ottobock.

Prepreg Technology

The production of light and high-strength orthoses

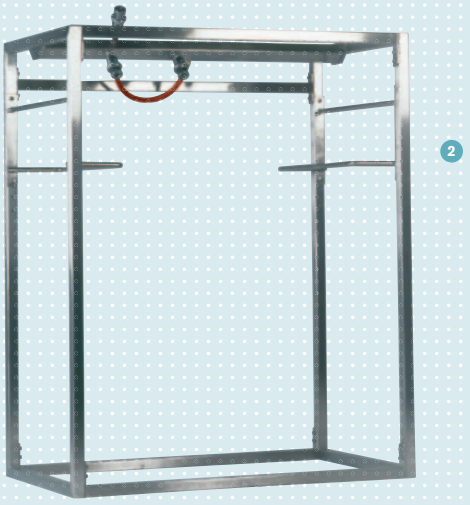
Information for technicians

Prepreg Technology
Ovens and Stands

The term ‘Prepreg’ is a derivation of the term ‘preimpregnated’. This term also implicates proper processing of carbon fiber materials. The carbon fibers reinforced with epoxy resin are especially suited for manufacture of lightweight reinforced orthoses.

1 Prepreg Oven Stand 758S2

2 Prepreg Oven Stand 758S7



Prepreg Technology Oven Stands

The 758S2 and 758S7 Prepreg Oven Stands are made completely of high-quality steel, grade 1.4301. The 758S2 Prepreg Oven Stand fits the oven dimensions so as to be inserted and removed easily. This provides a multipurpose use of the 701E8 Oven for heating of plastics, drying of plaster models, manufacture of Prepreg orthoses etc. The external vacuum supply is connected via thermal resistant quick release coupling. The vacuum distribution valve with 6 quick release couplings, thermal resistant up to 160 °C/320 °F, is sized for connection of up to 3 two-way vacuum pipes 755X123.

The design of the 758S7 Prepreg Oven Stand for the 701E7 Oven is the same as 758S2, but has 6 connections, out of which 2 are provided with quick release couplings for vacuum supply, thermal resistant up to 160 °C/320 °F. If necessary, up to 4 other 755Y60 Thermal Resistant Prepreg Couplings for vacuum supply up to 160 °C/320 °F can be retrofitted. Both Prepreg Oven Stands are incl. vacuum bushing, for installation into the 701E8 and 701E7 Ovens.

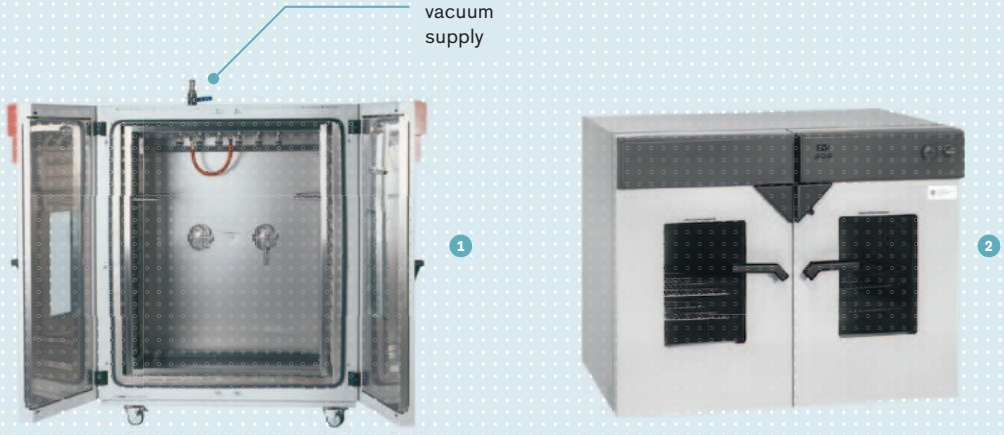
The 701E7 Ovens can be optionally equipped with the 758S7 Oven Stand and the 701E8 Ovens can be optionally equipped with the 758S2 Oven Stand.

Prepreg Technology Ovens

The hardening of the epoxy resin is performed at a temperature of 130 °C/266 °F. The carbon fiber material is under vacuum (min. 0.3 bar) during the hardening time of 4 hours at least so as to enclose the plaster model properly. Vacuum between the plaster model and PVA underlying foil as well as between the PVA underlying foil and PVA top foil is to be maintained at that time.

This processing technique requires an oven with the interior vacuum supply. The 701E7 and 701E8 Prepreg Ovens together with the 758S2 and 758S7 Oven Stands are specially designed for Prepreg Technique.

If you need consulting and servicing, our field service is at your disposal. We will gladly prepare a specific offer for your needs. Feel free to contact us for further support.



1 Oven 701E8

2 Oven 701E7

The ovens for Prepreg Technology are available in three versions:

1P Oven
2P + Window
3P + Window + Digital Readout

Technical Data

Prepreg Technic Oven	701E7	701E8
Exterior dimensions W x H x D	1234 x 1030 x 870 mm	1234 x 1530 x 970 mm
Interior dimensions W x H x D	1000 x 800 x 500 mm	1000 x 1200 x 600 mm
Interior volume	400 l	720 l
Temperature range	to 300 °C / 572 °F	300 °C / 572 °F
Power requirements	3 x 400/N/PE/50-60/3,4 V/Hz/kW	3 x 400/N/PE/50-60/5 V/Hz/kW
Weight net/gross	145/188 kg / 320/415 lbs	184/253 kg / 406/558 lbs
Exterior color	light gray, powder coated	light gray, powder coated
Electric equipment	2 m power cord with CEE plug 5 x 16 A and CEE socket 5 x 16 A	

Vacuum supply for Prepreg Technology

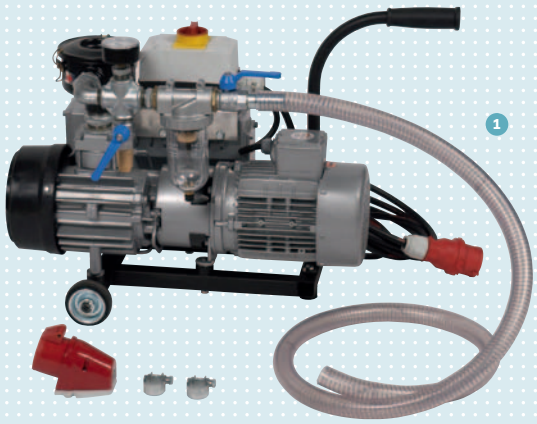
755E8 Vacuum Pump with tank
The high-performance Vacuum Pump 755E8 is suitable for precise vacuum forming of thermoplastic sheet materials and for Prepreg manufacture. In combination with the 755T4=360 Outer Ring, 755X84=260 Frame Plate, 755X94 Vacuum Pipe, and 755X104 Vacuum Pipe with disk (disk dia. 180, 260 or 360 mm) diverse prosthetic and orthotic parts can be fabricated.

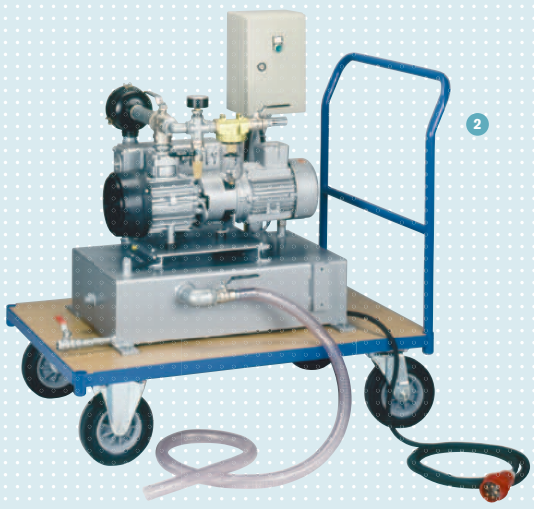
Device features
- A water trap is included as standard equipment. This trap prevents water from penetrating into the Vacuum Pump during deep drawing procedure.
- The Vacuum Pump has circular oil lubrication, back flow seal, oil mist trap, ball valve G ¾", and vacuum meter.
- The evacuation is switchable through a 3-way ball valve either to direct pump evacuation or evacuation through vacuum tank provided with adjustable automatic pressure control via contact pressure gauge.
- The Vacuum Pump is air cooled and mounted on the chassis.

Technical Data:

Features	Vacuum Pump 755E9	Vacuum Pump with tank 755E8
Rated intake volume	40 m³/h	40 m³/h
End pressure	20 mbar	20 mbar
Tank volume	0 l	50 l
Power requirements	3 x 400/PE/50/1,1 V/Hz/kW	3 x 400/PE/50/1,1 V/Hz/kW
Hose connection	25 mm	25 mm
Electric equipment:	4 m power cord with CEE plug 5x16A and CEE socket 5x16A, motor circuit breaker, main switch, contact pressure gauge	4 m power cord with CEE plug 5x16A and CEE socket 5x16A, motor circuit breaker, main switch, contact pressure gauge

1 Vacuum Pump 755E9
2 Vacuum Pump with Tank 755E8





The vacuum can also be supplied by central vacuum system.

Accessories for Prepreg Technology

755Y59 Mounting Coupling, Inside Thread 1/2", for Prepreg
Quick release coupling for attachment of ½" male thread nipples for 755X123 Two-way Vacuum Pipes. For mounting to the workbench.

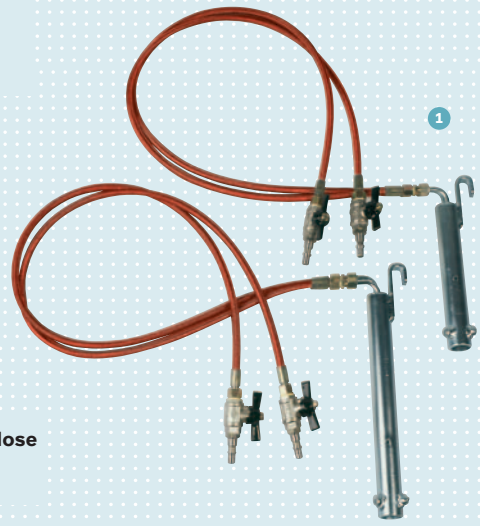
755Y60 Thermal Resistant Prepreg Coupling (not illustrated)
Quick release coupling for attachment of 3/8" male thread nipples for 755X123 Two-way Vacuum Pipes as an option for the 758S7 Oven Stand. Temperature range up to 160 °C/320 °F.

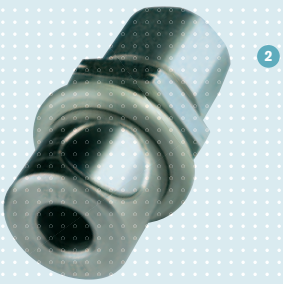
616R6 Vacuum Hose for 755E8 and 755E9 Vacuum Pump (not illustrated)
with spiral wire, NID 25 mm, weight 0.520 kg/m
When ordering please specify precise length.

755X123=1 Two-way Vacuum Hose, short
755X123=2 Two-way Vacuum Hose,long
The two-way vacuum pipes consist of:
- Silicon hose
- Shut-off valve
- Nipple

1 Prepreg Two-way Vacuum Hose 755X123

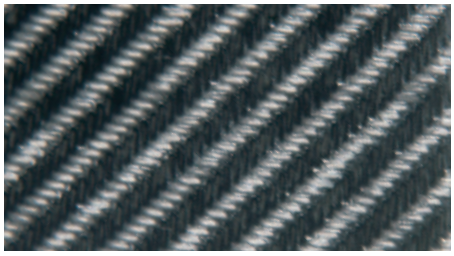
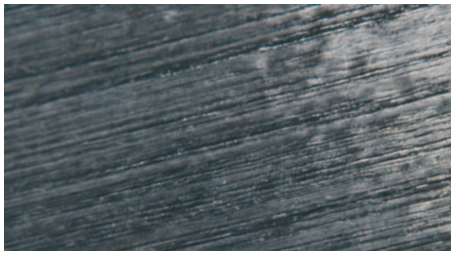
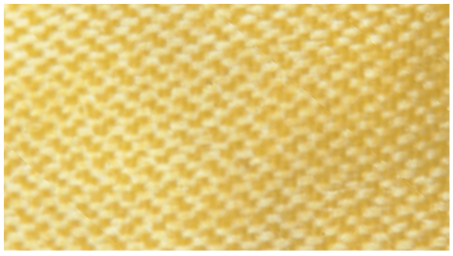
2 Mounting Coupling 755Y59





Prepreg Two-way Vacuum Hose
755X123=1 short
755X123=2 long

Materials for Prepreg Technology

Material		Fiber proportion g/m²	Delivery qty.	Bonding
	Carbon-Fiber Cloth 616B10=1	283	5 x 1,27 m	Body 4:4
	Carbon-Fiber Cloth, Unidirectional 616B11=1	240	5 x 0,3 m	Undirectional
	Aramid Cloth 616B13=1	175	2 x 1,25 m	Body 1:4
	Dyneema Cloth 616B15=1	160	2 x 1 m	Body 2:2
	Peel Ply 616B16=1		2 x 0,5 m	

Material		Article No.	Dimensions	Packing units
	PVA Bags	99B81 = 60 x 11 x 4 99B81 = 70 x 19 x 5 99B81 = 70 x 27 x 5 99B81 = 100 x 19 x 5 99B81 = 100 x 26 x 5 99B81 = 130 x 22 x 5 99B81 = 130 x 26 x 5	600 x 110 x 40 mm 700 x 190 x 50 mm 700 x 270 x 50 mm 1000 x 190 x 50 mm 1000 x 260 x 50 mm 1300 x 220 x 50 mm 1300 x 260 x 50 mm	10 pcs.
	PVC Sheeting Material, transparent	616F1 = 130 x 0.12	1300 x 0,12 mm	m
	Perlon Stockinette	99B25	ca. 500 mm lang	10 pcs.
	Rubber Cork	620P3 = 3 620P3 = 4 620P3 = 5 620P3 = 6	942 x 610 x 3 mm 942 x 610 x 4 mm 942 x 610 x 5 mm 942 x 610 x 6 mm	1 pcs.
	Rubber Cement	636N9 = 0.660 636N9 = 4.500	0,660 kg 4,500 kg	1 pcs.
	Plastaband (plastic sealing tape)	636K8 = 20 x 2 x 10	20 x 2 mm	10 m
	Polyester Adhesive Tape (thermal stability up to approx. 200 °C/ 392 °F)	636D3	25 mm	approx. 66 m

Please note: Processability time of the Prepreg materials is about 6 months when stored at -18°C/ 64,4 °F or maximum 30 days when stored at the room temperature.

With kind regards

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