

2732 Series 1 kN High-Temperature Pneumatic Action Grips

Catalog Number 2732-008, 2732-009

Features

- Rated capacity: 1 kN (100 kgf, 225 lbf)
- Open front design to facilitate specimen loading
- Self-centering action allows different specimen thickness without adjustment
- Pneumatic clamping of the specimen with follow-up action to reduce slippage
- Rugged design for minimum maintenance
- Adjustable gripping control
- Interchangeable jaw faces suitable for gripping different types of materials
- Rectangular jaw faces may be mounted with the long axis either horizontal or vertical to accommodate various specimens
- Temperature range: -70 °C to +315 °C (-100 °F to +600 °F)
- Optional automatic air kit with pretension and remote control for easy loading and improved efficiency

Description

High-temperature pneumatic action grips provide a convenient method for clamping delicate films, polymers and woven fabric within a temperature-controlled environment.

The clamping mechanism can be activated either automatically or through a foot switch. This allows hands free grip closure enabling the specimen to be held with both hands for easy loading. High-temperature pneumatic grips provide selectable clamping force to accommodate for the variety of different materials to be tested. Both jaw faces automatically adjust to different specimen thickness to ensure the line of tensile force remains concentric with the grip body. This has an excellent follow-up action that compensates for decay of the holding force due to specimen creep.

The grips are made of 300 Series stainless steel to prevent rusting generally caused by condensing air when testing with a cooling cycle. Interchangeable grip faces with various sizes and surfaces including, smooth ground, rubber coated, serrated, line-contact and special coated, are available as well as pull rods of various lengths to accommodate different length specimens and optimize load string space.

Principle of Operation

Pneumatic action grips clamp the specimen through a dual lever arm, actuated by air cylinders built into the grip body. The air cylinders are connected to pull rod extensions for fitting inside the temperature chamber. The air input to the grips is passed through the hollow pull rods via a connection outside of the chamber. The gripping force can be increased with air pressure to accommodate materials that are often difficult to hold. This constant gripping force is maintained on the specimen and provides the ultimate in follow-up action to compensate for any decay in the gripping force. The grips may be closed or opened by a pneumatic footswitch for hands-free operation. An automated air kit is also available for hands-free, automated and pretension testing. The interchangeable jaw faces are held on the grip in a manner that one face is free to swivel on a horizontal axis and the other on a vertical axis. This action allows for self-alignment to compensate for variations in sample thickness.



▲ Pneumatic high-temperature grips inside a chamber

Application Range

- Type of loading: Tension
*Not suitable for through zero/reverse stress or fatigue testing
- Specimen material: Thin sheets, films, foils, threads, plastic tapes, fine wires and soft materials
- Specimen shapes: Round (wires) and flat specimen with/without shoulder tab ends

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Specifications

Catalog Number	2732-008		2732-009
Maximum Capacity	-	1 kN (100 kg, 225 lb)	-
Connection upper	-	Pneumatic connection	-
Connection lower	-	Pneumatic connection	-
Overall Width (A)	145 mm (5.7 in)	-	153 mm (6.0 in)
Effective length upper	-	193 mm (7.6 in)	-
Effective length lower	-	193 mm (7.6 in)	-
Throat Depth (C)	-	38 mm (1.5 in)	-
Throat Depth (D)	-	16 mm (0.6 in)	-
Weight Per Grip	4.1 kg (9.0 lb)	-	4.2 kg (9.2 lb)
Temperature Range	-	-73 °C to +316 °C (-100 °F to 600 °F)	-
Clamping Force	4.98 kN (498 kgf, 1120 lbf)	-	2.5 kN (250 kgf, 560 lbf)
Maximum Air Pressure	-	6.3-bar (90 PSI)	-
Specimen Thickness	0 to 6.3 mm (0 to 0.25 in)	-	0 to 12 mm (0 to 0.50 in)

Notes:

- Grip catalog provides two grips
- Grips require upper and lower pneumatic pull rods to connect to the load cell and machine base
- Upper grip may require a flexible coupling for certain applications
- Automatic air control kit or pneumatic footswitch will be required for operation of these grips

Accessories

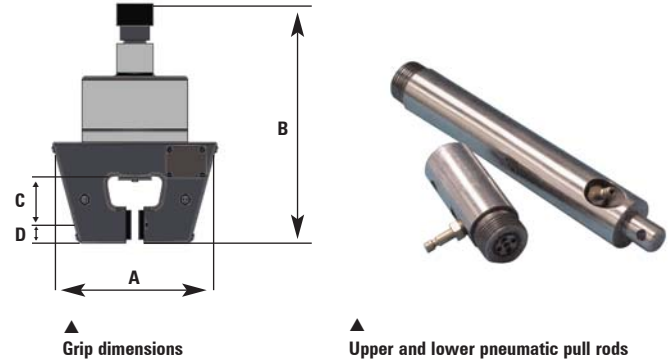
Catalog Number	Description
2810-018	Air compressor, portable 115 VAC
2810-060	Air compressor, portable 230 VAC
2701-004	Pneumatic footswitch
2701-065	Automatic air control kit for 4400, 5500 (excluding 4411 and upgrade (excluding 1130, 6000, 4500 and TTs)
2701-067	Automatic air control kit for 4411 and upgrades on 1130s

Jaw Faces

Catalog Number	Surface	Clamping Area (W x H)	Application
2702-011	Smooth ground	12 mm x 38 mm (0.5 in x 1.5 in)	For gripping thin sheets, films, foils, paper and tapes
2702-031	Smooth ground	25 mm x 25 mm (1 in x 1 in)	For gripping thin sheets, films, foils, paper and tapes
2702-014	Smooth ground	25 mm x 38 mm (1 in x 1.5 in)	For gripping thin sheets, films, foils, paper and tapes
2702-017	Smooth ground	50 mm x 38 mm (2 in x 1.5 in)	For gripping thin sheets, films, foils, paper and tapes
2702-034	Smooth ground	76 mm x 25 mm (3 in x 1 in)	For gripping thin sheets, films, foils, paper and tapes
2702-012	Rubber-coated	12 mm x 38 mm (0.5 in x 1.5 in)	For gripping threads, fabrics, plastic tapes and fine wires
2702-032	Rubber-coated	25 mm x 25 mm (1 in x 1 in)	For gripping threads, fabrics, plastic tapes and fine wires
2702-015	Rubber-coated	25 mm x 38 mm (1 in x 1.5 in)	For gripping threads, fabrics, plastic tapes and fine wires
2702-018	Rubber-coated	50 mm x 38 mm (2 in x 1.5 in)	For gripping threads, fabrics, plastic tapes and fine wires
2702-035	Rubber-coated	76 mm x 25 mm (3 in x 1 in)	For gripping threads, fabrics, plastic tapes and fine wires
2702-013	Diamond-serrated, pitch 1 mm (25-teeth per in)	12 mm x 38 mm (0.5 in x 1.5 in)	For gripping plastic and soft materials
2702-033	Diamond-serrated, pitch 1 mm (25-teeth per in)	25 mm x 25 mm (1 in x 1 in)	For gripping plastic and soft materials
2702-016	Diamond-serrated, pitch 1 mm (25-teeth per in)	25 mm x 38 mm (1 in x 1.5 in)	For gripping plastic and soft materials
2702-019	Diamond-serrated, pitch 1 mm (25-teeth per in)	50 mm x 38 mm (2 in x 1.5 in)	For gripping plastic and soft materials
2702-059	Diamond-serrated, pitch 1 mm (25-teeth per in)	76 mm x 25 mm (3 in x 1 in)	For gripping plastic and soft materials
2702-020	Line contact ³	25 mm (1 in) x 2.3 mm (0.09 in) radius convex surface	For gripping elasticated fabrics, paper and rigid
2702-062	Line contact ³	76 mm (3 in) x 2.3 mm (0.09 in) radius convex surface	For gripping elasticated fabrics, paper and rigid
2702-044	High friction compound	25 mm x 38 mm (1 in x 1.5 in)	For gripping bundled reinforced plastics and other materials at elevated temperatures
2702-045	Waved profile	50 mm x 38 mm (2 in x 1.5 in)	For gripping fabrics and plastic tape

Notes:

- Faces catalog number provides four faces
- All faces are hardened to 60 - 65 Rc, excluding rubber-coated and if otherwise specified
- Line contact faces are provided with a smooth ground opposing face
- The width and height of the faces are interchangeable, providing that one half of the vertical dimension of the faces less than dimension C
- All rubber-coated faces are limited to a temperature range of -20 °C to +115 °C



Pull rods and Adaptors

Catalog Number	Description
3110-559	Upper and lower adaptors to convert grips Type 2732-003 and 2732-004 for ambient use without pullrods. Upper fitting: Pneumatic connection to 1/4 in clevis pin (Type Cm) Lower fitting: Pneumatic connection to 1/2 in clevis pin (Type Dm)
3119-305	Lower pullrod, rated capacity 10 kN Mechanical fitting: Pneumatic connection to 1/2 in clevis pin (Type Dm) Effective length: 81 mm (3.2 in)
3119-306	Lower pullrod, rated capacity 10 kN Mechanical fitting: Pneumatic connection to 1/2 in clevis pin (Type Dm) Effective length: 118 mm (4.6 in)
3119-307	Upper pullrod, rated capacity 10 kN Mechanical fitting: Pneumatic connection to 1/4 in clevis pin (Type Cm) Effective length: 316 mm (12.4 in)
3119-308	Upper pullrod, rated capacity 10 kN Mechanical fitting: Pneumatic connection to 1/4 in clevis pin (Type Cm) Effective length: 380 mm (15 in)
3119-311	Upper pullrod, rated capacity 10 kN Mechanical fitting: Pneumatic connection to 1/2 in clevis pin (Type Dm) Effective length: 160 mm (6.3 in)
3119-312	Upper pullrod, rated capacity 10 kN Mechanical fitting: Pneumatic connection to 1/2 in clevis pin (Type Dm) Effective length: 350 mm (13.8 in)



Corporate Headquarters
825 University Avenue, Norwood, MA 02062-2643 USA
Tel: +1 800 564 8378 or +1 781 575 5000 Fax: +1 781 575 5725

Instron Industrial Products
900 Liberty Street, Grove City, PA 16127-9969, USA
Tel: +1 724 458 9610 Fax: +1 724 478 9614

European Headquarters
Coronation Road, High Wycombe, Bucks HP12 3SY, UK
Tel: +44 1494 464646 Fax: +44 1494 456123

www.instron.com

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