Smart & Cab
Industrial Brakes

Mono-Actuated Pneumatic Brakes

COREMO

Coremo Worldwide

Coremo has consolidated its business on the main domestic and international markets over the decades, delivering braking solutions to machine constructors and end users operating in a variety of industrial sectors.

Its international scope is also reflected in the company's organisational structure, since it operates from two locations, in **Italy** and **France**, through a network of distributors and dealers in the rest of the world. With the optimal blend of technical expertise and closeness to customers, this organisation provides swift responses to the different technical and applicational needs of the markets served.

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For more than 65 years, Coremo has designed, produced and distributed industrial brakes and clutches for applications where reliability, technical expertise and constant support are essential requirements.

Over time, the business has grown from a small production outfit to a well-structured organisation of specialist technical departments that collaborate seamlessly in design, production and technical and commercial customer care. This growth has been facilitated by the creation of a production plant of more than 5,000 m² that includes a tests and trials department supporting the development of solutions tailored to the demands of the various fields of application.

65 Years of Experience and Innovation

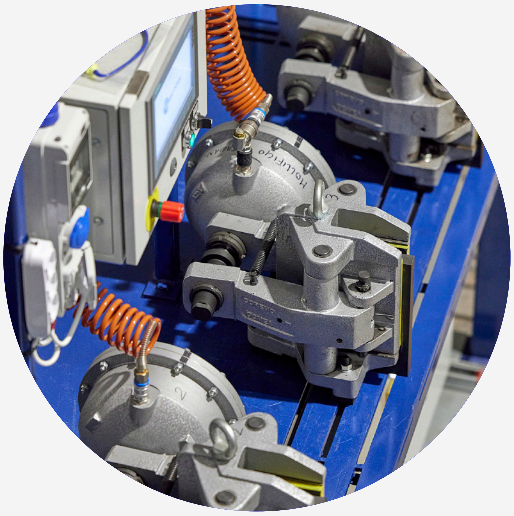
The experience garnered in the different industrial sectors combines with constant dialogue with customers, suppliers and partners to consolidate and expand the company's technical know-how. This approach guides product development, research, materials selection and the continuous improvement of the braking solutions.

Coremo's ongoing investments in static and dynamic test rigs enable it to verify products' behaviour in real operating conditions, gather data as input for the development of new solutions, and deepen knowledge of the various application contexts.

Cert. n. 0238

ATEX

A Circular Model: Expertise, Sharing, Partnership



Coremo constantly invests in the development of its technical expertise through **people**, **tools** and **infrastructure** dedicated to design, production, validation and applicational support.

The company's specialist staff include engineers, designers, technicians and operators able to partner customers in product selection, the development of custom solutions and the analysis of applicational criticalities.

Expertise and Tools at the Service of Safety

Coremo is also well equipped with state-of-the-art design and data management tools, calculation and simulation software and static and dynamic test rigs. The company's technical expertise is supported by constant updating of its design methodologies, data analysis, FEM systems, product management and risk analysis, guaranteeing compliance with safety and reliability standards.

Value Added for the Customer

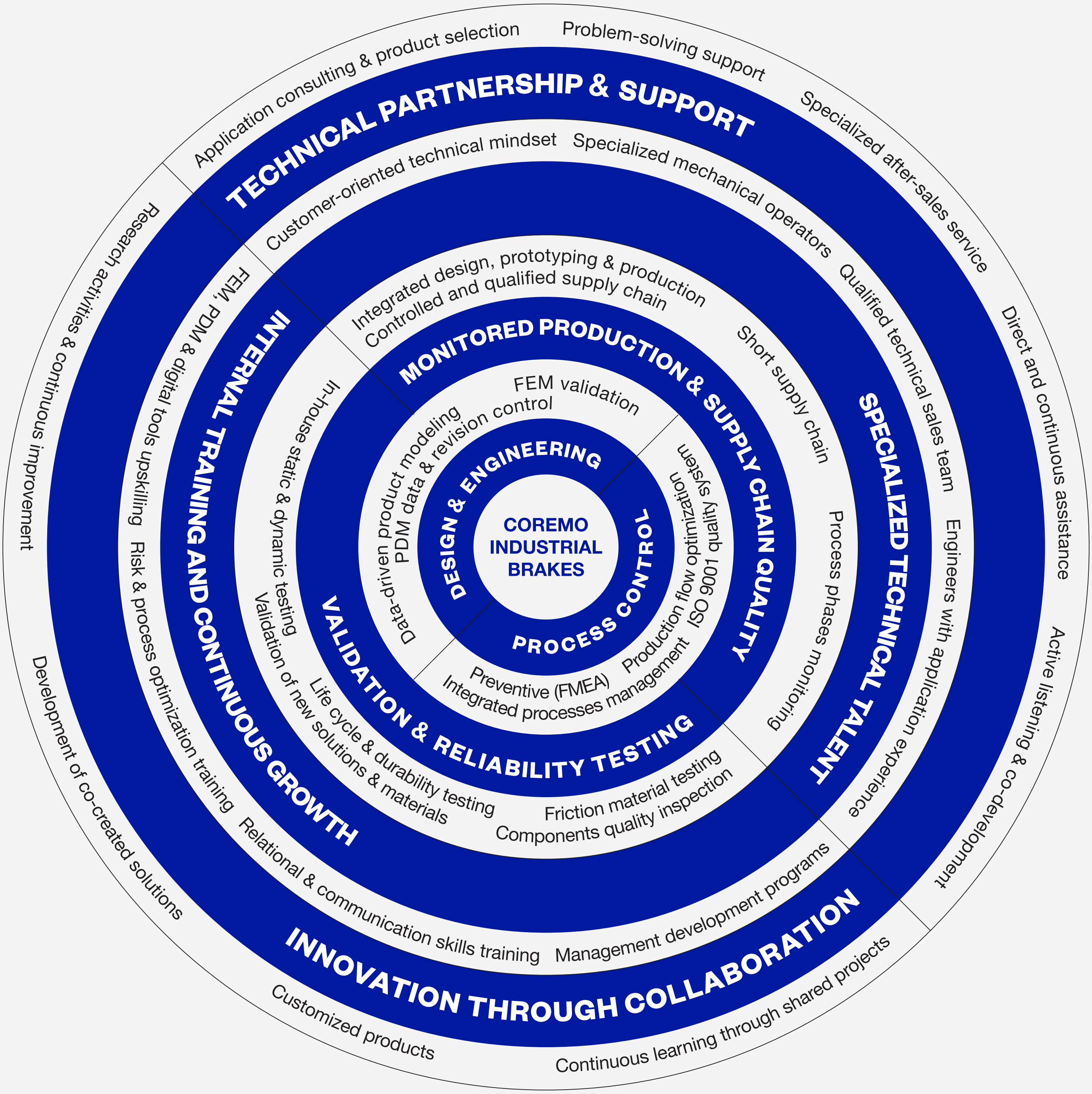
More reliable plants

Reduction of risks and machine downtimes

Better performance

Continuous technical support

Partnership grounded in expertise and trust


COREMO INDUSTRIAL BRAKES
DESIGN & ENGINEERING
PROCESS CONTROL
FEM validation
Data-driven product modeling
PDM data & revision control
ISO 9001 quality system
Production flow optimization
Preventive (FMEA)
Integrated processes management
MONITORED PRODUCTION & SUPPLY CHAIN QUALITY
VALIDATION & RELIABILITY TESTING
Integrated design, prototyping & production
Controlled and qualified supply chain
Short supply chain
Process phases monitoring
In-house static & dynamic testing
Validation of new solutions & materials
Life cycle & durability testing
Friction material testing
Components quality inspection
INTERNAL TRAINING AND CONTINUOUS GROWTH
SPECIALIZED TECHNICAL TALENT
Customer-oriented technical mindset
Specialized mechanical operators
Qualified technical sales team
Engineers with application experience
FEM, PDM & digital tools upskilling
Risk & process optimization training
Relational & communication skills training
Management development programs
TECHNICAL PARTNERSHIP & SUPPORT
INNOVATION THROUGH COLLABORATION
Application consulting & product selection
Problem-solving support
Specialized after-sales service
Direct and continuous assistance
Active listening & co-development
Continuous learning through shared projects
Customized products
Development of co-created solutions
Research activities & continuous improvement

Coremo mono-actuated pneumatic brakes are designed for industrial applications where c**ompact size, precise regulation and continuity of service** are fundamental requirements.

Their construction configuration permits actuation on only one side of the disc, making the system especially compact and ideal for installations where space is limited.

CAB & SMART
Mono-Actuated Pneumatic Brakes

Lightweight, solid, compact structure

Flange or foot mounting

Precise, proportional braking even at low pressures

Optimal integration with Coremo brake discs

The operating principle is simple and effective: the pneumatic pressure acts on a thruster travelling inside the chamber within the brake body, generating a thrust proportional to the supply pressure, up to a maximum of 6 bar. This solution enables precise control of braking force and is particularly effective in continuous braking applications.

CAB 65-2 BP

SMART 42

CAB
Unbeatable strength and flange mounting

CAB model mono-actuated pneumatic brakes are constructed in aluminium alloy and machined from the billet. This construction solution provides outstanding structural strength and dimensional precision combined with a compact, lightweight configuration.

Precise, proportional braking

Structural strength

Compact size and light weight

Flange mounting

Nominal braking force from 170 [N] to 2945 [N]

The CAB series family of mono-actuating brakes is especially suited to applications with continual tensioning of material where space is at a premium.

SMART
Simple, compact integration

SMART model mono-actuated pneumatic brakes are constructed in cast aluminium alloy and are a compact, rugged, rational solution for applications needing light weight, easy integration and simple installation.

Aluminium alloy body

Solid, compact structure

Foot mounting

Nominal braking force from 170 [N] to 748 [N]

The SMART family is especially suitable for systems where simple installation, optimal use of space and the right balance of performance, compact and applicational convenience are paramount.

For the best performance, they should be combined with Coremo brake discs, designed with materials and surface finishing, hardness and roughness characteristics that maximise effective braking and stable tribological behaviour.

Two families, one design philosophy: compactness, strength, control

CAB Mono-Actuated Pneumatic Brakes

Technical datasheet Page. **09**

CAB 30

Technical Data
Axial load at 6 [bar]: Fs = 424 [N]
Axial load at 0.4 [bar]: Fs = 28 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar]= 170 [N]
Brake pad surface area = 628 [mm²]
Weight : 0.25 [kg]

Technical datasheet Page. **10**

CAB 30 AXIAL

Technical Data
Axial load at 6 [bar]: Fs = 424 [N]
Axial load at 0.4 [bar]: Fs = 28 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar]= 170 [N]
Brake pad surface area = 628 [mm²]
Weight : 0.25 [kg]

Technical datasheet Page. **11**

CAB 50

Technical Data
Axial load at 6 [bar]: Fs = 1178 [N]
Axial load at 0.4 [bar]: Fs = 78.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar]= 471 [N]
Brake pad surface area = 3154 [mm²]
Weight : 0.9 [kg]

Technical datasheet Page. **12**

CAB 50-1

Technical Data
Axial load at 6 [bar]: Fs = 1178 [N]
Axial load at 0.4 [bar]: Fs = 78.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar]= 471 [N]
Brake pad surface area = 3154 [mm²]
Weight : 0.9 [kg]

Technical datasheet Page. **13**

CAB 65

Technical Data
Axial load at 6 [bar]: Fs = 1870 [N]
Axial load at 0.4 [bar]: Fs = 124.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar]= 748 [N]
Brake pad surface area = 3154 [mm²]
Weight : 0.85 [kg]

Technical datasheet Page. **14**

CAB 65-1

Technical Data
Axial load at 6 [bar]: Fs = 1870 [N]
Axial load at 0.4 [bar]: Fs = 124.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] = 748 [N]
Brake pad surface area = 3154 [mm²]
Weight : 0.85 [kg]

Technical datasheet Page. **15**

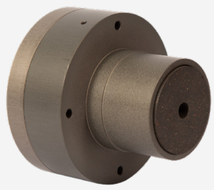
CAB 65-2

Technical Data
Axial load at 6 [bar]: Fs = 1870 [N]
Axial load at 0.4 [bar]: Fs = 124.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] = 748 [N]
Brake pad surface area = 3154 [mm²]
Weight : 0.85 [kg]

Technical datasheet Page. **16**

CAB 65-2 BP

Technical Data
Axial load at 6 [bar]: Fs = 1870 [N]
Axial load at 0.2 [bar]: Fs = 54 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] = 748 [N]
Brake pad surface area = 3154 [mm²]
Weight : 0.85 [kg]



Technical datasheet Page. **17**

CAB 80

Technical Data
Axial load at 6 [bar]: Fs = 2650 [N]
Axial load at 0.4 [bar]: Fs = 176.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] = 1060 [N]
Brake pad surface area = 3154 [mm²]
Weight : 2.5 [kg]

Aluminium-built, they are lightweight, rugged and easy to install. May be flange- or foot-mounted depending on product family.

Technical datasheet Page. **18**

CAB 100

Technical Data
Axial load at 6 [bar]: Fs = 3817 [N]
Axial load at 0.4 [bar]: Fs = 254.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] = 1526 [N]
Brake pad surface area = 3154 [mm²]
Weight : 2.4 [kg]

Technical datasheet Page. **19**

CAB 125M

Technical Data
Axial load at 6 [bar]: Fs = 7363 [N]
Axial load at 0.4 [bar]: Fs = 490.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] = 2945 [N]
Brake pad surface area = 3170 [mm²]
Weight : 5 [kg]

SMART Mono-Actuated Pneumatic Brakes

Technical datasheet Page. **21**

SMART 30

Technical Data
Axial load at 6 [bar]: Fs = 424 [N]
Axial load at 0.4 [bar]: Fs = 28 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] = 170 [N]
Brake pad surface area = 628 [mm²]
Weight : 0.25 [kg]

Technical datasheet Page. **22**

SMART 42

Technical Data
Axial load at 6 [bar]: Fs = 577 [N]
Axial load at 0.4 [bar]: Fs = 38.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] = 231 [N]
Brake pad surface area = 2941 [mm²]
Weight : 0.35 [kg]

Technical datasheet Page. **23**

SMART 64

Technical Data
Axial load at 6 [bar]: Fs = 1869 [N]
Axial load at 0.4 [bar]: Fs = 124.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] = 748 [N]
Brake pad surface area = 3234 [mm²]
Weight : 0.75 [kg]

A range designed to cover a wide range of machine and installation needs

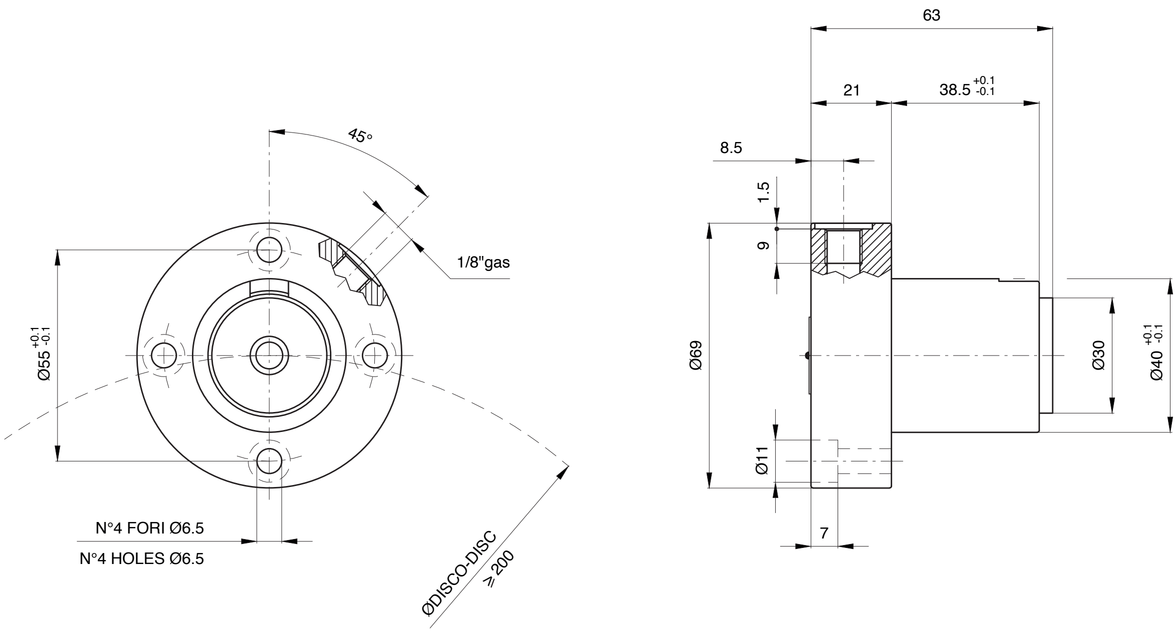
Coremo mono-actuated pneumatic brakes are ideally suited to tension regulation during the unwinding of cables, strips, plastic films and other continuous materials. However, the availability of a range of friction materials expands their field of use to embrace other types of braking service.

Selection criteria
In view of the small friction surface area and single-pad configuration, particular care must be taken over the application's temperature characteristics. To guarantee reliable performance and the expected friction material lifetime, when choosing the brake consideration must be given not only to the torque required but also to the heat to be dispersed during the duty cycle and the consequent operating temperature. It is also fundamental for the brake to operate within the specified pressure range: compliance with Coremo's stated minimum and maximum supply pressure values is essential.

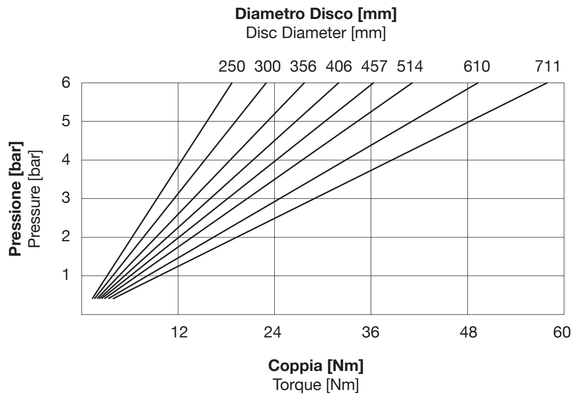
CAB
Technical Datasheets

CAB 30

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



<u>Attenzione</u>**: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale.** <u>Warning</u>: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 424 [N]
Spinta assiale a 0.4 [bar] : Fs = 28 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 170 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.015)
Max usura ferodo : 6 [mm]
Volume Aria : 0.01 [dm³]
Peso : 0.25 [kg]

Technical Data

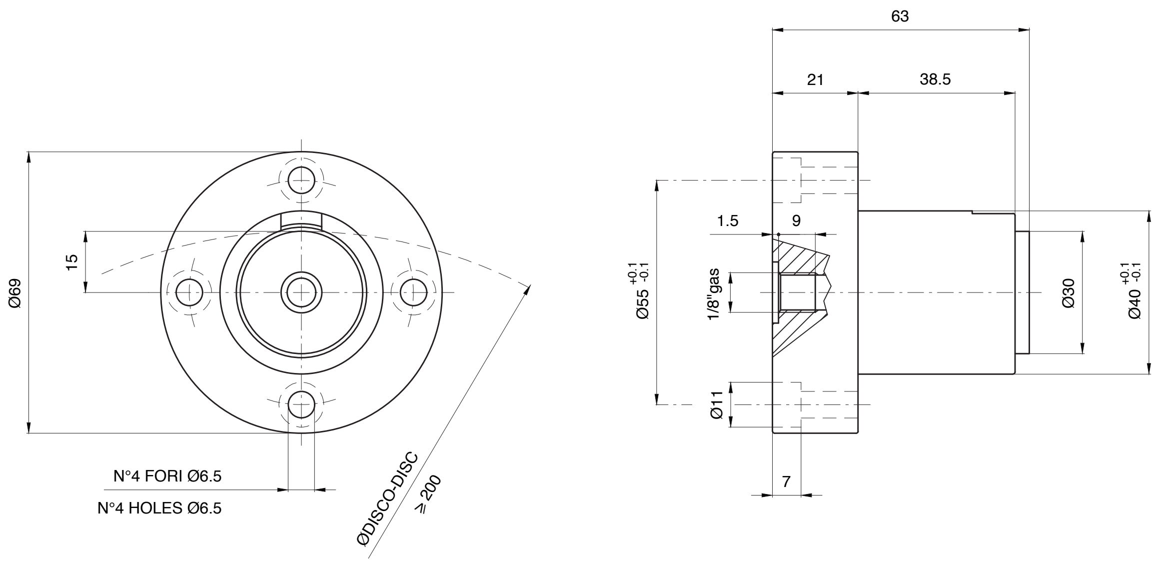
Axial load at 6 [bar] : Fs = 424 [N]
Axial load at 0.4 [bar] : Fs = 28 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 170 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.015)
Max pad wear : 6 [mm]
Air volume : 0.01 [dm³]
Weight : 0.25 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

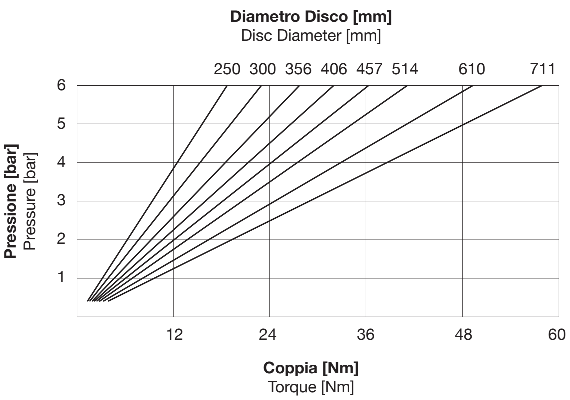
⚠ Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations hereinabove, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

CAB 30

Freno pneumatico a spinta con alimentazione assiale
Mono actuated pneumatic brake with axial supply



Dati Coppia / Torque data



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Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 424 [N]
Spinta assiale a 0.4 [bar] : Fs = 28 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 170 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.015)
Max usura ferodo : 6 [mm]
Volume Aria : 0.01 [dm³]
Peso : 0.25 [kg]

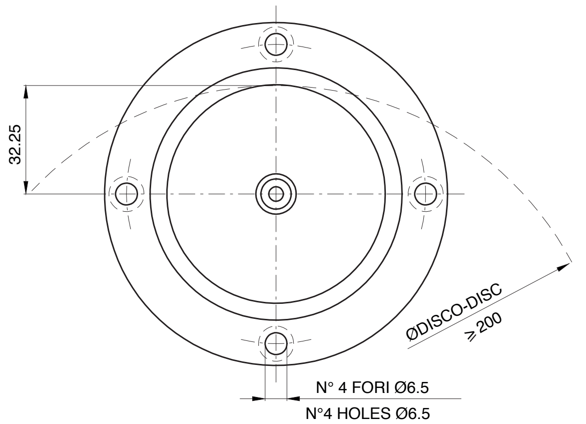
Technical Data

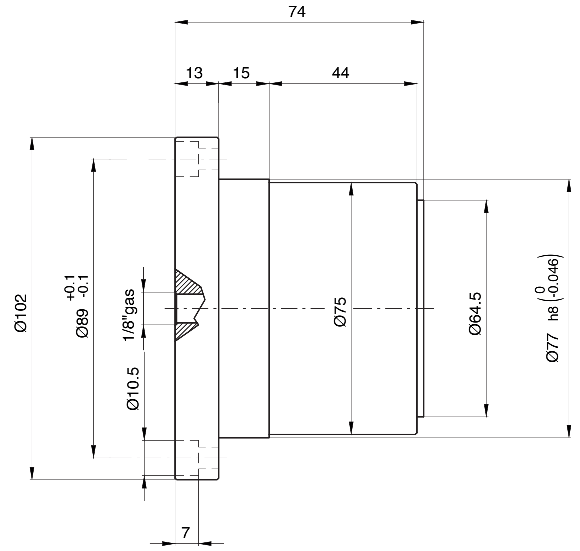
Axial load at 6 [bar] : Fs = 424 [N]
Axial load at 0.4 [bar] : Fs = 28 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 170 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.015)
Max wear pad : 6 [mm]
Air volume : 0.01 [dm³]
Weight : 0.25 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

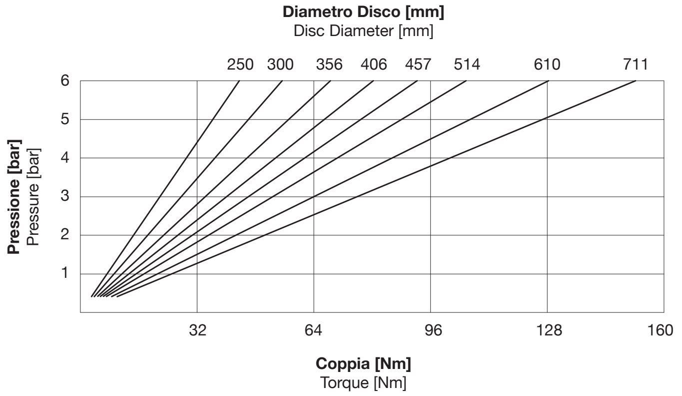
Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

Freno pneumatico a spinta
Mono actuated pneumatic brake





Dati Coppia / Torque data



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NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 1178 [N]
Spinta assiale a 0.4 [bar] : Fs = 78.5 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 471 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.032)
Max usura ferodo : 15 [mm]
Volume Aria : 0.035 [dm³]
Peso : 0.9 [kg]

Technical Data

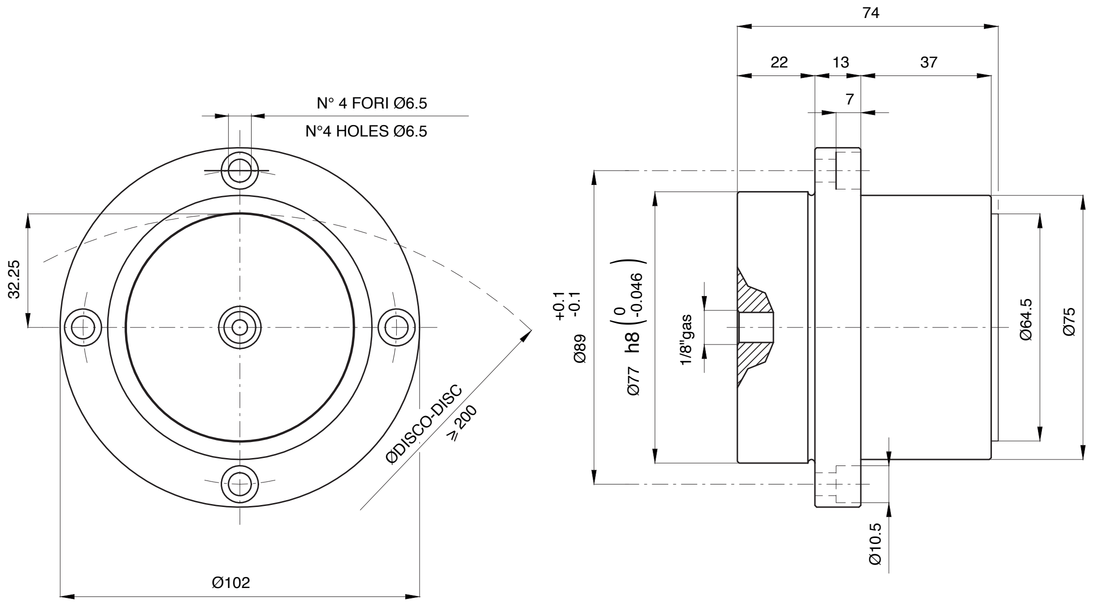
Axial load at 6 [bar] : Fs = 1178 [N]
Axial load at 0.4 [bar] : Fs = 78.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 471 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.032)
Max wear pad : 15 [mm]
Air volume : 0.035 [dm³]
Weight : 0.9 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

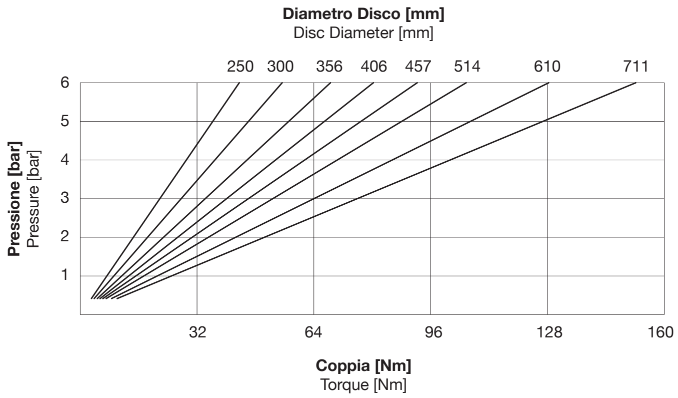
⚠ Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

CAB 50-1

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



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Dati Tecnici

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Max usura ferodo : 15 [mm]
Volume Aria : 0.035 [dm³]
Peso : 0.9 [kg]

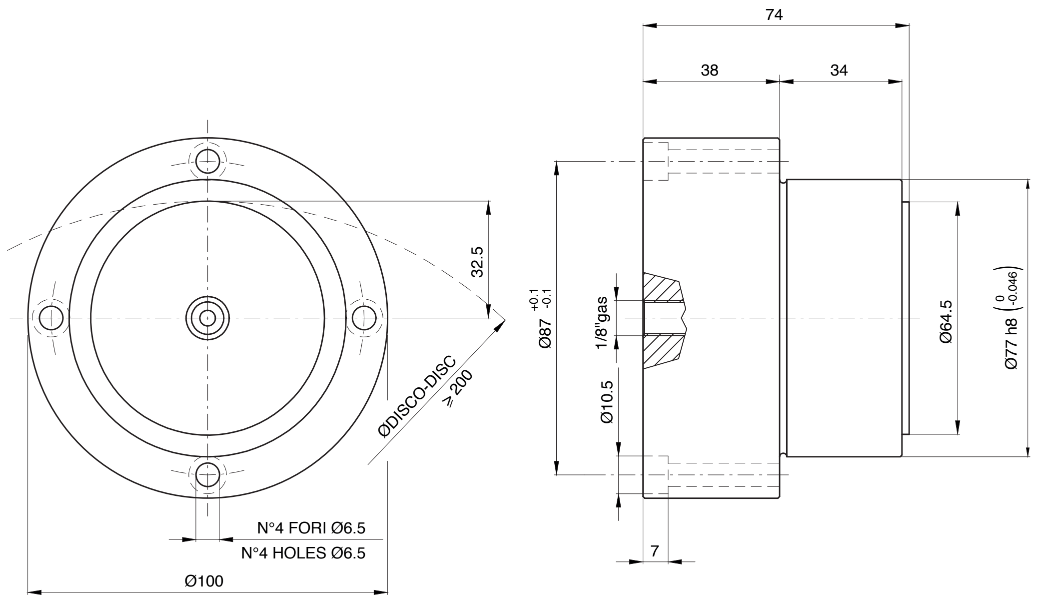
Technical Data

Axial load at 6 [bar] : Fs = 1178 [N]
Axial load at 0.4 [bar] : Fs = 78.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 471 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.032)
Max wear pad : 15 [mm]
Air volume : 0.035 [dm³]
Weight : 0.9 [kg]

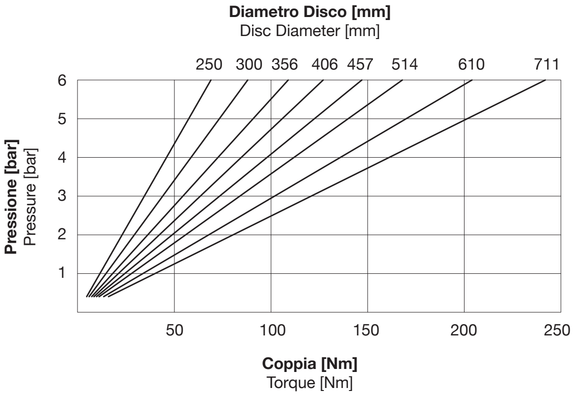
● Il calore da dissipare non deve superare la capacità termica del disco.
● The heat to dissipate must not in any case exceed the disc thermal capacity

Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



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Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 1870 [N]
Spinta assiale a 0.4 [bar] : Fs = 124.5 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 748 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.0325)
Max usura ferodo : 15 [mm]
Volume Aria : 0.85 [dm³]
Peso : 0.85 [kg]

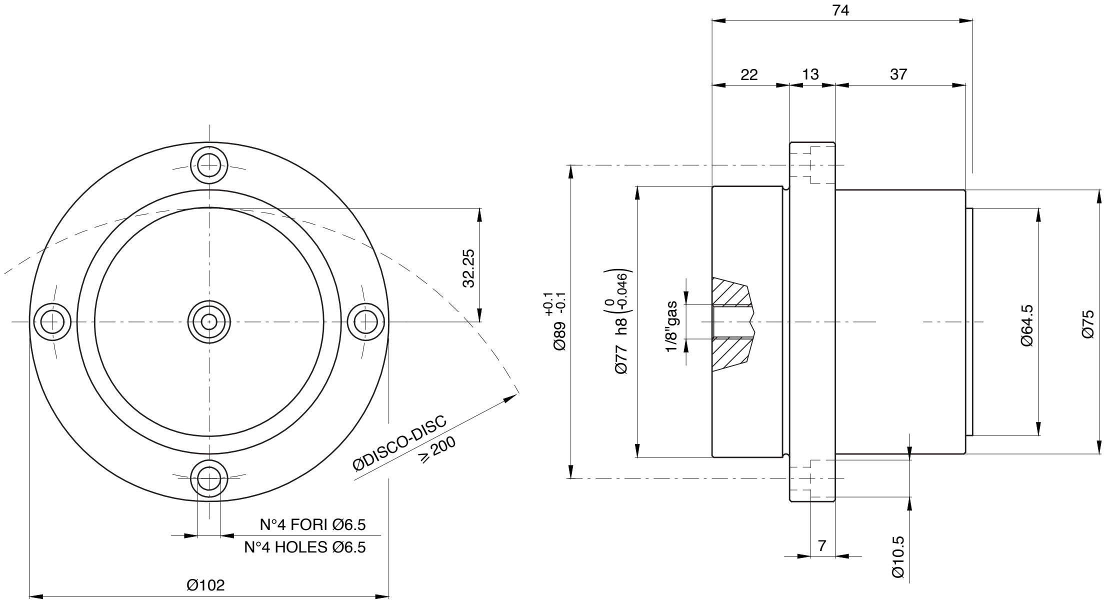
Technical Data

Axial load at 6 [bar] : Fs = 1870 [N]
Axial load at 0.4 [bar] : Fs = 124.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 748 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.0325)
Max wear pad : 15 [mm]
Air volume : 0.85 [dm³]
Weight : 0.85 [kg]

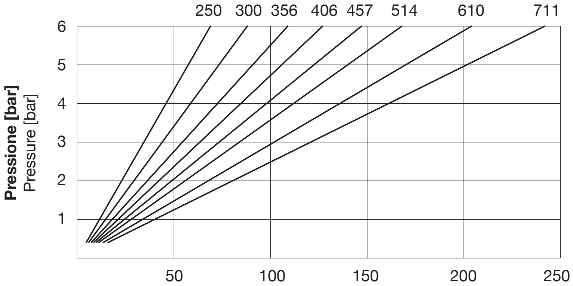
- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



<u>Attenzione</u>: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale. <u>Warning</u>: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 1870 [N]
Spinta assiale a 0.4 [bar] : Fs = 124.5 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 748 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.0325)
Max usura ferodo : 15 [mm]
Volume Aria : 0.85 [dm³]
Peso : 0.85 [kg]

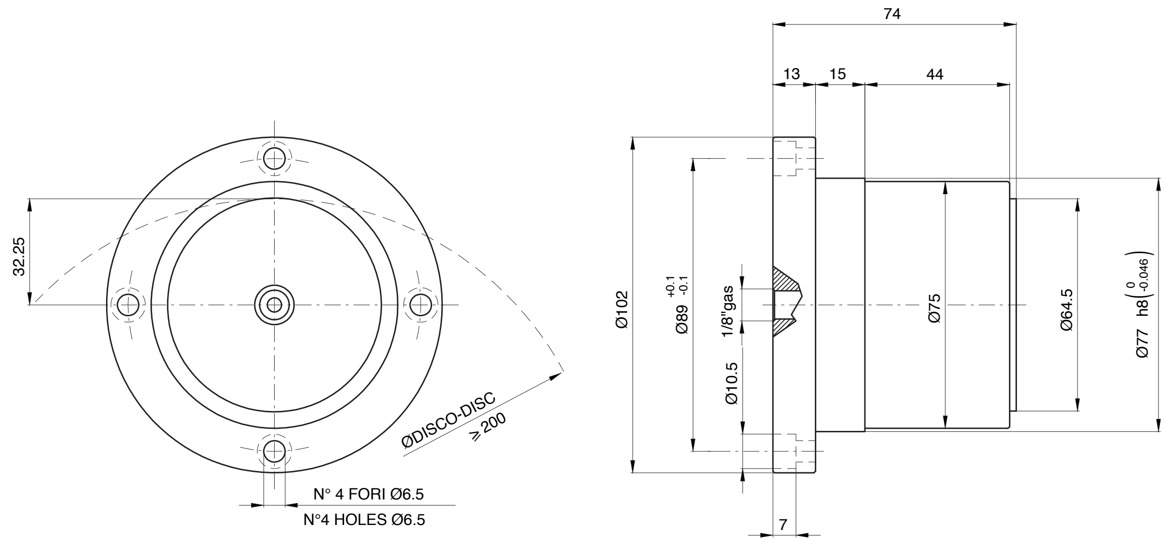
Technical Data

Axial load at 6 [bar] : Fs = 1870 [N]
Axial load at 0.4 [bar] : Fs = 124.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 748 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.0325)
Max wear pad : 15 [mm]
Air volume : 0.85 [dm³]
Weight : 0.85 [kg]

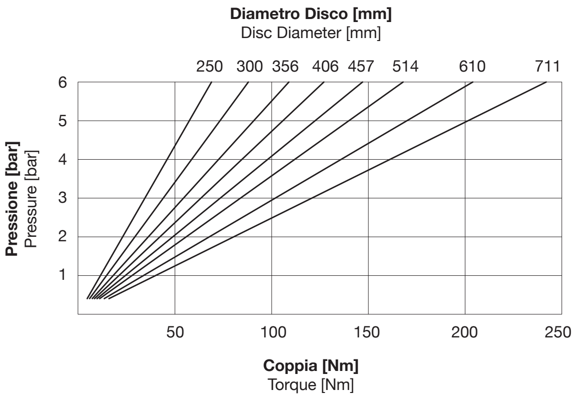
● Il calore da dissipare non deve superare la capacità termica del disco.
● The heat to dissipate must not in any case exceed the disc thermal capacity

⚠ Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



__Attenzione__**: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale.** __Warning__: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 1870 [N]
Spinta assiale a 0.4 [bar] : Fs = 124.5 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 748 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.0325)
Max usura ferodo : 15 [mm]
Volume Aria : 0.85 [dm³]
Peso : 0.85 [kg]

Technical Data

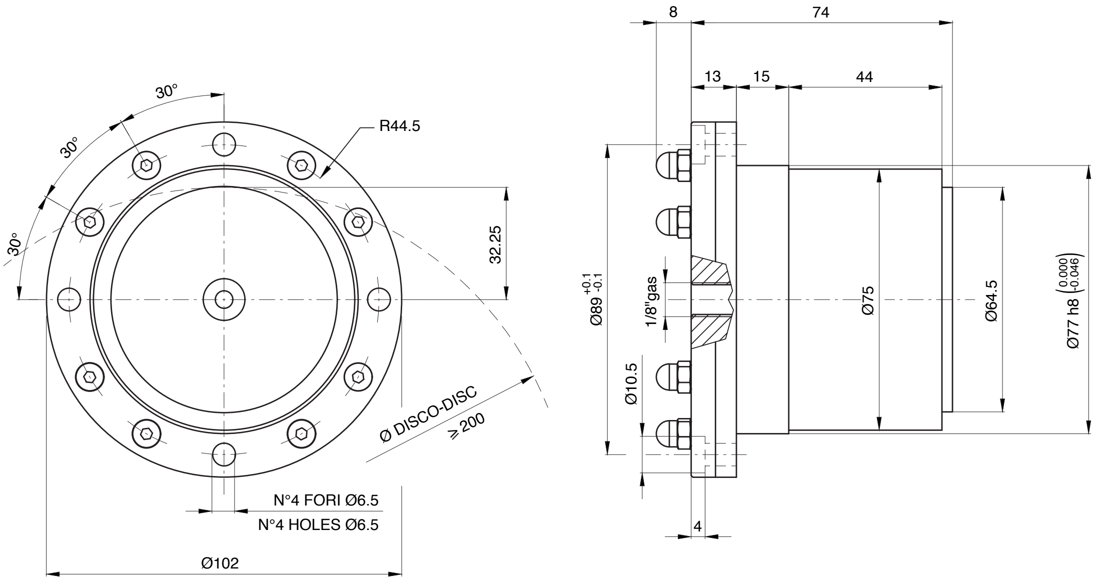
Axial load at 6 [bar] : Fs = 1870 [N]
Axial load at 0.4 [bar] : Fs = 124.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 748 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.0325)
Max wear pad : 15 [mm]
Air volume : 0.85 [dm³]
Weight : 0.85 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

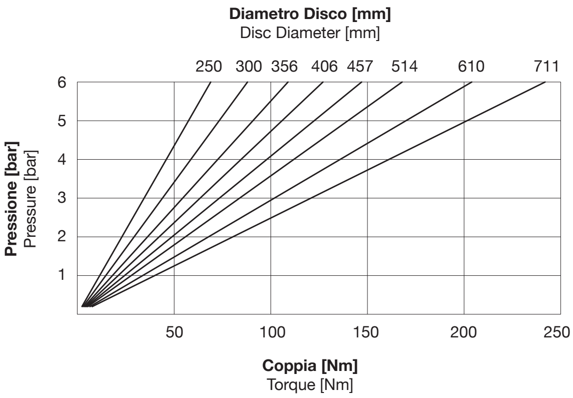
⚠ Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

CAB 65-2 BP

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



<u>Attenzione</u>: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale. <u>Warning</u>: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 1870 [N]
Spinta assiale a 0.2 [bar] : Fs = 54 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 748 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in m - 0.0325)
Max usura ferodo : 15 [mm]
Volume Aria : 0.85 [dm³]
Peso : 0.85 [kg]

Technical Data

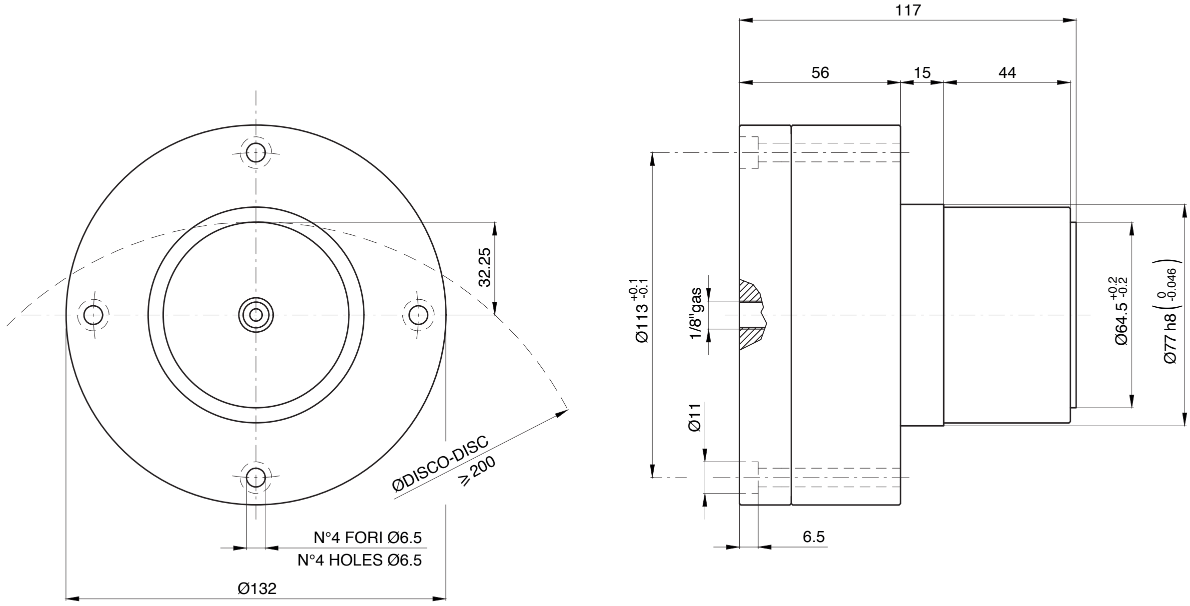
Axial load at 6 [bar] : Fs = 1870 [N]
Axial load at 0.2 [bar] : Fs = 54 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 748 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.0325)
Max wear pad : 15 [mm]
Air volume : 0.85 [dm³]
Weight : 0.85 [kg]

● Il calore da dissipare non deve superare la capacità termica del disco.
● The heat to dissipate must not in any case exceed the disc thermal capacity

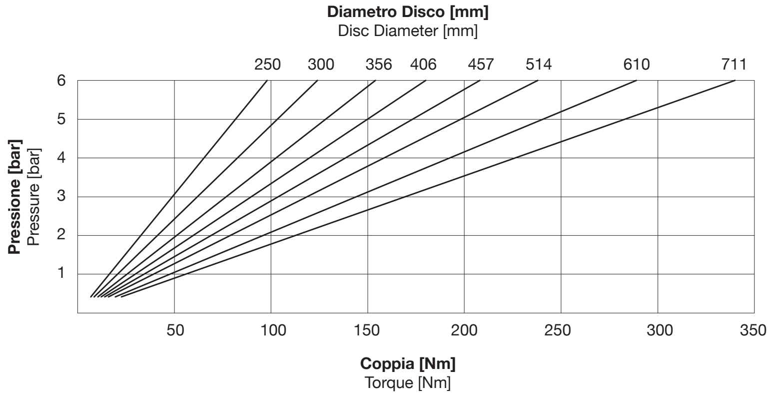
⚠ Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

CAB 80

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



<u>Attenzione</u>**: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale.** <u>Warning</u>: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 2650 [N]
Spinta assiale a 0.4 [bar] : Fs = 176.5 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 1060 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.0325)
Max usura ferodo : 15 [mm]
Volume Aria : 0.101 [dm³]
Peso : 2.5 [kg]

Technical Data

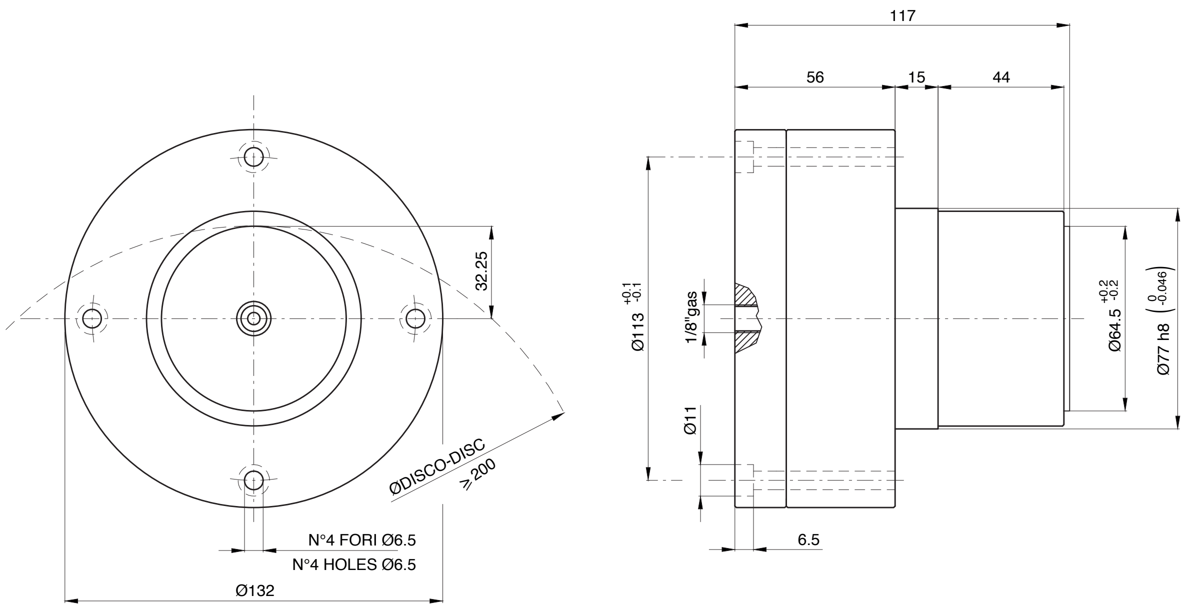
Axial load at 6 [bar] : Fs = 2650 [N]
Axial load at 0.4 [bar] : Fs = 176.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 1060 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.0325)
Max wear pad : 15 [mm]
Air volume : 0.101 [dm³]
Weight : 2.5 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

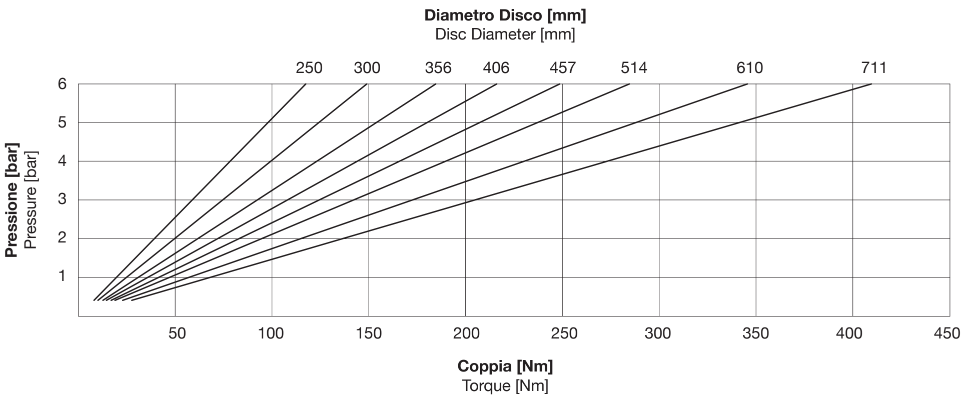
Il valore del coefficiente d’attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

CAB 100

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



Attenzione: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale. Warning: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 3817 [N]
Spinta assiale a 0.4 [bar] : Fs = 254.5 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 1526 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.0322)
Max usura ferodo : 15 [mm]
Volume Aria : 0.101 [dm³]
Peso : 2.4 [kg]

Technical Data

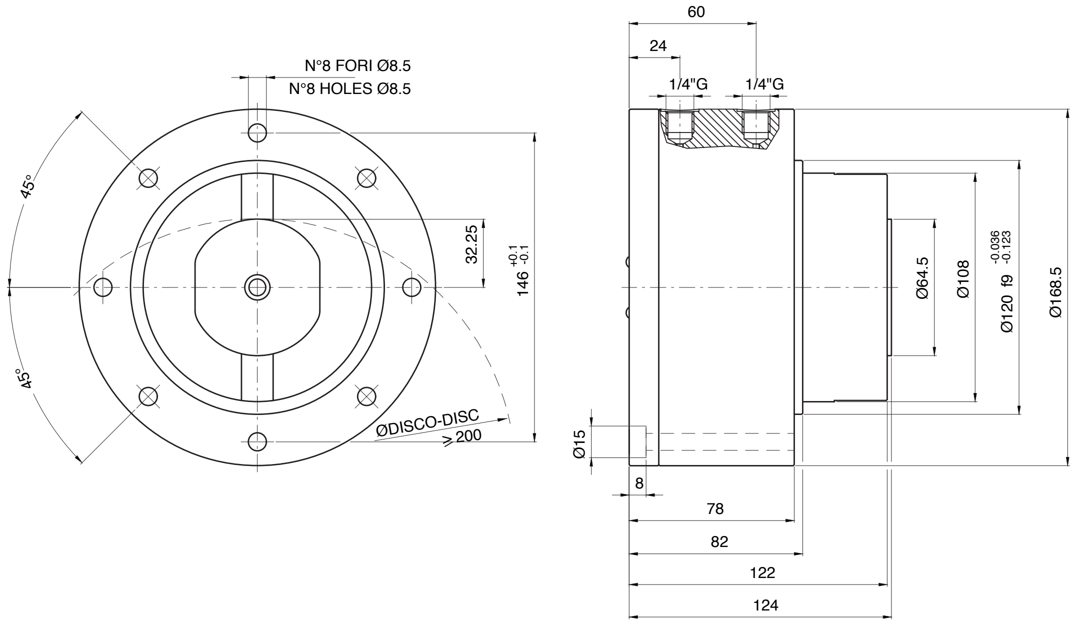
Axial load at 6 [bar] : Fs = 3817 [N]
Axial load at 0.4 [bar] : Fs = 254.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 1526 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.0322)
Max wear pad : 15 [mm]
Air volume : 0.101 [dm³]
Weight : 2.4 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

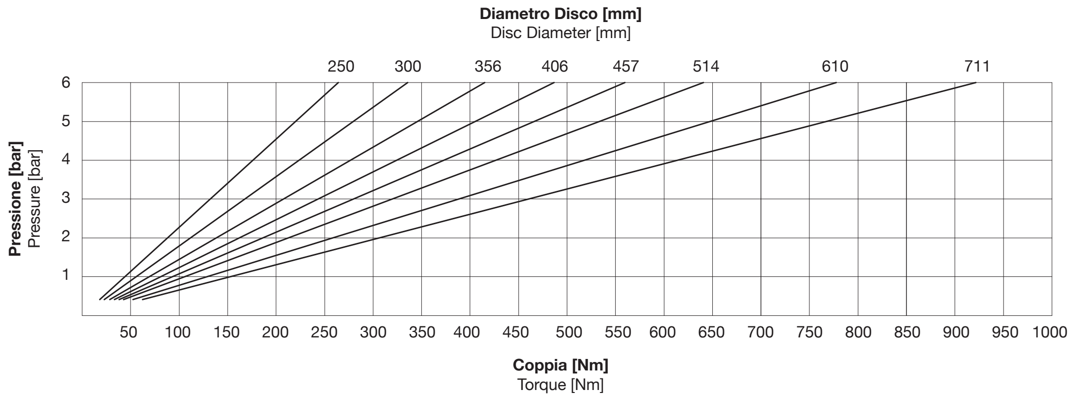
⚠ Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

CAB 125M

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



<u>Attenzione</u>: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale. <u>Warning</u>: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 7363 [N]
Spinta assiale a 0.4 [bar] : Fs = 490.5 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 2945 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.0322)
Max usura ferodo : 15 [mm]
Volume Aria : 0.25 [dm^3]
Peso : 5 [kg]

Technical Data

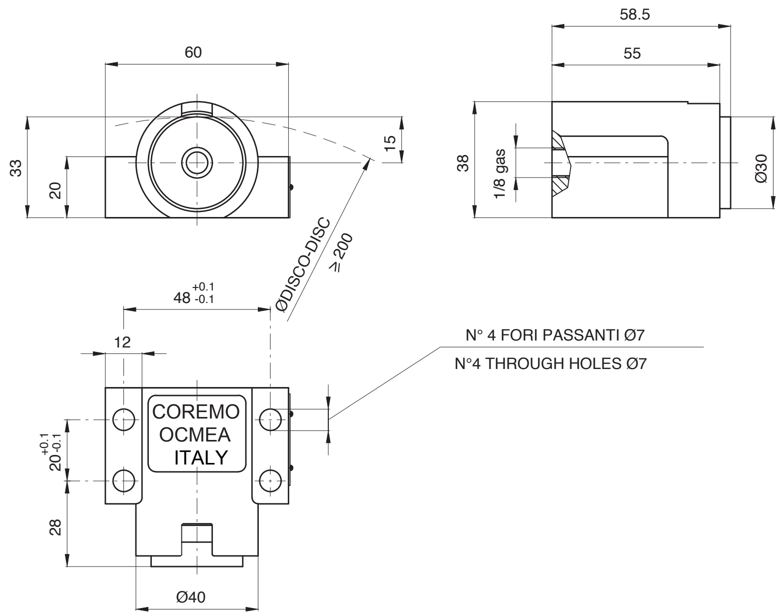
Axial load at 6 [bar] : Fs = 7363 [N]
Axial load at 0.4 [bar] : Fs = 490.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 2945 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.0322)
Max wear pad : 15 [mm]
Air volume : 0.25 [dm^3]
Weight : 5 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

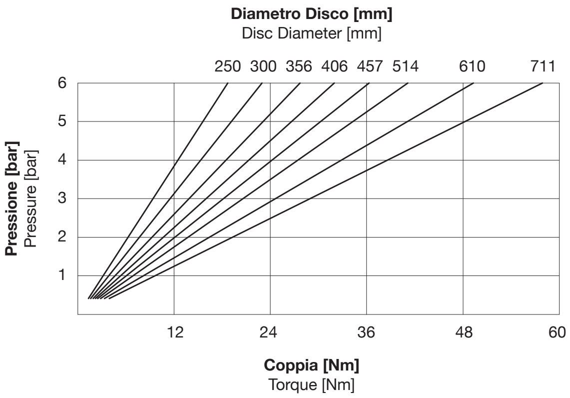
Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

SMART
Technical Datasheets

SMART 30	**Freno pneumatico a spinta** Mono actuated pneumatic brake



Dati Coppia / Torque data



Attenzione: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale. Warning: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 424 [N]
Spinta assiale a 0.4 [bar] : Fs = 28 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 170 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in m - 0.015)
Max usura ferodo : 6 [mm]
Volume Aria : 0.01 [dm³]
Peso : 0.25 [kg]

Technical Data

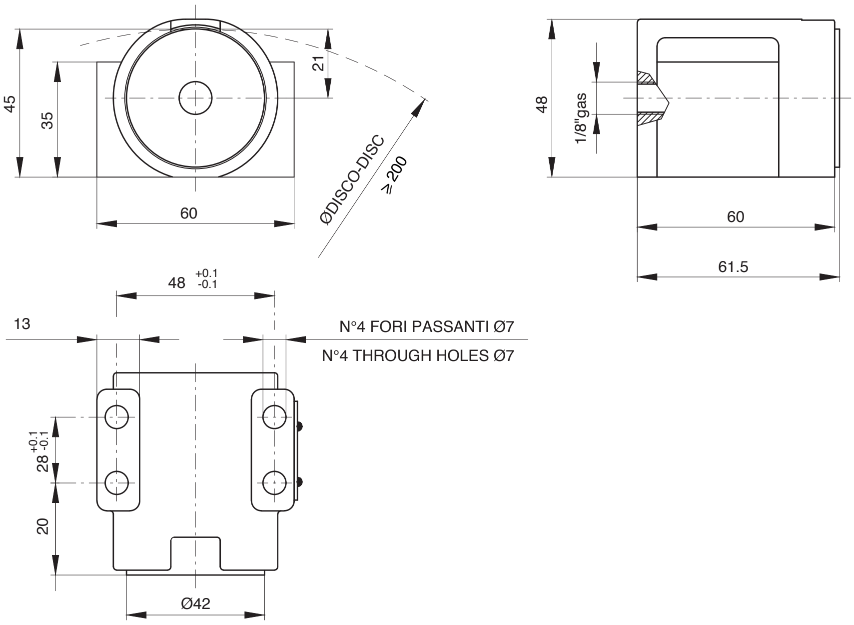
Axial load at 6 [bar] : Fs = 424 [N]
Axial load at 0.4 [bar] : Fs = 28 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 170 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.015)
Max wear pad : 6 [mm]
Air volume : 0.01 [dm³]
Weight : 0.25 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

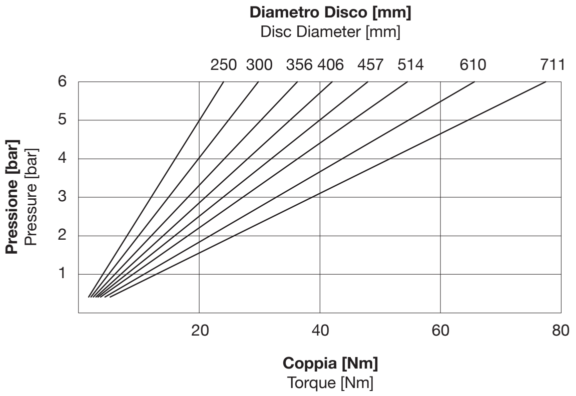
⚠ Il valore del coefficiente d’attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

SMART 42

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



<u>Attenzione</u>: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale. <u>Warning</u>: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 577 [N]
Spinta assiale a 0.4 [bar] : Fs = 38.5 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ = 231 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.021)
Max usura ferodo : 3.5 [mm]
Volume Aria : 0.02 [dm³]
Peso : 0.35 [kg]

Technical Data

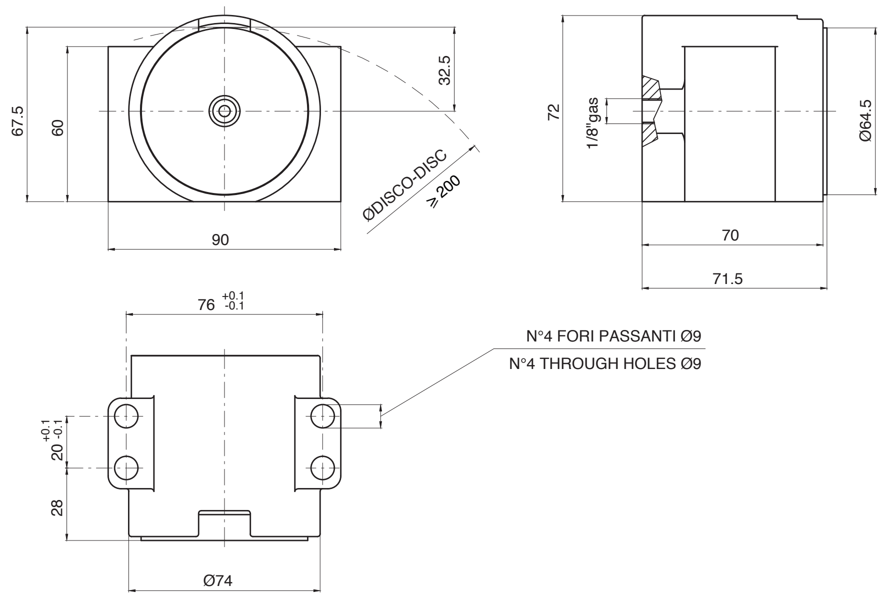
Axial load at 6 [bar] : Fs = 577 [N]
Axial load at 0.4 [bar] : Fs = 38.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 231 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.021)
Max wear pad : 3.5 [mm]
Air volume : 0.02 [dm³]
Weight : 0.35 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

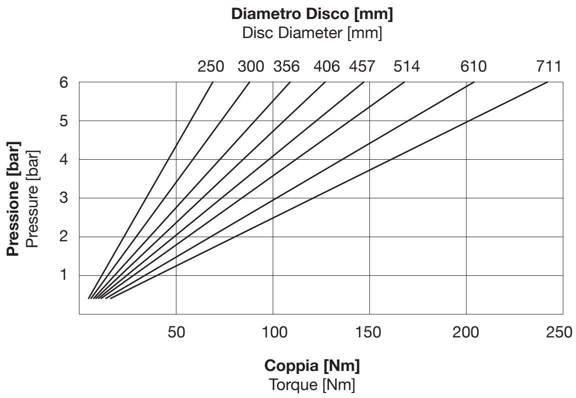
Il valore del coefficiente d'attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

SMART 64

Freno pneumatico a spinta
Mono actuated pneumatic brake



Dati Coppia / Torque data



<u>Attenzione</u>**: La coppia iniziale può essere inferiore dal 30% al 50% rispetto al valore nominale.** <u>Warning</u>: The initial braking torque can be lower from 30% to 50% than the nominal value.

NOTA: Il grafico mostra la variazione della coppia nominale (con μ = 0.4) in funzione della pressione per dischi di diversi diametri. NOTE: The diagram shows the variation of the nominal torque (with μ = 0.4) as a function of pressure for discs of different diameters.

Dati Tecnici

Spinta assiale a 6 [bar] : Fs = 1869 [N]
Spinta assiale a 0.4 [bar] : Fs = 124.5 [N]
Coefficiente di attrito nominale μ = 0.4
Forza tangenziale a 6 [bar] : Ft = Fs x μ =748 [N]
Coppia dinamica [Nm] = Ft x (raggio del disco in [m] - 0.0325)
Max usura ferodo : 4.5 [mm]
Volume Aria : 0.05 [dm³]
Peso : 0.75 [kg]

Technical Data

Axial load at 6 [bar] : Fs = 1869 [N]
Axial load at 0.4 [bar] : Fs = 124.5 [N]
Nominal friction coefficient μ = 0.4
Braking force at 6 [bar] : Ft = Fs x μ = 748 [N]
Dynamic torque [Nm] = Ft x (disc radius [m] - 0.0325)
Max wear pad : 4.5 [mm]
Air volume : 0.05 [dm³]
Weight : 0.75 [kg]

- Il calore da dissipare non deve superare la capacità termica del disco.
- The heat to dissipate must not in any case exceed the disc thermal capacity

⚠ Il valore del coefficiente d’attrito pari a 0,4 di cui ai calcoli sopra riportati è puramente teorico, essendo utilizzato ai fini meramente esplicativi. Tale valore può variare a seconda delle condizioni specifiche delle singole applicazioni. The friction coefficient value of 0,4, reported in the calculations here above, is purely theoretical and used for explanatory purposes. Such value can vary according to the specific conditions of each application.

To achieve an effective, reliable braking system, the brake must be combined with a disc with technical characteristics suited to the application. Dimensions, material, surface finish, hardness, mechanical strength and thermal capacity all directly influence the system's performance and the lifetime of its components.

Cast Iron and Steel Coremo Brake Discs

Vast range of diameters and thicknesses

In ductile cast iron or steel (also stainless), with or without hub

Bore supplied rough or machined to the customer's specifications

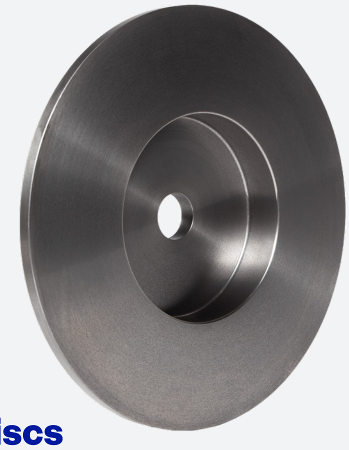
Fully customised discs produced to drawing or tailored to application requirements available

Hardness and surface finish designed to optimise the use of Coremo friction materials

Therefore, the choice of brake disc is as important as that of the brake itself. The right brake, disc and friction material combination improves braking stability, reduces wear and ensures continuity of service in the various operating conditions.

Coremo completes its range of industrial brakes with a brake disc offering designed to meet the needs of different applications, providing customers with a coherent system and expert technical support for the choice of the most suitable combination.

Alongside standard versions, custom solutions can also be provided, tailored to the specific applicational requirements or constructed to the customer's design. The range covers a variety of diameters and thicknesses and bores may be rough or custom-machined to facilitate the disc's integration in the system



Cast iron discs with or without hub

Coremo cast iron brake discs are constructed in **EN-GJS-500-7 ductile cast iron**, a material with excellent mechanical properties and outstanding fatigue strength and structural reliability, particularly suitable for heavy-duty industrial applications.

The standard range comprises:

Discs with diameter of 250 mm and thickness of 12.7 mm up to 762 mm in diameter and thickness of 25.4 mm, supplied with hat and rough bore.

To simplify installation procedures, Coremo is able to perform all machining required by the customer to produce the disc completely finished and ready for installation on the system.

The cast iron disc can also be supplied with steel hub complete with machined bore and keyway or any other machining specified by the customer's drawing or project requirements.

In order to guarantee high quality standards, prior to machining castings undergo ultrasound inspection to identify any internal discontinuities and reduce the risk of porosity or blowholes, ensuring unbeatable finished product reliability.

Steel discs with or without hub

Coremo offers a vast range of steel brake discs for the most widely varying industrial applications.

The standard range comprises:

Discs with diameter of 300 mm and thickness of 12.7 mm up to 600 mm in diameter and thickness of 25.4 mm, complete with hub and machined bore with keyway, or any other machining specified by the customer's drawing or project requirements.

Apart from its standard output, Coremo designs and constructs entirely custom discs, with or without hub, optimising their geometry, dimensions and construction characteristics to the requirements of the application.

Discs can be constructed in carbon, alloy or stainless steels, selecting the material best suited to the type of duty, operating conditions and working environment, such as operating temperatures, corrosive atmospheres, high salinity or the presence of aggressive chemicals.

Materials and functional characteristics

Coremo brake discs are chosen to suit the operating conditions and the performance required. The material and surface characteristics are specified to ensure correct braking behaviour and the highest degree of compatibility with Coremo friction materials.

The factors considered include:

Disc material

Hardness and surface finish

Thermal conductivity

Mechanical strength

Capacity to withstand thermal and operating stress

All these factors affect both braking performance and the lifetime of components, as they help to ensure correct pad-disc contact and to minimise wear.

The importance of the right choice

When selecting a brake disc, consideration must be given not only to the performance required but also to the actual operating conditions. The main factors to be assessed include:

Type of braking (dynamic or static)

Rotation speed

Duty cycle

Temperature conditions

Operating environment

Any dust, oils, humidity or chemicals

Any exposure to corrosive or marine environments

Correct analysis of these parameters is fundamental for the choice of the most suitable configuration, leading to more stable braking and greater reliability over time.

Coremo supports customers in selection of the most suitable brake, disc and friction material combination, to define a solution tailored to the duty cycle and the application's needs.

In-house tests and validation

The characteristics of Coremo discs are the outcome of in-house tests and trials conducted on specific test rigs. The tests embrace materials, hardness, surface finish, thermal behaviour and mechanical strength, assessing the disc's behaviour in the main applicational conditions.

Tests are performed considering parameters such as:

Type of braking

Friction material used

Environmental conditions

Rotation speed

Supply pressure

Disc surface characteristics and material

Thermal and mechanical stresses

Level of braking surface contamination

This approach enables the offering of solutions technically appropriate to the conditions of use, and the provision of real support to customers in choice of the most suitable disc.

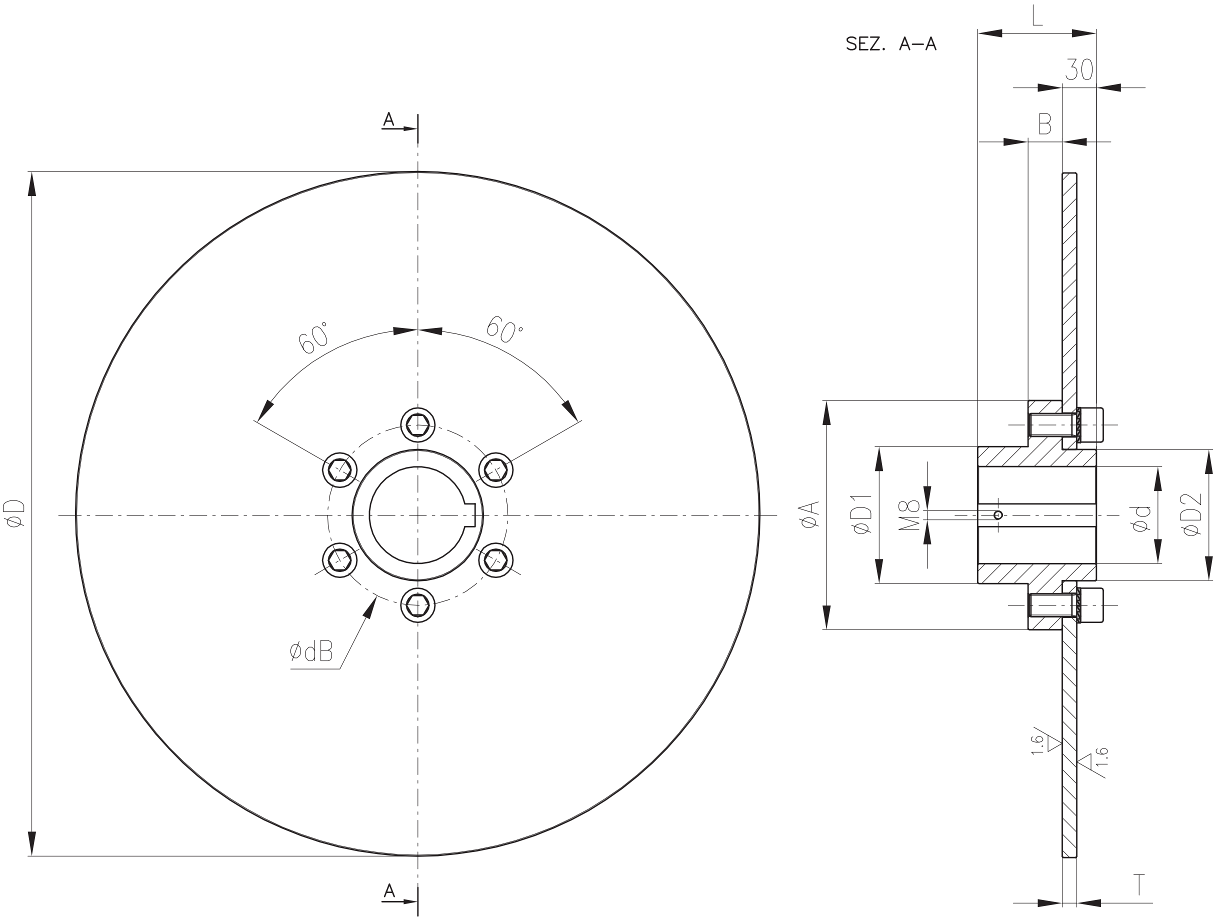
Coordinated supply package

The availability of brakes, discs and friction materials within the Coremo range simplifies the selection of a braking system and provides a single technical and commercial contact for the entire package.

This approach facilitates the procurement process, improves the package's consistency and supports customers in specifying a complete braking system, designed for the plant's specific needs.

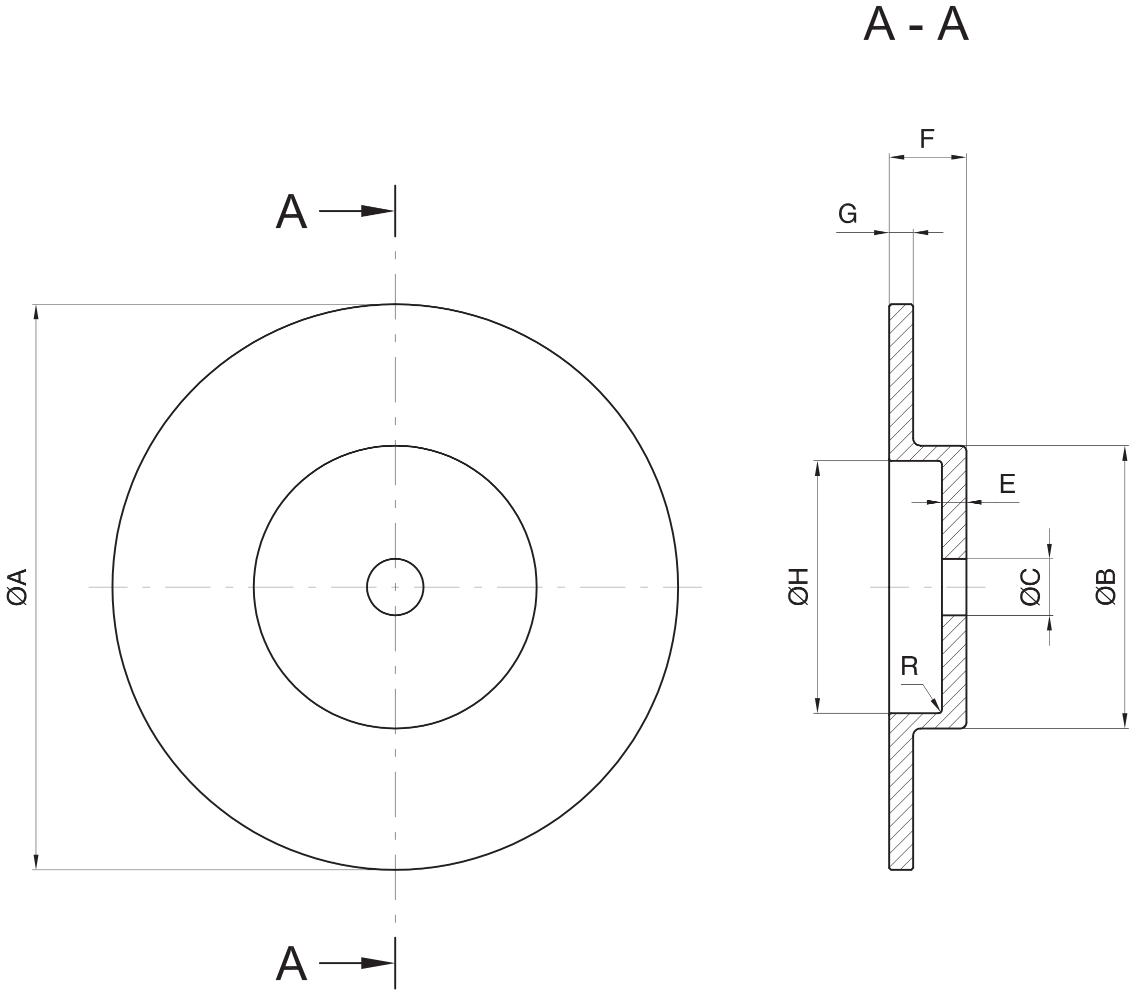
DISCHI
Technical Datasheets

Dischi piatti in acciaio con o senza mozzo
Steel flat discs with or without hub



Flat discs with hub. Dimensions

D	d max	D2	D1	dB	A	T	B	L	**Coppia Max [Nm]** Max Torque [Nm]
300	65	85	92	119	148	12.7	24	94	7500
350	65	85	92	119	148	12.7	24	94	7500
400	65	85	92	119	148	12.7	24	94	7500
450	85	115	120	158	201	12.7	30	104	16000
500	85	115	120	158	201	12.7	30	104	16000
500	85	115	120	158	201	25.4	30	104	16000
600	85	115	120	158	201	12.7	30	104	16000
600	85	115	120	158	201	25.4	30	104	16000



Cast iron hat discs. Dimensions

Ø A	Ø B	Ø C Grezzo Rough Bore	Ø H	R	E	F	G	Inerzia Inertia	Max Velocità Max Speed	Peso Weight
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kgm²]	[min⁻¹]	[kg]
250	100	20	91	1.5	6	36	12.7	0.07	4500	4
250	128	20	120	2	6	36	12.7	0.08	4500	4.2
300	181	30	165	2	13	41	12.7	0.12	3800	7.3
300	150	30	134	2	13	41	12.7	0.10	3800	7.2
356	210	40	175	2	16	54	12.7	0.23	3200	12.5
406	260	44	238	2	16	54	12.7	0.33	2800	15
457	311	44	277	2	16	54	12.7	0.53	2500	21
514	368	44	340	2	16	54	12.7	0.83	2200	25
610	464	44	426	2	16	54	12.7	1.63	1850	37.5
610	343	50	292	6	38	76	25.4	2.9	1850	68
711	565	80	532	2	19	54	12.7	3.63	1400	55
762	495	100	445	7	38	76	25.4	7.4	1500	109

Thermal analysis - dynamic braking

Thermal analysis is fundamental for establishing the correct dimensions of the braking system, meaning the brake-disc combination.

If the system is undersized for the thermal stresses present, the braking torque available will be reduced at high temperatures due to a decrease in the friction coefficient. This also leads to premature wear of the friction material and the possible onset of squealing and vibration during braking.

Excessively high temperatures may also damage the brake disc, with scratches formed by material transfer, discolouring due to overheating, changes in the metallurgy of the surface layers, variations in roughness and, in the most serious causes, thermal cracking.

If the relevant temperature limits are exceeded for lengthy periods, the changes to the friction material and disc may become permanent, meaning an impairment in braking performance even after normal duty conditions are restored.

Reliable operation of the system can only be ensured if both the following points are analysed and complied with:

- Permissible Specific Power for the friction material used.
- Brake disc maximum operating temperature

Specific Power of brake pad

The specific power must be analysed to assess whether the friction material will be operating within its acceptable temperature range.

The relevant parameter is the Specific Power (SP), obtained from the following formula:

$SP = P/F$ [kW/cm²]

where:
P = braking power [kW]
F = total surface area of friction material [cm²]

The guideline maximum values normally considered for industrial organic materials (consisting of phenol resins, reinforcing fibres, mineral fillers, metal components and solid lubricants) are:

- Emergency braking: $SP \leq 0.60$ [kW/cm²] equivalent to 6.0 [W/mm²]
- Continuous braking: $SP \leq 0.06$ [kW/cm²] equivalent to 0.6 [W/mm²]

Keeping SP values within these ranges restricts deterioration of the resin, organic fibre and metals, ensuring regular wear and a stable friction coefficient.

Specific blends, such as high-performance organic materials reinforced with aramid fibres or sintered materials, should be adopted for applications with more challenging thermal conditions.

Brake disc operating temperature

During dynamic braking, mechanical energy is converted into heat as the surfaces of the pad and disc rub against each other. Disc temperature is the main thermal parameter used to establish the system's operating limit. Exceeding temperature limits may cause a reduction in the friction coefficient, leading to an even considerable decrease in the braking torque available.

The guideline value generally adopted for emergency braking for standard organic brake pads is 250 °C. This value may only be exceeded in case of very rapid, isolated braking actions.

For continuous slip applications, the guideline maximum disc operating temperature generally applied is 100 °C. It should be borne in mind that the rate of pad wear increases with higher temperatures.

Therefore, compliance with the following thresholds must be ensured:

- Emergency braking: $T_{disc} \leq 250$ [°C]
- Continuous Slip: $T_{disc} \leq 100$ [°C]

Complying with these limits will provide a stable friction coefficient, limit oxidation of the disc and pad, reduce deterioration of the surface and the formation of unstable transfer layers, and conserve the brake's operating lifetime.

The values provided above refer to standard organic friction materials and discs. Higher limits can be adopted with the use of disc materials and friction material blends specifically designed to operate at higher temperatures.

Calculating the guideline disc temperature

The graphs provided below can be used for estimating the disc temperature that will be reached. The temperature curves are a tool for preliminary identification of guideline values and enable an initial qualitative estimate of the disc operating temperature.

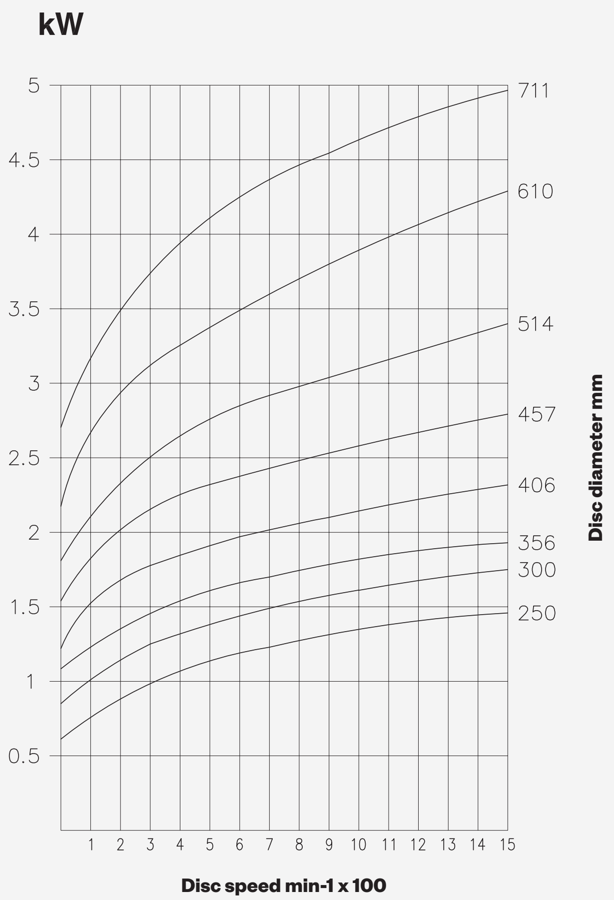
For applications in limit conditions or if specific temperatures have to be withstood, the value obtained must be integrated and verified using dedicated software tools (FEM analyses) or experimental tests in the laboratory (test rigs). In fact, real values may differ from those shown by the curves by reason of the metallurgy of the GS iron or steel used for the disc, the specific blend of the friction material, the braking cycle and applicational and environmental conditions.

Contact the Coremo Technical Office if in doubt.

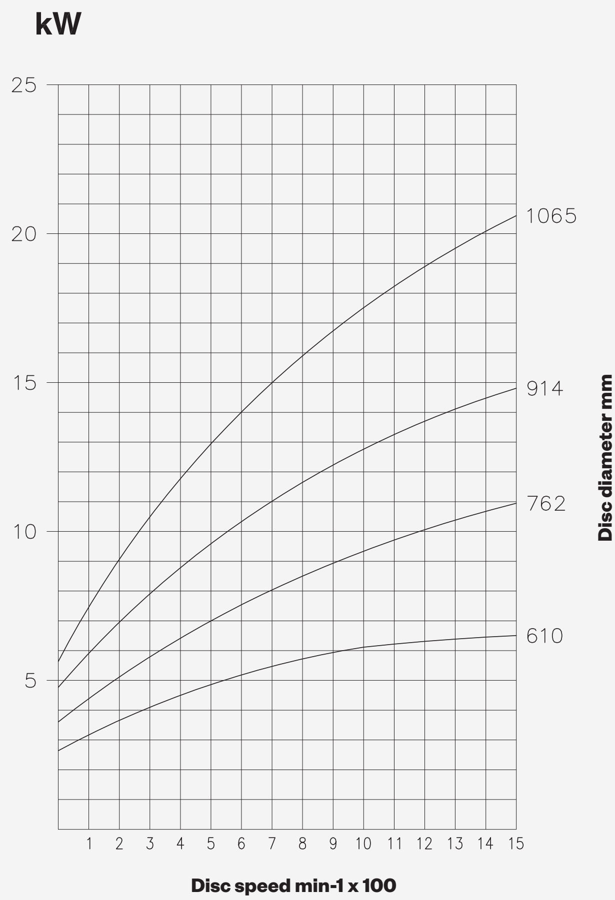
Thermal capacity - Continuous braking

The graphs below show the theoretical thermal curves, which show an increase in disc temperature (ΔT) of 170 °C in calm air, due to the continually generated power and the rotation speed. The data refers to EN-GJS-500-7 SG iron discs with nominal thickness of 12.7 mm and 25.4 mm and different diameters.

The graphs represent a guideline theoretical model and are therefore intended to provide preliminary guidance for deciding braking system size, using safety coefficients as a precaution.



Technical Data
Thickness: 12.7 mm
Material: SG Iron
UNI-ISO 1083-500.7
Heat dispersal with: ΔT = 170 °C



Technical Data
Thickness: 25,4 mm
Material: SG Iron
UNI-ISO 1083-500.7
Heat dispersal with: ΔT = 170 °C

How to use the graphs

The aim is to check that during continuous braking the final disc temperature (Twork) remains below the threshold value of 100 °C, the benchmark for organic friction materials in combination with SG iron or steel discs with thermal conductivity (λ) of more than 35 W/(m · K).

The application's final temperature is calculated as: Twork= (calculated $\Delta T \cdot k_S$) + Tambient

Where k_S is a corrective safety coefficient of 1.1 - 1.2 (an increase of 10-20%), applied to the value obtained from the graph to allow for tolerances between the theoretical model and real conditions.

Practical example:

- **Design data:** Continuous braking power required P=1.1kW; disc speed 100rpm; target disc = Ø610 mm (thickness 12.7 mm); ambient temperature = 25 °C.

- **Using the graph:** Follow the curve of the disc Ø610 mm, th. 12.7 mm until it meets the x axis value of 100 rpm.
Now find the corresponding limit power value on the y axis: it is about 2.65 kW. This means that at 100 rpm the temperature of the disc considered increases by 170 °C if subjected to a continuous power of 2.65 kW.

- **Calculating the expected increase (ΔT):** Assuming a linear relationship between power dispersal and temperature increase, the temperature rise for the design power (1.1 kW) is obtained:

$$\Delta T1.1kW = 1.1\ kW \cdot 170\ °C\ /\ 2.65\ kW = 70.6\ °C$$

- **Calculating the final temperature (Twork):** Applying the safety coefficient of 20% (1.2) and adding the ambient temperature:

$$Twork = (70.6°C \cdot 1.2) + 25\ °C = 109.7\ °C$$

- **Conclusion of the example:** The final temperature calculated (109.7 °C) is slightly above the recommended limit of 100 °C. Given this situation it is advisable to:

1. Proceed with a thermal analysis (FEM) to define the value more precisely.
2. Provide forced cooling systems (e.g. fan-assisted ventilation) to increase the heat exchange coefficient.
3. Consider using a thicker or larger-diameter disc, repeating the calculation.
4. Consider using disc and friction materials with higher thermal thresholds.

Additional comments

Check that the peripheral sliding velocity of the friction material and disc never exceed the maximum linear velocities, in m/s, stated in the technical datasheets of the friction material, or specific to the disc material.

Correct Use of the Product

General Safety Warnings

Wear suitable clothing

Risk of heavy weights

Risk of high temperatures

Risk of high pressures

Protect your hands and fingers

Read carefully before installing and using the product.

Field of application

Coremo brakes and the relative spare parts are components intended for incorporation in industrial machines or plants. The machine constructor or user is responsible for ensuring that the product is suitable for the intended application and complies with the relevant regulations.

The performance data provided in this catalogue refer to Coremo products used in the intended conditions and installed, used and maintained in accordance with Coremo's instructions.

Brake selection

Correct brake selection is fundamental for guaranteeing the application's reliability, durability and safety.

The parameters to be considered include:

• type of braking
• braking torque required;
• energy for dispersal;
• thermal capacity;
• rotation speed;
• braking frequency and duty cycle;
• environmental conditions;
• safety coefficient required by the application.
• expected friction coefficient

The braking torques and forces stated in this catalogue are nominal and must be recalculated if the expected friction coefficient varies from the nominal figure used for their calculation.

Nominal braking torque is not the only brake selection criterion. Heat dispersal capacity must be verified in relation to the intended duty cycle.

Unless other design factors have to be considered, a safety coefficient of at least twice the required torque is recommended for parking applications.

Coremo is at customers' service to assist them in correct product selection.

Installation and use

Installation, connection and maintenance must only be carried out by qualified staff in accordance with Coremo's instructions.

Prior to commissioning check that:

- components are correctly aligned;
- fixtures are correctly tightened;
- the pneumatic or hydraulic supply is correct;
- there are no leaks in the pneumatic or hydraulic circuits;
- there is no interference with rotating parts;
- the entire braking system functions correctly;
- all rotating or hazardous parts are protected by guards

The friction material gradually reaches its nominal performance levels during the breaking-in period. The initial braking torque may be as much as 30-50% below the nominal value.

Do not modify the product or use components or spare parts not approved by Coremo.

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Operating conditions

The values stated in the catalogue refer to the operating conditions specified in the relative Coremo technical datasheets and documents.

Do not exceeded the intended limits for the:

- braking torque;
- supply pressure;
- peripheral velocity;
- energy dispersal capacity;
- braking frequency;
- operating temperature.

Different conditions of use must have Coremo's prior approval.

Friction coefficient

The friction coefficient used in the unit's design and stated in the technical datasheet is a guideline nominal value.

The actual value may vary depending on the operating conditions such as temperature, speed, specific pressure, friction surface state, breaking-in, humidity, disc hardness and material, surface finish and any contamination by oils, greases or other substances.

The stated braking torques or forces are therefore to be considered purely nominal and recalculated if necessary on the basis of the expected friction coefficient.

Supply and operating pressure

For pneumatic brakes, use clean, dry, suitably filtered (degree of filtration ≤ 25μm) compressed air, free from liquid water and solids.
Slightly lubricated air may be used; in this case, it is essential to keep the lubrication level constant throughout the brake's working life.

For hydraulic brakes, use only the fluid specified for the version supplied:

- Standard version: ISO VG 46
- Offshore (OS) version: ISO VG 46
- Low Temperature (VL) version: ISO VG 15
- Offshore + Low Temperature (XT) version: ISO VG 15

The use of different fluids must be authorised by Coremo in advance.

The supply pressure must be kept within the operating range specified for the brake model.

The brake may fail to operate correctly in case of pressures below the specified values. In particular:

- in air- or oil-applied brakes, lower pressures may lead to reduced braking torque;
- in spring-applied, air- or oil-released brakes, they may prevent the brake from opening correctly, causing rubbing, overheating, premature wear and poor performance.

Pressure above the maximum permitted values may cause damage to thrusters, seals, sealing systems and other components exposed to the supply pressure.

The correct pressure value must be guaranteed directly at the brake in all plant operating conditions. Any pressure drops due to pipelines, fittings, valves or other components must be considered during design of the plant.

Friction materials

All friction materials used by Coremo are asbestos-free and comply with current regulations.

Wear of friction material generates airborne particles. During maintenance, do not clean with compressed air, use breathing systems or equivalent and wear the appropriate personal protective equipment.

Take care to prevent any contamination of friction surfaces with oils, greases or other lubricants. Lubricants may significantly reduce braking torque and impair the brake's performance.

Safety

Rotating parts must be suitably protected in accordance with current regulations.

Before any installation or maintenance procedure, check that all energy sources have been deactivated and the brake cannot be operated accidentally. For failsafe brakes, use the safety hook or screw supplied with the product.

Spring-applied brakes contain preloaded springs. They may only be dismantled in accordance with the instructions provided by Coremo. Incorrect removal of the preloading device may cause serious personal injury.

Use the appropriate personal protective equipment during installation, handling and maintenance.

Spare parts

To guarantee performance, reliability and safety only use genuine Coremo spare parts.

The use of non-genuine, modified or unauthorised components may impair the brake's operation and lead to forfeiture of warranty cover.

Storage and handling

Store brakes and spare parts in the original packaging, in a dry, clean, ventilated place, protected from weather, damp, direct sunlight, ozone and aggressive chemicals.

During handling use suitable equipment, considering the product's weight and adopting all safety measures envisaged by the regulations in force.

Before installation, check that the product has not been damaged during transport or storage.

If the product has been unused for long periods, check its suitability for use before putting it into service; in particular, inspect the seals and springs.

Disposal

At the end of their working life, the brake's components must be disposed of in accordance with the environmental regulations in force in the country of use.

Friction materials, metal parts, elastomers and any fluids must be separated and disposed of in accordance with the relevant local regulations.

Fire

Brakes may contain elastomer components that may generate potentially hazardous decomposition products in case of fire.

Emergency procedures must only be performed by trained staff equipped with the appropriate protective devices required by the relevant regulations.

Disclaimer

Coremo cannot be held responsible for direct or indirect damage arising from nonconforming installation, misuse, unauthorised modifications, poor maintenance, unsuitable storage, use beyond the design limits or the use of non-genuine spare parts.

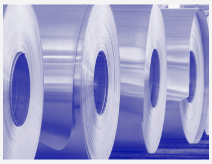
Updates to technical data

Coremo reserves the right to modify the technical characteristics, dimensions and contents of this catalogue without notice in the context of the continual improvement of its products.

Always contact Coremo representatives if in doubt or if you require more information, to avoid the risks arising from misuse of the product and its components.

Coremo Ocmea
Industrial Brakes and Clutches


Oil & Gas


Metalworking


Industry

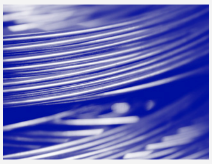

Rubber and Tyres


Mining


Winches and Cranes


Drinks & Liquid Food


Converting


Wires and Cables


Energy


Marine


Entertainment

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