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MAINTENANCE & HYDRAULIC TOOLS FOR BEARINGS AND TRANSMISSION PARTS



www.begaspecialtools.com



The bearing is at the heart of the triangle. We have specialized in the development and supply of industrial special tools for the Monitoring, Mounting and Dismounting of bearings and transmission parts. In our philosophy, they are inseparable.

MAINTENANCE AND HYDRAULIC TOOLS FOR BEARINGS AND TRANSMISSION PARTS

Bega Special Tools manufactures and distributes special tools for the safe and cost-effective mounting and dismounting of bearings and transmission parts. The tools are used in production and maintenance departments in MRO and OEM companies. We serve all types of industries, offering special solutions for the Wind, Rail, Mining and Steel industries. We aim to improve the quality of maintenance and installation of rotating parts in machines, thus extending their economic life.

BETEX® is a registered trademark of Bega International bv.



Dear reader,

In this catalogue you will find our BETEX® tools programme for maintenance (MRO) and production (OEM).

MOUNTING	: induction heaters (low and middle frequency), electrical heaters, mounting tools
DISMOUNTING	: mechanical and hydraulic pullers up to 150 tonnes, various auxiliary tools
HYDRAULICS	: cylinders, pumps, jacks, workshop presses
ALIGNMENT & MONITORING	: shims, alignment computers, checkers for bearings, temperature, noise, vibration
LUBRICATION	: Perma automatic lubrication systems (catalogue on request)



For further information and details of a nearby dealer,
please contact: sales@bega.nl.

BETEX® INDUCTION HEATERS

Bega develops, manufactures and sells a wide range of BETEX® induction heaters for professional use in industry and industrial services.

Our induction heaters are used around the world, are reliable and user friendly.

- Standard and TURBO heaters (low frequency) are used to heat bearings and other transmission components for mounting purposes.
- MF Quick-Heaters (middle frequency) are used to heat all kinds of parts for mounting and dismantling purposes.

OUR RANGE INCLUDES

- Portable models
- Benchtop models
- Roll-around models
- Heavy-duty models
- Custom-made models
- Middle frequency models for mounting and dismantling.



ADVANTAGES OF BETEX® INDUCTION HEATERS

- ✓ Safety first!
- ✓ Environmentally friendly: no smoke, no open flames, no fumes, no oil waste.
- ✓ The energy saving alternative to traditional methods.
- ✓ Evenly distributed heating: the microprocessor controlled electronics prevent overheating and explosive heating.
- ✓ Robust design for working in industrial environments.
- ✓ For sealed (2RS-ZZ) and pre-lubricated bearings.
- ✓ Automatic power reduction.
- ✓ Automatic demagnetisation to $<2A/cm$.
- ✓ Automatic reheat mode.
- ✓ Unique, user-friendly swivel-arm construction.
- ✓ Suitable for continuous use (24/7).
- ✓ Designed for MRO and OEM departments.
- ✓ 3-year warranty on electronic unit.
- ✓ Large choice from STANDARD and TURBO series, from 3.6 to 100 kVA.
- ✓ TURBO models: high output, very energy efficient.
- ✓ Solutions based on more than 40 years of experience.
- ✓ Complying with CE and IEC requirements.

BETEX® INDUCTION HEATERS

WHY USE INDUCTION HEATING?

Induction heating is a superior, fast and controlled heating method. It is a safe and environmentally-friendly alternative for traditional heating methods such as ovens, oil baths or blow torches. These methods cause smoke, fumes or oil waste and are hazardous for personal health and safety.

FOR BEARINGS AND OTHER COMPONENTS

BETEX® induction heaters are versatile and can be used for the heating of gear wheels, bushes, couplings, etc. It is common knowledge that a correct mounting method extends bearing life. Even, tension-free heating prevents unnecessary damage and retains original lubrication. Ideal for sealed bearings (2RS-ZZ) and pre-lubricated bearings.

TEMPERATURE OR TIME CONTROLLED HEATING

Digital electronics ensure optimum control during the heating process, automatically regulating the most efficient use of power and ensuring even and rapid heating. No extra steps are necessary. This prevents explosive heating (no discoloration or pitting of material).

DEMAGNETISATION

Fail-safe demagnetisation is essential for bearings and transmission parts. The proven quality of BETEX® induction heaters guarantees maximum demagnetisation (< 2A/cm). This has a major positive effect on the life span of bearings, gears, etc.

ENERGY EFFICIENT

All BETEX® induction heaters are energy efficient in comparison with classic methods. The advantage of the TURBO series over the Standard series is that larger components can be heated in a relatively short time while consuming the same amount of energy.

DEPENDABLE QUALITY

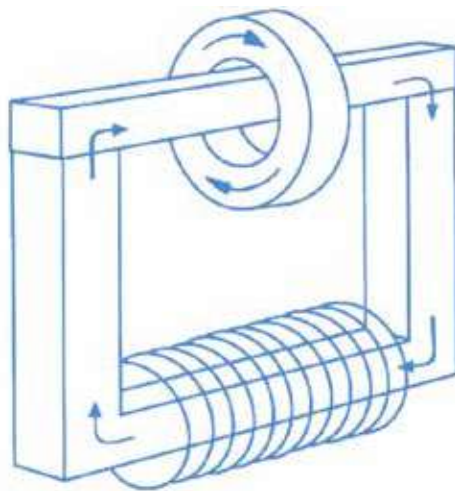
BETEX® induction heaters are proven to be reliable. Their sturdy styling and user-friendly design guarantees sustained, problem-free operation in an industrial environment. Our Standard series heaters are low frequency (50/60Hz). We also make use of the middle frequency (< 20kHz) principle for combined mounting and dismantling applications.

SERVICE & WARRANTY

Our expertise and experience ensure quality, reliability, professional advice and outstanding service. BETEX® induction heaters are supplied with clear instructions and a 3-year warranty on the electronic components.

WORKING PRINCIPLE

The heater works by inducing a (low frequency) current in the part to be heated. This is achieved by incorporating the component as a secondary winding in a transformer. The primary winding is connected to the mains power by means of an electronic control. The magnetic field induces a high current (short circuit current) through the component which consequently becomes hot. The work piece is automatically demagnetized after each heating cycle.



STANDARD or **TURBO**?

TURBO models offer low energy consumption combined with high output as an added advantage.
 The maximum **TURBO** effect is achieved with heating in the horizontal position!

Comparison of heating times, Standard and TURBO induction heaters						
Heating in horizontal position, to 110°C, in minutes						
Bearing no.	22322	22332	23148	22348	175296	gearwheel
Weight kg	18 kg	50 kg	64 kg	145 kg	220 kg	300 kg
Bore/OD mm	110/240	160/340	240/400	240/500	350/580	210/600
ELD 3.6 kVA 230V.	30.00	--	--	--	--	--
24 RLDi TURBO 3.6 kVA, 230V	03.47	23.00	--	--	--	--
22 ESDi 3.6 kVA, 230V	07.45	27.20	49.00	--	--	--
24 RSDi TURBO 3.6 kVA, 230V	--	06.03	19.20	47.00	--	--
38 ESD 8 kVA, 400V	02.58	07.10	11.50	31.20	--	--
40 RSD TURBO 8 kVA, 400V	--	02.00	03.58	07.10	26.50	15.00
38 ZFD 12 kVA, 400V	--	10.40	10.38	22.15	39.50	48.45
40 RMD TURBO 12 kVA, 400V	--	--	01.45	02.35	08.40	06.35

Heating times are subject to the relationship between:

- Minimum bore and maximum outside diameter, width, weight
- Required temperature and material type
- Available power



- All heaters are supplied with:**
- Instruction manual
 - Heat resistant gloves 250°C
 - Magnetic temperature probe (240°C)
 - Vaseline for maintenance
- Optional:
- Trolley
 - Adapter yokes
 - Heat resistant gloves 300°C
 - Magnetic temperature probe (350°C (higher on request))

The TURBO effect only works when the component is in a horizontal position

BETEX CONE HEATER, CH SERIES

For the heating of bearings, enabling easy mounting by means of shrinkage fitting.

Using the correct mounting method extends the bearing's life. Electrical heating is a safe alternative for traditional heating methods such as hammers, oil baths or blow torches. Suitable for the heating of gear wheels, bushes, couplings and other round metal components.

The affordable alternative!

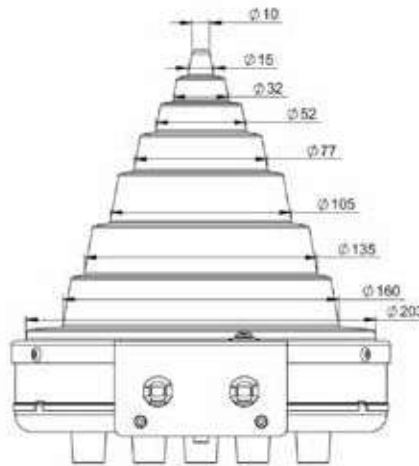
If your budget is limited, then the BETEX Cone Heater is an affordable alternative to other heating systems. Easy to use and suitable for various sizes. In a lightweight aluminium housing. For quick and even heating.

Advantages:

- Easy-to-use, just plug in and switch on
- Light weight, easy to move around
- Reliable & flexible
- Safe & clean operation

Models with thermometer (CHC)

- With preset temperature 120°C / 248°F
- With temperature hold: the unit will keep the bearing at preset temperature.



Standard	diameter Ø
mm	inch
10	0.39
15	0.59
32	1.26
52	2.05
77	3.03
105	4.13
135	5.31
160	6.30
203	7.99

Note: intermediate sizes also fit

Type BETEX Cone Heater	CHU	CHC
Art. No.	360600 - 120V 360610 - 230V	360700 - 120V 360710 - 230V
Power	725W	725W
Voltage/Amp;	120V / 6A 230V / 3.2A	120V / 6A 230V / 3.2A
Frequency Hz	50/60Hz	50/60Hz
Max. weight ± kg	5-7 kg	5-7 kg
Min. ID Ø, mm	10	10
Max. ID Ø, mm	203	203
Max. OD Ø, mm /	305	305
Temperature control in °C and °F Fixed temperature	-	120°C / 248°F
Heat retention function	-	Yes
Dimensions mm / " LxWxH	365x220x240	365x220x240
Weight heater kg / lbs	2.4 kg	2.6 kg

PORTABLE

BETEX iDuctor - handheld induction heaters

The ultimate tool for flameless heating

The BETEX iDuctor is a new professional type of induction hand tool. All sorts of metal parts, such as drive components, bearing housings, bolts, nuts, pipes and small surfaces can be heated locally. Thanks to the precise heating the surroundings retain a normal temperature. Stuck parts that are heated will expand and loosen. Also for removing decals and coating layers.

BETEX iDuctor 1 - 1200W



This is an ideal solution for stuck nuts and bolts, where often a conventional blow torch or grinder are used. Using an open fire entails some form of risk and may cause pollution. A grinder can spark and cause damage to the area surrounding the part. All in all, workplaces become much safer, cleaner and faster with the iDuctor 1!

As standard the BETEX iDuctor comes in a handy carrying case, a 2-meter long flexible 'wrappable' inductor and a set of heat-resistant gloves (250°C).

✓ *New*



BETEX iDuctor 2 - 2300W

New iDuctor 2 – 2300W

This is the only induction handheld tool in the market with a capacity of 2300 Watt!

The iDuctor 2 can heat larger and heavier components even faster. No open fire and the time savings are considerable.

Advantages

- Ergonomic design
- Time savings
- Cost savings
- Convenient
- Can be operated with one hand
- No open fire
- Safe to use
- Versatile
- For hard to reach locations
- Maintenance free.



PORTABLE

BETEX iDuctor - handheld induction heaters

Optional

- Set of 9 inductors, consisting of 8 induction spirals in sizes min/max ID: 18-52 mm (bolt sizes M8- M30) and 1 U-inductor,
- ID 160 mm; all easy to exchange
- Flexible inductor with iDuctor 1: 1,1 mtr
- Flexible inductor with iDuctor 2: 2,5, 3, 3,5 mtr
- iD-pad for heating flat surfaces to remove coating layers, decals
- Heat resistant gloves up to 300°C

Spirals and flexible inductors



iD-pad





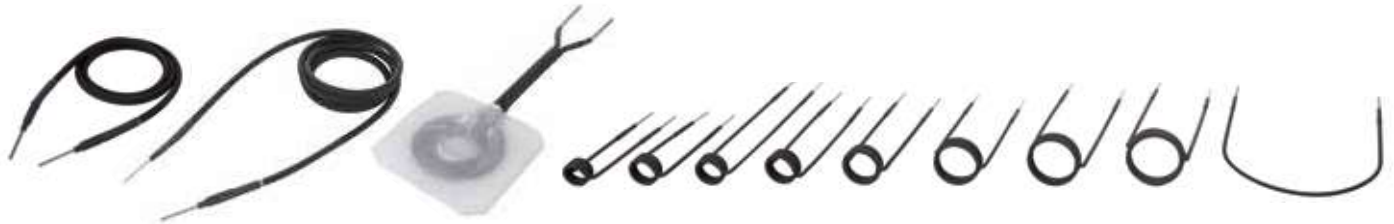
Both devices are supplied in a handy carrying case, including a 2,0 meter flexible inductor and heat resistant gloves (250°C)

Flexible inductor for heating different kinds of parts



TECHNICAL DETAILS - iDuctors, handheld

				
	Art. no.	Description	Art. no.	Description
	231101	iDuctor 1, 230V CE	231301	iDuctor 2, 230V CE
	231102	iDuctor 1, 120V CE, incl trafo	231302	iDuctor 2, 120V CE, incl trafo
	231103	iDuctor 1, c(UL)us 120V incl trafo		
Voltage/Amp/Hz		230V/6A, 50/60Hz		230V/12A, 50/60Hz
Power		1200W		2300W
Thermal protection		yes		yes
Error code		yes		yes
Cooling fan		yes		yes
Microprocessor controlled, automatic power control in case of overload or overheating.		yes		yes
LED lighting		yes		yes



iDuctor 1				
Description	Art. no.	Conductor thickness mm	Length mm	Temperature insulation
Inductor 1.1 mtr	231202	3,5	1100	650°C
Inductor 2.0 mtr	231203	3,5	2000	650°C
IDpad	231205	3,5	-	250°C
Inductor set 9 pcs.	231204	3,5	-	250°C
iDuctor 2				
Description	Art. no.	Conductor thickness mm	Length mm	Temperature insulation
Inductor 2 mtr	231203	3,5	2000	650°C
Inductor 2.5 mtr	231217	3,5	2500	650°C
Inductor 3 mtr	231218	3,5	3000	650°C
Inductor 3.5 mtr	231219	3,5	3500	650°C
IDpad	231205	3,5	-	250°C
Inductor set 9 pcs.	231304	3,5	-	250°C

Inductor sets consist of:

iDuctor 1 - Induction coils: M30, M24, M20, M16, M12, M10, M10, M08, (conductor thickness 3.5 mm), Ucoil

iDuctor 2 - Induction coils: M30, M24, M20, M16, M12, M10, M10*, M08*, (conductor thickness 3.5* or 5.5 mm), Ucoil

INDUCTION HEATER – light weight

BETEX 24 XLDi portable - heating cap. 10 kg



Light weight induction heater for use in workshops and on site.

- Min. ID Ø: 0 mm
- Max. OD Ø: 180 mm
- Max. width: 50 mm
- Automatic demagnetisation
- Shoulder strap
- No yokes necessary
- **Weighs only 7 kg**

- Max. bearing weight: 10 kg
- Max. weight other parts: 7 kg

Technical details page 27

AREAS OF APPLICATION:

- Technical services
- MRO organisation
- Service engineers

Why use induction heating?

- See page 6, 7 and 8



INDUCTION HEATER – standard

BETEX 22 ELDi portable - heating cap. 20 kg



Portable heater for use in the workshop and on site.

- Min. ID Ø: 10 mm
 - Max. OD Ø: 240 mm
 - Max. width: 120 mm
 - Automatic demagnetisation
 - Automatic power reduction.
 - Including 5 induction yokes
 - Shoulder strap
-
- Max. bearing weight: 20 kg
 - Max. weight other parts: 10 kg

Technical details page 27

AREAS OF APPLICATION:

- Technical services
- MRO organisation

Why use induction heating?

- See page 6, 7 and 8



INDUCTION HEATER – TURBO

BETEX 24 RLDi **TURBO** - heating cap. 50 kg



Portable heater for use in the workshop and on site.

- Min. ID Ø: 10/100 mm
- Max. OD Ø: 380 mm
- Max. width: 130 mm
- Automatic demagnetisation
- Automatic power reduction.
- Including 5 yokes

- Max. bearing weight: 50 kg
- Max. weight other parts: 30 kg

Technical details page 27

AREAS OF APPLICATION:

- Technical services
- MRO organisation

Why use induction heating?

- See page 6, 7 and 8

✓ *High output,
energy efficient!*



The **TURBO** effect only works when the component is in a horizontal position

INDUCTION HEATER – standard

BETEX 22 ESDi - heating cap. 65 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- MRO/OEM sector



Basic bench-top type with swivel arm for use in the workshop.

- Min. ID Ø: 15 mm
- Max. OD Ø: 380 mm
- Max. width: 150 mm
- Automatic demagnetisation
- Automatic power reduction.
- Yokes: set of 3 or 5 sizes

- Max. bearing weight: 65 kg
- Max. weight other parts: 30 kg

Optional:

- Adaptor yokes
- Max. OD Ø: 580 mm

Technical details page 28

Why use induction heating?

- See page 6, 7 and 8

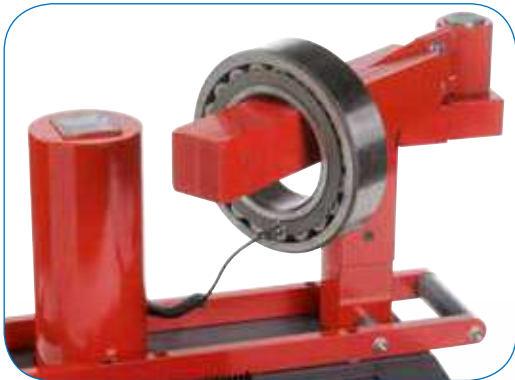


INDUCTION HEATER – TURBO

BETEX 24 RSDi **TURBO** - heating cap. 150 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- MRO/OEM sector



Basic benchtop type with swivel arm for use in the workshop.

- Min. ID Ø: 15/120 mm
- Max. OD Ø: 520 mm
- Max. width: 200 mm
- Automatic demagnetisation
- Automatic power reduction.
- Yokes: set of 3 or 5 sizes

- Max. bearing weight: 150 kg
- Max. weight other parts: 80 kg

Technical details page 28

Why use induction heating?

- See page 6, 7 and 8

✓ High output,
energy efficient!



The TURBO effect only works when the component is in a horizontal position

INDUCTION HEATER – standard

BETEX 38 ESD - heating cap. 150 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- MRO/OEM sector



Medium size benchtop type with swivel arm for use in the workshop.

- Min. ID Ø: 30 mm
- Max. OD Ø: 500 mm
- Max. width: 200 mm
- Automatic demagnetisation
- Automatic power reduction.
- Yokes: set of 2 or 3 sizes

- Max. bearing weight: 150 kg
- Max. weight other parts: 75 kg

Optional:

- Adaptor yokes
- Max. OD Ø: 720 mm

Technical details page 28

Why use induction heating?

- See page 6, 7 and 8



INDUCTION HEATER – TURBO

BETEX 40 RSD / 40 RSDm **TURBO** - heating cap. 350 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- MRO/OEM sector

✓ High output,
energy efficient!

Medium size benchtop type with swivel arm for use in the workshop.

- Min. ID Ø: 30/160 mm
- Max. OD Ø: 790 mm
- Max. width: 315 mm
- Automatic demagnetisation
- Automatic power reduction.
- Yokes: selection of 5 sizes

- Max. bearing weight: 350 kg
- Max. weight other parts: 250 kg

Technical details page 28

Why use induction heating?

- See page 6, 7 and 8

Mobile version
40 RSDm **TURBO**



The **TURBO** effect only works when the component is in a horizontal position

INDUCTION HEATER – standard

BETEX 38 ZFD - heating cap. 300 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- MRO/OEM sector



Roll-around heater with swivel arm and convenient folding operating panel, easier to operate.

- Min. ID Ø: 30 mm
- Max. OD Ø: 720 mm
- Max. width: 340 mm
- Automatic demagnetisation
- Automatic power reduction.
- Yokes: selection of 5 sizes

- Max. bearing weight: 300 kg
- Max. weight other parts: 200 kg

Optional:

- Adapter yokes
- Max. OD Ø: 1080 mm

Technical details page 29

Why use induction heating?

- See page 6, 7 and 8



◀ Folding operating panel from ZFD/RMD/RSD series.

INDUCTION HEATER – TURBO

BETEX 40 RMD **TURBO** - heating cap. 600 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- Railway sector
- MRO/OEM sector

✓ High output,
energy efficient!

Roll-around heater with swivel arm and convenient folding operating panel. easier to operate.

- Min. ID Ø: 60/175 mm
- Max. OD Ø: 920 mm
- Max. width: 365 mm
- Automatic demagnetisation
- Automatic power reduction.
- Yokes: selection of 3 sizes
- Max. bearing weight: 600 kg
- Max. weight other parts: 450 kg

Technical details page 29

Why use induction heating?

- See page 6, 7 and 8



◀ Folding operating panel from ZFD/RMD/IRS series.

The TURBO effect only works when the component is in a horizontal position

INDUCTION HEATER – standard

BETEX SUPER - heating cap. 600 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- MRO/OEM sector
- Wind energy
- Energy plants
- Mining industry



Heavy duty heaters.

- Min. ID Ø: 60 mm
- Max. OD Ø: 900/1300 mm
- Max. width: 400/700 mm
- Automatic demagnetisation
- Automatic power reduction.
- Yokes: selection of 5 sizes

- Max. bearing weight: 600 kg
- Max. weight other parts: 350 kg

Optional:

- electric crane
- enlarged width 700 mm: DL700

NB: these technical data are indicative and dependent on the amount of power and type of heater.

Technical details page 29

Why use induction heating?

- See page 6, 7 and 8



Heating times are subject to the relationship between:

- Min. bore and max. outside diameter, width, weight.
- Required temperature and material type.
- Available power.

INDUCTION HEATER – TURBO

BETEX SUPER TURBO - heating cap. 1200 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- MRO/OEM sector
- Wind energy
- Energy plants
- Mining industry

Heavy duty heaters.

- Min. ID Ø: 175/200 mm
- Max. OD Ø: 1700 mm
- Max. width: 750 mm
- Automatic demagnetisation
- Automatic power reduction.
- Including 1 yoke

- Max. bearing weight: 1200 kg
- Max. weight other parts: 900 kg

NB: these technical data are indicative and dependent on the amount of power and type of heater.

Technical details page 29

Why use induction heating?

- See page 6, 7 and 8

✓ High output,
energy efficient!



The TURBO effect only works when the component is in a horizontal position

INDUCTION HEATER – standard

BETEX GIANT - heating cap. 3500 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- MRO/OEM sector
- Wind energy
- Energy plants
- Mining industry

Heavy duty heaters.

- Min. ID Ø: 85/215 mm
- Max. OD Ø: 1400-2500 mm.
- Max. width: 440-990 mm.
- Automatic demagnetisation
- Automatic power reduction
- Yokes: selection of 5 sizes

- Max. bearing weight: 1500-3500 kg
- Max. weight other parts: 900-2500 kg

Optional:

- electric crane
- enlarged width 700 mm: DL700
- enlarged width 1000 mm: DL1000

NB: these technical data are indicative and dependent on the amount of power and type of heater.

Technical details page 29

Why use induction heating?

- See page 6, 7 and 8



Heating times are subject to the relationship between:

- Min. bore and max. outside diameter, width, weight.
- Required temperature and material type.
- Available power.

INDUCTION HEATER – TURBO

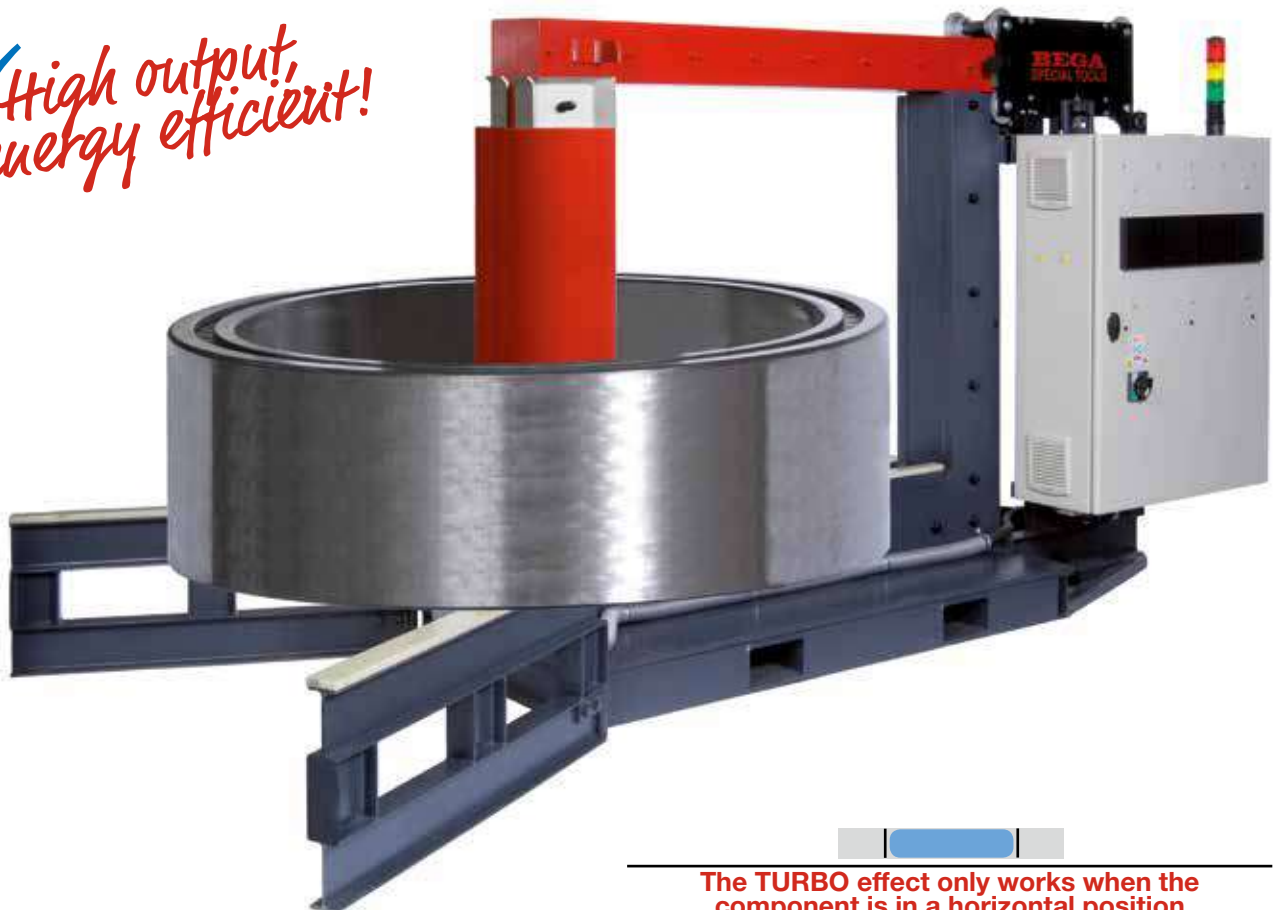
BETEX GIANT **TURBO** - heating cap. 12000 kg

AREAS OF APPLICATION:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox manufacturers
- Machine construction
- Transport sector
- MRO/OEM sector
- Wind energy
- Energy plants
- Mining industry



✓ High output,
energy efficient!



Heavy duty heaters.

- Min. ID Ø: 115 - 240 mm
- Max. OD Ø: 1400-2500 mm.
- Max. width: 450-1020 mm.
- Automatic demagnetisation
- Automatic power reduction
- Including 1 yoke

- Max. bearing weight: 1500-12000 kg
- Max. weight other parts: < 12000 kg

NB: these technical data are indicative and dependent on the amount of power and type of heater.

Technical details page 29

Why use induction heating?

- See page 6, 7 and 8

The **TURBO** effect only works when the component is in a horizontal position



STEEL



MACHINE BUILDING



RAIL/METRO



RAIL/METRO



STEEL



WIND



WIND

TECHNICAL DETAILS - Portable

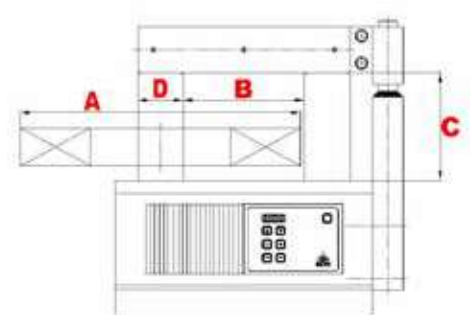


Type BETEX	24 XLDi Portable	22 ELDi Standard Portable	24 RLDi TURBO Portable	
Facility power: standard	1200W	3.6 kVA	3.6 kVA	
Voltage/Amp*: standard	230V/6A	230V/16A	230V/16A	
Voltage/Amp*: optional	120V/15A with trafo	120V/15A	120V/15A	
Frequency Hz	50/60Hz	50/60Hz	50/60Hz	
Yokes, standard mm / set 1	-	7,10,14,20,40	7,10,14,20,40	
Yokes, standard mm / set 2	-	in box	in heater	
Swivel arm	-	-	-	
Max. weight ± kg				
- bearings	10	20	50	
- other drive components	7	10	30	
Min. ID Ø: mm: vertical/horizontal	0	10	10/Ø100	
Max. OD Ø: mm	*A	180	240	380
Max. width, mm	*B	-	120	130
Max. width at horizontal heating, mm	*C	50	-	135
Cross section poles mm	*D	-	40	Ø100
Pole height mm	-	130	165	
Temperature control in °C or °F				
- max reach*	150°C	150°C	240°C	
- magnetic probe	yes	yes	yes	
- digital display	yes	yes	yes	
Time control				
- max reach	0-45 min.	0-30 min.	0-45 min.	
- digital display	yes	yes	yes	
Sound signal	yes	yes	yes	
Error code	yes	yes	yes	
Temperature hold	yes	yes	yes	
Automatic power reduction	-	-	yes	
Automatic demagnetization, <2A/cm	yes	yes	yes	
Thermal protection	yes	yes	yes	
Support for horizontal heating	-	-	yes	
Dimensions mm (lxwxh)	460x240x280	460x240x280	600x220x275	
Weight heater kg	7	21	23	
excl. Yokes		(incl. yokes)	(incl. yokes)	
Electric crane for yokes	-	-	-	
Alarm signal	-	-	-	
Mobile	-	-	-	

Heating times are subject to the relationship between:

- Minimum bore and maximum outside diameter, width, weight
- Required temperature and material type
- Available power

TURBO design: high output, very energy efficient!



TECHNICAL DETAILS - Workshop models

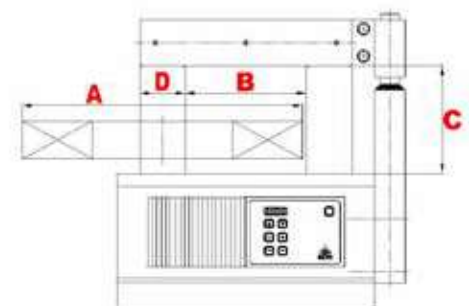


Type BETEX	22 ESDi	24 RSDi TURBO	38 ESD	40 RSD and RSDm (mobile) TURBO
Facility power: standard	3.6 kVA	3.6 kVA	8 kVA	8 kVA
Voltage/Amp*: standard	230V/16A	230V/16A	2 ~ 400V/20A	2 ~ 400V/20A
Voltage/Amp*: optional	120V/15A	120V/15A	2 ~ 500V/16A	2 ~ 500V/16A
Voltage/Amp*: optional			2 ~ 480V/16A	2 ~ 480V/16A
Voltage/Amp*: optional			2 ~ 600V/14A	2 ~ 600V/14A
Frequency Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Yokes, standard mm / set 1	14,30,60	14,30,60	30,70	optional
Yokes, standard mm / set 2	10,14,20,30,60	10,14,20,30,60	20,30,70	20,30,40,60,80
Swivel arm	yes	yes	yes	yes
Max. weight ± kg				
- bearings	65	150	150	350
- other drive components	30	80	75	250
Min. ID Ø: mm: vertical/horizontal	15/Ø100	15/Ø120	30/Ø110	30/Ø160
Max. OD Ø: mm	*A 380/580 *1	520	500/720 *1	790
Max. width, mm	*B 150	200	200	315
Max. width at horizontal heating, mm	*C 125	230	180	280
Cross section poles mm	*D 60	Ø120	70	Ø160
Pole height mm	140	230	210	320
Temperature control in °C or °F				
- max reach*	240°C	240°C*2	240°C*2	240°C*2
- magnetic probe	yes	yes	yes	yes
- digital display	yes	yes	yes	yes
Time control				
- max reach	0-45 min.	0-45 min.	0-60 min.	0-60 min.
- digital display	yes	yes	yes	yes
Sound signal	yes	yes	yes	yes
Error code	yes	yes	yes	yes
Temperature hold	yes	yes	yes	yes
Automatic power reduction	-	yes	yes	yes
Automatic demagnetization, <2A/cm	yes	yes	yes	yes
Thermal protection	yes	yes	yes	yes
Support for horizontal heating	yes	yes	yes	yes
Dimensions mm (lwxhx)	340x290x380	440x370x420	630x365x470	1200x500x650
Weight heater kg excl. Yokes	31	37	53	1200x640x1000(m) 97 RSD / 160 RSDm
Electric crane for yokes	-	-	-	-
Alarm signal	-	-	optional	optional
Mobile	-	-	-	yes (40RSDm)

Heating times are subject to the relationship between:

- Minimum bore and maximum outside diameter, width, weight
- Required temperature and material type
- Available power

TURBO design: high output, very energy efficient!



TECHNICAL DETAILS - Roll around, heavy duty

38 ZFD	40 RMD TURBO	SUPER Standard and DL-700	SUPER TURBO	GIANT Standard and DL-700	GIANT Standard DL-700/DL-1000	GIANT XL TURBO
12 kVA	12 kVA	24 kVA	24 kVA	40 kVA	48, 100 kVA	40, 48, 100kVA
2 ~ 400V/30A	2 ~ 400V/30A	2 ~ 400V/60A	2 ~ 400V/60A	2 ~ 400V/100A	2 ~ 400V/120,250A	2~400V/100,120,250A
2 ~ 500V/24A	2 ~ 500V/24A	2 ~ 500V/48A	2 ~ 500V/48A	2 ~ 500V/80A	2 ~ 500V/100,200A	2~500V/80,100,200A
2 ~ 480V/24A	2 ~ 480V/24A	2 ~ 480V/48A	2 ~ 480V/48A	2 ~ 480V/80A	2 ~ 480V/80A	2 ~ 480V/80A
2 ~ 600V/20A	2 ~ 600V/20A	2 ~ 600V/40A	2 ~ 600V/40A	2 ~ 600V/65A	2 ~ 600V/65A	2 ~ 600V/65A
50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
optional	optional	optional	included	optional	optional	included
20,30,40,60,80	40,60,80	40,50,60,80,100*3	1 yoke	60,80,100,150*3	60,80,100,150,200*3	1 yoke
yes	yes	-	-	-	-	-
300	600	600	1200	1500/2000*3	3000/3500*3	1500/12000*3
200	450	350	900	900/1500*3	1500/2500*3	<12000*3
30/Ø130	60/Ø175	60/85*3	175/Ø200	85*3	85/215*3	115/240*3
720/1080 *1	920	900/1300*3	1700	1400/1700*3	1700/2500*3	1400/2500*3
340	365	400/700*3	750	620/700*3	700/900*3	450/1020*3
290	305 adj. supports 320 fixed supports	390/690*3	600	440/730*3	730/990*3	450/1000*3
80	Ø175	100*3	Ø200	150*3	150/200*3	200*3
340	305	390*3	595	660/740*3	740/1000*3	900*3
240°C*2	240°C*2	240/350°C*2	240/350°C*2	240/350°C*2	240/350°C*2	240/350°C*2
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
0-99 min.	0-99 min.	0-99 min.	0-99 min.	0-99 min.	0-99 min.	0-99 min.
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
1200x640x1000	1200x640x1000	1000x500x1350*3	1600x700x1300	1750x600x1470*3	2150x900x2210*3	2350x1000x1875*3
125	205 adj. supports 185 fixed supports	220/320 kg*3	450 kg (incl. yoke)	660/800 kg*3	800/1700 kg*3	1800 kg*3
-	-	optional	-	optional	optional	optional
optional	optional	optional	optional	optional	optional	optional
yes	yes	optional	optional	optional	optional	optional

*1 With adaptor yokes, only available for the Standard models

*2 On request: 350°C, with heavy duty sensor and extra isolation

*3 Subject to power and execution



On request: other voltage / amperage / higher temperature up to 480°C

Reference list available on request

For more information: www.begaspecialtools.com

TURBO: *High output,
energy efficient!*

Rail transport

Bega has offered many solutions in the area of heating components in the rail transport sector.

The most important advantages for our customers are:

- Time and energy efficient.
- Can be immediately deployed, no pre-heating time needed.
- Controlled heat, no quality loss.
- Fast, safe, clean, stress-free heating.
- Environmentally friendly, no flames, smoke or noise.
- Capacities and types to the client's requirements.

References available on request.

For more information: www.begaspecialtools.com



BETEX GIANT TURBO
For heating wheels for subways, trams, trains and locomotives.



◀ BETEX GIANT

Client: manufacturer of bogie sets
Component: train wheel
Weight: 330 kg
Max. temp.: 240°C
Required time: 27 minutes
Optional: slide-in induction yoke

BETEX 40 RSDm TURBO 8 kVA ▲

Client: manufacturer of drive systems for trains
Component: gearwheel
Weight: 150 kg
Max. temp.: 150°C
Required time: 35 minutes



▶ BETEX GIANT ▲

Client: supplier of rail components
Component: rail track
Max. temp.: 250°C
Required time: 7 minutes

Wind energy

Bega has been supplying induction heaters for many years for the sustainable manufacture of wind turbines. Here we show some examples of successful projects with manufacturers and suppliers in this sector.

The most important advantages for our customers are:

- Time and energy efficient.
- Can be immediately deployed, no pre-heating time needed.
- Controlled heat, no quality loss.
- Fast, safe, clean, stress-free heating.
- Environmentally friendly, no flames, smoke or noise.
- Capacities and types to the client's requirements.

For more information: www.begaspecialtools.com



BETEX GIANT *TURBO* 48-100 kVA

BETEX GIGANT XL ▼

Client: manufacturer of wind turbines
Component: stainless steel ring
Weight: 1100 kg
Temp.: 270°C
Time: 3 hours

BETEX GIGANT ▼

Client: manufacturer of wind turbines
Component: (main) bearing
Temp.: 120°C
Time: 25 min.

BETEX GIANT *TURBO* ▼

Client: supplier of wind turbine components
Component: bearing housing
Weight: 4300 kg
Temp.: 90°C
Time: 55 min.



Machine tool industry

Our large heaters are very suitable for heavy and large components where safe, rapid and stress-free heating is a priority.

Bega Special Tools designs and produces customised, powerful and sturdy heaters for various industrial environments on request.



BETEX GIGANT DL-700



BETEX GIGANT DL-700
References available on request.

◀ BETEX GIGANT DL-1000

Client: manufacturer of steel sections
Component: section roller
Weight: up to 12000 kg

This company was using blow torches and was looking for an environmental friendly method. Opting for induction heating was obvious and satisfied the client's needs in several ways, also due to the controlled and stress-free heating of the sections.



Specials - custom-made

Bega designs and builds custom-made heaters for serial heating of components such as bearings, gear wheels, bushes, rings and aluminium houses of E-motors.

When fast and accurate heating is imperative, these 'Specials' offer surprising solutions. For example, it is possible to integrate them into fully automated production processes, even with a pick-and-place unit if desired.

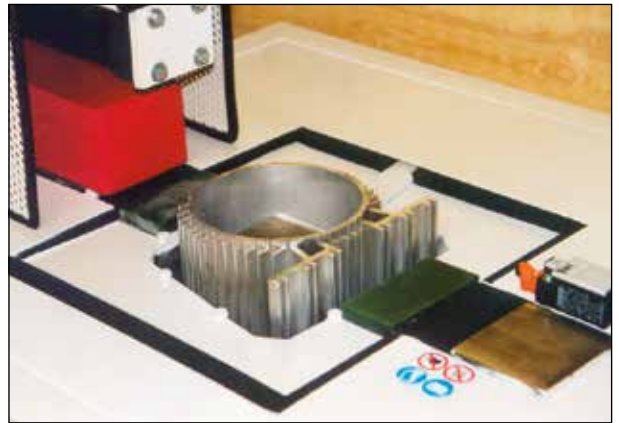
A huge advantage is the use of low frequency (50/60Hz), which costs much less than middle or high frequency solutions.

The most important advantages for our customers are:

- Heating times from 30 seconds to temperatures up to < 300°C.
- Energy-saving production method
- Increase in production capacity
- Safe, rapid, simple operation

References available on request.

For more information: www.begaspecialtools.com



Heating bores in housings
For mounting bearings and pins (including in frames and gearboxes).



INDUCTION HEATERS

Mounting & dismounting

BETEX MF QUICK-HEATERS - MIDDLE FREQUENCY TECHNOLOGY

For mounting & dismounting of bearings, labyrinth rings, bearing inner rings, bearing rings, sleeves, couplings, gears ...

Middle frequency induction heating is a safe and cost effective heating method, which improves the quality of installation or maintenance. This method is fast, simple and energy efficient, compared to conventional methods. Middle frequency technology makes it easier and quicker to transfer effective energy in the work piece. The MF Quick-Heater is a compact model.

This system is also clean and operates very quietly. The MF Quick-Heater saves you time as it can be deployed very rapidly (fewer actions) and heats faster than conventional methods. Energy use is much lower thanks to its more efficient electricity consumption. Each heater is customised to your needs and supplied with required size(s) of inductors.



BENEFITS OF BETEX MIDDLE FREQUENCY INDUCTION HEATERS

- ✓ **Economic:** One device for mounting and dismounting.
- ✓ **Choice between two standard generators:** 22 or 44 kW. Low connection power (32/63 Amp).
- ✓ **Choice** between fixed and/or flexible inductors.
- ✓ **Safe:** Temperature-controlled heating: overheating is not possible because demand is constantly monitored and adjusted if necessary. When the preset temperature is reached, the device will switch off automatically.
- ✓ **Energy efficient operation:** Short heating times and process optimization.
- ✓ **Clean and environment friendly:** No oil, gas, no pre-heating necessary (lower CO2 emissions).
- ✓ **Flexible operation:** Compact and easy to transport on site.
- ✓ **Versatile:** The inductors can be placed both in and around the component. You can also place a component on a flat surface (table model) or work with flexible inductors. The inductors are supplied in various diameters, fixed or flexible according to your requirements.
- ✓ **Smart Inductor recognition:** When a fixed inductor is connected to the generator for a second time, the correct settings are selected automatically. Simply press the START button to get the job done.
- ✓ **Air-cooled:** No need for unreliable water cooling.

INDUCTION HEATERS

Mounting & dismantling

BETEX MF QUICK-HEATERS - MIDDLE FREQUENCY TECHNOLOGY

The smart, eco-friendly way of heating

Middle frequency induction heating is a superior, fast and controlled heating method. It prevents unnecessary damage to parts and reduces wear and tear.

1. Steel industry

Couplings were removed using a 22 kW generator and a flexible inductor. In 3 minutes temperature of 100°C was reached. The old method lasted 2 hours so time saving was tremendous. The new method also caused improvement in working conditions: cleaner and quieter!

2. Rail/Metro industry

Easy disassembly of inner rings, NU-NJ bearings, labyrinth rings. Perfectly even heating results in a safe, fast and clean job.

3. Machine building, gear & drive systems

Flexible inductors are used to heat the bore of this large cable pulley so the bearing can be installed properly.

4. Paper/printing industry

This printing company could not dismantle bearing sleeves in-house – not without serious damage to part and paper roll – so the job was outsourced. This was not very efficient as it involved transport back and forward, costs for getting the job done etc. The customer can now do the job on location with their own MF Quick-Heater and is rapidly earning back the investment.



1.



2.

MOUNTING & DISMOUNTING

- Bearings
- Labyrinth rings
- Bearing inner rings
- Bearing rings
- Bearing housings
- Rollers
- Pipes
- Train wheels / rims
- Sleeves
- Couplings



3.



Flexible inductors may be used IN or AROUND a part.



4.

Find more application examples on www.begaspecialtools.com/industries

INDUCTION HEATERS

Mounting & dismantling

BETEX MF QUICK-HEATER 2.5

- Compact design with digital 3.5" display
- Middle frequency technology
- Choice between 2 generators: 22 or 44 kW
- Smart electronics ensure optimal operating frequency
- Adjustable power control
- Dual temperature sensing (monitoring ΔT)
- Choice between fixed or flexible inductors

✓ *New Generation
2.5!*



22 kW



44 kW

Technical specifications on pag 40–41

- For mounting, dismantling and preheating
- Suitable for steel, cast iron, stainless steel and titanium
- Controlled heating by temperature or time
- Low connection power (32/63 Amp)
- Generators adjustable from 2.5 - 44 kW
- Easy to use, flexible and compact
- Suitable for production and maintenance applications
- NO: residual magnetism, fire hazard, excessive noise or polluting fumes



Fixed Inductors are used in serial work.
Flexible Inductors have multifunctional applications. Ideal when working with different designs or sizes.

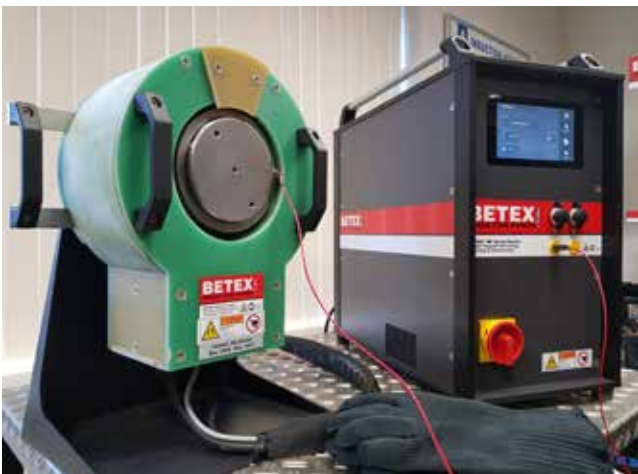
INDUCTION HEATERS

Mounting & dismounting

BETEX MF QUICK-HEATER 3.0

- Compact design with digital 7" display
- Middle frequency technology
- Choice between 2 generators: 22 or 44 kW
- Smart electronics ensure optimal operating frequency
- Adjustable power control
- Dual temperature sensing (monitoring ΔT)
- Choice between fixed or flexible inductors
- ✓ Heats according top reset temperature/time curve
- ✓ Shows temperature development in chart form
- ✓ Option of logging the heating cycle
- ✓ USB connection for software upgrading
- ✓ Login option for remote servicing

✓ *New Generation
3.0!*



Testing

For special applications, we carry out tests in advance with components that you make available to us. And we supply custom jobs where needed.

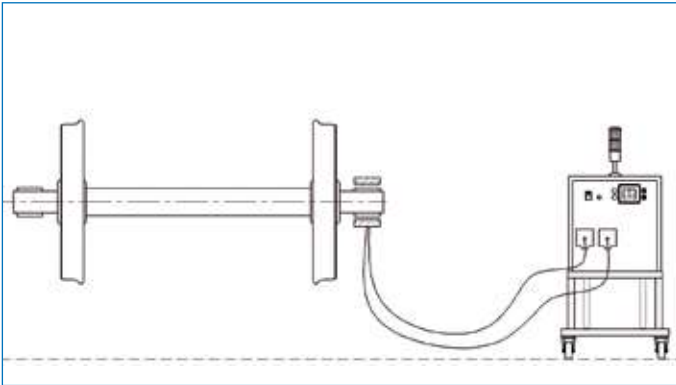
For standard applications, we have a large database with examples of different applications. But we also use simulation programs.

We supply optimal solutions to you so you can enjoy major savings. Measurable savings are realised not just by avoiding any damage to the job in the first place, but also by making it possible to reuse those components!



Request our product questionnaire for sound advice and quotations

MIDDLE FREQUENCY HEATING METHODS

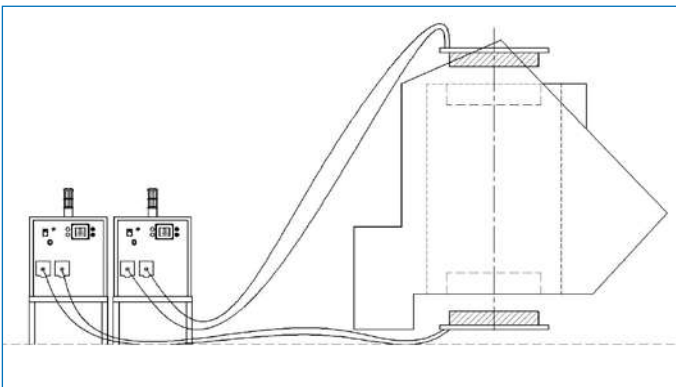


Method 1

- Fixed inductor

Heating with fixed inductor around the component. Energy input from outside to inside.

For bearing rings, pipes and rings.

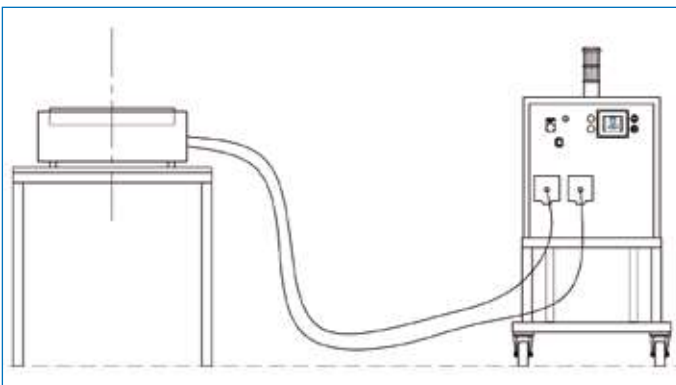


Method 2

- Fixed inductor

Heating with fixed inductor in the component. Energy input is outwards.

For example, bored holes for gearboxes or bearing bores in housings/frames.

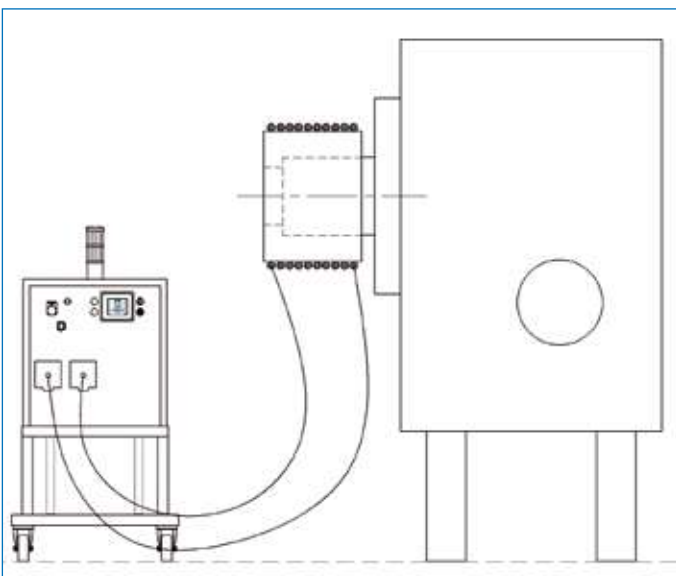


Method 3

- Table inductor

The part is lying flat on an inductor table and is heated in a very short time to the required temperature.

This method is suitable for light products that require serial heating.



Method 4

- Flexible inductor

The flexible inductor is wrapped around a component, for example, a gear coupling which was removed smoothly, with no damage to the shaft.

Suitable for non-cylindrical shapes or extreme dimensions.

*Technical details
page 40-41*





WIND



MRO



POWER PLANTS



MACHINE BUILDING



PAPER/PRINTING



MACHINE BUILDING

TECHNICAL DETAILS - Middle frequency 2.5



Type BETEX	MF Quick-heater 2.5, 22 kW	MF Quick-heater 2.5, 44 kW
Forced air cooling	yes	yes
Power	22kW	44kW
Frequency reach	10-25 kHz	10-25kHz
Voltage/Amperage	3 ~ 400V-32A	3 ~ 400V-63A
Voltage/Amperage	3 ~ 450V-30A	3 ~ 450V-59A
Voltage/Amperage	3 ~ 500V-28A	3 ~ 500V-55A
Voltage/Amperage	3 ~ 600V-23A	3 ~ 600V-45A
Frequency	50/60Hz	50/60Hz
Temperature measurement	for type K thermocouple	for type K thermocouple
Accuracy	± 3,5°C	± 3,5°C
Inductor recognition	yes	yes
Temperature sensor	yes, for max 300°C	yes, for max 300°C
Extra thermo couple input	yes	yes
Dimensions generator LxWxH	600 x 300 x 600 mm	600 x 650 x 580 mm
Weight generator	46 kg	78 kg
Trolley	option	option
Operation:		
Dimensions display	3.5"	3.5"
Heat curve in display	yes	yes
Setpoint power	via touchscreen	via touchscreen
Setpoint temperature	via touchscreen	via touchscreen
Setpoint temperature curve	yes	yes
Setpoint timer	via touchscreen	via touchscreen
Selection operating mode	via touchscreen	via touchscreen
Digital readings temperature	setpoint and actual value on touchscreen	setpoint and actual value on touchscreen
Digital readings time	setpoint and actual value on touchscreen	setpoint and actual value on touchscreen
Digital readings power	actual value on the touchscreen	actual value on the touchscreen
Digital readings frequency	actual value on the touchscreen	actual value on the touchscreen
USB connection	no	no
Network connection	no	no
Heating log	no	no
Signaling by:		
Installation in operational state	green flashing light	green flashing light
Error message	red continuous light/acoustic signal	red continuous light/acoustic signal
End of heating cycle	green continuous light/acoustic signal	green continuous light/acoustic signal

Min. winding diameter flexible inductors 22kW		
Type m / °C	Diameter cable	Min. winding diameter
15/20/25/30 m/180°C	Ø 12 mm	ca. 75 mm
15/20/25/30 m/180°C	Ø 15 mm	ca. 100 mm
15/20/25/30 m/300°C	Ø 20 mm	ca. 120 mm

Min. winding diameter flexible inductors 44kW		
Type m / °C	Diameter cable	Min. winding diameter
15/20/25/30 m/180°C	Ø 19 mm	ca. 140 mm
15/20/25/30 m/300°C	Ø 28 mm	ca. 220 mm

TECHNICAL DETAILS - Middle frequency 3.0



Type BETEX	MF Quick-heater 3.0, 22 kW	MF Quick-heater 3.0, 44 kW
Forced air cooling	yes	yes
Power	22kW	44kW
Frequency reach	10-25kHz	10-25 kHz
Voltage/Amperage	3 ~ 400V-32A	3 ~ 400V-63A
Voltage/Amperage	3 ~ 450V-30A	3 ~ 450V-59A
Voltage/Amperage	3 ~ 500V-28A	3 ~ 500V-55A
Voltage/Amperage	3 ~ 600V-23A	3 ~ 600V-45A
Frequency	50/60Hz	50/60Hz
Temperature measurement	for type K thermocouple	for type K thermocouple
Accuracy	± 3,5°C	± 3,5°C
Inductor recognition	yes	yes
Temperature sensor	yes, for max 300°C	yes, for max 300°C
Extra thermo couple input	yes	yes
Dimensions generator LxWxH	600 x 300 x 600 mm	600 x 650 x 580 mm
Weight generator	46 kg	78 kg
Trolley	option	option
Operation:		
Dimensions display	7"	7"
Heat curve in display	yes	yes
Setpoint power	via touchscreen	via touchscreen
Setpoint temperature	via touchscreen	via touchscreen
Setpoint temperature curve	yes	yes
Setpoint timer	via touchscreen	via touchscreen
Selection operating mode	via touchscreen	via touchscreen
Digital readings temperature	setpoint and actual value on touchscreen	setpoint and actual value on touchscreen
Digital readings time	setpoint and actual value on touchscreen	setpoint and actual value on touchscreen
Digital readings power	actual value on the touchscreen	actual value on the touchscreen
Digital readings frequency	actual value on the touchscreen	actual value on the touchscreen
USB connection	yes	yes
Network connection	yes	yes
Heating log	yes	yes
Signalling by:		
Installation in operational state	light option	light option
Error message	acoustic signal / light option	acoustic signal / light option
End of heating cycle	acoustic signal	acoustic signal



FITTING TOOL SETS

BETEX IMPACT 33 & 39

For safe, precise and quick mounting of bearings, bushings, sealing rings, cam wheels and pulleys the use of an Impact fitting tool set is an absolute necessity.

Specially for bearings it is important that during mechanical mounting the bearing is supported on its inner and outer ring in order to avoid unnecessary damage and premature failure.

In this way mounting forces are not transmitted via balls or rollers of the bearings and hence the raceways are not damaged.

By using the impact resistant plastic collets, made of unbreakable sheet material (instead of easily breaking injection moulded collets), metal to metal contact is avoided and also damaging of the shaft.

The sets can be used for bore diameters of 10 to 60 mm or parts thereof. Impact is also suitable for safe, precise and quick mounting of other machine parts, like bushings, sealing rings, cam wheels and pulleys.

IMPACT 33

- with 3 sleeves
- with 33 rings, suitable for +/- 375 bearings.

IMPACT 39

- with 4 sleeves
- with 39 rings, suitable for +/- 600 bearings.



TIP! Use in combination with Betex induction heaters

FITTING TOOL SETS

BETEX IMPACT 33 & 39

Your benefits:

- Quick, precise and safe mounting
- No more damage to shafts, bearing houses or sealing rings
- Extended life-cycle of bearings
- The impact resistant plastic collets are made of unbreakable sheet material
- The collet numbers are clearly engraved and marked



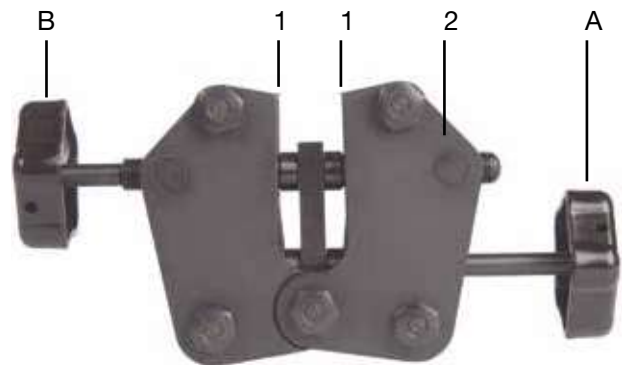
Collets are engraved and marked clearly

Impact	33	39
Art. no.	399900-2	399900-4
Collet bore mm	10-50	10-60
Collet OD mm	26-110	26-130
Sleeve bore mm	18, 32, 52	18, 32, 52, 62
Dead blow hammer	0.7 kg, absorbs shocks and vibrations	
Weight kg	4.8	6.5



KEY-EXTRACTOR

BETEX KZZ



For professional removal of parallel keys.

The Betex KZZ Key-extractor (Item No. 4900011) is used for the safe removal of keys from the shafts of any type of machine, motor, blower, compressor, etc. For keys to 35 mm in width.

Safe!

You no longer need a hammer and chisel.

Advantages

- Safe and fast removal.
- Perpendicular removal. No damage to shafts or keys.
- Shafts remain straight.
- Saves time, labour and costs.
- Jaws are made from specially tempered steel.
- Screw has left and right trapezium thread.

Easy to use

1. Turn wheel (A) to move the jaws (1) up or down so that they are aligned with housing (2).
2. Turn wheel (B) to fit the size of the key allowing ± 1 mm space.
3. Turn wheel (B) **hand tight** to secure the key with the jaws.
4. Then turn wheel (A) to extract the key perpendicularly.
5. Turn wheel (A) to move the jaws down; turn wheel (B) to open the jaws and free the key.

Type	Art. no.	Max. Spread mm	Weight kg
KZZ	4900011	35	2.2

SHIMS

BETEX SOLID STAINLESS STEEL SHIMS

Precut stainless steel shims for fast, simple and precise machine alignment.

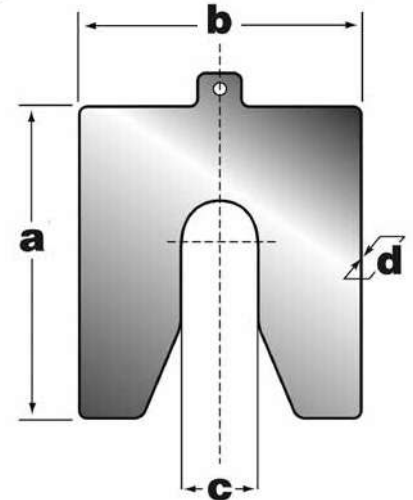
- Available in 6 difference sizes and 11 thicknesses.
- Packed in sets of 10 shims.
- High-quality, non-corroding material.
- The shim's thickness is etched on each shim.
- 31 standard combinations in handy carrying cases.
- Suitable for reuse.

Your advantages:

- You have the right size available for immediate use.
- The shims have been smoothed and have no burrs.
- Precise machine alignment helps you get the best machine performance.
- Stock control is now simpler and easier to verify.
- **Now also available in 2 and 3 mm thickness!**



Packed in sets of 10 shims.



Sizes of solid shims (AISI 304)



	Art. no.	package	a mm	b mm	c mm	d mm	bolt size
MINI	B035005Mn	10	35	30	9	0.05	M8
	B035010Mp	10	35	30	9	0.10	M8
	B035020Mr	10	35	30	9	0.20	M8
	B035025Ms	10	35	30	9	0.25	M8
	B035040Mt	10	35	30	9	0.40	M8
	B035050Mu	10	35	30	9	0.50	M8
	B035070Mv	10	35	30	9	0.70	M8
	B035100Mw	10	35	30	9	1.00	M8
A	B0500025Ak	10	50	50	13	0.025	M12
	B050005An	10	50	50	13	0.05	M12
	B050010Ap	10	50	50	13	0.10	M12
	B050020Ar	10	50	50	13	0.20	M12
	B050025As	10	50	50	13	0.25	M12
	B050040At	10	50	50	13	0.40	M12
	B050050Au	10	50	50	13	0.50	M12
	B050070Av	10	50	50	13	0.70	M12
	B050100Aw	10	50	50	13	1.00	M12
	B050200Ax	10	50	50	13	2.00	M12
B050300Ay	10	50	50	13	3.00	M12	
B	B0750025Bk	10	75	75	21	0.025	M20
	B075005Bn	10	75	75	21	0.05	M20
	B075010Bp	10	75	75	21	0.10	M20
	B075020Br	10	75	75	21	0.20	M20
	B075025Bs	10	75	75	21	0.25	M20
	B075040Bt	10	75	75	21	0.40	M20
	B075050Bu	10	75	75	21	0.50	M20
	B075070Bv	10	75	75	21	0.70	M20
	B075100Bw	10	75	75	21	1.00	M20
	B075200Bx	10	75	75	21	2.00	M20
	B075300By	10	75	75	21	3.00	M20

	Art. no.	package	a mm	b mm	c mm	d mm	bolt size
C	B1000025Ck	10	100	100	32	0.025	M30
	B100005Cn	10	100	100	32	0.05	M30
	B100010Cp	10	100	100	32	0.10	M30
	B100020Cr	10	100	100	32	0.20	M30
	B100025Cs	10	100	100	32	0.25	M30
	B100040Ct	10	100	100	32	0.40	M30
	B100050Cu	10	100	100	32	0.50	M30
	B100070Cv	10	100	100	32	0.70	M30
	B100100Cw	10	100	100	32	1.00	M30
	B100200Cx	10	100	100	32	2.00	M30
B100300Cy	10	100	100	32	3.00	M30	
D	B1250025Dk	10	125	125	45	0.025	M42
	B125005Dn	10	125	125	45	0.05	M42
	B125010Dp	10	125	125	45	0.10	M42
	B125020Dr	10	125	125	45	0.20	M42
	B125025Ds	10	125	125	45	0.25	M42
	B125040Dt	10	125	125	45	0.40	M42
	B125050Du	10	125	125	45	0.50	M42
	B125070Dv	10	125	125	45	0.70	M42
	B125100Dw	10	125	125	45	1.00	M42
	B125200Dx	10	125	125	45	2.00	M42
B125300Dy	10	125	125	45	3.00	M42	
E	B200005En	10	200	200	55	0.05	M52
	B200010Ep	10	200	200	55	0.10	M52
	B200020Er	10	200	200	55	0.20	M52
	B200025Es	10	200	200	55	0.25	M52
	B200040Et	10	200	200	55	0.40	M52
	B200050Eu	10	200	200	55	0.50	M52
	B200070Ev	10	200	200	55	0.70	M52
	B200100Ew	10	200	200	55	1.00	M52
	B200200Ex	10	200	200	55	2.00	M52
	B200300Ey	10	200	200	55	3.00	M52



Case ABCD



Case ABC



Case ABC

31 standard combinations in handy carrying case (other combinations on request)

Art. no	Thickness: Case type:	Number of shims per series / case in various sizes in mm											Total per case
		0.025	0.05	0.10	0.20	0.25	0.40	0.50	0.70	1.00	2.00	3.00	
B020210	AB 10/9		10	10	10	10	10	10	10	10	10		180
B020230	AB 10/10		10	10	10	10	10	10	10	10	5	5	180
B020240	AB 10/11	10	10	10	10	10	10	10	10	10	5	5	200
B020220	AB 20/9		20	20	20	20	20	20	20	20	10		340
B020250	AB 20/10		20	20	20	20	20	20	20	10	5	5	320
B020260	AB 20/11	20	20	20	20	20	20	20	20	10	5	5	360
B020310	BC 10/9		10	10	10	10	10	10	10	10	10		180
B020330	BC 10/10		10	10	10	10	10	10	10	10	5	5	180
B020340	BC 10/11	10	10	10	10	10	10	10	10	10	5	5	200
B020320	BC 20/9		20	20	20	20	20	20	20	20	10		340
B020350	BC 20/10		20	20	20	20	20	20	20	10	5	5	320
B020360	BC 20/11	20	20	20	20	20	20	20	20	10	5	5	360
B020410	CD 10/9		10	10	10	10	10	10	10	10	10		180
B020430	CD 10/10		10	10	10	10	10	10	10	10	5	5	180
B020440	CD 10/11	10	10	10	10	10	10	10	10	10	5	5	200
B020420	CD 20/9		20	20	20	20	20	20	20	20	10		340
B020450	CD 20/10		20	20	20	20	20	20	20	10	5	5	320
B020460	CD 20/11	20	20	20	20	20	20	20	20	10	5	5	360
B020110	ABC 10/9		10	10	10	10	10	10	10	10	10		270
B020100	ABC 10/10		10	10	10	10	10	10	10	10	5	5	270
B020140	ABC 10/11	10	10	10	10	10	10	10	10	10	5	5	300
B020120	ABC 20/9		20	20	20	20	20	20	20	20	10		510
B020130	ABC 20/10		20	20	20	20	20	20	20	10	5	5	480
B020150	ABC 20/11	20	20	20	20	20	20	20	20	10	5	5	540
B020019	ABCD 10/9		10	10	10	10	10	10	10	10	10		360
B020030	ABCD 10/10		10	10	10	10	10	10	10	10	5	5	360
B020040	ABCD 10/11	10	10	10	10	10	10	10	10	10	5	5	400
B020029	ABCD 20/9		20	20	20	20	20	20	20	20	10		680
B020031	ABCD 20/10		20	20	20	20	20	20	20	10	5	5	640
B020032	ABCD 20/11	20	20	20	20	20	20	20	20	10	5	5	720
B020600	E 10/10		10	10	10	10	10	10	10	10	5	5	90

SHIMS

BETEX PEEL-OFF HARD BRASS OR STAINLESS STEEL SHIMS

- Laminated pre-cut shims (peel-off)
- Made of high-quality hard brass or stainless steel to prevent corrosion
- Available in 7 sizes
- 12 peel-off layers (8 x 0.1 mm and 4 x 0.05 mm)
- Burr-free with specially rounded corners
- They always fit! Simply peel off until the right thickness is obtained

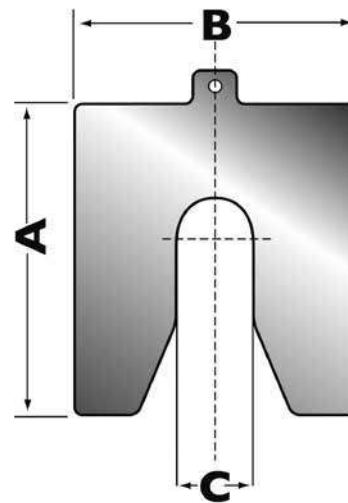
Size of peel-off shims in mm

Art. no.	Material	Package	A mm	B mm	C mm	Bolt size
8125005	HMS	10	35	30	9	M8
812502	HMS	10	50	50	13	M12
8125035	HMS	10	75	75	21	M18
812504	HMS	10	100	100	32	M27
8125045	HMS	10	125	125	45	M36
812506	HMS	10	200	200	55	M52

Art. no.	Material	Package	A mm	B mm	C mm	Bolt size
8125505	STAINLESS STEEL	10	35	30	9	M8
812552	STAINLESS STEEL	10	50	50	13	M12
812553	STAINLESS STEEL	10	75	75	21	M18
812554	STAINLESS STEEL	10	100	100	32	M27
8125545	STAINLESS STEEL	10	125	125	45	M36
812556	STAINLESS STEEL	10	200	200	55	M52

Size of peel-off shims in mm

Art. no.	Material	Dimensions mm
812508	HMS	610 x 1220 x 1.00
812558	STAINLESS STEEL	610 x 1220 x 1.00



TIP!

Use in combination with:
 Toe jacks, page 111-112
 Spreaders, page 114
 Alignment computers: 141 -148

SHAFT ALIGNMENT COMPUTERS

FIXTURLASER LASER KIT

The Fixturlaser Laser Kit consists of two wireless sensor units utilizing two line lasers. The use of line lasers minimizes setup time. To make it even easier, the sensors come pre-mounted on its fixtures and are pre-set to the most common setup.

The free software runs on an iOS or Android tablet, or phone, guiding the user through the entire alignment process. The user interface is entirely graphical and uses no text, no language barriers to overcome.

The software leaves you without any doubt how your machine is aligned and when your job is completed. Reporting is automatic and contains all relevant information.

The Fixturelaser is designed to be used with the free Laser Kit App.



Technical data Fixturlaser Laser Kit		
Art. no.:	780328	Complete system:
Case:		2 Measure units (M5 & S5)
Weight incl. all parts case	2.75 kg	2 V-bracket complete with chain
Dimensions mm (lxwxh)	357x305x96 mm	1 Tape measure 5 m
Displayed resolution	0.01 mm	1 Power supply 1 USB port 5 VDC
Sensor units:		1 Y splitter cable USB A micro
Weight	156 g	1 Universal tool
Dimensions mm (lxwxh)	139x79x40 mm	1 Manual
Measurement distance	70 mm - 850 mm	
Detector	PSD (single axis)	
Detector area	8.5 x 0.9 mm (0.3 x 0.4 inch)	
Measurement accuracy	3% +/- 0.01 mm	
Inclinometer accuracy	+/- 2°	
Wireless communication	Bluetooth tranceiver with multi-drop capability	
Shaft brackets:		
Shaft diameter	ø 30 - 150 mm	
Rods	2 pcs 150 mm	

SHAFT ALIGNMENT COMPUTERS

EASY-LASER® E420

Easy-Laser® is used to align pumps and motors for all types of installations in a variety of industries. Correctly set-up and aligned machines are necessary to reduce energy consumption and achieve optimum service life.

Easy-Laser® E420 sets a new standard in entry level laser systems for shaft alignment. Wireless measuring units, a large 5.7" colour display and an IP65-rated design that withstands harsh environments. These are the features you would normally only find in more expensive systems. Simply put, Easy-Laser® E420 has everything an entry level system should have, and more.

Take the next step into wireless freedom! Using Easy-Laser® E420 makes it easy to measure both horizontal and vertical/flange-mounted machines.

What you can measure and align:

Horizontal machines: horizontally mounted machines often consist of a pump and a motor, but can also include other types of machines such as gearboxes and compressors.

Vertical/flange-mounted machines: vertical and flangemounted machines, e.g. pumps, motors, gear boxes.



- Easy to learn and use.
- Compact measuring units for use on most machine designs.
- All wireless units with integrated rechargeable battery.
- Large 5.7" colour display.
- Programs with both symbols and text = easy to understand.
- TruePSD technology with unlimited resolution.
- Dual PSD, dual laser beams and dual inclinometers for superior control and accuracy.

Technical data E420		
Art. no.	780326	Complete system:
		2 measuring units (M & S)
Measuring unit M / S		1 align computer
Type detector	True PSD 20 mm (0.78")	2 shaft brackets with 2 chains
Communication	Bluetooth / >4 hours	8 rods (4x120 + 4x60 mm)
Measuring errors/ range	<1% / upto 3 m (9.8 feet)	1 measuring tape 3 m / 9.8"
Type laser / Laser class	Diode laser / Safety class II	1 USB memory stick with software + manual
Housing material	Anodized alu PC/ABS	1 DC to USB adapter, for charging
Dimensions / Weight	69x61.5x41.5 mm/ (2.71x2.42x1.6") 176g (6.2 oz)	1 Charger (100-240VAC)
Display unit		1 quick reference manual
Type display	VGA 7.5" colour screen	1 carrying case medium
Battery type/operating time	Li Ion chargeable / ±30h	
Temperature range	-10° - 50°C	
Communication	Bluetooth	
Intern memory	>2000 measurments	
Help functions	Calculator / unit converter	
Housing material	PC/ABS + TPE	
Protection	IP65	
Dimensions / Weight	250x175x63mm (9.8x6.88x2.480.78") / 910g (32oz)	

SHAFT ALIGNMENT COMPUTERS

EASY-LASER® XT440

Easy-Laser® XT440 is the first member of our Generation XT alignment systems, built upon our new cross-platform technology. You can now display the data on a multitude of different handheld devices, giving you the freedom to work with the gear that suits you the best. Simply download the straightforward XT application for free and you have all the measurement programs you need.

- Display data on multiple platforms
- One free app – no license needed
- Maximum flexibility
- Rugged design
- Long operating times
- Unique documentation possibilities
- Use with or without the new user-friendly Easy-Laser® display unit XT11



Technical data XT440		
Art.no.:	With display - 7803190	Complete system:
	Without display - 780320	2 Measuring units (M & S)
Dimensions/ Weight	460x350x175mm (18.1x13.8x6.9") 7.2 kg (15.9 lbs)	2 Shaft brackets with chains and rods
Measuring unit M / S		4 Rods 60 mm / 2.36"
Type detector	True PSD 30 mm (1.2")	1 Measuring tape 3 m / 9.8"
Communication	Bluetooth wireless techn.	1 Hexagon wrench set
Measuring errors/ range	<1% / upto 10 m (33 feet)	1 Charger (100-240VAC)
Type laser / Laser class	Diode laser / Safety class II	1 DC split cable for charging
Housing material	Anodized alu PC/ABS, TPE	1 DC to USB adapter, for charging
Dimensions / Weight	76x76.7x39.3mm (3.0x3.0x1.5") 245g (8.6 oz)	1 Shoulder strap for display unit
Display unit XT11		1 Quick reference manual
Type display	VGA 8" colour screen, backlit LED	1 Cleaning cloth for optics
Battery type/operating time	Heavy duty Li Ion chargeable /16h	1 USB memory with manuals
Communication	Wireless technology, WIFI	1 Carrying case small
Housing material	PC/ABS + TPE	
Dimensions / Weight	274x190x44mm (10.8x7.5x1.7") / 1.450g (51.5oz)	
Cable		
Charging cable	Splitter, 1 m (39.4")	
Brackets		
Shaft brackets	V-bracket for chain width 18mm (0.7"), shaft diameter: 20-150 mm (0.8-6.0") / anodised alu	
Rods	120 mm, 60 mm (4.72", 2.36") extendable / Stainless steel	

SHAFT ALIGNMENT COMPUTERS

FIXTURLASER ECO

Fixturlaser ECO makes professional alignment equipment available to everyone because of its price / quality ratio. The 20 mm detectors and the user-friendly user interface ensure that alignment can be carried out in any situation.

- Integrated Bluetooth
- Pre-mounted sensors
- 4" colour display
- VertiZontal Moves, innovative and time-saving features
- Screen flip
- 8 hours battery time, rechargeable, continuous use
- CCD sensors technology
- Live values during adjustment
- IP65 classified (resists harsh environments)
- Slim wireless sensor units



Technical specifications ECO		
Art.no.:	780346	Complete system:
Weight incl all parts	4,8 kg (10,6 lbs)	1 Fixturlaser DU ECO
Display Unit:		2 Fixturlaser S6 & M6
Dimensions	181 x 106 x 34 mm (7.1 x 4,2 x 2,2 in)	1 Tape measure 5 m
Weight	0.36 kg (12.8 oz)	1 Ext power cable EUR/US 2 m
Display size	4"(102 mm) diagonal 84 x 56 mm (3,3 x 2,2 in)	2 USB cable A-mini B 0,5 m black
Operating time:	8 hours continuous use	2 USB cable A micro B 1,5m black
Sensor/units:		2 V-bracket complete with chain
Weight	M6 200 g (7,5 oz) S6 188 g (6,6 oz)	1 Power supply 4 USB port 5 VDC
Environmental Protection	IP65	2 Universal tools
Measurement Distance	Up to 3 m	1 Manual
Detector	Digital line sensor	
Detector length	20 mm (0,8 in)	
Measurement accuracy	1% +/- 1 digit	
Shaft brackets:		
Shaft diameter	Ø25-175 mm (1in - 6.9in) Ø25-450 mm (1in - 18in) with extension chain	
Rods	4 pieces 150 mm (5,9in)	

SHAFT ALIGNMENT COMPUTERS

FIXTURLASER EVO

The EVO is all about evolved simplicity and user friendliness. The color coded graphic user interface that helps the maintenance professional throughout the alignment process. The EVO offers an extensive shaft alignment package, including the Feetlock function that is useful in base/bolt-mount machine situations.

- Integrated Bluetooth
- 5" compact colour display
- VertiZontal Moves, innovative and time-saving features
- Screen flip
- CCD sensors technology
- True position sensing (TPS)
- Live values during adjustment
- Compact sensor units (33 mm thick)
- 8 hours battery time, continuous use



Technical specifications EVO		
Art.no.	780347	Complete System:
Weight (incl all parts)	5.4 kg (11.9 lbs)	1 Fixturlaser DU EVO display unit
Dimensions	415 x 325 x 180 mm	2 Fixturlaser (M3 & S3)
Display-Unit		2 V-shaft brackets complete
Weight	0.36 kg incl battery	2 Chain 8 mm
Dimensions	181 x 103 x 180 mm	1 Tape measure 5 m
Environmental Protection	IP65	1 Power cable EUR/US 2 m
Display-size	5" (127mm, 5.0 in) diagonal / 111 x 63 mm (4.3 x 2.5 in)	3 USB cable A-mini B 2m, USB cable A mini 0,5 m
Operating time	8 hours continuous use	2 Universal tools
Sensor/Units		1 Power supply EUR/US 2 m
Weight	M3 212 g (7.5 oz) / S3 188 g (6.6 oz)	1 Manual
Dimensions	92 x 77 x 33 mm	
Environmental Protection	IP65	
Measurement Distance	Up to 10 m	
Detector	2nd generation digital Sensor	
Detector length / resolution	30 mm (1.2 in) / 1 µm	
Measurement Accuracy	0,3% ±1 digit (0.3) ±7µm	
Shaft brackets		
Shaft diameter	Ø25 - 175 mm	
With extension chain	Ø25 - 175 mm (1in-6.9in)	
Ø25 - 450 mm (1in-18in)	4 st. 150 mm	
Rods	4 Stck. 150 mm (5,9in)	

SHAFT ALIGNMENT COMPUTERS

FIXTURLASER NXA PRO

A revolution in shaft alignment as well as a revolution in usability with the Fixturlaser NXA Pro - a digital laser based shaft alignment system! The Fixturlaser NXA Pro aims to provide the user with a fast and simple operation, as well as having access to advanced functions and capabilities, such as the OmniView and the VertiZontal Moves, and probably the best power management system in the market place.

- Omniview: 6,5" transreflective display with icons and symbols to guide, no text involved
- Gyroscope
- VertiZontal Moves, Measure Once, Move in 2 Directions
- Integrated Bluetooth
- Power management system, 10 hours continuous battery operating time and express charge display
- CCD sensor technology
- Live values during adjustment
- IP65 classified (Dust tight and protected against water jets)
- Very compact sensor units 33,5 mm in width, they fit in the tightest spots



Technical specifications NXA Pro		
Art.no.:	780348	Complete system:
Weight incl all parts	7,7 kg (17 lbs)	1 Fixturlaser NXA Display unit
Dimensions	415 x 325 x 180 mm (16 x 13 x 7 in)	2 Sensor units (1 receiver M3, 1 transmitter S3)
Display unit:		2 Complete shaft-brackets
Weight	1,2 kg (2,6 lbs) with battery	2 Magnetic shaft-bracket
Dimensions	124 x 158 x 49 mm (4,9 x 6,2 x 1,9 in)	1 Magnetic base
Display size	6,5" (165 mm) diagonal (133 x 100mm)	1 Extension fixture
Environmental protection	IP 65 (Dust tight and protected against water jets)	1 Fixturlaser NXA USB stick
Gyroscope	6-Axis MEMS Inertial Motion Sensor with drift compensation and automatic field calibration	1 Rod kit
Operating time	10 hours continuous use (with 50% LCD backlight)	1 Fixturlaser NXA-power supply
Battery charging time	1 hour charge - 6 hours operating time	1 Chain 8 mm, 60 links
TD units:		1 Tape measure 5 m
Weight	M3 212 g (7,5 oz) S3 188 g (6,6 oz)	2 Angled universal tool
Dimensions	92 x 77 x 33 mm (3,6 x 3,0 x 1,3 in)	1 Manual
Measurement distance	Up to 10 m	
Detector	2nd generation Ultra HD CCD	
Detector length / resolution	30 mm (1,2 in) / 0,04 mils	
Measurement accuracy	0,3% +/- 1 digit (0,3% +/- 0,27 mils)	
Gyroscope and envirm.protect.	See info display unit	
Operating time	17 hours continuous use (measuring)	
Shaft brackets:		
Shaft diameter	Ø20-450 mm (3/4" - 18in)	
Rods	4 pieces 85 + 4 pcs 160 mm (extendable to 245 mm)	

