

Type EX 6/3-2 A.: 3 N  
Type EX 6/4-2 A.: 4 N

Type EX 6/4-4 A.: 4 N  
Type EX 6/6-4 A.: 6 N



## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

Free coil and big air gap exciter used to generate forces from 3 to 6 Newton in a frequency range reaching 9,000 Hz loaded and 18,500 Hz without load.

Small and light moving coil weighing between 9 and 14 grams according to the composition. Magnetic circuit with permanent magnet and a field strength in the air gap of about 3,000 gauss.

## APPLICATIONS

The insignificant inertia and damping added to the structure under tests by its non suspended and low weight moving coil make the EX 6 exciter especially suitable for modal analysis on both scale models and small structures.

# FEATURES

## MAGNETIC CIRCUIT

**Dimensions:** External diameter: 55 mm      Height: 31 mm      Weight: 300 grams  
**Attachment:** Hole 1/4 20 Kodak thread

## MOVING COIL

The magnetic circuit can receive different types of coils according to the application.

- Rigidity: light armature (A), or rigid armature (B)
- Maximum amplitude at the frequencies range: short coil HF, or large coil BF
- Force ranging between 2 and 6 N according to the coil and the amplifier
- Suitable frequency according to the type of armature and coil

**Coil armature weight:** light: 2.5 grams - rigid: 4 grams  
**Attachment hole:** 3 ISO  
**Electrical connection:** by flexible thread and socket FRB 002 - length: 1 m - ref.: 6943010  
**Cable used:** Ref. CL2-5 – length: 5 meters; maximum resistance: 0.3 Ohm

	SHORT COIL H.F.		LARGE COIL B.F.	
	EX 6/3.2	EX 6/4.4	EX 6/4.2	EX 6/6.4
Maximum force	3	4	4	6
Coil reference	694 3001	694 6001	694 3002	694 6002
Load factor N/A	1.5	1	2	1.5
Associated amplifier	A 732/2 A	A 732/4 A	A 732/2 A	A 732/4 A
Nominal current peak amplitude	2 A.C.	4. A.C.	2 A.C.	4 A.C.
Coil impedance at 1 kHz with cable	3.3 Ohm	1.7 Ohm	5.5 Ohm	3.1 Ohm
Coil resistance at 20°C	1.6 Ohm	0.7 Ohm	2.6 Ohm	1.1 Ohm
Maximum amplitude in mm	± 1.5 mm	± 1.5 mm	± 3 mm	± 3 mm
Usable frequency range with nominal current of the amplifier <sup>1</sup>	DC to 20,000 Hz	DC to 20,000 Hz	DC to 15,000 Hz	DC to 8,000 Hz
Fundamental armature resonance in Hz				
• Without load	7,700	8,500	7,000	8,500
• With light armature (A) - in load <sup>2</sup>	4,100	4,900	3,700	4,000
- without load	17,000	18,500	16,400	17,000
• With rigid armature (B) - in load <sup>2</sup>	8,200	9,100	7,800	8,600
Coil weight in grams:				
With light armature (A)	8.5	10.5	11	13.5
With rigid armature (B)	10	12	12.5	15

### OPTIONS:

- Mechanical link reference L23;
- Mechanical adjustable link reference LMA 3

<sup>1</sup> With associated amplifier at 100 % of the force and 1 % of distortion

<sup>2</sup> 50 gram test weight without load with an accelerometer of 3 grams

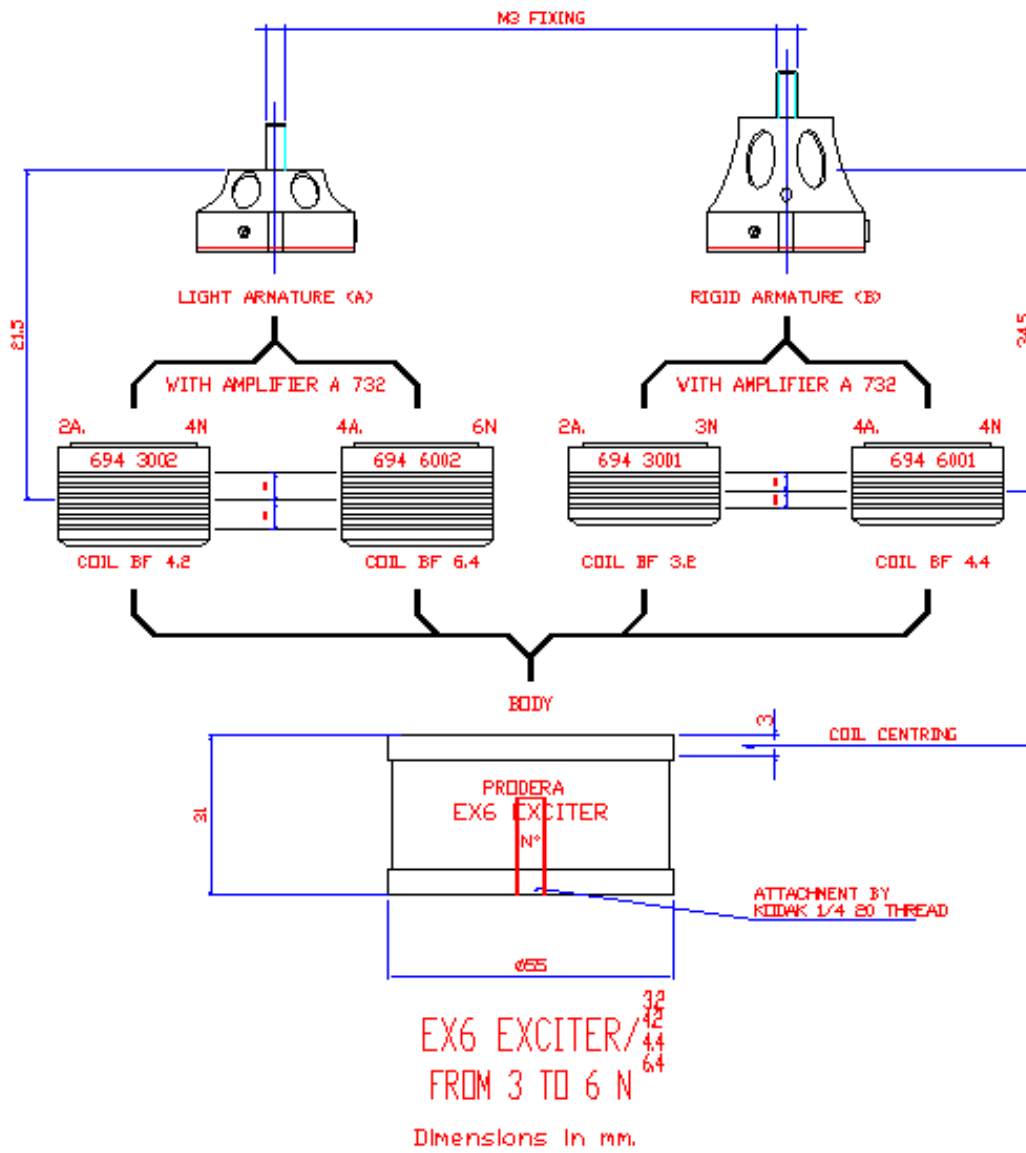
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email:info@haopute.com

phone:02884625157

mobile:18982185717

# DIMENSIONS



Type EX 8/4-2 A.: 4 N  
Type EX 8/5-2 A.: 5 N

Type EX 8/5-4 A.: 5 N  
Type EX 8/8-4 A.: 8 N



## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

Free coil and big air gap exciter used to generate forces from 4 to 8 Newton in a frequency range reaching 9,000 Hz loaded and 18,500 Hz without load.

Small and light moving coil weighing between 9 and 14 grams according to the composition. Magnetic circuit with permanent magnet and a field strength in the air gap of about 3,600 gauss.

## APPLICATIONS

The insignificant inertia and damping added to the structure under tests by its non suspended and low weight moving coil make the EX 8 exciter especially suitable for modal analysis on both scale models and small structures.

# FEATURES

## MAGNETIC CIRCUIT

Dimensions External diameter: 83 mm Height: 51 mm Weight: 1.5 kg  
Attachment: Hole 1/4 20 Kodak thread

## MOVING COIL

The magnetic circuit can receive different types of coils according to the application.

- Rigidity: light armature (A), or rigid armature (B)
- Maximum amplitude at the frequencies range : short coil HF or large coil BF
- Force ranging between 4 and 8 N according to the coil and the amplifier
- Suitable frequency according to the type of armature and coil

Coil armature weight light : 2.5 grams - rigid : 4 grams  
Attachment hole: 3 ISO  
Electrical connection: By flexible thread and socket FRB 002 - length: 1 m - ref.: 6943010  
Cable used: Ref. CL2-5 - length 5 m; maximum resistance : 0.3 Ohm

	SHORT COIL H.F.		LARGE COIL B.F.	
	EX 8/4.2	EX 8/5.4	EX 8/5.2	EX 8/8.4
Maximum force in Newton	4	5	5	8
Coil reference	694 3001	694 6001	694 3002	694 6002
Force factor N/A	2 N/A	1.25 N/A	2.5 N/A	2 N/A
Associated amplifier	A 732/2 A	A 732/4 A	A 732/2 A	A 732/4 A
Nominal current peak amplitude	2 A.C.	4 A.C.	2 A.C.	4 A.C.
Coil impedance at 1 kHz with cable	3.3 Ohm	1.7 Ohm	5.5 Ohm	3.1 Ohm
Coil resistance at 20°C	1.6 Ohm	0.7 Ohm	2.6 Ohm	1.1 Ohm
Maximum amplitude in mm	± 1.5	± 1.5	± 3	± 3
Usable frequency range with nominal current of the amplifier*	DC to 20,000 Hz	DC to 20,000 Hz	DC to 15,000 Hz	DC to 8,000 Hz
Fundamental armature resonance in Hz				
• Without load	7,700	8,500	7,000	8,500
• With light armature (A) - in load**	4,100	4,900	3,700	4,000
- without load	17,000	18,500	16,400	17,000
• With rigid armature (B) - in load**	8,200	9,100	7,800	8,600
Coil weight (in grams):				
With light armature (A)	8.5	10.5	11	13.5
With rigid armature (B)	10	12	12.5	15

- \* With associated amplifier at 100 % of the force and 1 % of distortion  
\*\* 50 gram test weight: without load with an accelerometer of 3 grams

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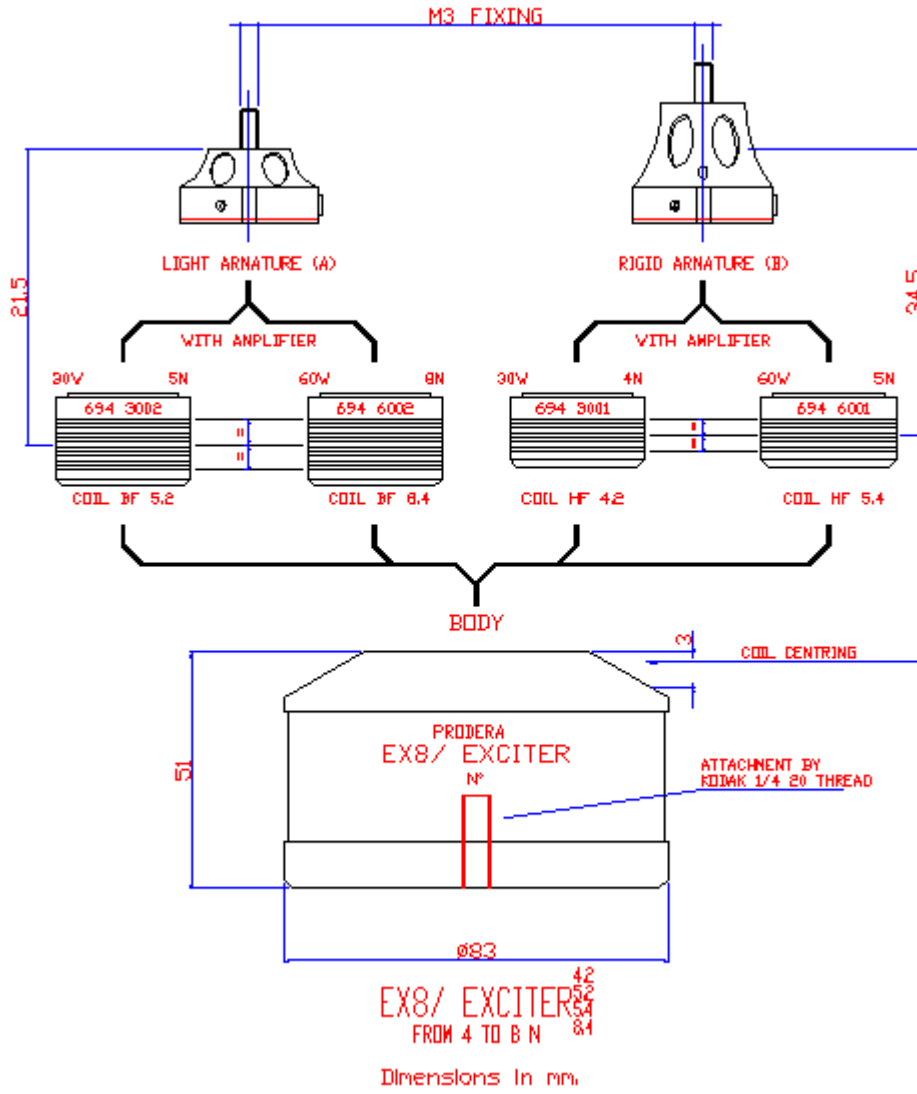
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**OPTIONS:**

- Mechanical link reference L23
- Mechanical adjustable link reference LMA 3
- Linear elastic cord system reference S 8L

**DIMENSIONS**



10 N



## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

Small electrodynamic exciter with suspended coil in a magnetic field produced by a permanent magnet of ticonal.

The low weight moving system (approximately 20 grams) allows to generate forces reaching 10 N with an acceleration without load of about  $460 \text{ m/s}^2$ , in a frequency range up to 6,000 Hz.

## APPLICATIONS

The design of its moving system, its low weight and its reduced dimensions make the EX 12 exciter particularly suitable for various applications.

Associated with an amplifier A 732/2 A, it can be used by the Universities, Schools and laboratories to carry out modal analysis on scale models and small structures.

## TECHNICAL FEATURES

	COPPER COIL TC 10
Nominal force	10 N
Force factor	5 N/A
Maximum peak current	2 A
Maximum displacement	± 5 mm
Coil resistance at 20°C	2.2 Ohm
Effective moving mass	30 grams
Maximum acceleration without load	330 m/s <sup>2</sup>
First resonance frequency without load	14,400 Hz
First resonance frequency with test weight <sup>1</sup>	6,600 Hz
Coil impedance at 500 Hz	4.6 Ohm
Associated amplifier	A 732
Usable frequency range <sup>2</sup>	DC to 19,500 Hz
Magnetic circuit	Cylindrical ticonal permanent magnet
Cooling	By natural convection
Maximum connection cable resistance	0.6 Ohm
Electrical connection	By FRB CPS 31 socket
Total weight	2 kg

### OPTIONAL ACCESSORIES:

- Cable reference: CL 4-5 (5 meters) or CL 4-10 (10 meters)
- Mechanical link reference L23; Mechanical adjustable link reference LMA 3
- Linear elastic cord suspension system reference S 12L
- Seismic support SS 12
- Trunnion reference BF 12
- Stirrup ES 12

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<sup>1</sup> Test weight : 53 grams

<sup>2</sup> With associated amplifier at 100 % of the force and 1 % of distortion.

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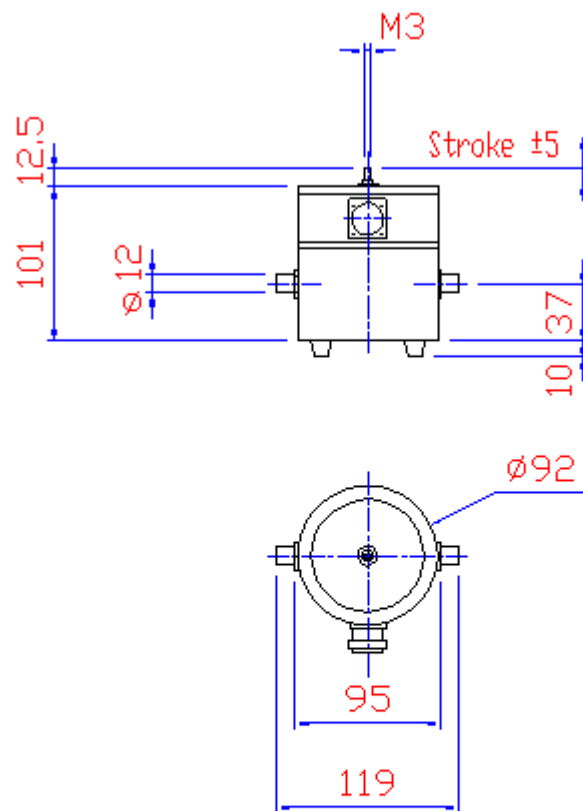
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phone:02884625157

mobile:18982185717



## DIMENSIONS



EX12A EXCITER

10N

Dimensions in mm.

20 N



## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

The magnetic circuit of rare earth permanent magnets generates a magnetic field in a reduced air gap in which the moving coil is free insuring an important longitudinal movement and without transverse stiffness. A central axe assures the coil guidance.

## APPLICATIONS

The exciter type EX 20 is especially designed for most of vibration tests thanks to its volume, its weight and its technical features.

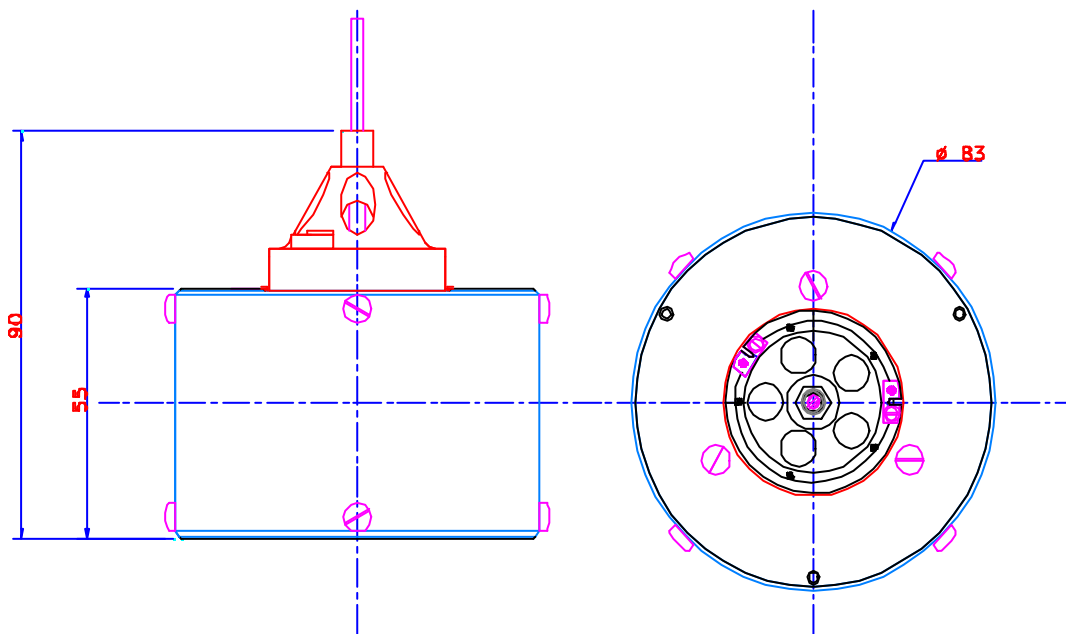
Associated with an amplifier A 732 (60 Watts), this exciter supplies a force of 20 N, with an harmonic distortion less than 1%.

## ACCESSORIES

The LMA 3 flexible link allows an easy and quick link between the shaker and the structure, reducing at the same time the risks due to the lateral movements.

# TECHNICAL FEATURES

Nominal force	20 N	
Maximum current	4 A. peak	
Nominal displacement	$\pm 5$ mm	
Force/current linearity	$> 0.5\%$	
Associated amplifier	A 732 (60 W)	
Magnetic circuit	Permanent magnets	
Electrical connection	FRB CS 12 40 Des. C/PS 5 points	
Mechanical connection	Threaded rod M3	
Total weight	1.9 kg	
Force factor	5 N/A	
Coil resistance at 20°C	2.5 Ohm	
Moving assembly weight	35 grams	
Suspension stiffness	No stiffness	
Mounting screw	M8 screw on the bottom	
Dimensions		
Height	With coil	90 mm approx.
	Without coil	55 mm
External diameter		83 mm



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 email: [info@haopute.com](mailto:info@haopute.com)  
 phone: 02884625157  
 mobile: 18982185717

**20 N**



## **AIM OF THE EXCITERS**

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## **MAIN FEATURES**

The magnetic circuit of a ticonal cylindrical permanent magnet generates a magnetic field in which the moving coil is suspended by two circular membranes.

The low weight of the moving system (about 60 grams) allows to generate forces reaching 20 N with an acceleration without load of about  $450 \text{ m/s}^2$  and a first resonance frequency without load of 11,600 Hz.

## **APPLICATIONS**

The exciter EX 24, because of its low weight and its reduced dimensions, is particularly suitable for various applications and particularly modal analysis.

Associated with an amplifier A 732/4 A, this exciter can be used until 8,000 Hz at the maximum of its force, with a distortion rate less than 1%.

## TECHNICAL FEATURES

Nominal force	20 N
Force factor	6.5 N/A
Maximum peak current	4 A
Linearity force/current	< 1 %
Maximum displacement	± 5 mm
Coil resistance at 20°C	1.2 Ohm
Maximum connection cable resistance	0.4 Ohm
Effective moving mass	61 grams
Maximum acceleration without load	450 m/s <sup>2</sup>
First resonance frequency without load	11,400 Hz
First resonance frequency with load <sup>1</sup>	5,700 Hz
Exciter impedance with cable at 1 kHz	2.5 Ohm
Associated amplifier	A 732/4 A
Usable frequency range <sup>2</sup>	DC to 17,500 Hz
Fundamental suspension frequency	29 Hz
Suspension stiffness	2 N/mm
Magnetic circuit	Cylindrical ticonal permanent magnet
Cooling	By natural convection
Electrical connection	By FRB C P M 31 socket
Total weight	4.5 kg

### OPTIONAL ACCESSORIES:

- Cable reference: CL 4-5 (5 meters) or CL 4-10 (10 meters)
- Mechanical link reference L23; Mechanical adjustable link reference LMA 3
- Linear elastic cord suspension system reference S 24L
- Seismic support reference SS 24; Stirrup ES 24
- Trunion reference BF 24

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<sup>1</sup> Test weight : 90 grams

<sup>2</sup> With associated amplifier at 100 % of the force and 1 % of distortion

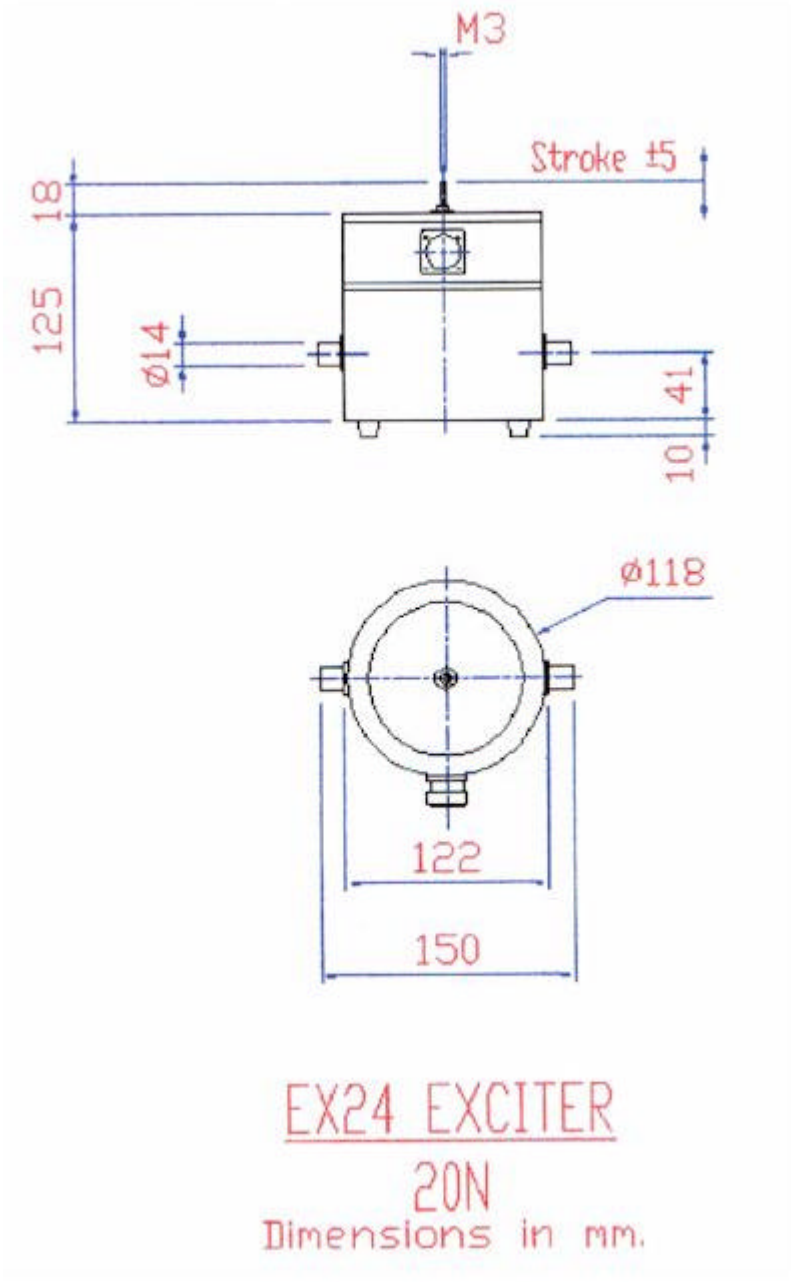
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email:info@haopute.com

phone:02884625157

mobile:18982185717

# DIMENSIONS



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phone:02884625157  
mobile:18982185717

50 N



## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

The magnetic circuit of a ticonal cylindrical permanent magnet generates a magnetic field in which the moving coil is suspended by the circular membranes.

The EX 58 exciter supplies a force of 50 N and an acceleration without load of about  $500 \text{ m/s}^2$  in a frequency band from DC to 3,000 Hz.

## APPLICATIONS

The design of its moving system (100 grams) and its reduced dimensions in relation to the force supplied, make this exciter especially suitable for modal analysis on average and compact structures. Associated with an amplifier type A 735, this exciter can operate at the maximum of its force and in its frequency range with an harmonic distortion less than 1%.

## TECHNICAL FEATURES

Nominal force	50 N
Maximum peak current	8 A
Nominal displacement	± 6 mm
Maximum mechanical displacement	± 7 mm
Force/current linearity	< 0.5%
Variation of the force according to the coil position in the air gap	at 50 % of the stroke: < 1.5 % at 75 % of the stroke: < 4 %
Maximum resistance of the connection cable	0.2 Ohm
Maximum admissible transverse force	10 N
Total weight	8.7 kg
Dimensions	Diameter: 144 mm Total height: 185 mm
Associated amplifier	A 735
Cooling	By natural convection

### PARTICULAR FEATURES OF THE ARMATURE

Force factor	6.4 N/A
Coil resistance at 20°C	0.6 Ohm
Armature weight	110 grams
Maximum acceleration without load	470 m/s <sup>2</sup>
Fundamental suspension frequency	Without load: 21 Hz With load of 345 g: 11.3 Hz
Suspension stiffness	1.9 N/mm
First major resonance frequency	Without load: 5,200 Hz With load: 2,950 Hz
Coil impedance at 1 000 Hz with 5 m cable	1.4 Ohm
Usable frequency range with associated amplifier and 5 m cable <ul style="list-style-type: none"> <li>• At the maximum of power</li> <li>• At 75 % of the power</li> </ul>	DC to 4,000 Hz DC to 10,000 Hz

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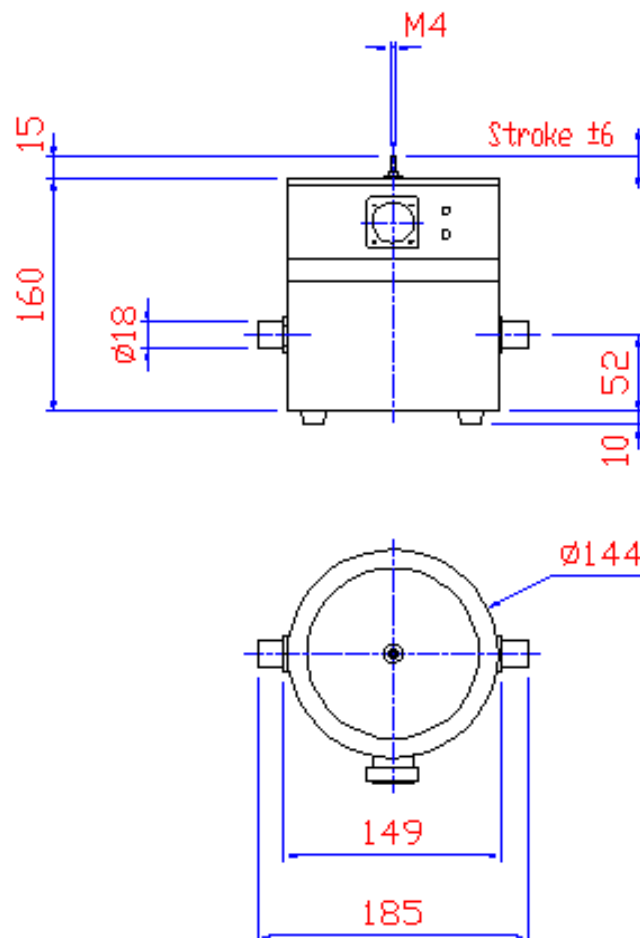
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### OPTIONAL ACCESSORIES :

- Cable references CL 58-5 (5 meters), CL 58-10 (10 meters), CL 58-20 (20 meters), CL 58-30 (30 meters)
- Mechanical link reference L24
- Linear elastic cord suspension system reference S 58 L; Linear elastic cord suspension system for shaker with trunnion reference S 58 BL
- Trunnion reference BF 58;
- Seismic support reference SS 331
- Stirrup reference ES 58

## DIMENSIONS



EX58 EXCITER

50N

Dimensions in mm.

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email:[info@haopute.com](mailto:info@haopute.com)

phone:02884625157

mobile:18982185717

75 N



## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional constant force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

The magnetic circuit of high performance magnets generates a magnetic field in which the moving coil is guided. The transverse movement is limited by the central guidance system.

## APPLICATIONS

The exciter type EX 58 C40 is especially designed for most high performance modal tests thanks to its volume, its weight and its technical features. Associated with an amplifier A 735 (120 Watt), this exciter supplies a force of 75 N with an harmonic distortion less than 1% in a frequency range between DC and 2,700 Hz.

## TECHNICAL FEATURES

Nominal force	75 N $\pm$ 10%
Maximum current with ventilation	20 A. peak
Nominal displacement	$\pm$ 20 mm
Maximum mechanical displacement	$\pm$ 22 mm
Force/current linearity	$>$ 0.5%
Variation of the force according to the coil position in the air gap	at 50% of the stroke : $<$ 1.5% at 75% of the stroke : $<$ 4%
Maximum resistance of the connection cable	0.1 Ohm
Associated amplifier	A 735 (120 W)
Magnetic circuit	Permanent magnet
Cooling	By convection
Electrical connection	Cannon socket 127039-0017
Mechanical connection	Threaded rod M6
Total weight	10 kg

	<b>COPPER COIL (STANDARD)</b>
Force factor	9.6 N/A
Coil resistance at 20°C	1.1 $\Omega$
Armature weight	235 grams
Suspension stiffness	None

### OPTIONAL ACCESSORIES:

- Connection cable reference CL 58 in lengths of 5, 10, 20 and 30 meters
- Mechanical link reference L 24
- Mechanical adjustable link reference LA 24
- Disks for mechanical links reference D-4
- Trunnion reference BF 58
- Linear elastic cord suspension system reference S 58 L
- Linear elastic cord suspension system for shaker with trunnion reference S 58 BL
- Seismic support reference SS 331

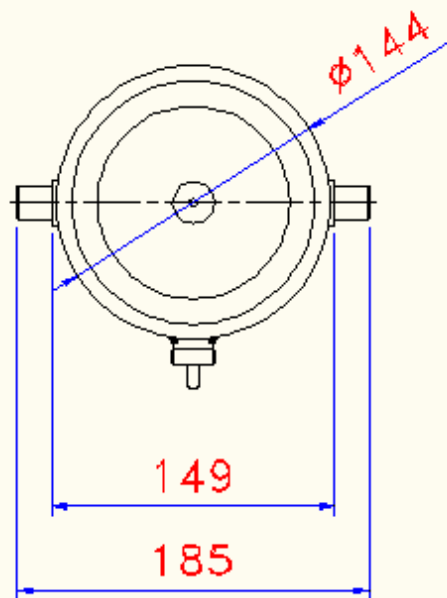
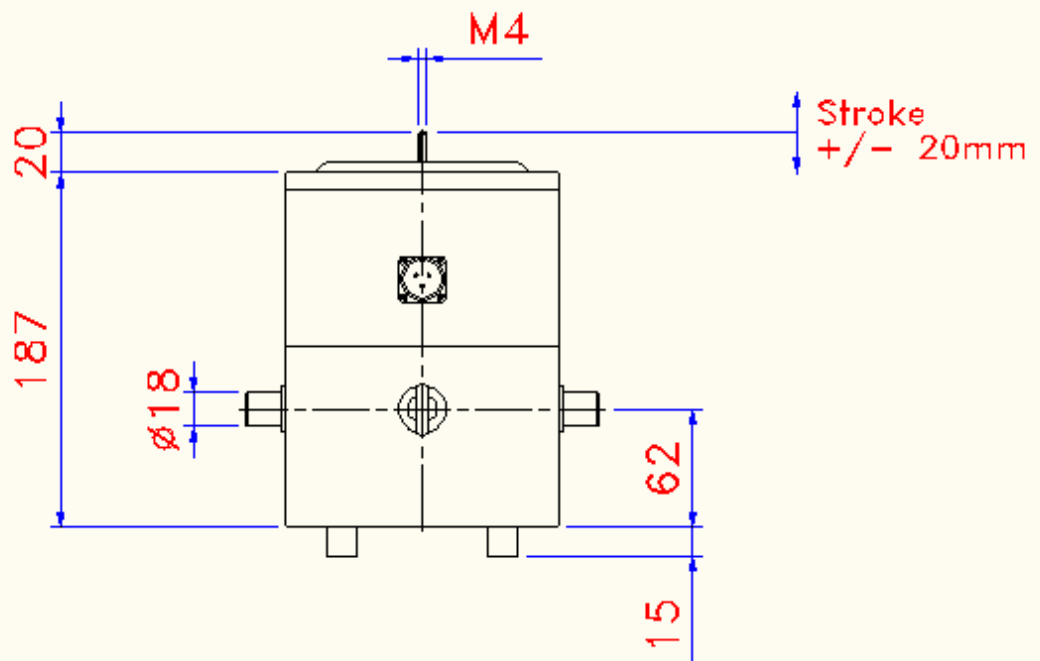
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# DIMENSIONS



Dimensions in mm of the standard EX 58 C40

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**200 N**



## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

The magnetic circuit of a ticonal cylindrical permanent magnet generates a magnetic field in which the moving coil is suspended by the circular membranes insuring an important longitudinal movement and an extremely weak transverse movement. The transverse movement is limited by mechanical protection with the possibility to visualise on the amplifier any lateral friction of the moving coil on the centring tool.

The exciter type EX 220 SC includes a fan directly powered by the power amplifier to insure the cooling of the moving coil.

A multicoloured luminous scale allows, at any time, the visualisation of the moving coil median position in the magnetic circuit when connecting the exciter to the structure and the indication of the movement amplitude. This visualisation is repeated on the front panel of the associated amplifier.

## APPLICATIONS

The exciter type EX 220 SC is especially designed for most of vibration tests thanks to its volume, its weight and its technical features. Associated with an amplifier A 648 (400 Watt), this exciter supplies a force of 200 N and an acceleration without load of about  $650 \text{ m/s}^2$ , with an harmonic distortion less than 1% in a frequency range between DC and 2,700 Hz.

# TECHNICAL FEATURES

Nominal force	200 N	
Maximum current with ventilation	20 A. peak	
Maximum current without ventilation	10 A. peak	
Nominal displacement	± 10 mm	
Maximum mechanical displacement	± 12 mm	
Force/current linearity	> 0.5%	
Variation of the force according to the coil position in the air gap	at 50% of the stroke : < 1.5% at 75 of the stroke : < 4%	
Maximum admissible transverse force	75 N	
Maximum resistance of the connection cable	0.1 Ohm	
Associated amplifier	A 648 S (400 W)	
Magnetic circuit	Cylindrical ticonal permanent magnet	
Cooling	By included fan 220 V 50/60 Hz	
Electrical connection	Souriau socket 840.43.132 and Cannon DE 9P	
Mechanical connection	Threaded rod M6	
Total weight	24 kg	
	<b>COPPER COIL (STANDARD)</b>	<b>ALU COIL</b>
Force factor	10.2 N/A	9.6 N/A
Coil resistance at 20°C	0.40	0.55
Armature weight	312 grams	195 grams
Maximum acceleration without load	650 m/s <sup>2</sup>	980 m/s <sup>2</sup>
Moving system suspension frequency in Hz		
<u>Without load</u>	13.1	16.2
<u>With load of 1.870 kg</u>	5.2	5.3
Suspension stiffness	2.11 N/mm	2.02 N/mm
First resonance frequency without load	4,600 Hz	5,300 Hz
First resonance frequency with load	2,020 Hz	2,800 Hz
Coil impedance at 500 Hz and 10 m cable	1.2 Ohm	1.3 Ohm
Working frequency range at 100% of the force	DC to 2,800 Hz	DC to 1,600 Hz
Working frequency range at 75% of the force	DC to 5,800 Hz	DC to 5,200 Hz

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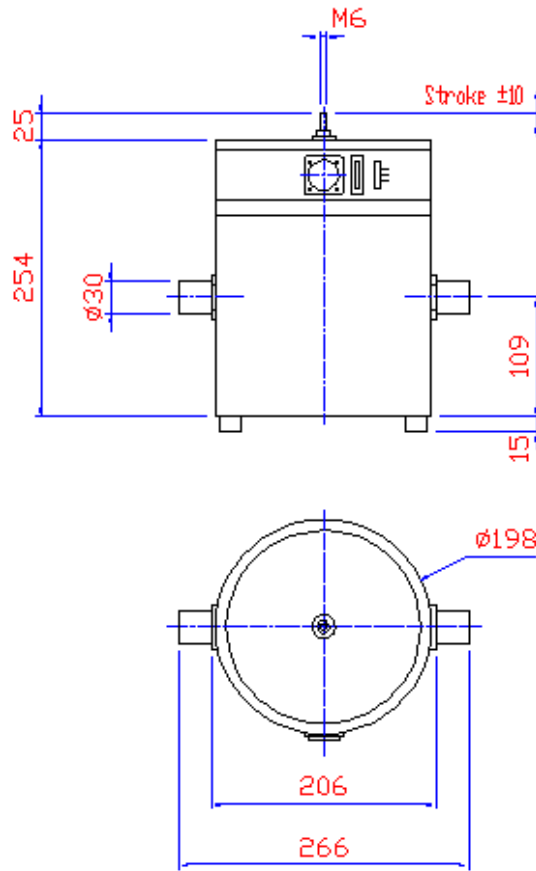
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### OPTIONAL ACCESSORIES:

- Power cables references CL 220-5 (5 meters), CL 220-10 (10 meters), CL 220-20 (20 meters), CL 220-30 (30 meters)
- Position cables references CL-S-5 (5 meters), CL-S-10 (10 meters), CL-S-20 (20 meters), CL-S-30 (30 meters)
- Mechanical link reference L25; Mechanical adjustable link reference LMA 200;
- Linear elastic cord suspension system reference S 220 L; linear elastic cord suspension system for shaker with trunnion reference S 220 BL;
- Trunnion reference BF 220
- Seismic support reference SS 331
- Stirrup reference ES 220

## DIMENSIONS



EX220 SC EXCITER

200N

Dimensions in mm.

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250 N



## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional constant force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

The magnetic circuit of permanent magnets generates a magnetic field in which the moving coil is guided. The transverse movement is limited by the central guidance system.

The exciter type EX 220 C40 includes a fan directly powered by the power amplifier to insure the cooling of the moving coil.

A multicoloured luminous scale allows, at any time, the visualisation of the moving coil median position in the magnetic circuit when connecting the exciter to the structure and the indication of the movement amplitude. This visualisation is repeated on the front panel of the associated amplifier.

## APPLICATIONS

The exciter type EX 220 C40 is especially designed for most high performance modal tests thanks to its volume, its weight and its technical features. Associated with an amplifier A 648 S (400 Watt), this exciter supplies a force of 200 N and an acceleration without load of about  $650 \text{ m/s}^2$ , with a harmonic distortion less than 1% in a frequency range between DC and 2,700 Hz.



## TECHNICAL FEATURES

Nominal force	250 N $\pm$ 10%
Maximum current with ventilation	20 A. peak
Maximum current without ventilation	10 A. peak
Nominal displacement	$\pm$ 20 mm
Maximum mechanical displacement	$\pm$ 22 mm
Force/current linearity	> 0.5%
Variation of the force according to the coil position in the air gap	at 50% of the stroke : < 1.5% at 75 of the stroke : < 4%
Maximum resistance of the connection cable	0.1 Ohm
Associated amplifier	A 648 S (400 W)
Magnetic circuit	Permanent magnets
Cooling	By included fan 220 V 50/60 Hz
Electrical connection	Souriau socket 840.43.132 and Cannon DE 9P
Mechanical connection	Threaded rod M6
Total weight	25 kg

	<b>ALUMINIUM COIL</b>
Force factor	12.8 N/A
Coil resistance at 20°C	1.23 O
Armature weight	~ 375 grams
Suspension stiffness	None

### OPTIONAL ACCESSORIES:

- ?? Connection cable reference CL 220 in lengths of 5, 10, 20 and 30 meters
- ?? Position cable reference CLD-220 in lengths of 5, 10, 20 and 30 meters
- ?? Mechanical link reference L 25
- ?? Adjustable link reference LA 25;
- ?? Disks for mechanical links reference D-220
- ?? Trunnion reference BF 220
- ?? Linear elastic cord suspension system reference S 220 L; linear elastic cord suspension system for shaker with trunnion reference S 220 BL;
- ?? Seismic support reference SS 331

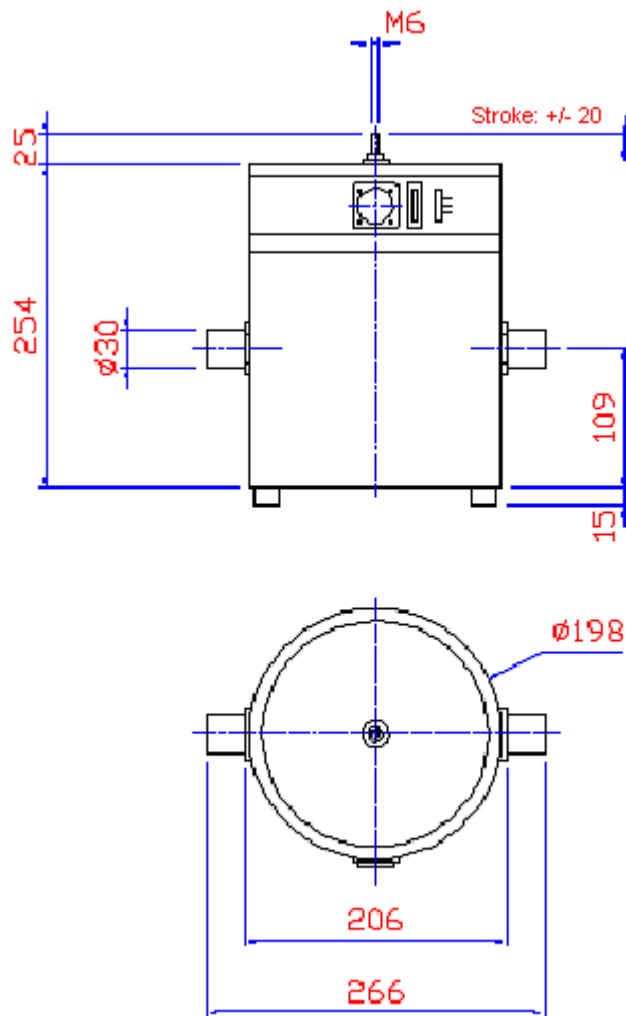
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# DIMENSIONS



EX 220 C40 EXCITER

250 N

Dimensions in mm

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email:info@haopute.com  
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## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

The EX 320 C50 exciter is a compact version of the EX 520 C50 shaker, developing up to 350 N, but maintaining the same long stroke.

The moving assembly made out of a magnesium head and an aluminium coil is mounted on a guidance rod. The rod is guided by two near zero friction bearings to insure a high amplitude longitudinal movement with no transverse movement.

This exciter includes a fan to insure the cooling of the moving coil and the fan is directly powered by the power amplifier through the main exciter cable.

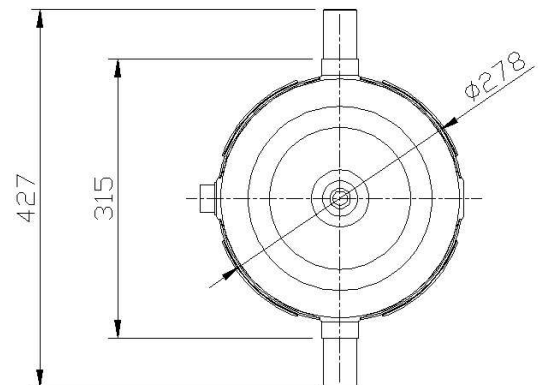
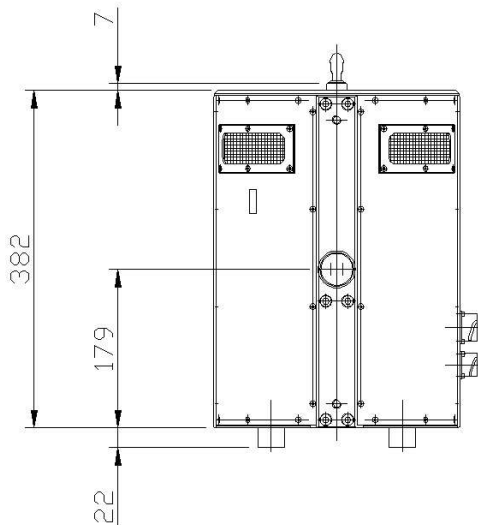
A multicolour luminous scale allows at any time the visualisation of the position of the moving coil in the magnetic circuit and the indication of the amplitude movement during the tests. This visualisation is repeated on the front panel of the associated amplifier.

## APPLICATIONS

Driven by the amplifier type A 649 HV (800 VA), the exciter type EX 320 C50 supplies a maximum force of 350 N. It can also supply 50% of the nominal force up to 300 Hz.

# TECHNICAL FEATURES

Nominal force	350 N $\pm$ 10%
Force factor	17,5 N/A $\pm$ 10%
Maximum peak current	20 A
Maximum displacement	$\pm$ 25 mm ( $\pm$ 1 inch)
Coil resistance at 20°C	1.19 Ohm
Armature weight	625 g
Magnetic circuit	Permanent magnets
Cooling	By incorporated ventilation
Electrical connection	With socket
Total weight	49,5 kg
Dimensions	See sketch
Electrical optical limits	$\pm$ 25 mm
Mechanical limit stops	$\pm$ 26 mm
Axis guidance	Low friction linear bearings
Power point	By grip



Dimensions in mm

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 mobile: 18982185717



## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

The EX 520 C50 exciter is a big exciter including a magnetic circuit made of magnets enabling the development of important forces. The moving assembly made out of a magnesium head and an aluminium coil is mounted on a guidance rod. The rod is guided by two near zero friction bearings to insure a high amplitude longitudinal movement with no transverse movement.

This exciter includes a fan to insure the cooling of the moving coil and the fan is directly powered by the power amplifier through the main exciter cable.

A multicolour luminous scale allows at any time the visualization of the position of the moving coil in the magnetic circuit and the indication of the amplitude movement during the tests. This visualisation is repeated on the front panel of the associated amplifier.

## APPLICATIONS

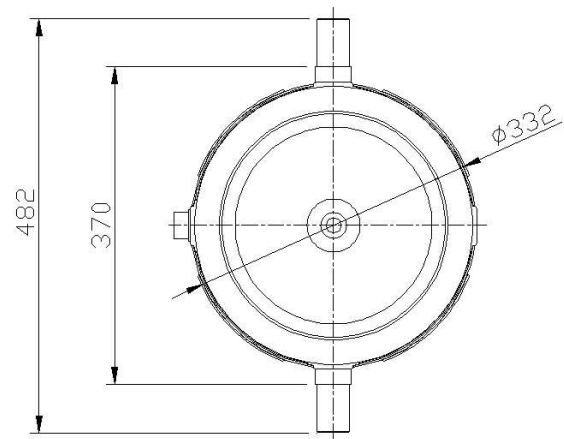
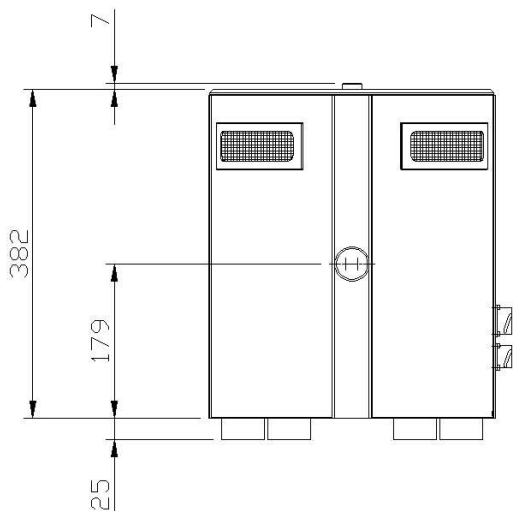
Driven by the amplifier type A 649 HV (1,600 VA), the exciter type EX 520 C50 supplies a minimum force of 550 N. The EX 520 C50, due to its force, can be used for different tests on heavy structures.

# TECHNICAL FEATURES

Nominal force	550 N (126.72 lbf) $\pm$ 2%
Force factor	27.5 N/A
Maximum peak current	20 A
Maximum displacement	$\pm$ 25.4 mm ( $\pm$ 1 inch)
Coil resistance at 20°C	1.82 Ohm
Armature weight with an aluminium coil	680 grams (1.49 lbs)
Magnetic circuit	Magnets
Cooling	By incorporated ventilation
Electrical connection	With socket
Total weight	66 kg (146.7 lbs)
Dimensions	See sketch
Electrical optical limits	$\pm$ 25 mm
Mechanical limit stops	$\pm$ 26 mm

## OPTIONAL ACCESSORIES:

- Power cables references CL 520-5 (5 meters), CL 520-10 (10 meters), CL 520-20 (20 meters), CL 520-30 (30 meters), CL 520-40 (40 meters)
- Position cables references CL 520-10-S (10 meters), CL 520-20-S (20 meters), CL 520-30-S (30 meters) CL 520-40-S
- Mechanical adjustable link reference LMA 300;
- Linear elastic cord suspension system reference S 520L; linear elastic cord suspension system for shaker with trunnion reference S 520BL;
- Trunnion reference BF 220; Seismic support reference SS 520



Dimensions in mm

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## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

The long-stroke exciter type EX 1070 C50/S, version developed as from the exciter type EX 520 C50, delivers a force of approximately 1 200 N.

The moving assembly made out of a magnesium head and an aluminium coil is mounted on a guidance rod. The rod is guided by two near to zero friction bearings to insure a high amplitude longitudinal movement with no transverse movement.

This exciter includes a fan to insure the cooling of the moving coil and the fan is directly powered by the power amplifier through the main exciter cable.

A multicolour luminous scale allows at any time the visualisation of the position of the moving coil in the magnetic circuit and the indication of the amplitude movement during the tests. This visualisation is repeated on the front panel of the associated amplifier.

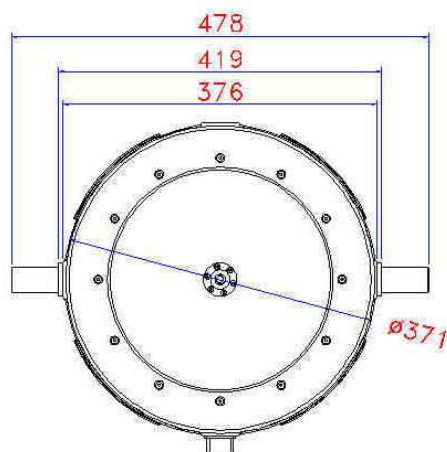
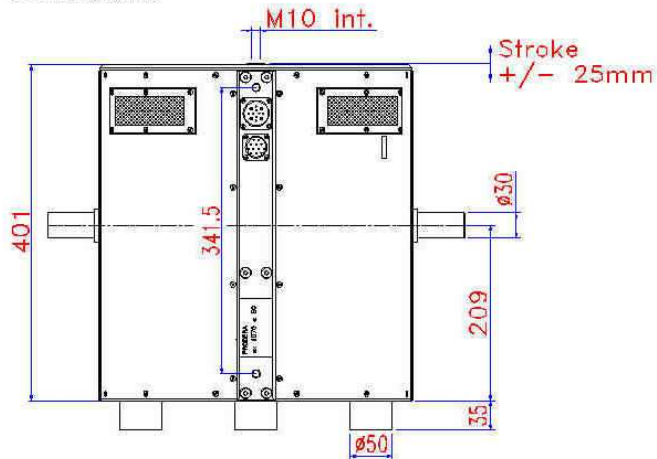
## APPLICATIONS

Driven by the amplifier type A 651/S2/S, the exciter type EX 1070 C50/S supplies a minimum force of 1200 N.

## TECHNICAL FEATURES

Nominal force	1200 N (269.77lbf)
Force factor	~ 20 N/A
Maximum peak current	70 A
Maximum displacement	± 25.4 mm (± 1 inch)
Coil resistance at 20°C	0.80 Ohm
Armature weight	<2.2 kg
Magnetic circuit	Magnets
Cooling	By incorporated ventilation
Electrical connection	With socket
Total weight	50 - 55 kg (111 – 122.10 lbs)
Dimensions	See sketch
Electrical optical limits	± 25 mm
Mechanical limit stops	± 26 mm

### DIMENSIONS



Dimensions in mm

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# EXCITER

# EXCITER

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**EX 1060** (1 200 N)

**EX 2060** (2 040 N)

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## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

Identically designed, the only difference between the EX 1060 and EX 2060 exciters is their moving coil and their command amplifier.

In order to give a very high force, the magnetic field of about 16,000 gauss is obtained from field coils powered by a DC supply.

The moving coil is guided by six elastic flexures insuring a weak transverse movement.

The ventilation of the exciter is insured by a ventilator working in depression or by industrial compressed air able to deliver 70 m<sup>3</sup>/hour at a pressure of 1.5 bar. The customer will choose the type of ventilation system when ordering. A later changeover from one system to another one implies the replacement of the security manostat from pressure to depression or vice versa.

A 10 element multicolour and luminous scale allows at any moment the visualisation of the moving coil median position in the magnetic circuit and the indication of the movement amplitude during the tests. This visualisation is repeated on the front panel of the associated amplifier. The excitation of the field coils is insured by a power supply regulated in direct current delivering 7 A at a voltage between 80 and 120 V.

## APPLICATIONS

Thanks to their force, the EX 1060 and EX 2060 exciters can be used in any test on heavy structures.

The EX 1060 exciter with the A 651/S1 amplifier (1,000 W) supplies a force of 1,000 N for an acceleration without load at about 1,000 m/s<sup>2</sup> and a maximum frequency range of 1,000 Hz at 100% of the power.

The EX 2060 exciter with the A 651/S2 amplifier (2,000 W) delivers a force of 2,000 N for an acceleration without load of 1,500 m/s<sup>2</sup> and a maximum frequency range of 650 Hz at 100% of the power.

## TECHNICAL FEATURES

	<i>EX 1060</i>	<i>EX 2060</i>
Nominal force	1,200 N	2,040 N
Force factor	20 N/A	34 N/A
Maximum peak current	60 A	
Maximum displacement	± 12.5 mm	
Moving coil resistance at 20°C	0.17 Ohm	0.3 Ohm
Moving tool weight	1 kg	1.8 kg
Maximum acceleration without load	1,200 m/s <sup>2</sup>	1,460 m/s <sup>2</sup>
First resonance frequency without load	3,630 Hz	3,260 Hz
First resonance frequency with load <sup>1</sup>	2,150 Hz	1,770 Hz
Coil impedance at 500 Hz	0.32 Ohm	0.84 Ohm
Associated amplifier	A 651/S1 (1,000 W)	A 651/S2 (2,000 W)
Maximum frequency of use <sup>2</sup>	6,000 Hz	3,000 Hz
Field coil resistance at 20°C	12 Ohm	
Magnetisation direct current	7 A	
Cooling system	With external turbine or compressed air 1.5 bar, 70 m <sup>3</sup> /hour	
Maximum connection cable resistance	0.02 Ohm	
Electrical connection	With socket	
Total weight	150 kg	

### OPTIONAL ACCESSORIES:

- Power cables references CL 1060-10 (10 meters), CL 1060-20 (20 meters), CL 1060-30 (30 meters)
- Position cables references CL-S-10 (10 meters), CL-S-20 (20 meters), CL-S-30 (30 meters)
- Mechanical link reference L27; Mechanical adjustable link reference LMA 500
- Linear elastic cord suspension system reference S 1060 L
- Trunnion reference BF 540

<sup>1</sup> Test weight: 54 g for EX 1060; 10 kg for EX 2060

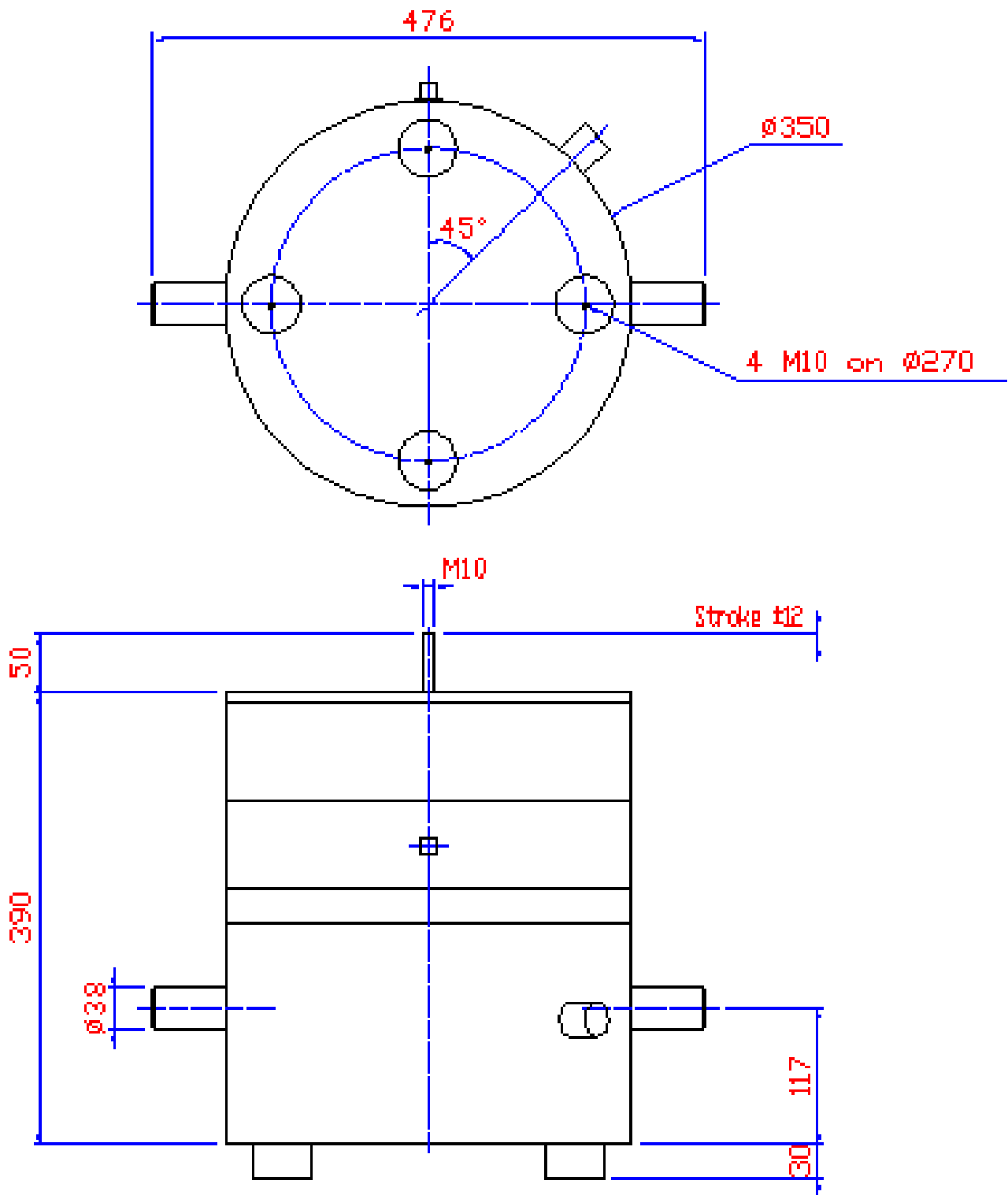
<sup>2</sup> With associated amplifier at 100% of the force and 2% of distortion. Possibility to increase the frequency of use of the moving coils especially studied for high frequencies.

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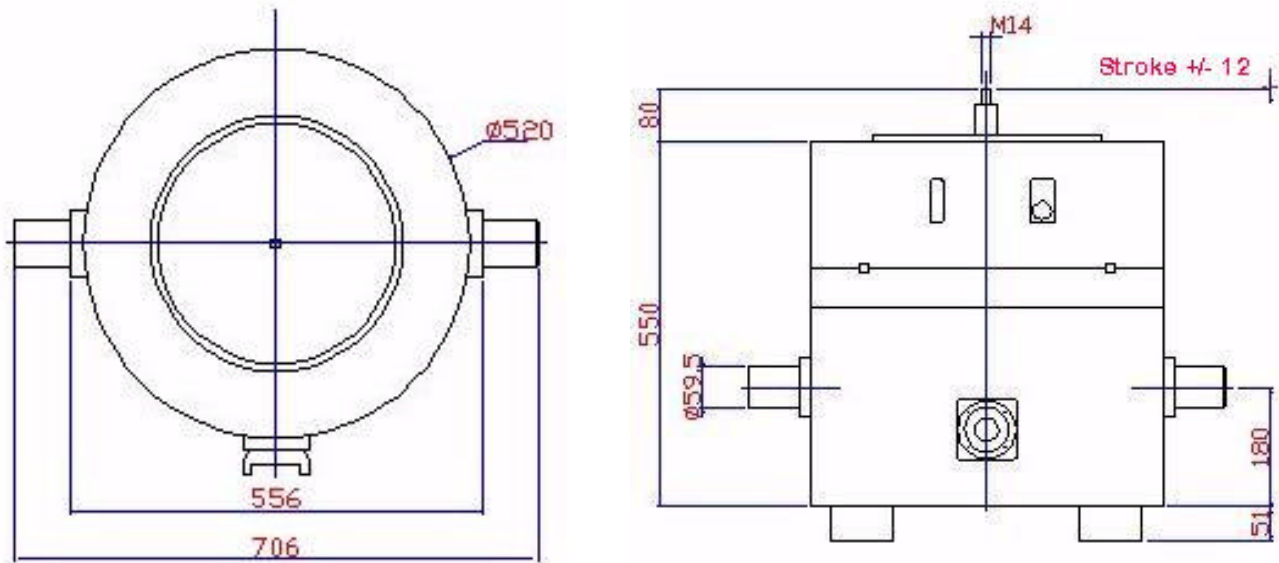
phone:02884625157

mobile:18982185717



EX1060 (1000N) EXCITER  
EX2060 (2000N)

www.haopute.com  
 email:info@haopute.com  
 phone:02884625157  
 mobile:18982185717



Dimensions in mm

## AIM OF THE EXCITERS

The aim of the exciters is to transform the current produced by an amplifier into a proportional force which, applied on appropriated points of a structure, sends a vibratory movement to this structure.

## MAIN FEATURES

The most powerful of our exciters, the EX 5080 exciter, has a magnetic circuit made from field coils powered by direct current in order to obtain a magnetic field in the air gap of about 17,000 gauss.

The moving system is guided in such a way as to obtain a very big longitudinal movement with a minimum transverse movement.

The ventilation of the exciter is insured by a ventilator working in depression or by industrial compressed air able to deliver 90 m<sup>3</sup>/hour at a pressure of 2 bars. The customer will choose the type of ventilation system when ordering. The later changeover from one system to another one implies the replacement of the security manostat from pressure to depression or vice versa.

A 10 element multicolour and luminous scale allows at any moment the visualisation of the moving coil median position in the magnetic circuit and the indication of the movement amplitude during the tests. This visualisation is repeated on the front panel of the associated amplifier.

The excitation of the field coils is insured by a power supply regulated in direct current delivering 8 A at a voltage between 90 and 125 V.

# APPLICATIONS

The EX 5080 exciter with the amplifier A 709 (4,000 W) supplies a force of 5,000 N for an acceleration without load at about 950 m/s<sup>2</sup> and a maximum frequency of 600 Hz at 75% of the power with an harmonic distortion less than 1%. The use of the EX 5080 exciter is advised in any test on heavy structures needing very big forces.

# TECHNICAL FEATURES

Nominal force	5,000 N
Force factor	63 N/A
Maximum peak current	80 A
Maximum displacement	± 20 mm
Coil resistance at 20° C	0.28 Ohm
Moving coil weight	5,300 grams
Maximum acceleration without load	940 m/s <sup>2</sup>
First resonance frequency without load	2,300 Hz
First resonance frequency with load <sup>1</sup>	990 Hz
Coil impedance at 500 Hz	1.2 Ohm
Associated amplifier	A 709 (4,000 W)
Maximum frequency of use <sup>2</sup>	600 Hz
Field coil resistance at 20° C	12.2 Ohm
Magnetization direct current	8 A
Cooling system	With external turbine or compressed air
Maximum connection cable resistance	0.02 Ohm
Electric connection	With Souriau socket 840 43 870, Cannon DE9S
Total weight	650 kg
Dimensions	See sketch

### OPTIONAL ACCESSORIES:

- Power cables references CL 5080-10 (10 meters), CL 5080-20 (20 meters), CL 5080-30 (30 meters)
- Position cables references CL-S-10 (10 meters), CL-S-20 (20 meters), CL-S-30 (30 meters)
- Mechanical link reference L41
- Linear elastic cord suspension system reference S 5080 L
- Trunnion reference BF 5080; Stirrup piece reference ES 5080

<sup>1</sup> Test weight = 10.6 kg

<sup>2</sup> With associated amplifier at 75% of the force and 1% of distortion