

HEBERLEIN® POLYJET-BCF TOP AIR.

AIR INTERLACING IN SPIN-DRAW TEXTURING.

AIR INTERLACING OF BCF YARNS IN THE SPIN-DRAW TEXTURING PROCESS.

The PolyJet-BCF Top Air is used for advanced air interlacing of BCF technical filament yarns such as Polyester, Nylon and Polypropylene, which can be used in the manufacture of carpets.

Air interlacing

Individual filaments are intermingled using a stream of compressed air. The resulting interlacing knots provide the required yarn compaction. This in turn leads to higher processing speeds, to an improved package build and reduced occurrence of broken filaments and yarn breaks in the downstream processes.



Features and Benefits

- ▶ Provides an additional indirect air stream from above, as well as normal vertical airstream from below
- ▶ Indirect air stream forwards and centres the yarn and works as a twist amplifier
- ▶ Vertical and indirect air streams can be set to different pressures
- ▶ Air streams work together to achieve a maximum interlacing performance with minimum air consumption
- ▶ Can produce a large number of strong interlacing knots with a large denier range
- ▶ Easy to thread with suction gun
- ▶ Ceramic guarantees long life
- ▶ Can be fitted to all existing BCF spin draw texturing machines

Heberlein® PolyJet-BCF Top Air

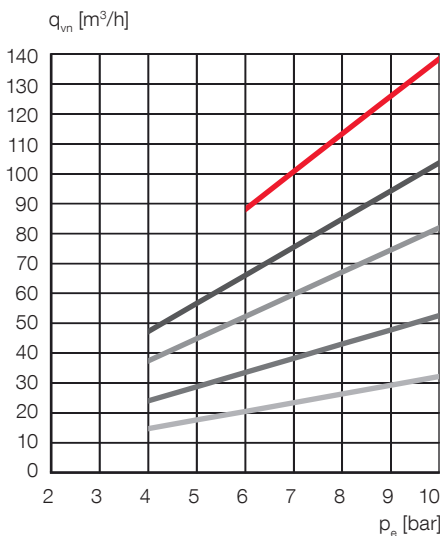
Technical Data

Type	BCF36- HN251A/CO33	BCF36- HN321A/CO41	BCF45- HN403A/CO52	BCF45- HN453A/CO63	BCF45- HN452A/CO62	BCF45- HN520A/CO65
Air pressure range p_e [bar]	4.0 - 10.0	4.0 - 10.0	4.0 - 10.0	4.0 - 10.0	4.0 - 10.0	6.0 - 10.0
Denier in jet ¹ [dtex] PA	500 - 1 200	700 - 2 000	1 000 - 3 200	1 800 - 4 500	2 400 - 6 000	4 500 - 8 000
PP	400 - 1 000	600 - 1 800	800 - 3 000	2 000 - 4 200	2 200 - 5 500	4 000 - 7 000
Winding speed [m/min]	~ 4 000	~ 4 000	~ 4 000	~ 4 000	~ 4 000	~ 4 000
Formula for air consumption per yarn channel						
Hauptluft q_{vm} = [m³/h]	2.905 (p_e+1)	4.759 (p_e+1)	7.437 (p_e+1)	9.412 (p_e+1)	9.412 (p_e+1)	12.568 (p_e+1)
Oberluft q_{vm} = [m³/h]	0.671 (p_e+1)	1.125 (p_e+1)	1.822 (p_e+1)	2.233 (p_e+1)	2.379 (p_e+1)	3.147 (p_e+1)
Yarn tension after the jet ² [cN/dtex]	0.08 - 0.12	0.08 - 0.12	0.08 - 0.12	0.08 - 0.12	0.08 - 0.12	0.08 - 0.12
Air channel [mm]	1 x \varnothing 2.50 2 x \varnothing 0.85	1 x \varnothing 3.20 2 x \varnothing 1.10	1 x \varnothing 4.00 2 x \varnothing 1.40	1 x \varnothing 4.50 2 x \varnothing 1.55	1 x \varnothing 4.50 2 x \varnothing 1.60	1 x \varnothing 5.20 2 x \varnothing 1.84
Number of yarn ends	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4
Gauge [mm]	15, 25	15, 25	15, 25	15, 25	15, 25	15, 25

¹ Approximate values: Depend on the properties of the feeder yarn used, on the machine set-up and the yarn guiding.

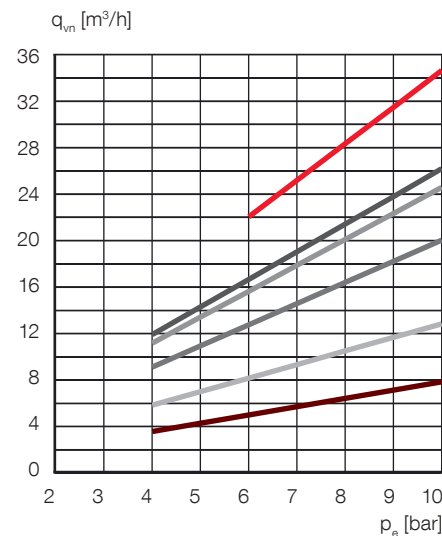
² Yarn tension 1 g = 0.981 cN.

Air consumption - main air



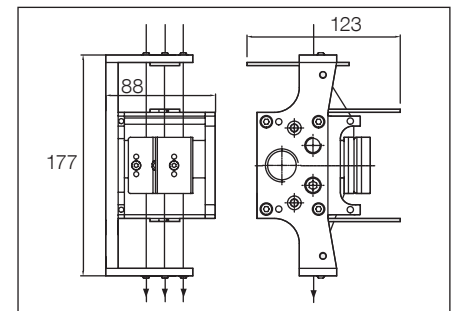
— HN520A
— HN452A/ HN453A
— HN403A
— HN321A
— HN251A

Air consumption - upper air



— CO65
— CO62
— CO63
— CO52
— CO41
— CO33

Dimensions and weight



Example: PolyJet-BCF TopAir 3 fold,
gauge 15 mm

Compressed air requirements

- Max. residual oil: 0.1 mg/m³ (class 2*)
- Max. residual particles: (class 2*)
 - Particle size 1 µm
 - Particle density 1 mg/m³
- Max. residual water: (class 5*)
 - Residual water 7.732 g/m³
 - Dew point + 7 °C

* According to DIN ISO 8573-1

p_e = gauge pressure [bar]
 q_{vm} = air consumption [m³/h]*
 psi = 14.7 x bar
 CFM = 0.588 x m³/h

* Standard conditions according to DIN 1343:

Standard temperature = 0 °C, standard pressure = 1.01325 bar, relative humidity = 0 %,
 (1 standard cubic metre = 1.293 kg)