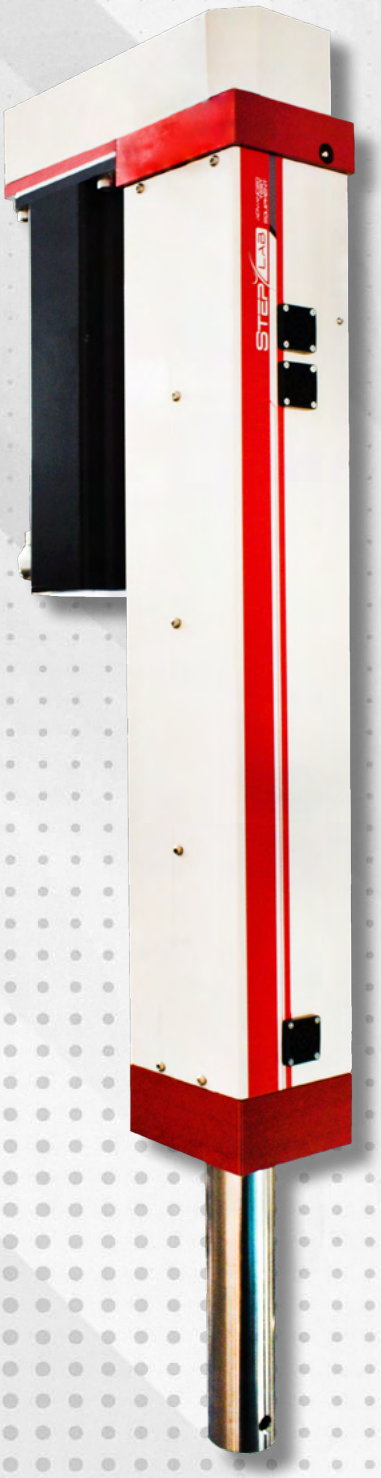
ELECTROMECHANICAL ACTUATORS

Flexibility and High Performances



www.step-lab.com

STEP Lab is specialized in the production of electrically operated mechanical testing machines for static and dynamic tests.

STEP Lab è specializzata nella realizzazione di macchine per test meccanici ad azionamento elettrico per prove statiche e dinamiche.

STEP Lab offers a complete range of solutions for mechanical testing of products and materials. STEP Lab's technical skills in the field of data acquisition and high-performance controls are offered to satisfy the different test requirements even the custum ones.

STEP Lab has been manufacturing electromechanical actuators for static and dynamic applications for many years and has dedicated its work to applications where reliability and precision are required.

STEP Lab offre una gamma completa di soluzioni per i test meccanici di prodotti e materiali. Le competenze tecniche di STEP Lab nel settore dell'acquisiozne dati e dei controlli ad alte prestazioni sono a disposizione del cliente per soddisfare anche le esigenze di test custom.

STEP Lab realizza da molti anni attuatori elettromeccanici per applicazioni statiche e dinamiche dedicate ad applicazioni dove viene richiesta affidabilità e precisione.

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About STEP Lab

STEP Lab is your global partner for product and material testing systems.
Step Lab specializes in electrical systems to be used in areas that until now had been reserved for hydraulic systems.

Today STEP Lab is able to offer the widest range of electric actuators on the market. These systems are completed by an electronic and software platform that allows you to manage any type of test both on single or multiple actuators.

SETP Lab proposes itself as the main partner in the realization of testing systems.STEP Lab directly develops, produces and sells all the accessories necessary to satisfy the customer's needs.

→ Structures for loads from 1 kN up to 265 kN
→ Climatic chambers is equipped with refrigerant circuit with a temperature range from -70 to + 250 °C
→ Grips
→ Torsional actuators

STEP Lab è il vostro partner globale nella realizzazione di sistemi di prova per prodotti e materiali.
STEP Lab è specializzato in sistemi elettrici da impiegare in ambiti che fino ad oggi erano stati riservati a sistemi idraulici.

Oggi STEP Lab è in grado di proporre la più ampia gamma di attuatori elettrici sul mercato.Questi sistemi sono completati da una piattaforma elettronica e software che permette di gestire qualunque tipologia di prova sia su attuatori singoli o multipli.

STEP Lab si propone come partner principale nella realizzazione dei sistemi di prova e per questo sviluppa e produce e commercializza direttamente tutti gli accessori necessari a soddisfare le esigenze del cliente.

→ *Strutture per carichi da 1 a 265 kN*
→ *Camere climatiche dotate di circuito frigorifero con range di temperatura da-70 a +250°C*
→ *Griffe*
→ *Attuatori torsionali*

Electro-mechanical Actuators / Attuatori Elettromeccanici

STEP Lab presents the new series of EA electromechanical actuators, the result of 10 years of experience in the global market and technological challenges in the field of dynamic applications.

The EA series was created to meet the needs of dynamic applications even in cyclic applications with a high number of cycles and short stroke.

The actuators have been designed to operate both alone on structures and on production lines for quality control.

Compared to the previous series STEP Lab has significantly reduced weights and dimensions but, at the same time, has expanded the Dynamic load range up to 200kN.

To accompany the birth of this important product range, this technical catalog has been prepared. This catalog has the function of guiding the customer in choosing the right product for his needs.
STEP Lab will propose a series of standard configurations created to cover the most common needs of the market both in the testing and industrial fields.

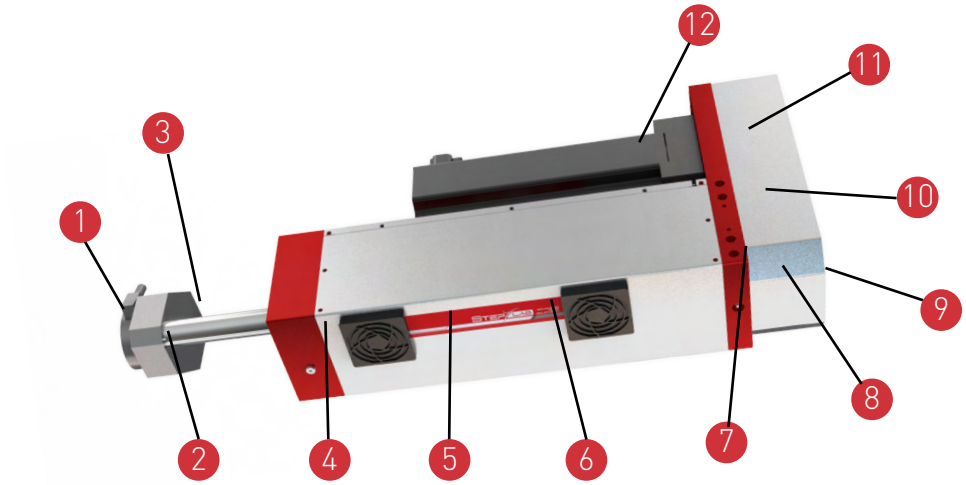
STEP Lab presenta la nuova serie di attuatori elettromeccanici EA frutto dell'esperienza di 10 anni nel mercato globale e sfide tecnologiche nell'ambito delle applicazioni dinamiche.

La serie EA nasce per soddisfare le esigenze delle applicazioni dinamiche anche in applicazioni cicliche con elevato numero di cicli e corsa breve.

Gli attuatori sono stati concepiti per operare sia da soli su strutture sia su linee produttive per il controllo qualità.

Rispetto alla serie precedente sono stati diminuiti significativamente pesi ed ingombri e contestualmente è stata ampliata la gamma.
I carichi dinamici arrivano fino a 200 kN

Per accompagnare la nascita di questa importante gamma di prodotto è stato preparato questo catalogo tecnico che ha la funzione di guidare il cliente nella scelta del prodotto più giusto per le sue esigenze.
A tal fine STEP Lab proporrà una serie di configurazioni standard create per coprire le più comuni necessità del mercato sia in ambito testing che industriali.



General Description

The EA series is not only a electromechanical actuators but real electrical machines able to carry out any type of application where high performance is required.
The EA series compared to the main competitors is born with unique intrinsic characteristics:

1. Connection with a precision centering and a preload pin
2. Hardened and anti-corrosion rod
3. Rod guide based on ball recirculation systems
4. Liquid / air cooling screw systems
5. Anti-rotation system based on recirculating ball guides to withstand both side and torsional loads
6. Special screws dedicated to long term cyclic applications
7. Special bearings dedicated to long term cyclic applications
8. Lubrification point with special greases for long maintenance intervals
9. Special belts to eliminate effects of hysteresis
10. Posterear anchor points for application flexibility
11. Special system for precise and repeatable positioning of the belt and for supporting the lateral load of the belt
12. Highly dynamic motors with absolute encoder and electromagnetic safety brake

Descrizione generale

La serie EA non sono semplici attuatori elettromeccanici ma vere e proprie macchine elettriche per effettuare qualunque tipo di applicazione dove siano richieste prestazioni elevate.
La serie EA rispetto ai principali concorrenti nasce con caratteristiche intrinseche uniche:

1. *Collegamento con centraggio di precisione e pin di precarico*
2. *Stelo temprato e anti corrosione*
3. *Guida stelo basata su sistemi a ricircolo di sfera*
4. *Sistemi di viti a ricircolo raffreddati ad liquido/aria*
5. *Sistema anti rotazione basato su guide a ricircolo di sfere per sopportare sia carichi laterali che torsionali*
6. *Viti speciali dedicate ad applicazioni cicliche a lunga durata*
7. *Cuscinetti speciali dedicati alle applicazioni cicliche a lunga durata*
8. *Punto di lubrificazione con impiego di grassi speciali per lunghi intervalli di manutenzione*
9. *Cinghie speciali per eliminare giochi e effetti di isteresi*
10. *Punti di ancoraggio posteriori per flessibilità di applicazione*
11. *Sistema speciale per un posizionamento preciso e ripetibile della chinghia e per il supporto del carico laterale della cinghia*
12. *Motori ad alta dinamica con encoder assoluto e freno elettromagnetico di sicurezza*

Applications / Applicazioni

The EA series actuators are specifically developed for applications in the testing field (both materials and products) and in the industrial field and in general in all those applications where performance with high reliability and precision are required.

→ Material testing laboratories: used together with our standard structures, the controller and the Test Center software, highly reliable and flexible test machines are created, perfect for testing all types of materials to characterize them from a static and dynamic point of view.

→ Product test laboratories and quality certification laboratories: used together with the controller and the Test Center software, they can be mounted alone or together with other actuators on structures built by STEP Lab or directly by the customer to carry out even complex tests on products.

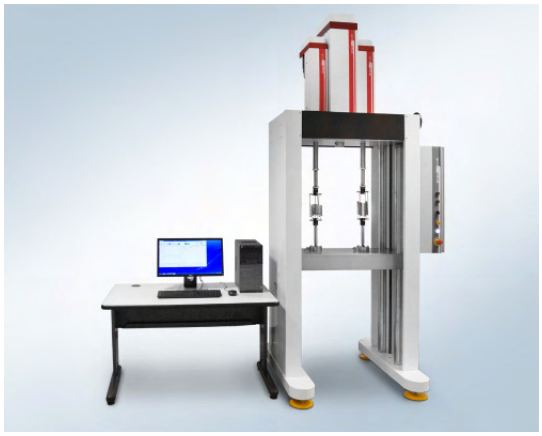
→ In the production line to carry out pressings or to carry out quality checks: thanks to the combination of sophisticated control, software dedicated to quality control and high precision mechanical components, the actuators are perfect for carrying out repeated tests for large numbers of cycles even in the case of applications H24.

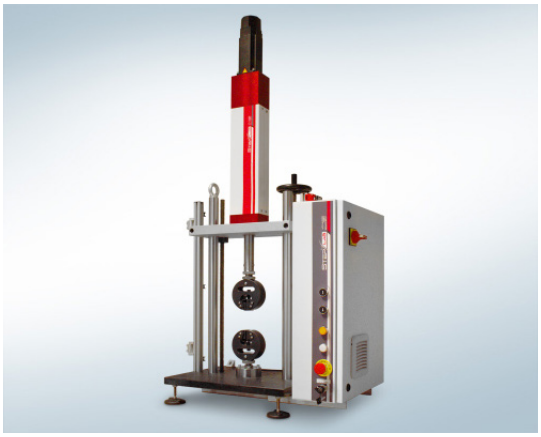
Gli attuatori della serie EA sono specificatamente sviluppati per applicazioni in ambito testing (sia materiali che prodotto) che in ambito industriale ed in generale in tutte quelle applicazioni dove siano richieste prestazioni con affidabilità e precisione elevata.

→Laboratori di test materiali: impiegati insieme alle nostre strutture standard, al controllore e il software Test Center si realizzano macchine di prova ad altissima affidabilità e flessibilità perfette per testare tutte le tipologie di materiali per caratterizzarli dal punto di vista statico e dinamico.

→ Laboratori di test prodotto, laboratori di certificazione qualità: impiegati insieme al controllore e software Test Center possono essere montati da soli o insieme ad altri attuatori su strutture realizzate da STEP Lab o direttamente dal cliente per realizzare test, anche complessi, su prodotti.

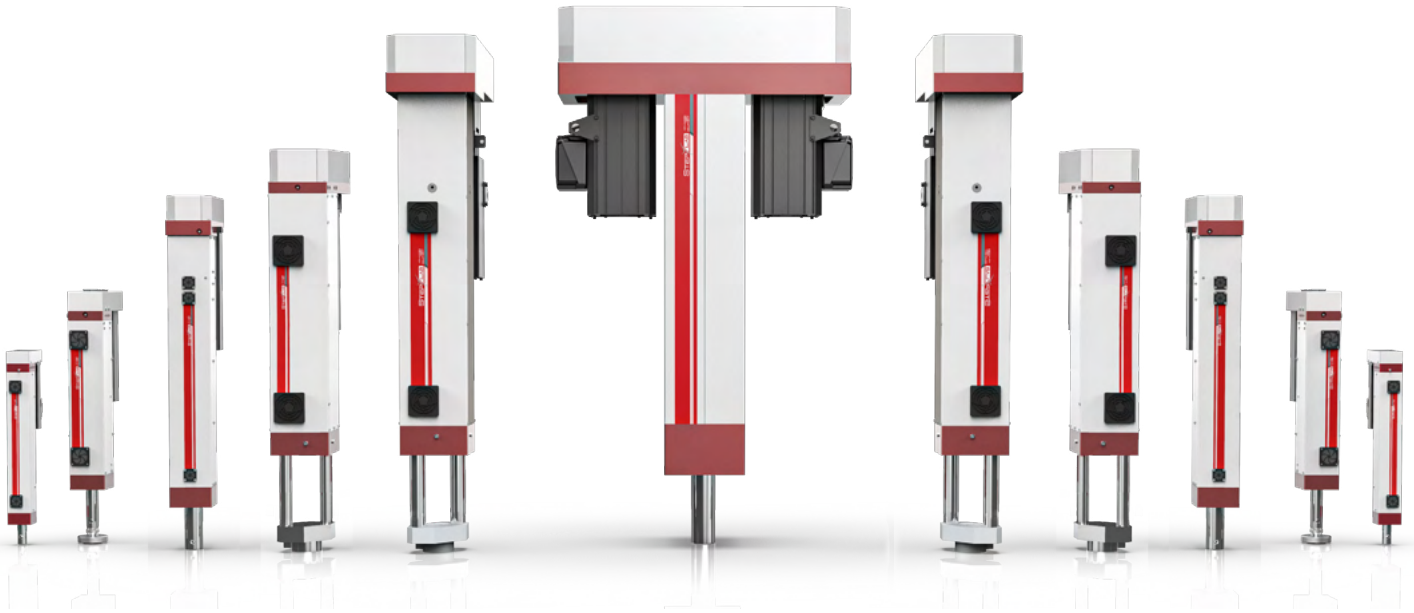
→In linea di produzione per effettuare piantaggi o per effettuare controlli qualità: gli attuatori grazie alla combinazione di controllo sofisticato, software dedicato al controllo qualità e componenti meccanici di elevata precisione sono perfetti per effettuare test ripetuti per grandi numeri di cicli anche nel caso di applicazioni H24.



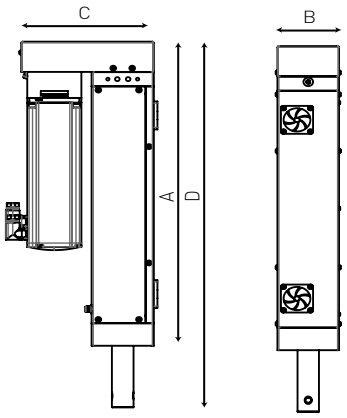


The EA Series / La Serie EA

Measurement and Performance / Dimensione e Prestazioni



	EA02	EA05	EA015	EA050	EA100	EA200*
Massima forza dinamica (fatica sinusoidale) *Max. Dynamic Force (Sinusoidal Fatigue)* **[kN]**	2.0	5.5	16.0	50.0	100.0	200.0
Massima forza statica *Max. Static Force* **[kN]**	4.0	15.0	35.0	65.0	130.0**	265.0**
Massima velocità di prova *Max. Test Speed* **[mm/s]**	800	1250	530	500	530	530
Corsa *Standard Standard Stroke* **[mm]** *	250	250	300	200	200	200
Frequenza *Frequency* **[Hz]**	35	30	25	20	20	20
A - Lunghezza *A - Length* **[mm]**	570	653	952	1100	1320	1500
B - Larghezza *B - Width* **[mm]**	75	115	135	185	280	425
C - Profondità *C - Depth* **[mm]**	160	240	320	370	600	940
D - Lunghezza con pistone *D - Length with piston* **[mm]**	642	737	1050	1250	1554	1745
Temp. ambiente *Ambient Temp.* **[°C]**	5 - 35	5 - 35	5 - 35	5 - 35	5 - 35	5 - 35

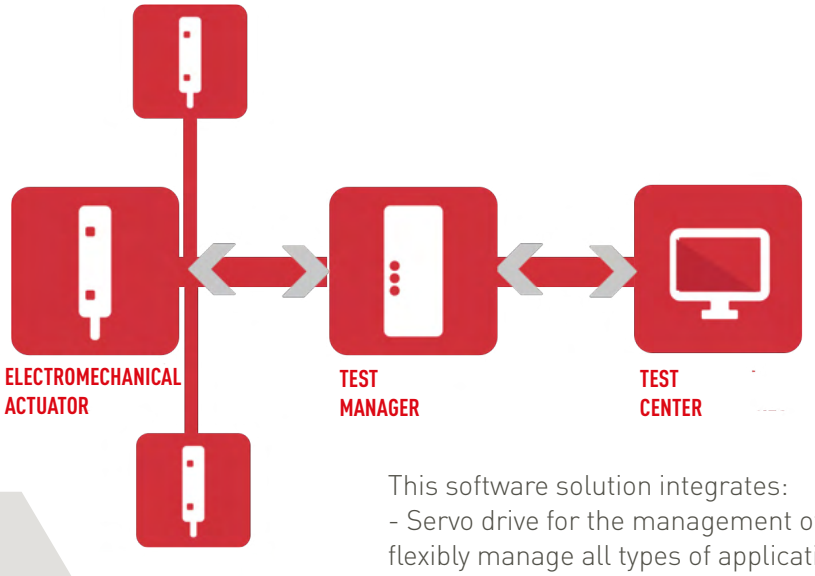


* Other values available under request. / *Altri valori disponibili su richiesta.* | **Configuration for heavy loads with low dynamic. / *Configurazione dedicata ad alti carichi a bassa dinamica.*
NOTE / *NOTES:* I valori di forza e velocità riportati non rappresentano una configurazione specifica, ma i valori massimi ottenibili in differenti configurazioni. Contattaci per ulteriori informazioni.
/ *Force and speed values aren't the values for a particular configuration. They are the maximum reachable values in different configurations. Please contact us for more information.*
Dettagli e dimensioni possono differire, in funzione della configurazione. / *Details and dimensions may differ, in function of the configuration.*

Integration with Test Center / Integrazione con Test Center

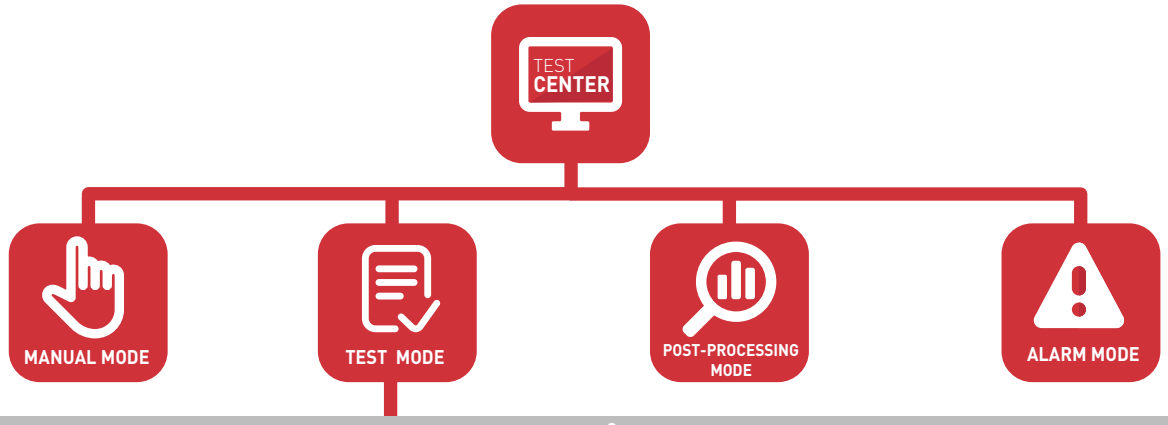
STEP Lab provides a complete software and electronic solution for the management of the EA series actuators. The solution offered by the Test Center Software is extremely flexible and can manage multi-axis systems, safety devices, and other accessories such as climatic cells, grips, optical and contact extensometers, automated support structures, as well as interfacing with third-party company management systems.

STEP Lab fornisce una soluzione software ed elettronica completa per la gestione degli assi della serie EA. La soluzione è estremamente flessibile e può gestire anche sistemi multi asse, sicurezze, ed ulteriori accessori quali celle climatiche, griffe, estensometri ottici e a contatto, strutture di supporto automatizzate, oltre ad interfacciarsi con gestionali aziendali di terze parti



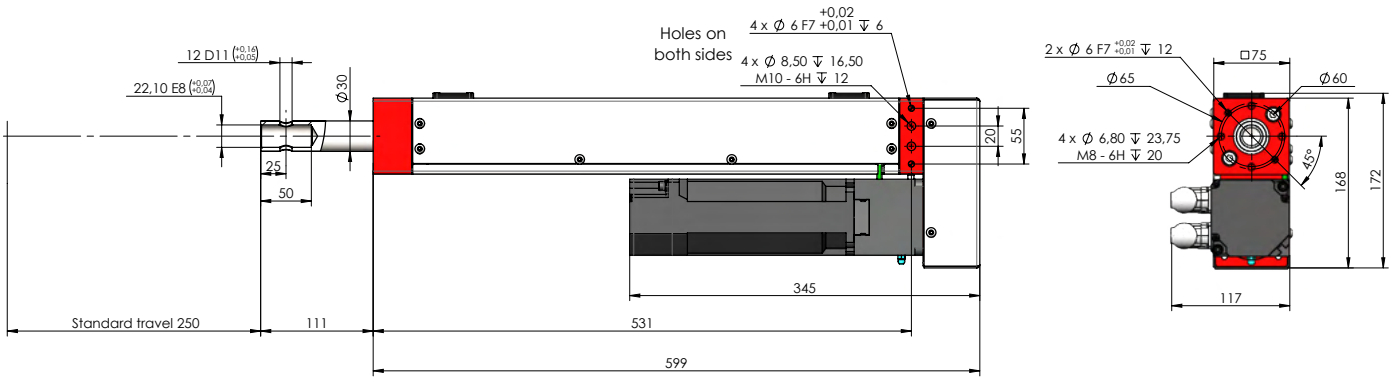
This software solution integrates:
- Servo drive for the management of brushless motors to flexibly manage all types of applications in both low and high dynamics.
- A real-time controller for advanced motor management with the ability to run applications in:
→ Position control
→ Load control
→ Control on a transducer other than the load cell, such as pressure sensors, strain gauges, optical extensometers
→Synchronized and non-synchronized multi-actuator mode.
- Windows-based user interface software for setting up, acquiring, and evaluating tests on products and materials.

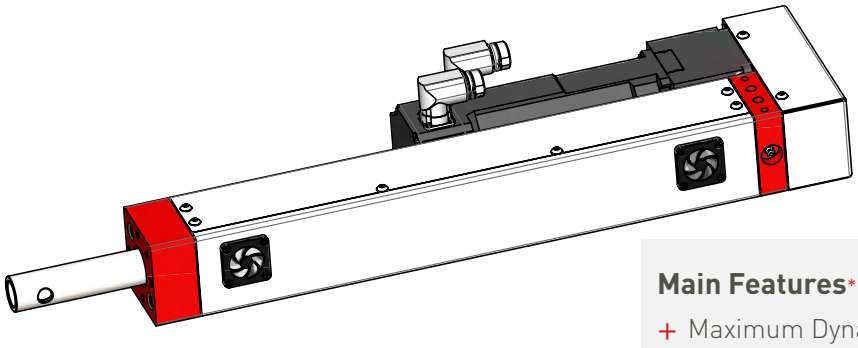
Questa soluzione software integra:
- Un servo drive per la gestione di motori brushless per gestire in modo flessibile tutte le tipologie di applicazioni sia in bassa che alta dinamica.
-Un controllore real time per la gestione avanzata dei motori con la possibilità di eseguire applicazioni in:
→Controllo di posizione
→Controllo di carico
→Controllo su trasduttore diverso dalla cella di carico, quale ad esempio sensori di pressione estensimetri, estensometri ottici.
→Modalità multi-attuatore sincronizzato e non
-Software di interfaccia utente basato su sistema Windows per l'impostazione, l'acquisizione e la valutazione di test su prodotti e materiali.



STATIC MODULE *Tensile, compression and creep tests*	**MODULO STATICO** *Prove di trazione, compressione e creep*
DYNAMIC MODULE *Fatigue and profile reproduction tests*	**MODULO DINAMICO** *Test di fatica e riproduzione del profilo*
DMA *Dynamic Mechanical Analysis*	**DMA** *Analisi Meccanica Dinamica*
DAMPER MODULE *Characterization and quality control*	**MODULO AMMORTIZZATORI** *Caratterizzazione e controllo qualità*
SPRING MODULE *Characterization and quality control*	**MODULO MOLLE** *Caratterizzazione e controllo qualità*
FRACTURE MECHANICS MODULE *Analysis of crack propagation*	**MODULO DI MECCANICA DELLA FRATTURA** *Analisi della propagazione della cricca*
MULTIACTION MODULE *Programming of complex tests*	**MODULO MULTIACTION** *Programmazione di test complessi*
CLIMATIC CHAMBER MODULE *Integration of climatic parameters in tests*	**MODULO CAMERA CLIMATICA** *Integrazione dei parametri climatici nei test*
END OF THE LINE *Production line quality control integrated*	**END OF THE LINE** *Controllo qualità della linea di produzione integrato*
DYNAMIC HMI MODUL E *Customization of the interface*	**MODULO HMI DINAMICO** *Personalizzazione dell'interfaccia*
MULTIAXIS SYNCHRONIZED MODULE *Management of multi synchronized actuators*	**MODULO MULTIASSE SINCRONIZZATO** *Gestione di più attuatori sincronizzati*
MULTIAXIS INDIPENDENT MODULE *Share controller between independent actuators*	**MODULO MULTIASSE INDIPENDENTE** *Condivisione del controller tra attuatori Indipendenti*

EA02





Main Features*

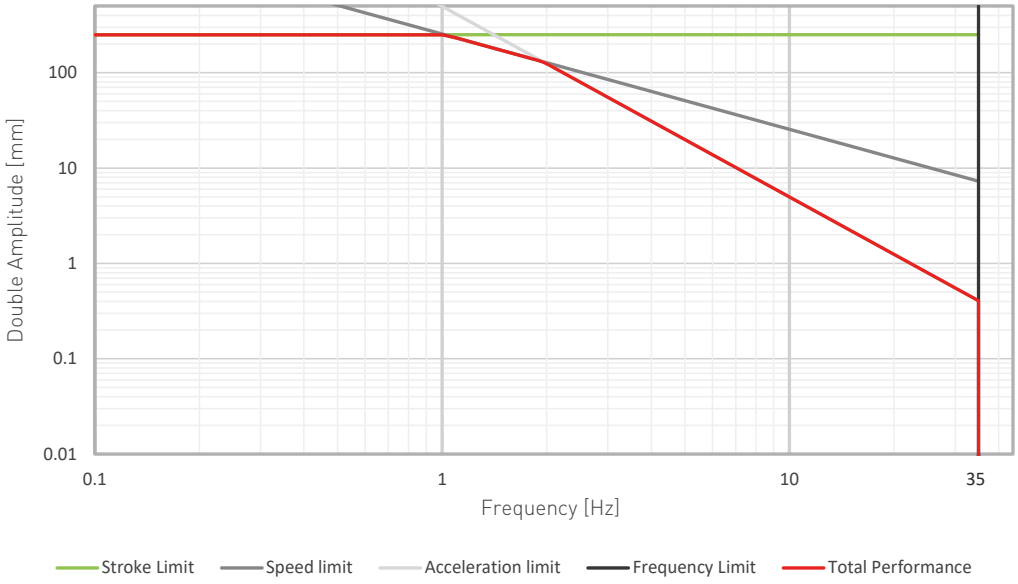
+ Maximum Dynamic Force 2.0 kN
+ Maximum Static Force 4.0 kN

Configuration and Codes / Configurazioni e Codici

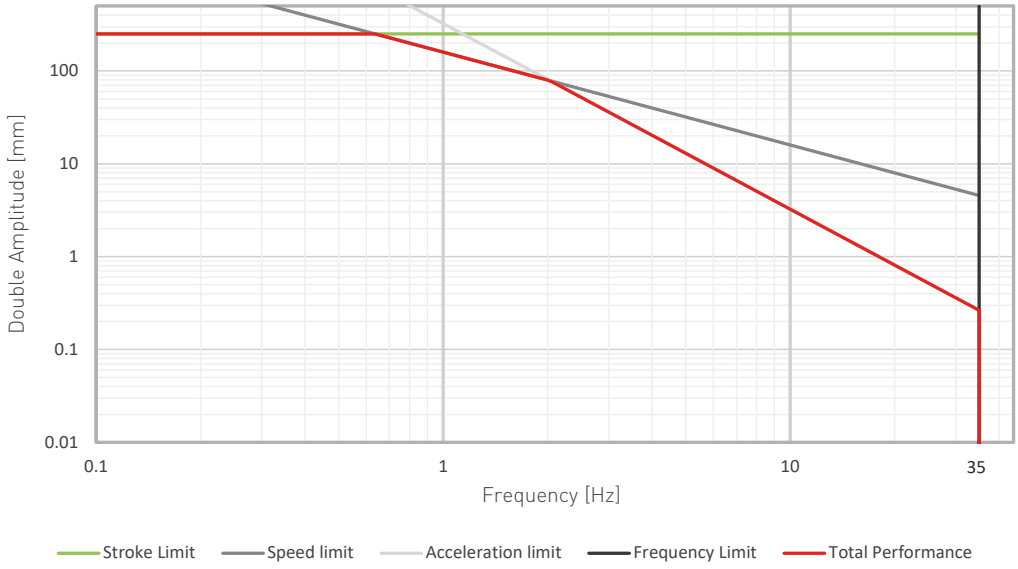
	Code	Static Force (N)	Dynamic Force (N)	Acceleration (g)	Max. Speed (mm/s)	Standard Stroke (mm)
EA02	EA02-5/400/N-H16/1-250	480	630	0.99	800	250
	EA02-5/400/N-H10/1-250	780	1010	0.65	500	
	EA02-5/400/N-H5/1-250	1550	1490	0.33	250	
	EA02-3/04/3A-H16/1-250	1270	1330	1.5	800	
	EA02-3/04/3A-H10/1-250	2030	1690	0.96	500	
	EA02-3/04/3A-B5/1-250	4000	2000	0.48	250	

* Other configurations available upon request. / *Altre configurazioni disponibili su richiesta.*

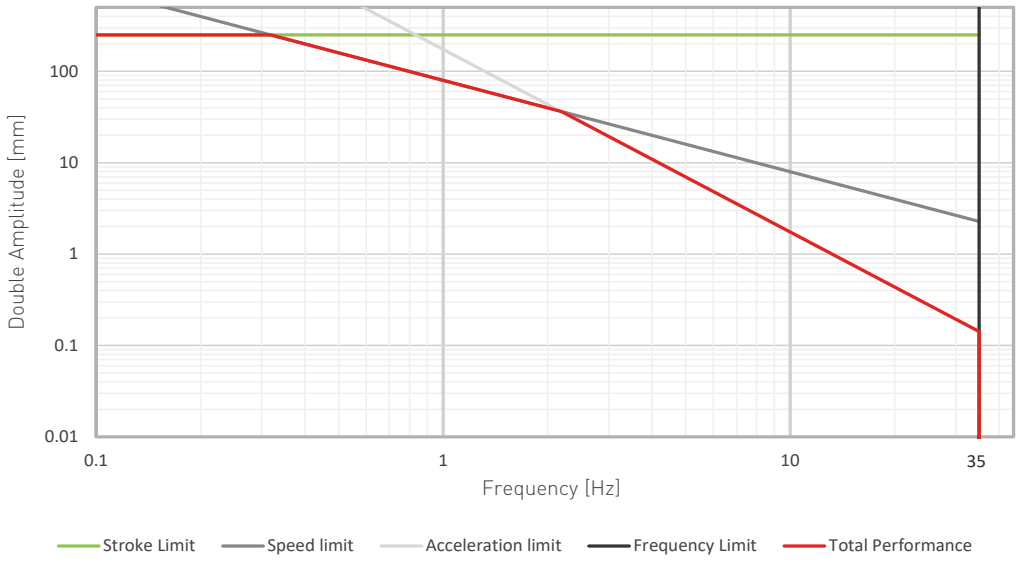
Performance chart - EA02-5/400/N-H16/1-250



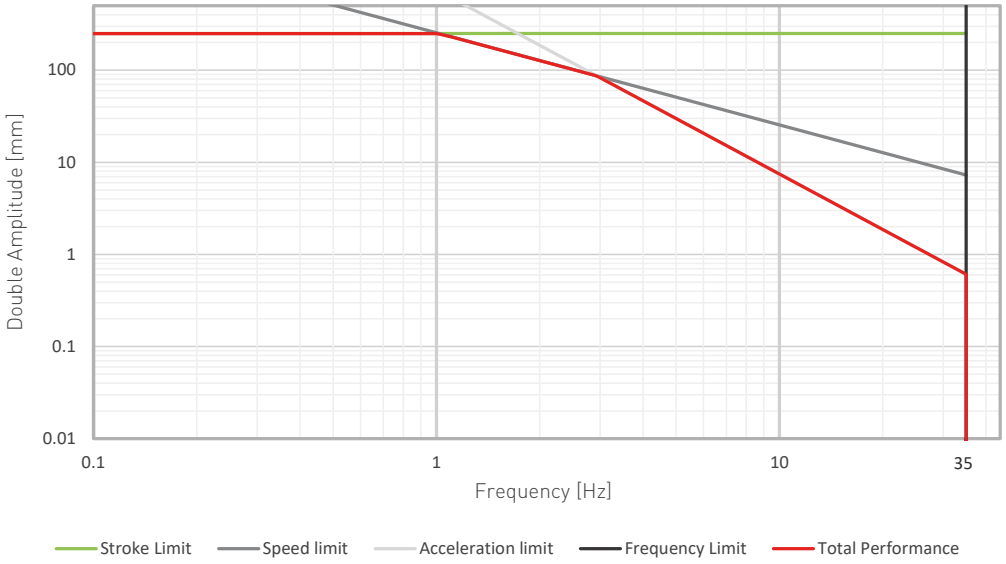
Performance chart - EA02-5/400/N-H10/1-250



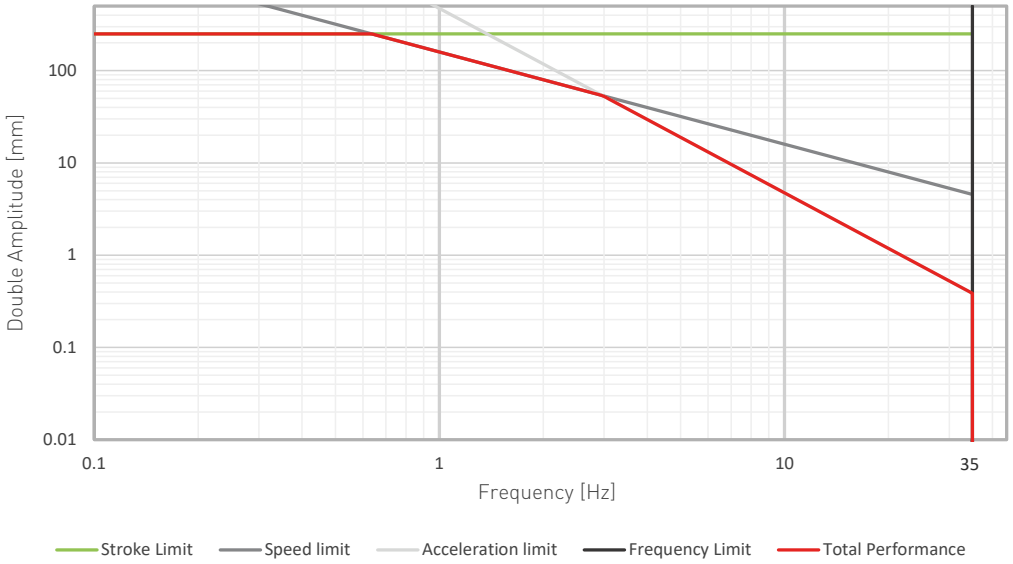
Performance chart - EA02-5/400/N-H5/1-250



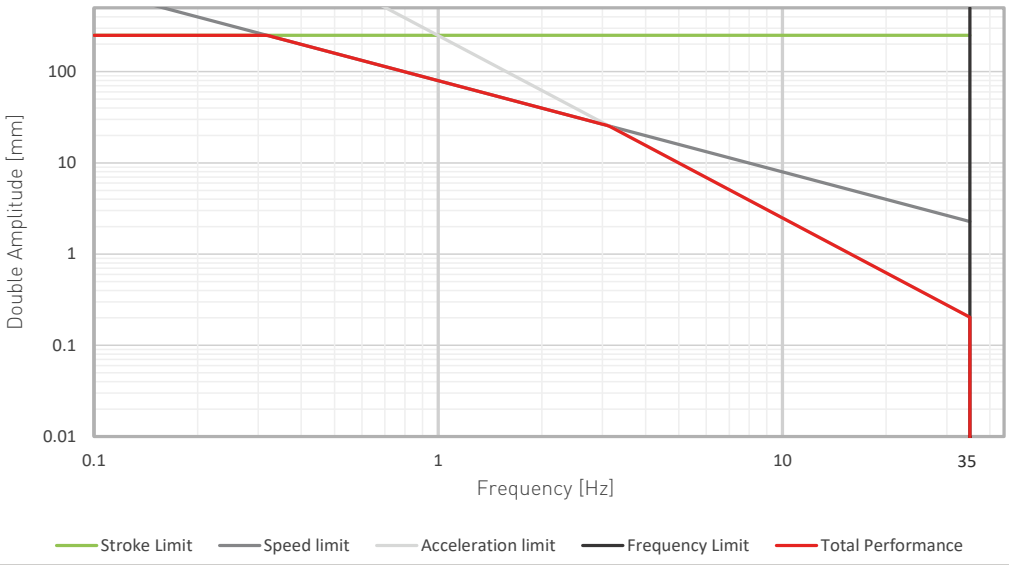
Performance chart - EA02-3/04/3A-H16/1-250



Performance chart - EA02-3/04/3A-H10/1-250

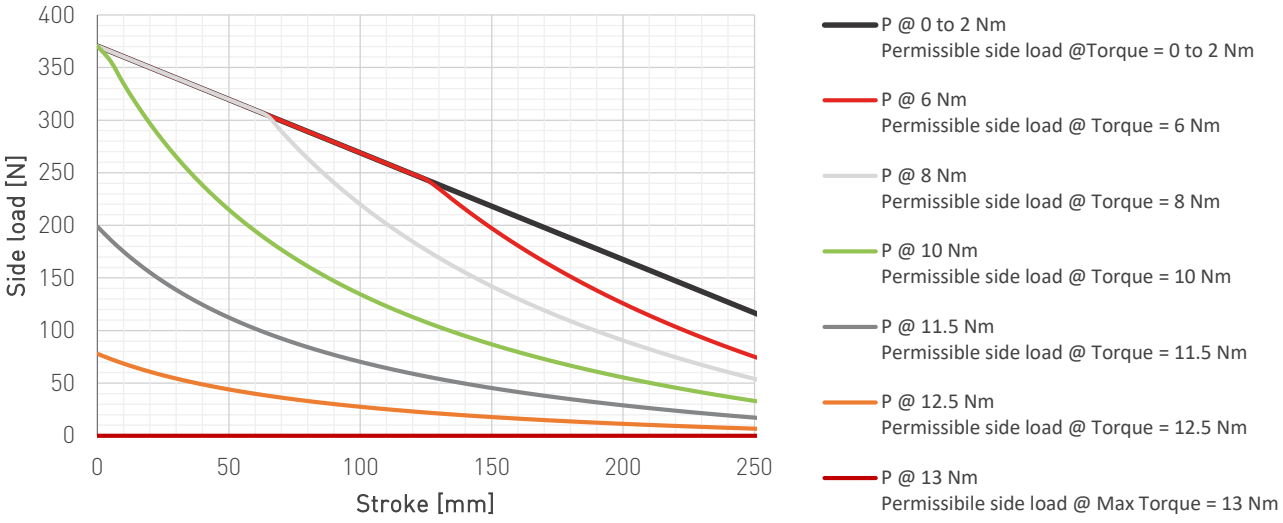


Performance chart - EA02-3/04/3A-B5/1-250

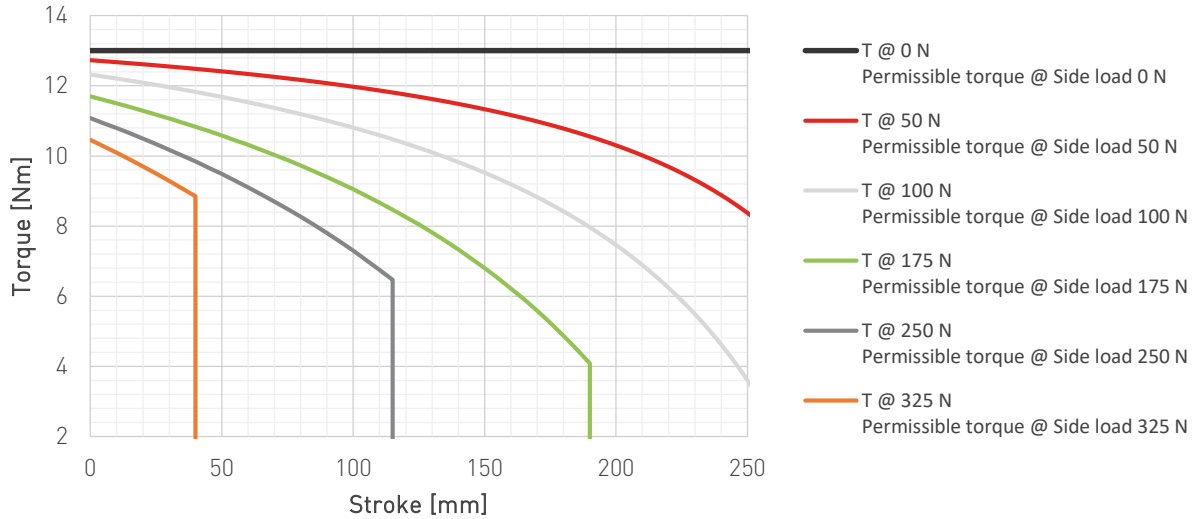


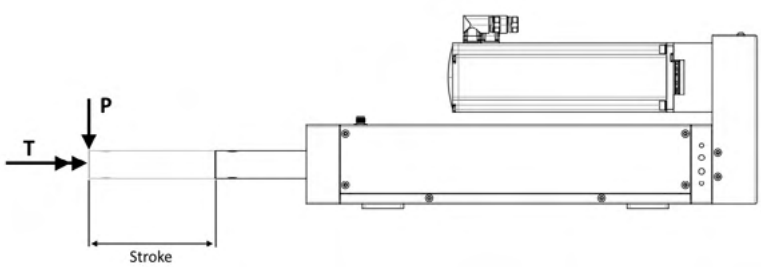
Performance Charts with Torque and Side Force / Tabelle Prestazioni con Carico Torsionale e Laterale*

Permissible side load for a given torque
EA02 - stroke 250 mm



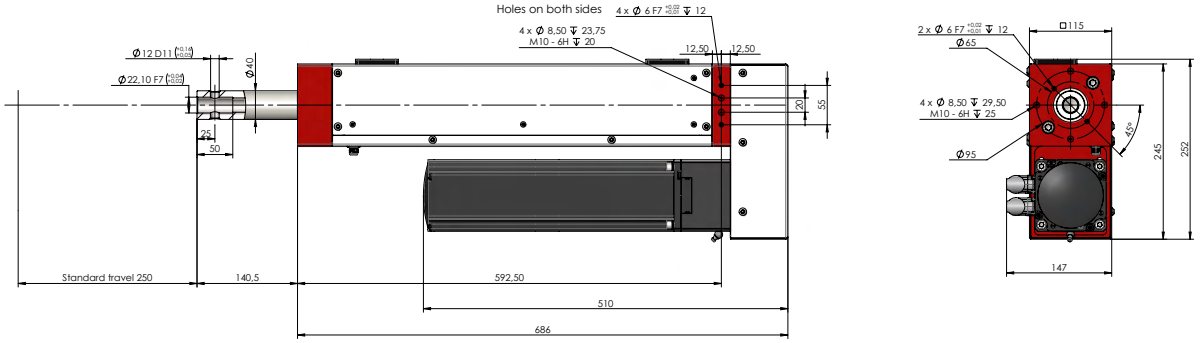
Permissible torque for a given side load
EA02 - stroke 250 mm

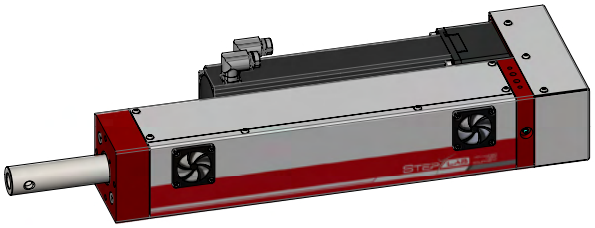




* These tables are intended for an indicative sizing. The final sizing will be provided by STEP Lab based on the request. /
Queste tabelle sono da usare per un dimensionamento indicativo. Il dimensionamento finale verrà fornito da STEP Lab in base alla richiesta.

EA05





Main Features*

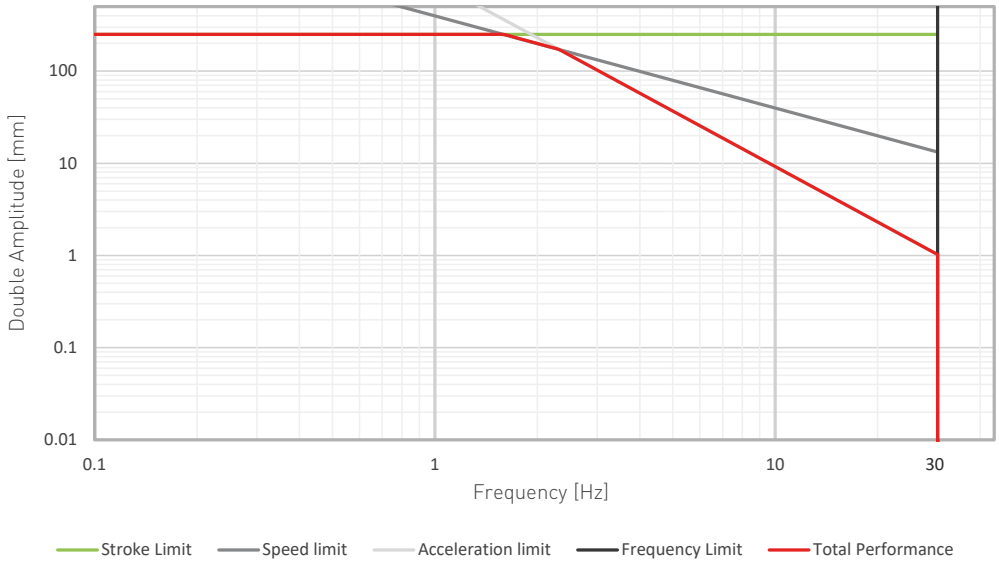
+ Maximum Dynamic Force 5.5 kN
+ Maximum Static Force 15.0 kN

Configuration and Codes / Configurazioni e Codici

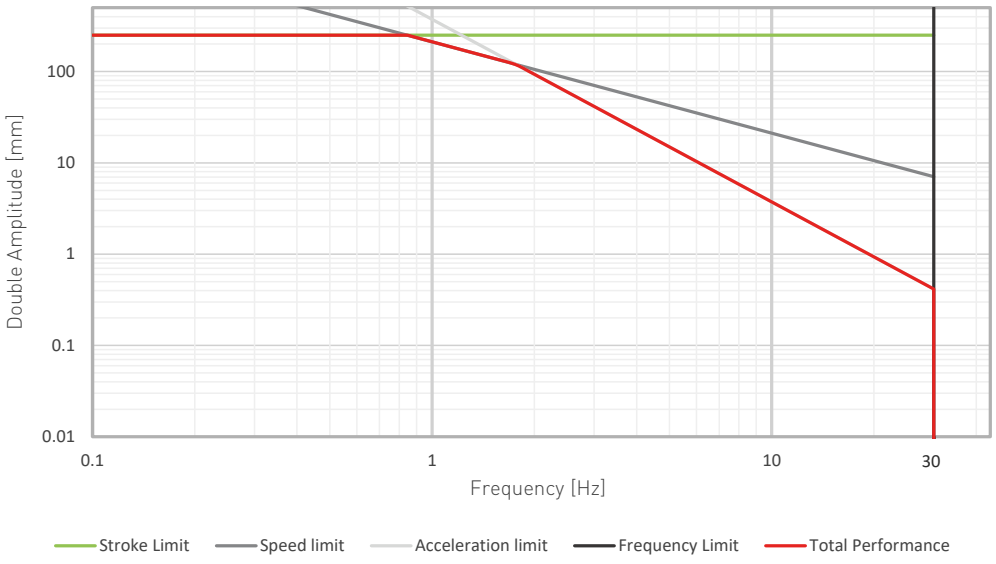
	Code	Static Force (N)	Dynamic Force (N)	Acceleration (g)	Max. Speed (mm/s)	Standard Stroke (mm)
EA05	EA05-3/04/3A-T25/1-250	800	900	1.85	1250	250
	EA05-3/04/3A-T25/1.88-250	1500	1700	0.74	665	
	EA05-3/04/3A-T10/1-250	2000	2000	0.85	500	
	EA05-3/04/3A-T5/1-250	4100	2300	0.44	250	
	EA05-3/04/3A-T5/2.29-250	9300	2300	0.1	110	
	EA05-3/04/3A-B10/1.41-250	2900	3200	0.53	355	
	EA05-3/04/3A-B10/1.88-250	3800	4300	0.31	265	
	EA05-3/04/3A-B10/2.29-250	4600	5300	0.28	220	
	EA05-5/12/6A-T25/1.42-250	3500	1800	2	880	
	EA05-5/12/6A-T5/1-250	9900	2300	0.85	250	
	EA05-5/12/6A-B25/1-250	2500	3500	2	1250	
	EA05-5/12/6A-B25/1.42-250	3500	3500	2	880	
	EA05-5/12/6A-B5/1.18-250	15000	3500	0.68	210	
	EA05-5/12/3A-B10/1.67-250	5300	5500	0.31	300	
	EA05-5/12/6A-B10/1-250	6300	5500	1.7	500	
	EA05-5/12/6A-B10/1.67-250	10400	5500	0.62	300	

* Other configurations available upon request. / *Altre configurazioni disponibili su richiesta.*

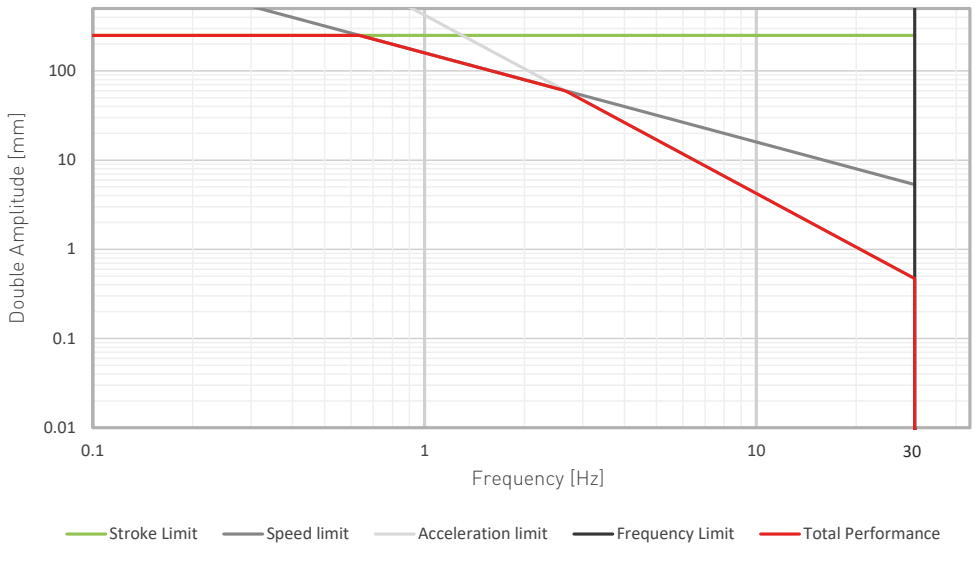
Performance chart - EA05-3/04/3A-T25/1-250



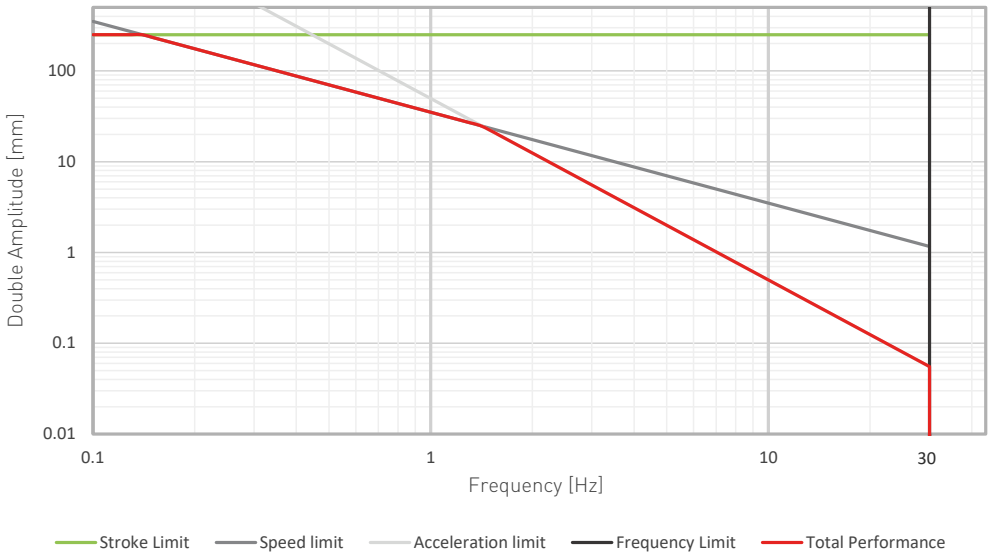
Performance chart - EA05-3/04/3A-T25/1.88-250



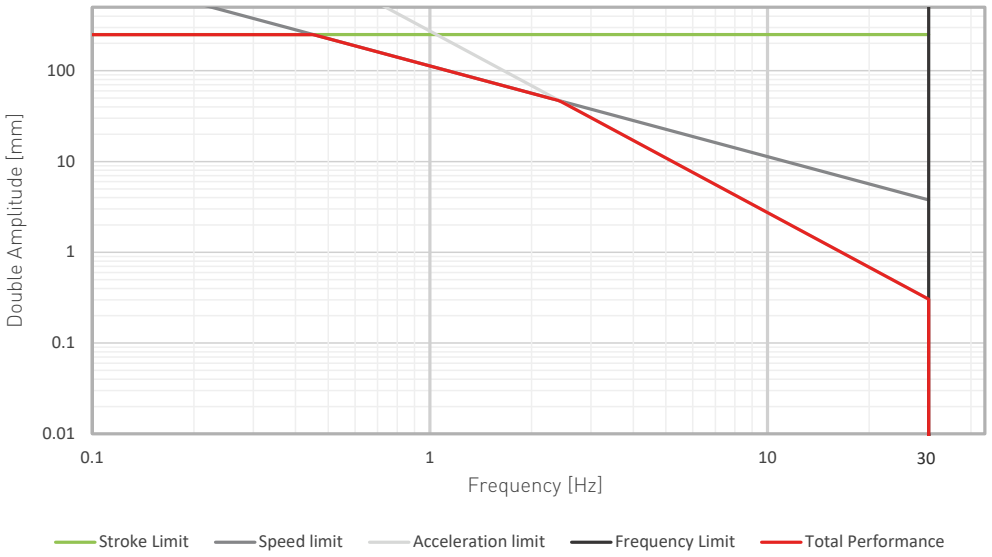
Performance chart - EA05-3/04/3A-T10/1-250



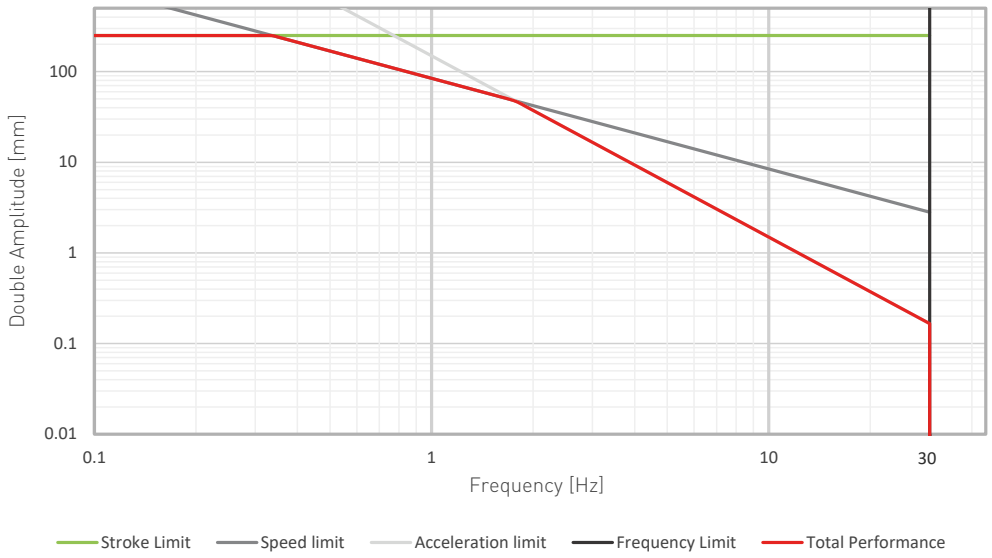
Performance chart - EA05-3/04/3A-T5/2.29-250



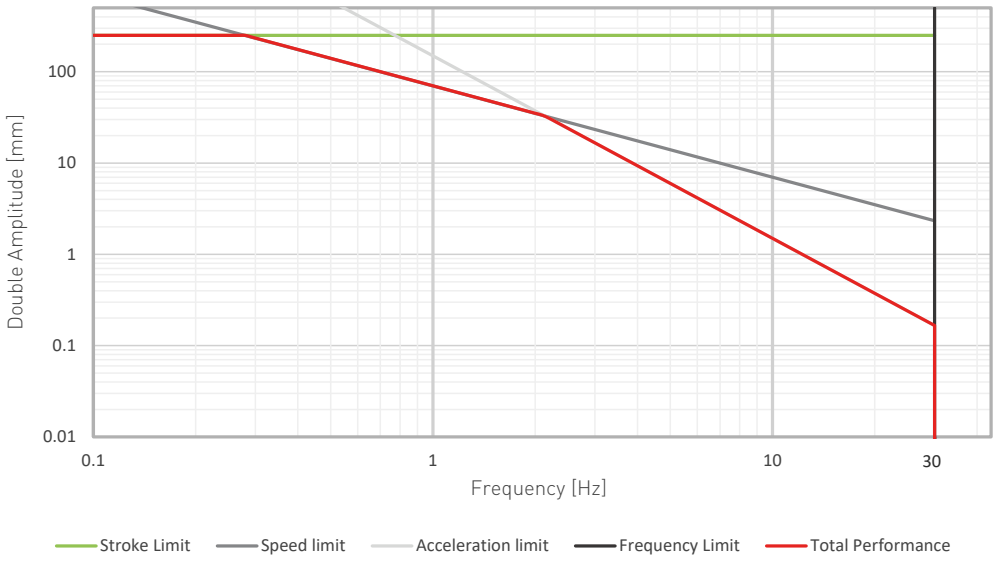
Performance chart - EA05-3/04/3A-B10/1.41-250



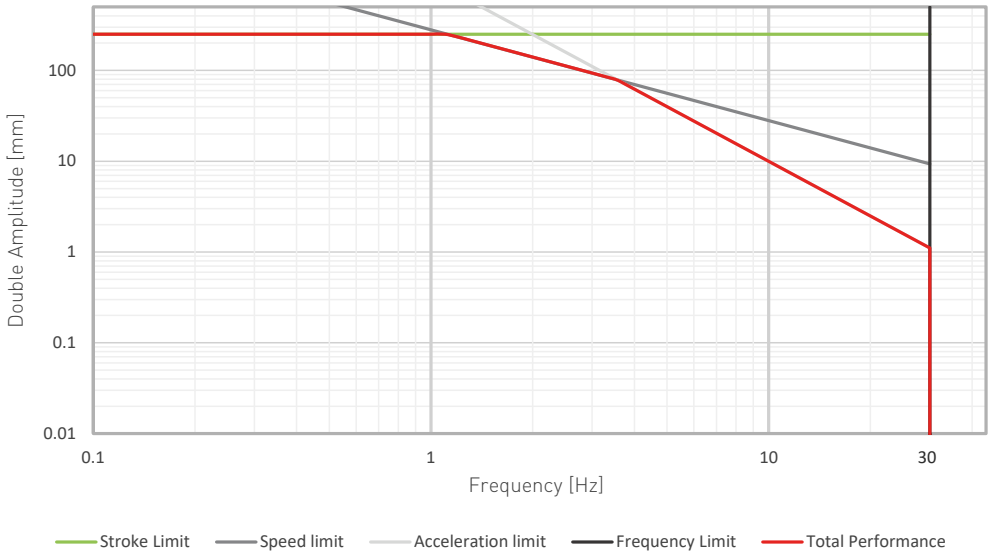
Performance chart - EA05-3/04/3A-B10/1.88-250



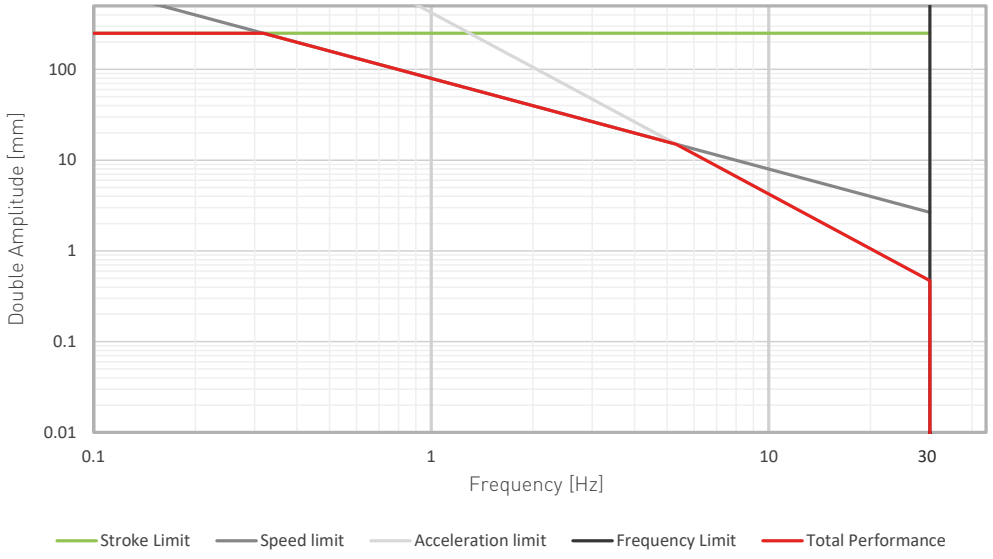
Performance chart - EA05-3/04/3A-B10/2.29-250



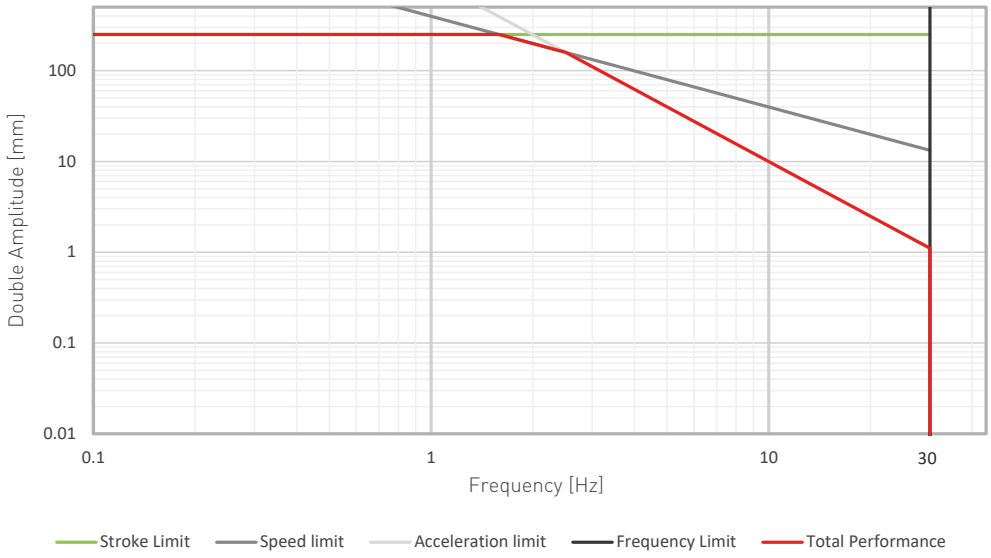
Performance chart - EA05-5/12/6A-T25/1.42-250



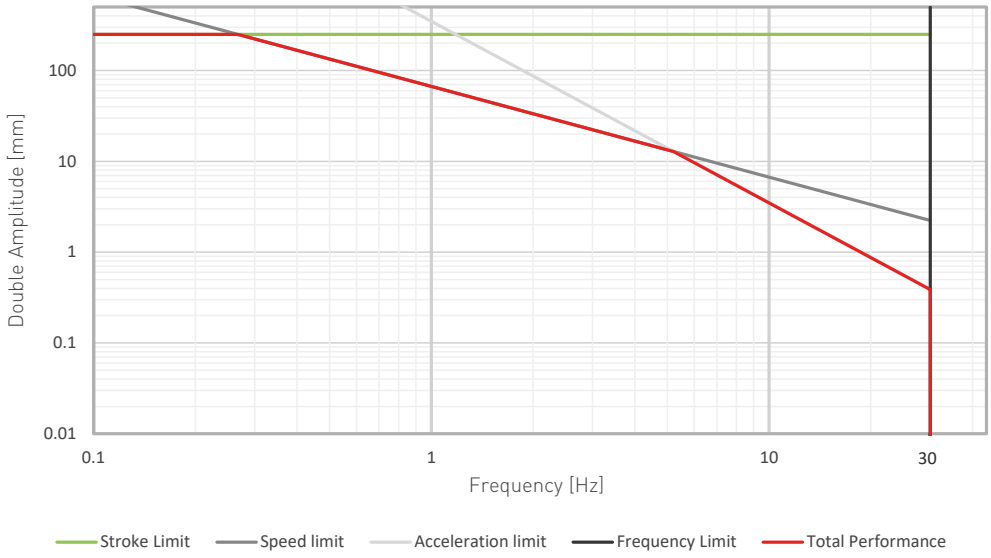
Performance chart - EA05-5/12/6A-T5/1-250



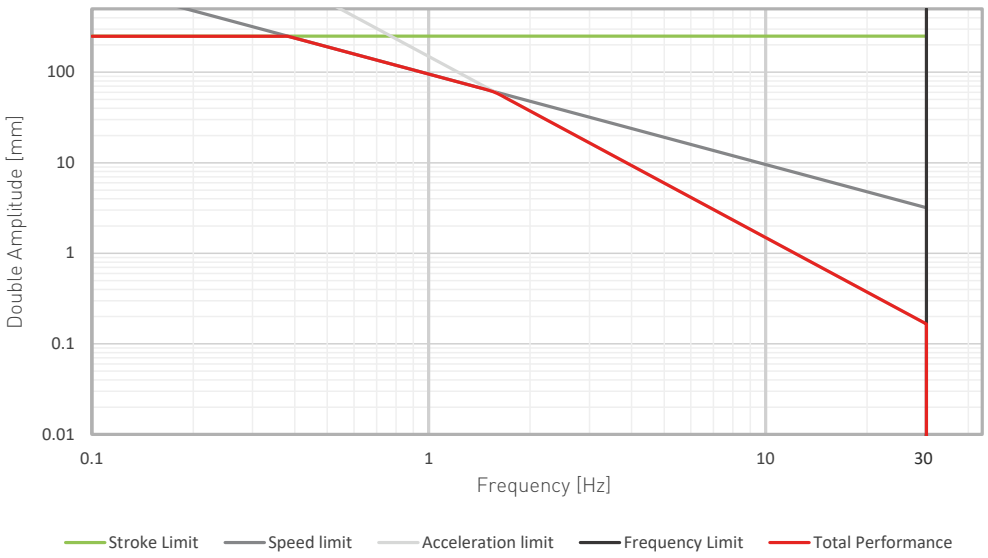
Performance chart - EA05-5/12/6A-B25/1-250



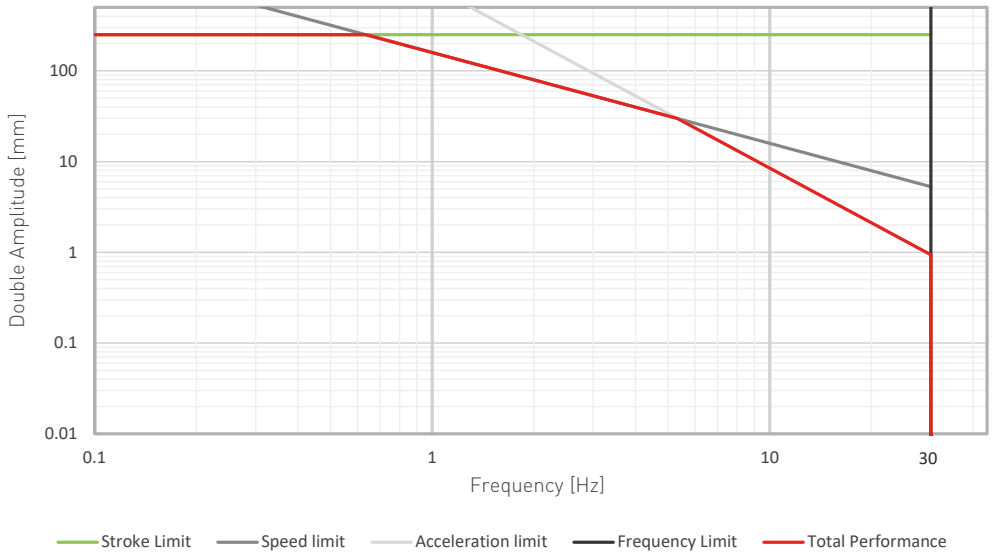
Performance chart - EA05-5/12/6A-B5/1.18-250



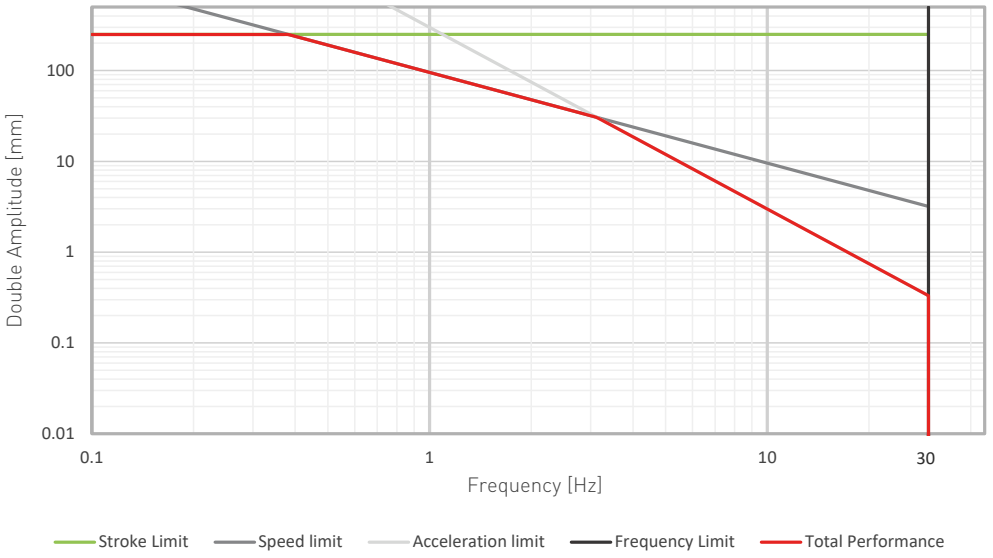
Performance chart - EA05-5/12/3A-B10/1.67-250



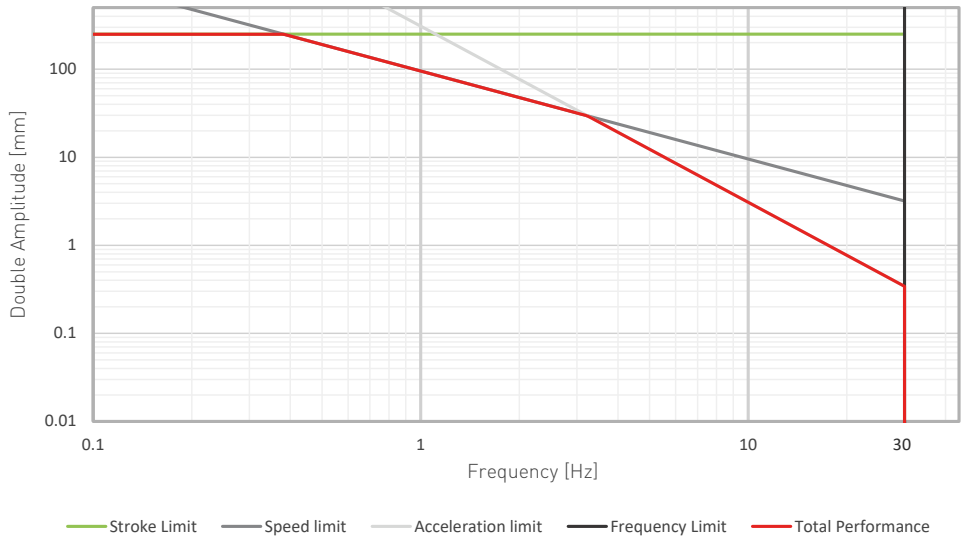
Performance chart - EA05-5/12/6A-B10/1-250



Performance chart - EA05-5/12/6A-B10/1.67-250

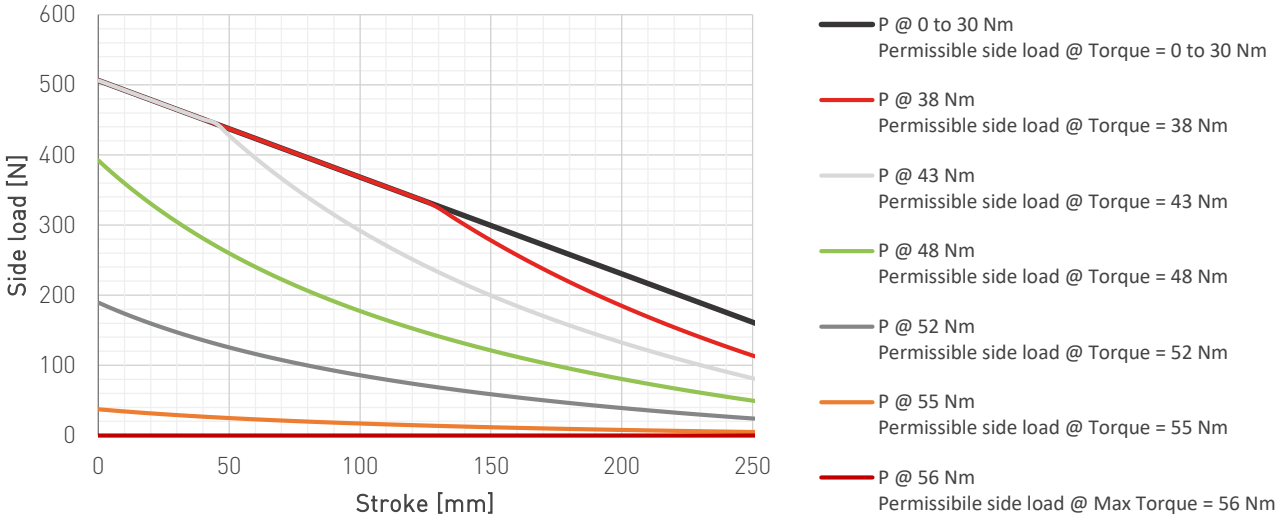


Performance chart - EA05-5/12/6A-B10/1.67-250

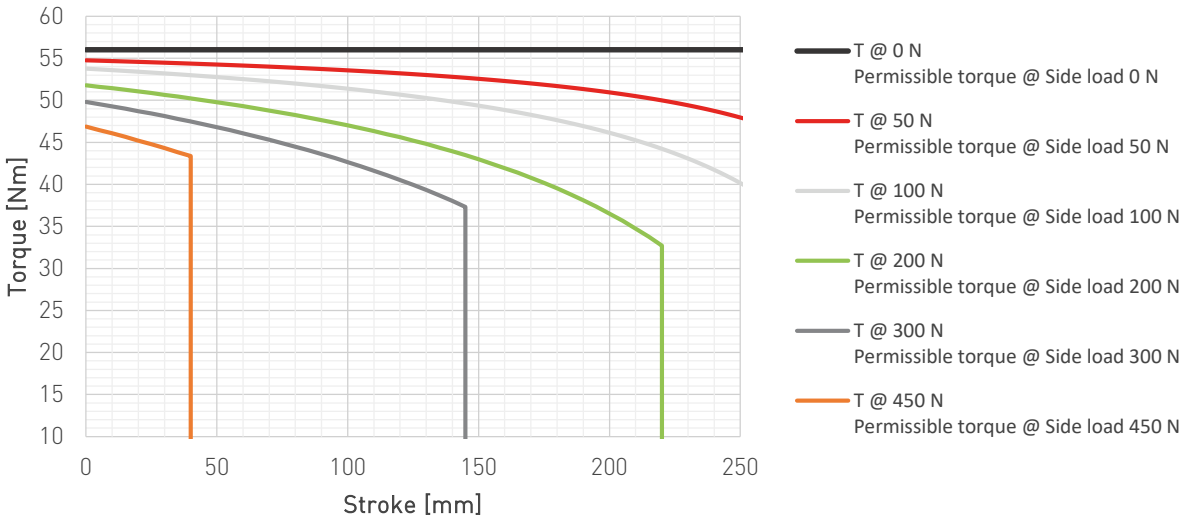


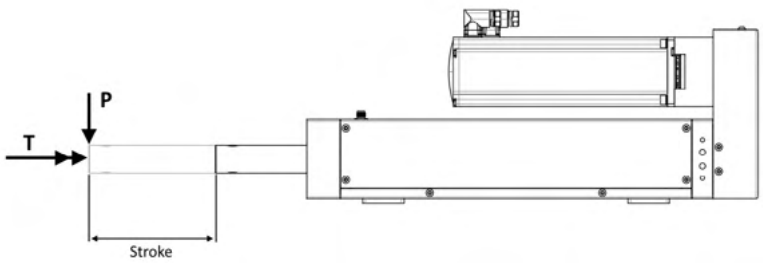
Performance Charts with Torque and Side Force / Tabelle Prestazioni con Carico Torsionale e Laterale*

Permissible side load for a given torque
EA05 - stroke 250 mm



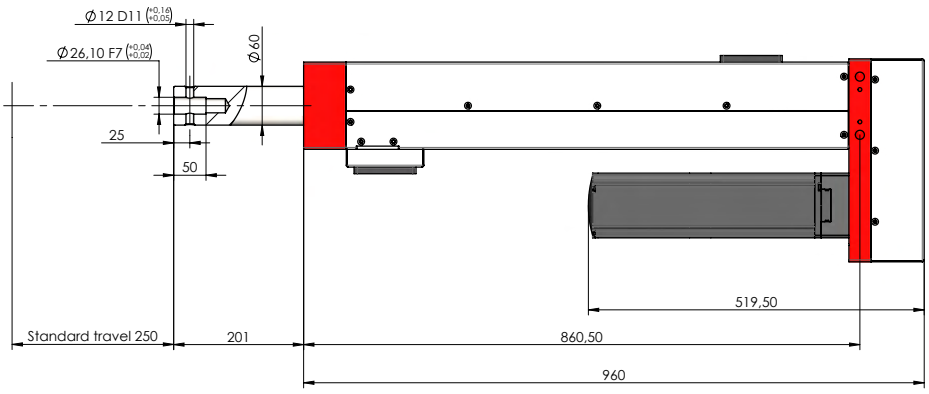
Permissible torque for a given side load
EA05 - stroke 250 mm

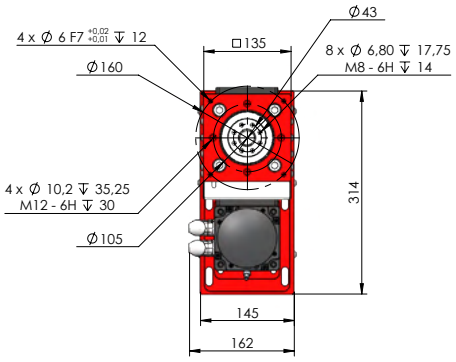


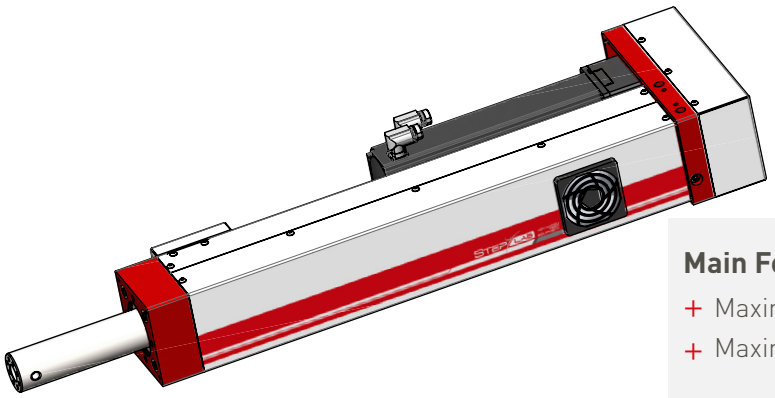


* These tables are intended for an indicative sizing. The final sizing will be provided by STEP Lab based on the request. / *Queste tabelle sono da usare per un dimensionamento indicativo. Il dimensionamento finale verrà fornito da STEP Lab in base alla richiesta.*

EA015







Main Features*

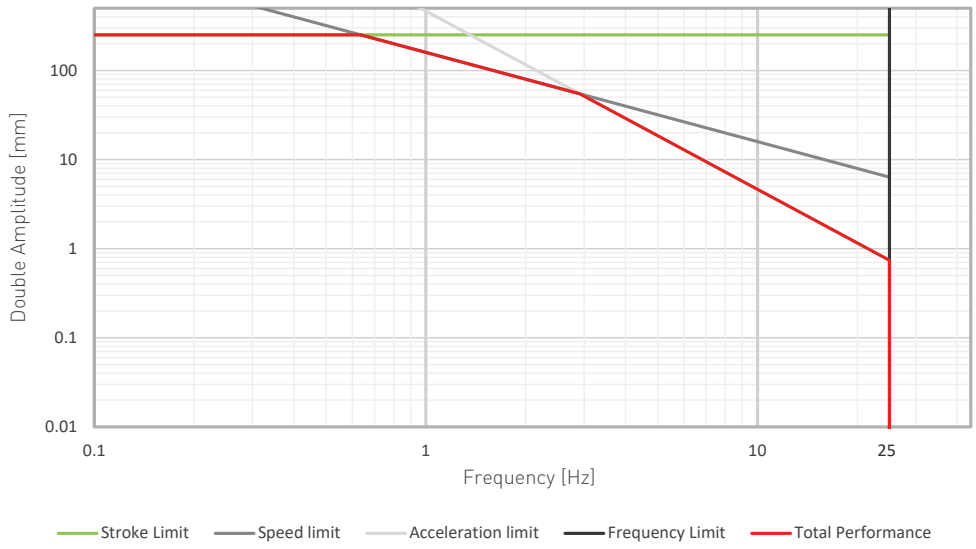
+ Maximum Dynamic Force 16.0 kN
+ Maximum Static Force 35.0 kN

Configuration and Codes / Configurazioni e Codici

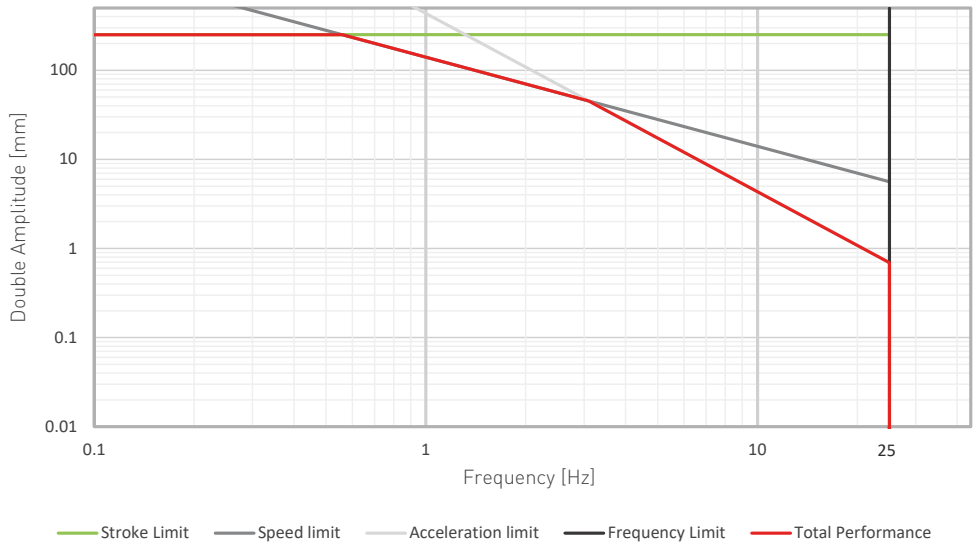
	Code	Static Force (N)	Dynamic Force (N)	Acceleration (g)	Max. Speed (mm/s)	Standard Stroke (mm)
EA015	EA015-5/12/6A-T10/1-250	6300	7100	0.93	500	250
	EA015-5/12/6A-B16/1.82-250	7100	10000	0.87	440	
	EA015-5/12/12A-B16/1.82-250	9200	11100	0.97	440	
	EA015-5/12/12A-B16/2.18-250	11100	13300	0.73	365	
	EA015-5/12/12A-B12/2-250	13500	16000	0.47	300	
	EA015-7/40/12A-T10/2-250	30000	7100	0.96	125	
	EA015-7/40/12A-B16/1-250	12700	16000	2	535	
	EA015-7/40/12A-B16/2-250	25500	16000	1.5	200	
	EA015-7/40/12A-B12/2-250	34000	16000	1.15	200	

* Other configurations available upon request. / *Altre configurazioni disponibili su richiesta.*

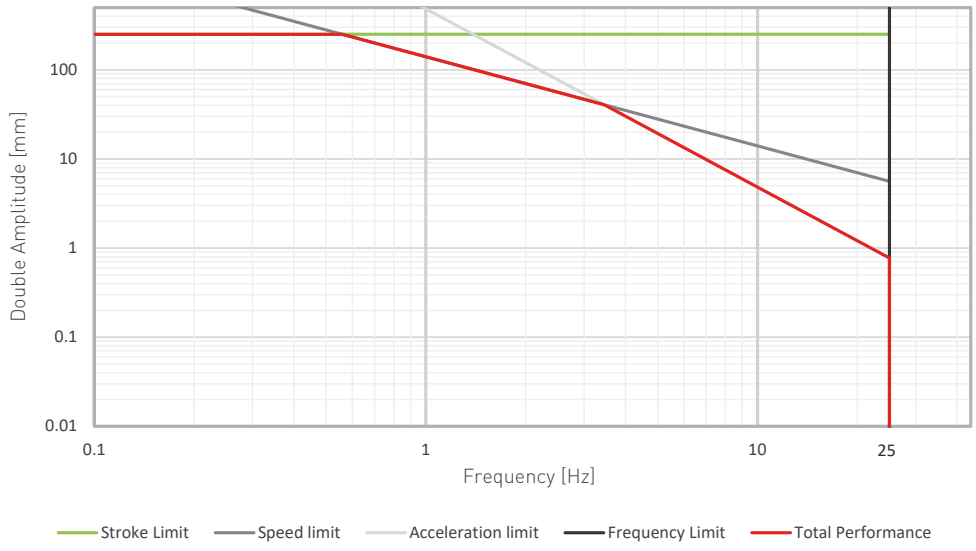
Performance chart - EA015-5/12/6A-T10/1-250



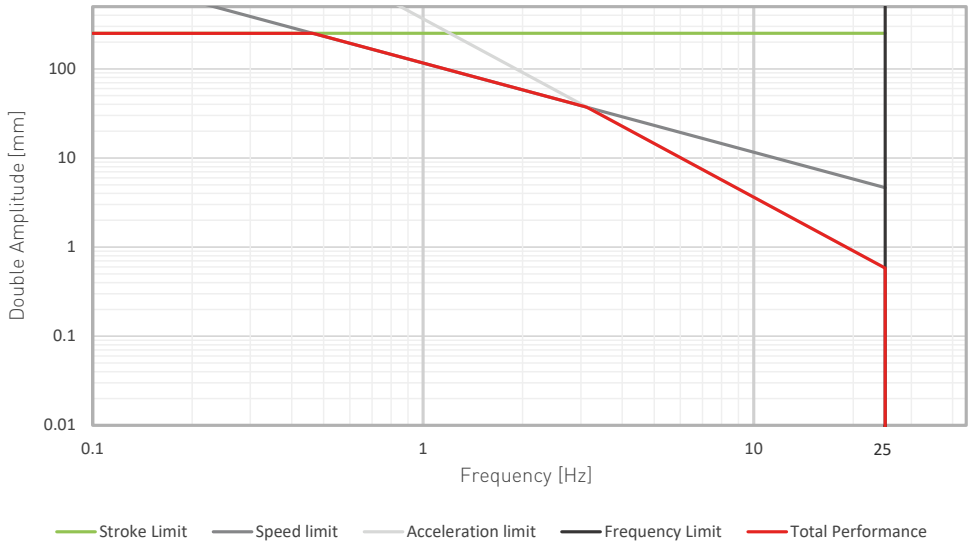
Performance chart - EA015-5/12/6A-B16/1.82-250



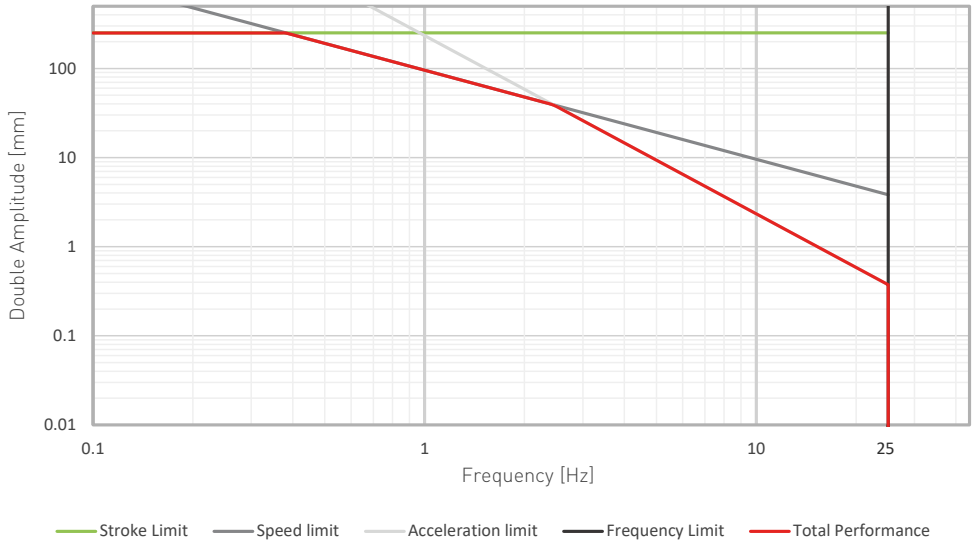
Performance chart - EA015-5/12/12A-B16/1.82-250



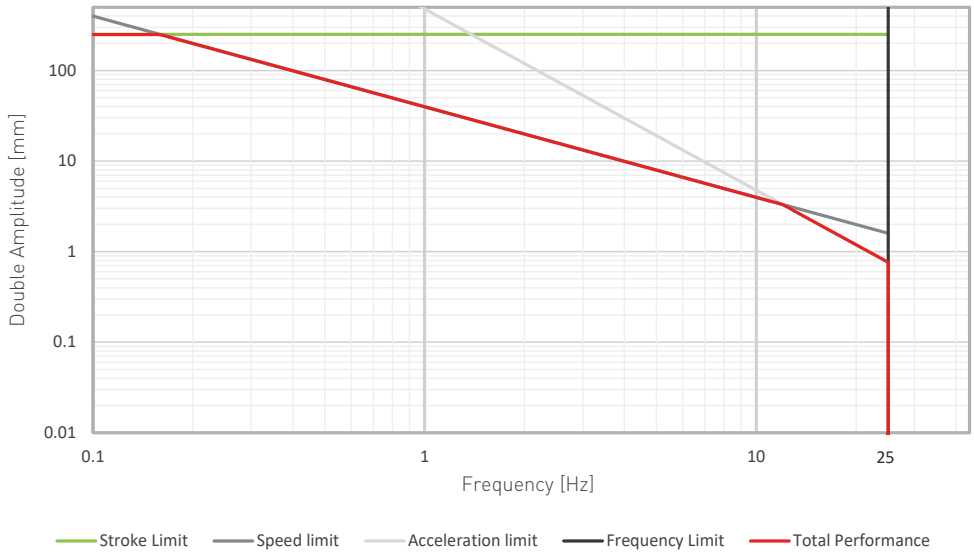
Performance chart - EA015-5/12/12A-B16/2.18-250



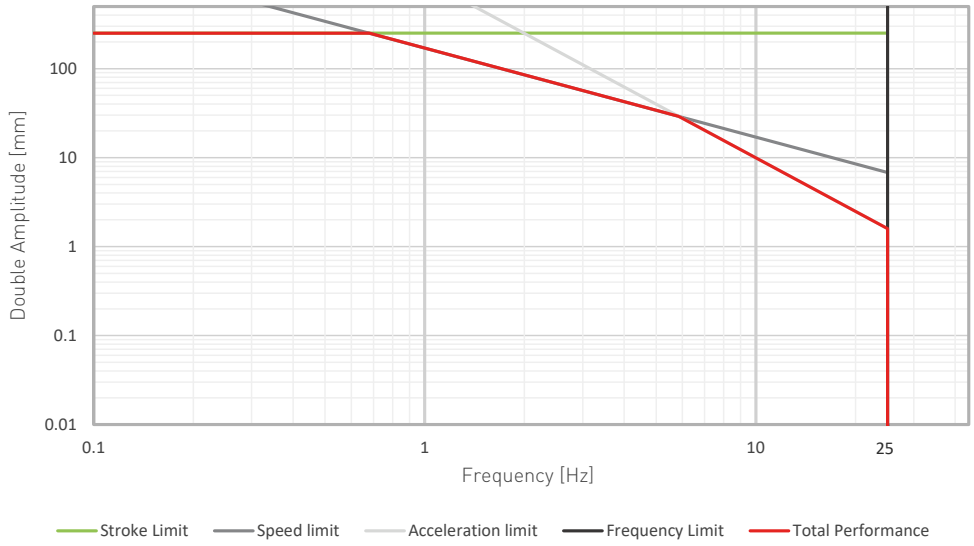
Performance chart - EA015-5/12/12A-B12/2-250



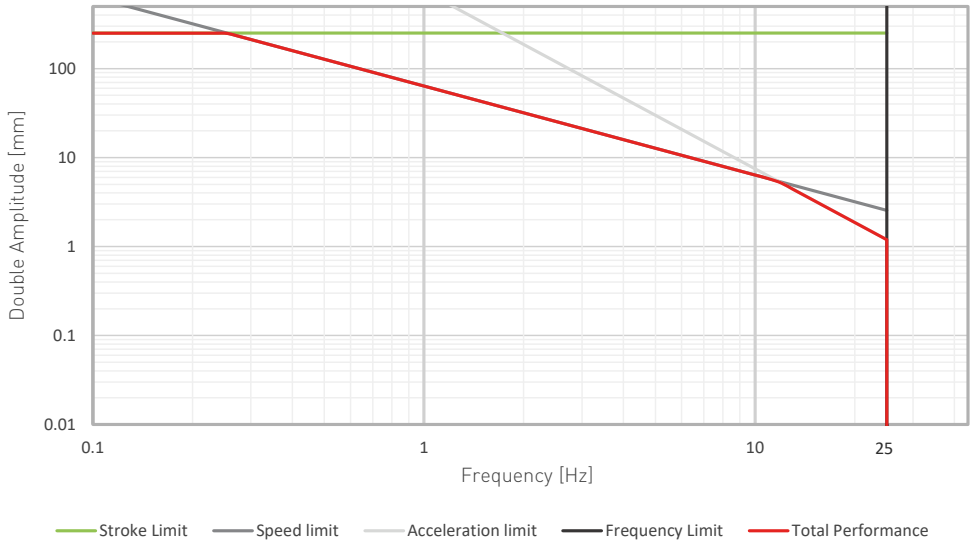
Performance chart - EA015-7/40/12A-T10/2-250



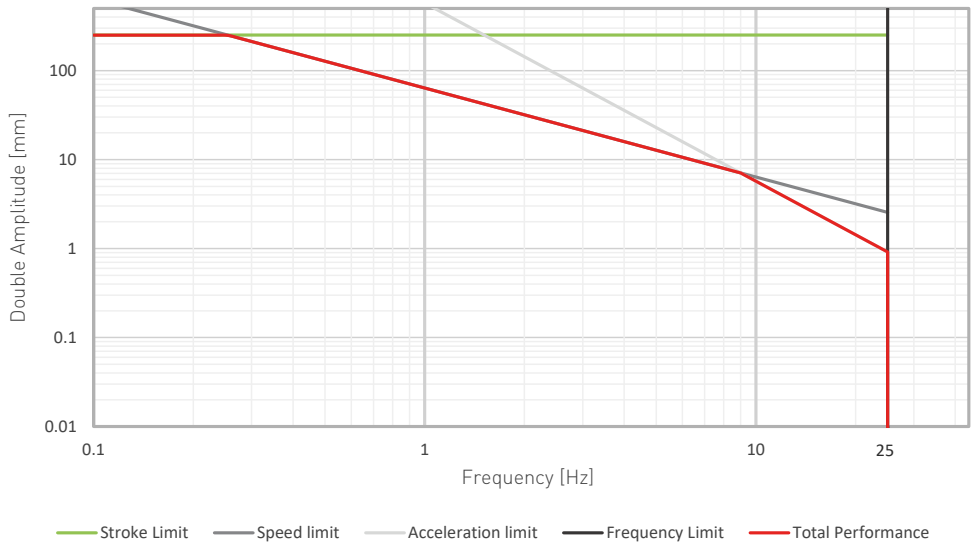
Performance chart - EA015-7/40/12A-B16/1-250



Performance chart - EA015-7/40/12A-B16/2-250

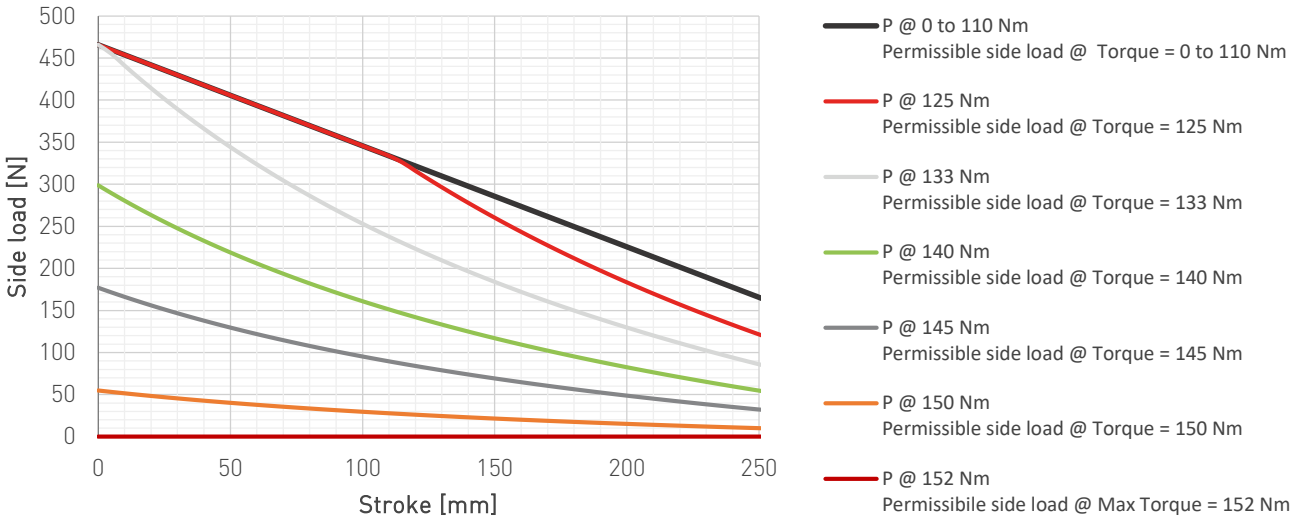


Performance chart - EA015-7/40/12A-B12/2-250

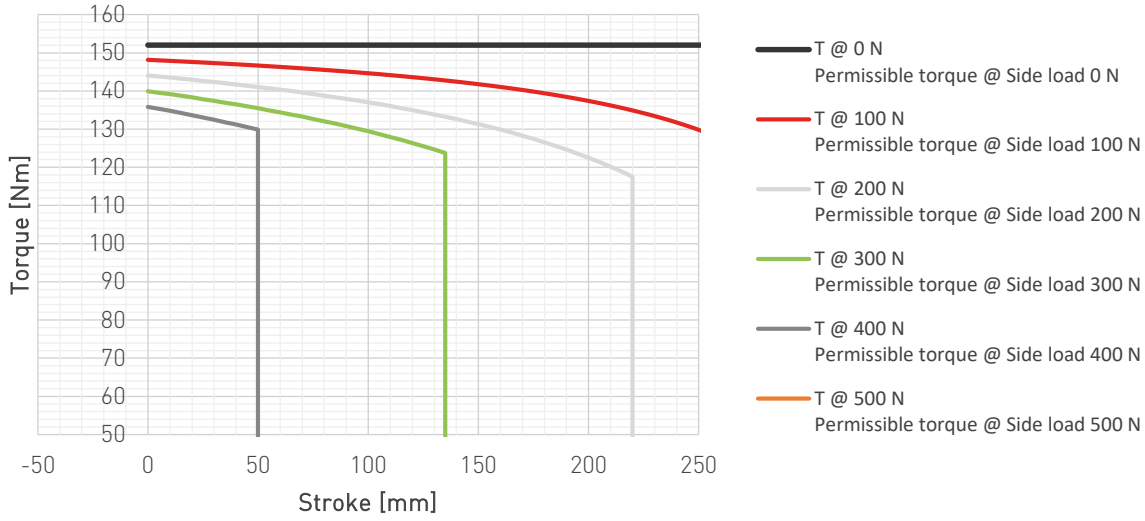


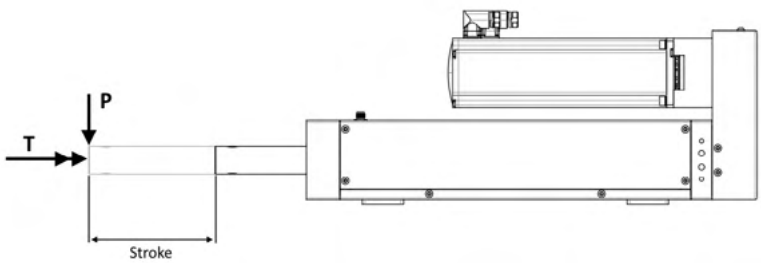
Performance Charts with Torque and Side Force / Tabelle Prestazioni con Carico Torsionale e Laterale*

Permissible side load for a given torque
EA015 - stroke 250 mm



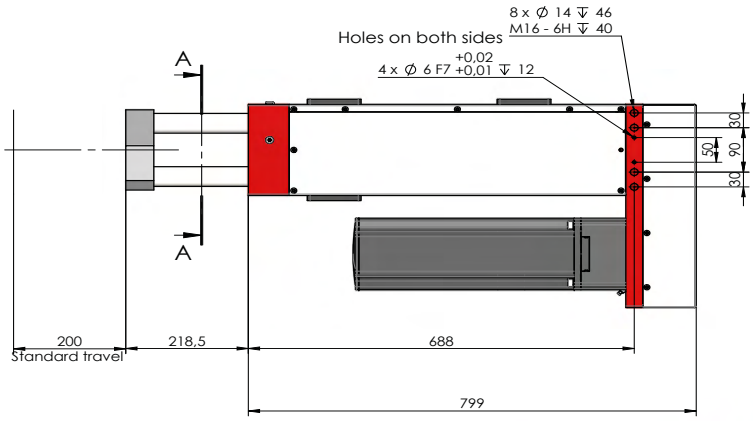
Permissible torque for a given side load
EA015 - stroke 250 mm

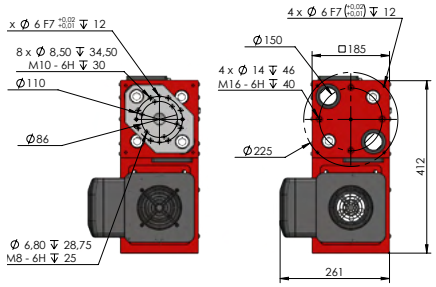




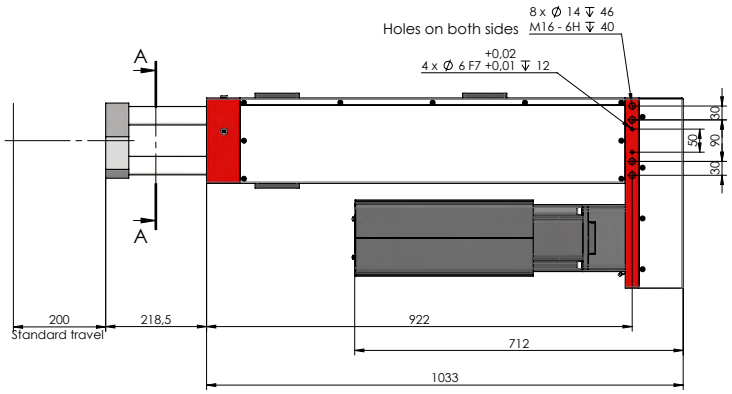
* These tables are intended for an indicative sizing. The final sizing will be provided by STEP Lab based on the request. /
Queste tabelle sono da usare per un dimensionamento indicativo. Il dimensionamento finale verrà fornito da STEP Lab in base alla richiesta.

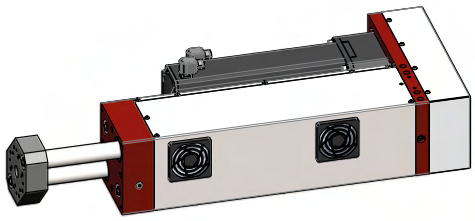
EA050





SEZIONE A-A





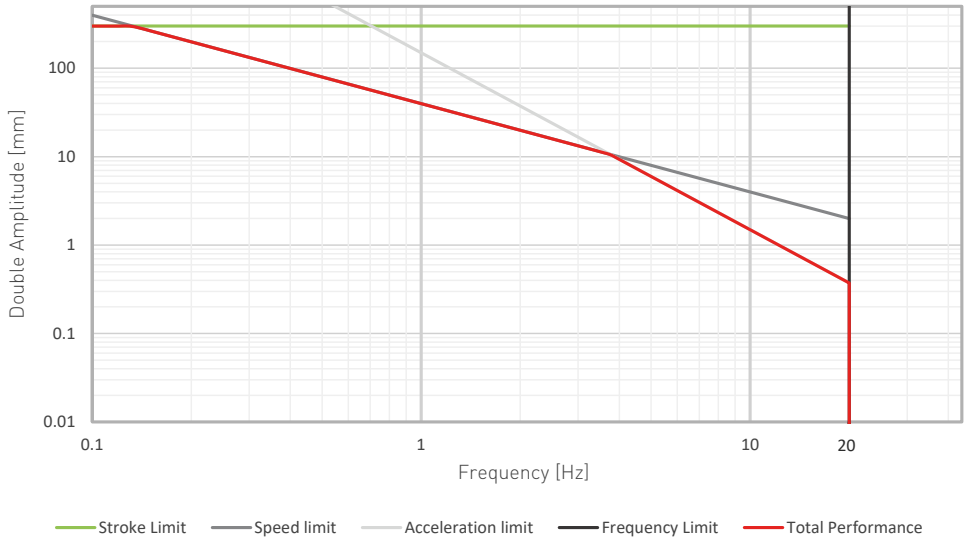
Main Features

- Maximum Dynamic load 50.0 kN
- Maximum Static Load 80.0 kN

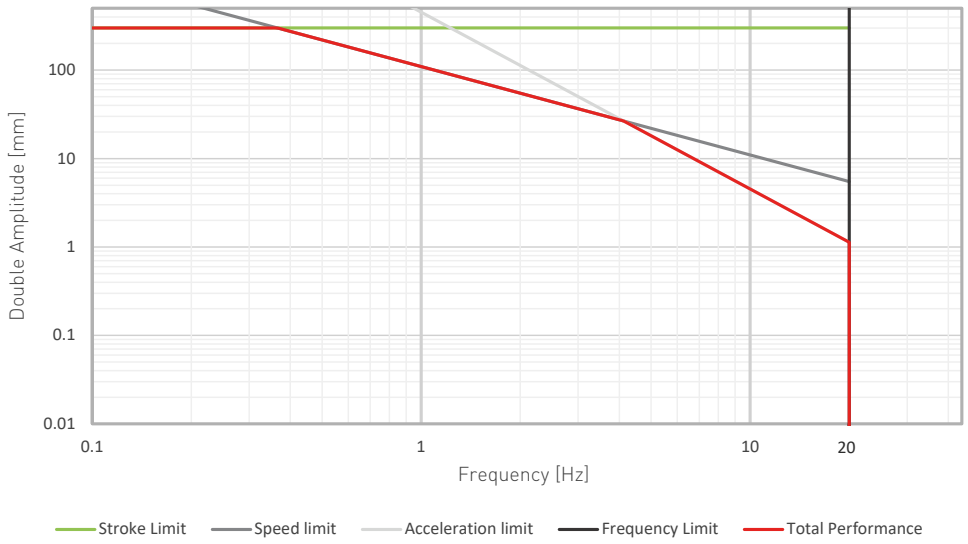
Configuration and Codes

	Codice Asse	Static Load (N)	Dynamic Load (N)	Acceleration (g)	Max. Speed (mm/s)	Standard Stroke (mm)
EA050	EA050-7/40/12A-T10/2,67-200	38500	9100	0.3	125	200
	EA050-7/40/12A-N16/1,54-200	19600	25700	0.91	345	
	EA050-7/40/12A-N16/1,85-200	23500	30800	0.74	290	
	EA050-7/40/12A-B20/1,54-200	15700	19900	1.2	435	
	EA050-7/40/12A-B20/1,69-200	17200	19900	1.05	395	
	EA050-7F/40/24A-B10/2,29-200	65000	15300	0.47	145	
	EA050-7F/40/24A-B20/1,41-200	24600	19900	1.5	470	
	EA050-7F/40/24A-N16/1,06-200	23100	30400	1.5	505	
	EA050-7F/40/24A-N16/1,41-200	30800	40500	1.15	380	
	EA050-7F/40/24A-N16/1,47-200	32100	42300	0.75	360	
	EA050-7F/40/24A-N16/1,78-200	38800	50000	0.69	300	
	EA050-7F/40/24A-N16/4-200	80000	50000	0.22	135	

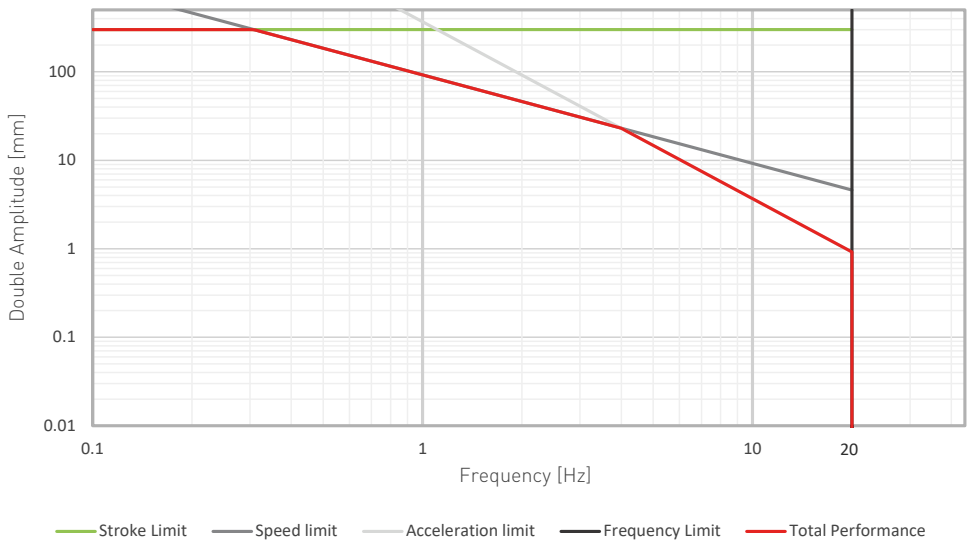
Performance chart - EA050-7/40/12A-T10/2,67-200



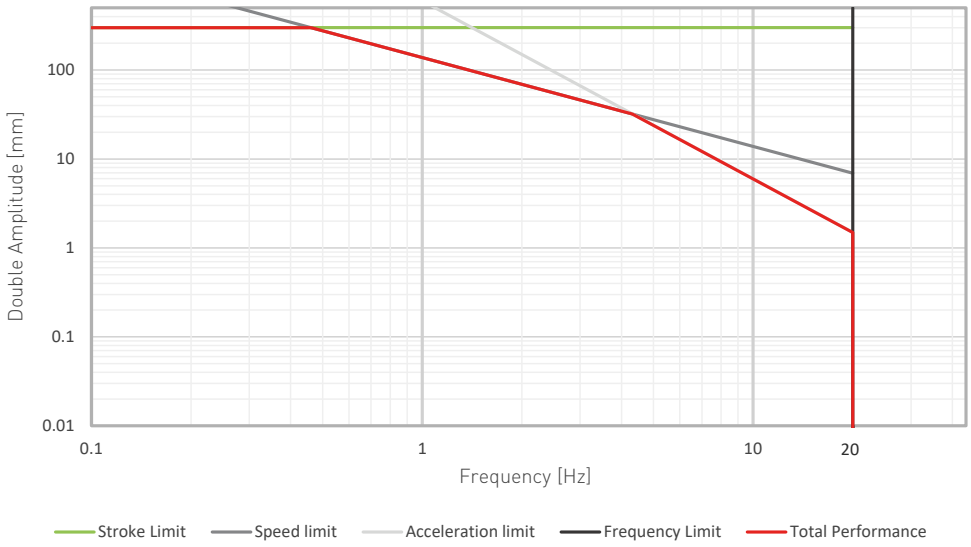
Performance chart - EA050-7/40/12A-N16/1,54-200



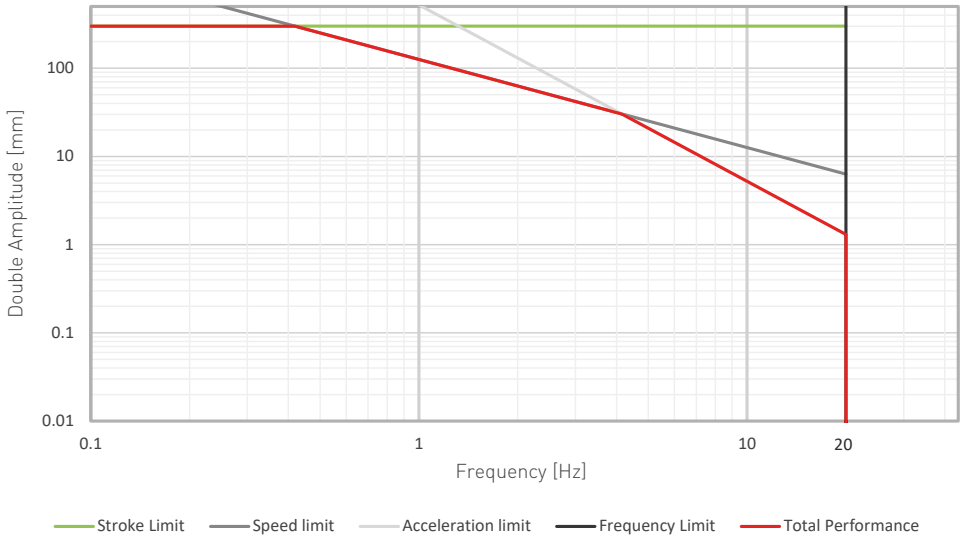
Performance chart - EA050-7/40/12A-N16/1,85-200



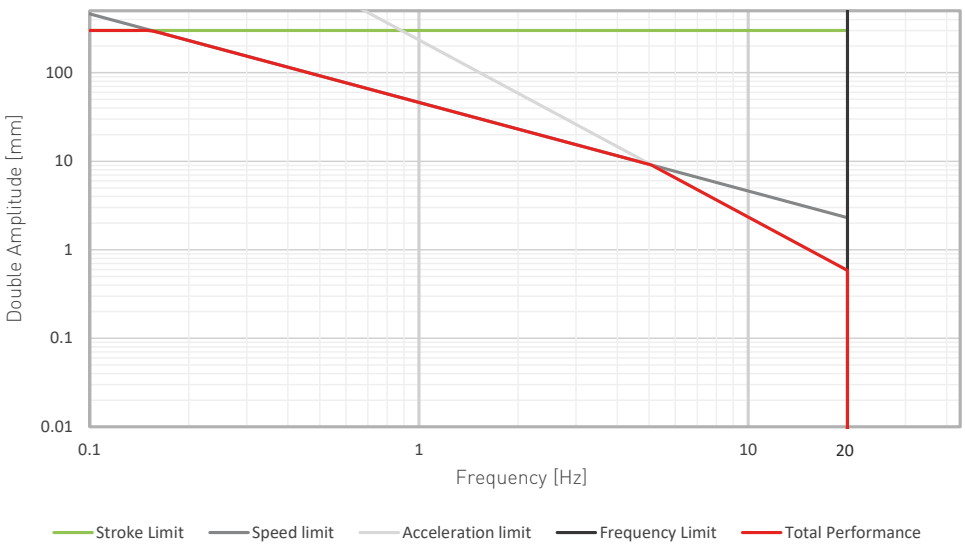
Performance chart - EA050-7/40/12A-B20/1,54-200



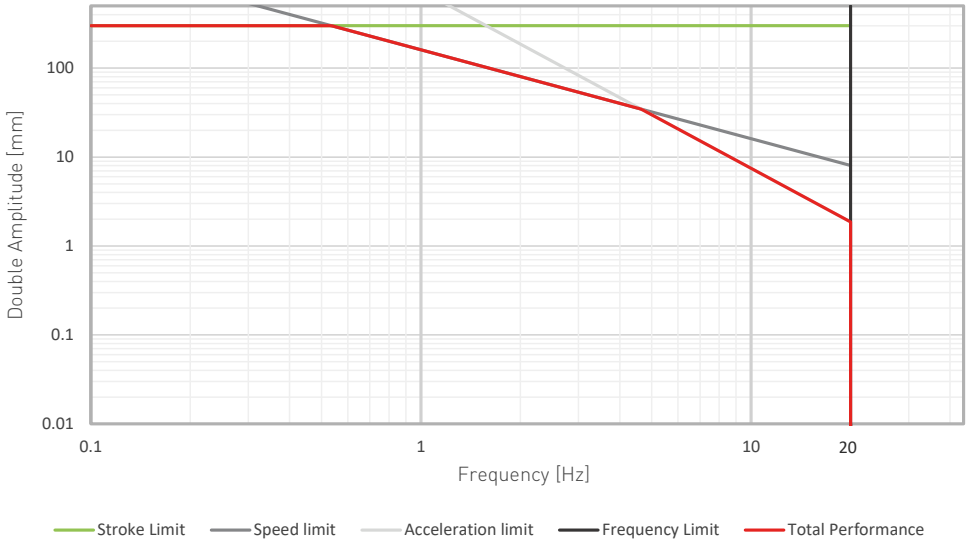
Performance chart - EA050-7/40/12A-B20/1,69-200



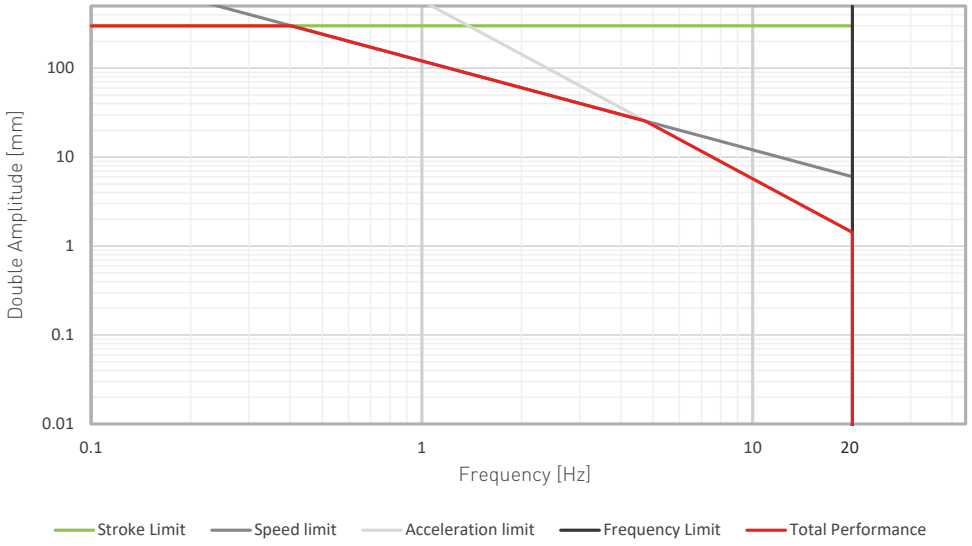
Performance chart - EA050-7F/40/24A-B10/2,29-200



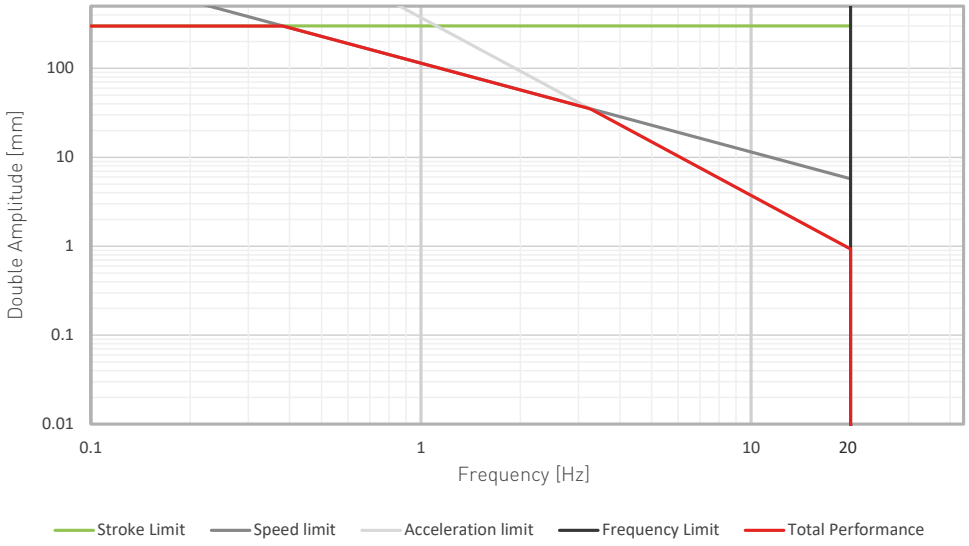
Performance chart - EA050-7F/40/24A-N16/1,06-200



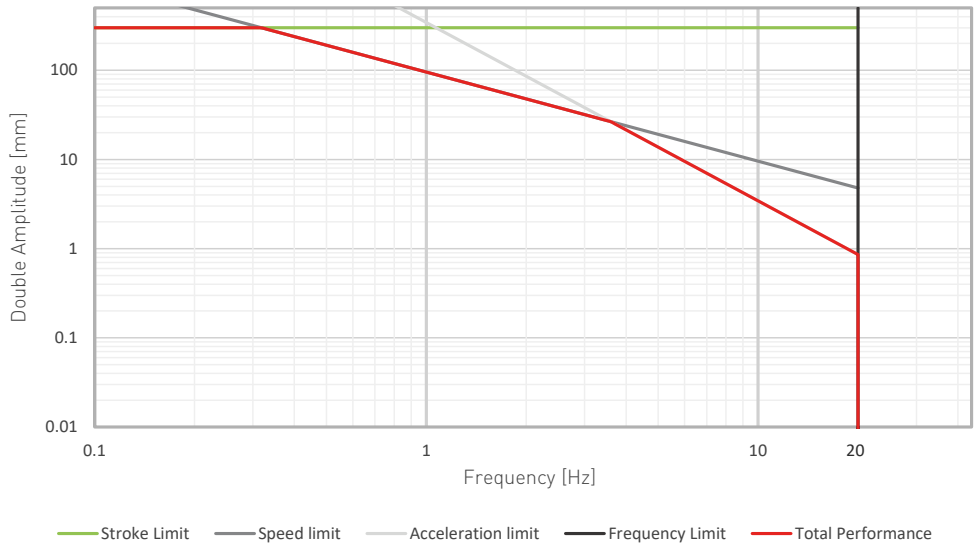
Performance chart - EA050-7F/40/24A-N16/1,41-200



Performance chart - EA050-7F/40/24A-N16/1,47-200

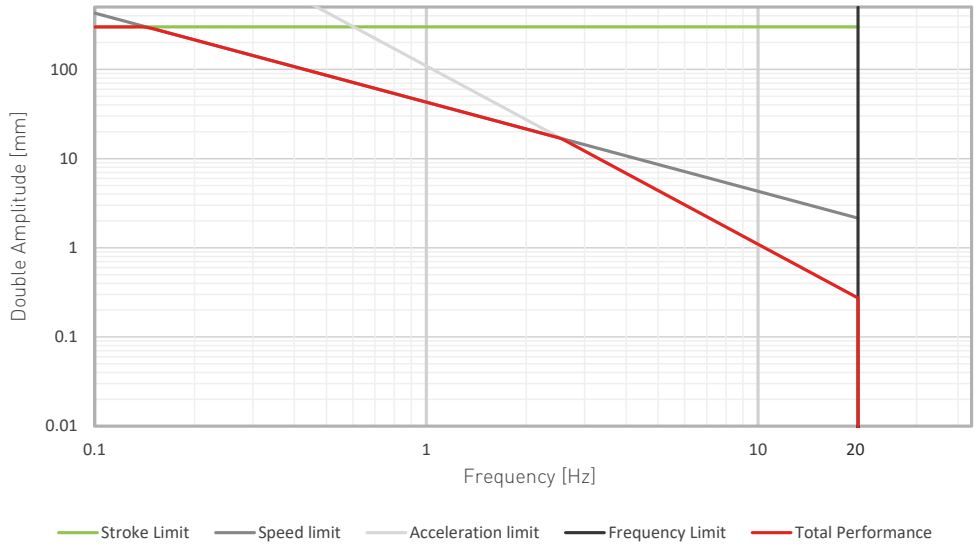


Performance chart - EA050-7F/40/24A-N16/1,78-200



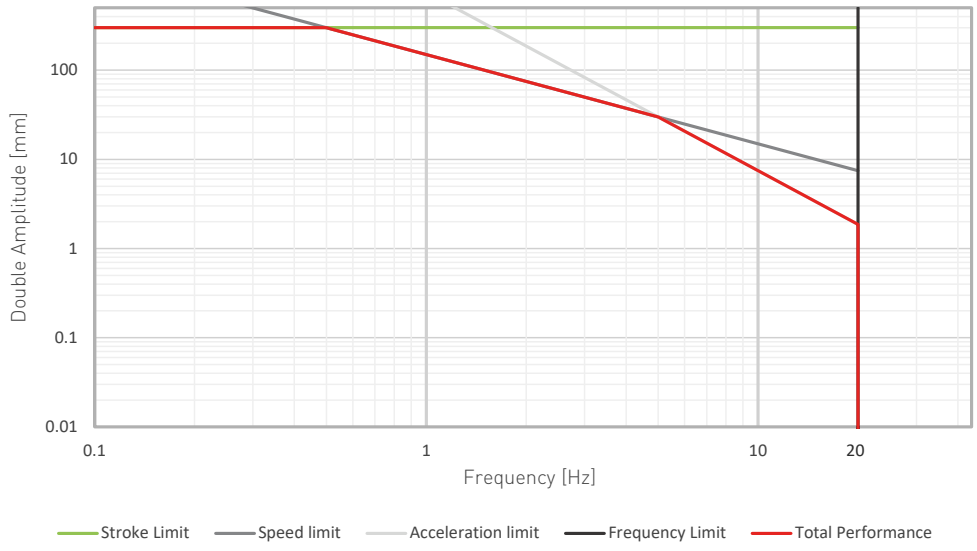
Stroke Limit — Speed limit — Acceleration limit — Frequency Limit — Total Performance

Performance chart - EA050-7F/40/24A-N16/4-200



Stroke Limit — Speed limit — Acceleration limit — Frequency Limit — Total Performance

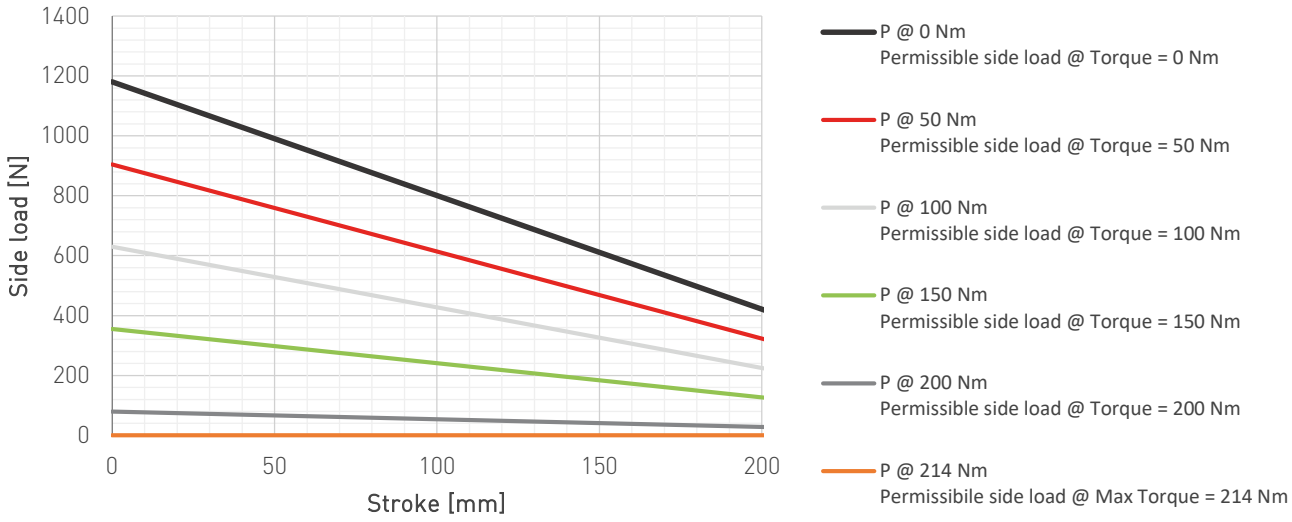
Performance chart - EA050-7F/40/24A-B20/1,41-200



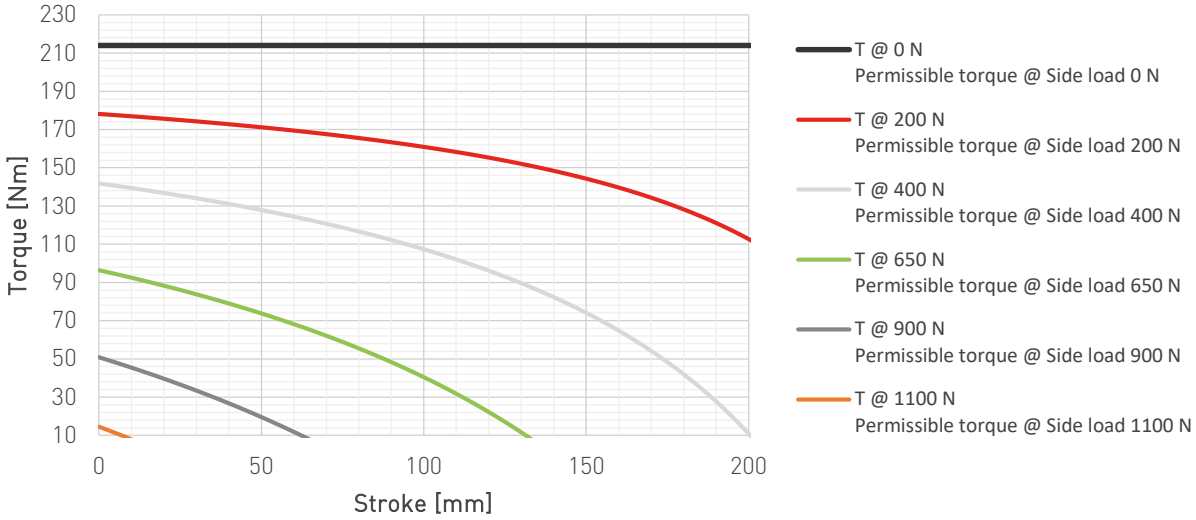
Stroke Limit — Speed limit — Acceleration limit — Frequency Limit — Total Performance

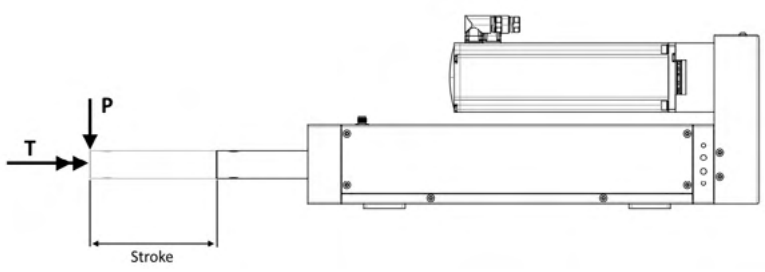
Performance Charts with Torque and Side Force / Tabelle Prestazioni con Carico Torsionale e Laterale*

Permissible side load for a given torque
EA050 - stroke 200 mm



Permissible torque for a given side load
EA050 - stroke 200 mm





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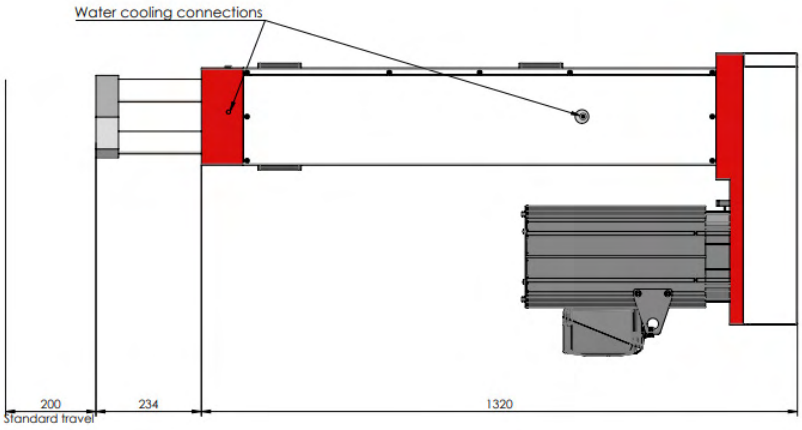
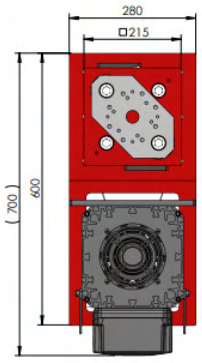
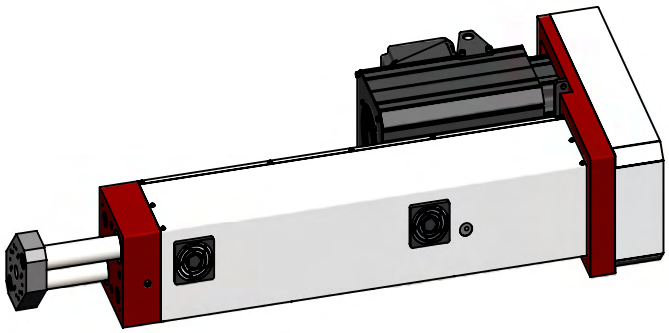
EA100







Main Features*

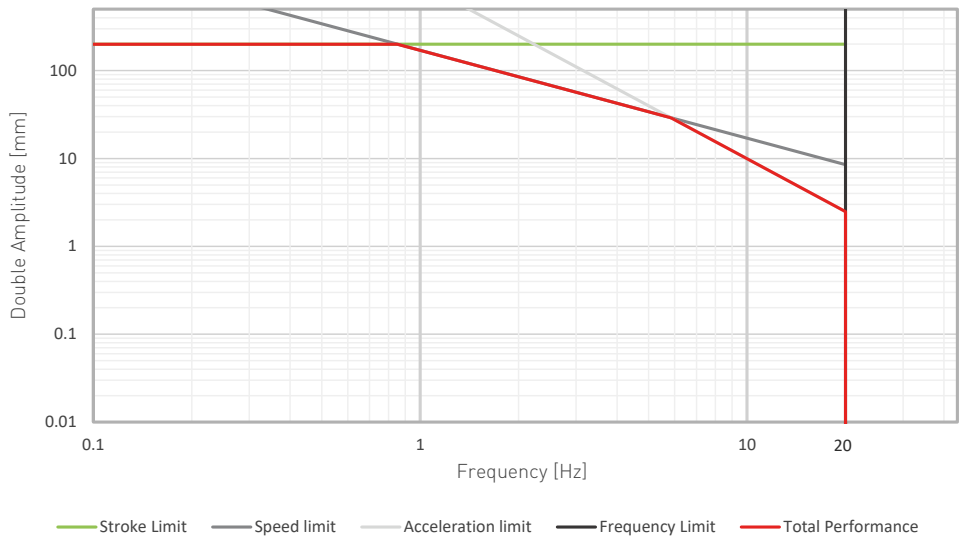
+ Maximum Dynamic Force 100 kN
+ Maximum Static Force 130 kN

Configuration and Codes / Configurazioni e Codici

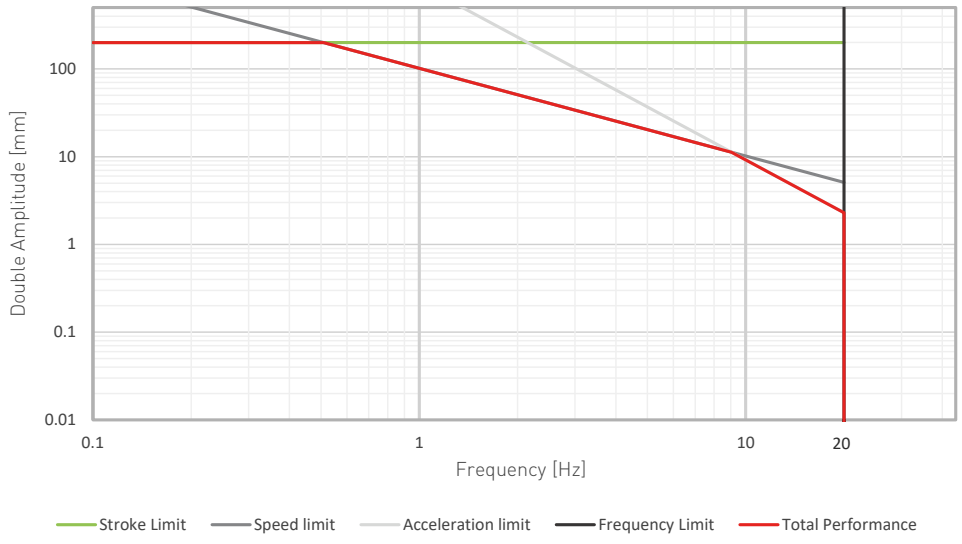
	Code	Static Force (N)	Dynamic Force (N)	Acceleration (g)	Max. Speed (mm/s)	Standard Stroke (mm)
EA100	EA100-10F/10/48A-N16/1-200	44700	62600	2	535	200
	EA100-10F/10/48A-N16/1.67-200	74600	100000	1.85	320	
	EA100-10F/10/48A-N16/3-200	134200	100000	0.68	180	

* Other configurations available upon request. / *Altre configurazioni disponibili su richiesta.*

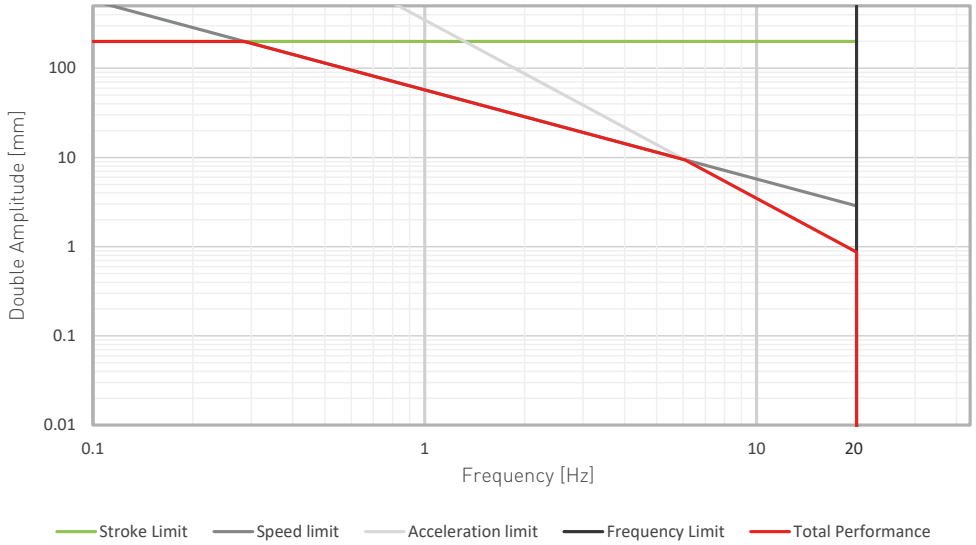
Performance chart - EA100-10F/10/48A-N16/1-200



Performance chart - EA100-10F/10/48A-N16/1.67-200

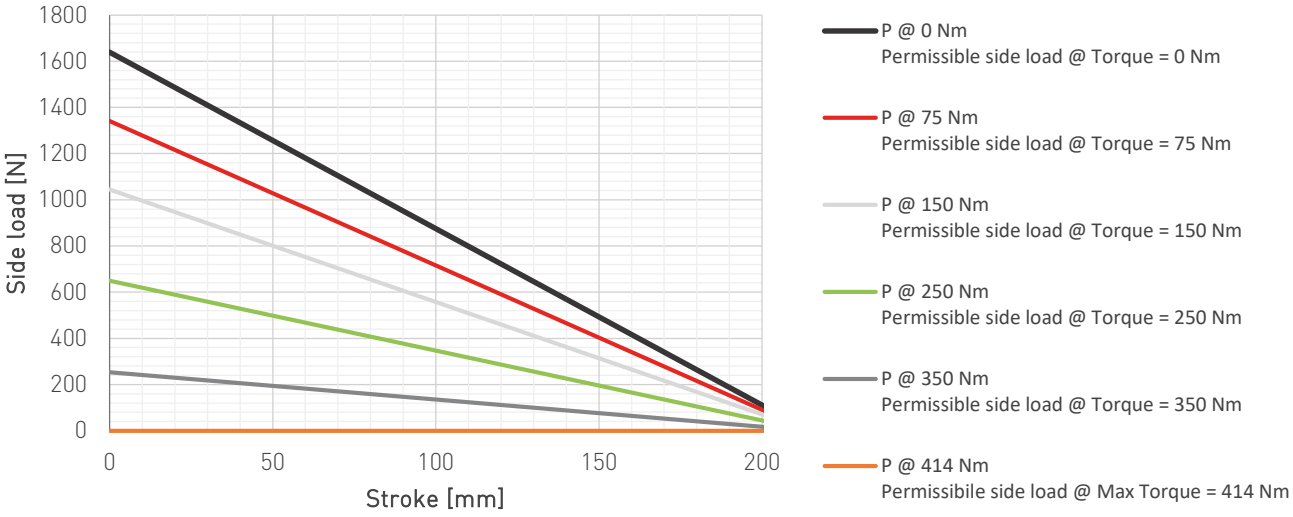


Performance chart - EA100-10F/10/48A-N16/3-200

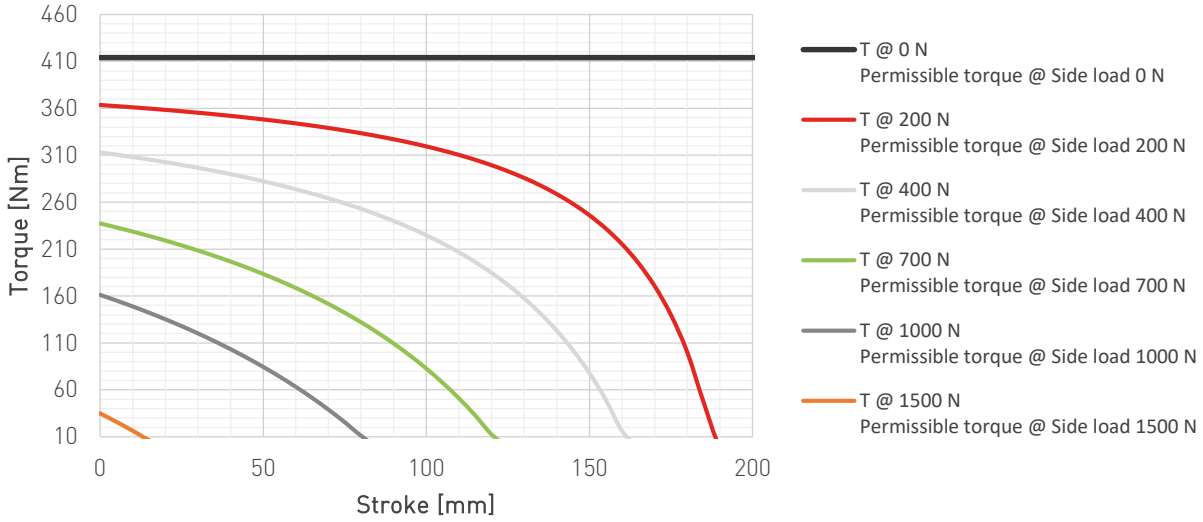


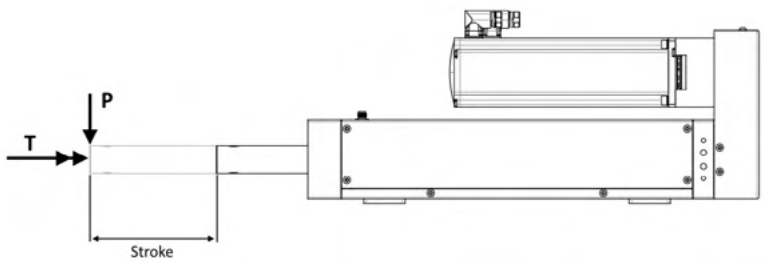
Performance Charts with Torque and Side Force / Tabelle Prestazioni con Carico Torsionale e Laterale*

Permissible side load for a given torque
EA100 - stroke 200 mm



Permissible torque for a given side load
EA100 - stroke 200 mm





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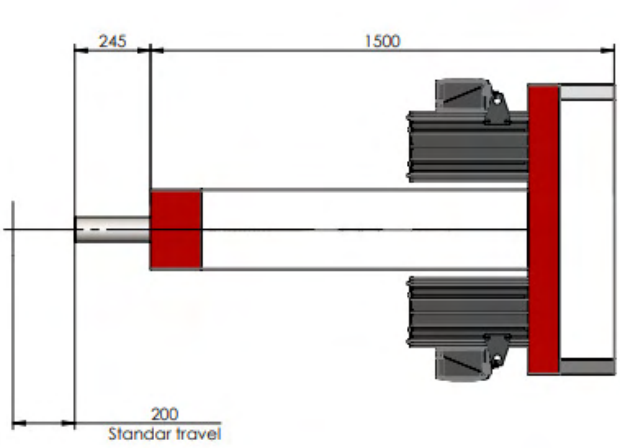
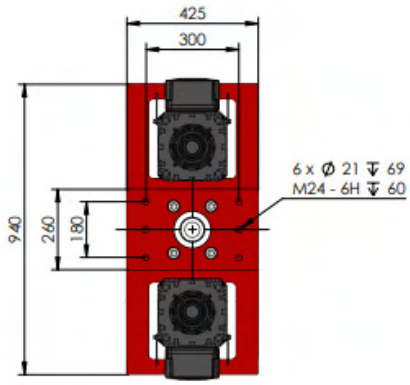
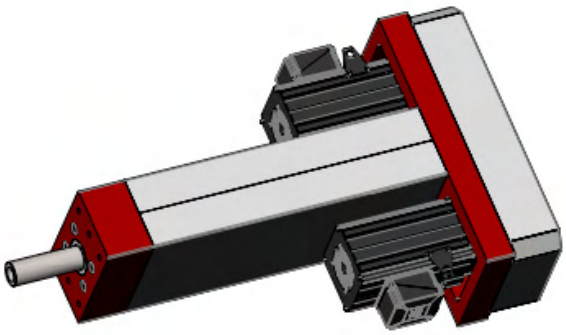
EA200







Main Features*

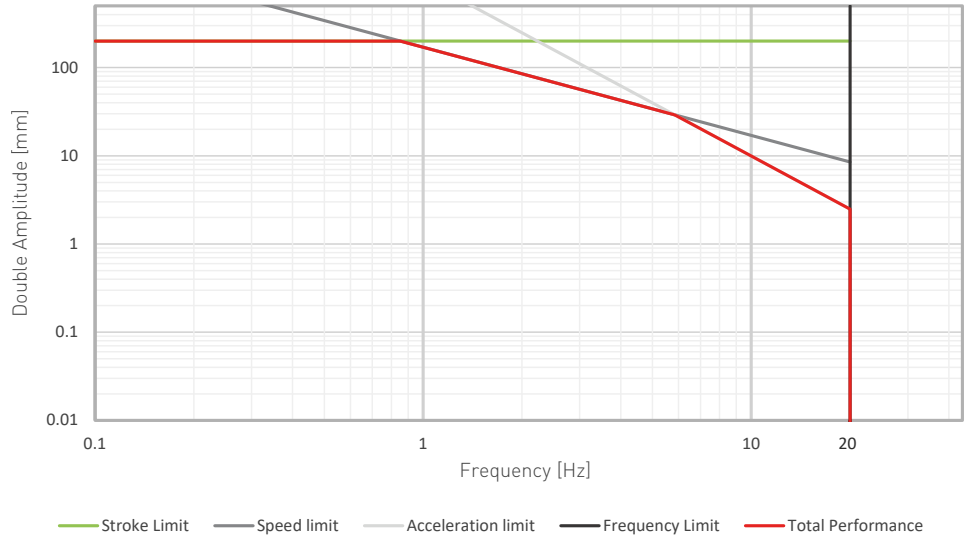
+ Maximum Dynamic Force 200 kN
+ Maximum Static Force 265 kN

Configuration and Codes / Configurazioni e Codici

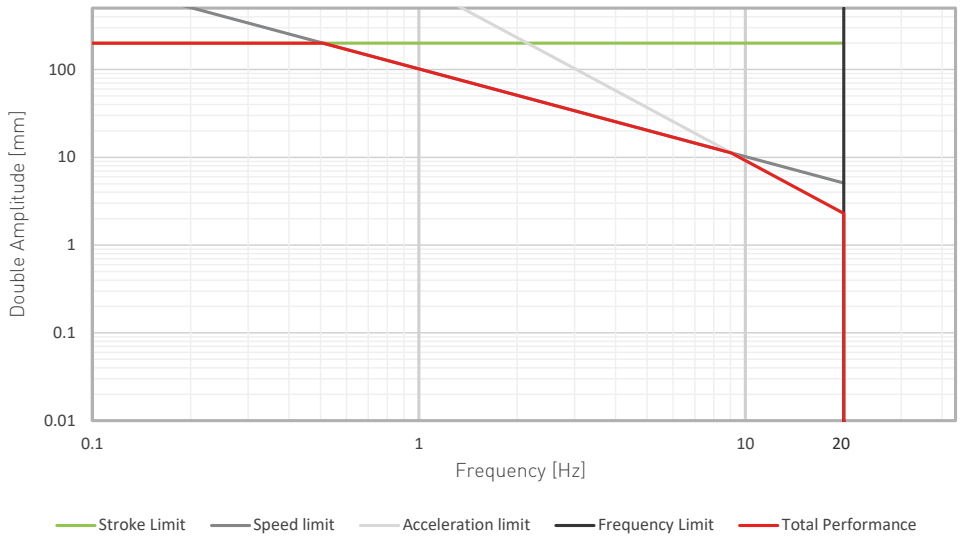
	Code	Static Force (N)	Dynamic Forc (N)	Acceleration (g)	Max. Speed (mm/s)	Standard Stroke (mm)
EA200	EA200-210F/10/48A-N16/1-200	89500	125300	2	535	200
	EA200-210F/10/48A-N16/1.67-200	149200	200000	1.85	320	
	EA200-210F/10/48A-N16/3-200	268500	200000	0.68	180	

* Other configurations available upon request. / *Altre configurazioni disponibili su richiesta.*

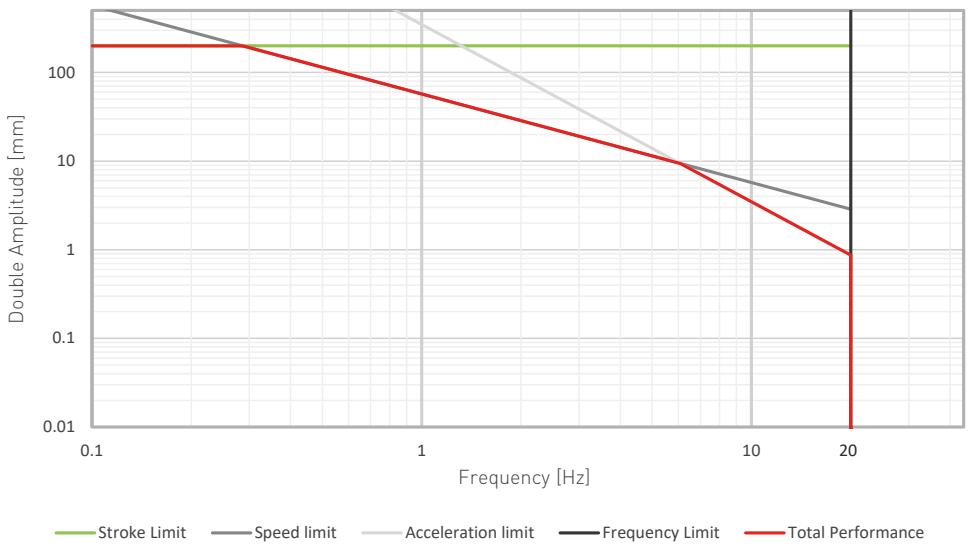
Performance chart - EA200-210F/10/48A-N16/1-200



Performance chart - EA200-210F/10/48A-N16/1.67-200

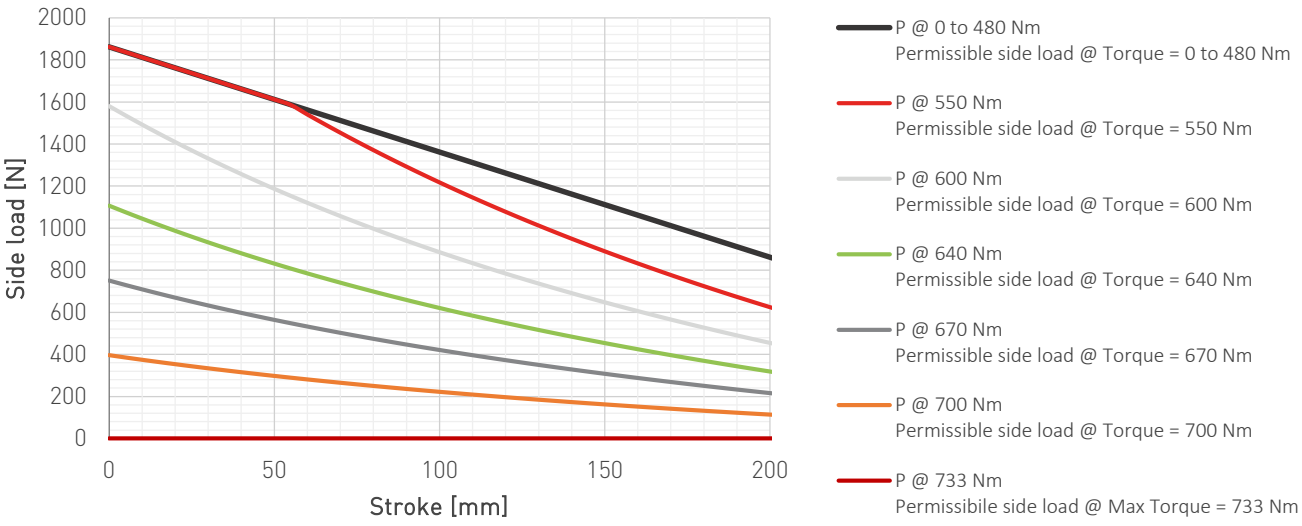


Performance chart - EA200-210F/10/48A-N16/3-200

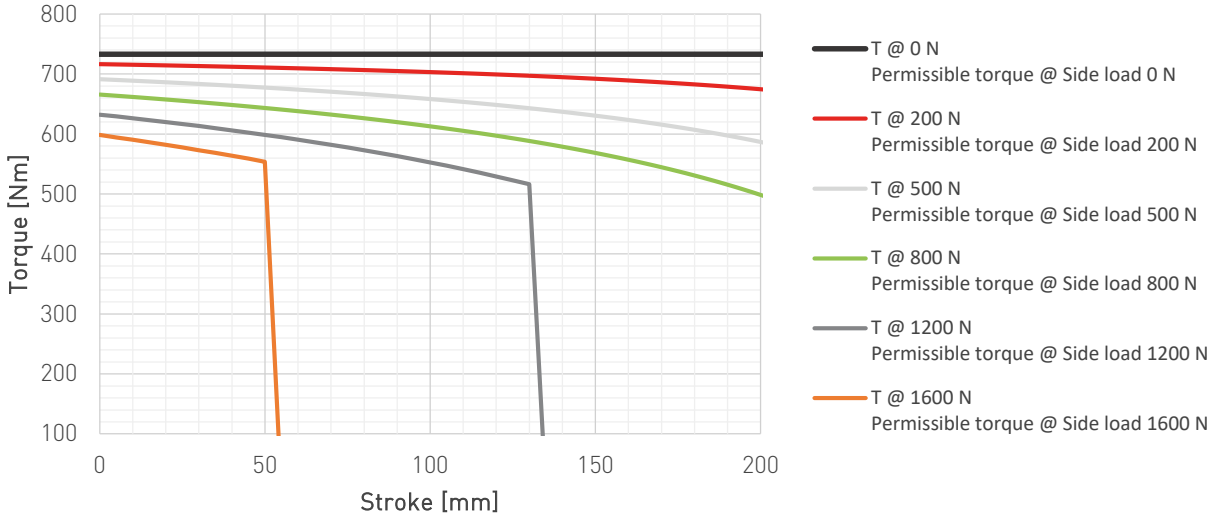


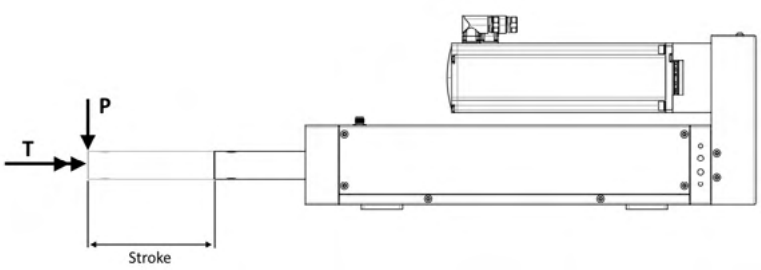
Performance Charts with Torque and Side Force / Tabelle Prestazioni con Carico Torsionale e Laterale*

Permissible side load for a given torque
EA200 - stroke 200 mm



Permissible torque for a given side load
EA200 - stroke 200 mm





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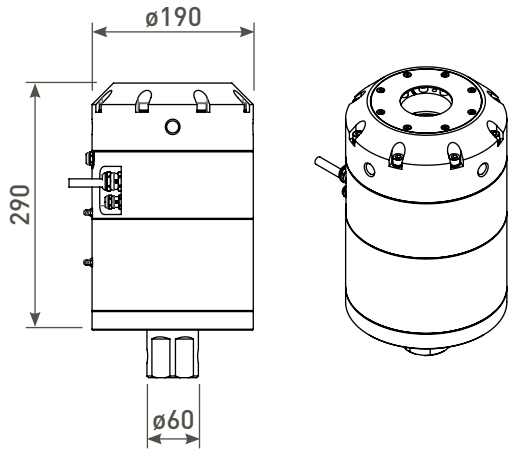
Queste tabelle sono da usare per un dimensionamento indicativo. Il dimensionamento finale verrà fornito da STEP Lab in base alla richiesta.

Bi-axial Variant: Torsional Actuator / Variante Bi-assiale: Attuatore Torsionale



BV050 - Dimensions

BV050

EA015 with BV050 variant

General description
Technical solutions for electromechanical axis and for axis based on linear motors.

Descrizione generale
Soluzioni tecniche per assi elettromeccanici e assi basati su motori linari.

	BV015	BV030	BV050	BV090	BV140
Massima coppia statica *Max. Static Torque* **[Nm]**	11.0	20.0	35.0	65.0	100.0
Massima coppia dinamica *Max. Dynamic Torque* **[Nm]**	15.0	30.0	50.0	90.0	140.0
Massima velocità di prova *Max. Test Speed* **[rpm]**	400	400	300	300	300
Numero massimo di rivoluzioni *Max. Number of Revolutions*	Illimitato *Unlimited*	Illimitato *Unlimited*	Illimitato *Unlimited*	Illimitato *Unlimited*	Illimitato *Unlimited*
Encoder rotativo assoluto *Rotational Absolute Encoder*	Integrato *Integrated*	Integrato *Integrated*	Integrato *Integrated*	Integrato *Integrated*	Integrato *Integrated*
Compatibile con attuatori *Compatible with Actuators*	da EA05 in su da UD02 in su *EA05 and greater UD02 and greater*	da EA05 in su da UD02 in su *EA05 and greater UD02 and greater*	da EA015 in su da UD04 in su *EA015 and greater UD04 and greater*	da EA015 in su da UD04 in su *EA015 and greater UD04 and greater*	da EA015 in su da UD08 in su *EA015 and greater UD08 and greater*

All the solutions is comprensive of biaxial load cell./*Tutte le soluzioni sono comprensive di cella di carico biassiale*

* Greater value upon request / *Valori maggiori su richiesta*

Stucture Types / Tipi di struttura

Configurations of ST05 Frames / Configurazioni delle Strutture ST05

ST05	B	M	A	N	CEA005	Y	F	R	B

Frame type
B – Bench-type machine

Crosshead regulation
N – No crank for crosshead regulation
M – Manual crosshead regulation (crank on top)

Electrical panel position
A – Hanging electrical panel
F – Floor-mounted electrical panel

Crosshead locking sensors
N – No crosshead locking sensor

Crosshead predisposition and size
CEA005 – Crosshead for EA02 and EA05

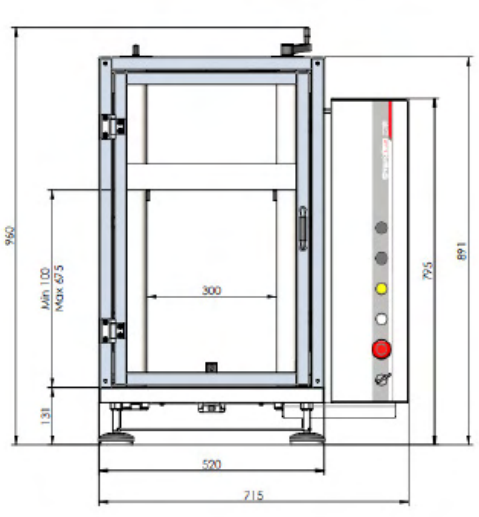
Safety fence
N – No safety fence
Y – With safety fence

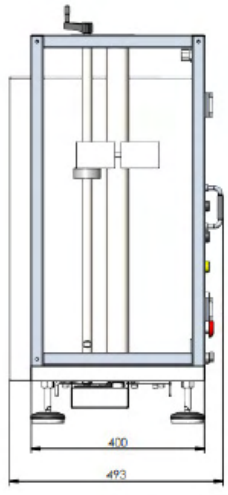
Only with safety fence, Else 0 (zero)

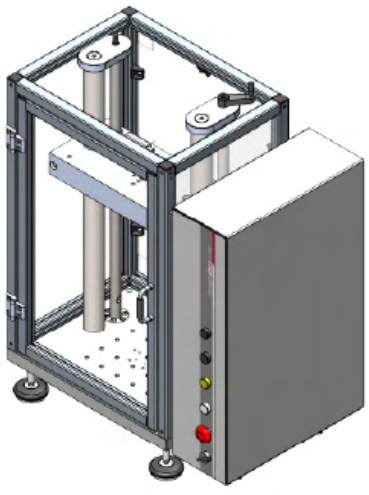
Safety fence handle type
B – Normal bridge handle

Safety fence handle position
R – Right-side door handle
L – Left-side door handle

Removable back panel for rear access
F – Fixed panel
R – Removable panel







Example of ST05 Manual Bench-type Frame: ST05 BMAN CEA005 YFRB

Configurations of ST015 Frames / Configurazioni delle Strutture ST015

ST015	B	E	A	N	SEA015	Y	R	R	B

Frame type
- B – Bench-type machine
- F – Floor-type machine

Crosshead regulation
- M – Manual crosshead regulation (crank on top)
- L – Manual crosshead regulation (lateral crank)
- E – Electrical crosshead regulation

Electrical panel position
- A – Hanging electrical panel (only for EA series)
- F – Floor-mounted electrical panel

Crosshead locking sensors
- N – No crosshead locking sensors
- Y – Crosshead with locking sensors

Crosshead predisposition and size
- SEA005 – For EA05, Crosshead with thickness 89 mm
- SEA015 – For EA015, Crosshead with thickness 89 mm **
- LEA015 – For EA015, Crosshead with thickness 150 mm
- LEA050 – For EA050, Crosshead with thickness 150 mm

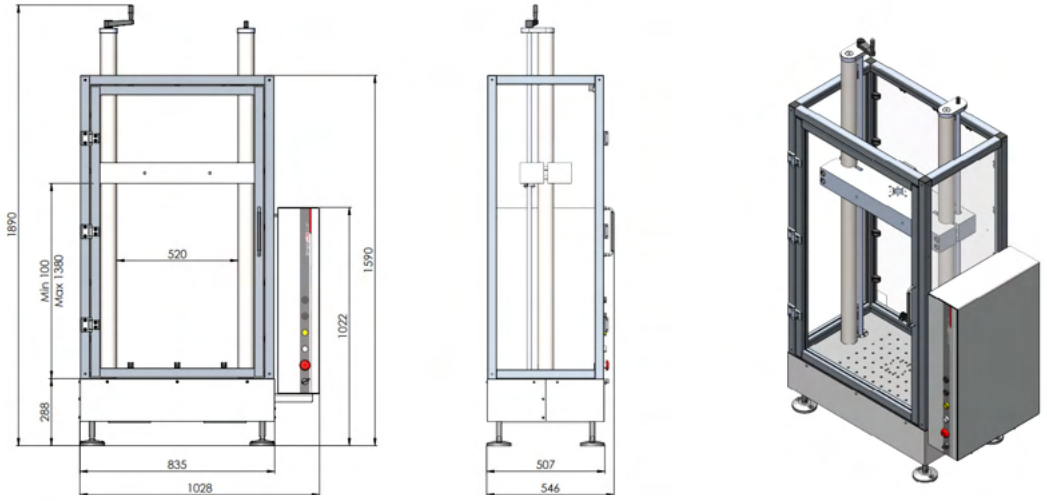
Safety fence
- N – No safety fence
- Y – With safety fence

Only with safety fence, Else 0 (zero)

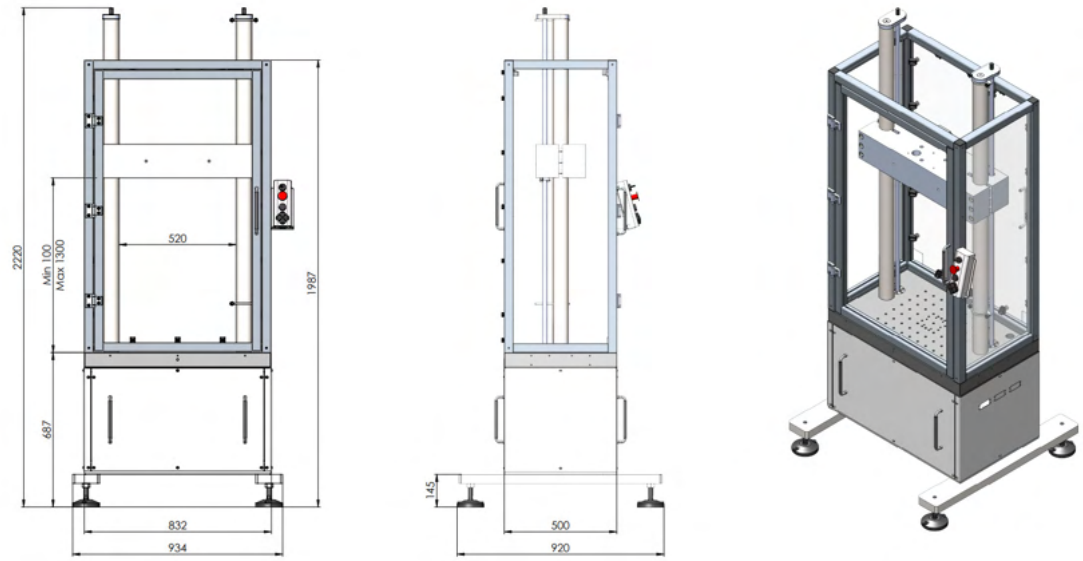
Removable back panel for rear access
- F – Fixed panel
- R – Removable panel

Safety fence handle position
- R – Right-side door handle
- L – Left-side door handle

Safety fence handle type
- B – Normal bridge handle
- L – Lighted handle
- I – Interlocked lighted handle



Example of ST015 Manual Bench-type Frame: ST015 BMAN SEA015 YFRB



Example of ST015 Electric Floor-type Frame: ST015 FEFN LEA015 YRRB

Structure	Actuator		
ST05	EA02	EA05	
ST015 (89 mm crosshead)	EA02	EA05	EA015
ST015 (150 mm crosshead)	EA015 **	EA050	
ST100*	EA050	EA100	EA200

*Available on request / *Disponibile su richiesta*

**Suggested for load over 16 kN / *Suggerito per carichi oltre 16 kN*

Accessories / Accessori*

Item	Fmax [kN]
Load cell / *Cella di carico* [1]	0,1
	0,5
	1
	2,5
	5
	10
	25
	50
	100
	200
	300

[1] The standard accuracy class is 1 (ISO 376). The accuracy class 05 and 00 are available upon request.

[1] *L'accuratezza delle celle di carico fornite è 1 (ISO 376). A richiesta sono disponibli celle di carico con accuratezza 05 e 00 .*

Item
Control for two or more synchronized electro-mechanical actuator *Controllo per due o più assi sincronizzati*
Climatic temperature chambers integrated on the structure and managed by Test Center *Camere climatiche integrate nella struttura e gestite da Test Center*
Remote control *Controllo a distanza*
Wedge grips for tests on plane specimen *Griffe a cuneo per test su provini piani*
Wedge grips for tests on cylindrical specimen *Griffe a cuneo per test su provini cilindrici*
Mechanical customizzed grips for materials and products mono-axial testing *Afferraggi personalizzati per test monoassiali di materiali e prodotti*
Mechanical customizzed grips for materials and products multi-axial testing *Afferraggi personalizzati per test multiassiali di materiali e prodotti*

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