

전자식 진동 시험기

실시간 문의하기



[STI]전자식 진동 시험기(Multi Purpose DC Series)

by 뉴런핏 posted Oct 30, 2014



이곳에 문의하실 내용을 입력해 주시기 바랍니다.

☐ 개인정보활용동의 [보기]

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자동차, 핸드폰, 전자부품 등의 신뢰성을 테스트하는 제품

Vibration Simulator (전자식 진동 시험기)

MULTI PURPOSE DC SERIES

The switching power amplifier can make the system have a large output of random RMS force.

It can achieve large force, large displacement, high load capacity, good guidance, low distortion and good protection.

The multi purpose DC series adopt double magnetic circuit, non-frame moving coil, air suspension, linear bearing guidance and trunnion isolation.



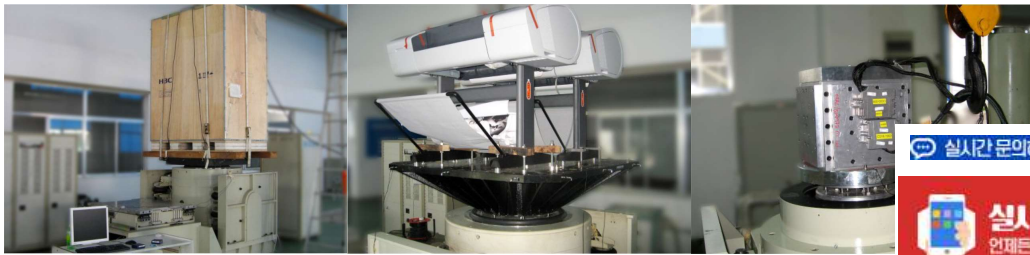
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Our company, the predecessor of which is Suzhou Central Test Apparatus Plant Co. Ltd, is the largest enterprise that manufactures test equipments of mechanics environment in P.R. China and i the only professional corporation in Jiangsu provincial than holds the famous brand and provides the high quality product. Over the past 50 years, it has provided all varieties and series of vibration, shock, clash, fail test equipment, etc for industries of aeronautics, astronautics, electronics, shipboard, weaponry, nuclear, automobile, instrument, and household appliance, etc and universities and research institutions, More over, the products are sold to USA, Europe, Southeast Aisa, Korea, Japan, and Russia, etc. Our company occupies an area of 80 acres and its registered capital is RMB42 million while it annually produces over 400 sets of various test system.





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Technical Guide

Principle

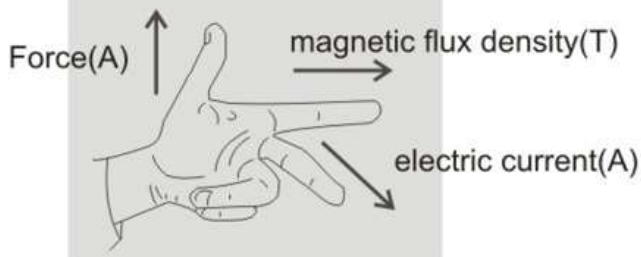
The working principle of the shaker is as same as speaker's, i.e., applying electric currents to a cable that flows across the magnetic field in a perpendicular direction.

force

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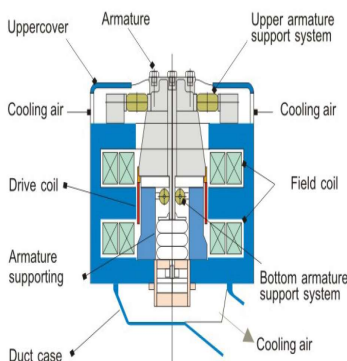
Fleming's left hand rule



$$F = B \times I \times L$$

Force (N)
electric current(A)
length of cable(m)
magnetic flux density(T)

Air cooled electro-dynamic shaker



- Rated frequency : the frequency range the system generates under rated force.
- Rated force : the force that the system generates, it is peak value with sine test, and RMS value with random test.
- Max. displacement : the maximum displacement the system generates, it is subject to mechanical stroke restriction, usually it is described in double amplitude(mm p-p) value.
- Max. acceleration : the maximum acceleration the system generates when unloaded.
- Max. velocity : the maximum velocity the system generates.
- Max. load : the maximum load can be loaded on the vibration table.
- Armature : the armature is composed of table, moving coil(frame included), and connecting items
- Allowable eccentric moment : the eccentric moment the armature of shaker withstands.

Calculation for excitation force

The excitation force needed for the vibration test is calculated by multiplication of total load and max.

Acceleration :

1. For vibration test, there are 4 basic units, force F(N), acceleration A(m/s²), velocity V(m/s) and displacement D(mm p-p).

$$F = ma \quad F(\text{N}), m(\text{mass}), a(\text{acceleration})$$

2. mass of moving parts if,

mass of vertical auxiliary table or slip table = m1

mass of armature, mass of adaptor on = m2

environmental test chamber = m3

mass of fixture = m4

mass of sample = m5

test acceleration = a

then,

the excitation force needed for the test : $F = (m1 + m2 + m3 + m4 + m5) a$

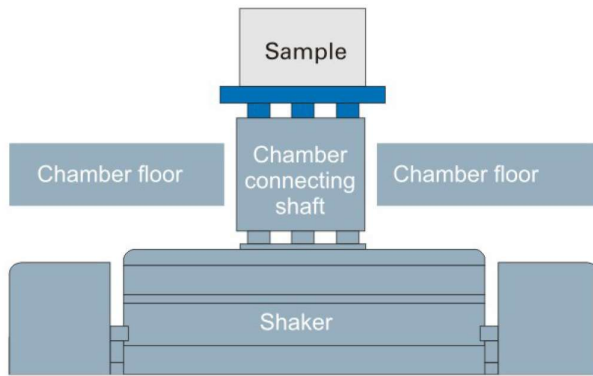
3. Connection of displacement, velocity and acceleration. The equations below hold for sine vibration

$$a = 2\pi f v = \frac{1}{1000} (2\pi f)^2 d$$

$$v = \frac{1}{1000} (2\pi f) d$$

frequency(f)
acceleration (m/s²)
velocity(m/s)
displacement (mm p-p).

Connecting sketch map between shaker and environmental test chamber



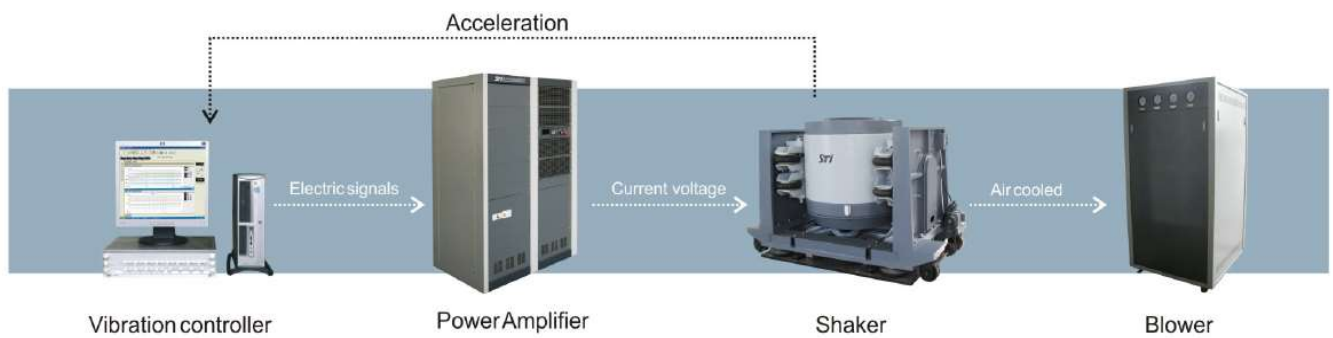
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Characteristics

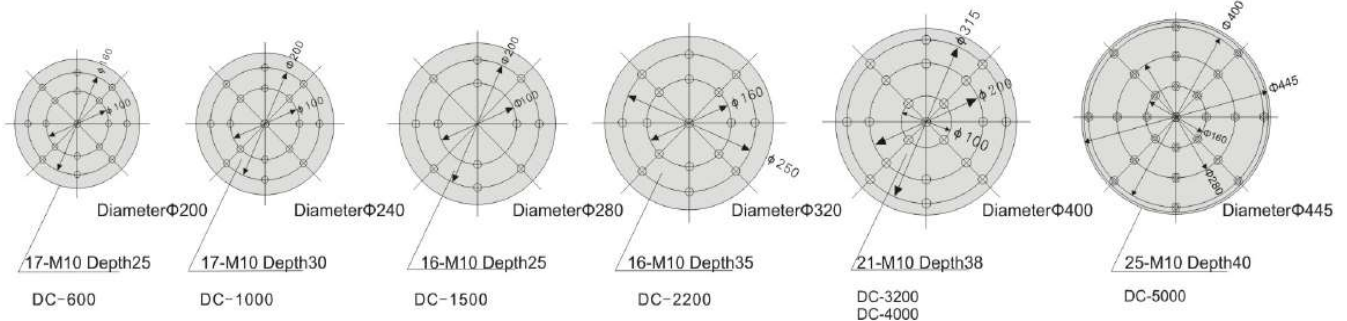
☐ 개인정보활용동의 [보기]

전자식진동기는 "2개 자기회로 구조", "틀 없는 이동코일", "공기 스프링 방침", "방진 Trunnion", "Rock arm 시스템과 직선 베어링"을 가지고 있습니다. 시스템 진동대는 파형 변이가 작고, 적재능력이 강합니다. 지향성이 좋고, 보호기능을 가지고, 호환성이 좋아서 제작이 쉽습니다.

Sketch Map



Sample Mount Screw Location



Specifications

System Model		D-100-2	D-300-3	D-600-6	D-1000-15	D-1500-16
Freq. Range (Hz)		5 ~ 4500	5 ~ 5000	5 ~ 5000	5 ~ 3000	5 ~ 3000
Sine (N)		0.98	2.94	5.88	9.8	14.7
Random (Nrms)		0.98	2.94	5.88	9.8	14.7
System Spec.	Max. Acc.(m/s ²)	490	980	980	980	784
	Max. Vel. (m/s)	2	2	2.00	2.00	2.00
	Max. Disp.(mmp-p)	25	40	51	51	51
	Max. Load. (kg)	70	120	200	200	300
Model		DC-100	DC-300	DC-600	DC-1000	DC-1500
Shaker	Armature Maxx (kg)	2	3	6	10	18
	Amature Diameter(mm)	110	150	200	240	280
	Allowable eccentric moment(N.m)	196	196	300	300	300
	Dimension (W x D x H,mm)	660 x 630 x 530	660 x 720 x 530	790 x 700 x 580	900 x 810 x 550	900 x 990 x 790
Mass (Kg)		410	320	620	950	1600
Model		SA-2	SA-3	SA-6	SA-15	SA-16

Power Amplifier	Max. Output(KVA)	2	3	6	15	20
	Dimension (W x D x H,mm)	550 x 1700 x 800	550 x 1700 x 800	550 x 1700 x 800	550 x 1700 x 800	550 x 1700 x 800
	Mass (kg)	200	220	240	290	390
	Work methord			Switch		
	Max. Input (KVA)	4.5	5	12		
Cooling method				Air cooling		
System Spec.	System Model	D-2200-26	D-3200-36	D-4000-40	D-5000-50	D-6000-65
	Freq. Range (Hz)	5 ~ 3000	5 ~ 2500	5 ~ 2500	5 ~ 2500	5 ~ 2500
	Sine (N)	21.56	31.36	39.2	49.0	58.8
	Random (Nrms)	21.56	31.36	39.2	49.0	58.8
	Max. Acc.(m/s ²)	980	980	980	980	980
	Max. Vel. (m/s)	2.00	2.00	2.00	2.00	2.00
	Max. Disp.(mmp-p)	51	51	51	51	51
	Max. Load. (kg)	300	500	500	500	500
Model		DC-2200	DC-3200	DC-4000	DC-5000	DC-6000
Shaker	Armature Maxx (kg)	22	32	38	50	58
	Amature Diameter(mm)	320	400	400	445	445
	Allowable eccentric moment(N.m)	490	490	490	980	980
	Dimension (W x D x H,mm)	900 x 990 x 790	1000 x 1060 x 880	1000 x 1060 x 880	1500 x 1170 x 1310	1500 x 1170 x 1310
	Mass (Kg)	1600	2000	2500	3800	4000
Model		SA-26	SA-36	SA-40	SA-50	SA-65
Power Amplifier	Max. Output(KVA)	30	40	50	65	70
	Dimension (W x D x H,mm)	550 x 1700 x 800	550 x 1700 x 800	550 x 1700 x 800	550 x 1700 x 800	550 x 1700 x 800
	Mass (kg)	410	410	450	920	1000
	Work methord			Switch		
	Max. Input (KVA)	33	42	72	90	95
Cooling method				Air cooling		

실시간 문의하기



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☐ 개인정보활용동의 [보기]

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좋아요 친구들이 무엇을 좋아하는지 알아보려면 가입하기