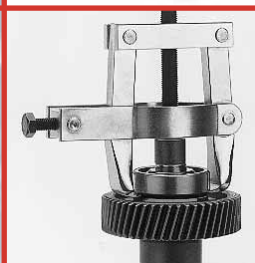
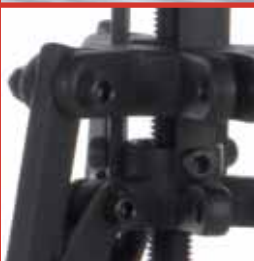


**BEGA**  
**SPECIAL TOOLS**

ANNO 1978



TOP  
QUALITY  
SINCE  
1978

**BETEX®**  
**MAINTENANCE PRODUCTS**

[WWW.BEGA.NL](http://WWW.BEGA.NL)





## Professional Solutions With Proven Quality & Performance!

Dear reader,

We are proud to present our catalogue of BETEX Maintenance Products.

Here you will find our BETEX® Special Tools programme for maintenance (MRO) and production (OEM):

- Condition Monitoring: measuring equipment for bearings, temperatures, noise and vibrations etc
- Dismounting: mechanical and hydraulic pullers, self-centering pullers up to 100 t capacity, work shop equipment, auxiliary tools
- Hydraulic equipment: BETEX hydraulic Power
- Mounting & Alignment: induction heaters, fitting tool sets, shims, alignment computers
- Perma Lubrication Systems: automatic lubrication
- Power Team hydraulic equipment

### About Bega Special Tools

We have been developing and manufacturing 'Special Tools' since 1978 and we provide solutions for damage-free mounting and dismounting of bearings and drive components. Our expertise and experience ensure quality, reliability, professional advice and outstanding service.

BETEX® is a registered trademark of Bega Special Tools and stands for quality and reliability.

### Please also order our catalog for:

- BETEX® Induction heaters for maintenance (MRO) and production (OEM). For mounting and dismounting.
- Perma Lubrication Systems
- Power Team Hydraulic Equipment

Please do not hesitate to contact our Sales department or one of our dealers. We will be pleased to help you.



**BETEX®**

**POWER TEAM®**

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**TOP  
QUALITY  
SINCE  
1978**



06

## Condition Monitoring

Condition monitoring instruments



12

## Dismounting

Mechanical and hydraulic pullers up to 100t



30

## Hydraulic equipment

Cylinders, pumps, jacks



60

## Mounting and alignment

Induction heaters, fitting tool sets,  
Shims, alignment computers



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## Perma automatic lubrications systems

**perma<sup>®</sup>**

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## Power Team hydraulic equipment

**POWER TEAM<sup>®</sup>**



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## CHECKING (MONITORING)

### BETEX BEARING CHECKER



#### **An economic three- in-one-instrument for condition monitoring.**

Bearing Checker is unique, being the first portable, pocketsize instrument (weight 185 g, size 158 x 62 x 30 mm) for evaluated shock pulse measurement. Besides shock pulses, Bearing Checker measures machine surface temperature with infrared light, and can also be used as an electronic stethoscope for listening to machine sounds.

The instrument can be used on most rotating machinery, in a diversity of industrial environments, such as:

- electric motors
- fans
- pumps

#### **Bearing Checker - your affordable expert**

Machine breakdowns are frequently caused by bearing damage. Unplanned downtime, as well as unnecessary repair work, can be significantly reduced by periodically checking bearing condition.

The Bearing Checker is inclusive:

- Infra-red thermometer
- Electronic Stethoscope
- Manual, quick-start instruction
- DVD with technical documentations
- Batteries



#### **Advantages:**

- proactive approach to maintenance
- useful and economical complement to your maintenance toolbox
- no specialized training
- potential problem sources can be detected well before damage is detectable by heat or vibration.



## CHECKING (MONITORING)

### BETEX VIBCHECKER VIBRATION MONITORING



#### **VibChecker – portable and user friendly vibration measurement**

VibChecker is a light and compact-sized instrument for vibration measurement in the 10-1000 Hz frequency range. Measurement results are immediately and automatically evaluated against ISO standards. Green - yellow - red LEDs indicate vibration severity and a real time FFT spectrum is produced for easy pattern recognition. Results can be stored for documentation and follow-up. With its built-in probe, easy button operation and clear symbols, VibChecker is an all set to go instrument; just point the probe and measure to locate vibration-related problems.

#### **Vibration monitoring is a cost-effective predictive maintenance tool.**

In most cases, vibration measurement can detect a problem long before damage to the machine is done. The repair of equipment failing while in service is many times costlier than planned repairs made possible through vibration monitoring.

#### **Minding your machinery**

Machine vibration is the cause of many problems in industrial equipment. Integrated in your normal maintenance activities, periodic vibration measurement with VibChecker will go a long way to help keep your equipment operational. VibChecker combines handiness and ease of use with cost effectiveness and durability. Suited to both new and experienced users, VibChecker covers the basic vibration monitoring needs of your maintenance organization.



## CHECKING (MONITORING)

### BETEX 1200 - INFRARED THERMOMETER (remote)

Monitor temperatures remotely! A pocket-sized unit!  
Super light and easily fits in your jacket pocket.  
The laser beam allows you to measure remotely the temperature of any required object.  
Temperature range from -20°C to + 270°C.

- Readable temperature from -20° to +270° degrees Celsius
- Readings possible in Celsius or Fahrenheit.
- Display illumination on/off
- Reading 1 degree Celsius/Fahrenheit
- Remote range factor distance/surface 6:1
- Incl. 2 x 1.5V AAA batteries
- Weight 74 grams



### BETEX 1220 DIGITAL LASER THERMOMETER UP TO 290°C

Monitor temperatures remotely! A pocket-sized unit!  
Super light and easily fits in your jacket pocket.  
The laser beam allows you to measure remotely the temperature of any required object.  
Digital laser temperature meter for accurately measuring fluids, gasses and all sorts of other substances, till 290 degrees Celsius!  
Temperature range from -50°C to + 290°C.

- Readable temperature from -50°C till 290°C
- Readings possible in Celsius or Fahrenheit.
- Display illumination on/off
- Measurements: 155 x 50 x 72 mm.
- Incl. 2 x 1.5V AAA batteries
- Fast reaction time (within 0.9 sec)
- Weight 125 grams



### BETEX 1230 DIGITAL LASER THERMOMETER DIGITAL LASER THERMOMETER UP TO 380°C

Digital laser temperature meter with a range of -50°C to 380°C and for accurately measuring fluids, gasses and all sorts of other substances.  
The laser beam allows you to measure remotely the temperature of any required object. Digital laser temperature meter for accurately measuring fluids, gasses and all sorts of other substances.

- Measure distance: -50°C to 380°C
- Reading / resolution: 0,1°C.
- Automatic "hold" function
- Display illumination
- Very fast reaction time (within 0.5 sec.)
- Incl. 1 battery, 9V
- Incl. carry case
- Measurements: 155 x 50 x 72 mm.
- Deliverable in black, blue or yellow
- Weight: 200 grams.





## BETEX 1240 - DIGITAL LASER THERMOMETER UP TO 550°C

Monitor temperatures remotely! A pocket-sized unit!

Super light and easily fits in your jacket pocket.

The laser beam allows you to measure remotely the temperature of any required object.

Digital laser temperature meter for accurately measuring fluids, gasses and all sorts of other substances.

- Measure distance: -50°C up to 550°C
- Reading / resolution: 0,1°C.
- Automatic "hold" function
- Display illumination
- Very fast reaction time (within 0.5 sec.)
- Incl. 1 battery, 9V
- Incl. carry case
- Measurements: 155 x 50 x 72 mm.
- Weight: 200 grams.



## BETEX 1250 DIGITAL LASER THERMOMETER UP TO 1000°C

High quality digital laser temperature meter with an extreme range of -50°C up to 1000°C.

For accurately measuring fluids, gasses and all sorts of other substances. The laser beam allows you to measure remotely the temperature of any required object.

Digital laser temperature meter for accurately measuring fluids, gasses and all sorts of other substances.



- Measure distance: -50°C up to 1000°C
- Reading / resolution: 0,1 °C.
- Automatic "hold" function
- Display illumination
- Very fast reaction time (within 0.5 sec.)
- Incl. 1 battery, 9V
- Incl. carry case
- Measurements: 222 x 60 x 92 mm.
- Weight: 300 grams.

## BETEX 1300 - DIGITAL THERMOMETER UP TO 1400°C

Digital temperature meter for accurately measuring fluids, gas- ses and all sorts of other substances, till 1400° Celsius!

- 13 mm LCD display
- Data memory
- Also suitable for surface measurements
- Readable temperature from -50° to +1400° Celsius
- Reading 1 degree Celsius
- Readings possible in Celsius or Fahrenheit.
- Reading 1 degree Celsius/Fahrenheit
- Works on 9V battery
- Incl. battery, linen bag and instructions.
- Weight: 155 grams.







## BETEX 1400 - DIGITAL TEMPERATUREMETER UP TO 150°C WITH PROBE

Digital temperature meter for accurately measuring fluids, gasses and all sorts of other substances.

- 13 mm LCD display
- Data memory
- Also suitable for surface measurements
- Readable temperature from -50 to +150 degrees Celsius
- Reading 0.1 degree Celsius
- Readings possible in Celsius or Fahrenheit.
- Reading 1 degree Celsius/Fahrenheit
- Works on 9V battery
- Incl. battery, linen bag and instructions.
- Weight: 68 grams.

## BETEX 1500 - PROFESSIONAL DIGITAL SOUND LEVEL METER

With this professional microprocessor operated DB meter you can measure sound level precisely.

The instrument has an extra large display with digit height of 20 mm.

- Measurement range: 30 - 130 dB (A)
- Hold-function and interval measurements
- Frequency range: 31.5 Hz - 8500 Hz
- Resolution: 0.1 dB
- 1x 9V batterij. (incl.) or connection for netadaptor
- Size: 260 x 69 x 32 mm
- Weight: 350 gr

Including:

- Microprocessor operated dB meter
- Windcap for microphone
- Battery 9V.
- Instruction guide.



## BETEX 1600 DIGITAL LASER TACHOMETER

This professional digital tachometer is designed for recording rotational speeds (RPM) and peripheral velocities in m./min.

As well as measuring the length of cables, ropes, etc.

Rotational speeds can be measured either as contact or non-contact readings.

Peripheral velocities and length measurements are only possible as contact readings.

- Display: 5 digit 18 mm LCD display
- Non-contact range of measurement: 2.5 - 99,999 rpm
- Contact range of measurement: 0.5 - 19,999 rpm
- Contact range for peripheral velocity measurement: 0.05 - 1,999.9 m/min
- Precision: +/- 0.05% + 1 digit
- Function switch for: non-contact rpm, contact rpm, contact m/min
- Memory key for: last recorded value maximum recorded value minimum recorded value
- Power supply: 4 AA 1.5V penlight batteries, 6V 65mA, via adapter
- Dimensions: 210 x 74 x 37 mm



## BETEX 1620 - DIGITAL LASER TACHOMETER

This digital laser tachometer is very suitable for maintenance and service of engines, rotating equipment and machines.

- Display: 5-digit 10 mm LCD display
- Contact range of measurement: 5 - 99.999 rpm
- Display: 0,1 rpm at 0,5 - 999.99 rpm
- Display: 1,0 rpm above 1000 rpm
- Measurement results: 1x per second
- Precision: +/- 0,5 %
- Contact range: 50 - 300 mm
- Automatic contact range selection
- Memory key for last recorded value, maximum recorded value
- Power supply: 3x 1,5 V AAA batteries
- Incl. manual.
- Dimensions: 72 x 190 x 37 mm
- Weight: 250 grams



## BETEX ELS12 ELECTRONIC STETHOSCOPE

For preventive maintenance on installations and rotating equipment. A simple method to detect machine failure in a noisy environment.

The need to eavesdrop on mechanical sounds within machinery is essential in any maintenance department. Mechanical faults can often be heard. The problem is to locate the sound source quickly and accurately in a generally noisy environment.

The electronic stethoscope is a sensitive listening stick, for location of all kinds of machinery noise. Valve chatter, tappet noise, piston slap, gear and pump noise and the operation of relays and solenoids are just a few of the many noises that may be traced, amplified and assessed with this device. ELS-12 can also be connected to a tape recorder.

The ELS12 is inclusive:

- Sound amplification with volume control
- Headset combined with ear defenders to cut out background noise
- Two probe tips, lengths 60 and 290 mm
- Strong probe body, black ABS moulding.
- Weight with 290 mm probe tip only 300 grams
- 9 V alkaline battery for about 30 hours of continuous operation.
- Temp. range: 0° to +55° C (32° to 131° F)
- Dimensions: 205 x 50 x 40 mm (8" x 2" x 1.6")

## HYDRAULIC PULLERS

BETEX HP 2/3-arm pullers, with integrated pump and cylinder



**Compact, ergonomic design, easily operated by one person!**

- **Multifunctional:**

These HP-pullers are ideal for pulling a wide variety of parts, including bearings, bushings, wheels, gears and pulleys. Applications for HP-pullers will be found in motor repair shops, service companies, maintenance shops, industry, mining, paper mills, chemical plants, shipping, offshore, etc.

- **Compact:**

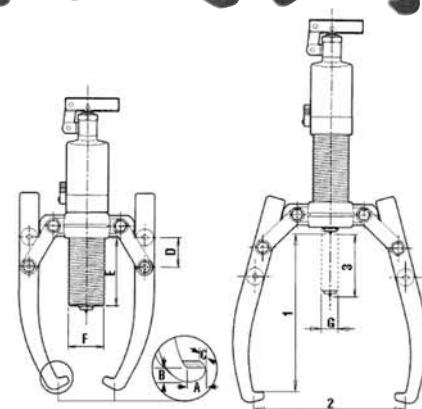
The self contained hydraulic pump and cylinder save space, as you don't need a separate pump, hose or puller.

- **Strong:**

The harder the force, the tighter the jaws grip. The arms cannot bend or deflect.

- **Economical:**

2/3-arm combination puller, 2 pullers for the price of one, including integrated pump and cylinder!



- **Safe:**

The improved integral safety release valve prevents overloading and ensures that you will never exceed the maximum power capacity.

- **Versatile:**

Various accessories are available. Sets are supplied in practical PE case and consist of a puller block, connecting rods and a set of bearing splitters.

**4, 6, 8, 12, 20 and 30 ton capacity!**

### BETEX HP 2/3 Hydraulic pullers

For accessory sets see page 16, 17.

Type	Art.no.	Cap. ton	Max. shaft length mm	Max. spread mm	Stroke mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Weight Kg
HP 43 *	791000	4	185	275	60	11	6	22	32	84	42	22	4.5
HP 63 *	792000	6	215	300	85	11	10	25	51	122	45	25	6.5
HP 83 *	793000	8	230	350	85	11	10	25	51	122	50	25	6.5
HP 123 *	794000	12	270	375	85	14	10	29	51	118	60	28	8.0
HP 203**	796000	20	360	520	111	20	27	33	60	161	80	40	22.0
HP 303 **	797000	30	360	550	111	20	27	38	60	155	68	50	32.0

\* Incl. safety net \*\* incl. safety blanket



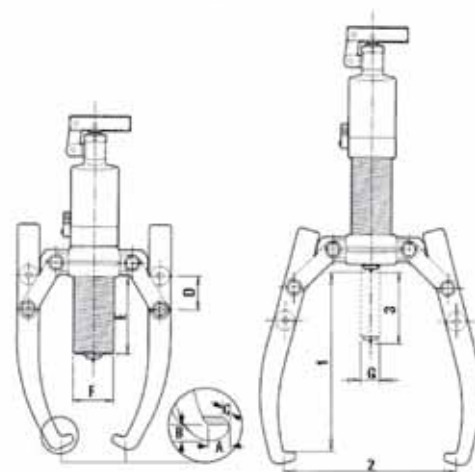
## HYDRAULIC PULLERS

BETEX HSP 2/3-arm pullers, **self-centering**, with integrated pump and cylinder



**Compact, ergonomic design, easily operated by one person!**

- **Practical!**  
Self-centering, easy to convert, 2-arm or 3-arm puller. The arms slide inwards or outwards simultaneously.
- **Compact!**  
The self contained hydraulic pump and cylinder save space, as you don't need a separate pump, hose or puller.
- **Strong!**  
The harder the force, the tighter the jaws grip. The arms cannot bend or deflect.
- **Economical!**  
2/3-arm combination puller, 2 pullers for the price of one, including integrated pump and cylinder!
- **Safe!**  
The integral safety release valve prevents overloading and ensures that you will never exceed the maximum power capacity.
- **Versatile!**  
Various accessories are available. Sets are supplied in practical PE case and consist of a puller block, connecting rods and a set of bearing splitters.



### Advantages of self-centering pullers:

- Prevents damage to shaft and workpiece being pulled.
- Efficient and saves time.
- Can be used in any position.
- Adapters included.

**4, 6, 8, 12, 20 and 30 ton capacity!**

### BETEX HSP 2/3 Hydraulic self-centering pullers

For accessory sets see page 16, 17.

Type	Art.no.	Cap. ton	Max. shaft length mm	Max. spread mm	Stroke mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Weight Kg
HSP 43*	791500	4	190	325	60	13	10	22	-	40	42	22	8.0
HSP 63*	792500	6	230	380	70	13	10	22	-	50	45	23	10.0
HSP 83*	793500	8	280	450	85	13	13	27,5	-	70	50	25	12.0
HSP 123*	794500	12	305	485	85	15	16,5	29	-	70	60	28	15.0
HSP 203**	796500	20	365	570	111	20	27	33	-	62	80	40	25.0
HSP 303**	797500	30	465	680	111	20	27	38	-	85	98	50	36.0

\* Incl. safety net \*\* incl. safety blanket



## HYDRAULIC PULLERS

BETEX HXP 2/3-arm pullers, **self-centering**



**Safe and easy dismantling of bearings, couplings, rings etc.**

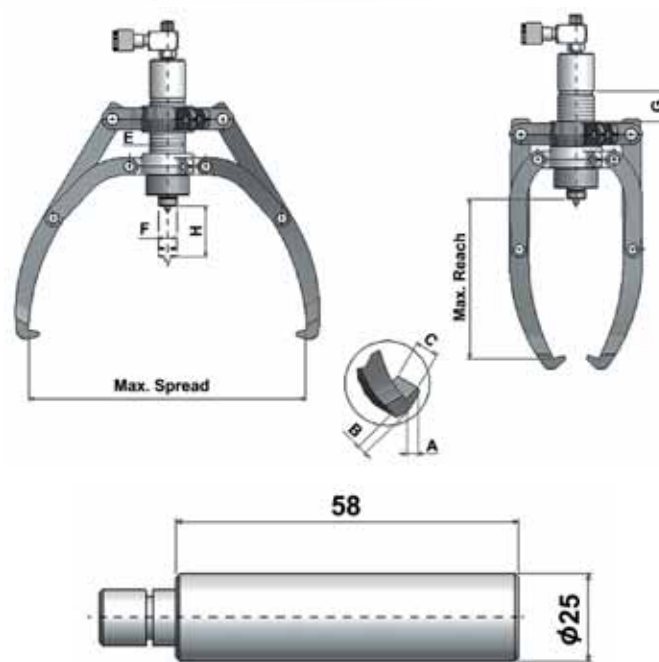
**Separate 2-stage handpump available**

- **Practical!**  
Self-centering, easy to convert, 2-arm or 3-arm puller.  
The arms slide inwards or outwards simultaneously.
- **Safe!**  
Arms can never deflect!
- **Economical!**  
2/3-arm combination puller, 2 pullers for the price of one.
- **Strong!**  
The greater the pulling force, the tighter the jaws grip!  
The arms cannot bend or deflect.

**Advantages of self-centering pullers:**

- Prevent damage to shaft and workpiece being pulled.
- Work efficient and save time.
- Accessory sets are available for the 8 and 12 ton pullers.
- Supplied in handy carrying case.

**8, 12, 20, 30 and 50 ton capacity!**



**BETEX HXP 2/3 Hydraulic self-centering pullers**

For accessory sets see page 16, 17, for pumps 42-47.

Type	Art.no.	Cap. ton	Max. shaft length mm	Max. spread mm	Stroke mm H	Pump tip mm			Jaw tip mm			Weight Kg
						E	F	G	A	B	C	
HXP 83*	793600	8	280	450	85	42	22	40	13	10	22	9.0
HXP 123*	794600	12	305	485	85	50	25	70	13	13	27.5	11.7
HXP 203**	796600	20	365	570	111	60	28	70	15	16.5	29	24.0
HXP 303**	797600	30	465	680	111	80	40	62	20	27	33	34.0
HXP 503**	799600	50	455	860	330	98	50	85	20	27	38	140.0

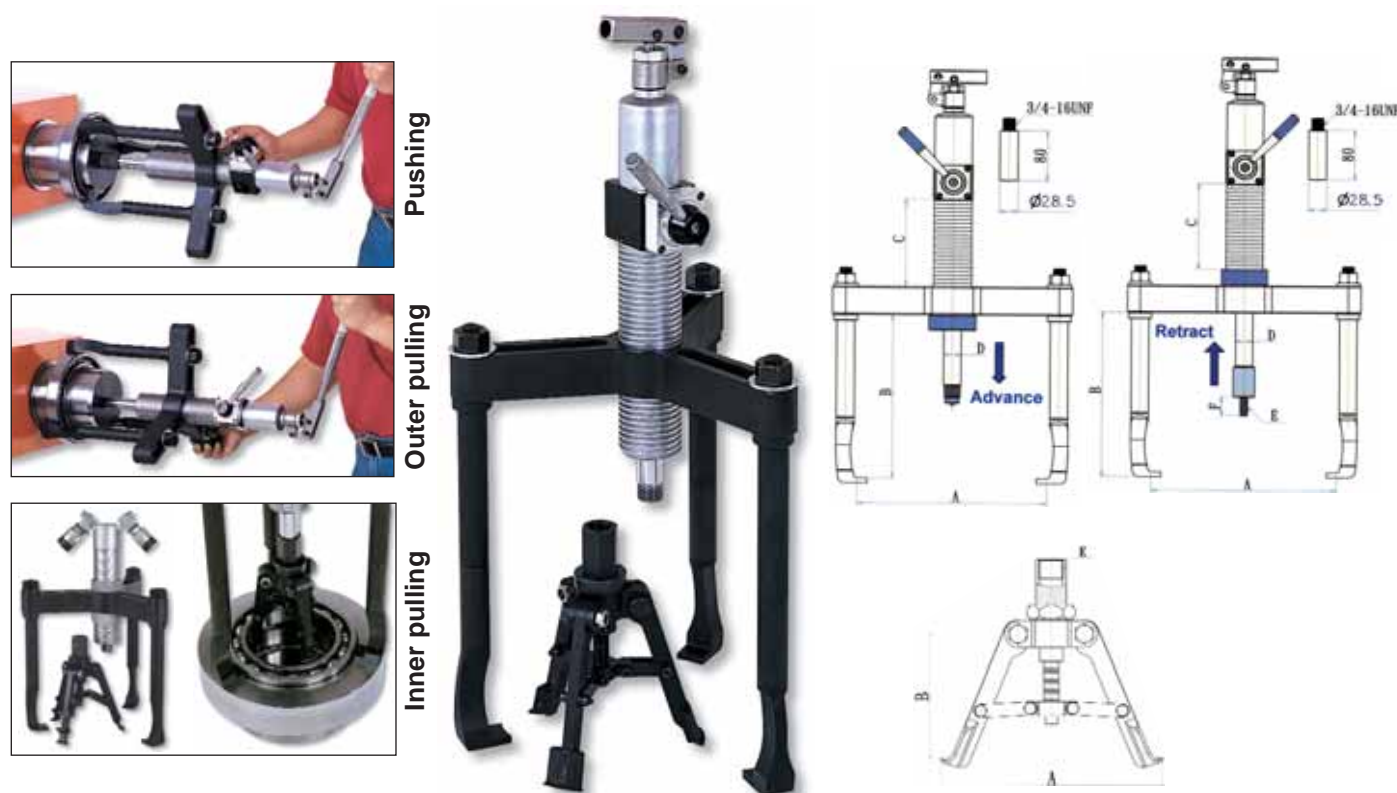
\* Incl. safety net \*\* incl. safety blanket





## HYDRAULIC PULLERS

### BETEX HPP Push Puller



#### Push Puller: three-in-one tool

This unique patented design provides end users with a three-in-one tool to easily and safely fit or remove bearings and sleeves using either their outer or inner edges. The push puller is specially designed for combined pushing and pulling. This creates one tool that uses even force to enable very easy pushing and pulling. The pushing jaw fits on the bearing's inner ring, preventing the transmission of forces and/or heat through the outer ring to the moving parts, minimizing the risk of bearing damage.

#### User-Friendly

- Unique, patented double-acting pump body to provide pushing and pulling force.
- Unique jaw design for mounting and outer ring pulling without removing and changing.
- Three-jaw structure always provides an even and constant force, whether mounting, outer ring pulling or inner ring pulling.
- Depends on user requirements - the extension bars can be used where necessary for extra reach.

- Self-centering design of the inner puller always provides an even force and prevents jaws sliding off during operation.

#### Safe

- The built-in safety valve ensures user safety and prevents damage to tool and job.
- The built-in safety valve prevents the user from being harmed and the job from being damaged as rated pressure cannot be reset or adjusted.
- Most parts are forged of SCM440 alloy steel, creating a very safe and durable product.

#### Cost-reducing

- Built-in safety valve ensures the tool is always operated as per the rated pressure, significantly extending tool life.
- Three-in-one design reduces preparation, tool-reset time and duration of operation.
- This push puller is ideal for fitting and removing a wide variety of press-fit parts, including bushings, wheels, bearings, gears and pulleys.

#### BETEX Push Puller / three-in-one

For accessory sets see page 16, 17.

Type	Operations	Output tons	A mm	B mm	C mm	D mm	E	F mm	Weight Kg
HPP123	Pushing	8	44-280	270	140	28	M12-P1.75	30	19,5
	Outer pulling	12	85-300	260	140	28	-	-	
	Inner pulling	8	110-210	130-150	-	-	1"-12UNF	-	

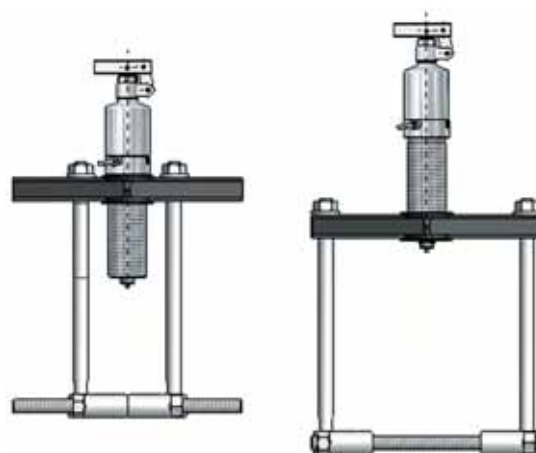
## ACCESSORY SETS

### BETEX Bearing splitters

This accessory set consists of:

- 1 puller block
- 2 connecting rods (legs)
- 1 set of bearing splitters for a min./max Ø 25-225 mm

You can use the cylinder from the HP/HSP/HXP series.



### ACCESSORY SETS FOR 4, 6, 8, 12 TON PULLERS HP, HSP, HXP, HPP

Type	Art.no.	Cap. ton	Shaft length mm	Min/max Spread mm	Weight kg
Acc. Set HP 43, HSP 43	791100	4	250	Ø 15-110	8.5
Acc. Set HP 63, HSP 63,	792100	6	280	Ø 25-150	12.5
Acc. Set HP 83, HSP 83, HXP 83	793100	8	280	Ø 40-150	12.5
Acc. Set HP 123, HSP 123, HXP 123, HPP 123	794100	12	325	Ø 45-225	18.0

## ACCESSORY-SETS

### BETEX Tri-section plates



#### Easy to use

The tri-section plates are specially designed to be used in conjunction with the three-armed pullers. The unique and patented swivel design creates maximum spread and applies even force at the most efficient point. The plates grip behind the inner and outer rings of the bearing, preventing the pulling force from being transmitted through the moving parts, minimizing the risk of bearing damage.

#### User-friendly

- Unique, patented swivel design creates maximum spread.
- The tri-section construction provides even-force distribution, preventing bearings from locking and/or tilting on the shaft during removal.
- Suitable for use in conjunction with all three-armed hydraulic pullers.
- Available in a wide range, covering the most common shaft sizes.

The Tri-section plates series consist of 4 different sizes of tri-section plates that are suitable for shafts of max. Ø ranging from 50 to 495 mm (2" to 19.5").

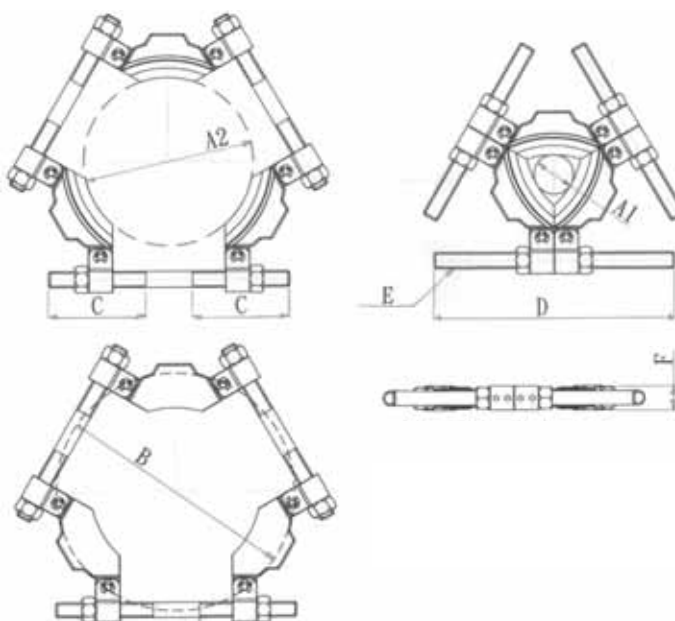
#### Use in combination with

Tri-section 160: HP/HSP43

Tri-section 210: HP/HSP43, 63, 83

Tri-section 340: HP/HSP/HXP 83, 123, HPP 123

Tri-section 495: HP/HSP/HXP 203, 303



Type	Art.no.	Available shaft diam		Spread	C	D	E	F	Weight
		A1 mm	A2 mm	B (mm max)	mm	mm		mm	kg
Tri-section 160	791160	26	160	216	105	240	5/8"-11UNC	8	3.5
Tri-section 210	791210	50	210	280	115	285	3/4"-16UNF	31	5.5
Tri-section 340	791340	90	340	460	170	430	7/8"-14UNF	45	16.5
Tri-section 495	791495	140	495	660	240	600	1"-14UNF	61	41



## MOBILE HYDRAULIC PULLER



25  
OR  
50  
TONS



## MOBILE HYDRAULIC PULLER

### BETEX MOBIPULLER

#### THE BETEX MOBIPULLER

is a heavy duty, mobile hydraulic puller. It is used for dismantling bearings, couplings, gears and other parts, with relative speed and ease. The Mobipuller excels through functional and ergonomic operation. It is stable, mobile and adjustable in height.

A maximum tractive force of either 25 or 50 tons can be applied with diameters of up to 430 mm. To ensure safe and easy operation the electrical models are equipped with remote control, safety cage and pressure gauge.

A1: In standard position mm:	575 - 575/500
A2: In extended position mm:	955 - 955/800
B1: Frame length in standard pos. mm:	1210
B2: Frame length in extended pos. mm:	1590
Position high / low mm:	1100/1650
Dimensions L x W mm:	1470x1040
C: Diameter of jaws mm:	430
D: Set-up height mm:	900/1430
Adapters mm (155 mm):	Ø 40,50
Weight kg:	460

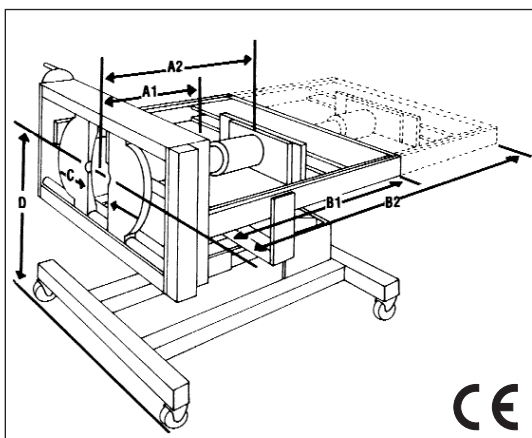
Remote control



All models are equipped with a safety cage for personal safety



Meaning of codes:	
25-50	tractive force in tons
430	max. diameter in mm
H	manual hydraulic
E	electrical hydraulic
V	mobile
A	remote control
S	max. stroke in mm
D	double acting



Auxiliary tools for dismantling of inner rings and delicate components.

Type	Art.no.	Cap. Ton	Stroke cylinder	Pump hydraulic manual/electric	In standard position mm	In extended position mm
25 HV 430 S 260	700001	25	260	manual	575	955
25 EVA 430 S 260	700002	25	260	single acting electric	575/500	955
50 HV 430 S 260	700003	50	260	manual	575/500	955/880
50 EVA 430 S 260	700004	50	260	single acting electric	575/500	955/880
50 EVA 430 S 340	700005	50	340	single acting electric	575/500	955/880
50 EVAD 430 S 340	700006	50	340	double acting electric	450	830
50 EVAD 430 S 460	700007	50	460	double acting electric	300	680



## HYDRAULIC PULLERS

BETEX 50 HXPM - MOBILE 2/3-arm puller, 50 t / 100 t **self-centering**



**For dismantling of transmission parts, such as bearings, couplings, bushes, gear wheels, etc.**

- **Practical!**  
The puller is easy to manoeuvre, adjustable in height and 5° vertically adjustable.
- **Fast!**  
The complete stroke is 330 mm. Three adapters (extensions) are included for a max stroke of 475 mm.
- **Safe!**  
The arms move inwards and outwards simultaneously and cannot deflect. A safety release valve prevents overload and ensures that you never exceed the maximum power capacity.

**50 / 100 ton capacity!**

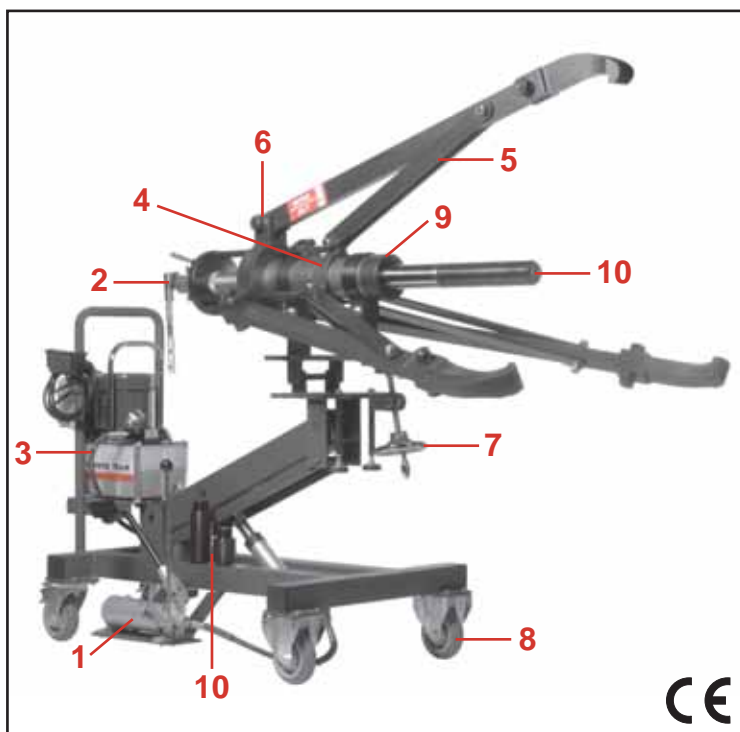


## HYDRAULIC PULLERS

**BETEX 50 HXPM - MOBILE 2/3-arm puller, 50 t / 100 t self-centering**

Type / Art. no.	50-HXPM-1250-S330 / 700014	100-HXPM-500-S260 / 700015
Capacity in tons	50	100
Max. stroke in mm	330	260
Max. spread in mm	1250	1500
Min. spread in mm	75	240
Max. shaft length in mm	665-720	1225
Operating main cylinder	Electric-hydraulic pump, 230V - 16A, with remote control	
Operating height adjustment	with footpump	
Operating self-centering jaws	with handpump, double-acting	
Four adapters (in mm)	2 x Ø 40, 2 x Ø 50, length: 155	
Min. height (from the centre) in mm	820	± 820
Max. height (from the centre) in mm	1.370	± 1.370
Manometer	700 bar	700 bar
Weight in kg	372 kg	± 600 kg

**Including safty blanket**



- 1 Footpump for height adjustment.
- 2 Double-acting handpump for holding, opening and closing the jaws for safe, secure grip on job.
- 3 An electric-hydraulic pump, 230V-700 bar operates the cylinder. This is a 4-stage pump. For the 50 ton puller the oil delivery is 3.9 liters per minute at 0 bar pressure, for the 100 ton puller the oil delivery is 6,7 liters per minute at 0 bar pressure.
- 4 Self-centering; the jaws are evenly advanced or retracted.
- 5 The design prevents the puller jaws from slipping or deflecting.
- 6 Puller can easily be converted from 3- to 2-arm configuration.
- 7 The puller is adjustable 5° vertically.
- 8 The cart has two swivel casters (self-locking) and has two rigid casters.
- 9 The hydraulic cylinder is a 2-stage spring-return type with a max. working pressure of 700 bar (50 ton).
- 10 Four adapters (cylinder extensions) with a total length of 620 mm are included.



## MECHANICAL PULLERS

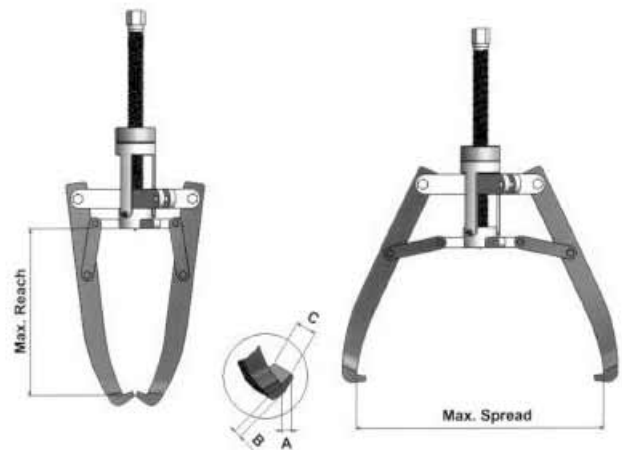
BETEX MSP 2/3-arm pullers, **self-centering**



**Safe and easy dismounting of bearings, couplings, rings etc.**

**Ergonomic design, easily operated by one person!**

- **Practical!**  
Self centering 2 or 3-arm puller with self-locking system.  
Easy to convert and easy to use in every position.
- **Safe!**  
The arms adjust themselves simultaneously, either inwards or outwards. Self-locking system guarantees arms neither bend nor deflect.
- **Economical!**  
2- or 3-arm combination puller. Two pullers for the price of one.
- **Strong!**  
The harder the force, the tighter the jaws grip. The arms cannot bend or deflect.



**Advantages of self-centering pullers:**

- Prevent damage to shaft and workpiece being pulled.
- Work efficient and save time.

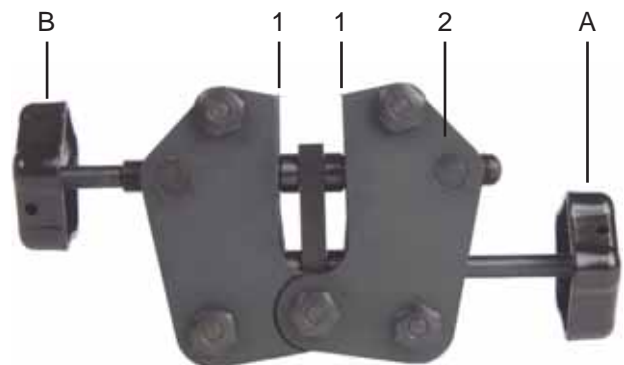
**2, 3, 5, 8 and 10 ton capacity!**

**BETEX MSP 2/3 Mechanical self-centering pullers**

Type	Art.no.	Cap. ton	Max. shaft length mm	Max. spread mm	A mm	B mm	C mm	Weight Kg
MSP 2/3-120	798250	2	80	120	8	6	15	1.6
MSP 2/3-180	798300	3	120	180	6	7	15	2.3
MSP 2/3-270	798350	5	160	270	11	10	25	4.3
MSP 2/3-300	798400	8	210	300	13	14	27	6.1
MSP 2/3-380	798450	10	250	380	14	10	29	9.6

## KEY-DRAWER

BETEX KZZ



### For professional removal of keys.

The Betex KZZ Key-drawer (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 from 5 mm 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  $\pm 1$  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.

Typ	Art.no.	Min. Spread mm	Max. Spread mm	Weight Kg
KZZ	4900011	5	35	2,2

## MECHANICAL PULLERS

### BETEX 46

**Simple, handy 2-arm puller for parts gripped externally like pulleys, bearings, rings, etc. Suitable for removing fans from electric motors**

During operation the arms can not slip because they are pressed against the cross bar. The higher the necessary pulling force, the stronger the arms are pressed against the cross bar. The one-hand operation of the puller permits easy use even under unfavourable conditions. A spring inside the housing guarantees a continual clamping of the forged alloy steel arms.



**BETEX 46 is available in 4 types**

Type	Max. diam. mm	Max. shaft length mm
46-200	60	40
46-000	75	60
46-010	110	100
46-020	220	200

### BETEX 47

**Patented special 2-arm bearing pullers**

This bearing puller is particularly suitable for extracting bearings, bearingrings etc. that fit flushly with other parts. This system is generally applied when dismantling bearings from anchors, pump shafts etc.



**BETEX 47 is available in 3 types**

Type	Max. diam. mm	Max. shaft length mm
47-100	45	65
47-200	90	100
47-300	150	150

### BETEX 48/49

**2/2 bearing splitters and pullers**

Betex no. 48/49 is designed for dismantling flush-fitting bearings and other parts where an ordinary puller would be unable to get a proper grip. Suitable for various applications.

**BETEX 48 is available in 5 types**

**BETEX 49 is available in 4 types**

Type	Max. diam. mm	Counter support	Max. shaft length mm	
			standard	with extension
48-060	60	49-100	150	250
48-075	75	49-100	150	250
48-115	115	49-200	200	300
48-150	150	49-300	300	400
48-210	210	49-400	300	400





## MECHANICAL PULLERS

### BETEX 52

**Patented self-centering 3-arm pullers (mechanical and hydraulic) for diameter Ø40 mm till Ø640 mm**

The 3 arms of these pullers adjust themselves simultaneously and symmetrically, inwards or outwards. There is no possibility of the arms bending or deflecting. Hydraulic screws with a 20 ton capacity are available for use in combination with the two largest pullers. The thread of the screws is in no way affected by the building up of hydraulic pressure, thus keeping wear and tear to the screws down to a minimum.

**BETEX 52 with mechanical screw is available in 6 types**

Type	Max. diam. mm	Max. shaft length mm
52-085	85	65
52-130	130	105
52-230	230	150
52-295	295	235
52-390/394*	390	270
52-640/644*	640	300

\* these types may be converted into hydraulic tools simply by replacing the mechanical screw and the screw-bush with a 20 ton mechanical hydraulic screw.



### BETEX 54

**Patented 2-arm pullers for diameter Ø40 mm till Ø350 mm**

This 2-arm puller is extremely well-suited to applications involving the extraction of bearing-rings, innerrings (NU-NJ). Reversal of the arms makes internal dismantling also possible. The self-locking system guarantees that the arms will not deflect. Extended and extra-extended arms can be supplied for long shafts.

**BETEX 54 with standard arm-length is available in 6 types**

Type	Max. diam. mm	Maximum shaft length mm		
		standard	with extension	with extra extension
54-100	80	100	200	250
54-200	120	125	200	250
54-300	160	150	250	300
54-400	200	175	250	300
54-500	250	200	300	400
54-600	350	250	300	400



## MECHANICAL PULLERS

### BETEX 56

**Internal 4-arm bearing pullers with interchangeable claws (in case) for total 66 bearings till Ø105 mm**

This 4-arm bearing puller has been specially developed to extract ball-bearings from casings and shafts using a single action. This concerns the 6000, 6200, 6300 and 6400 series. 66 different ball-bearings can be removed with these three sets of pullers.

**BETEX 56 is available in 3 sets**

Set	Max. shaft length mm	Claws (4 per set)	No of bearings	
56-020	65	3 sets	12	
56-120	90	5 sets	30	
56-220	150	5 sets	24	
Set	Ball-bearing 6000	Ball-bearing 6200	Ball-bearing 6300	Ball-bearing 6400
56-020	6004 t/m 6006	6200 6205	6300 6302	-
56-120	6007 t/m 6020	6206 6212	6303 6308	6403 6405
56-220	6021	6213 6219	6309 6319	6406 6412



### BETEX 44

**Hydraulic 8/15 tons mini-press**

When using mechanical screws, much of the force is lost as a result of the friction caused by the thread. This minipress administers a shock to the part which is to be extracted. This enables optimal use to be made of BETEX pullers 52 and 54, without loss of force or wear and tear to screws. Note\*: may be used from 49-200, 52-230 and 54-300 and upwards.

\* application: heavy duty pullers, BETEX 49-200, 52-230 en 54-300 upwards \* height: 35 mm

**Betex 44 is available in 2 types**

Type	Capacity ton	Stroke mm
44-080	8	7
44-150	15	10



### BETEX 625/630

**Shaft protector sets for shaft centers and hollow shafts**

These shaft protectors are indispensable between shaft and bearing puller while dismantling bearings, couplings etc. There are two types: 625 for protecting shaft centers and 630 for hollow shafts.

Use of shaft protectors prevents distortion to the shaft centers and the screw.



**BETEX 625 consists of a 6-piece set**

'D' min. = Ø 19 mm 'H' min. = Ø 16 mm

'D' max. = Ø 38 mm 'H' max. = Ø 19 mm

**BETEX 630 'S' consists of a 11-piece set**

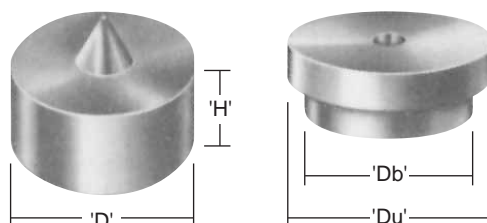
'Db' min. = Ø 19 mm 'Du' min. = Ø 25 mm

'Db' max. = Ø 51 mm 'Du' max. = Ø 64 mm

**BETEX 630 'T' consists of a 6-piece set**

'Db' min. = Ø 54 mm 'Du' min. = Ø 67 mm

'Db' max. = Ø 76 mm 'Du' max. = Ø 89 mm



## MECHANICAL PULLERS

### BETEX 62

#### Internal expander puller up to a bore of Ø 150 mm

This special expander system has been developed to facilitate rapid and effective dismantling under difficult conditions, e.g. in 'blind holes'. The multiple adjustable jaws (up to 6) ensure the correct grip from behind the bearing, bush etc.

Bearings, bushes, sealings etc. are extracted effortlessly.

Smaller, larger and longer sizes are available on request.



BETEX 62 is available in 3 sets

The two sets together come in a free carrying case

Counter support type	Suitable for expanders	Expander	For diameter mm	For max. depth mm		
62-100	62-004→ 62-030	62-004	4-7	35	*	****
		62-007	7-10	35	*	****
		62-010	10-14	35	*	****
		62-014	14-20	45	*	****
		62-020	20-30	50	*	****
		62-030	30-40	90	*	****
62-200	62-040→ 62-070	62-040	40-50	95	**	****
		62-050	50-60	95	**	****
		62-060	60-70	95	**	****
62-200/62-300	62-070 → 62-0125	62-070	70-80	95	**	****
		62-080	80-100	140	***	
		62-0100	100-125	140	***	
		62-0125	125-150	140	***	

\* = set 1 62-101

\*\* = set 2 62-201

\*\*\* = set 3 62-301

\*\*\*\* = combination set 62-105, including free carrying case

### BETEX 62-9

#### Slide hammer puller

Used in combination with the internal puller.

Slide hammer weight: 0,9 kg

2 sizes with strokes of 90 mm and 300 mm

2 connecting threads (M10 and M14x1,5)

The advantage of the slide hammer is that

it can be used independent of any

supporting face. After positioning the

internal puller the slide hammer is

connected through the hexagon adaptor.

We recommend:

Up to bore-diameter 39,5 mm Nr. 62-9092

Up to bore-diameter 79,5 mm Nr. 62-9302

## MECHANICAL PULLERS

### BETEX 63, 64 / TRACTA

These systems are unique and suitable for difficult dismounting jobs of roller bearings.

#### Advantages:

- For all kinds of roller bearings
- Shaft Ø 10,5 mm up to Ø 100 mm, larger sizes on request
- Dismounting from house and shaft in one act
- Also for flush fit bearings
- Unlimited shaft lengths through extensions
- 360°C grip over full bearing
- Hydraulic type on request
- Suitable for serial dismounting
- Prevents damage to bearing, bearing house and shaft!

### BETEX 63, 64 / TRACTA

Type	Shaft diam. mm	Outside diam. mm	Max stroke mm	Max shaft length mm	Max shaft length mm with extra extension
63-100	10,5	26	62	95	165
63-200	18	35	64	100	180
64-400	30,5	60	78	135	235
64-500	46	75	80	150	250
64-600	66	100	92	170	270
64-700	77	125	120	205	305
63-800	100	140	150	240	390

Larger models on request



BETEX 63



BETEX 64



## MECHANICAL PULLERS

### Collets for BETEX 63 and 64

There are 4 different pulling principles that can be applied, depending on bearing type. To define the correct collet the following is mandatory:

**Principle 1:** grip on inner bearing ring. Bearing is dismantled in one act, from shaft and bearing house.

**Example:** self aligning ball bearings, four point bearings and ball bearings with split innering.



Principle 1

**Principle 2:** grip on rollers, independent of number of rolls. Also when bearing is flush fit.

**Example:** wheel bearings, tapered bearings.



Principle 2

**Principle 3:** grip on bearing inner ring.

**Example:** tapered roller bearings.



Principle 3

**Principle 4:** grip inside or behind bearing inner ring, or behind bearing outside ring.

**Example:** cylindrical roller bearing, lowest innerring of the ball bearings, outside ring of the needle roller bearings, spherical roller bearings, NU-, NJ-bearing bushes, ABS-rings, bushes, gear wheels.



Principle 4

## EXPLANATION CYLINDERS



### FEATURES:

1. Betex® offers a wide selection of cylinder design, capacity and stroke to match your daily requirements.
2. Built for Rugged Industrial/Construction use. All Betex® cylinders meet worldwide safety standards.
3. Stop rings, plated pistons and heavy duty construction provide trouble-free operation and long life.
4. Heavy duty, wound steel-plated springs provide fast and complete retraction, cycle after cycle, and retain their tension longer. Long-lasting springs contribute substantially to cylinder life.
5. Threaded collars and internal plunger threads withstand full loading for maximum flexibility in fixturing.
6. All Betex® cylinders incorporate a positive piston stop to limit piston travel at the end of the stroke, allowing the cylinder to be operated at full stroke. Piston stops add strength and safety to your Betex® cylinder.
7. Rod wiper cleans the rod surface during retraction, protecting the inner cylinder assembly from dirt, moisture and other contaminants.
8. Most Betex® cylinders have a chrome-plated finish to protect the cylinder from dirt, moisture and other contaminants for long life.

### Cylinders overview

Series	Description	Type	Capacity ton	Stroke mm	Page
SSS	General purpose, spring return	Single Acting	5-100	25.4-362	31
SLS	Low profile, spring return	Single Acting	5-150	6-17	32
SCS	Compact, spring return	Single Acting	10-100	38-57	33
SHS	Hollow, spring return	Single Acting	13-100	8-158	34
JLLC	Lock nut, load return	Single Acting	50-1000	50-300	35
JLPC	Pan lock nut, load return	Single Acting	60-520	45-50	36
SSA	Aluminium, spring return	Single Acting	50-100	51-254	37
ALNC	Aluminium, lock nut, load return	Single Acting	50-100	51-254	38
ACHC	Aluminium, hollow, spring return	Single Acting	30-60	76-153	39
DAC	Hollow, spring return	Double Acting	10-100	255-330	40
ADAC	Aluminium, hollow, spring return	Double Acting	30-60	51-254	41

## CYLINDERS

### BETEX SSS SERIES, single acting, spring return



#### Model: SSS-Series

Capacity : 5-100 ton  
Stroke : 25,4-362 mm  
Max. working pressure : 10,000 psi / 700 Bar

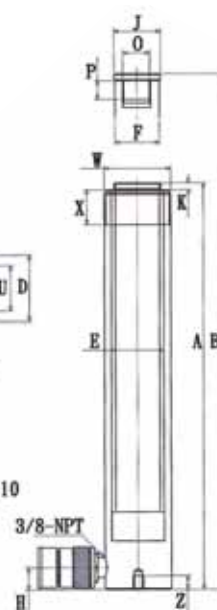
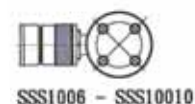
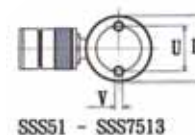
All rams are single acting with spring return. Pistons hard chromed.  
Rams inside roll-polished, outside blasted and chromed.

#### Power sources:

Handpumps, Footpumps and air/hydraulic pumps and electric pumps.

#### Pump and cylinder sets:

All cylinders are available as sets (cylinder, gauge, couplers, hose and pump) for your ordering convenience.

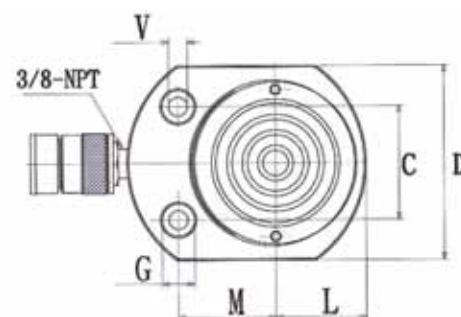


TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

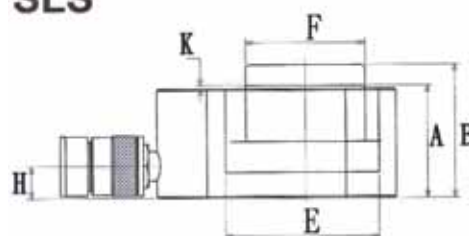
Type	Capacity ton	Stroke mm	Oil cap cm <sup>3</sup>	A Height mm Retracted	B Height mm Extended	D mm	E mm	F mm	H mm	J mm	K mm	O ø un	P mm	U mm	V ø	W un	X mm	Z mm	Weight Kg
SSS51	5	27	19	110	137	38	30	25.4	19	25	6	3/4"-16	14	25	1/4"-20un	1 1/2"-16	28	14	1
SSS53		76	54	165	241								14						1.5
SSS55		127	90	216	343								14						1.9
SSS57		181	128	273	454								16						2.4
SSS59		232	164	324	556								16						2.8
SSS101	10	25.4	40	89	114.4	57	45	38	19	-	-	#10-24un	6	39	5/16"-18un	2 1/4"-14	30	12	1.8
SSS102		55	87	121	176					40	6	1"-8	16						2.3
SSS104		105	167	171	276					40	6	1"-8	16						3.3
SSS106		155	246	247	402					40	6	1"-8	16						4.4
SSS108		206	327	298	504					40	6	1"-8	16						5.4
SSS1010		257	408	350	607					40	6	1"-8	16						6.4
SSS1012		305	484	400	705					40	6	1"-8	16						6.8
SSS1014		356	566	451	807					40	6	1"-8	16						8.2
SSS151	15	25.4	50	124	149	70	50	40	25.4	38	9.6	1"-8	25	47	3/8"-16un	2 3/4"-16	30	12	3.3
SSS152		51	100	149.5	200.5														4.1
SSS154		101.6	199	200	301.6														5.0
SSS156		152.4	299	271.5	423.9														6.8
SSS158		203	398	322	525														8.2
SSS1510		254	498	373	627														9.5
SSS1512		305	598	424	729														10.9
SSS1514		356	698	475	831														11.8
SSS251	25	25.5	84	139.5	165	85	65	55	25	50	10.5	1 1/2"-16	25	58	1 1/2"-12un	3 5/16"-12	50	19	5.9
SSS252		50.8	168	165	215.8														6.4
SSS254		102	338	215.5	317.5														8.2
SSS256		152.4	505	273	425.4														10
SSS258		210	696	324	534														12.2
SSS2510		261	865	375	636														14.1
SSS2512		311	1031	425	736														16.3
SSS2514		362	1200	476	838														17.7
SSS308	30	209	923	388.5	597.5	103	75	65	57	50	10.5	1 1/2"-16	25	-	-	4"-12	50	-	18.1
SSS502	50	51	361	176	227	127	95	80	33	70	2	-	-	95	1 1/2"-12un	5"-12	55	19	15
SSS504		102	723	227	328														19.1
SSS506		159	1126	288	447														23.1
SSS5013		337	2387	463	800														37.6
SSS756	75	156	1619	288	444	146	115	95	30	70	5	-	-	-	-	5 3/4"-12	45	-	29.5
SSS7513		333	3457	492	825														59
SSS1006	100	168	2228	357	525	177	130	105	41	70	2	-	-	139	3/4"-10un	6 7/8"-12	45	25	59
SSS10010		260	3449	449	709														72.6

## CYLINDERS

BETEX SLS SERIES: Shorty, Flat, Compact



**SLS**



### Model: SLS-Series

Capacity : 5-150 Ton  
Stroke : 6-17 mm  
Max. working pressure : 10,000 psi / 700 Bar

All rams are single acting with spring return.  
Pistons hard chromed.  
Rams inside roll-polished.  
Rams outside blasted and chromed.

### SLS SERIES: Shorty, Flat, Compact

TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

Type	Capacity ton	Stroke mm	Oil cap cm <sup>3</sup>	A Height mm Retracted	B Height mm Extended	C mm	D mm	E Ø mm	F Ø mm	G Ø mm	H mm	K mm	L mm	M mm	O Ø mm	P Ø mm	U mm	V Ø mm	Weight Kg
SLS50	5	6	4.5	33	39	28.5	58x41	31	25.4	9.5	16	1	20	22	-	-	-	5.5	1.0
SLS100	10	12	18.0	42	54	36	82x55	44	38	11	19	1	28.5	34	-	-	-	7.5	1.4
SLS200	20	12	34.0	51	63	49.3	101x76	60	50.8	15	19	1	39	39	-	-	-	10	3.1
SLS300	30	13	54.0	58	71	52.3	117x95	73	63.5	16	19	2	47	44	-	-	-	10	4.5
SLS500	50	16	102.0	66	82	66.5	140x114	90	70	19	19	2	55	55	-	-	-	11	6.8
SLS750	75	16	166.0	79	95	76.2	165x140	115	82.5	20.5	19	2	69	66	-	-	-	13.5	11.3
SLS1000	100	16	212.0	85	101	76.2	178x152.5	130	92	20.5	19	2	76	74	-	-	-	13.5	14.5
SLS1500	150	17	342.0	100	117	117	216x190	160	115	20.5	23	2	95	82	-	-	-	13.5	26.3



## CYLINDERS

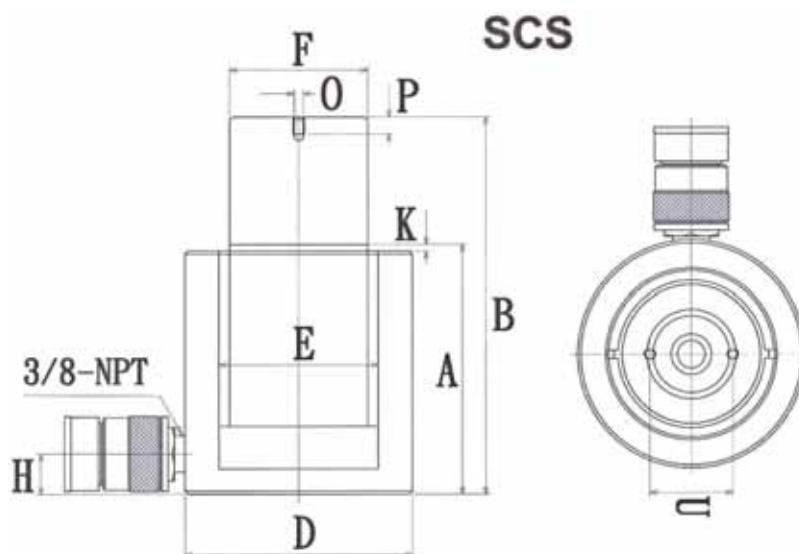
BETEX SCS SERIES, shorty, flat, compact



### Model: SCS-Series

Capacity : 10-100 Ton  
Stroke : 38-62 mm  
Max. working pressure : 10,000 psi / 700 Bar

All rams are single acting with spring return.  
Pistons hard chromed.  
Rams inside roll-polished.  
Rams outside blasted and chromed.



### SCS SERIES: shorty, flat, compact

TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

Type	Capacity ton	Stroke mm	Oil cap cm <sup>3</sup>	A Height mm Retracted	B Height mm Extended	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	O mm	P mm	U mm	V mm	Weight Kg
SCS101	10	38	53.0	88	126	-	70	42	38	-	17	5	-	-	M4	8	26	-	4.1
SCS201	20	45	127.0	98	143	-	93	60	50	-	17	3	-	-	M5	8	39	-	5.0
SCS302	30	62	274.0	117	179	-	107	75	65	-	19	3	-	-	M5	8	39	-	6.8
SCS502	50	60	381.0	122	182	-	125	90	70	-	23	2	-	-	M5	8	39	-	10.9
SCS1002	100	57	756.0	141	198	-	165	130	95	-	31	1	-	-	M8	10	55	-	22.7

## CYLINDERS

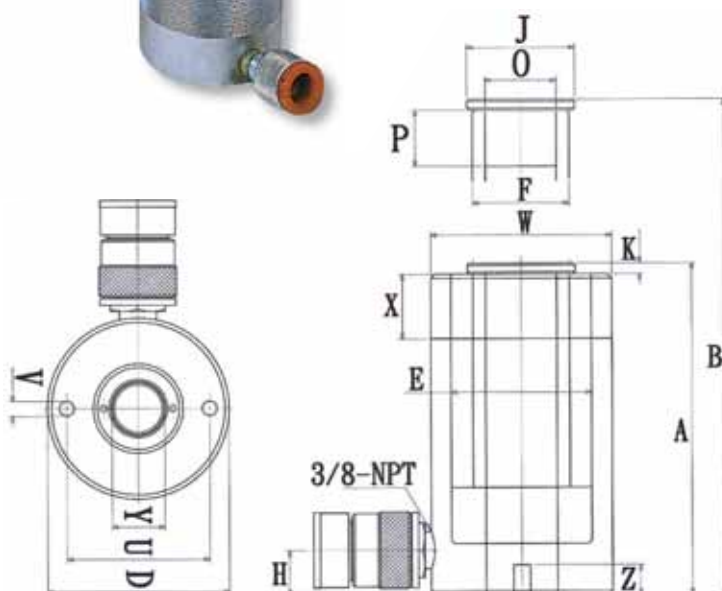
## BETEX SHS SERIES, center hole cylinders



**Model: SHS-Series**

Capacity : 12-100 Ton  
Stroke : 8-158 mm  
Max. working pressure : 10,000 psi / 700 Bar

All rams are single acting with spring return.  
Pistons hard chromed.  
Rams inside roll-polished.  
Rams outside blasted and chromed.



### SHS SERIES: center hole cylinders

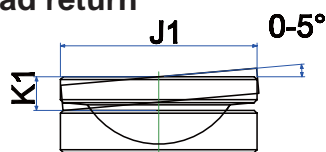
TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

Centre Hole  $\varnothing$

Type	Capacity ton	Stroke mm	Oil cap cm <sup>3</sup>	A Height Retracted	B mm Extended	D Ø mm	E Ø mm	F Ø mm	H mm	J mm	K mm	O Ø un	P mm	U mm	V Ø unc	W Ø un	X mm	Y Ø mm	Z mm	Weight Kg
SHS120	12	8	18	60	68	73	54.1	35	11.5	-	-	3/4"-16	16	50.8	5/16"-18	2 3/4"-16	30	19.5	9	1.5
SHS121	12	42	96	121	163	73	54.1	35	19	-	-	-	16	-	-	2 3/4"-16	30	19.5	-	3
SHS123	12	76	175	180	256	73	54.1	35	19	-	-	-	16	50.8	5/16"-18	2 3/4"-16	30	19.5	12.7	4.2
SHS202	20	52	230	162	214	100	75	54.9	19	54	9	1 9/16"-16	19	82.6	3/8"-16	3 7/8"-12	38	27	9.4	7.5
SHS206	20	152	671	310	462	100	75	54.9	19	54	9	1 9/16"-16	19	82.6	3/8"-16	3 7/8"-12	38	27	9.4	13.5
SHS302	30	68.5	435	182	250.5	114	90	65	23	63	10	1 7/8"-16	22	92	3/8"-16	4 1/2"-12	42	36	14	11
SHS306	30	158	1005	332	490	114	90	65	25	63	10	1 7/8"-16	22	92	3/8"-16	4 1/2"-12	42	36	14	20.4
SHS603	60	76	932	247.5	323.5	158.6	125	90	32	89	12.5	2 3/4"-16	22	130	1/2"-12	6 1/4"-12	50	54	14	26.4
SHS606	60	153	1876	326.5	479.5	158.6	125	90	32	89	12.5	2 3/4"-16	22	130	1/2"-12	6 1/4"-12	50	54	14	34
SHS1003	100	83	1774	254	337	213	165	125	38	125	12	4"-12	28	178	5/8"-11	8 3/8"-12	60	79	19	50.1

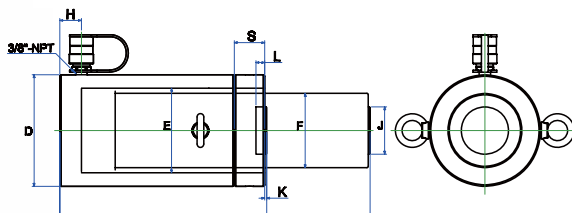
## LOCK NUT CYLINDERS

BETEX JLLC SERIES, load return

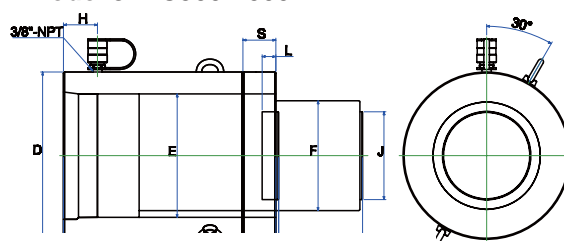


TSA-Optional Tilt Saddle

Model JLLC50-200T



Model JLLC300-1000T



### Lock Nut

Capacity : 50-1000 tons.  
Stroke : 50-300 mm.  
Max. working pressure : 10,000 psi / 700 bar.

### Model: JLLC series

- Single-acting, load return
- Safety locknut for mechanical load holding
- Chrome plated to prevent corrosion and to lower friction for smoother operation
- Withstands side-load forces up to 5% of rated cylinder capacity without scoring
- Stop ring for piston blow-out protection
- Interchangeable, hardened, grooved saddle as standard
- High flow coupler and dust cap included on all models

### JLLC SERIES: single acting, load return

TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

Type	Capacity ton	Stroke mm	Oil cap cm <sup>3</sup>	D ø mm	E ø mm	F mm	H mm	J mm	K mm	L mm	S mm	Weight Kg	Optional Tilt Saddle		
													J1 mm	K1 mm	Type
JLLC502	50	50	354.5	125	95	Tr80x4	20	70	2	13	35	15	70	24	TSA-100
JLLC506	50	150	1063.5	125	95	Tr80x4	20	70	2	13	35	25	70	24	TSA-100
JLLC5010	50	250	1772.5	125	95	Tr80x4	20	70	2	13	35	35	70	24	TSA-100
JLLC1002	100	50	665	165	130	Tr110x6	32	70	2	13	45	30	70	24	TSA-100
JLLC1006	100	150	1995	165	130	Tr110x6	32	70	2	13	45	48	70	24	TSA-100
JLLC10010	100	250	3325	165	130	Tr110x6	32	70	2	13	45	64	70	24	TSA-100
JLLC1502	150	50	1005	205	160	Tr140x6	49	125	2	25	45	53	125	20	TSA-200
JLLC1506	150	150	3015	205	160	Tr140x6	49	125	2	25	45	78	125	20	TSA-200
JLLC15012	150	300	6030	205	160	Tr140x6	49	125	2	25	45	117	125	20	TSA-200
JLLC2002	200	50	1345	235	185	Tr170x6	52	125	2	25	50	83	125	20	TSA-200
JLLC2006	200	150	4035	235	185	Tr170x6	52	125	2	25	50	117	125	20	TSA-200
JLLC20012	200	300	8070	235	185	Tr170x6	52	125	2	25	50	170	125	20	TSA-200
JLLC3002	300	50	2167.5	305	235	Tr210x6	62	155	5	25	60	173	195	75	TSA-300
JLLC3006	300	150	6502.5	305	235	Tr210x6	62	155	5	25	60	233	195	75	TSA-300
JLLC30012	300	300	13005	305	235	Tr210x6	62	155	5	25	60	323	195	75	TSA-300
JLLC4002	400	50	2755	355	265	Tr250x6	76	155	5	25	70	250	225	85	TSA-400
JLLC4006	400	150	8265	355	265	Tr250x6	76	155	5	25	70	327	225	85	TSA-400
JLLC400112	400	300	16530	355	265	Tr250x6	76	155	5	25	70	441	225	85	TSA-400
JLLC5002	500	50	3532.5	395	300	Tr280x6	81	175	5	25	80	367	240	90	TSA-500
JLLC5006	500	150	10597.5	395	300	Tr280x6	81	175	5	25	80	466	240	90	TSA-500
JLLC50012	500	300	21195	395	300	Tr280x6	81	175	5	25	80	617	240	90	TSA-500
JLLC6002	600	50	4274	425	330	Tr300x6	89	195	5	25	85	446	275	95	ATS-600
JLLC6006	600	150	12823	425	330	Tr300x6	89	195	5	25	85	562	275	95	ATS-600
JLLC60012	600	300	25646	425	330	Tr300x6	89	195	5	25	85	737	275	95	ATS-600
JLLC8002	800	50	5970	505	390	Tr360x6	105	225	5	25	100	709	315	120	ATS-800
JLLC8006	800	150	17910	505	390	Tr360x6	105	225	5	25	100	870	315	120	ATS-800
JLLC80012	800	300	35820	505	390	Tr360x6	105	225	5	25	100	1110	315	120	ATS-800
JLLC10002	1000	50	7257	555	430	Tr400x6	108	245	5	25	110	949	355	135	ATS-1000
JLLC10006	1000	150	21772	555	430	Tr400x6	108	245	5	25	110	1141	355	135	ATS-1000
JLLC100012	1000	300	43544	555	430	Tr400x6	108	245	5	25	110	1430	355	135	ATS-1000

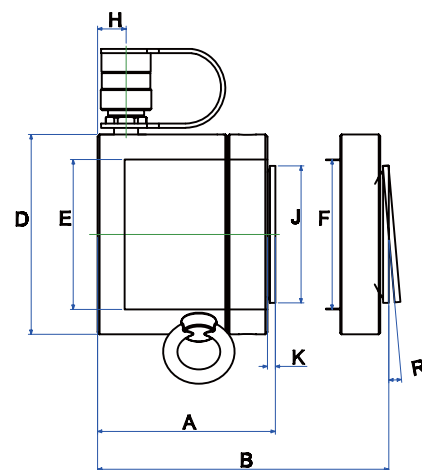
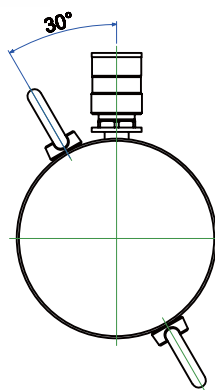
## LOCK NUT CYLINDERS

BETEX JLPC SERIES, single acting, load return



### Model: JLPC series

- Extremely low height for use in confined areas
- Single-acting, load return
- Locknut for positive and safe load holding over a long period of time
- Chrome plated to prevent corrosion and to lower friction for smoother operation
- Withstands side-load forces up to 3% of rated cylinder capacity without scoring
- Overflow port functions as a stroke limiter
- High flow coupler and dust cap included on all models



Capacity : 60-500 tons.  
Stroke : 45-50 mm.  
Max. working pressure : 10,000 psi / 700 bar.

### JLPC SERIES: single acting, load return

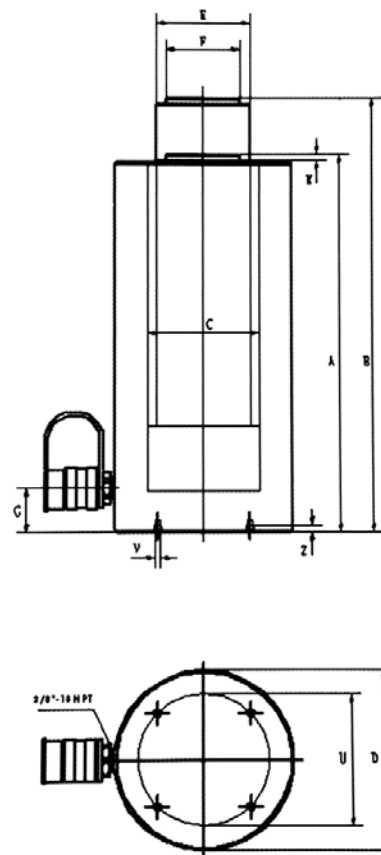
TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

Type	Capacity ton	Stroke mm	Oil cap cm <sup>3</sup>	A mm	B mm	D mm	E Ø mm	F Ø mm	H mm	J Ø mm	K mm	R mm	S mm	Weight Kg
JLPC602	60	50	433	125	175	140	105	Tr105x4	20	96	6	5°	28	15
JLPC1002	100	50	715	137	187	175	135	Tr135x6	21	126	8	5°	31	26
JLPC1502	150	45	963	148	193	220	165	Tr165x6	27	150	9	5°	40	44
JLPC2002	200	45	1273.5	155	200	245	190	Tr190x6	30	180	10	5°	43	57
JLPC2502	250	45	1710	159	204	275	215	Tr215x6	32	200	11	5°	44	74
JLPC4002	400	45	2574	178	223	350	270	Tr270x6	39	250	11	5°	55	134
JLPC5002	520	45	3179	192	237	400	300	Tr300x6	48	285	10	5°	62	189



## ALUMINIUM CYLINDERS

BETEX SSA SERIES, aluminium cylinders



### Model: SSA series

- 14 standard models available for 50 to 150 tons.
- Up to 60% lighter than steel cylinders.
- Heavy-duty spring for easy and full retraction.
- Large saddle surface for angle load protection.
- High-flow quality couplers.
- All models are provided with carrying handles.
- Rod wiper protects inner rod from dirt.
- Hard-anodized housing and piston reduce wear and corrosion.

Custom stroke lengths and capacities are available.

### SSA SERIES: aluminium cylinders

TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

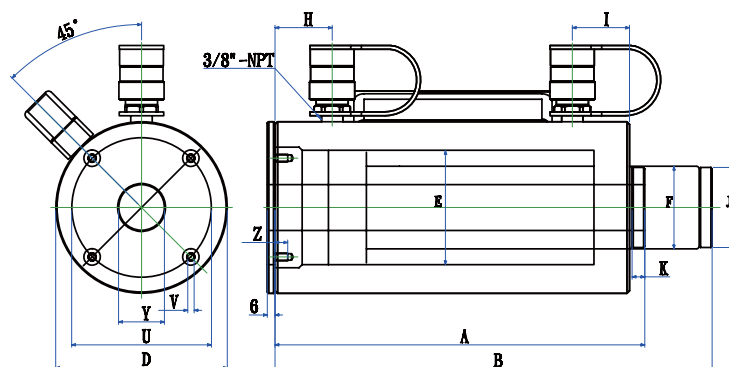
Type	Capacity ton	Stroke mm	Olie cap cc	A Height mm		B	C	D	E	F	G	K	U	V	Z	Weight Kg
				Minimum	Maximum		Body i.d. mm	Body o.d. mm	Piston o.d. mm	mm	Base to port mm	mm	mm	mm	mm	
SSA502	50	50	354	165	215		95	140	80	60	38.1	3	110	M6x1.0	6	6
SSA504	50	100	708	215	315		95	140	80	60	38.1	3	110	M6x1.0	6	7.7
SSA506	50	150	1062	265	415		95	140	80	60	38.1	3	110	M6x1.0	6	8.2
SSA508	50	200	1416	315	515		95	140	80	60	38.1	3	110	M6x1.0	6	12.7
SSA5010	50	250	1770	365	615		95	140	80	60	38.1	3	110	M6x1.0	6	16.4
SSA754	75	100	138	215	315		115	165	100	70	38.1	3	135	M6x1.0	6	13.2
SSA756	75	150	1557	265	415		115	165	100	70	38.1	3	135	M6x1.0	6	15.9
SSA1002	100	50	663	165	215		130	203	110	90	38.1	3	160	M6x1.0	6	18.2
SSA1004	100	100	1326	215	315		130	203	110	90	38.1	3	160	M6x1.0	6	20.5
SSA1006	100	150	1989	265	415		130	203	110	90	38.1	3	160	M6x1.0	6	22.7
SSA10010	100	250	3315	365	615		130	203	110	90	38.1	3	160	M6x1.0	6	30.9
SSA1502	150	50	1068	165	215		165	254	140	110	38.1	3	200	M6x1.0	6	26.4
SSA1506	150	150	3205	265	415		165	254	140	110	38.1	3	200	M6x1.0	6	39
SSA15010	150	250	5342	365	615		165	254	140	110	38.1	3	200	M6x1.0	6	50

## ALUMINIUM CYLINDERS

BETEX ALNC SERIES, load return, lock nut type



Model ALNC cylinders 50-100T



### Model: ALNC series

- Half the weight of steel cylinders
- Locknuts offer extended load holding
- Large bearing surfaces for side load protection
- Carrying handles standard on all models
- Hard-anodized coating reduces wear & corrosion
- Stop rings for piston blow-out protection
- Heavy duty spring for fast & full return

### Load Return, Lock nut type

Capacity : 50-100 tons.  
Stroke : 50-250 mm.  
Max. working pressure : 10,000 psi / 700 bar.

### Base Plate Mounting holes dimensions (mm)

Cylinder model/ capacity ton	Bolt circle U mm	Thread V mm	Thread Dept X mm
ALNC-50	110	M6 x 1.0	10
ALNC-100	170	M6 x 1.0	10

### ALNC SERIES: load return, lock nut type

Type	Capacity ton	Stroke mm	Oil cap cm <sup>3</sup>	A mm	B mm	D mm	E mm	F mm	H mm	J mm	K mm	S mm	Weight Kg
ALNC502	50	50	354.5	206	257	135	95	Tr80x4	38	60	3	36	10
ALNC504	50	100	709	257	359	135	95	Tr80x4	38	60	3	36	12.7
ALNC506	50	150	1063.5	308	461	135	95	Tr80x4	38	60	3	36	14.5
ALNC5010	50	250	1772.5	409	663	135	95	Tr80x4	38	60	3	36	18.2
ALNC1002	100	50	663.5	213	264	198	130	Tr105x6	38	90	3	43	20.5
ALNC1004	100	100	1327	264	366	198	130	Tr105x6	38	90	3	43	25
ALNC1006	100	150	1990.5	315	468	198	130	Tr105x6	38	90	3	43	29.1
ALNC10010	100	250	3317.5	416	670	198	130	Tr105x6	38	90	3	43	37.3

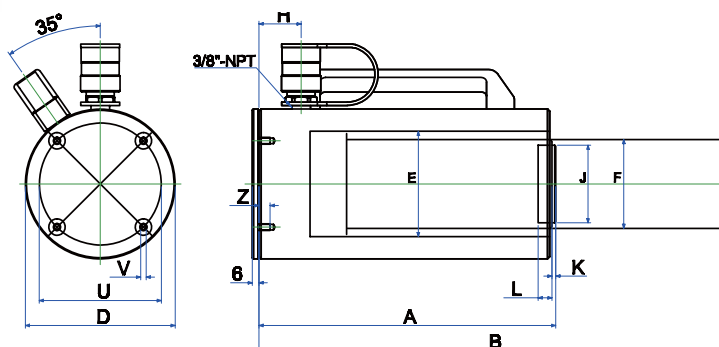
TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

## ALUMINIUM CYLINDERS

BETEX ACHC SERIES, spring return, hollow



Model ACHC 30-60T



### Spring Return, Hollow type

Capacity : 30 & 60 tons.

Stroke : 50-150 mm.

Max. working pressure : 10,000 psi / 700 bar.

### Model: ACHC-series

- Half the weight of steel cylinders
- Heavy duty spring for fast & full return
- Chrome plated centre hole for extra protection
- Large bearing surfaces for side load protection
- Carrying handles standard on all models
- Hard-anodized coating reduces wear & corrosion
- Stop rings for piston blow-out protection
- Rod wiper protects inner cylinder from dirt

### Base Plate Mounting holes dimensions (mm)

Cylinder model/ capacity ton	Bolt circle U mm	Thread V mm	Thread Dept Z mm
ACHC-30	110	M6 x 1.0	10
ACHC-60	160	M6 x 1.0	10

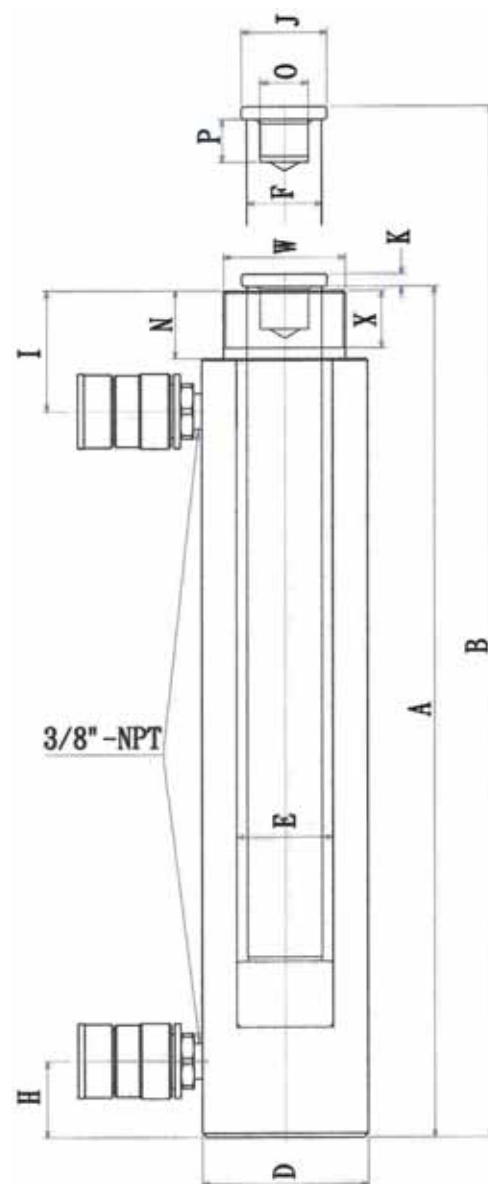
### ACHC SERIES: spring return, hollow type

Type	Capacity ton	Stroke mm	Oil cap cm <sup>3</sup>	A Height mm Retracted	B Height mm Extended	D Ø mm	E Ø mm	F Ø mm	H mm	J Ø mm	K mm	L mm	Weight Kg
ACHC302	30	50	362	177	227	135	90	65	35	63	11.5	36	10
ACHC306	30	150	728	305	455	135	90	65	35	63	11.5	36	14
ACHC602	60	50	684	177	227	198	125	90	35	89	14	54	19.5
ACHC606	60	150	1377	305	455	198	125	90	35	89	14	54	25

TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

## CYLINDERS

BETEX DAC SERIES, double acting, hollow, spring return



### Model: DAC series

Capacity : 10-100 tons.  
Stroke : 153 - 356 mm.  
Max. working pressure : 10,000 psi / 700 bar.

Perfect for construction, shipyards, utilities, mining and equipment maintenance.

Hard chromed piston.

Ram inside roll-polished.

Ram outside blasted and chromed.

### DAC SERIE: double acting, hollow, spring return

TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

Type	Capacity ton		Stroke mm	Oil cap cm³		A Height mm	B mm	D ø mm	E ø mm	F ø mm	H mm	I mm	J ø mm	K mm	O ø un	P mm	U mm	V mm	Z mm	W ø un	X mm	Weight Kg
	Push	Pull		Push	Retracted																	
DAC1010	10	4.5	255	405	160	408	663	78	45	35	36	57	50	6	1"-8	20	-	-	-	2 1/4"-14	27	13
DAC1012	10	4.5	305	485	190	458	763	78	45	35	36	57	50	6	1"-8	20	-	-	-	2 1/4"-14	27	15
DAC2512	25	13	305	1500	720	470	775	101	56	50	36	26	50	10	1 1/2"-16	25	-	-	-	4"-12	40	29
DAC308	30	15	204	901	440	386.5	590.5	103	75	55	36	80	50	10	1 1/2"-16	30	-	-	-	4"-12	50	20
DAC3014	30	15	356	1572	760	551.5	907.5	103	75	55	36	80	50	10	1 1/2"-16	30	-	-	-	4"-12	50	29
DAC506	50	15	153	1084	320	336	489	127	95	80	30	76	70	3	1"-12	25.4	-	-	-	5"-12	50	29
DAC5013	50	15	356	2339	680	511	841	127	95	80	30	76	70	3	1"-12	25.4	-	-	-	5"-12	50	43
DAC756	75	25	153	1589	505	353	506	146	115	95	30	75	70	3	1"-12	38	-	-	-	5 3/4"-12	50	40
DAC7513	75	25	356	3427	1090	524	854	146	115	95	30	75	70	3	1"-12	38	-	-	-	5 3/4"-12	50	58
DAC1006	100	45	153	2030	945	359	512	177	130	95	38	71	70	10	1 3/4"-12	35	139	3/4"-10	25.4	6 7/8"-12	50	59
DAC10013	100	45	356	4380	2040	526	856	177	130	95	38	71	70	10	1 3/4"-12	35	139	3/4"-10	25.4	6 7/8"-12	50	83

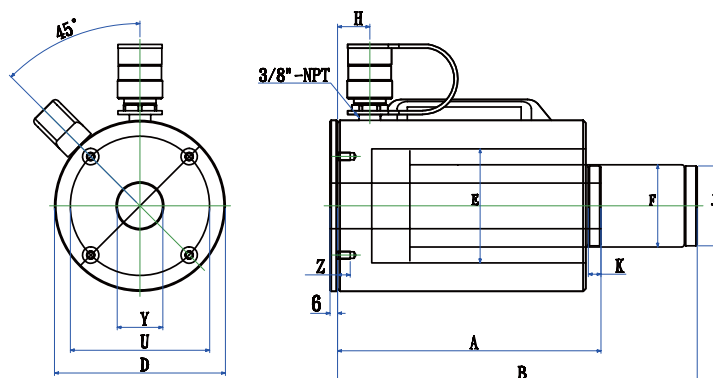


## ALUMINIUM CYLINDERS

BETEX ADAC SERIES, spring return, hollow, double acting



Model ADAC cylinders 30-60T



### Spring Return, Hollow, Double acting

Capacity : 30-60 tons.  
Stroke : 50-250 mm.  
Max. working pressure : 10,000 psi / 700 bar.

### Model: ADAC-series

- Half the weight of steel cylinders
- Steel piston for protection against load damage
- Chrome plated centre hole for extra protection
- Carrying handles standard on all models
- Hard-anodized coating reduces wear & corrosion
- Stop rings for piston blow-out protection
- Rod wiper protects inner cylinder from dirt

### Base Plate Mounting holes dimensions (mm)

Cylinder model/ capacity ton	Bolt circle U mm	Thread V mm	Thread Dept Z mm
ADAC-30	110	M6 x 1.0	10
ADAC-60	160	M6 x 1.0	10

### ADAC SERIES: spring return, hollow, double acting

TIP! Use in combination with: hand- and foot pumps, page 42-47. Accessoires, page 49, 50, 51

Type	Capacity ton	Stroke mm	Capacity ton Push	Capacity ton Pull	Oil cap cm <sup>3</sup> Push	Oil cap cm <sup>3</sup> Pull	A mm	B mm	D mm	E mm	F mm	H mm	I mm	J mm	K mm	Y mm	Weight Kg
ADAC302	30	50	33	21	238	152	177	227	135	90	65	35	45	63	11.5	36	9.3
ADAC306	30	150	33	21	715	456	305	455	135	90	65	35	45	63	11.5	36	13
ADAC3010	30	250	33	21	1192	760.5	430	680	135	90	65	35	45	63	11.5	36	16
ADAC602	60	50	62	41	447.5	295	177	227	198	125	90	35	45	89	14	54	15.5
ADAC606	60	150	62	41	1342	886	305	455	198	125	90	35	45	89	14	54	23
ADAC6010	60	250	62	41	2237	1477	430	680	198	125	90	35	45	89	14	54	30.5

## HEAVY-DUTY HANDPUMPS

BETEX PB, heavy-duty handpumps

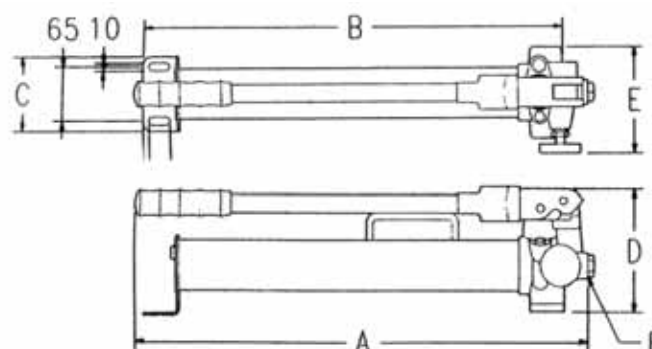


### Model: PB series

- Betex heavy duty handpumps feature a forged construction.
- The drop-forged base and rugged welded construction effectively prevents collision damage and deformation.
- The professional choice for a wide range of industrial applications.
- Internal overload valve prevents pump from being used beyond its rated capacity.
- Two-speed pumps provide rapid pumping to load the cylinder quickly.
- External adjustable relief valve with locking mechanism.
- Carrying handles for easy portability.

### Also available as a HANDPUMPSET, this includes:

- T-adaptor
- manometer
- hose
- couplings
- steel storage case



### Two-speed heavy-duty handpumps

TIP! Use in combination accessoires, page 49, 50, 51

Type	Pressure rating bar		Usable oil capacity cc	Oil volume per stroke cc		A mm	B mm	C mm	D mm	E mm	Oil port thread F	Weight Kg
	1st stage	2nd stage		1st stage	2nd stage							
PB350	13,8	700	350	13,0	2,8	335	303	90	146	128	3/8 NPT	5,5
PB600	13,8	700	600	13,0	2,8	543	480	90	146	142	3/8 NPT	7,6
PB700	13,8	700	700	13,0	2,8	632	541	90	146	128	3/8 NPT	7,3
HC1500	13,8	700	1500	13,0	2,8	633	551	106	200	142	3/8 NPT	11,2
HC2000	13,8	700	2000	13,0	2,8	580	523	140	189	148	3/8 NPT	11,5

## ALUMINIUM HANDPUMPS

BETEX AHP, aluminium handpumps

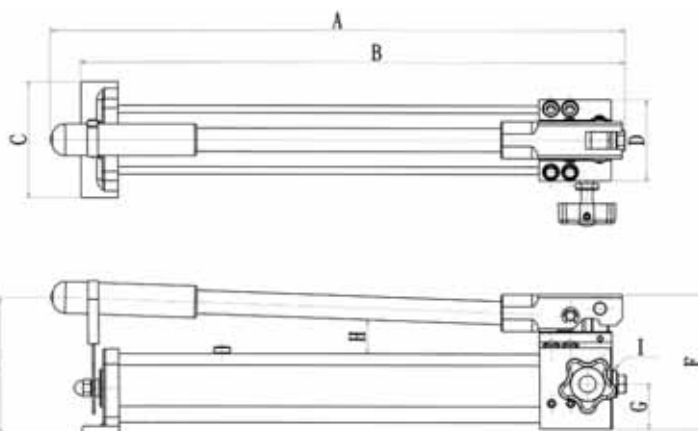


### Model: AHP series

- Our handpumps are always characterized by their rugged construction and easy-operation handles.
- Aluminium alloy construction and handy release knobs with locking mechanism are perfect for industrial applications and daily operations.
- Special lightweight design with aluminium alloy construction makes for an easily portable and mobile unit.
- Specially designed AHP703D is for double-acting cylinders without the need for extra controlling valve and adapters.

### Also available as a HANDPUMPSET, this includes:

- T-adaptor
- manometer
- hose
- couplings
- steel storage case



### Aluminium handpumps

TIP! Use in combination accessoires, page 49, 50, 51

Type	Pressure rating (bar)		Usable oil capacity (cc)	Oil volume per stroke (cc)		A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I	Weight Kg
	1st stage	2nd stage		1st stage	2nd stage										
AHP701	13.8	700	350	12.9	1	391	361	110	77	140	127	42.5	37	3/8" -NPT	2.3
AHP702	13.8	700	1000	12.9	2.3	542	513	110	77	130	127	42.5	-	3/8" -NPT	3.5
AHP703	13.8	700	2000	12.9	2.3	623	556	150	102	135	135	50	-	3/8" -NPT	6
AHP703D	13.8	700	2000	12.9	2.3	623	556	150	102	135	135	24/37	-	3/8" -NPT	7.0

## ALUMINIUM HEAVY DUTY HAND PUMPS

BETEX HP SERIES, aluminium hand pumps

### Model: HP series

Max. working pressure : 10,000 psi / 700 bar.

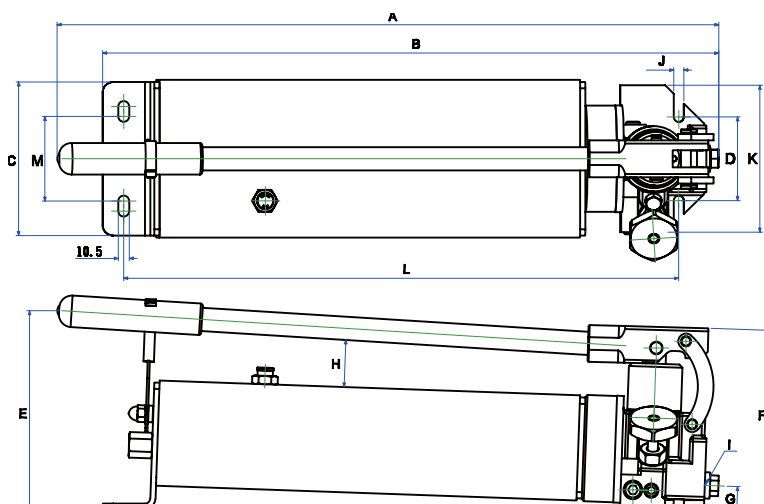
Large 3/8" pressure port for maximum flow.

Low Handle effort for easy operation.

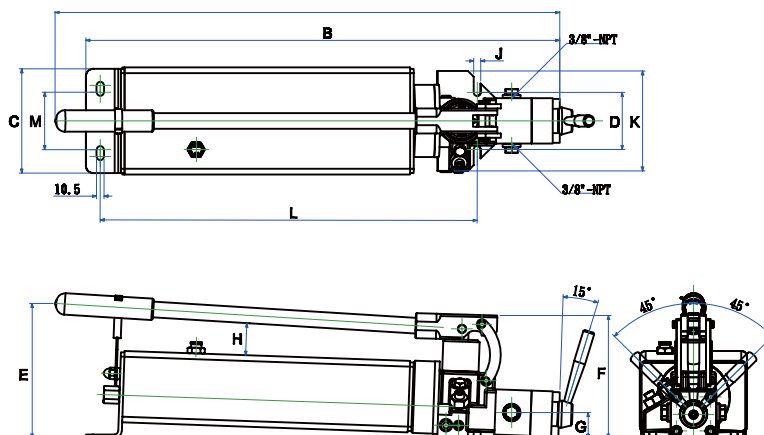
Two speed models.



### Model HP35



### Model HP35D (double acting)



### Model: HP series

- Our handpumps are always characterized by their rugged construction and easy-operation handles.
- Aluminium alloy construction and handy release knobs with locking mechanism are perfect for industrial applications and daily operations.
- Special lightweight design with aluminium alloy construction makes for an easily portable and mobile unit.
- Specially designed HP35D is for double-acting cylinders without the need for extra controlling valve and adapters.

### HP hand pumps

TIP! Use in combination accessoires, page 49, 50, 51

Type	Pressure rating (bar)		Usable oil capacity (cc)	Oil volume per stroke (cc)		A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I	Weight Kg
	1st stage	2nd stage		1st stage	2nd stage										
HP35	28	700	3500	40	3	629	586	146	79.7	79.7	79.7	22.35	45	3/8" -NPT	16.5
HP35D	28	700	3500	40	3	706	663	146	79.7	79.7	79.7	36	45	3/8" -NPT	16.8



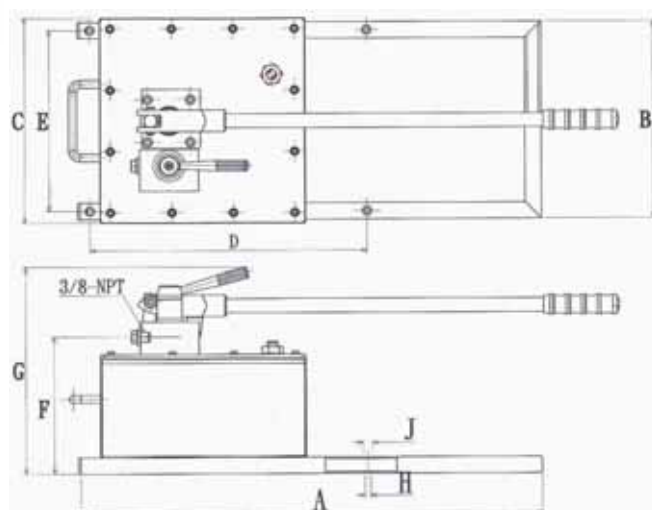
## HAND PUMPS

### BETEX HP SERIES, 10L reservoir hand pumps



#### Model: HP hand pumps series

- Rugged construction: most components are made of aluminium alloy and are built for long service life, easy operation and portability
- Automatic 10,000 psi overload-relief valve protects components in hydraulic systems and ensures safe operation
- New inlet/outlet design features slow deflation function reducing noise, and allows multidirectional operation
- Oil capacity can be modified according to your specific application



#### HP hand pumps

TIP! Use in combination accessoires, page 49, 50, 51

Type	Pressure rating (bar)		Usable oil capacity (cc)	Oil volume per stroke (cc)		A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	Weight Kg
	1st stage	2nd stage		1st stage	2nd stage										
HP80	27.5	700	8000	113	4	700	300	312	420	275	208.5	315.5	9	14	24
HP80D	27.5	700	8000	113	4	700	300	312	420	275	216.5	338.5	9	14	24

## FOOT PUMPS

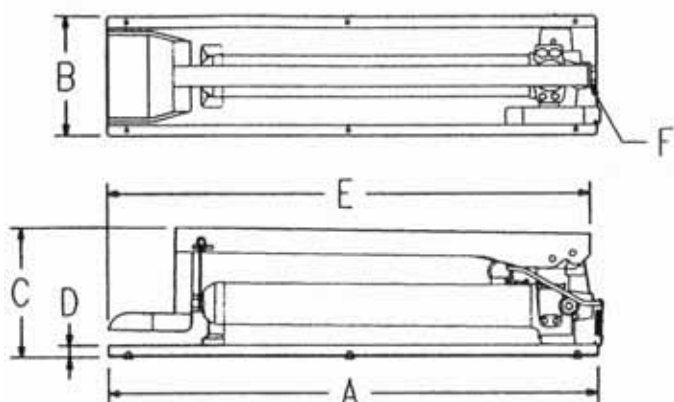
### BETEX FHB SERIES, foot pumps

Max. working pressure: 10,000 psi / 700 bar.  
 Large  $\frac{3}{8}$ " pressure port for maximum flow.  
 Low pedal effort for easy operation.  
 Single & twin speed models.  
 Metal pump.



#### Model: FHB series

- Betex® innovative foot pumps are not only attractively designed, but are also durable and stable
- Foot-operated pump and release pedal, providing accurate control for operating in different conditions
- Single-speed, twin-speed and forged metal versions available
- Spring-loaded foot pedal is convenient and easy to operate
- Internal overload valve prevents pump from being used beyond its rated capacity



#### FHB foot pumps

TIP! Use in combination accessoires, page 49, 50, 51

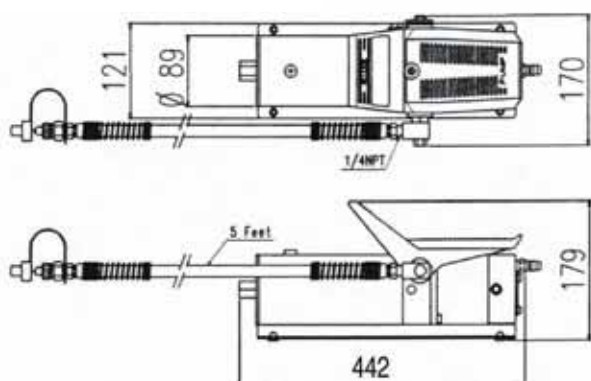
Type	Pressure rating (bar)		Usable oil capacity (cc)	Oil volume per stroke (cc)		A mm	B mm	C mm	D mm	E mm	Output flow rate (cc)		Air cons.	F	Weight Kg
	1st stage	2nd stage		1st stage	2nd stage						Unload	Load			
FHB350	13.8	700	350	13.0	2.8	474	174	192	17	461	-	-	-	$\frac{3}{8}$ "-NPT	8.5
FHB600	13.8	700	700	13.0	2.8	660	174	192	17	647	-	-	-	$\frac{3}{8}$ "-NPT	10.8
FHB700	13.8	700	700	13	2.8	708	174	192	17	695	-	-	-	$\frac{3}{8}$ "-NPT	11.1

## FOOT PUMPS

BETEX AP SERIES, air/hydraulic pumps



AP921



### Model: AP series

- Rugged construction: most components are made of aluminium alloy and are built for long service life, easy operation and portability
- Automatic 10,000 psi overload-relief valve protects components in hydraulic systems and ensures safe operation
- New inlet/outlet design features slow deflation function reducing noise, and allows multidirectional operation
- Oil capacity can be modified according to your specific application



AP1600

### AP foot pumps and air/hydraulic pump

TIP! Use in combination accessoires, page 49, 50, 51

Type	Pressure rating (bar)		Usable oil capacity (cc)	Oil volume per stroke (cc)		A mm	B mm	C mm	D mm	E mm	Output flow rate (cc)		Air cons.	F	Weight Kg
	1st stage	2nd stage		1st stage	2nd stage						Unload	Load			
AP921	-	-	750	-	-	-	-	-	-	-	550	130	3-8 bar	-	5.4
AP1600	-	-	1600	-	-	-	-	-	-	-	1280	150	3-8 bar	-	8.2

## ALUMINIUM HIGH PRESSURE HAND PUMPS

BETEX AHP/UHP SERIES, aluminium high pressure hand pumps: 1000 / 1500 / 2800 bar

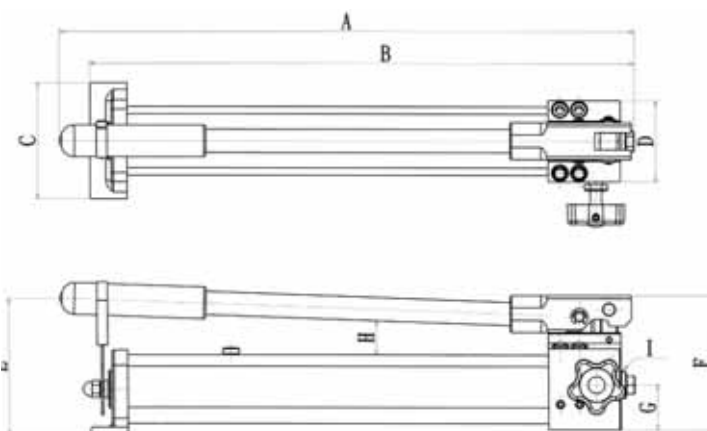


### Model: AHP/UHP serie

- AHP704: high working pressure up to 1000 / 1500 bar
- UHP2800: light weight model for ultra high working pressure of 2800 bar for special applications.

Also available as HAND PUMP SETS, which are supplied complete with:

- T-piece
- manometer
- tube
- couplers
- storage case



### Aluminium hand pumps

Type	Pressure rating bar		Usable oil cap. cc	Oil volume per stroke cc		A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I	Weight Kg
	1st stage	2nd stage		1st stage	2nd stage										
AHP704	13.8	1000	1000	12.9	1.65	539	501	110	77	145	127	42.5	-	3/4"-16UNF	3.5
AHP705	13.8	1500	2700	6.5	1	699	629	150	102	152	157	50	-	3/8" - NPT	6.7
UHP2800	14	2800	1000	12.9	0.65	620	488	80	140	108	157	26	-	3/4"-16UNF	5.3



## ACCESSOIRES

Hoses, regulators, valves, gauge adapters



BP422



M0031B



E0567



VB201



VB401



VC331

- Heavy-duty hoses rated at 700 bar, meet IJ-100 specifications
- Hoses are black rubber coated with two layers of steel braided reinforcement, I/D of 1/4".
- Flexible hoses with spring guards at both ends to protect the adapters. Available to special lengths upon request.
- BETEX supplies a variety of screw-set quick couplers in four different sizes. These can also be used with existing hydraulic systems.
- All couplers are rated to 700 bar, and have an anti-leak mechanism that works in either low- and/or high-pressure conditions.

### MODEL: M0031B

Hydraulic gauge  
Liquid-filled, dampens needle vibration.  
Indicated range: 1000 Bar (14,000 psi); Safety Range: 700 Bar(10,000psi).  
Diameter of Gauge surface: 63 mm; Thread size: 1/4 NPT.

### MODEL: E0567

Gauge adapter  
Allows you to fit gauge between hydraulic pump and hose coupling.

### MODEL: VB201/VB401

Manifold valve  
Allows distribution of hydraulic fluid from one source to two or four cylinders.

### MODEL: VC331

One-way relief valve  
Allows metered lowering of cylinder and locks when prolonged load lifting is required. Also protects rams and hoses which need to be separated.

### MODEL: BP422

Manifold valve  
Allows distribution of hydraulic fluid for double-acting cylinder.  
Aluminium alloy construction for long service life, easy operation and portability

### MODEL: CP 330

Quick coupler set.  
This set includes CP331 female coupler and CP332 male coupler

Type	End one	End two	Length (mm)
HS225	1/4" NPT	1/4" NPT	1500
HS235	1/4" NPT	3/8" NPT	1500
HS226	1/4" NPT	1/4" NPT	1800
HS236	1/4" NPT	3/8" NPT	1800
HS333	3/8" NPT	3/8" NPT	900
HS335	3/8" NPT	3/8" NPT	1500
HS336	3/8" NPT	3/8" NPT	1800
CP330	3/8" NPT	3/8" NPT	-
CP331	3/8" NPT	3/8" NPT	-
CP332	3/8" NPT	3/8" NPT	-

### COUPLER SETS



CP330

CP331

CP332



## ACCESSORY Max. Working Pressure -700 bar/10,000 psi

### FITTINGS

Type	Description	Dimensions mm
ADL101	Elbow	
ADL202	Elbow	
ADL203	Elbow	
ADC303	Elbow	
ADE303	Elbow	
ADT101	Tee	
ADT202	Tee	
ADT303	Tee	
ADG303	Tee	
ADF102	Adaptor	
ADF203	Adaptor	

Type	Description	Dimensions mm
ADF302	Adaptor	
ADF303	Adaptor	
ADF304	Adaptor	
ADI202	Connector	
ADI203	Connector	
ADI303	Connector	
ADO2031	Reducing Connector	
ADO203	Reducing Connector	
ADO101	Hexagon Nipple	
ADO202	Hexagon Nipple	
ADO204	Hexagon Nipple	

## ACCESSORY Max. Working Pressure -700 bar/10,000 psi

### ACCESSOIRES

Type	Description	Dimensions mm
ADO205	Hexagon Nipple	
ADO303	Hexagon Nipple	

### GAUGE

Type	Description	Dimensions mm
M0039		Liquid-filled, dampens needle vibration. Calibrated to read in bar, psi. Dial – 2½"; Accuracy, meets DIN Standard ±1.6% of full scale

### 3-WAY Directional Control Valve

Type	Description	Dimensions mm
BP2	700 bar; 17l/min Manual, 2-position, Advance/Retract for single-acting cylinders	

### 4-WAY Directional Control Valve

Type	Description	Dimensions mm
BP421	for use with double-acting cylinder or two single-acting cylinders 700 bar; 17l/min Manual, Advance/Hold/Retract	
BP422		
BP423 *BP425	Manual, Advance/Hold/Retract; Lock for Load Holding	

## JACKS

### BETEX CJ SERIES, low-height jacks



#### Model: CJ series

Spring-loaded

Available in : 10 or 20 ton.

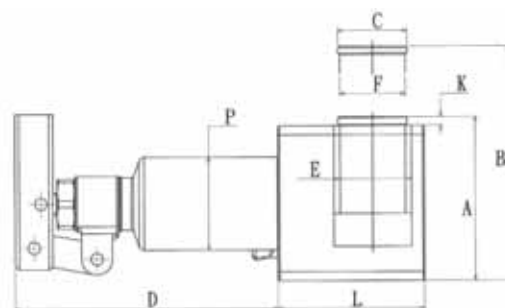
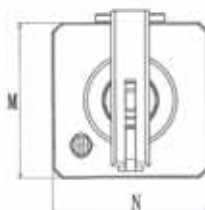
Stroke : 41 mm.

Max. working pressure : 10,000 psi / 700 bar.

Hard chromed piston.

Ram inside roll-polished

Perfect for jobs with limited space, like positioning machines, mounting tools or load tests.



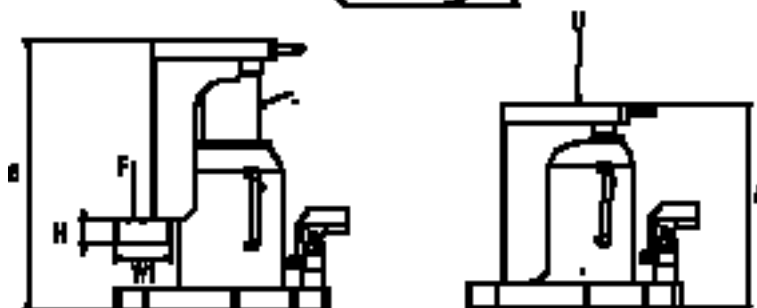
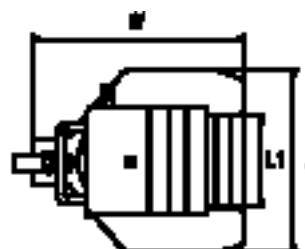
#### CJ SERIES: Low-height jacks

TIP! Use in combination with: Betex shims, page 64, 65

Type	Capacity ton	Stroke mm	Oil cap cm <sup>3</sup>	A Height mm Retracted	B Height mm Extended	C Ø mm	D mm	E Ø mm	F Ø mm	H mm	K mm	L mm	M mm	N mm	P Ø mm	Weight Kg
CJ100	10	41	155	95	136	40	152.5	45	37.95	407.5	4.9	85	90	90	53.8	5.5
CJ200	20	41	250	95	136	40	152.5	65	50.8	407.5	4.9	110	90	110	69.5	8

## TOE JACKS

### BETEX TOE SERIES



#### Toe-jacks

- Heat-treated and chrome-plated hydraulic rod provides longer seal life and optimum performance.
- Internal safety valve prevents toe jack being used beyond its rated capacity.
- Leakages are prevented by welding the housing onto the forged base.
- Strong toe lift for long service life.
- Low toe heights for tight spaces.
- Swivel sockets for easy operation.
- Toe jacks can be operated quickly by hand without a load.
- Removable handle makes unit easier to operate.

#### Toe jacks

TIP! Use in combination with: Betex shims, page 64, 65

Type	Top cap. U (tons)	Top-lift cap. F (tons)	Stroke mm	Min. height A mm	Max. height A mm	Piston rod diam. J mm	Base dimensions LxW mm	Height H mm	Top-lift L1xW1 mm	Weight kg
TOE-025	2.5	1.2	100	176	276	19	140x190	19	65x50	6.5
TOE-040	4	2	110	136	246	25	150x200	19	65x50	8
TOE-060	6	3	100	134	234	36	160x217	19	65x50	10
TOE-100	10	5	130	164	294	40	189x242	22	75x55	11.9
TOE-160	16	8	134	168	302	52	211x256	25	90x55	23
TOE-200	20	10	140	182	322	56	228x274	25	100x60	31
TOE-300	30	15	100	147	247	70	259x305	32	110x60	47.3
TOE-500	50	25	110	165	275	90	299x347	38	150x60	77.5

## PORTABLE POWER KITS

### BETEX PPK, Portable Power Kits



**Set PPK 4 (art.nr. 7560804)**  
incl. 4 t cylinder, 100 mm stroke, in portable transport case

**Set PPK 10 (art.nr. 7560810)**  
incl. 10 t cylinder, 150 mm stroke, in portable transport case on wheels.

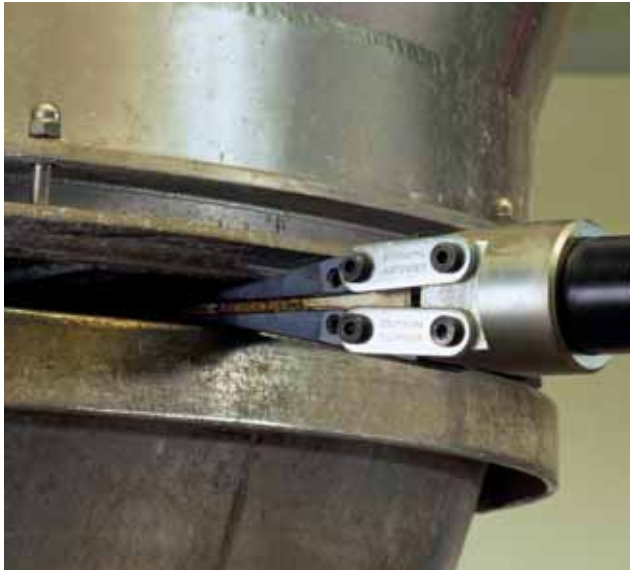


- 'Snap-on' design for quick and easy assembly and disassembly.
- Extra thick extension rods designed for strength prevent bending.
- Single acting pump, 700 bar with safety valve to prevent overloading.
- Flexible hydraulic hose, 1.8 mtr.
- Versatile through many different accessories!
- All parts are made of forged steel.

Type PPK 4	Description 4 t	Type PPK 10	Description 10 t
PA351	"heavy duty" hydraulic hand pump	PA603	"heavy duty" hydraulic hand pump
HS236	HD hose 1,8 meter	HS236	HD hose 1,8 meter
PA404	4-tons cylinder with 101,6 mm stroke	PA106A	10-tons cylinder with 152,4 mm stroke
SR05A	spreader 0,5 ton	SR05A	spreader 0,5 ton
B0523	extension rod 406,4 mm	B0519	extension rod 482,6 mm
B0524	extension rod 304,8 mm	B0520	extension rod 355,6 mm
B0525	extension rod 203,2 mm	B0521	extension rod 254 mm
B0526	extension rod 101,6 mm	B0522	extension rod 127 mm
B0467	male connector	B0406	male connector
F0180	flat base	F0174	flat base
F0181	90 degree V base	F0175	90 degree V base
F0182	spreader	F0176	spreader
F0183	plunjer toe	F0177	plunjer toe
F0184	ram toe	F0178	ram toe
B0540	rubber flexible head	B0541	rubber flexible head
F0179	serrated saddle	F0173	serrated saddle
G0026	transport case	G0021	transport case on wheels



## HYDRAULIC SPREADERS/LIFTERS



15 TLS



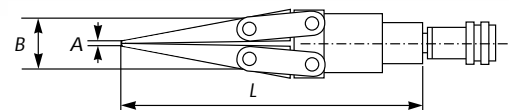
25 TLS

### Loads are lifted perpendicularly!

- Ideal for numerous industrial maintenance repair jobs.
- Accurate height adjustments (for instance shaft alignment) can easily be executed by one person.
- Easy, light and very practical to use. Particularly suitable when available space is very limited.
- Suitable for spaces of 5 to 43 mm.
- Due to the reduced thickness of the jaws, made of high quality hardened steel, these multi-functional wedges can be used for jobs where working space is extremely limited.

### Various combination sets\* available in carrying case, including:

- hydraulic spreader/lifter
- 2-stage handpump
- hose, 1.8 mtr
- pressure gauge
- T-adapter
- male (hose) half coupler
- complete quick coupler



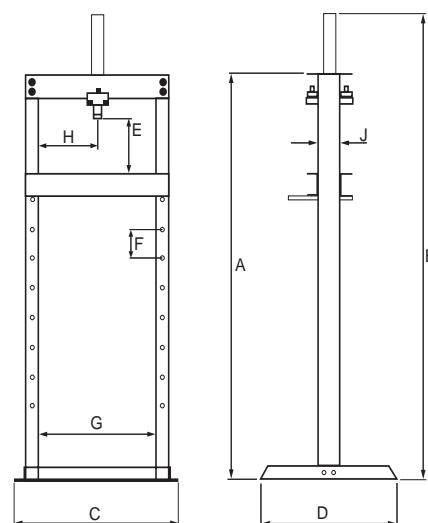
Type	Art. no.	Capacity ton	Max. spread mm	Max. pressure bar	Combined pump	A mm	B mm	L mm	Weight Kg
15TL	78170	15	10	700	single-acting	5	40	235	4
15 TLS	789150	15	10	700	single-acting	5	40	235	4
25 TLS	789250	25	16	700	single-acting	8	43	342	8

\* see price list

## WORKSHOP PRESSES

### BETEX WSP, professional workshop presses with hand, air or electric pump

- Robust steel frame ensures maximum stability and prevents bending.
- Multiple working positions for press bed.
- Steel crossbars prevent the frame from bending when loaded.
- Includes gauge for precise control of the press force.
- Available in 2 models: 10 en 25 ton.
- Single-acting and spring-return ram with 10" stroke is horizontally moveable on head channel.
- Also available with electric- or air-hydraulic pump.



#### BETEX WSP 10 ton

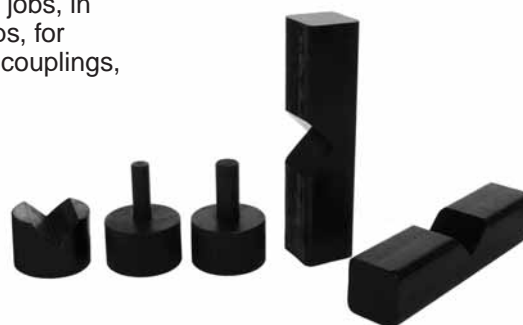
Ideal for mounting and dismantling jobs, like repairing motors, transmissions, removal and installation of gears, bearings and other parts.

#### BETEX WSP 25 ton

Ideal for heavy duty pressing jobs, in garages, industrial work shops, for mounting and dismantling of couplings, bearings and other parts.

Type	Cap. * ton	Stroke mm	Type pump	Work force bar	Type cilinder	Weight kg
WSP 10	10	250	hand	700	single acting	87
WSPA 10	10	250	air	700	single acting	88
WSPE 10	10	250	electric	700	single acting	90
WSP 25	25	250	hand	700	single acting	145
WSPA 25	25	250	air	700	single acting	146
WSPE 25	25	250	electric	700	single acting	148

\*cap. up to and including 200 ton available.



WSP shop presses are including adaptors and accessories to support work: V adaptor, V block and 2 pushing adaptors.

Type	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm
WSP 10 ton	1650	1900	740	610	225-1065	120	540	54-490	100
WSP 25 ton	1650	1900	790	700	232-1072	120	540	50-490	125

## WORKBENCH

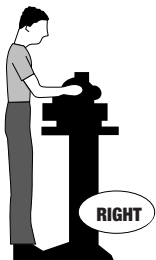
### BETEX Mobilift



H 400



H 1000



A correct working height and room for the feet allows for a good working posture, with back straight, the worktop close to the body.



Workbench too low, no room for feet under the worktop.

### The Betex Mobilift

is a modern design adjustable bench with a unique **one-arm lifting principle**.

The bench is mobile and stable. The use of a hydraulic pump means no cables on the work floor. All these characteristics make the Mobilift very popular in workshops, so that it soon becomes indispensable.

**The Mobilift workbenches are available in 2 types: capacity 400 or 1000 kg.**

#### Advantages:

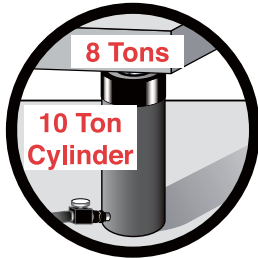
- Very stable, therefore very suitable as a workbench.
- Extra safe due to the lack of a 'scissors' movement.
- Wooden worktop prevents work from slipping.
- 2 lockable drawers.
- Simple controls.
- **Promotes a good working posture!**

### IDEAL IN ANY WORKSHOP

Type/art. nr.	H400/260400	H1000/261000
Carrying capacity	400 kg	1000 kg
Dimensions in lowest position (lxwxh)	1500x950x620	1450x860x620
Worktop dimensions (lxw)	1220x800	1220x800
Working height: minimum	620	670
maximum	1160	1160
Height adjustment	Hydraulic footpump	Hydraulic footpump
Security devices	check valve	check valve
Base/frame	2 casters with brake, 2 rigid casters, Ø 160, wheel width 50	2 casters with brake, 2 rigid casters, Ø 160, wheel width 50
Wheel basis width: length	630 1080	630 1080
Tool drawers (lxwxh) (2 pcs with padlock) (dimensions in mm)	500x300x100	500x300x100

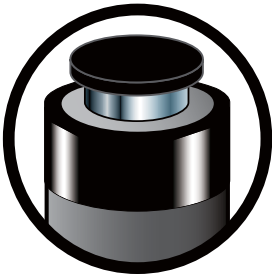
## SAFETY TIPS

### 1. Choose the right ram.



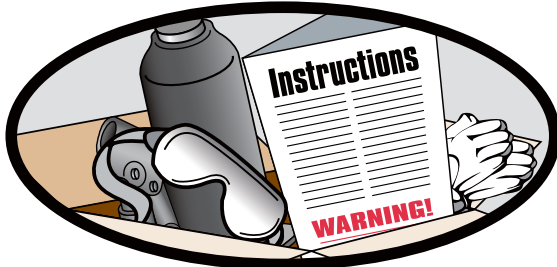
You must know the weight of what you intend to lift and choose a ram with at least 20% more capacity. Be aware of possible load shift requiring more capacity at any particular lifting point.

### 2. Check each component.



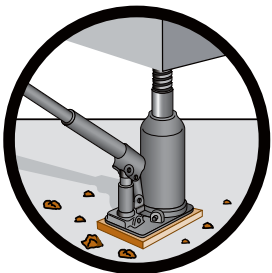
Check each component before you set up your hydraulic system. Do not use damaged or worn components. Turn them in for repair or replacement.

### 3. Safety instructions.



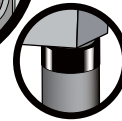
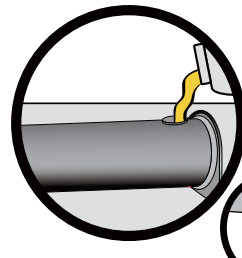
Read all warning labels and instructions. Operating instructions must be understood before using equipment. Never remove labels from equipment. Replace missing, worn or damaged labels. Always wear safety goggles and protective clothing when using hydraulic equipment.

### 4. Fully support each jack or ram at its base.



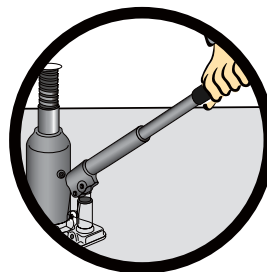
Every jack or ram, whether used individually or in a system, should be completely supported on a solid, firm, non-sliding foundation capable of supporting the load.

### 5. Fill oil reservoirs with cylinder retracted.



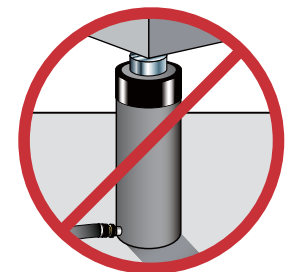
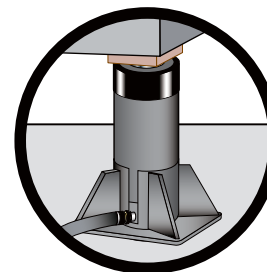
Only fill pump to recommended level; only fill when connected cylinder is fully retracted.

### 6. Know how your hydraulics work.



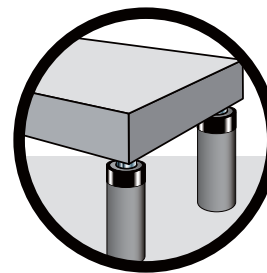
Do not use extensions or cheater bars on hydraulic jacks or hand pumps to raise a load.

### 7. Centre the load on the lifting point.



The load must be centred on the ram, or equally distributed on multiple rams. Off-centre loading can result in the ram slipping out and loss of the load.

### 8. Distribute load evenly when using multiple rams.

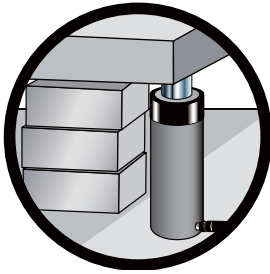


For multiple ram lifts, you must be able to determine the location and number of lifting points that will allow the load to be evenly distributed to all the rams. This is called load balance. Size, centre of gravity and load geometry must be considered in order to correctly determine load balance.

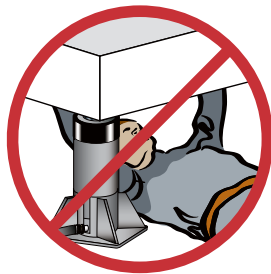
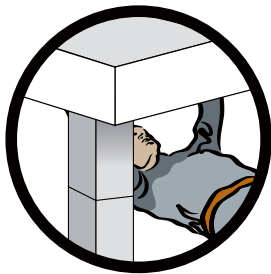


## SAFETY TIPS

### 9. Block or crib load as it rises.

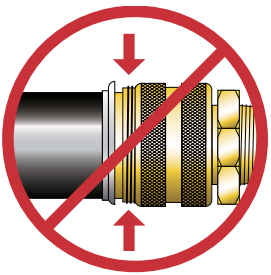
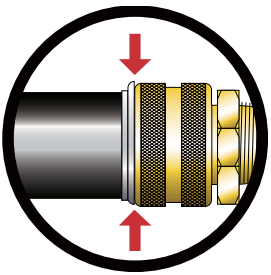


Place blocking or cribbing under the load as you raise it. Each time you raise it higher, insert more blocking. Position yourself in a manner that will keep you clear of the load, and will not allow your hands or other body parts between the load and the cribbing.



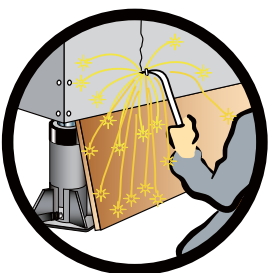
### 10. Do not use rams as permanent supports.

Hydraulic rams are not meant to be used as permanent supports, but are designed to lift and lower. If you need to hold the load for any length of time, cribbing or Simplex locknut cylinders should be used.



### 11. Connecting the hydraulics.

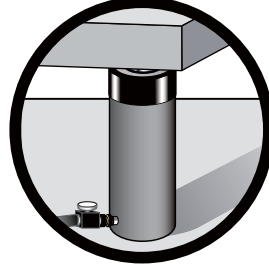
When making connections with quick couplers, make sure the couplings are fully engaged. Threaded connections, such as fittings, gauges, etc., must be securely tightened and leak free. Never use excessive tightening force that may distort the fittings or strip the thread profile.



### 12. Avoid extreme heat or weld splatter.

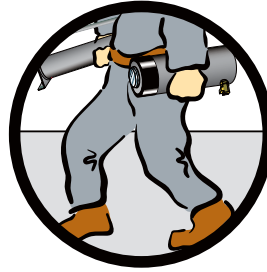
Weld splatter will damage plunger rods and hoses. Hydraulic fluid can ignite if vaporized or exposed to high temperatures.

### 13. Disconnecting the hydraulics.



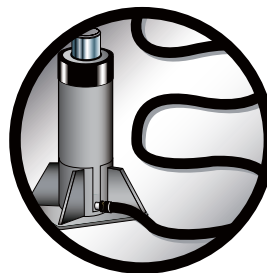
Never attempt to disconnect hydraulic hoses, fittings or couplers under pressure. Unload the ram, open the release screw on the hand pump and shift or open all hydraulic controls several times. If system includes a gauge, double check the gauge to ensure pressure has been completely released.

### 14. Do not carry or drag pumps and rams by their hoses.



Dragging or carrying rams or pumps by a connected hose can damage the couplers and hoses. Using damaged couplers and hoses can be dangerous.

### 15. Keep hydraulic hoses free of obstructions.



Do not drop sharp or heavy objects on hose. Keep hose out of heavy traffic areas. Avoid internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture. Avoid sharp bends and kinks when routing hydraulic hoses.



## FITTING TOOL SET

### BETEX IMPACT 33

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.

#### IMPACT 33

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

#### 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, contrary to easily breaking injection moulded collets.
- The collet numbers are clearly engraved and coloured, to avoid mistakes.



Tip! Use in combination with: Betex induction heaters, page 62, 63

## FITTING TOOL SET

### BETEX IMPACT 39

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 39

- with 39 rings, suitable for  $\pm 600$  bearings.

Impact	33	39
Collet bore mm	10-50	10-60
Collet OD mm	26-110	26-130
Sleeve bore mm	32, 52	18, 32, 52, 62
Hammer	0.7 kg, absorbs shocks and vibrations	
Weigh kg	4,8	6,5



Collets are marked clearly in order to avoid mistakes.



Tip! Use in combination with: Betex induction heaters, page 62, 63

## INDUCTION HEATERS

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

### 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 medium frequency (< 20kHz) principle for combined mounting and dismounting 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.

### WHY USE INDUCTION HEATING?

Induction heating is a superior, fast and controlled heating method.

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

### 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.

### 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. Induction heaters are ideal for sealed (2RS-ZZ) and pre-lubricated bearings.

### SAFE AND CONTROLLED HEATING

Digital electronics ensure optimum control during the heating process. These automatically regulate the most efficient use of power and ensure even and rapid heating. No extra steps are necessary. This prevents explosive heating (no discolouration 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.

### ADVANTAGES OF BETEX® INDUCTION HEATERS

- ✓ Robust design for working in industrial environments.
- ✓ Evenly distributed heating: the microprocessor controlled electronics prevent overheating and explosive heating.
- ✓ The energy saving alternative to traditional methods.
- ✓ For sealed (2RS-ZZ) and pre-lubricated bearings.
- ✓ Automatic power reduction.
- ✓ Automatic demagnetisation to <2A/cm.
- ✓ Unique, user-friendly swivel-arm construction.
- ✓ Suitable for continuous use (24/7).
- ✓ Large selection from STANDARD and TURBO series, from 3.6 to 100 kVA.
- ✓ TURBO models are energy efficient.
- ✓ Portable models for on-site works.
- ✓ 3 year warranty.
- ✓ Meets CE and IEC requirements.
- ✓ UL and CSA certification approved by TÜV.
- ✓ Practical solutions based on more than 30 years of experience.

### OUR RANGE INCLUDES

- Standard series - up to 100 kVA
- **TURBO** series - up to 100 kVA
- Custom-made to client's requirements.
- Medium frequency for mounting & dismounting

BETEX MF Quick-heater





	Standard serie		TURBO serie	
<b>3,6 kVA</b>	<b>Betex 22 ELD portable</b>  Min. Ø 10 mm Max. BD: 240 mm For bearings up to ±15 kg			<b>Betex 24 RLD TURBO portable</b>  Min. Ø 10 mm Max. BD: 350 mm For bearings up to ±40 kg
<b>3,6 kVA</b>	<b>Betex 22 ESD</b>  Min. Ø 15 mm Max. BD: 340 mm For bearings up to ±40 kg			<b>Betex 24 RSD TURBO</b>  Min. Ø 15 mm Max. BD: 520 mm For bearings up to ±95 kg
<b>8 kVA</b>	<b>Betex 38 ESD</b>  Min. Ø 30 mm Max. BD: 480 mm For bearings up to ±125 kg			<b>Betex 40 RSD TURBO</b>  Min. Ø 30 mm Max. BD: 790 mm For bearings up to ±350 kg
<b>12 kVA</b>	<b>Betex 38 ZFD</b>  Min. Ø 30 mm Max. BD: 720 mm For bearings up to ±280 kg			<b>Betex 40 RMD TURBO</b>  Min. Ø 60 mm Max. BD: 920 mm For bearings up to ±600 kg
<b>24 kVA</b>	<b>Betex SUPER</b>  Min. Ø 60 mm Max. BD: 1300 mm For bearings up to ±600 kg			<b>Betex SUPER TURBO</b>  Min. Ø 145 mm Max. BD: 1700 mm For bearings up to ±1200 kg
<b>40-48- 100 kVA</b>	<b>Betex GIANT</b>  Min. Ø 85 mm Max. BD: 1400-2500 mm For bearings from ±1500 up to ±3500 kg			<b>Betex GIANT TURBO</b>  Min. Ø 115 mm Max. BD: 1400-2500 mm For bearings from ± 500 up to ±12000 kg

## SHIMS



Case ABCD

### 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!**



Case ABC



Case E

### BETEX SOLID STAINLESS STEEL SHIMS Pre-cut 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.
- Suitable for re-use
- 9 standard combinations in handy carrying cases

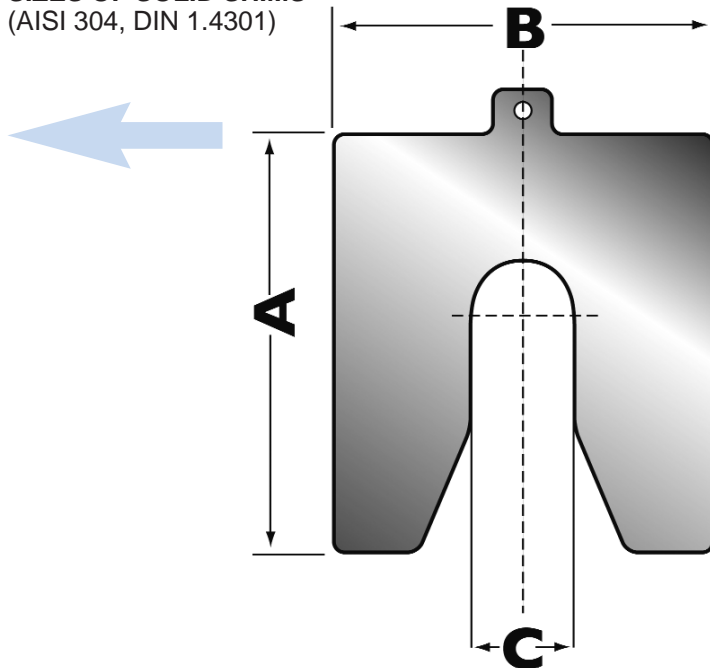
### 9 STANDARD COMBINATIONS IN HANDY CARRYING CASE (other combinations on request)

Case	ABCD 10/9	ABC 10/9	ABC 10/10	ABC 20/10	AB 10/9	BC 10/9	ABCD 10/10	CD 10/9	E 10/10
Art.no.	B020019	B020110	B020100	B020130	B020210	B020310	B020030	B020410	B020600
Thick- ness									
0,05	10	10	10	20	10	10	10	10	10
0,10	10	10	10	20	10	10	10	10	10
0,20	10	10	10	20	10	10	10	10	10
0,25	10	10	10	20	10	10	10	10	10
0,40	10	10	10	20	10	10	10	10	10
0,50	10	10	10	20	10	10	10	10	10
0,70	10	10	10	20	10	10	10	10	10
1,00	10	10	10	20	10	10	10	10	10
2,00	10	10	5	5	10	10	5	10	5
3,00	-	-	5	5	-	-	5	-	5
<b>Total</b>	<b>360</b>	<b>270</b>	<b>270</b>	<b>510</b>	<b>180</b>	<b>180</b>	<b>360</b>	<b>180</b>	<b>90</b>



	Art.no.	package	A	B	C	size	bolt size
<b>MINI</b>	B-035-005Mn	10	35mm	30mm	9mm	0,05mm	M8
	B-035-010Mp	10	35mm	30mm	9mm	0,10mm	M8
	B-035-020Mr	10	35mm	30mm	9mm	0,20mm	M8
	B-035-025Ms	10	35mm	30mm	9mm	0,25mm	M8
	B-035-040Mt	10	35mm	30mm	9mm	0,40mm	M8
	B-035-050Mu	10	35mm	30mm	9mm	0,50mm	M8
	B-035-070Mv	10	35mm	30mm	9mm	0,70mm	M8
	B-035-100Mw	10	35mm	30mm	9mm	1,00mm	M8
<b>A</b>	B-050-0025Ak	10	50mm	50mm	13mm	0,025mm	M12
	B-050-005An	10	50mm	50mm	13mm	0,05mm	M12
	B-050-010Ap	10	50mm	50mm	13mm	0,10mm	M12
	B-050-020Ar	10	50mm	50mm	13mm	0,20mm	M12
	B-050-025As	10	50mm	50mm	13mm	0,25mm	M12
	B-050-040At	10	50mm	50mm	13mm	0,40mm	M12
	B-050-050Au	10	50mm	50mm	13mm	0,50mm	M12
	B-050-070Av	10	50mm	50mm	13mm	0,70mm	M12
	B-050-100Aw	10	50mm	50mm	13mm	1,00mm	M12
	B-050-200Ax	10	50mm	50mm	13mm	2,00mm	M12
	B-050-300Ay	10	50mm	50mm	13mm	3,00mm	M12
<b>B</b>	B-075-0025Bk	10	75mm	75mm	21mm	0,025mm	M20
	B-075-005Bn	10	75mm	75mm	21mm	0,05mm	M20
	B-075-010Bp	10	75mm	75mm	21mm	0,10mm	M20
	B-075-020Br	10	75mm	75mm	21mm	0,20mm	M20
	B-075-025Bs	10	75mm	75mm	21mm	0,25mm	M20
	B-075-040Bt	10	75mm	75mm	21mm	0,40mm	M20
	B-075-050Bu	10	75mm	75mm	21mm	0,50mm	M20
	B-075-070Bv	10	75mm	75mm	21mm	0,70mm	M20
	B-075-100Bw	10	75mm	75mm	21mm	1,00mm	M20
	B-075-200Bx	10	75mm	75mm	21mm	2,00mm	M20
	B-075-300By	10	75mm	75mm	21mm	3,00mm	M20
<b>C</b>	B-100-0025Ck	10	100mm	100mm	32mm	0,025mm	M30
	B-100-005Cn	10	100mm	100mm	32mm	0,05mm	M30
	B-100-010Cp	10	100mm	100mm	32mm	0,10mm	M30
	B-100-020Cr	10	100mm	100mm	32mm	0,20mm	M30
	B-100-025Cs	10	100mm	100mm	32mm	0,25mm	M30
	B-100-040Ct	10	100mm	100mm	32mm	0,40mm	M30
	B-100-050Cu	10	100mm	100mm	32mm	0,50mm	M30
	B-100-070Cv	10	100mm	100mm	32mm	0,70mm	M30
	B-100-100Cw	10	100mm	100mm	32mm	1,00mm	M30
	B-100-200Cx	10	100mm	100mm	32mm	2,00mm	M30
	B-100-300Cy	10	100mm	100mm	32mm	3,00mm	M30
<b>D</b>	B-125-0025Dk	10	125mm	125mm	45mm	0,025mm	M42
	B-125-005Dn	10	125mm	125mm	45mm	0,05mm	M42
	B-125-010Dp	10	125mm	125mm	45mm	0,10mm	M42
	B-125-020Dr	10	125mm	125mm	45mm	0,20mm	M42
	B-125-025Ds	10	125mm	125mm	45mm	0,25mm	M42
	B-125-040Dt	10	125mm	125mm	45mm	0,40mm	M42
	B-125-050Du	10	125mm	125mm	45mm	0,50mm	M42
	B-125-070Dv	10	125mm	125mm	45mm	0,70mm	M42
	B-125-100Dw	10	125mm	125mm	45mm	1,00mm	M42
	B-125-200Dx	10	125mm	125mm	45mm	2,00mm	M42
	B-125-300Dy	10	125mm	125mm	45mm	3,00mm	M42
<b>E</b>	B-200-005En	10	200mm	200mm	55mm	0,05mm	M52
	B-200-010Ep	10	200mm	200mm	55mm	0,10mm	M52
	B-200-020Er	10	200mm	200mm	55mm	0,20mm	M52
	B-200-025Es	10	200mm	200mm	55mm	0,25mm	M52
	B-200-040Et	10	200mm	200mm	55mm	0,40mm	M52
	B-200-050Eu	10	200mm	200mm	55mm	0,50mm	M52
	B-200-070Ev	10	200mm	200mm	55mm	0,70mm	M52
	B-200-100Ew	10	200mm	200mm	55mm	1,00mm	M52
	B-200-200Ex	10	200mm	200mm	55mm	2,00mm	M52
	B-200-300Ey	10	200mm	200mm	55mm	3,00mm	M52

## SIZES OF SOLID SHIMS (AISI 304, DIN 1.4301)

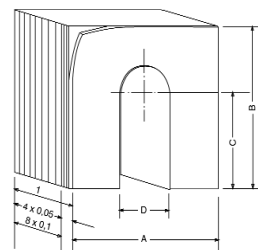


## PEEL-OFF (HARD BRASS SHIMS) MS-63

- The peel-off shims are 1 mm thick and are available in 5 sizes. They consist of 12 peel-off layers (8x0.1 mm and 4x0.05 mm).
- They always fit! Simply peel off until the right thickness is obtained.

## Sizes of peel-off shims

Art.no.	package	size	bolt size
8125005	10	35x35mm	M10
812502	10	50x50mm	M14
8125035	10	75x75mm	M16
812504	10	100x100mm	M24
8125045	10	125x125mm	M32



## TIP!

Use in combination with:  
Betex jacks pag. 52, 53  
Betex Spreaders, pag. 55  
Alignment computer, pag. 66-72

## SHAFT ALIGNMENT COMPUTERS

### FIXTURELASER DIRIGO

The Fixturelaser Dirigo puts laser alignment accuracy within reach of everyone! The ergonomically designed control unit fits comfortably in one hand. The live display means that you will get instant feedback when shimming or moving the machines. This eliminates the guesswork and back and forth you're suffering through now. All this at an affordable price that means a really quick payback.

#### Fast, Easy, Precise

The Fixturelaser Dirigo features an unique "laser line" instead of the traditional laser dot. This makes setup and alignment much easier, as the line is wide and is easily projected to the laser detector.

An easy to use and payable laser align system with push-buttons for the alignment of horizontal mounted machines.

- Horizontal shaft alignment
- Easy to use
- Wide laserbeams
- Packaged brackets
- Measuring distance: max. 1 meter

The Fixturelaser is inclusive:

Display unit  
2 measuring units with spirit levels  
2 mechanical shaft fixtures  
2 locking chains  
2 extension chains  
Measuring tape  
Instruction for use  
Certificate of calibration  
Set of alignment reports  
Carrying case



#### TIP!

Use in combination with:  
Betex jacks, page 52, 53  
Betex spreaders, page 55  
Betex shims, page 64, 65



## EASY-LASER D450 SHAFT ALIGNMENT EQUIPMENT

Easy-Laser® D450 is a basic system, with the performance and potential for expansion of our more advanced ones, for example D505 and D525. In fact, with the right accessories your D450 system can be converted into any other Easy-Laser® system!

The general idea behind the system is "simplicity for the user". All parts included in the system are developed for rough use and to be easy to mount on the machines. As a user you are given step-by-step instructions on the display through the entire measurement procedure. Even though the technology inside is rather advanced, the measurement principle is straightforward. It is based on the "reverse indicator method" with two laser/measuring units mounted on each side of the coupling.

System D 450 includes two measurement programs: Horizontal shaft alignment and Softfoot\*. The displayed measurement resolution can be set as low as 0.05 mils/thou [0.001 mm]. When the measurement is complete you can produce a printout, save in the display unit or transfer the data to your PC.

### Why the D450

- Alignment can now be done by one person
- The simplicity of the design makes training unnecessary
- Laser-technology is faster and more precise than conventional alignment methods
- Shaft alignment for horizontal machines
- Soft Foot specification
- Thermal growth
- Tolerance check, geographic display showing whether alignment falls within tolerances.
- Measurement value filter Electronic filter system for accurate measurement results in poor conditions, such as air turbulence and vibration.

A complete system contains:

- 1 Display unit D279 (with 2 measurement programs)
- 1 Protective case
- 2 Cables with Push/Pull connectors
- 2 Measuring units (S, M)
- 2 Sets of rods for measuring units ( 4x2.36", 8x4.72"[4x60mm, 8x120mm] )
- 2 Shaft brackets with chains
- 2 Extension chains
- 1 Measuring tape
- 1 Manual
- 1 EasyLink™ Windows® program + PC cable

Delivered in robust aluminium framed carrying case with contoured foam insert.



### TIP!

Use in combination with:  
Betex jacks, page 52, 53  
Betex spreaders, page 55  
Betex shims, page 64, 65





## EASY-LASER D480 SHAFT ALIGN EQUIPMENT

Every part of the Easy-Laser® systems is designed to withstand the most demanding environments and to be easy to operate when doing the measurements. The versatile design tackles all types of measurement quickly and accurately. You can measure all types of rotating machine with a measurement distance of up to 10 metres [33 feet].

With this system you can align all types of rotating machines: horizontally mounted, vertically/flange mounted, cardan-shaft-coupled machines\* and machine trains (up to ten machines in line).

The EasyTurn function makes alignment possible with as little as 40° rotation of the shafts. Good when connections, motor guards etc prevent greater rotation. In addition, you can start measurement anywhere on the revolution.

The system has functions for compensation of thermal growth, tolerance check and reference foot locking. You can also check straightness and twist on the machine base. Last but not least, it is possible to perform vibration measurements and digital sheave/pulley alignment using easy to connect accessories.

This makes Easy-Laser D480 one of the market's most comprehensive measurement systems. A system for alignment professionals.

\* Requires accessory

All in all, Easy-Laser® provides you with many opportunities for measuring and alignment:

- SHAFT ALIGNMENT
- SHEAVE / PULLEY ALIGNMENT
- VIBRATION MEASUREMENT
- TWIST MEASUREMENT OF FOUNDATIONS
- STRAIGHTNESS MEASUREMENT

Using a single instrument, you have the potential to troubleshoot and prevent wear and breakdowns in your machines. Easy-Laser® offers what is probably the most competent and cost-effective measuring system for rotating machines on the market!



A complete system contains:

- 1 Display unit D279 (with 14 measurement programs)
- 1 Protective case
- 2 Cables with Push/Pull connectors
- 2 Measuring units (S, M)
- 2 Sets of rods for measuring units
- 2 Shaft brackets with chains
- 2 Extension chains
- 1 Measuring tape
- 1 Manual
- 1 EasyLink™ Windows® program + PC cable
- 1 Carrying case

### TIP!

Use in combination with:  
Betex jacks, page 52, 53  
Betex spreaders, page 55  
Betex shims, page 64, 65



## EASY-LASER D505 SHAFT ALIGN EQUIPMENT

With this system you can align all types of rotating machines: horizontally mounted, vertically/flange mounted, cardan-shaft-coupled machines\* and machine trains (up to ten machines in line).

The EasyTurn™ function makes alignment possible with as little as 40° rotation of the shafts. Good when connections, motor guards etc prevent greater rotation. In addition, you can start measurement anywhere on the revolution.

The system has functions for compensation of thermal growth, tolerance check and reference foot locking.

You can also check straightness and twist on the machine base. Last but not least, it is possible to perform vibration measurements and digital sheave/pulley alignment using easy to connect accessories. This makes Easy-Laser® D505 one of the market's most comprehensive measurement systems. A system for alignment professionals.

\* Requires accessory

### Why the D505

- Horizontal and vertical alignment
- Alignment of cardan shaft
- 14 programs for all types of rotating machines
- EasyTurn 40° function
- Measurements with 1 or 2 shaft detector
- Soft Foot specification

- Thermal growth compensation
- Tolerance check
- Feet Lock
- The simplicity of the design makes training unnecessary
- Alignment can now be done by one person
- Laser-technology is faster and more precise than conventional alignment methods
- Expandable

A complete system contains:

- 1 Display unit D279 (14 programs)
- 2 Cables with Push/Pull connectors
- 2 Measuring units (S, M)
- 2 Sets of rods (4x60 mm, 8x120 mm [4x2.36", 8x4.72"] )
- 2 Shaft brackets with chains
- 2 Extension chains
- 2 Offset brackets
- 2 Magnet bases
- 1 Manual
- 1 Measuring tape
- 1 Protective case for the display unit
- 1 EasyLink™ Windows® program + PC cable and USB converter

Delivered in robust aluminium framed carrying case with contoured foam insert.

### TIP!

Use in combination with:  
Betex jacks, page 52, 53  
Betex spreaders, page 55  
Betex shims, page 64, 65





## EASY-LASER D525 SHAFT ALIGN EQUIPMENT

This is our most flexible shaft system, with all programs and functions for the alignment of rotating machines included in system D505, as well as all programs for geometric measurements. You only need add the geometric accessories you need. This system is common as a base for professional maintenance companies that must be able to solve all types of measurements and alignments. If you mainly carry out shaft alignment, but wish to perform geometric measurements now or in the future, this is also the right system for you. For example, you can check straightness and twist on the machine base, and perform vibration measurements\* and digital sheave/pulley alignment\*.

Typical applications for this system are horizontally, vertically/flange mounted and cardan-shaft-coupled machines\*, machine trains (up to ten machines in line) as well as BTA Digital and geometric measurements when suitable measuring accessories from these systems are used.

\* Requires accessory

A complete system contains:

- 1 Display unit D279 (27 programs)
- 2 Measuring units (S, M)
- 12 Rods for measuring units (8x120 mm, 4x60 mm)
- 2 Shaft brackets with chains
- 2 Extension chains
- 2 Offset brackets
- 2 Magnet bases
- 2 Cables with Push/Pull connectors (2x2 m)
- 1 Manual
- 1 Measuring tape
- 1 Protective case for display unit
- 1 EasyLink™ Windows® program and PC cable
- 1 Carrying case

Characteristics and functions:

- 14 programs for all types of rotating machines
- 13 programs for geometric applications
- EasyTurn™ function
- Thermal growth compensation
- Tolerance check
- Extremely long operating time (up to 48 hours)
- Documentation possibilities
- Expandable
- 2 year warranty



TIP!

Use in combination with:  
Betex jacks, page 52, 53  
Betex spreaders, page 55  
Betex shims, page 64, 65

## PULLEY ALIGNMENT COMPUTERS

### BTA EX EASY-LASER D90 PULLEY ALIGNMENT LASER

Why the Easy-Laser BTA models?

- The BTA fits all types of chain and belt drives
- Not only V-belts, but also flat and toothed belts
- Shows both angular and parallel errors together
- Can be used on both horizontally and vertically mounted machines
- Pulley alignment can now be done by one person
- The simplicity of the design makes training unnecessary
- Laser-technology is faster and more precise than conventional alignment methods
- Now also available in Atex/EX version (D130)



Specifications:

Measurements (bxdxh) : 145 x 86 x 30 mm

Material : ABS plastic

Weight : 270 gram

Schijfdiameters : from diameter 60 mm and bigger

Measuremetn distance : max. 10 meter



### BTA EASY LASER D130 ATEX/EX

Bega has been supplying laser-optic aligning equipment for shaft alignment and geometric measurement since the early nineties. Recently, Bega has added the BTA Easy Laser Compact to its range.

- The BTA fits all types of chain and belt drives
- Not only V-belts, but also flat and toothed belts
- Intrinsically safe and approved for use in potentially explosive environments.
- Shows both angular and parallel misalignment between the sheaves
- Can be used on both horizontally and vertically mounted machines
- Pulley alignment can be made by one operator
- Laser-technology is faster and more precise than conventional alignment methods

Specifications:

Dimensions (wxdxh) : 145 x 86 x 30 mm

Material : ABS plastic

Weight : 270 grams

Sheave diameters : 60 mm diameter and larger

Operating range : maximum 10 metres

### BTA EASY LASER D160 DIGITAL

BTA Digital Easy-Laser D160 pulley alignment laser

Transmitter dimensions (wxdxh) : 145 x 86 x 30 mm - 270 grams

Receiver dimensions (wxdxh) : 95 x 95 x 35 mm - 170 grams

Display dimensions (wxdxh) : 78 x 120 x 23 mm - 170 grams

Material : ABS plastic / anodised aluminium

Sheave diameters : 60 mm diameter and larger

Operating range : maximum 3 metres digital (10 metres with targets)

Parallel and angular errors between the sheaves are given with digital precision on the receiver.

The laser is supplied complete with:

Separate backlit display

1 measuring cable, length 2 metres, with push/pull connectors

2 magnetic targets, adjustable from -4 to +4 mm

2 AA 1.5V Penlight and 9V Block batteries (1 reserve set)

Plastic case with foam insert and manual



TIP!

Use in combination with:  
Betex jacks, page 52, 53  
Betex spreaders, page 55  
Betex shims, page 64, 65

## PULLEY ALIGNMENT COMPUTERS

### PAT PULLEY ALIGNMENT LASER

The PAT pulley alignment laser is the definitive solution for all your pulley alignment jobs!

Because the belts' grooves are used as reference points, you can see instantly whether the pulleys are correctly aligned or not.

The PAT is supplied with two spring-loaded laser units that can be mounted in the pulley grooves.

The PAT also has standard tapers allowing the lasers to be mounted on most standard gauges. (A-E 6 mm - 40 mm) Other gauges are available as accessories.

The use of two laser units makes it very easy for the user to determine the adjustment required, e.g. whether to correct a parallel error or an angular error.

You can see in no time whether your pulleys are correctly aligned. Alignment is just as easy as mounting the laser units. Simply switch on the lasers and view the laser unit on the other pulley.

The laser projects a line on the upper surface of the opposing laser unit, mounted on the 'target' as shown to the left. If required, the machine can be aligned in such a way that the laser on both units hits the 'target'.



#### Specifications:

Material	: anodised aluminium
Dimensions	: 61 x 76 x 60 mm (l x h x w)
Weight	: 0,64 kg
Battery type	: (2) AAA batteries
Operating range	: from 15,2 mm till 609,6mm
Laser	: class 2
Pulley diameters	: 76 mm and bigger

#### TIP!

Use in combination with:  
Betex jacks, page 52, 53  
Betex spreaders, page 55  
Betex shims, page 64, 65



## PERMA-tec LUBRICATION SYSTEMS

# perma<sup>®</sup>

### Perma stands for innovative and creative solutions in lubrication technology.

All over the world, Perma single-point and multipoint lubrication systems are being applied in all kinds of industries. In the world of single-point lubrication, Perma is market leader.

To maintain this position, Perma invests in research and development. The company's success is ensured by its ingenious applications. With over 40 years of experience, its forward thinking and repeated embedding of new ideas have resulted in unique solutions that meet the highest technical requirements.

Perma offers solutions for difficult-to-reach locations, extreme circumstances (such as high/low temperatures), heavy duty applications, and dust and dirt. It carries a wide variety of greases and oils. For both chain and bearing lubrication.

Perma has been working together with Bega for nearly 20 years now. Bega staff receive training on a regular basis in order to stay up-to-date about the latest developments in terms of both lubrication and applications.

Learn more about Perma in our new catalog or check our website [www.bega.nl](http://www.bega.nl)



## POWER TEAM HYDRAULIC EQUIPMENT

# POWER TEAM®

**Cylinders, pumps, jacks, workshop equipment, mechanical and hydraulic tools and accessories.**

American top quality! This extensive range of tools is used in all branches of the industry. Power Team products are manufactured with the greatest care and comply with international quality standard ISO 9001:2000.

Power Team has been in Europe since 1989. All products meet European directives and are CE marked. All Power Team products and parts are warranted against defects in materials and workmanship for the life of the product or part.

Bega is an authorized Distributor and Service Partner for Power Team.

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