production facilities



Example 1



Example 2



Example 3



Machine list, updated 17.03.2017

Machine	Year	Description
1	Okuma LB300 MY	2004 Horizontal lathe
2	Doosan 700 M	2008 Horizontal lathe
3	Moris Seiki Sv50	1998 Vertical milling machine
4	Okuma MB46V	2008 Vertical milling machine
5	Hedelius BC125	2010 Vertical milling machine
6	Doosan Puma 400	2008 Horizontal lathe
7	Doosan VTS 1620M	2012 Vertical lathe
8	Doosan DBC 130L	2012 Horizontal boring
9	Okuma LU45	2013 Horizontal lathe
10	Okuma LB4000	2013 Horizontal lathe
11	Okuma Multus U4000	2014 Multi-tasking CNC lathe
12	Okuma LB3000 EX-MY	2014 Horizontal lathe
13	Moris Seiki 600	1999 Horizontal lathe
14	Doosan 700LM	2004 Horizontal lathe



Company Name:

Web: www.se-tech.no

Se-Tech AS

Address:



Skålevikveien 60
5178 Loddefjord
Norway

Telephone number:

+4755506350

Contact person	E-mail	Telephone	Mobile phone
Roar Solfjell	roar@se-tech.no	+4755506353	+4791733609
Click here to enter text.	Click here to enter text.	Number	Number
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 23 Turnover MNOK (2016) NA 2015=60.6

Description of Company

Se-tech AS is a highly automatized mechanical workshop. Main products are milling and turning, working in high grade materials, and has been producing high grade parts since 1986.

Se-Tech AS is solely a sub-supplier offering machining of parts to a broad mechanical market.

Se-Tech AS has a professional set of dedicated master workmen performing to the highest standards.

Materials:Aluminium, copper, Brazz, JM/OM materials, AISI316, Duplex, Super Duplex, Inconels', Toughmets' and also within plastics as POM and PEEK, Titanium Gr2 and Gr5 amongst others.

Our mix of machines, work in sizes from pin size to 880*880*3000mm.

We do of course have a suitable CMM to verify the products produced at our workshop.

Main and global customer base in Subsea oil products, topside oil products, Three phase meters, seismic systems (both land based and for subsea), sensors for fish farming.

Relevant certification

ISO 9001-2008



Se-Tech AS reception

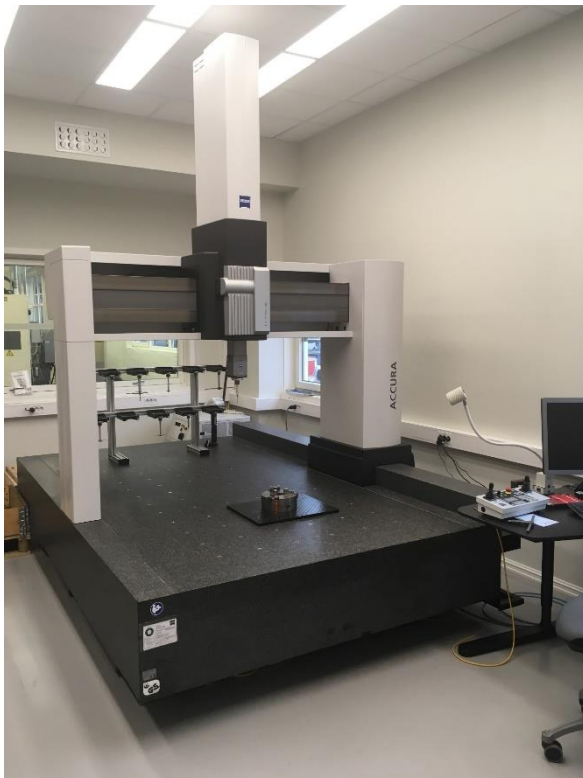




5 axis Okuma system with robot.



2 x Makino FMS A88E with 20 pallets system with robot.



Zeiss Accura CMM for quality verification.



Se-Tech AS machine list:

Se-Tech AS has in recent years renewed itself in its turning capabilities. This is needed to provide a complete high quality machining process to its customers. We are happy to provide you with price offers.

Se-Tech AS turning machines:

The last few years we have invested in efficient and precise machines to be able to offer a broad spectrum of products and services. Amongst these new machines you will find an Okuma Multus B750.

Se-Tech AS CMM (coordinate measuring machine: CMR Zeiss Accura II 12/24/8 and CE Johansson Topaz 7



Okuma Genos L200E-M (Ø 0-200mm) w/feeder.



Okuma SimulTurn LU300M (max Ø 300mm) 2pc



Okuma LB300 (Ø 0-300mm) w/feeder.

Se-Tech AS Milling machines:

Se-Tech AS has recently invested in effective and accurate machines to offer a wide range of milling services. Notable machines include Makino A61NX and Ibarria ZVH55 L3000 as the latest additions to our production floor. Please get in touch to hear what we have to offer.



Okuma LR15M (Ø 0-200mm) w/feeder.



Ibarria ZVH 55 L3000 (880*880*3000mm work area)



Okuma LT200-MY (Ø 0-210mm) w/feeder.



Makino A 61 NX w/2 pallet system. (610*610*880mm work area)



Okuma LU15 (Ø 0-70mm) w/feeder



Okuma LU300 (Ø 0-220mm) w/feeder.



Okuma LU45 (max Ø650mm).



LU45M Okuma (max Ø 650mm)



Okuma Mac-Turn 250W w/robot and pallet system. (max Ø 550mm, max Ø250mm with robot drive)



Okuma Mac-Turn 350W w/robot and pallet system (max Ø 550mm, max Ø250mm with robot drive)



Okuma Mac-Turn 50 (max Ø 580mm)



• Okuma Multus B750 (max Ø 525mm)



• Makino A66 FMS with connected DM w/17 pallet system. (660*660*880mm work area) 2pc



Makino A88E FMS with connected flexible 20 pallet system. (880*880*1000mm work area)



Okuma MU-VA500-L. Full 5-axis milling machine with turning function. Connected robot and 3 pallet system. (500*500*500mm work area)



Okuma MX55VA 5-axis (550*550*550mm work area).

• Se-Tech AS sawing machines:

Kasto Twin A2 2pc



Kasto Twin A4



Company Name:

Web: www.simpro.no

Simpro AS

Address:

Industriveien 4
7332 Løkken Verk
Norway



Telephone number:

+47 72 49 72 30

Contact person	E-mail	Telephone	Mobile phone
Erik Dragset	erik.dragset@simpro.no	+4772497230	+4790162348
Jo Stene Nordvoll	Jo.nordvoll@simpro.no	+4772497230	+4791107391
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Number of Employees 45 Turnover MNOK (2016) 81,3

Description of Company

Electronic manufacturing

Relevant certification

ISO 9001

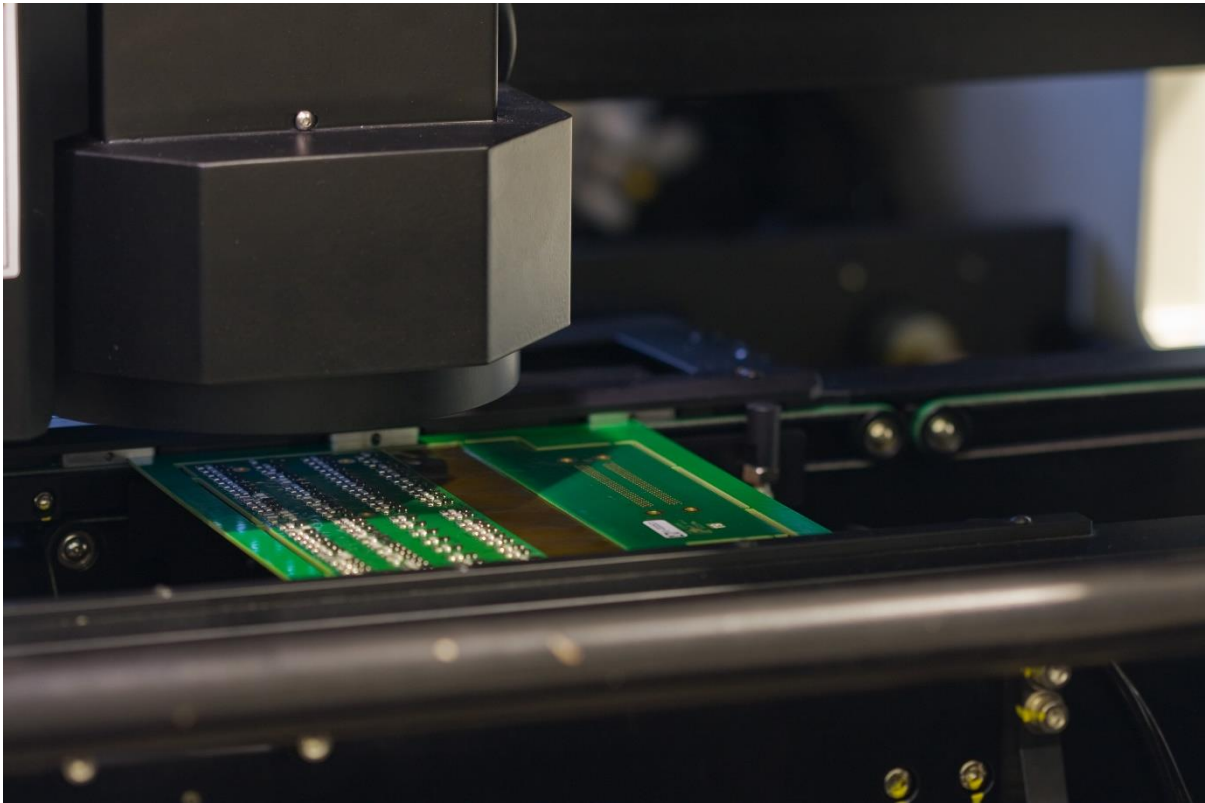
ISO 14485



Factory



OFM mounting, now we have two mounting lines.



AOI inspection

[Click here to enter text.](#)



Simpro Machines and tools

Type	Type / Description	Brand / Model
	PCA Cleaning	Kolb
	Heating cabinet	
	Selectiv coating	PVA
	Lasermarker (Marking serial# on pcb)	ASYS INSIGNIUM 3000
SMD line 1	Solder paste printer	DEK HORIZON
	SMD placer	MIRAE 1010
	SMD placer	MIRAE 1030P
	Reflow oven	VITRONICS XPM820
SMD line 2	Solder paste printer	DEK HORIZON Ny
	SMD placer	MIRAE 400L
	SMD placer	MIRAE 400L
	SMD placer	MIRAE 400LP
	Reflow oven	HELLER 1810MK3
	LODDEPASTA INSPEKSJON	SAKI 3DSI SPI
	INSPEKSJON OFM MONTERING	Mirtec MV7
	AOI Offline (solder and place inspection)	Mirtec MV7U
	Xray	DAGE XD7600NT
Wave soldering	Selective soldering Lead	VITRONICS 6745
	Selective soldering LeadFree	VITRONICS 6745
	Wave soldering LeadFree	ERSA Powerflow N2
	Vacuum packing	Boss NF 1/21
	Vacuum packing	VacuWeld
Potting	Vacuum pump for potting	
	2D mixer for PUR potting	PVA
	Cable cut/strip	
	Coax strip machine	Schleuniger
	Screen washer	
	Traceability system	Mentor Foundation and Production
	Dry cabin	

Test equipment

Type / Description	Brand / Model
DMM	Agilent 34401A
Loop calibrator	FLUKE 707
Megger	MEGGER MIT410
LCR meter	Keysight U1733C
RF-generator	R&S SMB100A
Radio tester	R&S CMS
AWG	AGILENT 33220A
Generator RF	TTI TGR6000
Generator RF 1GHz - 22GHz	R&S SMF 100A
Frequency counter	AGILENT 53131A
Oscilloscope	TEKTRONIX TDS3032 300MHZ
Elektronik Load	LD400P
Power Meter	R&S NRP-Z11
Signal Analyzer	ROHDE & SCHWARZ FSV13
Spectrum Analyzer	R&S FSP 7GHz
Thermometer	TES 1322 IR % K-PROBE
Temp Logger	DATAPAQ 9000
DAQ-module	NI 9205 AI +/- 10V
DAQ-module	NI 9221 AI +/- 60V
DAQ-module	NI 9234 AI +/-5V IEPE
PXI-DMM	NI PXI-4065
Hi-pot Tester	Kikusui TOS5050A
AWG	NI PXI-5406
Oscilloskope	NI PXI-5114
Torque Calibrator DAQ	Atlas Copco St-analyzer
Rotation transducer	Atlas Copco IRTT-B 5-06
Vibration Controller	VR9500
Climate chamber	Angelantoni Speedy
Climate chamber	Angelantoni Discovery
PXI Chassis	Numerous switching systems
PSUs	Numerous
LabVIEW	SW
TestStand	SW
WATS	SW
XJTAG	SW



Company Name:

Web: www.stavangersteel.no

Stavanger Steel AS

Address:

Stålverksveien 51
4100 Jørpeland
NORWAY



Telephone number:

+4751743400

Contact person	E-mail	Telephone	Mobile phone
Erik Ødegård	eog@stavangersteel.no	+4751743400	+4797581073
Georg Riis Nielsen	grn@stavangersteel.no	+4751743400	+4790206046
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 45 Turnover MNOK (2016) 150 Mill NOK

Description of Company

Production of forgings and castings of stainless steel and special steels. Production includes melting shop

Delivery of batches appr. 10 tons with machined forged bar material from same heat.

Castings net weight max 10 tons.

Relevant certification

ISO 9001 / ISO14001

Classification approvals by DNV-GL, Lloyds, ABS, GL, TUV



Production Facility, Jørpeland Norway



Forged stainless steel bars



Cast steel for mooring component



Heat treatment process



Company Name:

Web: www.timech.no

Timech AS

Address:

Breimyra 8
4344 Bryne
Norway



Telephone number:

+47 95895207

Contact person	E-mail	Telephone	Mobile phone
Trine Holland	trine@timech.no	+4751313440	+4795895207
Egil Grude Haaland	egil@timech.no	+4751313440	+4792443293
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 4 Turnover MNOK (2016) 8,2

Description of Company

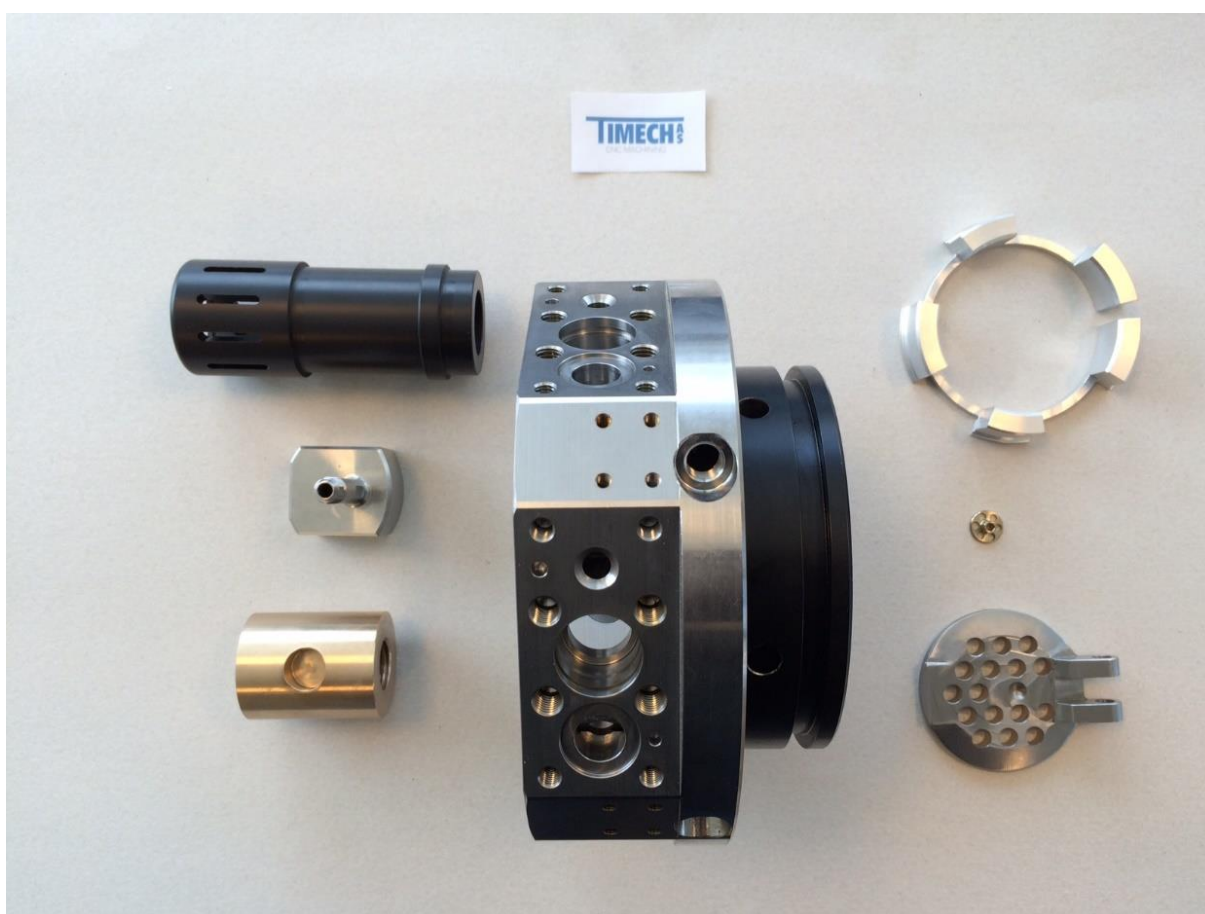
CNC machining, project administration

Relevant certification

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Legg til bilde av produksjonslokale eller relevante produkt



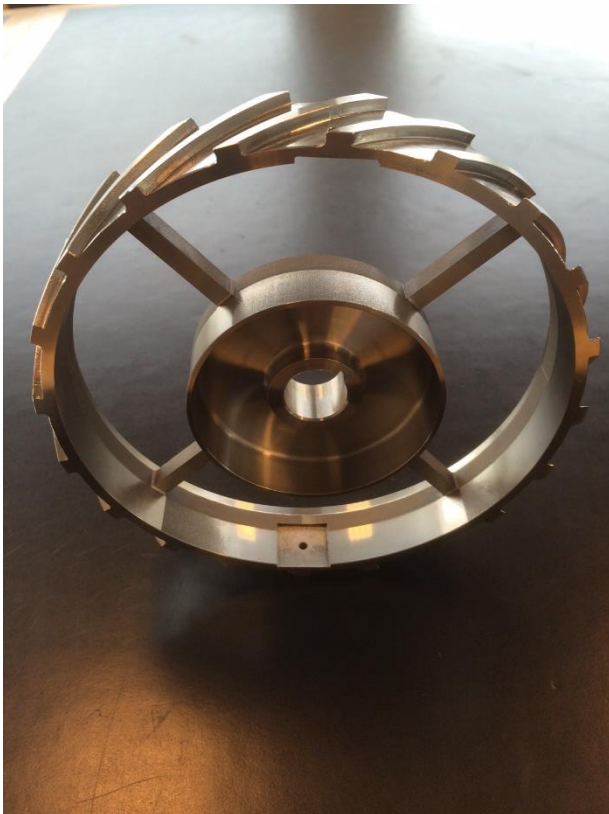
Various parts in materials POM, Bronse, stainless steel, inconel, aluminium.

We have considerable experience in machining all kinds of materials; plastics, steel - low and high alloy, stainless, titanium different grades, bronze different qualities, aluminium.

Machining capabilities and preferences : Diamater 0-400 MM, length up to 1500 MM



Drift pins



Mesh Cage for pump



MACHINE LIST



INTEGREX i2000 shown

2014 model Mazak Integrex i200. Auto tool changer and 72 tool storage magazine. Machining length 1000MM, 10" chuck and tail stock. 5 axis multi-tasking machine.



2007 model Mazak QT 350 MY, 12 station driven tool turret, Y-axis for off-center milling. Turning length 1500MM, 12" chuck, steady rest and tail stock.



2001 model Mazak SQT 300M turning machine with driven tool turret, 12" chuck and tail stock. 1000MM turning length.



Company Name:

Web: www.ultratech.biz

Ultra Technology AS

Address:

Bedriftsvegen 18
4353 klepp st
Norway



Telephone number:

+4792202911

Contact person	E-mail	Telephone	Mobile phone
Stig Seglem	stig@ultratech.biz	+4793044512	+4793044512
Click here to enter text.	Click here to enter text.	Number	Number
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 10 Turnover MNOK (2016) 11,6 mill NKR

Description of Company

About Ultra Technology AS

Ultra Technology AS was established in September 2004 by Stig Seglem & Atle W. Kydland

In 2007 Stig bought Atle's holdings and has since expanded its operations with more equipment and staff. Overall, the company today has 6 lathes and 3 mills. These you can read more about in "Machines". In total, Ultratech currently has 10 employees, including one apprentice and one part-time employee.

Stig Seglem has 22 years experience from the field. Previous he has worked as an CNC operator at Klepp Mek. AS, Tranberg AS and at NH Machining AS.

The firm will as stated in the name be one of the best companies in Rogaland in machining/engineering of small and medium details. We focus on high precision, finish and delivery on time.

Relevant certification

Achilles certification 2016



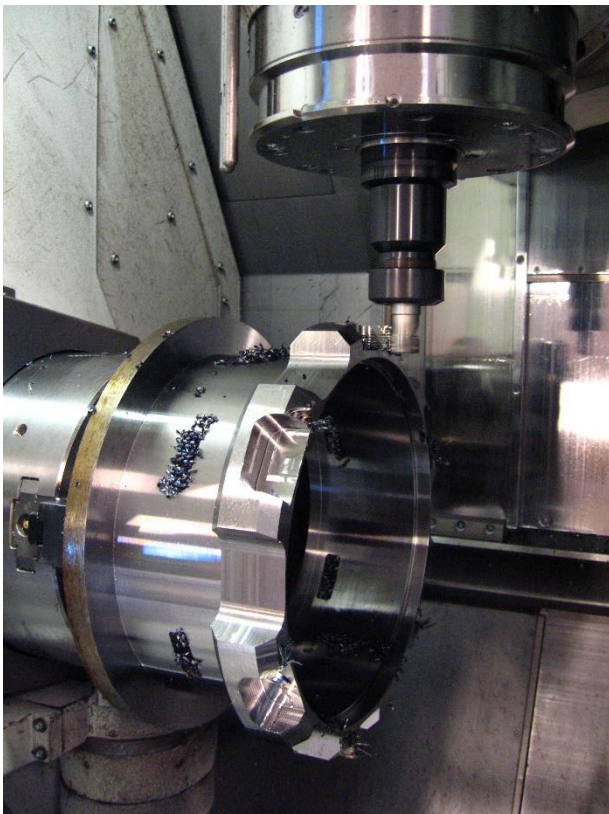
Legg til bilde av produksjonslokale eller relevante produkt



Mazak 250 MSY- Turnig/milling-Barfeeder & Robot



Stainless steel Fittings



Aisi 4145- conector ring in Integrex 400



Machines

Mazak Integrex 200-III.

Maximum machining diameter Ø 660mm.

Maximum machining length 1016mm.

Bar work capability Ø 65mm.

Movement stroke Y +/- 80mm.

Bar feeder

Mazak Nexus 200-MSY.

Maximum machining diameter: Ø380 mm.

Maximum machining length: 575mm.

Bar work capability: Ø 65mm.

Movement stroke Y: +/- 50mm.

Bar feeder up to: ø 65mm.

Mazak Integrex 400-IV MATRIX.

Maximum machining diameter: Ø 760mm.

Maximum machining length: 1524mm.

Bar work capability: Ø 102mm.

Movement stroke Y: +/- 115mm.

Mazak Nexus VCN510C-II.

X axis=1050mm.

Y axis=510mm.

Z axis=510mm.

Spindel speed=12000 rpm.

Robojob

Fast setup time

Automatic tray

Interchangeable jaws

Adjustable jaws

Safety laser scanner

Rotary head with two chucks

Automatically shuts off

Mazak Nexus 200-II MY

Maximum machining diameter: Ø 380mm.

Maximum machining length: 541mm.

Bar work capability: Ø 65mm.

Movement stroke Y: +/- 50mm.

Bar feeder.

Mazak Nexus 250 MSY.

Maximum machining diameter: Ø380 mm.

Maximum machining length: 575mm.

Bar work capability: Ø 75mm.

Movement stroke Y: +/- 50mm.

Bar feeder up to: Ø 75mm

Mazak Nexus 200-II M

Maximum machining diameter: Ø 380mm.

Maximum machining length: 541mm.

Bar work capability: Ø 65mm.

Bar feeder.

SIC marker with B-Axis

With B-Axis and P120 marking gun

Haas TM-P1

X axis=762mm.

Y axis=306mm.

Z axis=406mm.

Spindel speed=6000 rpm.

Haas VF-0E

X axis=760mm.

Y axis=400mm.

Z axis=500mm.

Spindel speed=7500 rpm.

Danobat saw

Bianco saw mod. 330. for Ø255
2004. Model.



Company Name:

Web: www.westcontrol.com

Westcontrol as

Address:

Breivikvegen 7
4120 Tau
Norway



Telephone number:

+47 51741000

Contact person	E-mail	Telephone	Mobile phone
Lars Kåre Nag	Larskare.nag@westcontrol.com	+47 51741000	+47 95828408
Bjørnar Nærland	bjornar@westcontrol.com	+47 51741000	+47 95784216
Click here to enter text.	Click here to enter text.	Number	Number

Number of Employees 135 Turnover MNOK (2016) 220

Description of Company

WESTCONTROL AS is an electronic systems house, and machining centre, which supplies services as: machining and surface treatment, software and hardware electronics development, proto-series, contract manufacturing of small, medium and large-scale series, assembly and testing. We also employ a automation department.

WESTCONTROL is currently comprised of one company located in two places in Rogaland. With a history that dates back to 1946, we have built up many years of experience in developing and manufacturing electronic based solutions. In the beginning, the idea was to make high quality products that could be used by the maritime industry and agriculture in particular. Today WESTCONTROL is a turnkey supplier that can design, develop and manufacture new products for the majority of industries and applications based on an idea.

Products that have been manufactured by us can be found in your own living room, a helicopter, the bridge of a ship, downhole and offshore subsea!

WESTCONTROL is located in the following places:

Tau: Head office, development, electronics manufacturing and assembly

Egersund: Electronics manufacturing, machining and assembly

Production lines consist of:

Laser Engraving of PCB's

SPI (Paste Inspection)

SMD Lines (MYDATA and Fuji)



Reflow Soldering

AOI's

Storage Towers

Wave Solders for THM (Ersa and SEHO)

Selective Soldering Machine

X-ray Inspection (Dagestan)

PCB Cleaning Machine

Clean Testing for PCB

Relevant certification

IPC-610 E certified personel (recertification every two years). Visual Inspection electronics

IPC-J-STD-001 E certified personel (recertification every two years). Process standard

IPC-620 certified personel (recertification every two years) Cableharness

7711/21 certified (recertification every two years). Rework

ISO 9001

ISO/IEC80079-34



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Testing Linux
HW-Digital HART
X-ray inspection Low/medium mix J-STD-001 Manufacturing
PCB-layout High Speed P IPC-A-610 ATEX
HW-Analog Development Z-Wave
Compilation Industrialisation Programming EMC
FPGA Prototyping Embedded GUI-programming
High Temp Windows



WET equipment list

Equipment/function	Spec./model
Dry cabinet	Ghibli II
Storage Tower	Mydata Tower 2000
Screen printer	Speedprint 210
Screen printer	Speedprint 720
Screen printer	Ekra II
SPI	Koh young KY8030-3
Pick & place machine	Mydata MY12
Pick & place machine	Mydata MY100DX
Pick & place machine	Fuji AIMEX2S
Reflow ovn	Ersa Hotflow 2 / 12
Reflow ovn	Rehm V8
Reflow ovn	Rehm VXP 734
Laser	Koh Young ALMC-100
AOI	Cyberoptics Flex Ultra HR
AOI	Cyberoptics Flex Ultra
AOI	Cyberoptics QX 600
PCB Cleaning	Compaclean III
Selective soldering	Ersa versaflow 3
Wave soldering	Seho 8140 PCS
Wave soldering	EWS 330
Assembly Robot	Universal UR10
2-K Moulding Machine	Fritz Giebler 2-K-DOS
PC based test systems	
Boundary Scan	
Functional test systems	Custom specified
Burn-in chambers	
RF/Microwave instruments	Various
DMMs, Oscilloscopes, powers, etc	Various
mΩ Hi Tester	Hioki 3540
Hi Insulationtester	Hioki 3455
Converter AC AC 0-270V/45-500Hz	Elgar CW801
Function Generator 2,5kHz-1,5GHz	
Radio Test Set	IFR 2965
RF Network Analyzer	
Protocol Analyzer	LineEye L2500
Spectrum analyzer, Rohde & Schwarz	FSP 9kHz - 3GHz
Programmer Stand Alone	Superpro 3000U
X-ray	Nordson Dage Diamond
Power DC 200V/4A – 400V/2A	Delta Elektronika SM400
Pulse Generator 165-330MHz	Agilent 8110A