STRIP SHAPE

Shapemeter Roll VPMR

Application

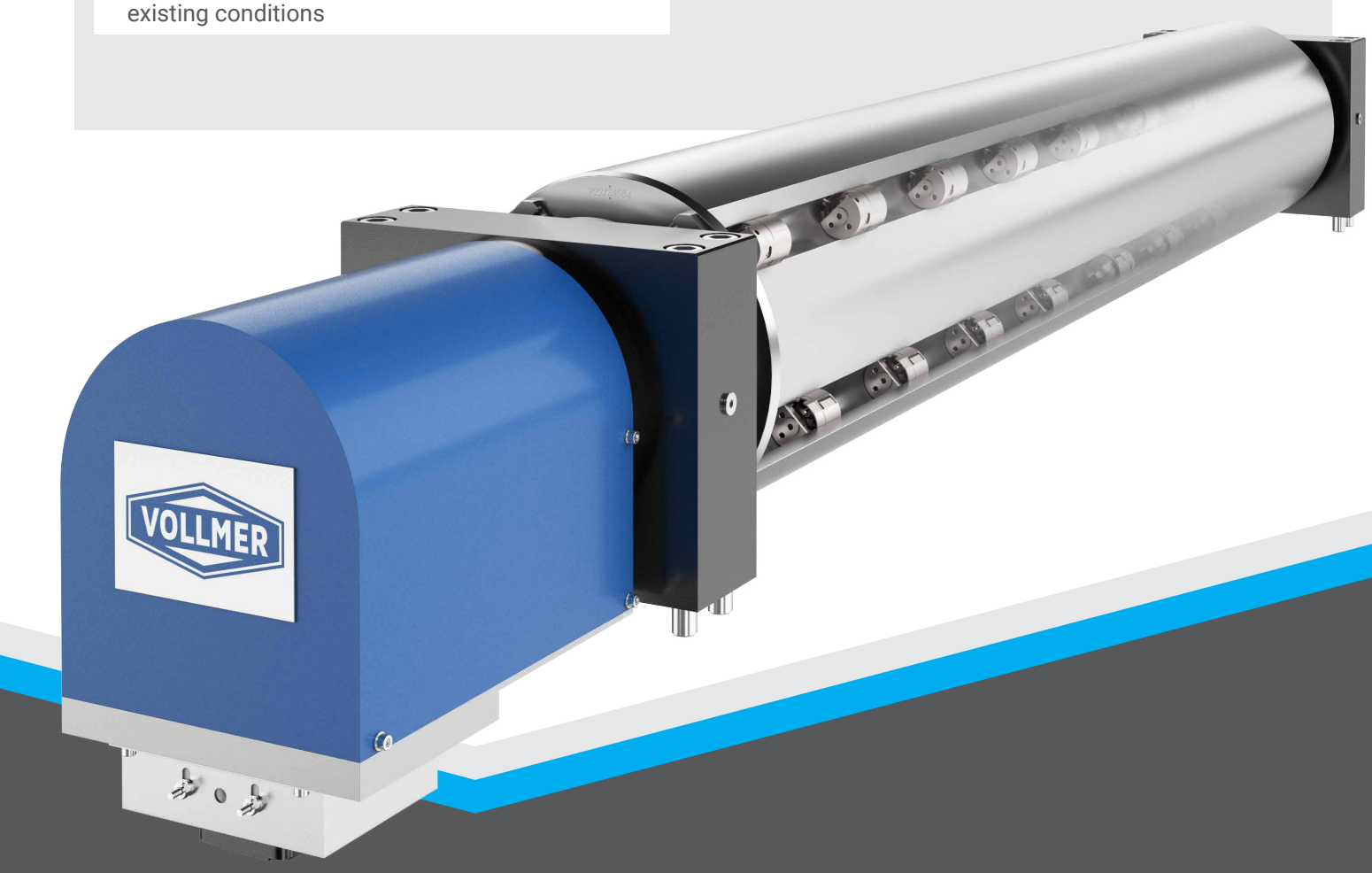
- Metal strip

Function

Shape measurement using piezoelectric force sensors according to the proven patent of the VDEh-Betriebsforschungs- institut (BFI).

Advantages

- Simple structure with excellent robust design
- Solid roll body with closed roll barrel surface
- Shapemeter roll universally applicable, typically as deflector roll
- Installation of temperature sensors in the flatness measuring roll possible
- Retrofitting in existing rolling mills is unproblematic, since roll diameters, barrel length and bearing center distances can be designed according to the existing conditions
- Maintenance-free, optical signal transmission (Pulse-Code-Modulation)
- No purge air/cooling of the roll electronic in standard applications required
- Factory-set calibration, no recalibration required even after grinding or recoating
- Digital signal transmission from the shapemeter roll to the control cabinet



Type Series	VPMR	
Process Parameters		
Material to be measured	metal strip	
Strip thickness	≥ 0.005	mm
Max. strip tension	depending on diameter, wrap angle and width of the roll	
Wrap angle	fixed or variable	
Max. strip temperature	standard application 180 °C (special application 270 °C)	
Measurement Parameters		
Roll diameter	200 – 600	mm
Grinding range steel roll	6 mm of roll diameter (3 mm for foil measurement)	
Roll surface	standard steel 58 HRC+4, alternatively rubber, tungsten carbide, chrome	
Design	axial bores in 90° distribution for mounting the sensors	
Measuring zone width	typically 26 mm / 52 mm, others possible (minimal 17 mm)	
Sensor type	active piezo quartz force sensor with single cable technology	
Sensor load capacity	60 – 84	kN
Sensor stiffness	5.2	kN/µm
Linearity including hysteresis	± 0.5	%
Measurement resolution	< 0.1	I-Unit
Measurement accuracy	± 1	I-Unit
Connection Data / Environment / Others		
Signal transmission	rugged digital signal transmission from the shapemeter roll to the control cabinet	
Visualization	at the control desk or switch room	
Interfaces	TCP/IP; further interfaces such as UDP, PROFINET, PROFIBUS DP or digital and analog inputs and outputs are possible	
Supply voltage / Connected load	110 – 230 V AC, 50 – 60 Hz / 2 kW	
Ambient temperature	roll transmitter unit: 0 – 45 °C; Control cabinet: 5 – 35 °C	
Relative humidity	0 – 95 %	
Measured value output	per revolution	
Accessories	transport traverse, grinding adapter	
Options		
Strip position detection	if the strip position is not sufficiently known	
Drive system	to support the shapemeter rolls	
Partition system	for shape measurement on wedge strips	
Automatic shape control	e.g. for the actuators bending, tilting, axial shifting, saddle adjustment, zone cooling	
Temperature detection	over the strip width and strip length	
Air conditioner	for control cabinet	