

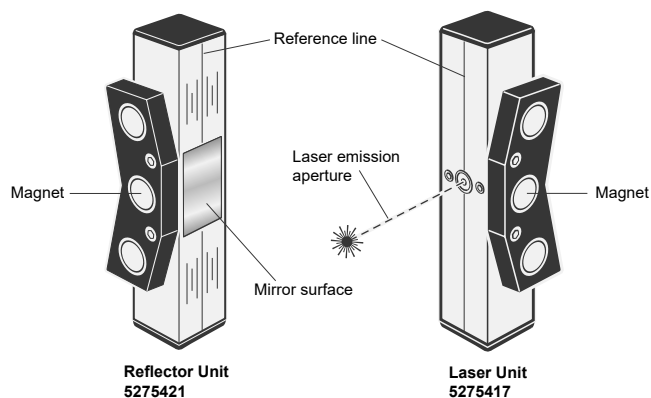
835 Laser Belt Alignment Tool Instructions



This document contains safety information and safety symbols that are relevant while using the product. The document contains laser safety information. The document deals also with storage, care, disposal and transport.

Contents subject to change without further notice, particularly in the interest of further technical development.

Fluke 835 (the product) is used in industrial environments to align pulley systems. Pulley alignment with the product requires only one operator.



Safety

A **Warning** identifies conditions and procedures that are dangerous to the user. A **Caution** identifies conditions and procedures that can cause damage to the Product or the equipment under test.

	The laser safety warning symbol denotes laser radiation.
	The avoid direct eye exposure symbol denotes laser radiation.
	The Electrical hazard symbol is used to identify electrical hazard and high voltage areas.
	Any waste electrical and electronics parts of the product must be disposed of according to applicable safety and environmental regulations. Customers in member states of the European Union must adhere to the EU directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Fluke products that fall under this directive are marked with the shown crossed-out wheelee bin symbol and must be disposed of according to this directive. The marked components must be disposed of with Fluke or with Fluke-authorized disposal partners. If you have any questions regarding the WEEE Directive, please contact your local Fluke sales representative.

Warning

To prevent possible electrical shock, fire, or personal injury:

- Read all safety information before you use the product.

General safety

Warning

Use the product only as specified, or the protection supplied by the product can be compromised.

- Make sure machines are locked out, tagged out, and cannot be started accidentally or deliberately during maintenance.

Laser safety

The product uses the laser unit 5275417. According to IEC 60825-1:2014, the laser unit is classified as Class 2 laser product. The laser unit complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated June 24, 2007. The laser operates at a wavelength of 505 – 535 nm. The laser has a maximum radiant power < 2.8 mW. The radiant power determined according to IEC 60825-1:2014 condition 3 is < 1.0 mW. No maintenance is necessary to keep the product compliant as outlined above.

Warning

Do not look directly into the laser beam at any time. (The natural blink reaction of the human eye is normally sufficient to protect the eyes from any dangers posed by looking at the laser beam briefly. But as natural blink reaction can fail to occur, take care to avoid staring into the beam.)

Do not insert any optical devices into the beam path.

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

To prevent eye damage and personal injury:

- Do not point laser directly at persons or animals or indirectly off reflective surfaces.
- Do not look directly into the laser with optical tools (for example: binoculars, telescopes, microscopes). Optical tools can focus the laser and be dangerous to the eye.
- Use the product only as specified or hazardous laser radiation exposure can occur.
- Do not open the laser unit. The laser beam is dangerous to eyes. Have the device repaired only through an approved Fluke service centre.

Transporting Magnetic Components

Warning

Due to the powerful magnets on the laser and reflector units, handle the units with care, and DO NOT transport the units with the magnets uncovered. Use the provided cover plate to cover the magnets. The cover plate lowers the magnetic field strength significantly. To cover the magnets, slide the plate onto the surface of the magnets. DO NOT snap it on as this can cause painful nips and pinches. The units must be kept away from magnetic materials such as watches, spectacle frames and other units that can be damaged.

Caution

When not in use, store the product in the pouch.

For maximum performance make sure that the optics on the laser transmitter, the reflecting surface on the reflector and the outside housing of both units are kept clean and dust free. Clean the product with lint free cloth. Use the optics cleaning cloth (2687537) to clean the mirror surface.

Laser labelling

The laser safety warning label affixed to the rear side of the laser unit



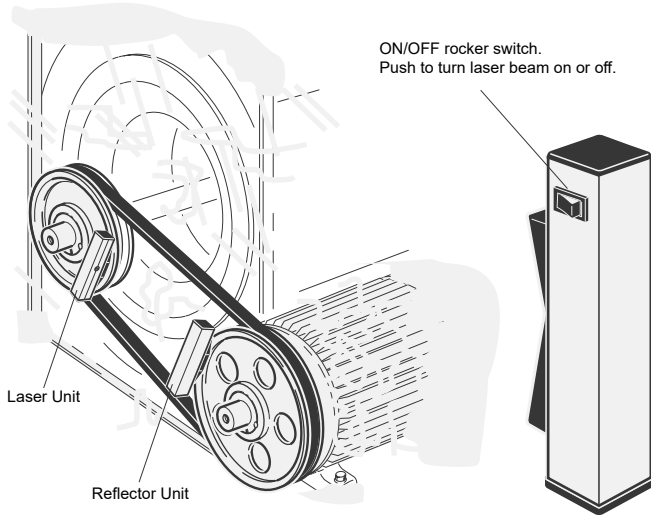
Setup

Warning

Isolate the machines to be aligned from mains supply.

Slide the cover plates to remove the plates from the product before mounting. **DO NOT** snap the units on as this can cause painful nips and pinches.

Mount the reflector unit onto the machine to be moved, and the laser unit onto the stationary machine



Handling Precautions

Caution

Do not drop the product. Do not subject the product to physical shock.

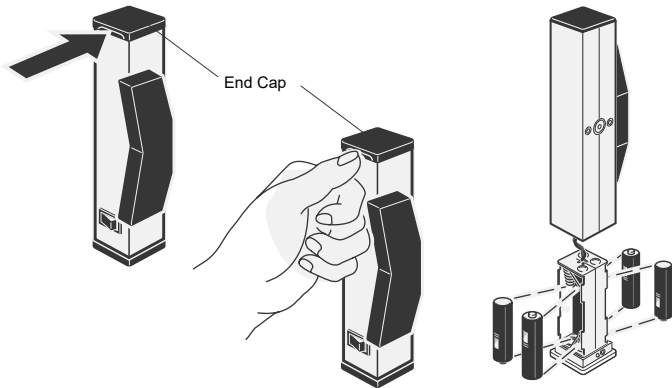
Storage

Use the provided pouch to transport the units.

If the laser unit is not used for an extended period, remove the batteries, and store them in a cool, dry and well-ventilated location.

Observe the storage temperature specified in the technical data.

To remove batteries, use your thumb or a coin and lift off the end cap attached to the battery holder. Pull out the battery holder and remove the batteries.



Maintenance

- The product is maintenance-free.
- Do not use the product if defective. Send the product for repair.
- The product must be repaired only by authorized service centres. Service centres verify the safe state of the laser unit after repair

Declaration of conformity

The device fulfills the EC Guidelines for electric devices and those relating to electromagnetic compatibility as indicated in its conformity certificate.

Warranty

Each Fluke product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is two years and begins on the date of shipment. Parts, product repairs, and services are warranted for 90 days. This warranty extends only to the original buyer or end-user customer of a Fluke authorized reseller, and does not apply to fuses, disposable batteries, or to any product which, in Fluke's opinion, has been misused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation or handling. Fluke warrants that software will operate substantially in accordance with its functional specifications for 90 days and that it has been properly recorded on non-defective media. Fluke does not warrant that software will be error free or operate without interruption.

Fluke authorized resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Fluke. Warranty support is available only if product is purchased through a Fluke authorized sales outlet or Buyer has paid the applicable international price. Fluke reserves the right to invoice Buyer for importation costs of repair/replacement parts when product purchased in one country is submitted for repair in another country.

Fluke's warranty obligation is limited, at Fluke's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to a Fluke authorized service center within the warranty period.

To obtain warranty service, contact your nearest Fluke authorized service center to obtain return authorization information, then send the product to that service center, with a description of the difficulty, postage and insurance prepaid (FOB Destination). Fluke assumes no risk for damage in transit. Following warranty repair, the product will be returned to Buyer, transportation prepaid (FOB Destination). If Fluke determines that failure was caused by neglect, misuse, contamination, alteration, accident, or abnormal condition of operation or handling, including overvoltage failures caused by use outside the product's specified rating, or normal wear and tear of mechanical components, Fluke will provide an estimate of repair costs and obtain authorization before commencing the work. Following repair, the product will be returned to the Buyer transportation prepaid and the Buyer will be billed for the repair and return transportation charges (FOB Shipping Point).

THIS WARRANTY IS BUYER'S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. FLUKE SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, ARISING FROM ANY CAUSE OR THEORY.

Since some countries or states do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any provision of this Warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision.

Technical data

Laser unit 5275417	
Type	Semiconductor laser diode
Beam power	< 1.0 mW (measured at 100 mm distance from a 7 mm diameter aperture according to IEC 60825-1:2014 condition 3)
Beam divergence	< 1.0 mrad
Beam spread	70 deg.
Maximum beam power	< 2.8 mW (measured directly at the aperture)
Wavelength	505 – 535 nm (green visible)
Safety class	Class 2 according to IEC 60825-1:2014 The laser complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.
Safety precautions	Do not look into the laser beam
Measuring accuracy	0.2°
Measuring distance	10 m between units
Power supply	4 LR 03 AAA alkaline batteries Supply voltage and current with batteries at full capacity (6 V, 150 mA) Supply voltage and current with almost depleted batteries (2.7 V, 380 mA)
Operating time	6 hours
Controls	ON/OFF rocker switch
Environmental protection	IP20 Relative humidity: 10% to 95% (non-condensing) Altitude: up to 2,000 m (6560 ft) Usage: Both indoors and outdoors
Temperature range	Operating: -5°C to 40°C (23°F to 104°F) Storage: -10°C to 70°C (14°F to 158°F)
Mounting method	Strong magnets
Weight	Approx. 0.3 kg (0.66 lb.) with batteries
Dimensions	Approx. 37 x 40 x 170 mm (1 7/16" x 1 9/16" x 6 11/16")
Housing material	Gray anodized aluminium
Reflector 5275421	
Accuracy	0.2°
Reflector surface size	21 x 32 mm (13/16" x 1 1/4")
Mounting method	Strong magnets
Weight	Approx. 0.27 kg (0.6 lb)
Dimensions	Approx. 37 x 40 x 170 mm (1 7/16" x 1 9/16" x 6 11/16")
Housing material	Gray anodized aluminium