



INDUSTRIALHUB BD

RELIABILITY & ENGINEERING SERVICE PARTNER

BELT ALIGNMENT TOOL

Laser belt alignment tools from SKF, Easy-Laser, Fluke and FAG:
comparison, selection, mounting and troubleshooting.



How to use this guide

For maintenance and reliability engineers who choose, fit and use laser tools to align belt and chain drives. It compares five tools from four makers on equal terms, gives each its own page, then covers the job itself.

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Theory

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Tools

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The job

Pages 13 to 17. Safety, steps, mounting, faults, tension.

Brands

Pages 18 to 19. Global brands, cross-reference, comparison.

READING PATHS

Maintenance lead

Pages 5, 6, 7 to 12, 18, 19. Which tool to buy and why.

Plant engineer

Pages 3 to 6, 14, 15. Theory, data and method.

Technician

Pages 13 to 17. Before the job, steps, faults, tension.



A belt drive with a laser unit fitted to the pulley

Data status

Tool data comes from each maker's own product sheet, paraphrased. Not stated means the documents we reviewed do not list it, not that the feature is missing. Pages marked general practice give field practice, not maker data. Photos and diagrams come from those documents; confirm usage rights before external use.

Read this first: check values against the current maker documents before you buy or use a tool. Isolate the drive before you work, and never look into a laser beam.

Why belt alignment matters

A V-belt drive looks simple, yet a small installation error quietly shortens the life of belts, pulleys and bearings. Most of the damage is invisible until a belt fails or a bearing runs hot. Precise alignment increases belt and pulley life, reduces vibration and reduces energy costs.



Laser unit on a pulley, belt drive in a plant

Premature belt wear

Misaligned pulleys load one edge of the belt. Side-wall wear, cracking and fraying shorten belt life.

Bearing damage

Uneven belt pull adds side load on motor and driven-shaft bearings, raising temperature and failure risk.

Energy loss

A belt that runs off-line slips and flexes more. That wasted effort is paid for in electricity every shift.

Vibration and noise

Chirping, belt flutter and shaking guards are common signs of poor alignment.

SIGNS TO WATCH FOR ON A RUNNING DRIVE

On the belt

Edge wear, side-wall wear, cracking, fraying, or a belt that twists or rides on one flank.

By ear and eye

Chirping, belt flutter and shaking guards.

At the bearings

A motor or driven bearing that runs hot.

WHEN TO CHECK

- At every belt change
- After any motor replacement
- After any base or motor-mount work
- When a belt wears out sooner than it should

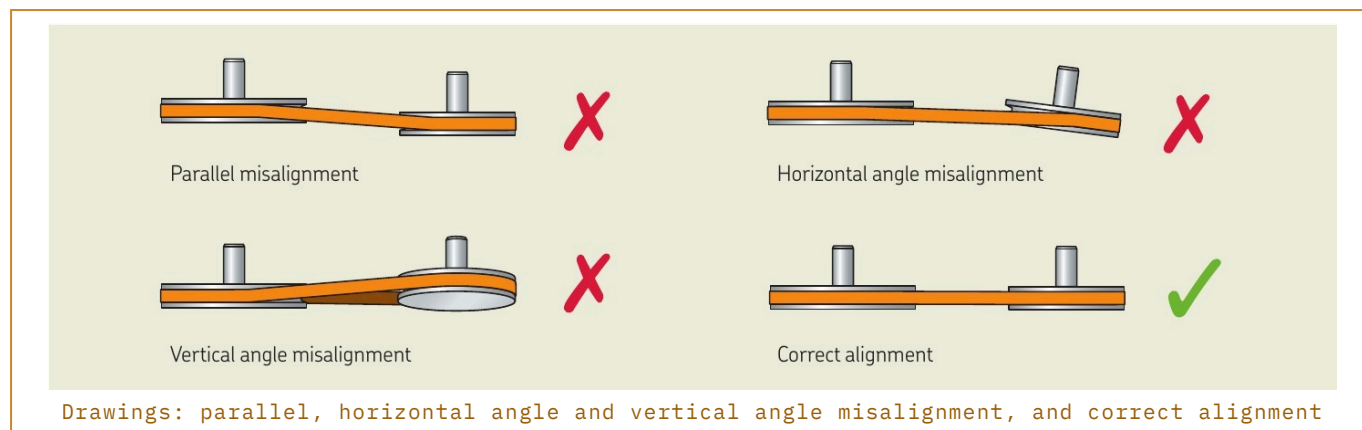
KEY NOTE • HOW IT WORKS

A belt is a flexible link, but it still wants both pulleys in one plane. If they are not, one edge of the belt carries more load than the rest and the belt pulls sideways on both shafts. That sideways pull is what heats the bearings and wears the belt edge. Aligning takes little time and costs far less than a belt set or a bearing, which is why it is one of the cheapest reliability actions on a drive.

Engineer's view: alignment is one of the lowest-cost reliability actions on a belt drive. Check it at every belt change and after any motor or base work.

Types of misalignment

Three errors can exist on a belt drive, alone or together. The laser line makes each one visible at once.



Error	What it looks like	How to correct it
Parallel	Pulleys are parallel but their grooves are not in the same plane. The belt runs sideways and wears one edge.	Move one pulley along its shaft
Horizontal angle	One shaft is turned in the horizontal plane. Belt tension is uneven across the width.	Move the machine sideways
Vertical angle	One shaft is tilted up or down. The belt rides on one flank and twists in the groove.	Shim under the front or rear feet
Combined	Offset and angles together. Common after motor replacement or base movement.	Correct in the order on page 14

ORDER OF CORRECTION

1 • Vertical angle

Shim under the front or rear feet.

2 • Horizontal angle

Move the machine sideways.

3 • Parallel

Move one pulley along its shaft.

KEY NOTE • HOW IT WORKS

Think of the two pulleys as two flat discs. They must lie in the same plane and face the same way. **Parallel** error means the discs face the right way but sit side by side. **Horizontal angle** means one disc is turned left or right. **Vertical angle** means one disc is tipped up or down. Tipping is corrected first because shimming also changes the other two. Tightening the belt can turn the motor slightly, so look at the horizontal angle again afterwards.

Order of correction: vertical angle first, then horizontal angle, then parallel offset. Check horizontal angle again when you tighten the belt.

Datasheet: measurement and hardware

Five tools, one row at a time. Values are as each maker states them.

MEASUREMENT

	SKF TKBA 40	Easy-Laser XT190 BTA	Easy-Laser D92 BTA	Fluke 835	FAG SMARTY
Principle	Laser line on a three-line receiver	Laser plane read by a digital detector	Laser line on two targets	Laser line and reflected line on a reflector	Laser line on two magnetic targets
Read-out	Visual, three reference lines	Live offset and angles on detector OLED, app or display unit	Visual, two target slots	Visual, reference lines	Visual, slots in targets
Accuracy	Angle better than 0.2°; offset better than 0.5 mm	Plane parallelism below 0.05°; offset below 0.2 mm	Same transmitter as XT190	Not stated	Better than 0.5 mm or 0.2°
Distance	50 mm to 6 m	40 mm to 3 m (low); 0.5 to 10 m (high)	Up to 10 m	Up to 10 m	10 m between units
Smallest pulley	Min. datum ø 75 mm (V-guide chart)	Sheave ø 60 mm and larger	Sheave ø 60 mm and larger	Not stated	ø 60 mm and more
Laser	Red, class 2, below 1 mW, 632 nm	Red, class 2, 630 to 680 nm, 60° beam	Red, as XT190 transmitter	Green, class 2, below 1 mW, 505 to 535 nm	Red, class 2, below 1 mW, 635 to 670 nm, 78° beam

HARDWARE

	SKF TKBA 40	Easy-Laser XT190 BTA	Easy-Laser D92 BTA	Fluke 835	FAG SMARTY
Power	2 × AAA, 20 h	Transmitter 1 × AA, 12 h; detector Li-ion, 5 h	1 × AA battery	4 × AAA, 6 h	2 × AA, 24 h
Weight	Emitter 320 g; receiver 270 g; 1.2 kg with case	Transmitter 265 g; detector 190 g	Transmitter 265 g	Not stated	0.3 kg
Fixing	Magnets with V-guides (4 sizes)	Magnets; tape or clamps if non-magnetic	Magnets; tape or clamps	Magnets, inside or outside face	Magnets; double-sided tape if non-magnetic
Part no.	TKBA 40	12-1053	12-1332	835	LASER.SMARTY

KEY NOTE • HOW IT WORKS

Accuracy figures for the visual tools are close, so they rarely decide the purchase. What changes your day is **distance** (how far apart the pulleys are), **smallest pulley** (will the unit fit), **read-out** (a line to judge by eye, or numbers on a screen) and **power** (battery type and run time). Read the rows against your own drives. A dash or Not stated means the maker document does not give the value.

Read it by the job. Distance, smallest pulley, read-out and battery are where the tools differ in daily use.

Which tool do I need?

Which drives each tool covers, and how it shows the result. Suits means the maker document lists that drive type.

DRIVES AND FEATURES

	SKF TKBA 40	Easy-Laser XT190 BTA	Easy-Laser D92 BTA	Fluke 835	FAG SMARTY
V-belt, grooved pulleys	Suits (groove-mounted)	Suits	Suits	Suits	Suits
Multi-ribbed, timing, flat belts	With side adapter TMEB A2	Suits	Suits	Suits	Suits
Chain sprockets	With side adapter TMEB A2	Suits	Suits	Suits	Suits
Pulleys of different widths	Aligns grooves, not faces	Reads offset and angles	Move marks on targets	Reflector lines simulate widths	Move marks on targets
Non-magnetic pulleys	Not stated	Tape or clamps	Tape or clamps	Not stated	Double-sided tape
Long distance	6 m	10 m (high mode)	10 m	10 m	10 m
Numbers and a record	No	Detector display, app or display unit; PDF report	No (can add detector)	No	No
Tolerance check on screen	No	With display unit or app	No	No	No

WHICH ONE FOR WHICH JOB

Grooved V-belt drives in daily use SKF TKBA 40. It sits in the groove and has three reference lines.	Mixed drives and a written record Easy-Laser XT190 BTA. Live numbers, an app or display unit, PDF report.
Fast checks, low cost Easy-Laser D92 and FAG SMARTY. Visual targets, no screen.	Bright line in a bright plant Fluke 835. Green laser and a reflector on the moveable motor.

KEY NOTE • HOW IT WORKS

A visual tool shows you the error as a line on a target, and you correct until the line sits where it should. A tool with a detector shows the same error as numbers, so you can see how far you have moved with every shim. Both find the same misalignment. You pay extra for numbers only when you need a tolerance check or a written record for the job file.

Our advice: one visual tool covers most V-belt jobs. Add the XT190 where you need numbers, a tolerance and a report for the maintenance record.

SKF TKBA 40: groove-mounted laser line

The TKBA 40 is two units, a laser emitter and a receiver. Both sit in the pulley grooves on magnets and V-guides. The laser line shows on the receiver, and the drive is aligned when the line meets all three reference lines.



Both units facing each other in the pulley grooves



Carrying case TMEB 2 with emitter, receiver, V-guides and batteries

WHAT IT DOES WELL

Fast to fit

Strong magnets. V-guides in four sizes fit most grooves.

Aligns the grooves

Not the pulley faces, so unequal widths are fine.

Tension and alignment

Adjust both together while you watch the line.

Long working range

50 mm to 6 m between the units.

Other drives

Side adapter TMEB A2 for multi-ribbed, timing and sprockets.

Light and robust

20 hours on 2 AAA cells; aluminium housing.

READING THE LINE

On the receiver	Meaning
Slanted line	Vertical angle misalignment
Stepped line, off centre	Horizontal angle misalignment
Straight line beside the reference lines	Parallel misalignment
Line on all three reference lines	Aligned

Typical uses (SKF)

HVAC, pumps, paper and flour mills, lathes, milling machines, conveyors; sprocket drives on agricultural machinery, compressors and camshafts.

Laser and calibration

Class 2 red laser, below 1 mW, 632 nm. Calibration certificate valid for two years.

KEY NOTE • HOW IT WORKS

The emitter throws a thin line of light across the gap. The receiver has three reference lines. If both pulleys are in one plane, the line falls exactly on all three. A tilted line points to a vertical angle; a line with a step in it points to a horizontal angle; a straight line that sits beside the reference lines means the pulleys are parallel but offset. You correct until the line and the reference lines become one.

V-guide selection

Match the pulley groove width and belt profile to the V-guide size. Check the pulley datum diameter against the limits.

Groove width (mm)	Belt profile	Min. Ø (mm)	Max. Ø (mm)	V-guide
6	Y/6	75	700	1 or 2
8	8	75	900	1 or 2
9	3V/9N	85	900	1 or 2
9.7	SPZ	85	900	1 or 2
10	Z/10, ZX/X10	80	900	1 or 2
12.7	SPA	85	900	1 or 2
13	A/13, AX/X13	80	900	1 or 2
15	5V/15N	90	1 300	1 or 2
16.3	SPB	90	1 300	1 or 2
17	B/17, BX/X17	90	1 300	1 or 2
20	20	140	1 300	1 or 2
22	SPC, C22, CX/X22	140	1 300	1 or 2, or 3 or 4
25	25, 8V/25N	300	1 800	3 or 4
32	D/32	300	1 800	3 or 4
40	E/40	300	1 800	3 or 4

FOUR V-GUIDE SIZES, 3 PAIRS OF EACH

Size	Groove width	Rods
V-guide 1	5 to 22 mm	Short rods
V-guide 2	5 to 22 mm	Long rods
V-guide 3	22 to 40 mm	Short rods
V-guide 4	22 to 40 mm	Long rods



Fit or change a V-guide

KEY NOTE • HOW IT WORKS

The V-guide is the part that sits in the groove and centres the magnet and laser unit on the pulley. If it does not match the groove, the unit sits off centre and every reading is wrong. Measure the groove width, find the belt profile in the table, then check that your pulley diameter is between the minimum and maximum. Wide grooves, from 22 mm up, need the larger guides 3 or 4.

Spare set: a set of V-guides (3 pieces of each size) is available as TKBA G2. The side adapter for multi-ribbed and timing belts is TMEB A2.

Easy-Laser XT190 BTA: digital read-out

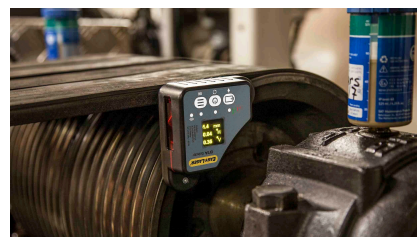
The XT190 BTA reads the sheave position against a laser plane and shows offset and both angles live on a built-in OLED display. With a separate display unit you can also read and record the result at the point where you adjust.



XT190 BTA: transmitter and detector



Detector with built-in display, live values



Detector on a belt drive in a plant

FIVE WAYS TO READ THE RESULT

1 • Targets

Aligned when the laser hits both slots.

2 • Built-in display

Offset, horizontal angle, vertical angle.

3 • Phone or tablet

Free XT Alignment app, iOS and Android.

4 • E51 or E52

Display unit with a belt program; documents the result.

5 • XT display unit

Full graphic interface; documents the result.

TRANSMITTER

Item	Detail
Sheaves	ø 60 mm and larger
Laser	Class 2, 630 to 680 nm, 60° beam
Power	Below 0.6 mW low; below 4.8 mW high
Accuracy	Plane parallelism below 0.05°; offset below 0.2 mm
Battery	1 × AA, up to 12 h
Size, weight	145 × 86 × 30 mm; 265 g

DETECTOR

Item	Detail
Distance	40 mm to 3 m low; 0.5 to 10 m high
Range	Offset ±3 mm; angle ±8°
Display	Yellow OLED, 96 × 96 pixels
Link	Bluetooth wireless
Battery	Li-ion, up to 5 h
Size, weight	95 × 95 × 36 mm; 190 g

KEY NOTE • HOW IT WORKS

The transmitter sends a flat sheet of laser light. The detector sits on the other pulley and sees where the sheet lands, then calculates the offset and the two angles for you and updates them live while you move the motor. Its range is ±3 mm and ±8°, so do a rough alignment first. Use high power mode when the pulleys are more than 3 m apart.

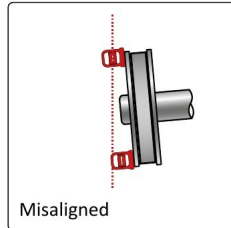
When to choose it: mixed drives, long centre distances, or any job where the maintenance record needs numbers and a PDF.

Easy-Laser D92 BTA and display units

The D92 BTA is the same laser transmitter as the XT190 with two targets instead of a detector. The laser line on the targets shows how to adjust. It can be upgraded later by adding the digital detector.

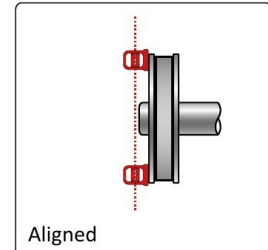


D92 transmitter and targets



Misaligned

Misaligned: line off the target slot



Aligned

Aligned: line in both slots

D92 BTA AT A GLANCE

Item	Detail
Part no.	12-1332 (transmitter 12-1325, 2 targets 12-0394, manual, 1 × AA battery)
Drives	V-belt, timing belt, flat belt and chain
Modes	High and low power; low mode saves battery
Read-out	Visual, from the targets
Upgrade	Add the XT190 digital detector later

DISPLAY OPTIONS FOR THE XT190 DETECTOR



E51 / E52 display unit with belt program



Phone or tablet with the XT Alignment app



XT display unit

The detector connects wirelessly to E51 and E52 display units that carry the belt program, to XT12 and XT11 display units, and to iOS and Android devices. Display units are not in the kit.

KEY NOTE • HOW IT WORKS

The D92 works like a sight line. The transmitter draws a line, and the two targets, one at each pulley position, show whether that line lands in the slots. If it does, the pulleys are in one plane. The detector is a later upgrade that replaces judging by eye with numbers, and it fits the same transmitter, so nothing is wasted if you start with the D92.

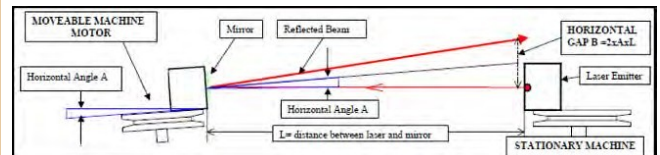
Start with the D92 if you want visual targets now and numbers later. The detector fits the same transmitter.

Fluke 835: green laser with a reflector

The 835 uses one green laser and a reflector. The laser unit goes on the stationary machine and the reflector on the moveable motor, so the beam is reflected back to the laser unit. That doubles the distance and gives the maker's reflected-beam sensitivity.



Fluke 835 laser line across a belt drive



Reflected beam principle (maker diagram)

WHAT TO KNOW

Green laser

505 to 535 nm, class 2. The eye sees green as brighter than red at the same power.

One adjustment

Move the motor, not the laser. Both reflector and laser unit show the result.

Reads all errors

Vertical angle and offset on the reflector; horizontal angle on the laser unit.

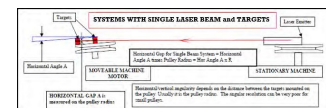
THE FLUKE 835 STEPS



1 • Vertical angle. Shim the motor while watching the reflector.



2 • Offset. Shift the motor along its axis.



3 • Horizontal angle. Shift the motor sideways, watch tension.

Item	Detail
Laser	Class 2, below 1 mW, 505 to 535 nm (green)
Range	Up to 10 m between the units
Power	4 × AAA cells, 6 h continuous
Fixing	Magnets on the inside or outside face of most pulleys and sprockets

KEY NOTE • HOW IT WORKS

Only one unit lights the way. The laser unit sends a green line across the drive to the reflector on the motor, and the reflector sends part of it back. Because the beam travels there and back, small movements show up larger. You read the vertical angle and the offset on the reflector and the horizontal angle on the laser unit, and you only ever move the motor.

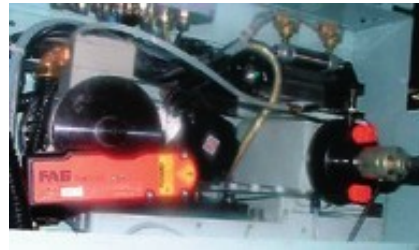
Good fit: grooved or flat-faced pulleys where you want one laser, one reflector and a bright line.

FAG SMARTY: light and low-cost

The Top-Laser SMARTY is a light hand-held emitter with two magnetic targets. It shows parallel and angular misalignment between two pulleys and works on V, flat and toothed belts and on chain wheels. One person can do the job.



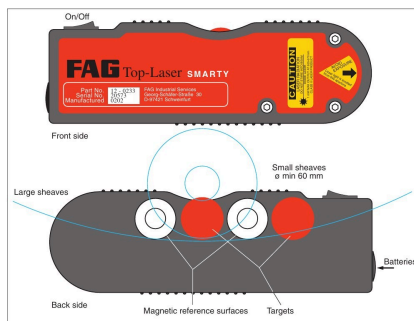
SMARTY emitter



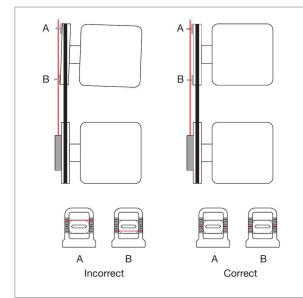
Laser line across a drive



Magnetic target (spare part)



Instrument layout (maker diagram)



Belt drive: incorrect and correct (maker diagram)

WHY USE IT

- Shows parallel and angular error
- Fast to fit, one operator
- Horizontal and vertical machines
- Tape fixing on non-magnetic pulleys
- Adjust target marks for unequal widths

DATA

Item	Detail
Pulleys	ø 60 mm and larger
Laser	Class 2, below 1 mW, 635 to 670 nm, 78° beam
Distance	10 m
Accuracy	Better than 0.5 mm or 0.2°
Power	2 × AA, 24 h
Size, mass	188 × 60 × 28 mm; 0.3 kg

KEY NOTE • HOW IT WORKS

The SMARTY puts a laser line on the pulley face and two magnetic targets mark where that line should fall. If the line runs through the slots in both targets, the pulleys are in line. If one target shows the line off to one side, there is an angle or an offset. For pulleys of different widths you slide the target marks to match, so one tool covers unequal pairs.

Good fit: a low-cost visual check for fans, pumps and conveyors, and for sets of small pulleys down to ø 60 mm.

Before you start, and safety

Plan the job before you open the toolbox. A clean drive and a locked-out machine save time on the day.

GENERAL PRACTICE

1 • Isolate

Switch off and lock out the drive machine

2 • Inspect

Pulleys, shafts, belt and base

3 • Fit

Units in the grooves, facing

4 • Correct

Vertical, horizontal, parallel

5 • Close out

Tension, re-check, remove units



Clean grooves and straight shafts: both units must seat on the pulleys

BEFORE YOU ALIGN

- Switch off the drive machine and isolate it.
- Check that the pulleys are mounted correctly and the shafts are straight; a buckled pulley spoils the result.
- Clean the pulley grooves so the V-guides and magnets seat properly.
- Check for worn grooves, damaged belts and loose base bolts.
- Have shims ready for the moveable machine.

SAFETY

- Never stare into the laser; never aim it into another person's eyes.
- Do not open the laser unit housing; it voids the warranty.
- Do not use in areas with a risk of explosion.
- Keep the tool away from high humidity and water.
- Have repairs done by an SKF repair shop.

RECORD ON THE JOB CARD

Drive tag and location	Date, tool and serial no.	Belt profile and pulley sizes	Before: line or values
After: line or values	Belt tension set	Technician and sign-off	

KEY NOTE • HOW IT WORKS

Almost every bad result on a belt drive comes from something that was wrong before the laser was fitted: a buckled pulley, a bent shaft, a worn groove or a loose base. The tool only measures the pulleys as they are. Check and clean first, and have shims ready so that you can move straight to the correction once you know the error.

The laser is below 1 mW, but never look into it. Remove both units from the pulleys before the machine is started.

Alignment step by step

Follow the maker's manual for button-level steps. The sequence below applies to any of the five tools.



Motor and base: move the motor in two directions



Shim and move the motor

STEP BY STEP

- 1 **Isolate.** Switch off and lock out the drive machine.
- 2 **Inspect.** Check pulleys, shafts, belt and base; clean the grooves.
- 3 **Fit.** Put the units on the pulleys so they face each other.
- 4 **Read.** Note the line on the targets, or the numbers on the display.
- 5 **Vertical angle.** Shim under the front or rear feet of the moveable machine.
- 6 **Horizontal angle.** Move the machine sideways.
- 7 **Parallel offset.** Move one pulley along its shaft.
- 8 **Close out.** Set belt tension, check horizontal angle, remove the units.

DONE WHEN

SKF TKBA 40

Line on all three reference lines.

Easy-Laser

Within tolerance on display, or line in both slots.

Fluke 835

Lines match their reference lines.

FAG SMARTY

Line in both slots at A and B.

KEY NOTE • HOW IT WORKS

Change one thing at a time. Each shim or move shifts the pulley in more than one way, so look at the line or the numbers again before the next correction. The order in this list is chosen so that later steps disturb the earlier ones as little as possible. Belt tension is set last because pulling the belt tight can turn the motor and spoil the horizontal angle.

Do one correction at a time. After every shim or move, look at the line or the numbers again before you make the next one.

Mounting and alignment by tool

The method differs a little by maker. Use the column for your tool, and keep the machine isolated until the units are off the pulleys.

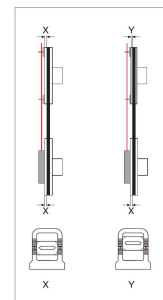
	SKF TKBA 40	Easy-Laser XT190 / D92	Fluke 835	FAG SMARTY
Fit	V-guides in the groove; magnet holds the unit	Magnets on the sheave side; tape or clamps if non-magnetic	Magnets on an inside or outside pulley face	Magnets, or double-sided tape on non-magnetic pulleys
Where	Units face each other, one per pulley	Transmitter on one sheave, detector or targets on the other	Laser on the stationary machine; reflector on the moveable motor	Emitter on one pulley; targets on the other
Read	Laser line on the three reference lines	Live numbers (XT190) or laser on both target slots	Laser line on reflector; reflected line on laser unit	Laser line in the target slots
Order	Vertical angle, horizontal angle, parallel	Follow the display; values for horizontal and vertical	Vertical angle, offset, horizontal angle	Match the line to the slots; adjust marks for width
Done	Line on all three reference lines	Within tolerance on display, or line in both slots	Lines match their reference lines	Line in both slots at A and B
Then	Re-check horizontal angle after belt tension	Save the result on a display unit if you use one	Set belt tension, run, re-check	Re-check after tension



SKF: fit or change a V-guide



Fluke: shim and move the motor



FAG: pulleys of different widths

KEY NOTE • HOW IT WORKS

The tools differ in what they put on the pulley and where they show the result, not in what you are trying to achieve. In every case you bring the line or the values to the target in the same order: vertical angle, horizontal angle, then offset. For the Fluke, the laser and the reflector sit on different machines, so only the motor moves. For the others, one unit sits on each pulley.

Do one correction at a time. After every shim or move, look at the line or the numbers again before you make the next one.

Failure modes and troubleshooting

GENERAL PRACTICE • TOOL PROBLEMS

Symptom	Likely cause	Action
No laser line	Batteries inserted the wrong way round or flat; dirt on the laser optic	Check the battery positions, replace the batteries, and clean the optic with a cotton cloth
Lost calibration	Heavy impact to the laser unit	Return the TKBA 40 to SKF for repair

DRIVE AND READING PROBLEMS

Symptom	Likely cause	Action
Belt edge wear or fraying	Parallel or angular misalignment	Align in the order vertical, horizontal, parallel
Belt twists or rides on one flank	Vertical angle misalignment	Shim the feet until the line is parallel to the reference lines
Chirping or belt flutter	Misalignment or wrong belt tension	Re-align, then check tension and horizontal angle
Motor or driven bearing runs hot	Side load from uneven belt pull	Check alignment and tension, then check the bearings
No line on the receiver	Units not facing each other, distance outside range, or an obstruction	Re-seat both units; keep within 50 mm to 6 000 mm and clear the path
Line never meets the three lines	Buckled pulley or bent shaft	Check the pulleys and shafts before more adjustment
Alignment drifts after tensioning	Belt tension has moved the machine	Check horizontal angle again and adjust

OTHER MAKERS: CHECKS

Tool	Check
Easy-Laser XT190	High power mode beyond 3 m. Detector range is ± 3 mm and $\pm 8^\circ$: rough-align first.
Fluke 835	Laser on the stationary machine, reflector on the moveable motor.
FAG SMARTY	Line not parallel to the magnets: check on a level surface and readjust.

KEY NOTE • HOW IT WORKS

Work from the symptom to the cause. A tool that gives no line is usually a battery or a dirty optic. A line that never meets the reference lines, even after adjustment, points to the drive: a buckled pulley or a bent shaft cannot be corrected by shimming. Belt wear that comes back after a new belt is the clearest sign that alignment, tension or the base is still wrong.

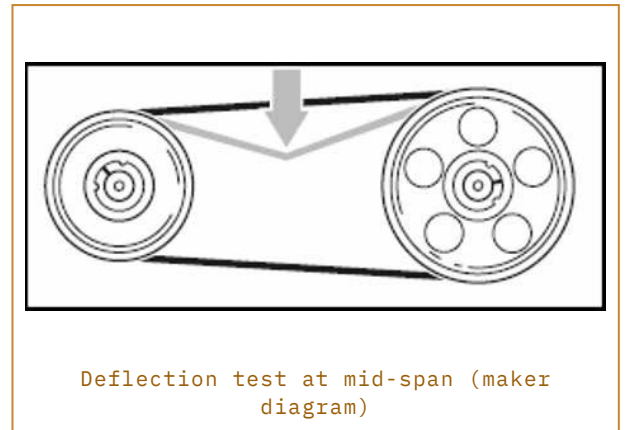
Treat repeat failures as a clue. If a belt wears again, do not only replace it; check pulley wear, shaft straightness and the base as well as the alignment.

Tension, care and spares

Alignment is only half the job. A drive with the wrong tension still wears belts and bearings, so set tension straight after the last move.

TENSION AND RUN-IN (FLUKE FAQ)

- Press the tight side at mid-span with a spring scale
- Deflect 1 mm for every 100 mm of span (1/64 in per inch)
- If the span is unknown, use the centre distance
- Run for a couple of hours, then re-check tension
- Run at least 72 hours, then check and adjust again



CARE AND STORAGE

Maker	What to do
SKF	Keep the optic clean; remove the AAA cells for long storage; store between -20 and +65 °C; return to SKF if calibration is lost
Easy-Laser	Charge the detector; the transmitter takes one AA cell; keep the units in the carrying case
Fluke	Magnets are strong: carry with the cover plate and slide it on, do not snap it; clean optics with a lint-free cloth
FAG	Check beam parallelism to the magnets on a level surface and readjust if needed

SPARES AND ACCESSORIES

Maker	Part
SKF	TKBA G2 V-guide set (3 of each size); TMEB A2 side adapter; TDTC 1/A toolcase
Easy-Laser	12-1325 transmitter; 12-1054 wireless detector; 12-0394 targets; 12-0804 carrying case; 03-1256 charger
FAG	LASER.SMARTY.TARGET spare magnetic target

KEY NOTE · HOW IT WORKS

A belt that is too slack slips and heats; one that is too tight overloads the bearings. The deflection test gives a repeatable way to check: press at the middle of the span and measure how far the belt moves for its length. A new belt stretches during the first hours, which is why the tension is checked again after a couple of hours and once more after 72 hours of running.

Keep a spare V-guide set and spare batteries with the tool. A missing part stops the job on the day.

Global brands and cross-reference

IndustrialHub BD helps maintenance and engineering teams choose belt alignment tools by drive type, pulley groove profile, centre distance, read-out and operating needs.

SKF TKBA 40 · V-GUIDES · TMEB A2 Groove-mounted laser line with a three-line receiver, V-guides and a side adapter for ribbed and timing belts.	Easy-Laser XT190 BTA · D92 BTA Digital detector with display units and the XT Alignment app, or visual targets on the same transmitter.
Fluke 835 BELT ALIGNMENT TOOL Green laser with a reflector on the moveable motor. Fluke also owns Prüftechnik.	FAG (Schaeffler) TOP-LASER SMARTY Light, low-cost hand-held emitter with two magnetic targets.
Prüftechnik PIONEER OF LASER ALIGNMENT Long-established precision alignment brand, now part of Fluke. No belt tool data in the documents reviewed.	Fixturlaser LASER ALIGNMENT SYSTEMS No belt tool data in the documents reviewed. Ask for the current data sheet.

CROSS-REFERENCE RULE

Never mix V-guides, targets, units or programs between brands. Match these points against the maker's own data first, then compare the offers.

Drive type and belt profile	Groove width and V-guide	Smallest pulley	Distance range	Accuracy
Laser type and class	Read-out and reports	Fixing, magnetic or tape	Battery and power	Calibration and support

Maintenance team Start from the drive: belt profile, groove width, smallest pulley, centre distance and whether the pulleys are magnetic. Cross out the tools that miss one of these, then shortlist on page 19.

We support solutions from recognized brands including SKF, Fluke, Prüftechnik, Easy-Laser, Fixturlaser and FAG, subject to technical suitability, product availability and specific customer requirements.
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Global brand comparison statement

Five documented tools on the points that decide most selections. Use it to shortlist by drive, then ask each supplier for the full data sheet.

MAJOR KEY POINTS

	SKF TKBA 40	Easy-Laser XT190 BTA	Easy-Laser D92 BTA	Fluke 835	FAG SMARTY
Laser concept	Line on a three-line receiver	Plane on a digital detector	Line on two targets	Line and reflector	Line on two magnetic targets
Read-out	Visual	Live numbers; app or display unit	Visual	Visual	Visual
Accuracy	Angle better than 0.2°; offset better than 0.5 mm	Offset below 0.2 mm; plane below 0.05°	Same transmitter as XT190	Not stated	Better than 0.5 mm or 0.2°
Range	50 mm to 6 m	Up to 10 m	Up to 10 m	Up to 10 m	10 m
Smallest pulley	ø 75 mm (V-guide chart)	ø 60 mm	ø 60 mm	Not stated	ø 60 mm
Laser	Red, 632 nm	Red, 630 to 680 nm	Red, as XT190	Green, 505 to 535 nm	Red, 635 to 670 nm
Other drives	Side adapter TMEB A2	Suits	Suits	Suits	Suits
Record and report	No	PDF report with display unit or app	No	No	No
Best for	Daily grooved V-belt jobs	Mixed drives and a written record	Visual now, numbers later	Bright plant, one laser	Low-cost visual checks

How maintenance and procurement use this page

Maintenance picks by drive type, smallest pulley, distance and read-out. Procurement then asks every supplier for the model and revision, V-guides or brackets in the kit, software or display unit, calibration certificate, warranty, training and delivery time. Prüftechnik and Fixturlaser data were not in the documents we reviewed; ask for current data sheets.

Not stated means the maker document we used does not list it. Ask for the current data sheet before you order. We support solutions from recognized brands including SKF, Fluke, Prüftechnik, Easy-Laser, Fixturlaser and FAG, subject to technical suitability, product availability and specific customer requirements.



REQUEST A QUOTATION

Maintenance and plant teams: send the drive type, pulley groove profile, centre distance and preferred brand. You get the right belt alignment tool, the price and the delivery time, and an engineer who stays with you after delivery.

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[Request a quotation →](#)

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★ 20 YEARS ON THE PLANT FLOOR

WHO LEADS US

- Erect, commission and revamp mills
- Operation, maintenance & shutdowns
- Troubleshoot and spares

WHAT WE SUPPLY AND SUPPORT

PARTS

- Belt and pulley alignment tools
- V-guides, targets and adapters
- Cases, cables and batteries
- Spares, bearings and accessories

SUPPORT

- Pick the right tool
- Set-up and tension advice
- Training and first alignment
- Quotation and delivery follow-up