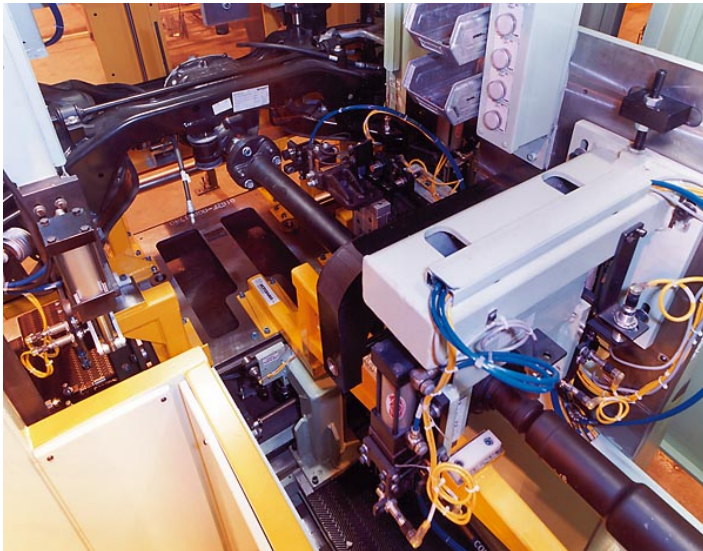


JAC-I/A Balancing and Diagnostic System for Rear-Axle Modules



- Balancing of the drive train
- Testing the rear axle drive in the installed condition (NVH = Noise vibration harshness, VAD = Vibro-acoustic diagnosis)
- Function test
- Automatic test sequence

Range of application

Quality testing of drive modules (front-mounted rear-axle with drive shafts) of passenger vehicles and light commercial vehicles.

Suitable for measurement and correction of the unbalance, improvement of the NVH characteristics through vibro-acoustic evaluation of the assembly structure as well as diagnosis of the noise properties of components (differential, drive shaft, bearing).

Application in production, integrated into the assembly line.

Design

Single-station machine with fully automatic test sequence, loading and unloading by a pallet system.

Consisting essentially of vibration isolated machine frame for testing as if installed, measurement and control cabinet with test-stand PC and drive, positioning device for adaptation to the work-piece type on hand, protective enclosure.

Sequence of operations

- Transport the rear-axle module on pallet by roller conveyor and close the protective equipment (loading door)
- Lift the pallet, clamp, couple the drive and synchronizer, attach the sensors for unbalance measurement, lower the pallet, close the safety devices.
- Fully automatic test sequence: Check the length of the drive

shaft (with type mix), run up and regulate the load, measure the required torque and differential ratio, measure the initial unbalance, structure-borne sound and the possible test weight and correction positions, brake, index, add the test weight, and carry out a further measuring run, brake, index, remove the test weight, calculate the coefficient and initial unbalance. Compare with tolerances (for coefficient and unbalance).

- When out of tolerance: Index for unbalance correction, open the operating doors, manually add the unbalance correction according to the display, close the doors and perform a check run.
- When in tolerance: Mark, travel to home position, open loading doors, move the pallet out.

Special features

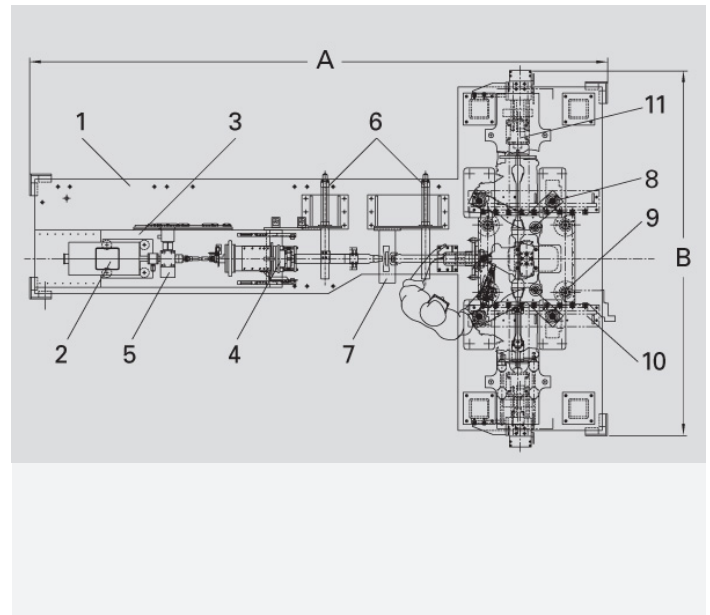
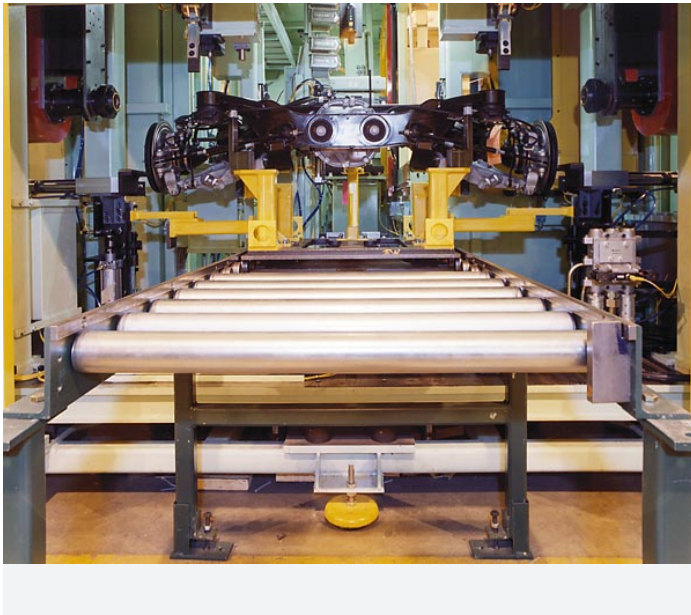
- Modular construction as a single station with free positioning of test part (installation position)
- Powerful industrial PC for control of the test sequence and measured value processing
- Software module for VAD procedure and measurement of static unbalance; large rotor type data memory, operator prompting, diagnostic program, statistics, process control, external interfaces

A photograph of a large industrial machine, the JAC-I/A Balancing and Diagnostic System, used for testing rear-axle modules. The machine is white and blue, with a large, complex metal component being tested. The background is a clean, industrial setting.

JAC-I/A Balancing and Diagnostic System for Rear-Axle Modules

- Single or multiple-channel noise checking with integrated unbalance recognition
- Flexible application, easy change over for various rearaxle modules
- Special system adaptation to the requirements of objective noise testing, such as structural isolation of the test equipment as well as high-repeatability, test part coordinated sensor coupling of the test part support.
- Automatic coupling of the part at the shaft ends
- Automatic recognition of the possible correction position
- With manual correction automatic indexing to the correction position and display of the correction weights
- Protection against shaft breakage.

JAC-I/A Balancing and Diagnostic System for Rear-Axle Modules



- 1 Machine bed2 Drive
- 3 Slide
- 4 Adapter
- 5 Torque measurement shaft
- 6 Retaining device
- 7 Clamping device central bearing
- 8 Clamping device (4x)
- 9 Lifting unit
- 10 Palette
- 11 Synchronisation with brake

JAC-I/A

Balancing and Diagnostic System for Rear-Axle Modules

Technical data at a glance		JAC-I/A
Measuring unit		IPC
Unbalance determination		•
Manual unbalance correction		•
Vibro-acoustic diagnostic		•
Drive simulation through		
test part loading equipment		•
Rear-axle module, complete		
Weight	[kg]	50 - 200
Dimensions	[mm]	a.A.
Machine		
Width A	[mm]	4800
Depth B	[mm]	3600
Height C	[mm]	2600
Sampling rate, VAD-	[kHz]	20
Drive load, max.	Nm	130
Test speed	[min ⁻¹]	1500 - 5000
Measurement uncertainty, approx.	[gmm]	25
Cycle time, approx.	[s]	120
Air pressure	[kPa]	600
Power consumption	[kVA]	11
	Order No.	R0560100.01
	Order No.	R0560101.01
Type identification	Order No.	R0560102.01

2) Acc. to DIN 1319, 95% probability, workpiece dependent

3) Dependent on unbalance correction method and integration with other equipment

4) Dependent on the selected test speed

o.r. On request