TIRA Schwingtechnik Vibration Test Systems

Vibration Test System TV 59349/AIT-480

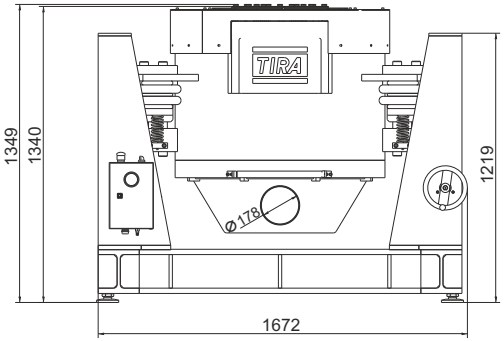
S 59356/AIT-480 (Example drawing) Dimensions in mm

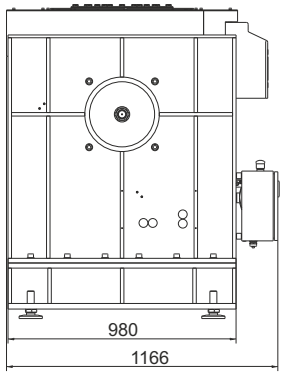
TECHNICAL PARAMETERS

Rated peak force Sine$_{pk}$/Random$_{RMS}$[1]/Shock$_{pk}$[2]	49500/48000/148500 N
Frequency range	5 - 2500 Hz
Main resonance frequency	2000 Hz ±5%
Max. displacement Pk-Pk Sine/Random/Shock[3]	63.5/63.5/76.2 mm
Max. velocity Sine$_{pk}$/Random$_{RMS}$/Shock$_{pk}$	2.0/2.0/5.0 m/s
Max. acceleration Sine/Random/Shock	91/75/224 g
Suspension stiffness	250 N/mm
Effective moving mass	55 kg
Max. payload	910 kg
Magn. stray field[4]	1.5 mT
Armature diameter	480 mm
Min. required compressed air supply	600 kPa
Total mass	4800 kg
Interlocks	Temperature, displacement, cooling air, overcurrent, compressed air

1) Random force vector according to ISO 5344
2) Theoretical maximum shock value. Depends on payload, amplifier, shock and shock width
3) Impact by moving to static mass and frequency is possible
4) measured at 150 mm above armature inserts
For long-term tests, the load must be reduced to 80 %. Continuous operation at maximum load can cause damage.







Environmental conditions for operation:

Temperature	5-30 °C
Relative humidity	10-30 %

SCOPE OF DELIVERY, OPTIONS AND FEATURES OF THE SYSTEM

Scope of delivery:
- Vibration exciter
- Trunnion mount
  - with integrated vibration isolation (AIT)
- Power amplifier
- Cooling blower
- Connection box for blower
- Connection cables (each 10 m)
- Power cable (10 m)
  - for cooling blower (CEE 63 connector)
- Blower hose ø175 mm (5 m)
- Compressed-air hose NW 7,2 (Standard) (5 m)

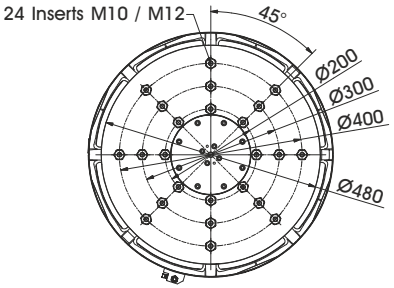
Options:
- Different hole pattern of armature (different pitch diameter and/or thread inserts) at customers request
- Airglide-option (Shaker movable on air cushions)
- Squeak&Rattle (Silent operation without blower)
- Wheels&Rails (incl. 3m rails)
- Thermobarrier (-40°C to +140°C)
- Chamber leadthrough
- Climatic chamber support kit
- Remote control (Software)
- Silencer
  - for cooling blower (Noise reduction 9 - 15 dB(A))
- Acoustic enclosure
  - for cooling blower (Noise reduction 5 - 23 dB(A))
- Water-cooled acoustic enclosure
  - for cooling blower (Noise reduction 30 dB(A))
- Cable extension
- Factory acceptance test

Options:

TIRA EMS Energy Management System

- Operation with temperature-controlled cooling blower (and optional with variable field strength)
- ASM-Mode (Auto Shutdown Manager)

Features:
- AIT-trunnion with integrated vibration isolation < 3 Hz
- Coarse filter unit
- Fully automatic pneumatic load compensation
- AIT fixable
- Automatic centering of the AIT-System and the armature
- Degauss kit to reduce stray magnetic field
- Made in Germany
- Servicehotline



Armature 480 (Standard)

TIRA GmbH Eisfelder Str. 23/25, 96528 Schalkau, Germany • Phone: +49 36766 280-0 • Fax: +49 36766 280-99 • Internet: www.tira-gmbh.de • Email: st@tira-gmbh.de

© TIRA GmbH • Version 08 - 2026-03-06

Subject to modifications

TIRA Vibration Test Systems TV 59349/AIT-480

Vibration Test System TV 59349/AIT-480

TECHNICAL PARAMETERS Amplifier A 6 26 11 105

Output power$_{RMS}$, max.	60000 VA
Frequency range	DC - 5 kHz
Voltage$_{RMS}$, max.	212 V
Current$_{RMS}$, max.	500 A
Signal input voltage$_{PK}$	±10 V
Total Harmonic Distortion (THD, at 70A$_{RMS}$, 200 Hz)	< 0.2 %
Signal to noise ratio	> 85 dB
Field voltage	250 V
Field current	103 A
Power supply (Standard)	3~ / N / PE 400 V±5% 50 Hz Direct connection (Terminal block)
Max. power consumption at 400 V	56 kVA
Recommended fuse protection (Standard)	125 A slow
Dimensions (WxHxD)	1800 x 2200 x 900 mm
Total mass	1050 kg
Interlocks:	Overload, Temperature, Displacement, Cooling air, Compressed air, Phase monitoring, Emergency stop

Features:
Field supply integrated
Mains switch and integrated line filter
Lo-Field/Hi-Field (Energy-saving mode)
Field voltage/Field current variable
according to customer spec.
4 Sigma peak current
Color Touch Screen

TECHNICAL PARAMETERS Cooling blower TB 7/FUK/20

Max. volume flow rate	5820 m³/h
Max. total pressure difference	16 kPa
Motor output	20 kW
Max. frequency	105 Hz
Hose diameter	175 mm
Hose length (Std.)	5 m
Total mass	131 kg
Dimensions (WxHxD)	625 x 773 x 602 mm
Max. sound pressure level	105 dB(A)
Connection box (fixation to wall):	
Mass	10 kg
Dimensions (WxHxD)	300 x 300 x 250 mm
Power supply (variable)	3~ / PE 400 V±5% 50 Hz CEE 63
Recommended fuse protection (Standard)	50 A slow
Max.current consumption at 400 V	38 A

Options:
Silencer TB 7/FUK-SI (Noise reduction 9 - 15 dB(A))
Dimensions (LxD): 1120 x 280 mm
Mass: 9.2 kg
Acoustic enclosure TB 7/FUK-AE (Noise reduction 5 - 23 dB(A))
Dimensions (WxHxD): 1250 x 1393 x 1470 mm
Mass: 103 kg
Water-cooled acoustic enclosure WWT (Noise reduction 30 dB(A))
Dimensions (WxHxD): 1500 x 2080 x 1200 mm
Mass: 800 kg
Hose length according to customers request (up to 10 m)


Amplifier


Connection box
with main switch (for blower)


Cooling blower TB 7/FUK/20
with frequency converter


Silencer TB 7/FUK-SI
(optional)


Acoustic enclosure TB 7/FUK-AE
(optional)

TIRA GmbH Eisfelder Str. 23/25, 96528 Schalkau, Germany • Phone: +49 36766 280-0 • Fax: +49 36766 280-99 • Internet: www.tira-gmbh.de • Email: st@tira-gmbh.de

© TIRA GmbH • Version 08 - 2026-03-06

Subject to modifications