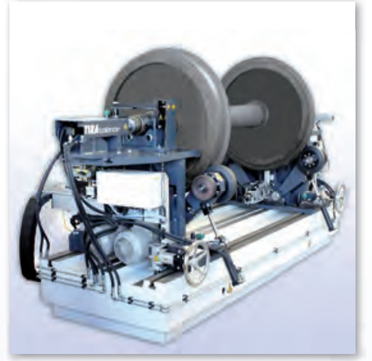
Applications – automatically

RAYLWAY WHEELS AND WHEELSETS


K 2000 ROF (on floor)
as possible under floor

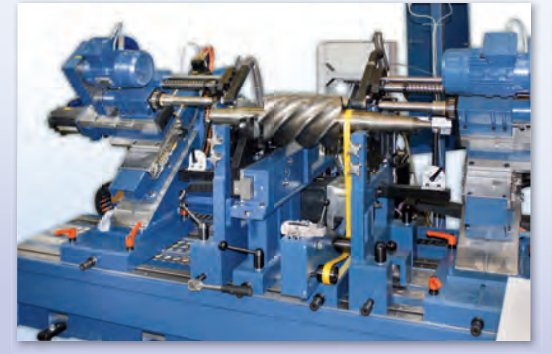

KV 800
with axial and concentric run-out measuring system

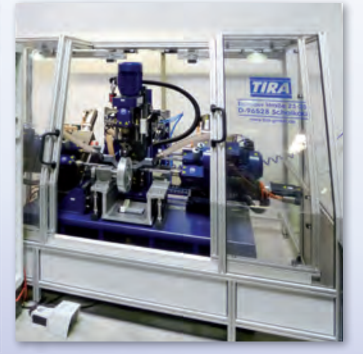
FANS


KV 20 S

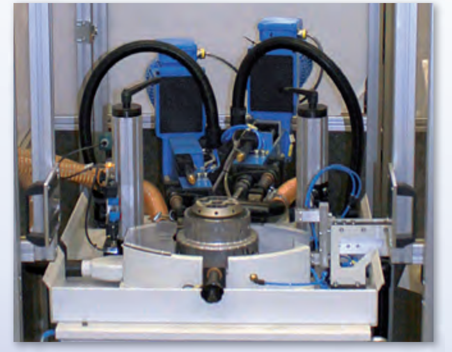

KV 10 ET Tandem
self-propelled

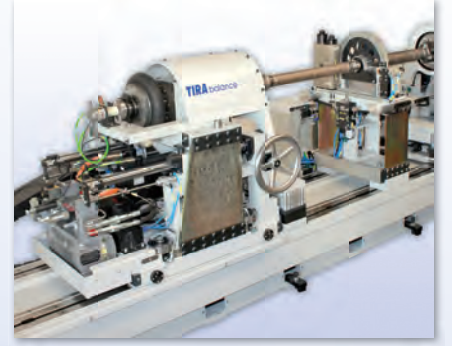
PUMPS AND COMPRESSORS


K 250 BHA


K 20 BHA

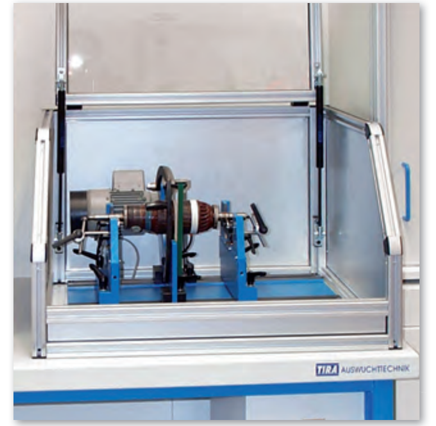
PIECES OF GEARS AND DRIVES

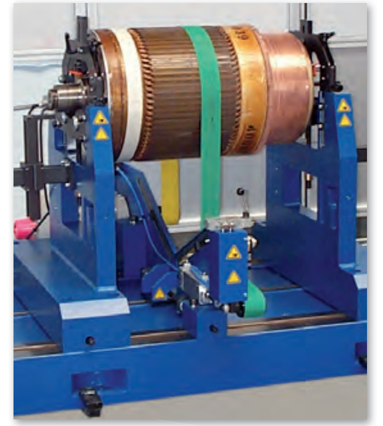

KV 5 VA


W 20 G

Applications – manually

UNIVERSAL BALANCING MASCHINES


K 10 B


K 2000 B

FANS


KV 30 T with manually loading

DRIVE CLUTCHES AND GARAGE MASCHINES


K 450 for two-piece driveshafts


Verticale balancing maschine
KV 60 with drilling unit


Horizontale balance maschine K 100 B
with two drilling unit

ATT ANGELANTONI TEST TECHNOLOGIES | TIRA Auswuchttechnik Balancing Technology

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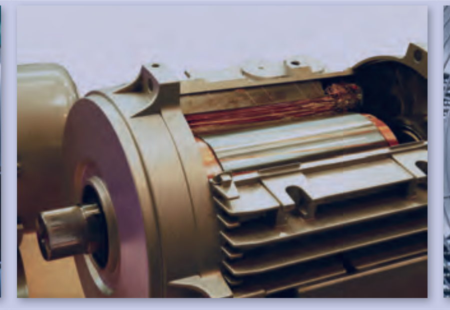
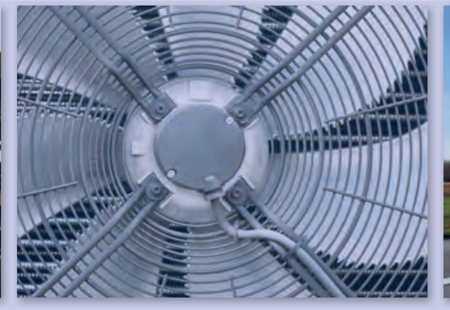
www.tira-gmbh.de | Tel.: 00 49 (0) 3 67 66 / 280 - 0 | Fax.: 00 49 (0) 3 67 66 / 280 - 99 | e-Mail: iat@tira-gmbh.de

TÜV International Certification TÜV Thüringen CERT ISO 9001:2008 15 100 5053 TIC

TIRA Auswuchttechnik
Balancing Technology





Balancing Technology

TIRA Balancing Technology

With his more than 65-years history delivered TIRA several thousand measuring and testing equipment and systems to a varied of industry and research. Look through the future technologies such as electric mobility and high-speed trains, there are also some new challenges come to balancing technology.

The main application areas of TIRA balancing technology can be found wherever when mass unbalance asymmetries of rotating part or tools which have to be eliminated removed or minimized.

TIRA PRODUCTION AND DELIVERY RANGE

- Force and displacement measuring balancing system with horizontal and vertical rotor bearing.
- Machines for small-, medium- and large batch production, fully- and semi-automatic machines with unbalance compensating units such as drilling, milling or welding units and more.
- Precision balancing machines for quality assurance and precision mechanics.
- Special-purpose machines for under floor and top floor installation.
- Balancing as well as concentricity and axial run-out measurements.
- Modernization of existing balancing machines
- Supply of services.

Qualified, highly motivated and dedicated staffs ensure the excellent quality of products for industry and science. Our products meet the stringent requirements of ISO 9001. Our test equipment allow to national and international regulations.

ADVANTAGES OF TIRA BALANCING MACHINES

TIRA balancing test systems are designed based on customer request and ensure the management of all balancing requirements.
Highly Automated machines for the full series production are part of our delivery range. Such as manual universal machines for service establishments.

The application area of TIRA balancing technology are from small electric motors, electric drives over to railway wheels and wheel sets, complete fan for high speed trains.
The modular structure and the separation of measurement technology ensure a high level of control and friendliness service.

Balancing Technology

Balancing maschines

HORIZONTAL BALANCING MASCHINES

Maschine size* / Rotor data	3	10	30	100	500	1000	5000	10000
Rotor weight (kg)	0,03 - 3	0,1 - 10	0,3 - 30	1 - 100	5 - 500	10 - 1000	50 - 5000	100 - 10000
sym. weighted rotor (kg)	- 4	- 16	- 40	- 135	- 650	- 1350	- 6500	- 14000
max. rotor diameter (mm)	90	187	350	350/500	500/750	750	750	-
above maschine bed (mm) ????	- 80 180	- 200 350	- 400 700	- 400 1000	- 500 1500	- 800 1500	- 800 1500	- 800 1500
Bearing Journal Diameter - standard (mm) - expansion (mm)	5 - 15 -	5 - 30 -	7 - 70 140	7 - 140 200	12 - 120 240	12 - 120 240	12 - 120 240	12 - 120 240
Dinstance between bearing (mm) Universal joint drive (mm)	-	-	20 - 1200	20 - 1200	40 - 2200	40 - 2200	100 - 2400	100 - 2400
Belt drive (mm)	40 - 500	70 - 500	180 - 1200	180 - 1200	220 - 2000	200 - 2400	300 - 2400	-
Balancing speed (U/min.) Universal joint drive (U/min.)	-	-	100 - 3000	100 - 3000	240 - 1780	240 - 1780	240 - 460	100 - 460
Belt drive (U/min.)	100 - 3300	100 - 3000	100 - 3000	100 - 3000	100 - 2000	100 - 2000	100 - 500	100 - 500
max. display sensivity (gmm)	0,05	0,1	0,2	0,5	1,0	2,0	5,0	5,0
Drive power (kW)	0,12	0,25	0,75	1,5	3,3	7,5	15	15

VERTIKAL BALANCING MASCHINES

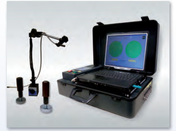
Maschine size* / Rotordaten	1	3	5	10	100	1000
Rotor weight (kg)	0,1 - 1	0,3 - 3	0,5 - 5	1 - 10	10 - 100	100 - 1000
Rotor high (mm)	200	300	500	400	300	300
max. rotor diameter (mm)	150	250	300	400	600	1500
Balancing speed (U/min.)	2000	2500	2500	2000	1000	500
max. display sensivity (gmm)	0,05	0,1	0,2	0,5	1,0	2,0
Drive power (kW)	0,18	0,25	0,5	2,2	5	11

*Different size, drive power an balancing speed easy to realise within the maschine systems.
Depending on the application as a hard or soft bearing maschine.

SERVICE/ MODERNIZATION

Service features:
- Service and calibration of balancing machines with service and calibration protocol
- Remote maintenance via Internet or VPN-connection
- Telephone- or on-site service
- Maintenance and service agreements
- Training of customers on-site or in our company
- Production of master rotors
- Application consulting and construction assistance
- System integration

Modernizations:
- Modernization of measurement technology (also for machines from other manufacturers)
- Modification and adaption of existing old machines
- Retrofit of safety devices according to DIN



Tragbares Messsystem TIRA X9000 WIN P zum Betriebsauswuchten

TIRA X9000 WIN in Messschrank zur Modernisierung einer vorhandenen Wuchtmaschine

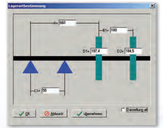
Controller | Measurement Software

MEASUREMENT AND CONTROL TECHNOLOGY

- The universal modular measurement technology is configurable via a standard PC and also subsequently rebuilt and upgradable
- There is a wide range for use of sensors and encoders
- The processing and display of all measured variables to accord with real time - the response of external influences on measurement system can be detected immediately
- Depending on the test condition of customer, can our measurement system varied adapted and adjusted
- We manufacture both force and displacement measuring systems (hard or soft vibration system)

SOFTWARE

- TIRA X9000 WIN is a special software which will be used for a modular design of values measurement and evaluation
- It is expandable by means of special functions such as: Spindle impact compensation (cover wheel balancing) / Concentricity measure / Axial run-out measure and more.
- It is possible to do measure up to four test levels.
- Data Protocol and outcome data storage adaptable to customer's requirements
- Communication with higher-level process control systemsf or example via failsafe SPS
- With peripheral devices, data exchange can be carried out via bus and modern network system



Graphical input menu

Work menu for four levels

Balancing Technology