

BEGA

SPECIAL TOOLS

ANNO 1978



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QUALITY
SINCE
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BETEX[®]

MAINTENANCE PRODUCTS

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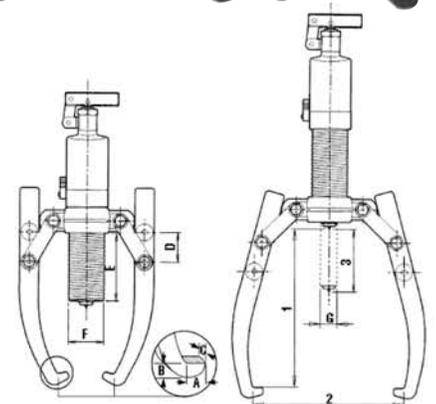
HYDRAULIC PULLERS

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

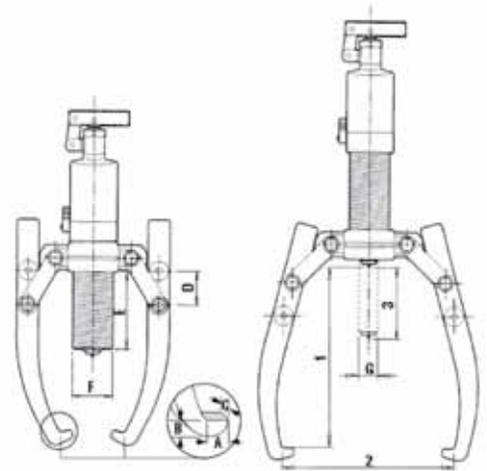
HYDRAULIC PULLERS

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.

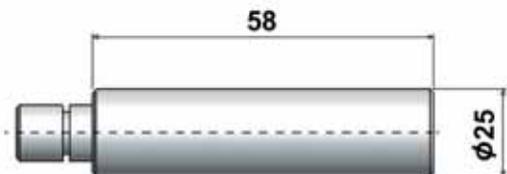
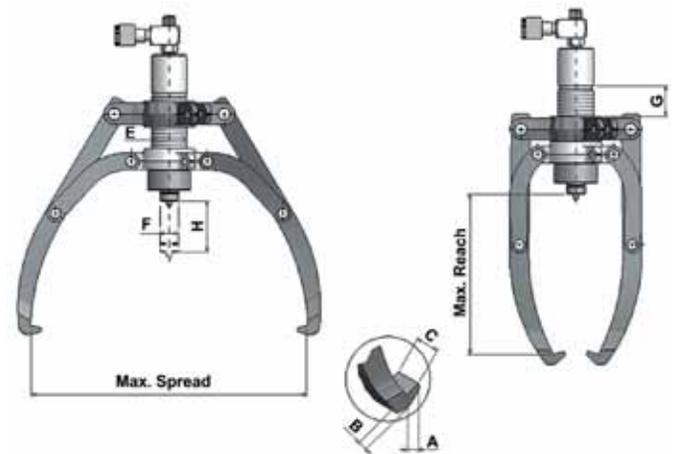
Separate 2-stage handpump available

- **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



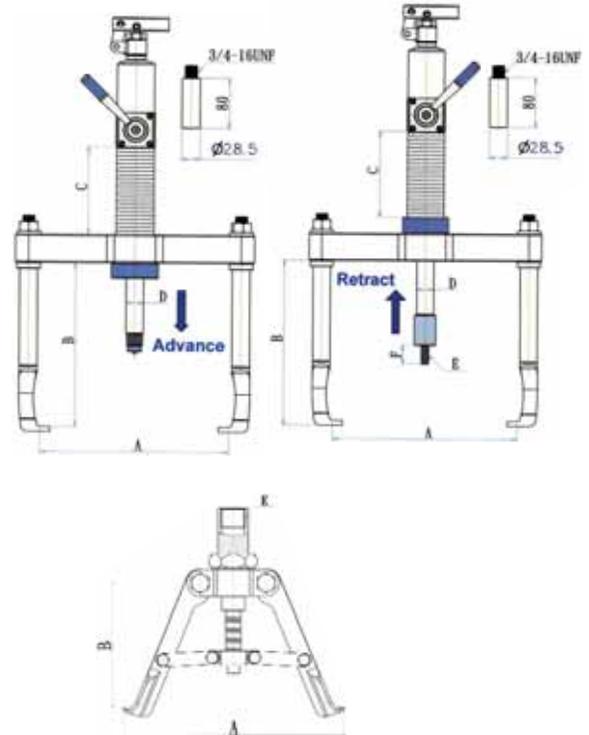
Pushing



Outer pulling



Inner pulling



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	-	

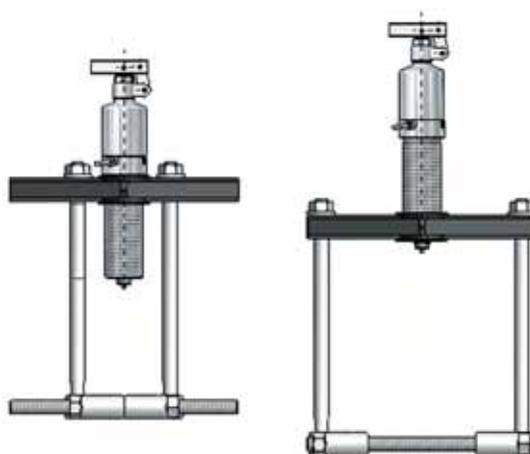
ACCESSORY SETS

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.

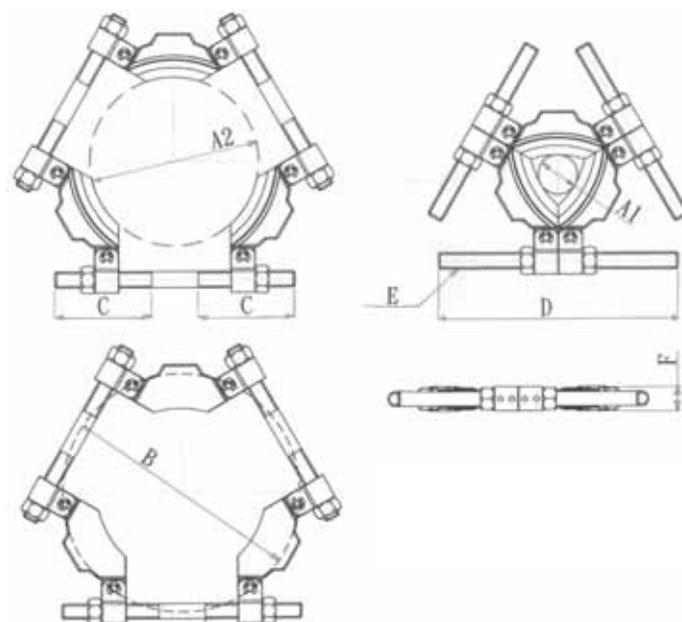
User-friendly

- 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 B (mm max)	C mm	D mm	E	F mm	Weight kg
		A1 mm	A2 mm						
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

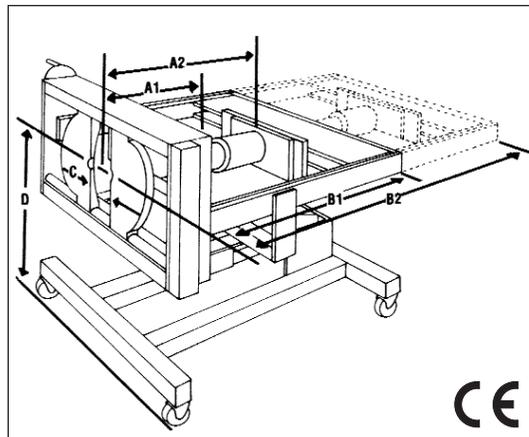
Remote control



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!

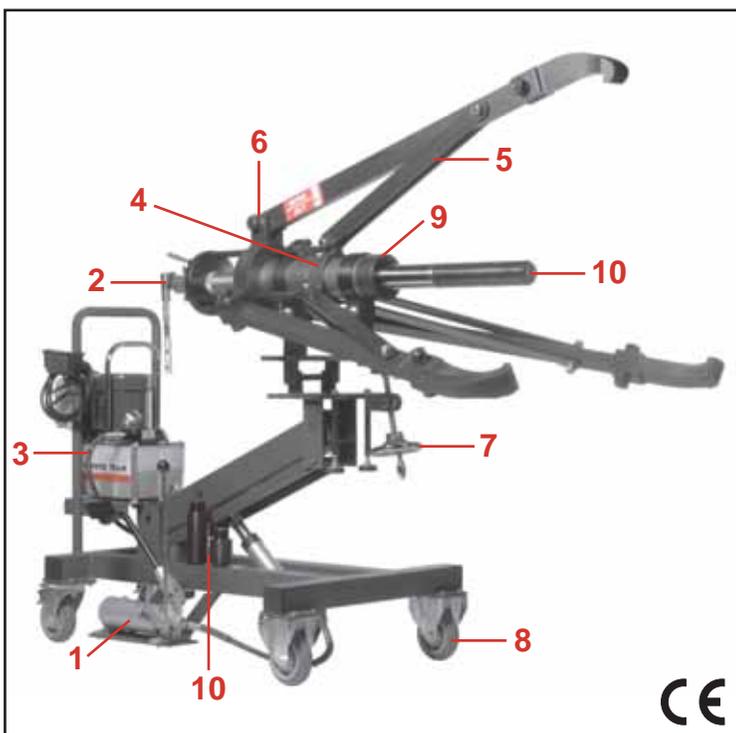


HYDRAULIC PULLERS

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

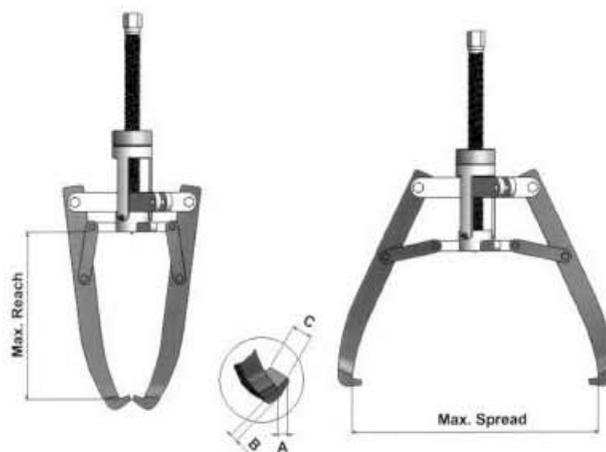
BETEX MSP 2/3-arm pullers, **self-centering**



Safe and easy dismantling 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.

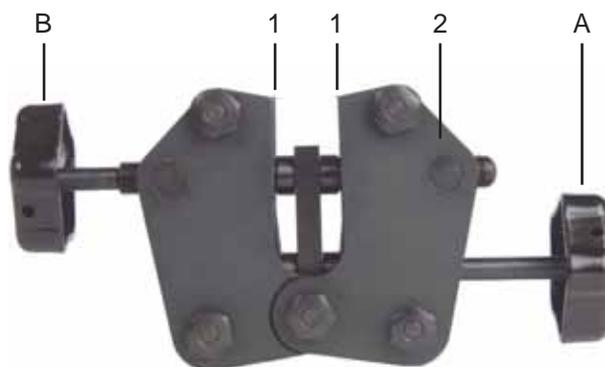
2, 3, 5, 8 and 10 ton capacity!

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 ± 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

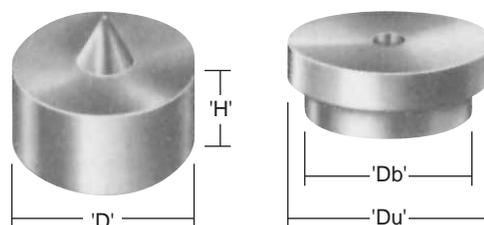
'Db' min. = Ø 19 mm 'Du' min. = Ø 25 mm

'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

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



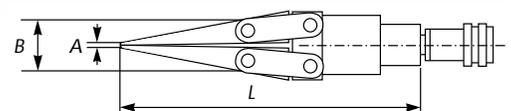
25 TLS

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

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



For more information order our BETEX Induction heater catalog or visit our website: www.bega.nl

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

Measurement 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