Zumbach

SWISS PRIME MEASURING SINCE 1957

Oscillating Device for ODAC® Laser Gauges

DVO 2

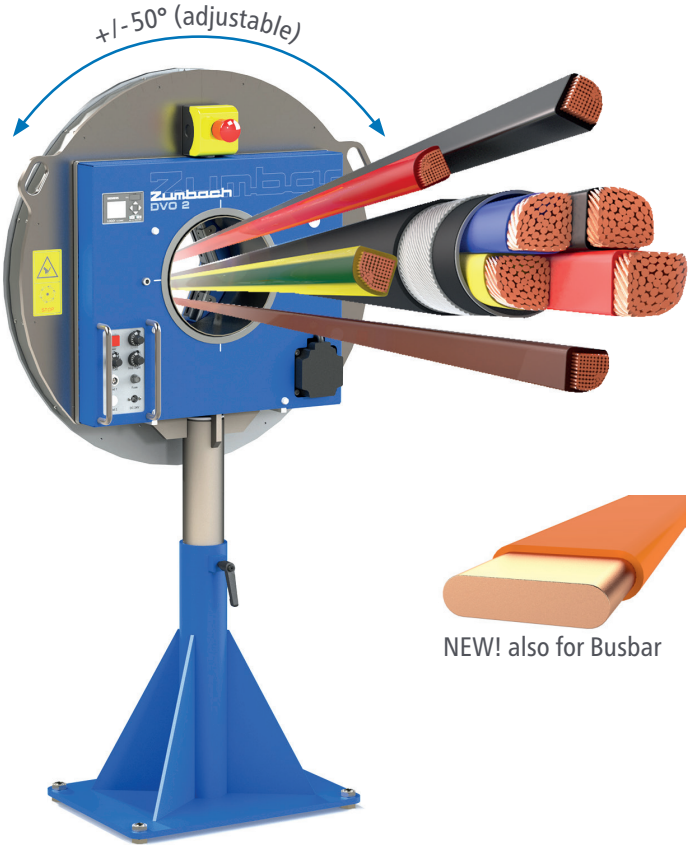
In-line height and width measurement of profiles. Very accurate readings, independent of position and twist.

The Problem

Non-contact in-line measurement of profile shapes has always been an issue. Most optical systems using laser or CCD cameras measure the height of the shadow of the product, and is subject to strong variations if the product is not perfectly aligned with the laser beam.
A twist angle of 1° or less can already cause errors which are often larger than the specified product tolerance.
Most profiles, in particular steel, can not be guided absolutely parallel due to their mechanical stiffness and due to the required forces for guiding.

The Solution

The oscillating device DVO 2 is a simple accessory for some ODAC laser head models used for such applications.
With a continuously pivoting motion of the laser heads combined with the electronic "minimal value detection" of the relevant dimension, the height (or thickness) will be measured very accurately.
The DVO 2 is an autonomous unit and can directly be connected to the mains, therefore it does not require an external control unit. The data acquisition, processing and display can be carried out via a processor of ZUMBACH's USYS series or via the CI 1J/ EN-RS, -DP, -EN, -PN -EI computer interface through a higher level computer system.



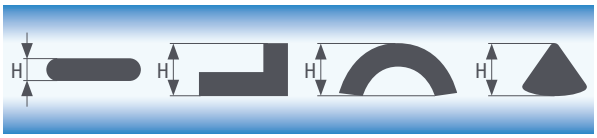
NEW! also for Busbar

Generic product shapes such as triangles, squares, rectangles etc, define the requirement of circumferential measurement needed to ensure all critical parameters are measured with optimal timing and precision. This ultimately led us to designing a solution with capabilities from 1 to 3 measurement axes. Where 3 axis measurement is the ultimate solution, providing precise ovality and dimensional measurement simultaneously.

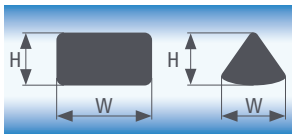
In consideration throughout the design phase, was what is it that is required for our end customers, as it is the case for all ZUMBACH developments. Ultimately a solution flexible enough to mount anything from a single axis to a 3 axis measurement gauge would be sought, ensuring that optimum measurement and capability could be realised. Hence the oscillating device DVO 2 has evolved as an all round all fitments solution for all markets.

Typical product shapes and measured dimensions

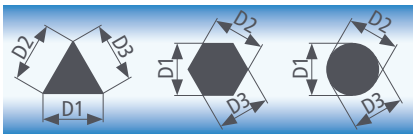
Measurable with 1-axis heads



Measurable with 2-axis heads



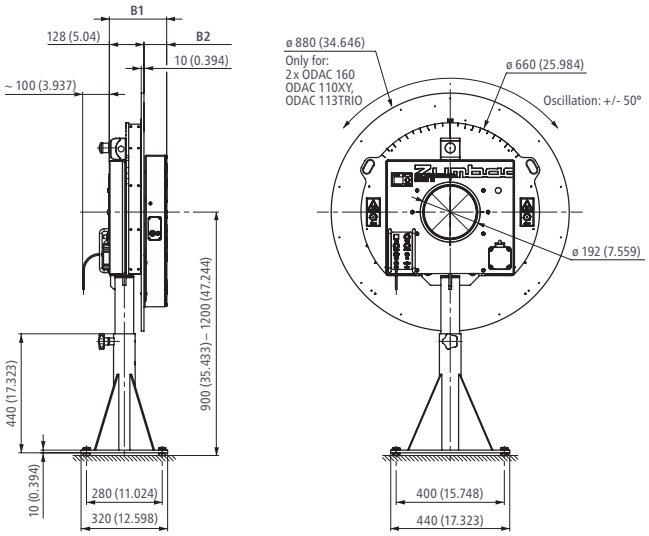
Typical for 3-axis heads

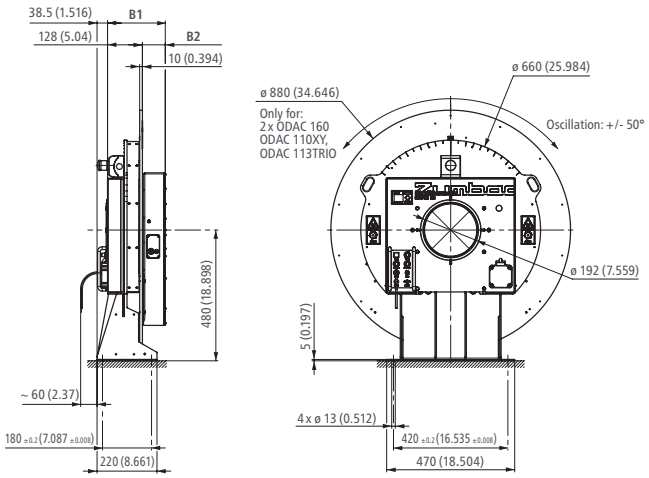


DESCRIPTION

DVO 2 is a mechanical oscillating device for ODAC measuring heads. In the adjusted angle (adjustable between –50° up to +50°), the device oscillates the measuring head (mounted on a disc) continuously around the product. The unit is driven by a stepper motor. The required cycle time is set by means of a potentiometer. Thanks to its rugged design, the DVO 2 can be easily installed and operated in each production line without additional reinforcement elements. The protection type of the oscillating device as well of the ODAC measuring heads is adequate enough for the integration into production lines under normal environmental conditions.
The universal design of the DVO 2 enables the use of numerous ODAC models, qualifying the device for a wide range of applications where precise measurement of height and width is required.

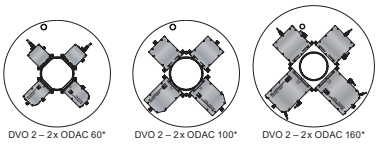
DIMENSIONS – VERSIONS OVERVIEW

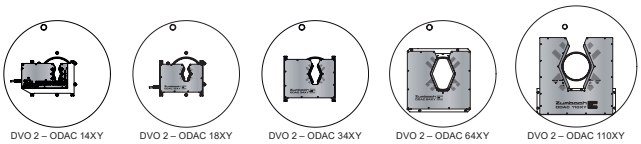


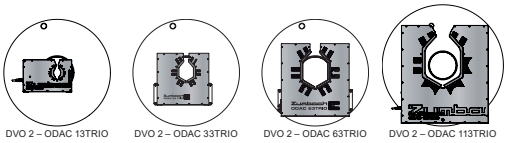


Model	Order number	B1 mm (in.)	B2 mm (in.)	Measuring field mm	(inch)
DVO 2 – 2x ODAC 60*	DVO.002.00600	191 (7.52)	63 (2.48)	60	(2.36)
DVO 2 – 2x ODAC 100*	DVO.002.01000	202 (7.95)	74 (2.91)	100	(3.94)
DVO 2 – 2x ODAC 160*	DVO.002.16000	212 (8.35)	84 (3.31)	160	(6.30)
DVO 2 – ODAC 14XY	DVO.002.00140	193 (7.60)	65 (2.56)	16 x 16	(2 x 0.63)
DVO 2 – ODAC 18XY	DVO.002.00180	191 (7.52)	63 (2.48)	18 x 18	(2 x 0.71)
DVO 2 – ODAC 34XY	DVO.002.00340	192 (7.56)	64 (2.52)	34 x 34	(2 x 1.34)
DVO 2 – ODAC 64XY	DVO.002.00640	202 (7.95)	74 (2.91)	64 x 64	(2 x 2.52)
DVO 2 – ODAC 110XY	DVO.002.11000	212 (8.35)	84 (3.31)	110 x 110	(2 x 4.30)
DVO 2 – ODAC 13TRIO	DVO.002.00130	188 (7.40)	60 (2.36)	3 x 16	(3 x 0.63)
DVO 2 – ODAC 33TRIO	DVO.002.00330	192 (7.56)	64 (2.52)	3 x 34	(3 x 1.34)
DVO 2 – ODAC 63TRIO	DVO.002.00630	197 (7.76)	69 (2.72)	3 x 64	(3 x 2.52)
DVO 2 – ODAC 113TRIO	DVO.002.01130	208 (8.19)	80 (3.15)	3 x 110	(3 x 4.30)

*Depending on the application, the DVO 2 is also available with only 1 ODAC® measuring head.

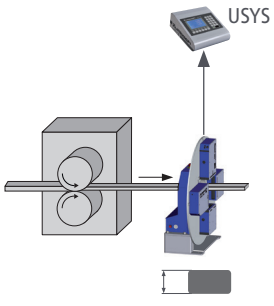




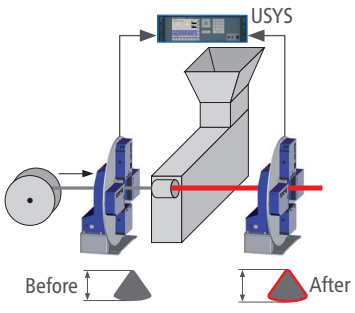


TYPICAL APPLICATIONS

Cold Rolling: Precision Profiles



Extrusion: Sector Cables



MAIN DATA

Data acquisition, processing and display units	USYS 20, USYS 200, USYS IPC 1e / 2e
Computer interfaces	CI 1J/EN-RS, -DP, -EN, -PN, -EI
Shortest cycle time	2.6 seconds
Oscillation angles	+/- 50° (adjustable)
Power supply	85...265 VDC, 50...60 Hz, 40 VA

ACCESSORIES

Stand ST1-DVO 2	ST01.391.98000
Fine height adjustment FHV1 for ST 1	ST01.040.1000
Pedestal for DVO 2	DVO.002.910
Calibration device DVO 2	DVO.002.900

► Further accessories on request.

• Technical specifications are subject to change without notice

Switzerland (H.Q.): ZUMBACH Electronic AG, P.O. Box, CH-2552 Orpund, Phone +41(0)32 356 04 00, Fax +41(0)32 356 04 30, E-Mail: sales@zumbach.ch
Benelux • China • Czech Republic • France • Germany • India • Italy • Spain • Taiwan • United Kingdom • USA
www.zumbach.com

ZUMB.009.0022.EN SEP.2025