

Air Interlacing Jets LD

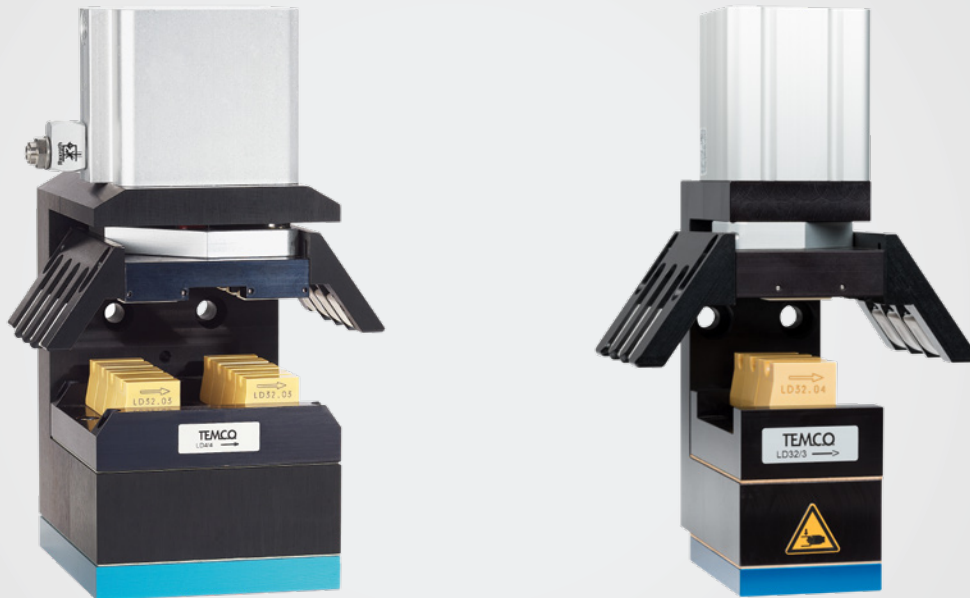
Technical information



The right jet solution
for each process

Air Interlacing Jets LD

Overview and technical data



Function of the air interlacing jets

During the air interlacing process, a yarn is essentially transversely impinged with a stream of air, which results in local filament twisting.

The air interlacing jets of the product series LD4 and LD32 have a special mechanism with a short-stroke air cylinder, which entails the opening and by default an integrated air on/off feature. The automatic open/close principle saves energy and improves the application of the threading process:

Yarn Threading can be carried out by opening the jet. The air supply is interrupted automatically.

If the jet is closed once, the thread can no longer slip out of the thread channel. The air supply is reactivated automatically.

If an integrated air on/off feature is not possible with customer-specific variants, the air on/off feature must be realized on the machine side.

The material-related accuracy, geometry and surfaces of the air and thread channels ensures the high level of evenness of the interlacing. Depending on the yarn and count to be processed, there are air jet attachments available with different geometries. Yarn guide, baffle plate and jet attachments are made of wear-resistant ceramic. The springy application of the baffle plate guarantees a safe application to the jet attachment in the process. Both sides of the baffle plate can be used.

Application area of the LD for technical yarns (CF, FDY, optical fibers etc.)

The air interlacing jets are used in the following processes:

Spinning fully-drawn yarns (FDY)

- Bulked Continuous Filament (BCF)
- Spooling and winding (multiple/mixed yarns)
- Optical fiber spinning (staple fiber/roving yarns)

Quality benefits for the further processing are:

- Good yarn compaction by interlacing during yarn manufacture
- No filament breaks, which could result in losses of strength
- Good unwinding properties during downstream processing
- Damage to the yarn, also during downstream processing result in the loss of strength due to filament breaks

Pneumatics

In order to ensure the optimum interlacing, an oil, water and dirt-free air is required:

- Temperature 20 °C, ± 5 °C
- Relative humidity < 40 percent
- Residual oil content < 0.2 ppm
- Filter out dirt particles > 0.2 µm
- Chemically neutral, free from abrasive particles

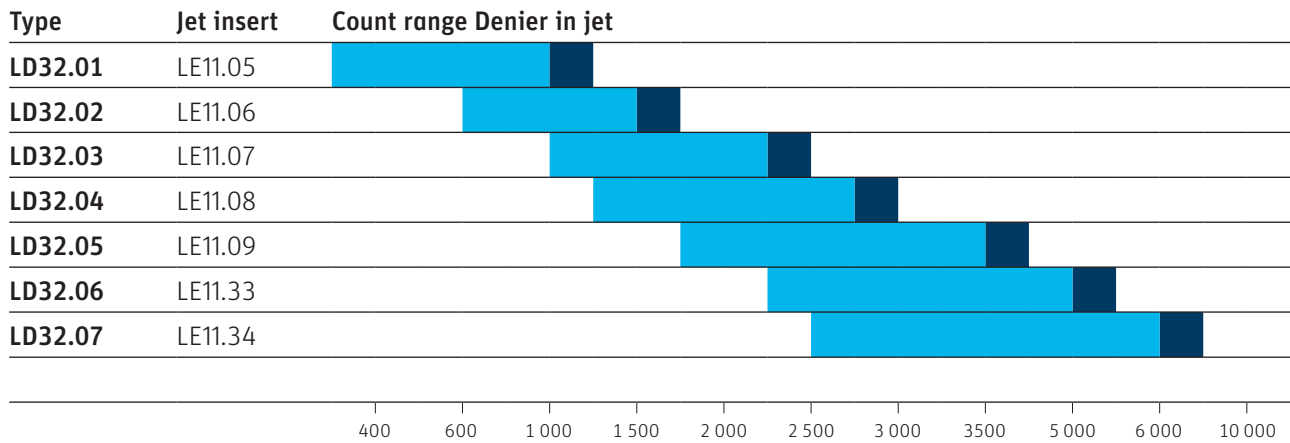
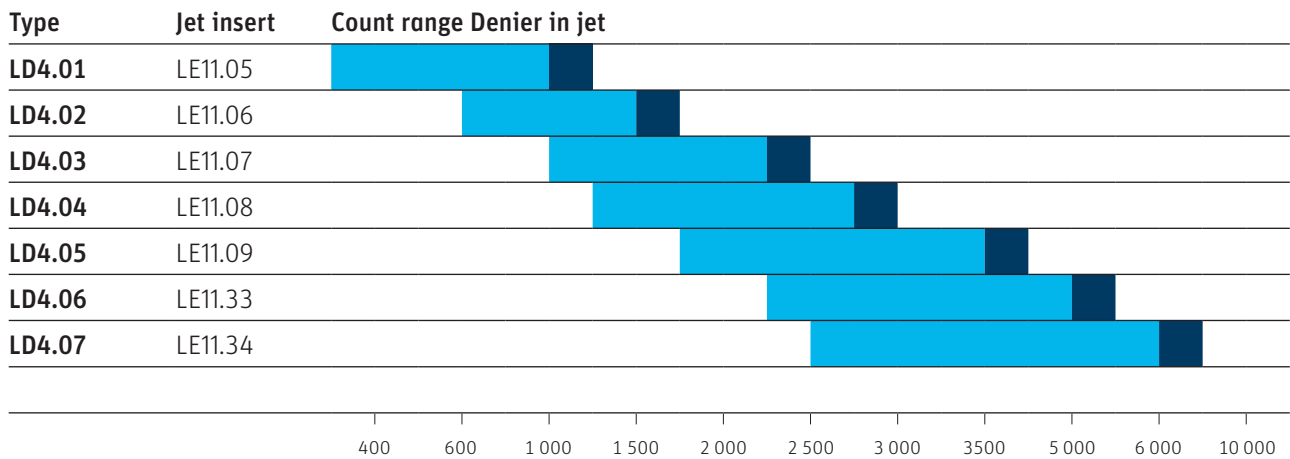


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Application area of the LD in BCF

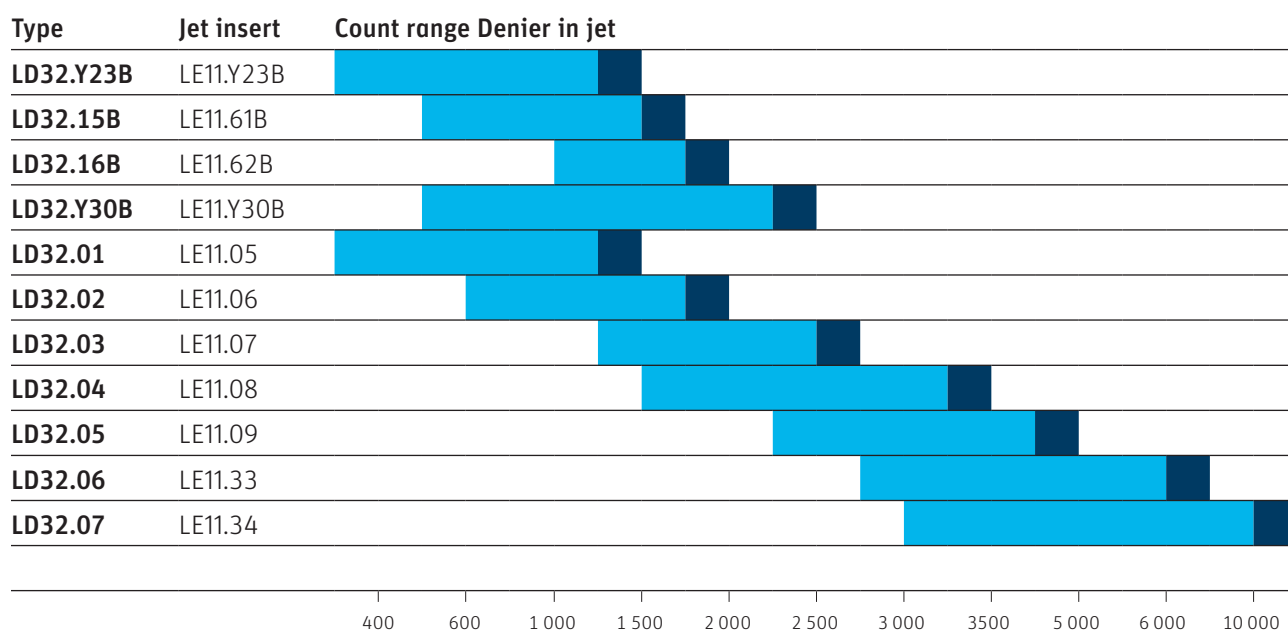
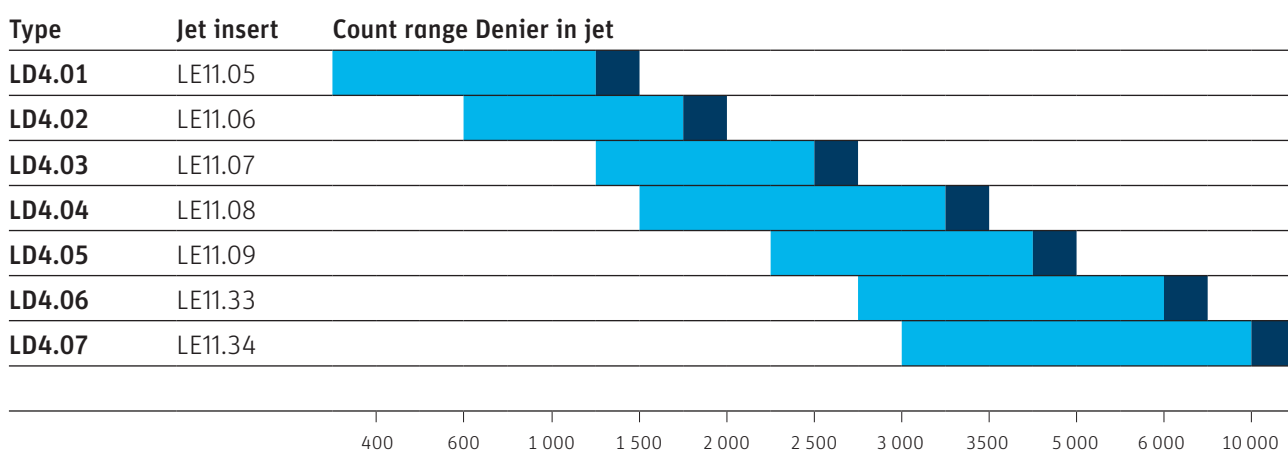
in dtex (den = 0.9 dtex)



■ Typical range
■ Limits of application
 Regular interlacing and high interlacing density up to 4000 m/min

Application area of the LD for technical yarns (CF, FDY, optical fibers etc.)

in dtex (den = 0.9 dtex)



■ Typical range
■ Limits of application

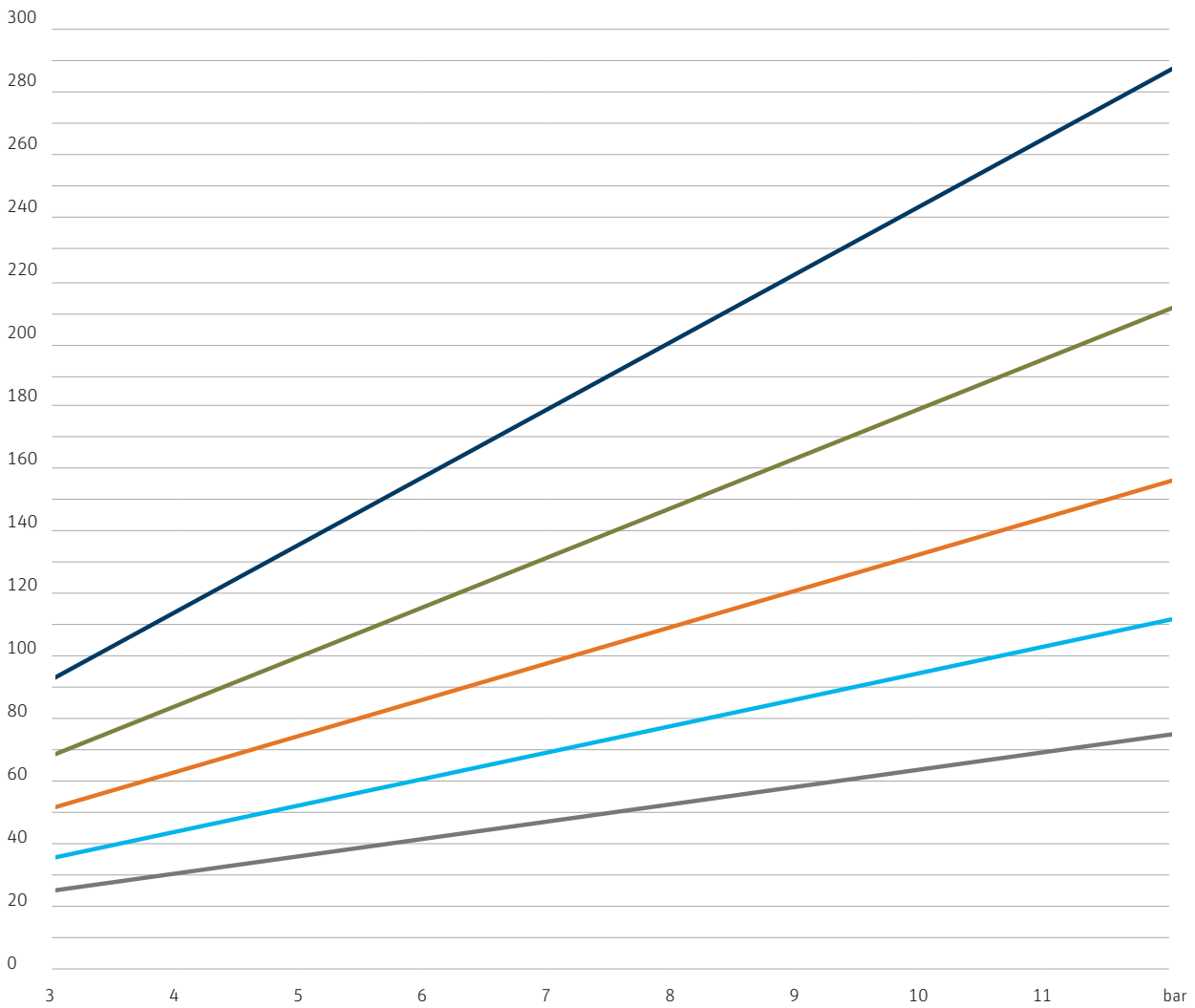
Regular interlacing and high interlacing density up to 4 000 m/min

Air Interlacing Jets LD

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Air consumption diagram air interlacing jets per thread position

Air consumption LD4 per yarn position
in Nm³/h*



- LD4.05, LD4.06, LD4.07
- LD4.04
- LD4.03
- LD4.02
- LD4.01

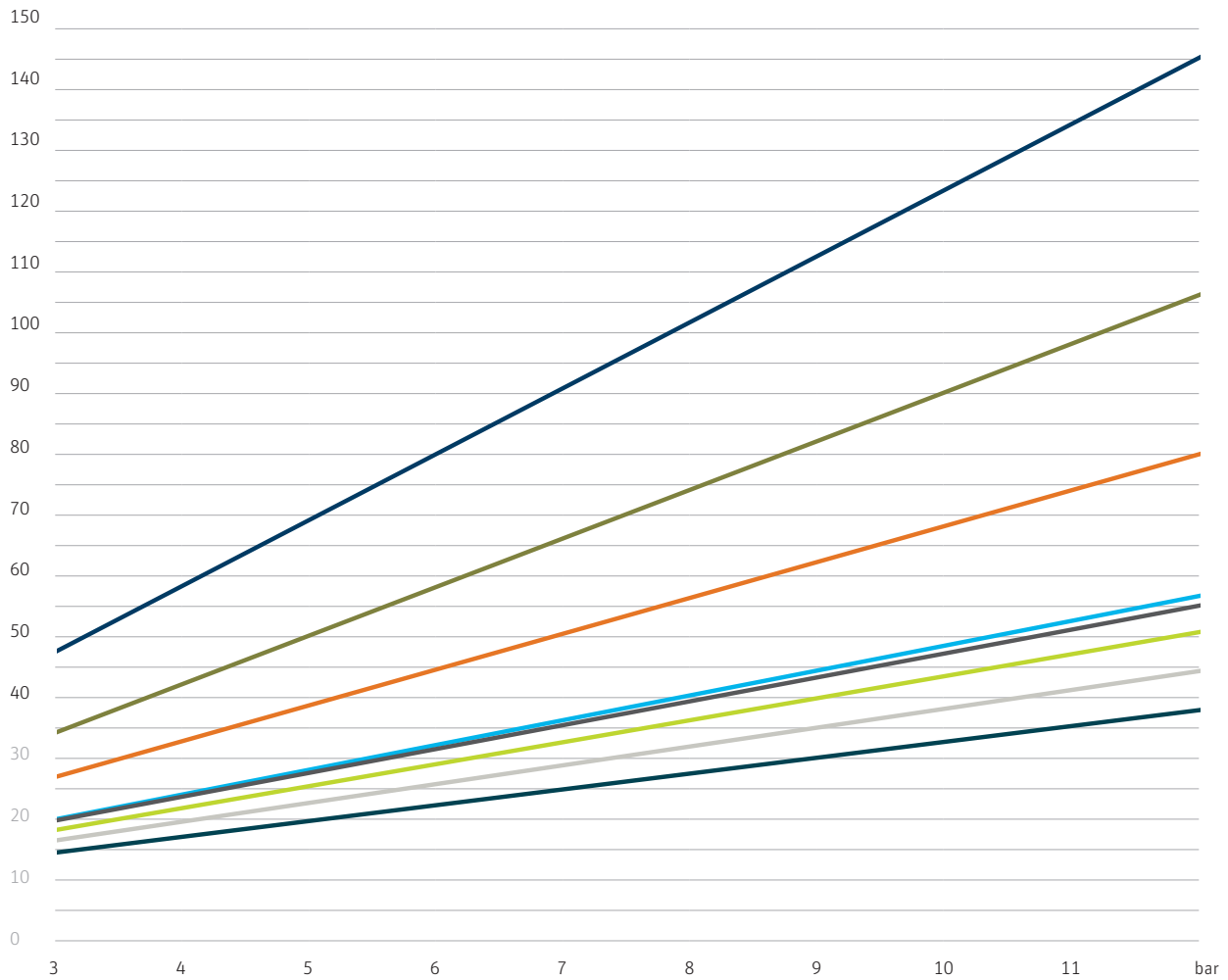
LD4.01: $q = 2 \times 2.98 \times (p + 1.013)$
 LD4.02: $q = 2 \times 4.10 \times (p + 1.013)$
 LD4.03: $q = 2 \times 5.79 \times (p + 1.013)$
 LD4.04: $q = 2 \times 7.97 \times (p + 1.013)$
 LD4.05: $q = 2 \times 10.89 \times (p + 1.013)$
 LD4.06: $q = 2 \times 10.89 \times (p + 1.013)$
 LD4.07: $q = 2 \times 10.89 \times (p + 1.013)$

q = Air consumption [Nm³/h]*
 p = pressure [bar]
 ft³/min (cfm) = $q \times 0.5886$
 psi = $p \times 14.5$

* Point of reference: T = 293°K = 20°C = 68°F (DIN 1343)

Air consumption diagram air interlacing jets per thread position

Air consumption LD32 per yarn position
in Nm³/h*



- LD32.05, LD32.06, LD32.07
- LD32.04
- LD32.03
- LD32.02
- LD32.Y30B
- LD32.16B
- LD32.15B
- LD32.01, LD32.Y23B

LD32.01: $q = 2.98 \times (p + 1.013)$
 LD32.02: $q = 4.10 \times (p + 1.013)$
 LD32.03: $q = 5.79 \times (p + 1.013)$
 LD32.04: $q = 7.97 \times (p + 1.013)$
 LD32.05: $q = 10.89 \times (p + 1.013)$
 LD32.06: $q = 10.89 \times (p + 1.013)$
 LD32.07: $q = 10.89 \times (p + 1.013)$

q = Air consumption [Nm³/h]*
 p = pressure [bar]
 ft³/min (cfm) = $q \times 0.5886$
 psi = $p \times 14.5$

* Point of reference: T = 293°K = 20°C = 68°F (DIN 1343)



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