PULLEY ALIGNMENT TOOL

USER MANUAL

ACOEM **PAT**

acoem

INTRODUCTION

ACOEM PAT uses two laser transmitters for projecting of laser lines on the opposite laser unit. By adjusting the pulleys so that the laser line coincides with the reference line on the opposite laser unit, the pulleys are aligned.

DECLARATION OF CONFORMITY

In accordance with
2014/35/EU Low Voltage Directive
2012/19/EC Waste electrical and electronic equipment (WEEE)
2011/65/EU Restriction of the use of certain hazardous substances (RoHS)
2006/66/EU Battery Directive
2001/95/EC CE marking directive

Type of equipment
Alignment Tool

Brand name or trade mark
ACOEM

Type designation(s)/Model no(s)
1-0671 ACOEM PAT

Manufacturer's name, address, telephone & fax no
ACOEM AB, Box 7, SE-431 21 Mölndal, Sweden
Tel: +46 31 706 28 00, E-mail: info.se@acoem.com

Standard/Test report/Technical construction file/Normative document
The following standards and/or technical specifications, which comply with good engineering practice in safety matters in force within the EEA, have been applied:
EN 61000-6-3:2007.
EN 61000-6-2:2005, EN 61000-4-2, -3, -4, -5, -6, -11.
EN 61010-1:2010
ISO9001:2015 Ref. No/ Issued by: DNV Certification AB
Certification No. 2009-SKMAQ-2704/2009-SKM-AE-1419.
The laser is classified in accordance with the International Standard IEC-60825-1:2014, USA FDA Standard 21 CFR, Ch 1, Part 1040.10 and 1040.11 except for deviations pursuant to laser notice No. 50, dated June 24, 2007.

Additional information
The product was CE-marked in 2024.

As manufacturer, we declare under our sole responsibility that the equipment follows the provisions of the Directives stated above.

Date and place of issue
Mölndal 2024-04-30

Signature of authorized person

Hans Svensson, Managing Director

SAFETY

Retain and follow all product safety and operating instructions. Observe all warnings on the product and in the operating instructions.

Failure to observe the safety pre-cautions and operating instructions can cause bodily injury, fire, and damage to the equipment.

Do not disassemble, modify, or use the equipment in other ways than explained in the operating instructions. ACOEM AB will not accept any liability for such use.

WARNING!

Do not mount equipment on running machines and take all appropriate measures to prevent unintentional start-up of machines. Make sure to fully comply with all appropriate shut down procedures, safety measures and regulations at worksite and local regulations regarding safety in a machine environment.

LASER PRECAUTIONS

The system uses laser diodes with a power output of < 1.0 mW. The laser classification is Class 2.

Class 2 is considered safe for its intended use with only minor precautions required. These are:

- Never stare directly into the laser transmitter.
- Never shine the laser directly into anyone else's eyes.

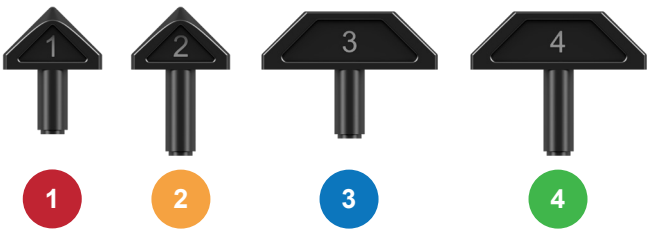
Your system complies with the requirements in:

- IEC-60825-1:2007
- British Standard BS EN 60825-1
- DIN EN 60825-1
- USA FDA Standard 21 CFR, Ch 1, Part 1040.10 and 1040.11

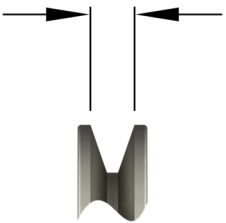
MOUNTING

SELECTING V-GUIDES

Four sizes of V-guides are supplied to fit pulley grooves of most widths and types. Select the appropriate V-guide according to the V-guide selector. Mount two V-guides on each PAT unit.

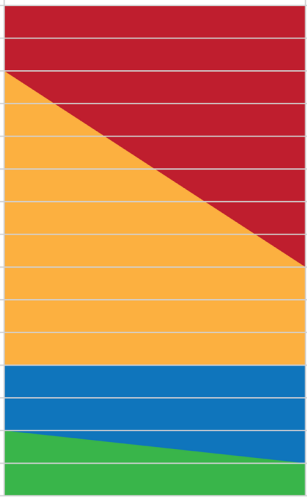


Pulley groove width



V-guide selector

Pulley groove width (mm)	Belt profile	Min diam (mm)	Pulley datum diameter →	Max diam (mm)
6	Y/6	75		700
8	8	75		900
9	3V/9N	85		900
9.7	SPZ	85		900
10	Z/10, ZX/X10	80		900
12.7	SPA	85		900
13	A/13, AX/X13	80		900
15	5V/15N	90		1300
16.3	SPB	90		1300
17	B/17, BX/X17	90		1300
20	20	140		1300
22	SPC, C/22, CX/X22	140		1300
25	25, 8V/25N	300		1800
32	D/32	300		1800
40	E/40	300		1800



V-guide 1: 5-22 mm short rod

V-guide 2: 5-22 mm long rod

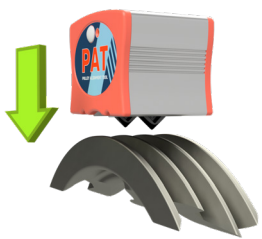
V-guide 3: 22-40 mm short rod

V-guide 4: 22-40 mm long rod

MOUNTING THE PAT UNITS

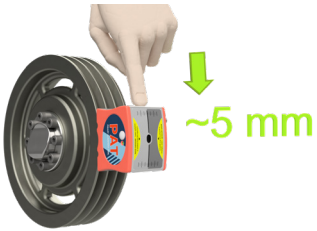
Place the V-guides of the first unit in the groove of the first pulley and press the unit firmly until the magnet secures it to the pulley.

NOTE! The magnet, which holds the unit to the pulley, is very strong. Do not pinch your fingers.

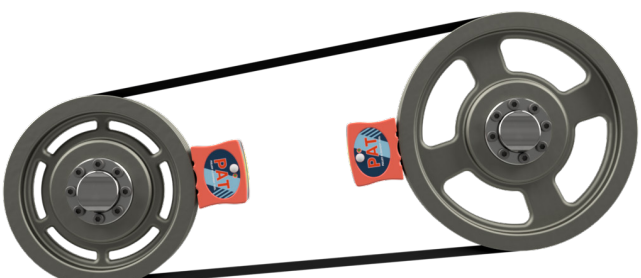


The V-guides are used to center the units. The V-guides must have contact with both walls of the sheaves, but will not “fill the groove”.

Ensure that the V-guides has settled correctly in the groove by pushing the units a few millimeters along the groove.



Place the second unit in the opposite groove of the second pulley. Position both units facing each other, and in the corresponding grooves.



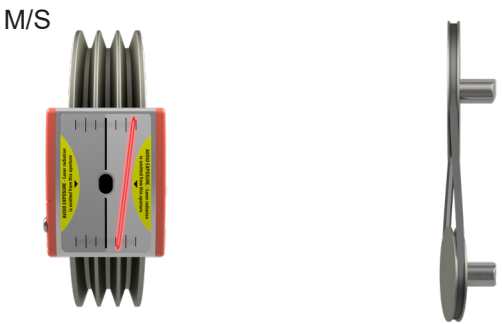
STARTING

Press the ON-button on each unit to turn on the laser.

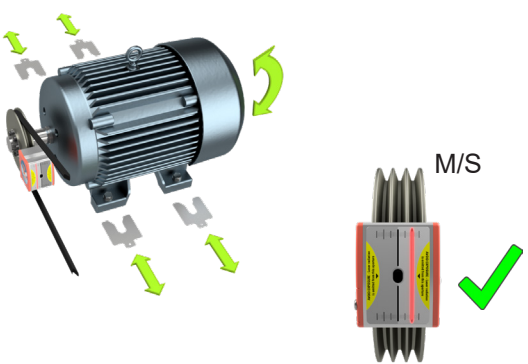
ALIGNMENT

1. VERTICAL ANGLE ALIGNMENT (TWIST)

If the laser lines are not parallel to the center line on the targets (see picture below), there is a vertical angular misalignment.



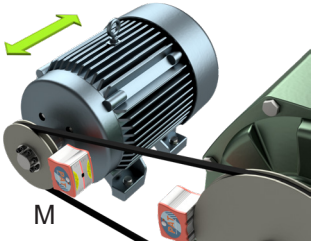
Correct the twist by adding or removing shims on the movable side until the the laser lines are parallel to the center lines.

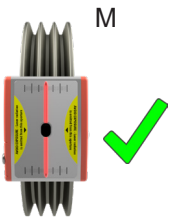


2. HORIZONTAL OFFSET ALIGNMENT

If the laser line on the movable side is parallel to the center line but not in the center, there is a horizontal offset misalignment.

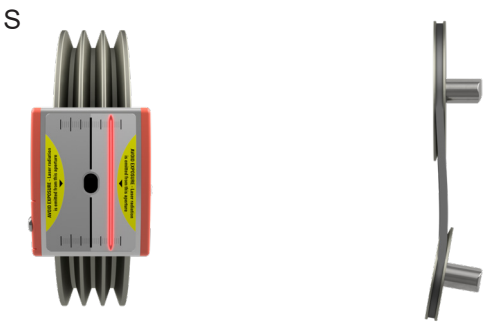
Correct the offset misalignment by moving the movable machine in the axial direction until the laser line (on the movable side) coincides with the center line.



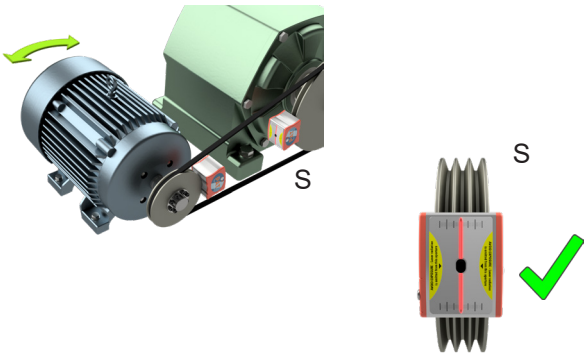


3. HORIZONTAL ANGLE ALIGNMENT

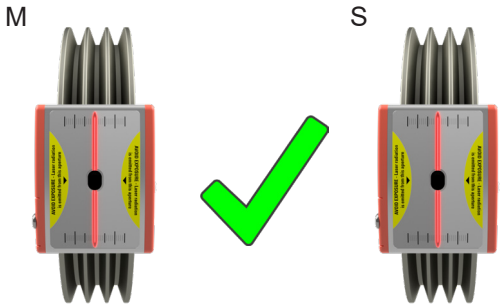
If the laser line on the stationary side is parallel to the center line but not in the center, there is a horizontal angle misalignment.



Correct the angle misalignment by rotationg the movable machine horizontally until the laser line (on the stationary side) coincides with the center line.



Finally, check that the laser line coincides with the center line on both the movable and stationary side.



Repeat step 1 to 3 for fine adjustment, if necessary.

TECHNICAL SPECIFICATION

Housing material: Anodized aluminum frame an ABS plastic.
Operating Temp: 0 to 40 °C
Storage Temp: -20 to 65 °C
Relative humidity: 10 - 90%
Weight: 324 g/unit with batteries
Dimensions: 61 mm x 77 mm x 61 mm
Laser: 650 nm class II diode laser
Laser power: < 1 mW
Measurement distance: From 50 mm to 6000 mm
Measurement accuracy: Better than 0.5 mm or 0.2 degrees
Power supply: 2 x 1.5V LR03 (AAA) Alkaline batteries per unit
Operating time: 20 hours continuous use
LED indicators: Unit state / laser transmision
Pulley diameter range: From 75 mm and larger (standard)
Pulley belt groove width: From 6 mm to 40 mm (standard)

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