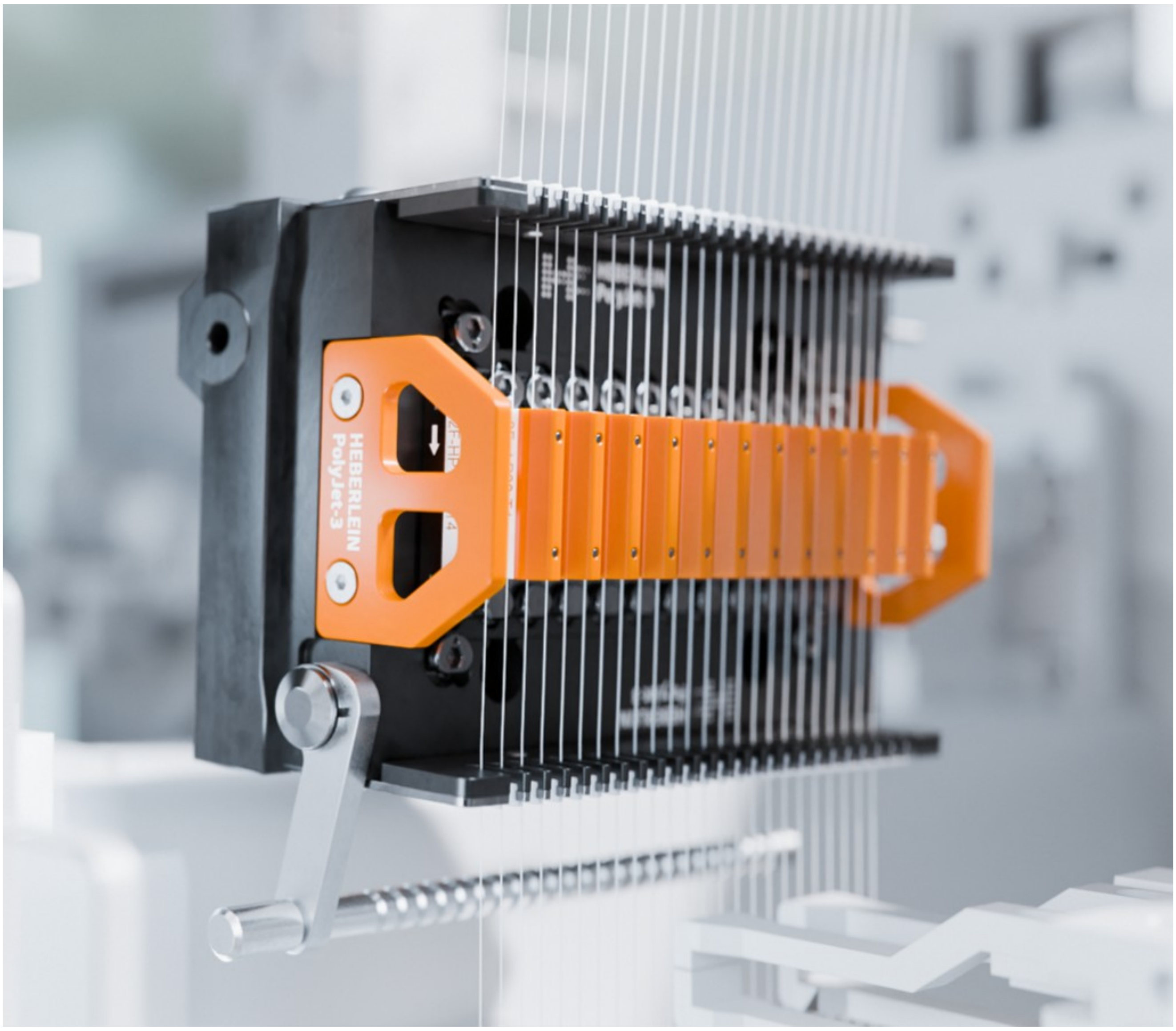
English

HEBERLEIN®

Product catalogue 11.24



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HEBERLEIN®
TECHNOLOGY FOR PROFESSIONALS

1 Processes & Products

1.1 Overview of Processes & Product Groups

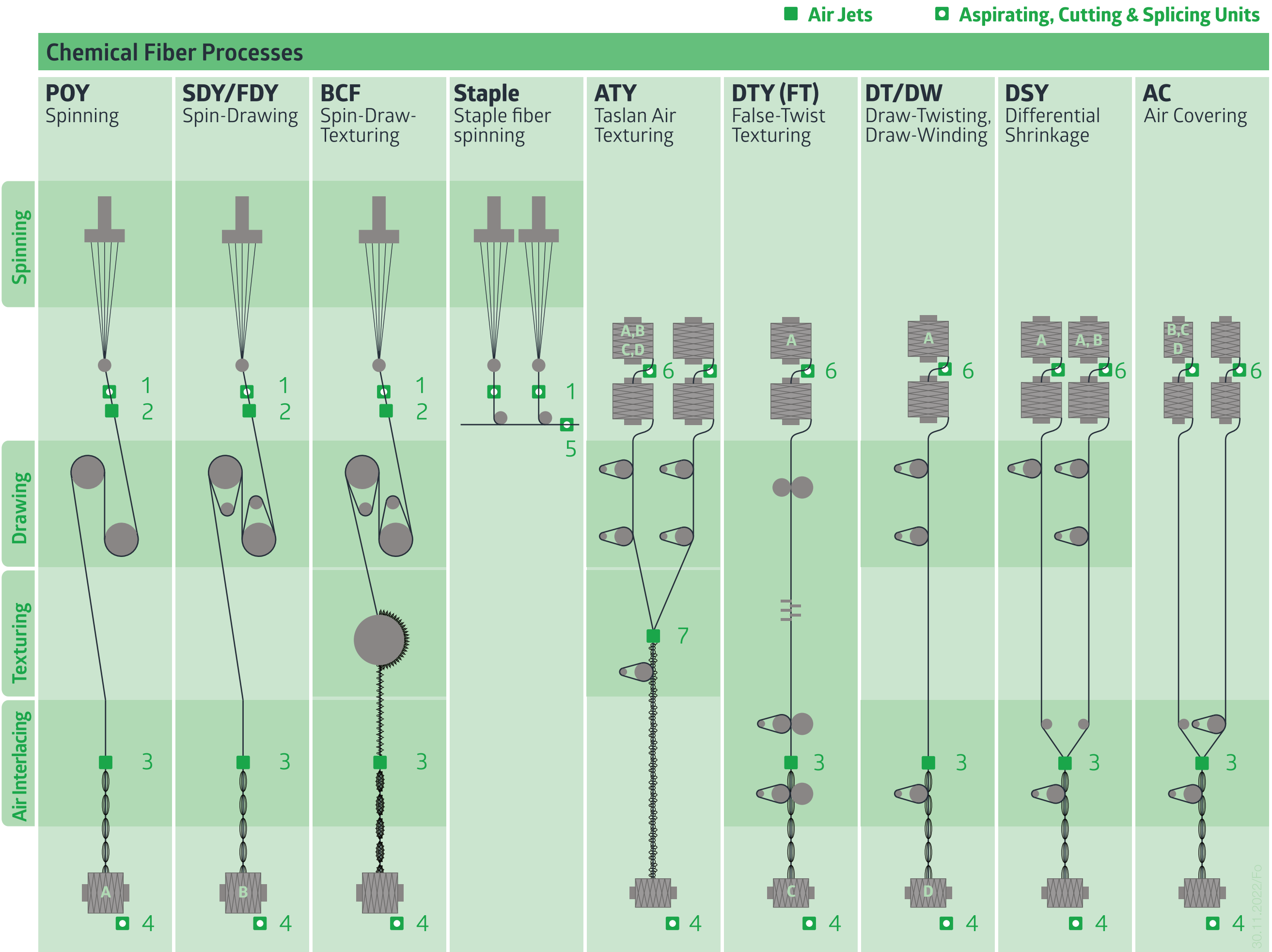


Fig. 1

1	Aspiration-cutting units	5	Cutting/splicing units
2	Migration jets	6	Yarn splicers [1)]
3	Air interlacing jets [1)]	7	Air texturing jets
4	Aspirators		

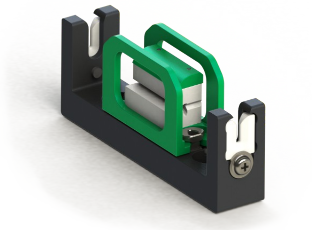
1) Also available for other processes

2 Product overview

2.1 Jets

2.1.1 Air migration jets

The air migration causes the individual filaments of a multi-filament yarn to be slightly compacted by the compressed air without creating interlacing points. At the same time, the compressed air spreads the unevenly distributed spin finish uniformly right into the yarn core. This results in smooth yarn running and allows higher processing speeds.



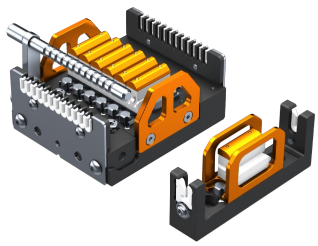
Product		Process		
		POY	SDY/FDY	BCF
PolyJet-SP-3 Migra	Page [9]	x	x	
PolyJet-SP-2 Migra	Page [11]	x	x	
MIG-Jet-SP	Page [16]	x	x*	
PolyJet-TG-3 Migra	Page [20]		x	x
PolyJet-TG-2 Migra	Page [22]		x	x
MIG-Jet-TG	Page [26]		x	x

** Trials may be required*

2.1.2 Air interlacing jets

In air interlacing, an air blast is used to mechanically intermingle individual yarn filaments together. The resulting interlacing points allow higher processing speeds, resulting in improved package build and a reduced number of filament and yarn breaks during subsequent processes.

Air interlacing jets can also be used to splice several yarns together (doubling, co-mingling).



Product		Process		
		POY	SDY/FDY	BCF
PolyJet-SP-3	Page [6]	x	x	
PolyJet-SP-2	Page [11]	x	x	
POY-Jet-SP	Page [14]	x		
FDY-Jet-SP	Page [15]		x	
PolyJet-TG-3	Page [17]		x	
PolyJet-TG-2	Page [22]		x	
FDY-Jet-TG	Page [25]		x	
PolyJet-TG TopAir	Page [27]		x	
PolyJet-BCF TopAir	Page [29]			x

Product		Process			
		DTY	DT/DW	DSY	AC
SlideJet-FT15-2	Page [31]	x			
SlideJet-2T	Page [34]	x			
SwissJet	Page [35]	x			
KFJet	Page [38]	x			
SlideJet-DT15-2	Page [40]		x		
SlideJet-HFP15-2	Page [42]				x
DSW-Jet	Page [44]		x	x	

Product		Process
		Chain preparation
WarpJet-KV	Page [46]	x

2.1.3 Air twist jets

Air de-twisting uses compressed air to twist the individual filaments of a multifilament yarn in the **opposite** direction to the direction created by false-twist texturing so that they are de-twisted.

Product	
DetorqueJet-3	Page [39]

2.1.4 Air texturing jets

Air texturing uses air to intermingle the individual filaments of a multifilament yarn. The yarn therefore acquires more volume and thus greater elasticity, good heat insulation, and high moisture absorption capacity. In addition to this structural change, multiple yarns with different features can also be blended at the same time.

Product	
TexJet-ATY	Page [48]
HemaJet-LB06	Page [51]
HemaJet jet cores ST series	Page [53]
ATYJet-RC	Page [54]
HemaJet-EO52	Page [55]
Accessories:	
Wetting heads	Page [57]

2.2 Aspiration, cutting & splicing units

2.2.1 Splicers

A yarn splicer interlaces the ends of two multifilament yarns using air pressure. The resulting splice is highly uniform and very strong. Unlike a knot, a splice produces fewer problems in subsequent processes, since there is less thickening.

Product	
AirSplicer-POY	Page [59]
AirSplicer-3 Flex	Page [60]
AirSplicer-17-2	Page [62]

2.2.2 Aspirators

Units for aspirating and laying filament yarns during the spinning, drawing, and winding processes.

Product		Process			
		POY	SDY/FDY	BCF	Staple
Lufan-3	Page [63]	x	x	x	x

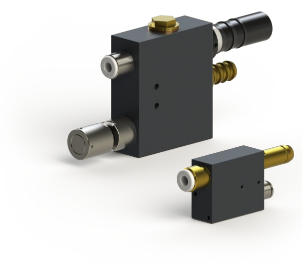
2.2.3 Splicing/cutting units (stationary)

Splicing/cutting units simplify the handling of individual ends when spinning them in or threading them in systems for manufacturing synthetic staple fibre tows. The new end to be threaded is spliced with the general tow in the vicinity of the single spinning position and then cut.

Product	
Splicing/cutting unit	Page [65]

2.2.4 Aspiration/cutting units (stationary)

Aspiration/cutting units are installed in the yarn path of spinning machines to enable fast reactions to yarn breaks. The fast cutting and/or aspirating procedures reduce yarn waste and increase productivity.

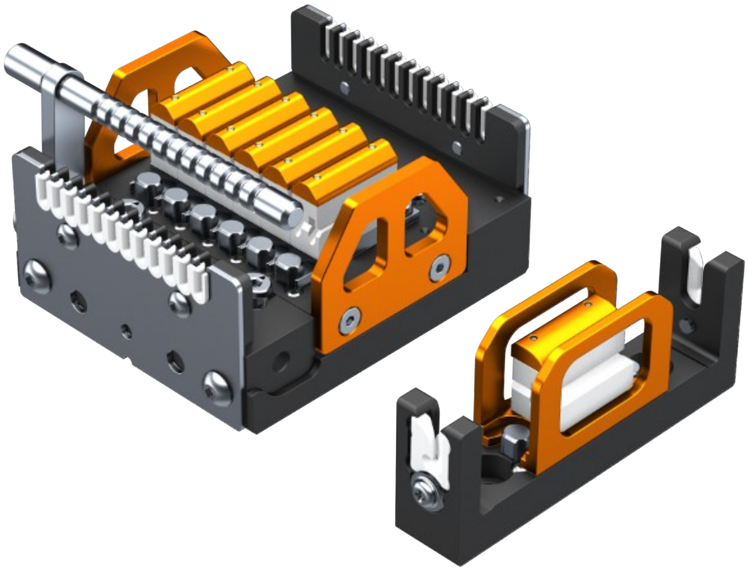


Product	
LufanStat	Page [67]
Accessories:	
DripDetector	Page [69]

3 PolyJet-SP-3

3.1 Features and Benefits

The PolyJet-SP-3 air interlacing jet raises the bar in terms of handling and process reliability. The unique quick-release system allows jet packs to be removed with just a single 180° turn.



Different variants for 1, 2, 4, 6, 8, 10, 12, 16, 20, 24 or 32 threads are available on request. Depending on the jet type, multiple jets with thread line spacing of 4, 6, 8, 10 or 12 mm are also available.

3.2 Assortment

Series HP

Allows a higher interlacing performance than the HN series with reduced air consumption. The jet is suitable for all textile multifilament yarns.

Series HN

Ideal for intermingling or POY processes. It also offers attachment solutions for both Orka and WINGS.

3.3 Technical data

3.3.1 Application area

Type	Count in jet [dtex]	Winding speed [m/min]	Yarn tension after the jet [cN/dtex]
Series HP			
HP090A/WP01	... 55	... 6000	0.1 ... 0.25
HP113A/WP10	... 95	... 6000	0.1 ... 0.25
HP122A/WP10	... 95	... 6000	0.1 ... 0.25
HP134A/WP20	55 ... 167	... 6000	0.1 ... 0.25
HP142A/WP20	55 ... 167	... 6000	0.1 ... 0.25
HP165A/WP30	110 ... 300	... 6000	0.1 ... 0.25
HP203A/WP40	220 ... 420	... 6000	0.1 ... 0.25
HP252A/WP50	400 ... 800	... 6000	0.1 ... 0.25
Series HN			
HN112A/CN15	... 78	... 6000	0.1 ... 0.25
HN121A/CN15	... 78	... 6000	0.1 ... 0.25
HN133A/CN14	33 ... 110	... 6000	0.1 ... 0.25
HN132A/CN14	33 ... 220	... **5000**	0.1 ... 0.25
HN141A/CN14	33 ... 110	... 6000	0.1 ... 0.25
HN163A/CN26	110 ... 330	... 6000	0.1 ... 0.25
HN164A/CN28	33 ... 167	... 6000	0.1 ... 0.25
HN202A/CN27	330 ... 550	... 6000	0.1 ... 0.25
HN251A/CN33	400 ... 800	... 6000	0.1 ... 0.25

All specifications are non-binding reference values.

3.3.2 Air consumption

Type	Air channel diameter	Formula
Series HP		
HP090A/WP01	0.9 mm	$q_{vn} = 0.376 \times (p_e + 1)$
HP113A/WP10	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
HP122A/WP10	1.2 mm	$q_{vn} = 0.669 \times (p_e + 1)$
HP134A/WP20	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$
HP142A/WP20	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
HP165A/WP30	1.6 mm	$q_{vn} = 1.190 \times (p_e + 1)$
HP203A/WP40	2.0 mm	$q_{vn} = 1.859 \times (p_e + 1)$
HP252A/WP50	2.5 mm	$q_{vn} = 2{,}905 \times (p_e + 1)$
Series HN		
HN112A/CN15	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
HN121A/CN15	1.2 mm	$q_{vn} = 0.669 \times (p_e + 1)$
HN132A/CN14, HN133A/CN14	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$
HN141A/CN14	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
HN163A/CN26, HN164A/CN28	1.6 mm	$q_{vn} = 1.190 \times (p_e + 1)$
HN202A/CN27	2.0 mm	$q_{vn} = 1{,}859 \times (p_e + 1)$
HN251A/CN33	2.5 mm	$q_{vn} = 2{,}905 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

3.3.3 Compressed air requirements

Overpressure	1.5 … 6.0 bar

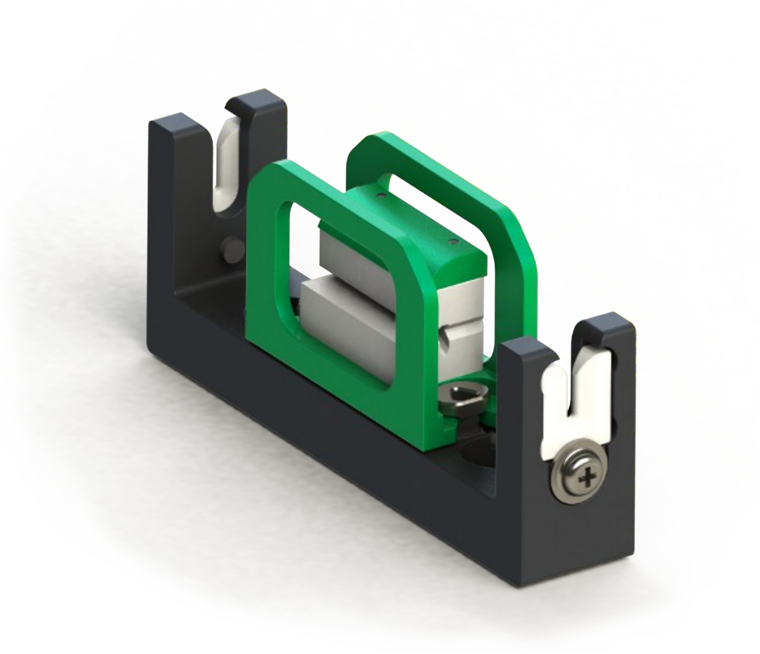
For the compressed air quality requirements, see page [▸ 70]

4 PolyJet-SP-3 Migra

4.1 Features and Benefits

The PolyJet-3 Migra not only ensures uniform distribution from the spinning preparation through to the yarn core, it also increases efficiency in downstream processes.

Thanks to the ingenious quick-fastening system, jet packs can be removed with a single 180° turn.



4.2 Technical data

4.2.1 Application area

Type	Count in jet [dtex]	Winding speed [m/min]
M090/CN01	... 55	... 7500
M110/CN16	... 95	... 7500
M130/CN14	... 190	... 7500
M161/CN26	... 350	... 7500
M200/CN27	... 800	... 7500
M250/CN33	... 1200	... 7500

All specifications are non-binding reference values.

4.2.2 Air consumption

Type	Air channel diameter	Formula
M090/CN01	0.9 mm	$q_{vn} = 0.376 \times (p_e + 1)$
M110/CN16	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
M130/CN14	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$
M161/CN26	1.6 mm	$q_{vn} = 1.190 \times (p_e + 1)$
M200/CN27	2.0 mm	$q_{vn} = 1.859 \times (p_e + 1)$
M250/CN33	2.5 mm	$q_{vn} = 2,905 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

4.2.3 Compressed air requirements

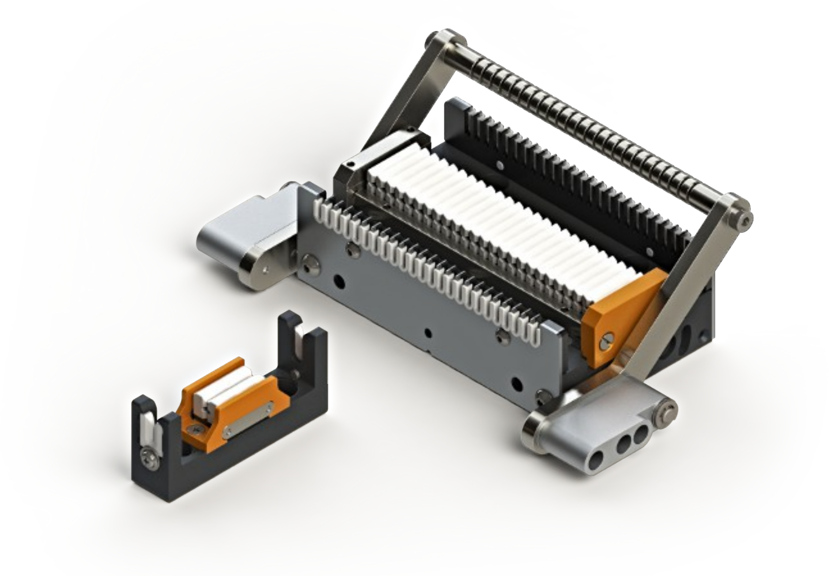
Overpressure	0.5 ... 2.0 bar

For the compressed air quality requirements, see page [▸ 70]

5 PolyJet-SP-2 / PolyJet-SP-2 Migra

5.1 Features and Benefits

The PolyJet-SP-2 allows jets of different sizes and interlacing characteristics to be replaced on the same holder. This allows a quick response to changing market trends.



Different variants for 1, 2, 4, 6, 8, 10, 12, 16, 20, 24 or 32 threads are available on request. Depending on the jet type, multiple jets with thread line spacing of 4, 6, 8, 10 or 12 mm are also available.

5.2 Assortment

Series HP

Allows a higher interlacing performance than the HN series with reduced air consumption. The jet is suitable for all textile multifilament yarns.

Series HN

The PolyJet-SP-2 HN is highly compact. As a result, some jet types allow very small thread line spacings (as low as 4 mm). High interlacing performance, uniformity and stability.

Series PP

The PolyJet-SP-2 PP is used for gentle interlacing with soft interlacing knots. The jet provides a high level of uniformity at low air pressure and can be used for delicate yarns, such as acetate or viscose.

Series TopAir

In addition to normal air stream from below, the PolyJet-SP-2 HN TopAir has an additional air stream from above. Maximum interlacing performance with minimum air consumption is thereby achieved. Hence very gentle interlacing is possible.

Series Migra

The PolyJet-2 Migra is used in spinning processes for the effective migration of spin finish in yarns.

5.3 Technical data

5.3.1 Application area

PolyJet-SP-2

Type	Count in jet [dtex]	Winding speed [m/min]	Yarn tension after the jet [cN/dtex]
Series HP			
HP090A/WP01	… 55	… 6000	0.1 … 0.25
HP113A/WP10	… 95	… 6000	0.1 … 0.25
HP122A/WP10	… 95	… 6000	0.1 … 0.25
HP134A/WP20	55 … 167	… 6000	0.1 … 0.25
HP142A/WP20	55 … 167	… 6000	0.1 … 0.25
HP165A/WP30	110 … 300	… 6000	0.1 … 0.25
HP203A/WP40	220 … 420	… 6000	0.1 … 0.25
Series HN			
HN112A/CN15	… 78	… 6000	0.1 … 0.25
HN121A/CN15	… 78	… 6000	0.1 … 0.25
HN133A/CN14	33 … 110	… 6000	0.1 … 0.25
HN132A/CN14	33 … 220	… **5000**	0.1 … 0.25
HN141A/CN14	33 … 110	… 6000	0.1 … 0.25
HN163A/CN26	110 … 330	… 6000	0.1 … 0.25
HN164A/CN28	33 … 167	… 6000	0.1 … 0.25
HN202A/CN27	330 … 550	… 6000	0.1 … 0.25
HN251A/CN33	400 … 800	… 6000	0.1 … 0.25
Series HN TopAir			
HN163A/CO26	110 … 330	… 6000	0.1 … 0.25
HN164A/CO28	33 … 167	… 6000	0.1 … 0.25
HN202A/CO27	330 … 550	… 6000	0.1 … 0.25
HN251A/CO33	400 … 1000	… 6000	0.1 … 0.25
Series PP			
PP100	… 78	… 5000	0.1 … 0.25
PP200	33 … 167	… 5000	0.1 … 0.25
PP400	110 … 330	… 5000	0.1 … 0.25

All specifications are non-binding reference values.

PolyJet-SP-2 Migra

Type	Count in jet [dtex]	Winding speed [m/min]
M090/CN01	… 55	… 7500
M110/CN16	… 95	… 7500
M130/CN14	… 190	… 7500
M161/CN26	… 350	… 7500
M200/CN27	… 800	… 7500

All specifications are non-binding reference values.

5.3.2 Air consumption

PolyJet-SP-2

Type	Air channel diameter	Formula
Series HP		
HP090A/WP01	0.9 mm	q_{vn} = 0.376 x (p_e + 1)
HP113A/WP10	1.1 mm	q_{vn} = 0.562 x (p_e + 1)
HP122A/WP10	1.2 mm	q_{vn} = 0.669 x (p_e + 1)
HP134A/WP20	1.3 mm	q_{vn} = 0.786 x (p_e + 1)
HP142A/WP20	1.4 mm	q_{vn} = 0.911 x (p_e + 1)
HP165A/WP30	1.6 mm	q_{vn} = 1.190 x (p_e + 1)
HP203A/WP40	2.0 mm	q_{vn} = 1,859 x (p_e + 1)
Series HN		
HN112A/CN15	1.1 mm	q_{vn} = 0.562 x (p_e + 1)
HN121A/CN15	1.2 mm	q_{vn} = 0.669 x (p_e + 1)
HN133A/CN14	1.3 mm	q_{vn} = 0.786 x (p_e + 1)
HN132A/CN14	1.3 mm	q_{vn} = 0.786 x (p_e + 1)
HN141A/CN14	1.4 mm	q_{vn} = 0.911 x (p_e + 1)
HN163A/CN26	1.6 mm	q_{vn} = 1.190 x (p_e + 1)
HN164A/CN28	1.6 mm	q_{vn} = 1.190 x (p_e + 1)
HN202A/CN27	2.0 mm	q_{vn} = 1,859 x (p_e + 1)
HN251A/CN33	2.5 mm	q_{vn} = 2,905 x (p_e + 1)
Series HN TopAir		
HN163A/CO26	1.8 mm	q_{vn} = 1,481 x (p_e + 1)
HN164A/CO28	1.8 mm	q_{vn} = 1,481 x (p_e + 1)
HN202A/CO27	2.2 mm	q_{vn} = 2,315 x (p_e + 1)
HN251A/CO33	2.8 mm	q_{vn} = 3.658 x (p_e + 1)
Series PP		
PP100	2 x 0.9 mm	q_{vn} = 0.753 x (p_e + 1)
PP200	2 x 1.1 mm	q_{vn} = 1.125 x (p_e + 1)
PP400	2 x 1.4 mm	q_{vn} = 1,822 x (p_e + 1)

PolyJet-SP-2 Migra

Type	Air channel diameter	Formula
M090/CN01	0.9 mm	q_{vn} = 0.376 x (p_e + 1)
M110/CN16	1.1 mm	q_{vn} = 0.562 x (p_e + 1)
M130/CN14	1.3 mm	q_{vn} = 0.786 x (p_e + 1)
M161/CN26	1.6 mm	q_{vn} = 1.190 x (p_e + 1)
M200/CN27	2.0 mm	q_{vn} = 1,859 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

5.3.3 Compressed air requirements

Overpressure PolyJet-SP-2 HN, HP	1.5 ... 6.0 bar
Overpressure PolyJet-SP-2 PP	1.5 ... 4.0 bar
Overpressure PolyJet-SP-2 Migra	0.5 ... 2.0 bar

For the compressed air quality requirements, see page [▷ 70]

6 POY-Jet-SP

6.1 Features and Benefits

The POY-Jet-SP enables optimum interlacing performance and is versatile thanks to the well-established PolyJet-SP-2 jet connector. The yarn guides can be combined to meet virtually any customer requirement. The POY-Jet-SP is suitable for cost-optimised pre-interlacing or interlacing of POY yarns.

6.2 Technical data

6.2.1 Application area

Type	Count in jet	Winding speed	Yarn tension after the jet
PJ11.0	... 110 dtex	... 5000 m/min	0.1 ... 0.2 cN/dtex
PJ13.0	... 350 dtex	... 5000 m/min	0.1 ... 0.2 cN/dtex

All specifications are non-binding reference values.

6.2.2 Air consumption

Type	Air channel diameter	Formula
PJ11.0	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
PJ13.0	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

6.2.3 Compressed air requirements

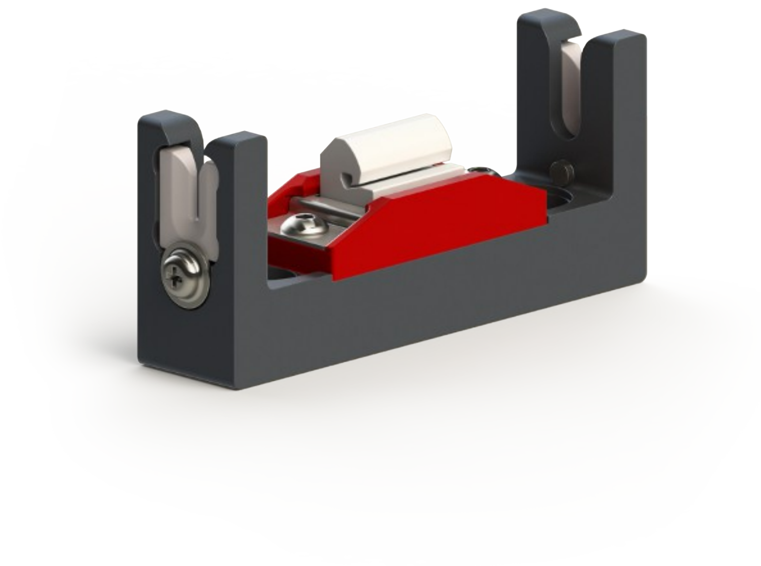
POY-Jet-SP overpressure	1.0 ... 4.0 bar

For the compressed air quality requirements, see page [▷ 70]

7 FDY-Jet-SP

7.1 Features and Benefits

A cost-effective interlacing jet for an application range up to max. 190 dtex. The connector is compatible with all jet packs from the PolyJet-SP-2 series. This ensures maximum flexibility. If requirements change, only the jet packs need to be exchanged.



7.2 Technical data

7.2.1 Application area

Type	Count in jet	Winding speed	Yarn tension after the jet
FJ13.1	... 190 dtex	... 5000 m/min	0.1 ... 0.2 cN/dtex

All specifications are non-binding reference values.

7.2.2 Air consumption

Type	Air channel diameter	Formula
FJ13.1	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

7.2.3 Compressed air requirement

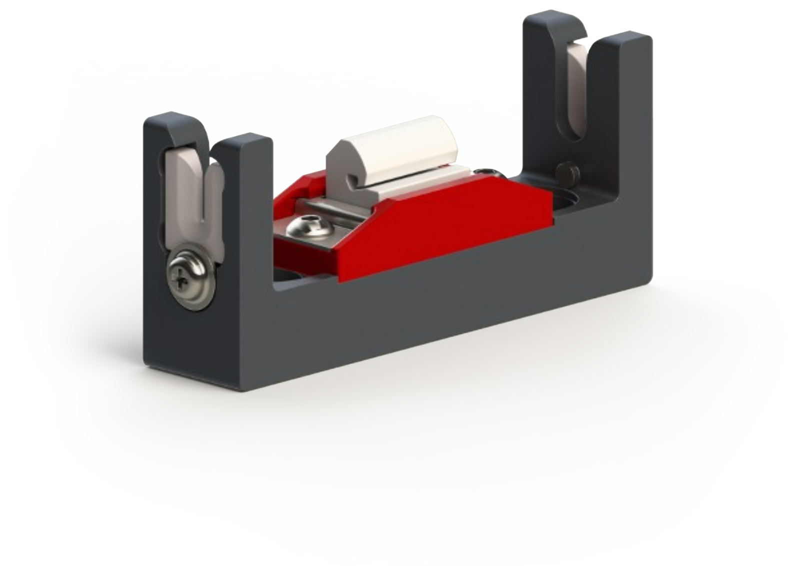
FDY-Jet-SP overpressure	1.0 ... 4.0 bar

For the compressed air quality requirements, see page [▸ 70]

8 MIG-Jet-SP

8.1 Features and Benefits

The MIG-Jet-SP air migration jet uses compressed air to slightly compact the individual filaments of a multi-filament yarn without creating interlacing points. At the same time, the compressed air spreads the unevenly distributed spin finish uniformly right into the yarn core. This results in smooth yarn running and allows higher processing speeds.



8.2 Technical data

8.2.1 Application area

Type	Count in jet [dtex]	Winding speed [m/min]
MJ13.0	... 350	... 7500

All specifications are non-binding reference values.

8.2.2 Air consumption

Type	Air channel diameter	Formula
MJ13.0	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

8.2.3 Compressed air requirements

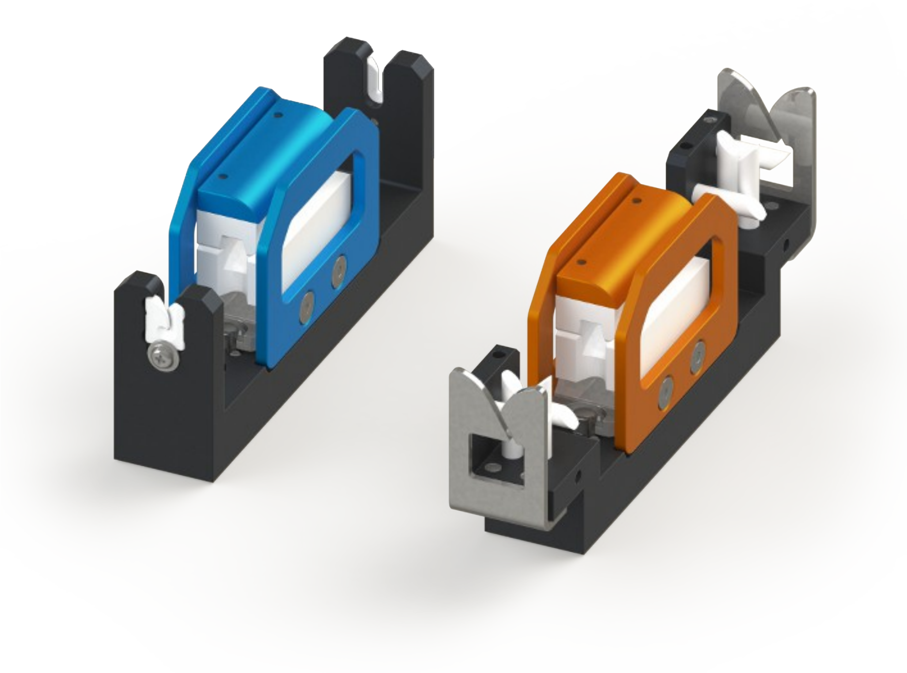
MIG-Jet-SP overpressure	0.5 ... 2.0 bar

For the compressed air quality requirements, see page [▸ 70]

9 PolyJet-TG-3

9.1 Features and Benefits

High-performance air interlacing jets for technical yarns. The unique quick-release system allows jet packs to be removed with just a single 180° turn. The lateral threading slot ensures maximum operational reliability. The jets are characterised by a compact, space-saving design and include a roll bar to protect the ceramic surfaces.



9.2 Assortment

Series	Interlacing			Air consumption
	Density [FP/m]	Uniformity	Stability	
HP TopAir	●●●	●●●	●●●	●●
HP	●●●	●●●	●●	●
HN TopAir	●●	●●	●●●	●●●
HN	●●	●●	●●	●●

●●● = high, ●● = medium, ● = low

9.3 Technical data

9.3.1 Application area

Important note
Advice is required to select the correct product variant for this product.
Please consult your sales representative.

Type	Count in jet [dtex]	Winding speed [m/min]	Yarn tension after the jet [cN/dtex]
Series HP TopAir – Very high interlacing density – very high stability (HF)			
HP252A/W050	400 ... 800	... 6000	0.06 ... 0.15
HP323A/W060	550 ... 1500	... 6000	0.06 ... 0.15
HP405A/W070	1000 ... 3000	... 6000	0.06 ... 0.15
HP454A/W071	1800 ... 4500	... 6000	0.06 ... 0.15
HP521A/W080	3000 ... 6500	... 6000	0.06 ... 0.15
Series HP – High interlacing density – high stability			
HP252A/WP50R	400 ... 800	... 6000	0.06 ... 0.15
HP323A/WP60R	550 ... 1200	... 6000	0.06 ... 0.15
HP405A/WP70R	1000 ... 2500	... 6000	0.06 ... 0.15
HP454A/WP71R	1800 ... 4000	... 6000	0.06 ... 0.15
HP521A/WP80R	3000 ... 6500	... 6000	0.06 ... 0.15
Series HN TopAir – medium interlacing density – high stability			
HN251A/C033	400 ... 1000	... 5000	0.06 ... 0.15
HN321A/C041	550 ... 1500	... 5000	0.06 ... 0.15
HN403A/C052	1000 ... 3000	... 5000	0.06 ... 0.15
HN453A/C063	1800 ... 4500	... 5000	0.06 ... 0.15
HN452A/C062	2200 ... 5500	... 5000	0.06 ... 0.15
HN520A/C065	3000 ... 6500	... 5000	0.06 ... 0.15
Series HN – Medium interlacing density – medium stability			
HN251A/CN33R	400 ... 800	... 5000	0.06 ... 0.15
HN321A/CN41R	550 ... 1200	... 5000	0.06 ... 0.15
HN403A/CN52R	1000 ... 2500	... 5000	0.06 ... 0.15
HN453A/CN63R	1800 ... 4000	... 5000	0.06 ... 0.15
HN452A/CN62R	2200 ... 5000	... 5000	0.06 ... 0.15
HN520A/CN65R	3000 ... 6500	... 5000	0.06 ... 0.15

All specifications are non-binding reference values.

9.3.2 Air consumption per thread

Type	Air channel diameter	Formula
Series HP TopAir		
HP252A/W050	2.8 mm	$q_{vn} = 3.617 \times (p_e + 1)$
HP323A/W060	3.6 mm	$q_{vn} = 5.925 \times (p_e + 1)$
HP405A/W070	4.5 mm	$q_{vn} = 9.285 \times (p_e + 1)$
HP454A/W071	5.0 mm	$q_{vn} = 11.792 \times (p_e + 1)$
HP521A/W080	5.9 mm	$q_{vn} = 15.754 \times (p_e + 1)$
Series HP		
HP252/WP50R	2.5 mm	$q_{vn} = 2.905 \times (p_e + 1)$

Type	Air channel diameter	Formula
HP323A/WP60R	3.2 mm	$q_{vn} = 4.759 \times (p_e + 1)$
HP405A/WP70R	4.0 mm	$q_{vn} = 7.437 \times (p_e + 1)$
HP454A/WP71R	4.5 mm	$q_{vn} = 9.412 \times (p_e + 1)$
HP521A/WP80R	5.2 mm	$q_{vn} = 12.568 \times (p_e + 1)$
Series HN TopAir		
HN251A/CO33	2.8 mm	$q_{vn} = 3.617 \times (p_e + 1)$
HN321A/CO41	3.6 mm	$q_{vn} = 5.925 \times (p_e + 1)$
HN403A/CO52	4.5 mm	$q_{vn} = 9.285 \times (p_e + 1)$
HN453A/CO63	5.0 mm	$q_{vn} = 11.646 \times (p_e + 1)$
HN452A/CO62	5.0 mm	$q_{vn} = 11.792 \times (p_e + 1)$
HN520A/CO65	5.9 mm	$q_{vn} = 15.754 \times (p_e + 1)$
Series HN		
HN251A/CN33	2.5 mm	$q_{vn} = 2.905 \times (p_e + 1)$
HN321A/CN41	3.2 mm	$q_{vn} = 4.759 \times (p_e + 1)$
HN403A/CN52	4.0 mm	$q_{vn} = 7.437 \times (p_e + 1)$
HN453A/CN63	4.5 mm	$q_{vn} = 9.412 \times (p_e + 1)$
HN520A/CN65	5.2 mm	$q_{vn} = 12,568 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

9.3.3 Compressed air requirements

Overpressure PolyJet-TG-3	1.5 … 8.0 bar

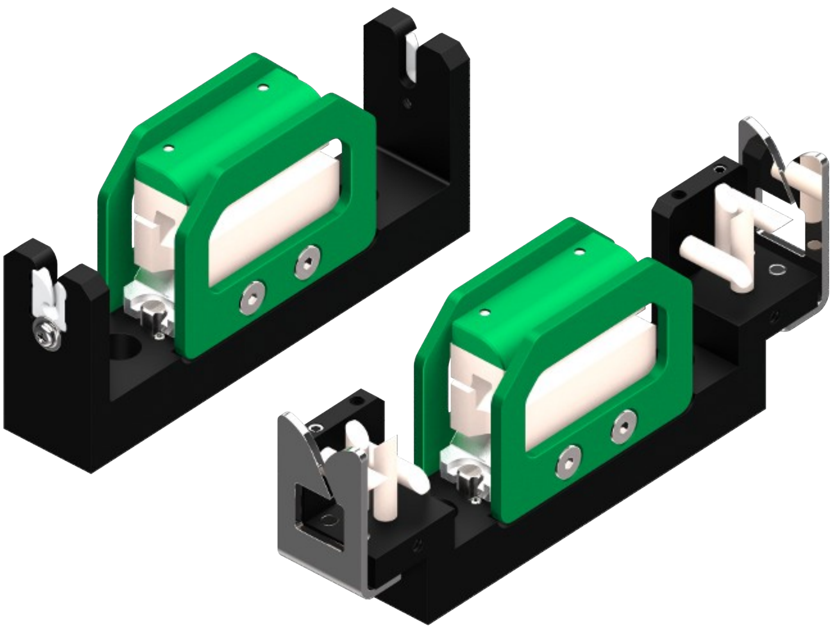
For the compressed air quality requirements, see page [▸ 70]

10 PolyJet-TG-3 Migra

10.1 Features and Benefits

The PolyJet-TG-3 Migra enables effective migration of the spin finish right into the yarn core and is designed for technical and BCF (bulked continuous filament) yarns.

The unique quick-release system allows jet packs to be removed with just a single 180° turn. The lateral threading slot ensures maximum operational reliability. The jets are characterised by a compact, space-saving design and include a roll bar to protect the ceramic surfaces.



10.2 Technical data

10.2.1 Application area

Flat yarns		
Type	**Count in jet [dtex]**	**Winding speed [m/min]**
M250/CN33R	... 2000	... 6500
M320/CN52R	... 5500	... 6500
M400/CN62R	... 10000	... 6500

BCF yarns		
Type	**Count in jet [dtex]**	**Winding speed [m/min]**
M250/CN33R	... 2500	... 3000
M320/CN52R	... 8500	... 3000
M400/CN62R	... 16000	... 3000

All specifications are non-binding reference values.

10.2.2 Air consumption per thread

Type	Air channel diameter	Formula
M250/CN33R	2.5 mm	q_{vn} = 2,905 x (p_e + 1)
M320/CN52R	3.2 mm	q_{vn} = 4,759 x (p_e + 1)
M400/CN62R	4.0 mm	q_{vn} = 7,437 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

10.2.3 Compressed air requirements

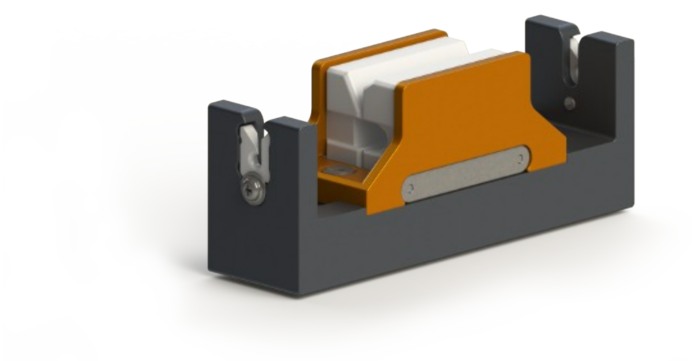
Overpressure PolyJet-TG-3 Migra	0.5 ... 2.0 bar

For the compressed air quality requirements, see page [70]

11 PolyJet-TG-2 / PolyJet-TG-2 Migra

11.1 Features and Benefits

The PolyJet-TG-2 allows different jets types to be easily changed, enabling a rapid response to shifting market trends. The product range covers various requirements for interlacing characteristics. The universal holder ensures durability and robustness.



11.2 Assortment

Series HN

The proven PolyJet-TG-2 HN ensures improved fault-free package build and smooth package unwinding during the subsequent process.

Series HN TopAir

The additional air streams of the PolyJet-TG-2 TopAir induce a large number of uniform and strong interlacing knots. At the same time, air consumption is reduced, as a large count can be processed. Alternatively, optimum performance is achieved at a lower working air pressure. The additional air streams provide for very gentle interlacing.

Series PP

The PolyJet-TG-2 PP allows gentle interlacing with soft interlacing knots. The jet offers a particularly high degree of uniformity at low air pressure.

Series Migra

The PolyJet-TG-2 ensures effective migration of the spinning preparation right into the yarn core.

11.3 Technical data

11.3.1 Application area

Important note
Advice is required to select the correct product variant for this product.
Please consult your sales representative.

PolyJet-TG-2

Type	Count in jet [dtex]	Winding speed [m/min]	Yarn tension after the jet [cN/dtex]
Series HN			
HN251A/CN33	400 ... 800	... 5000	0.06 ... 0.15
HN321A/CN41	550 ... 1200	... 3000	0.06 ... 0.15
HN403A/CN52	1000 ... 2500	... 5000	0.06 ... 0.15
HN453A/CN63	1800 ... 4000	... 3000	0.06 ... 0.15
Series HN TopAir			
HN251A/CO33	400 ... 1000	... 5000	0.06 ... 0.15
HN321A/CO41	550 ... 1500	~ 5000	0.06 ... 0.15
HN403A/CO52	1000 ... 3000	... 6000	0.06 ... 0.15
HN453A/CO63	1800 ... 4500	... 6000	0.06 ... 0.15
HN452A/CO62	2200 ... 5500	... 6000	0.06 ... 0.15
HN520A/CO65	3000 ... 6500	... 5000	0.06 ... 0.15
Series PP			
PP1000	... 600	... 4000	0.06 ... 0.15
PP1600	... 900	... 4000	0.06 ... 0.15
PP2400	... 1500	... 5000	0.06 ... 0.15
PP3500	... 2500	... 5000	0.06 ... 0.15
PP5000	... 3500	... 5000	0.06 ... 0.15

All specifications are non-binding reference values.

PolyJet-TG- 2 Migra

Flat yarns		
Type	**Count in jet [dtex]**	**Winding speed [m/min]**
M320/CN52	... 5500	... 6500
M400/CN62	... 10000	... 6500

BCF yarns		
Type	**Count in jet [dtex]**	**Winding speed [m/min]**
M320/CN52	... 8500	... 5000
M400/CN62	... 16000	... 3000

All specifications are non-binding reference values.

11.3.2 Air consumption per thread

PolyJet-TG-2

Type	Air channel diameter	Formula
Series HN		
HN251A/CN33	2.5 mm	q_{vn} = 2.905 x (p_e + 1)
HN321A/CN41	3.2 mm	q_{vn} = 4.759 x (p_e + 1)
HN403A/CN52	4.0 mm	q_{vn} = 7.437 x (p_e + 1)
HN453A/CN63	4.5 mm	q_{vn} = 9,412 x (p_e + 1)
Series HN TopAir		
HN251A/CO33	2.8 mm	q_{vn} = 3.617 x (p_e + 1)
HN321A/CO41	3.6 mm	q_{vn} = 5.925 x (p_e + 1)
HN403A/CO52	4.5 mm	q_{vn} = 9.285 x (p_e + 1)
HN453A/CO63	5.0 mm	q_{vn} = 11.646 x (p_e + 1)
HN452A/CO62	5.0 mm	q_{vn} = 11.792 x (p_e + 1)
HN520A/CO65	5.9 mm	q_{vn} = 15.754 x (p_e + 1)
Series PP		
PP1000	2.3 mm	q_{vn} = 2.380 x (p_e + 1)
PP1600	2.8 mm	q_{vn} = 3.718 x (p_e + 1)
PP2400	3.4 mm	q_{vn} = 5.354 x (p_e + 1)
PP3500	4.2 mm	q_{vn} = 8.366 x (p_e + 1)
PP5000	5.2 mm	q_{vn} = 12,726 x (p_e + 1)

PolyJet-TG-2 Migra

Type	Air channel diameter	Formula
M320/CN52	3.2 mm	q_{vn} = 4.759 x (p_e + 1)
M400/CN62	4.0 mm	q_{vn} = 7,437 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

11.3.3 Compressed air requirements

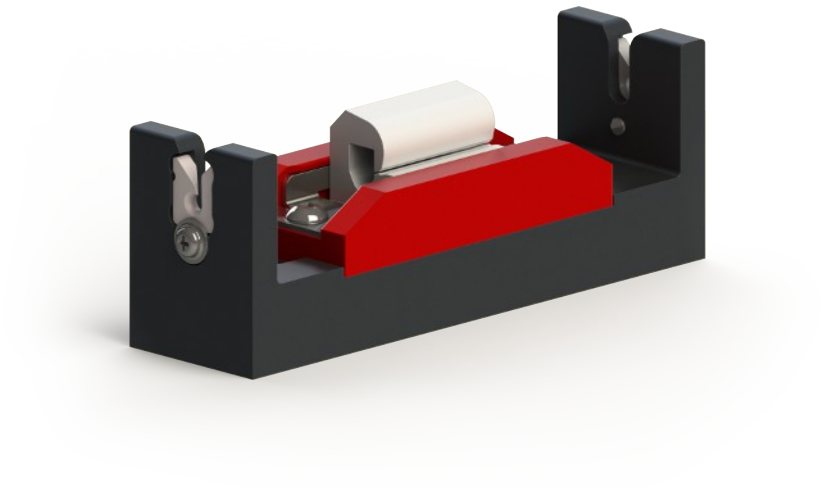
Overpressure PolyJet-TG-2	1.5 ... 8.0 bar
Overpressure PolyJet-TG-2 Migra	0.5 ... 2.0 bar

For the compressed air quality requirements, see page [▷ 70]

12 FDY-Jet-TG

12.1 Features and Benefits

The FDY-Jet-TG achieves a high interlacing performance, and its design is reduced to the essentials. Maximum functionality and durability as well as a robust design ensure consistent results. The jet is especially recommended for the interlacing of technical multifilament yarns made of polyester, polyamide, and polypropylene in all spin-draw processes.



12.2 Technical data

12.2.1 Application area

Type	Count in jet	Winding speed	Yarn tension after the jet
FJ40.0	1000 ... 2500 dtex	... 5000 m/min	0.06 ... 0.15 cN/dtex

All specifications are non-binding reference values.

12.2.2 Air consumption per thread

Type	Air channel diameter	Formula
FJ40.0	4.0 mm	q_{vn} = 7,437 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

12.2.3 Compressed air requirements

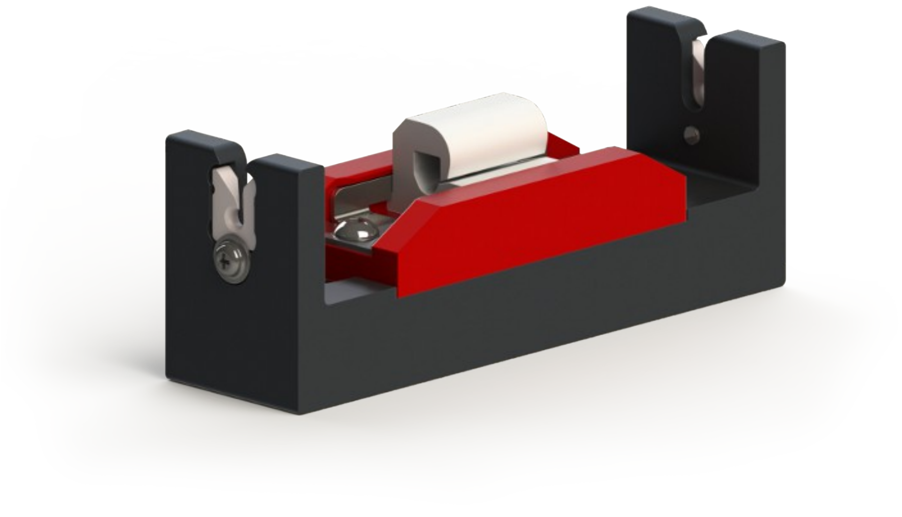
Overpressure	1.5 ... 8.0 bar

For the compressed air quality requirements, see page [▸ 70]

13 MIG-Jet-TG

13.1 Features and Benefits

The MIG-Jet-TG is used in the spinning process for spin-finish migration in textile, technical, and BCF (Bulked Continuous Filament) yarns. Its robust design ensures consistent results and a long service life.



13.2 Technical data

13.2.1 Application area

Flat yarns		
Type	**Count in jet [dtex]**	**Winding speed [m/min]**
MJ32.0	... 5000	... 7500

BCF yarns		
Type	**Count in jet [dtex]**	**Winding speed [m/min]**
MJ32.0	... 8000	... 5000

All specifications are non-binding reference values.

13.2.2 Air consumption per thread

Type	Air channel diameter	Formula
MJ32.0	3.2 mm	$q_{vn} = 4{,}759 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

13.2.3 Compressed air requirements

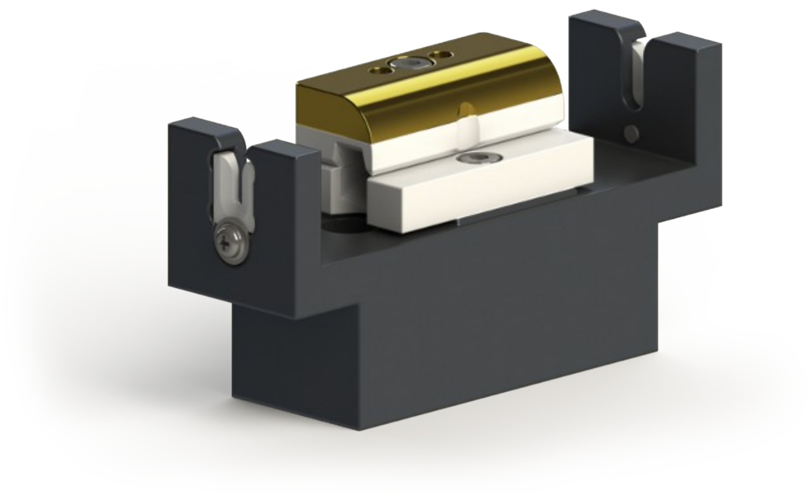
Overpressure	0.5 ... 2.0 bar

For the compressed air quality requirements, see page [▸ 70]

14 PolyJet-TG TopAir

14.1 Features and Benefits

The PolyJet-TG Top Air is used for advanced air interlacing of technical filament yarns made of polyester, nylon, and polypropylene which can be used, for example, in the manufacture of ropes, geo-textiles, hoses, sewing threads, and netting.



14.2 Technical data

14.2.1 Application area

Important note
Advice is required to select the correct product variant for this product. Please consult your sales representative.

Type		Count in jet [dtex]	Winding speed [m/min]	Yarn tension after the jet [cN/dtex]
HN251A/C033	PES	500 ... 1000	... 5000	0.06 ... 0.15
	PA	500 ... 1000	... 5000	0.06 ... 0.15
	PP	400 ... 900	... 5000	0.06 ... 0.15
HN321A/C041	PES	600 ... 1800	... 5000	0.06 ... 0.15
	PA	600 ... 1800	... 5000	0.06 ... 0.15
	PP	550 ... 1500	... 5000	0.06 ... 0.15
HN403A/C052	PES	1000 ... 3500	... 5000	0.06 ... 0.15
	PA	1000 ... 3000	... 5000	0.06 ... 0.15
	PP	900 ... 2500	... 5000	0.06 ... 0.15
HN453A/C063	PES	2000 ... 5000	... 5000	0.06 ... 0.15
	PA	2000 ... 4500	... 5000	0.06 ... 0.15
	PP	1800 ... 4000	... 5000	0.06 ... 0.15
HN452A/C062	PES	2500 ... 6000	... 5000	0.06 ... 0.15
	PA	2500 ... 5500	... 5000	0.06 ... 0.15
	PP	2200 ... 5000	... 5000	0.06 ... 0.15

Type		Count in jet [dtex]	Winding speed [m/min]	Yarn tension after the jet [cN/dtex]
HN520A/CO65	PES	3000 ... 7000	... 5000	0.06 ... 0.15
	PA	3000 ... 6500	... 5000	0.06 ... 0.15
	PP	3000 ... 6000	... 5000	0.06 ... 0.15

PES = polyester fibres, PA = polyamide fibres, PP = polypropylene fibres
All specifications are non-binding reference values.

14.2.2 Air consumption

Type	Air channel diameter	Formula
HN251A/CO33	2.8 mm	q_{vn} = 3.617 x (p_e + 1)
HN321A/CO41	3.6 mm	q_{vn} = 5.925 x (p_e + 1)
HN403A/CO52	4.5 mm	q_{vn} = 9.285 x (p_e + 1)
HN453A/CO63	5.0 mm	q_{vn} = 11.646 x (p_e + 1)
HN452A/CO62	5.0 mm	q_{vn} = 11.792 x (p_e + 1)
HN520A/CO65	5.9 mm	q_{vn} = 15,754 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

14.2.3 Compressed air requirements

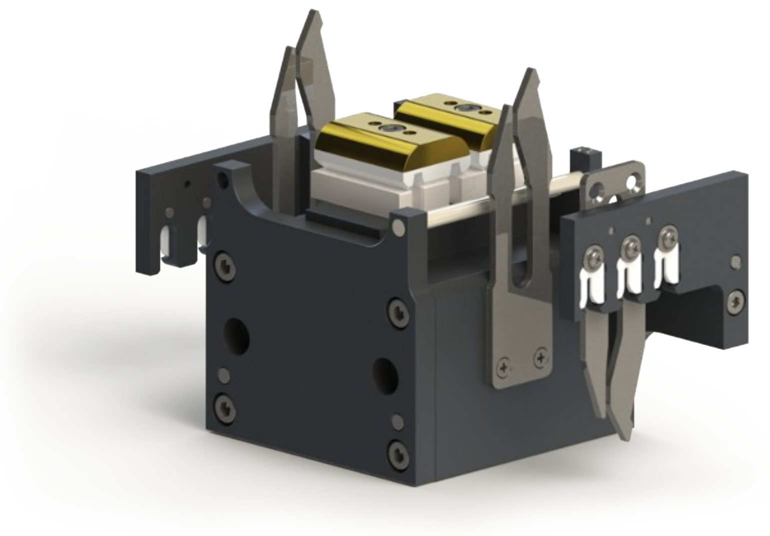
Overpressure PolyJet-TG TopAir	3.0 ... 8.0 bar

For the compressed air quality requirements, see page [▸ 70]

15 PolyJet-BCF TopAir

15.1 Features and Benefits

The PolyJet-BCF TopAir is used for the improved air interlacing of BCF yarns made of polyester, nylon, and polypropylene, which are used in the manufacture of carpets.



15.2 Technical data

15.2.1 Application area

Type		Count in jet [dtex]	Winding speed [m/min]	Yarn tension after the jet [cN/dtex]
HN251A/C033	PA	500 ... 1200	... 4000	0.08 ... 0.12
	PP	400 ... 1000	... 4000	0.08 ... 0.12
HN321A/C041	PA	700 ... 2000	... 4000	0.08 ... 0.12
	PP	600 ... 1800	... 4000	0.08 ... 0.12
HN403A/C052	PA	1000 ... 3200	... 4000	0.08 ... 0.12
	PP	800 ... 3000	... 4000	0.08 ... 0.12
HN453A/C063	PA	1800 ... 4500	... 4000	0.08 ... 0.12
	PP	2000 ... 4200	... 4000	0.08 ... 0.12
HN452A/C062	PA	2400 ... 6000	... 4000	0.08 ... 0.12
	PP	2200 ... 5500	... 4000	0.08 ... 0.12
HN520A/C065	PA	4500 ... 8000	... 4000	0.08 ... 0.12
	PP	4000 ... 7000	... 4000	0.08 ... 0.12

PA = polyamide fibres, PP = polypropylene fibres
All specifications are non-binding reference values.

15.2.2 Air consumption

The air consumption per thread is calculated from the air consumption of the main air and the air consumption of the upper air.

As a guideline, it can be assumed that the upper air overpressure is 1 bar higher than the main air overpressure. The effective values, however, can only be determined through trials.

Calculation formula: $\mathbf{q_{vn} = q_{vn\ main\ air} + q_{vn\ upper\ air}\ [m^3/h]}$

Type	Air channel diameter	Formula
Main air (jet plate)		
HN251A	2.5 mm	q_{vn} = 2.905 x (p_e + 1)
HN321A	3.2 mm	q_{vn} = 4.759 x (p_e + 1)
HN403A	4.0 mm	q_{vn} = 7.437 x (p_e + 1)
HN453A	4.5 mm	q_{vn} = 9.412 x (p_e + 1)
HN452A	4.5 mm	q_{vn} = 9.412 x (p_e + 1)
HN520A	5.2 mm	q_{vn} = 12.568 x (p_e + 1)
Upper air (cover plate)		
CO33	2x 0.85 mm	q_{vn} = 0.671 x (p_e + 1)
CO41	2x 1.1 mm	q_{vn} = 1.125 x (p_e + 1)
CO52	2x 1.4 mm	q_{vn} = 1.822 x (p_e + 1)
CO63	2x 1.6 mm	q_{vn} = 2,233 x (p_e + 1)
CO62	2x 1.55 mm	q_{vn} = 2,379 x (p_e + 1)
CO65	2x 1.85 mm	q_{vn} = 3,147 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

15.2.3 Compressed air requirements

Overpressure PolyJet-BCF TopAir	4.0 ... 10.0 bar

For the compressed air quality requirements, see page [▸ 70]

16 SlideJet-FT15-2

16.1 Features and Benefits

The SlideJet-FT15-2 is used in the manufacturing and processing of high value filament yarns in the false-twist texturing process. The jet is a modular system with a universal quick-lock housing and numerous easily replaceable jet inserts.

16.2 Assortment

Series APe

The APe series enables significant air savings of up to 15%. Existing jets can be replaced within seconds thanks to the "plug & play" design. While the jets help to minimize the cost-intensive "compressed air" resource, no compromises are required in terms of yarn quality. The investment pays for itself within a very short time.

Series APh

Designed to ensure maximum knot stability for downstream processes, such as weaving. A comprehensive series of tests have shown that up to 100% stability can be achieved at a load of 1 cN/dtex. This allows higher machine speeds and results in increased productivity. Alternatively, the sizing application can be reduced, which has a positive impact on costs and the environment.

Series P

The comprehensive P series covers a wide range of applications. Whether a light interlacing density with low stability is required, a strong interlacing density, high stability or microfilament yarns are processed - the variety of available jet types offers the right, cost-effective solution. Due to the very tight tolerances, this series offers a high uniformity from position to position. Customised types are available on request.

Series S

The cost-effective alternative to the P series with a scaled-down range of jet types.

16.3 Technical data

16.3.1 Application area & air consumption

Series APe

Type	Ideal count	Count range	Air consumption formula
High interlacing density (80 – 180 FP/m) – light to medium stability			
APe043	22 dtex	... 44 dtex	$q_{vn} = 0.196 \times (p_e + 1)$
APe141	50 dtex	... 67 dtex	$q_{vn} = 0.320 \times (p_e + 1)$
APe142	78 dtex	... 110 dtex	$q_{vn} = 0.474 \times (p_e + 1)$
APe143	110 dtex	50 ... 167 dtex	$q_{vn} = 0.602 \times (p_e + 1)$
APe243	167 dtex	78 ... 240 dtex	$q_{vn} = 0.786 \times (p_e + 1)$
APe244	330 dtex	140 ... 390 dtex	$q_{vn} = 1.042 \times (p_e + 1)$
APe246	450 dtex	200 ... 630 dtex	$q_{vn} = 1.234 \times (p_e + 1)$
APe247	660 dtex	390 ... 800 dtex	$q_{vn} = 1.577 \times (p_e + 1)$

Series APh

Type	Ideal count	Count range	Ø Air channel	Air consumption formula
Medium interlacing density (70 – 90 FP/m) – high to very high stability				
APh212	167 dtex	78 ... 330 dtex	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
APh213	330 dtex	110 ... 630 dtex	1.6 mm	$q_{vn} = 1.189 \times (p_e + 1)$
APh215	450 dtex	240 ... 800 dtex	1.8 mm	$q_{vn} = 1.506 \times (p_e + 1)$

Series P

Type	Ideal count	Count range	Ø Air channel	Air consumption formula
Low interlacing density (40 – 60 FP/m) – low stability				
P310-2	110 dtex	50 ... 167 dtex	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
P410-2	167 dtex	78 ... 240 dtex	1.6 mm	$q_{vn} = 1.189 \times (p_e + 1)$
Medium interlacing density (70 – 90 FP/m) – medium to high stability				
P211-2	78 dtex	20 ... 140 dtex	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$
P212-2	167 dtex	78 ... 330 dtex	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
P213-2	330 dtex	110 ... 630 dtex	1.6 mm	$q_{vn} = 1.189 \times (p_e + 1)$
P215-2	450 dtex	240 ... 800 dtex	1.8 mm	$q_{vn} = 1.506 \times (p_e + 1)$
P312-2	660 dtex	330 ... 1100 dtex	2.06 mm	$q_{vn} = 1.859 \times (p_e + 1)$
P313-2	990 dtex	660 ... 1200 dtex	2.2 mm	$q_{vn} = 2.315 \times (p_e + 1)$
P412-2	1200 dtex	800 ... 2000 dtex	2.5 mm	$q_{vn} = 2.772 \times (p_e + 1)$
P414-2	1800 dtex	990 ... 2400 dtex	3.0 mm	$q_{vn} = 3.875 \times (p_e + 1)$
High interlacing density (80 – 160 FP/m) – low stability				
P140-2	78 dtex	20 ... 110 dtex	0.92 mm	$q_{vn} = 0.393 \times (p_e + 1)$
High interlacing density (80 – 160 FP/m) – light to medium stability				
P141-2	50 dtex	... 67 dtex	0.88 mm	$q_{vn} = 0.360 \times (p_e + 1)$
P142-2	78 dtex	... 110 dtex	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
P143-2	110 dtex	50 ... 167 dtex	1.24 mm	$q_{vn} = 0.712 \times (p_e + 1)$
P243-2	167 dtex	78 ... 240 dtex	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
P244-2	330 dtex	140 ... 390 dtex	1.57 mm	$q_{vn} = 1.142 \times (p_e + 1)$

Type	Ideal count	Count range	Ø Air channel	Air consumption formula
P246-2	450 dtex	200 … 630 dtex	1.77 mm	q_{vn} = 1.451 x (p_e + 1)
P247-2	660 dtex	390 … 800 dtex	2.0 mm	q_{vn} = 1.785 x (p_e + 1)

Series S

Type	Ideal count	Count range	Ø Air channel	Air consumption formula
High interlacing density (80 – 160 FP/m) – light to medium stability				
S1	78 dtex	… 110 dtex	1.1 mm	q_{vn} = 0.562 x (p_e + 1)
S2	110 dtex	50 … 167 dtex	1.24 mm	q_{vn} = 0.712 x (p_e + 1)
S3	167 dtex	78 … 240 dtex	1.4 mm	q_{vn} = 0.911 x (p_e + 1)
Medium interlacing density (70 – 90 FP/m) – medium to high stability				
S12	167 dtex	78 … 330 dtex	1.4 mm	q_{vn} = 0.911 x (p_e + 1)
S13	330 dtex	110 … 630 dtex	1.6 mm	q_{vn} = 1.189 x (p_e + 1)
S14	450 dtex	240 … 800 dtex	1.8 mm	q_{vn} = 1,506 x (p_e + 1)
S16	660 dtex	330 … 1100 dtex	2.06 mm	q_{vn} = 1,859 x (p_e + 1)
S18	1200 dtex	800 … 2000 dtex	2.5 mm	q_{vn} = 2.772 x (p_e + 1)

All specifications are non-binding reference values.
q_{vn} = air consumption per thread [m^3/h] (DIN1343; applies from 0.8 bar); p_e = over pressure [bar]

16.3.2 Air savings: examples

Series APe versus P

Type	Air consumption formula	Type	Air consumption formula	Air savings[1)]	
APe141	q_{vn} = 0.320 x (p_e + 1)	P141-2	q_{vn} = 0.360 x (p_e + 1)	11.2 %	0.120 m^3/h
APe142	q_{vn} = 0.474 x (p_e + 1)	P142-2	q_{vn} = 0.562 x (p_e + 1)	15.7 %	0.265 m^3/h
APe143	q_{vn} = 0.602 x (p_e + 1)	P143-2	q_{vn} = 0.712 x (p_e + 1)	15.5 %	0.331 m^3/h
APe243	q_{vn} = 0.786 x (p_e + 1)	P243-2	q_{vn} = 0.911 x (p_e + 1)	13.8 %	0.377 m^3/h
APe244	q_{vn} = 1.042 x (p_e + 1)	P244-2	q_{vn} = 1.142 x (p_e + 1)	8.7 %	0.298 m^3/h
APe246	q_{vn} = 1.234 x (p_e + 1)	P246-2	q_{vn} = 1.451 x (p_e + 1)	15.0 %	0.675 m^3/h
APe247	q_{vn} = 1.577 x (p_e + 1)	P247-2	q_{vn} = 1.785 x (p_e + 1)	11.6 %	0.649 m^3/h

1) Average values; data in m^3/h at an overpressure of 2 bar
q_{vn} = air consumption per thread [m^3/h] (DIN1343; applies from 0.8 bar); p_e = over pressure [bar]

16.3.3 Compressed air requirements

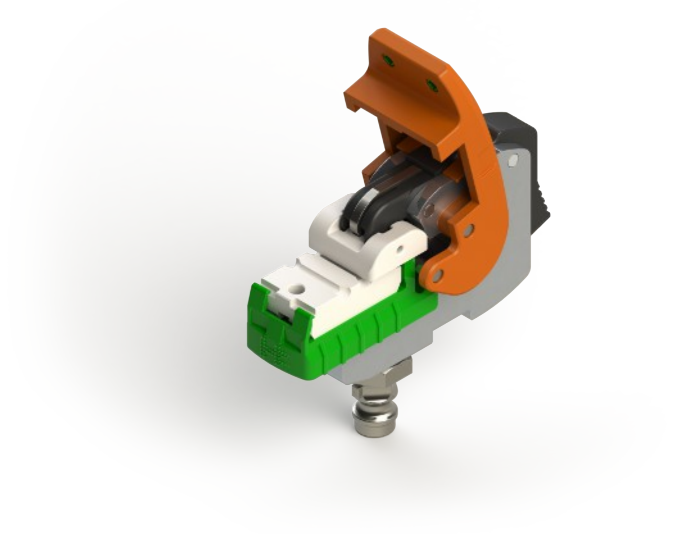
Overpressure	0.5 … 6.0 bar

For the compressed air quality requirements, see page [▹ 70]

17 SlideJet-2T

17.1 Features and Benefits

The SlideJet-2T was specially developed for DTY systems with modified (two-in-one) winding stations. The jet is a modular system with a universal quick-lock housing and various easily replaceable jet inserts with two yarn channels.



17.2 Technical data

17.2.1 Application area

Type	Typical range [dtex]	*(Max. limits of application)*
P141-2T	**... 50**	*(... 67)*
P142-2T	**... 78**	*(... 110)*
P143-2T	**78 ... 110**	*(50 ... 167)*

All specifications are non-binding reference values.

17.2.2 Air consumption

Type	Air channel diameter *	Formula *
P141-2	0.88 mm	$q_{vn} = 0.360 \times (p_e + 1)$
P142-2	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
P143-2	1.24 mm	$q_{vn} = 0.712 \times (p_e + 1)$

** Specifications apply for 1 thread*
p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

17.2.3 Compressed air requirements

Overpressure	0.5 ... 6.0 bar

For the compressed air quality requirements, see page [▸ 70]

18 SwissJet

18.1 Features and Benefits

The SwissJet is designed for the effective interlacing of multifilament yarns during false-twist texturing. The jet has a housing that is specially reinforced with carbon fibres which give it particularly great strength during operation, a long service life, and a very low weight. Various jet inserts are available for the different yarn types.

18.2 Assortment

Series APe

The APe series enables significant air savings of up to 15%. Existing jets can be replaced within seconds thanks to the "plug & play" design. While the jets help to minimize the cost-intensive "compressed air" resource, no compromises are required in terms of yarn quality. The investment pays for itself within a very short time.

Series APh

Designed to ensure maximum knot stability for downstream processes, such as weaving. A comprehensive series of tests have shown that up to 100% stability can be achieved at a load of 1 cN/dtex. This allows higher machine speeds and results in increased productivity. Alternatively, the sizing application can be reduced, which has a positive impact on costs and the environment.

Series P

The comprehensive P series covers a wide range of applications. Whether a light interlacing density with low stability is required, a strong interlacing density, high stability or microfilament yarns are processed - the variety of available jet types offers the right, cost-effective solution. Due to the very tight tolerances, this series offers a high uniformity from position to position. Customised types are available on request.

Series S

The cost-effective alternative to the P series with a scaled-down range of jet types.

18.3 Technical data

18.3.1 Application area & air consumption

Series APe

Type	Ideal count	Count range	Air consumption formula
High interlacing density (80 – 180 FP/m) – light to medium stability			
APe043	22 dtex	... 44 dtex	$q_{vn} = 0.196 \times (p_e + 1)$
APe141	50 dtex	... 67 dtex	$q_{vn} = 0.320 \times (p_e + 1)$
APe142	78 dtex	... 110 dtex	$q_{vn} = 0.474 \times (p_e + 1)$
APe143	110 dtex	50 ... 167 dtex	$q_{vn} = 0.602 \times (p_e + 1)$
APe243	167 dtex	78 ... 240 dtex	$q_{vn} = 0.786 \times (p_e + 1)$
APe244	330 dtex	140 ... 390 dtex	$q_{vn} = 1.042 \times (p_e + 1)$
APe246	450 dtex	200 ... 630 dtex	$q_{vn} = 1.234 \times (p_e + 1)$
APe247	660 dtex	390 ... 800 dtex	$q_{vn} = 1.577 \times (p_e + 1)$

Series APh

Type	Ideal count	Count range	Ø Air channel	Air consumption formula
Medium interlacing density (70 – 90 FP/m) – high to very high stability				
APh212	167 dtex	78 ... 330 dtex	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
APh213	330 dtex	110 ... 630 dtex	1.6 mm	$q_{vn} = 1.189 \times (p_e + 1)$
APh215	450 dtex	240 ... 800 dtex	1.8 mm	$q_{vn} = 1.506 \times (p_e + 1)$

Series P

Type	Ideal count	Count range	Ø Air channel	Air consumption formula
Low interlacing density (40 – 60 FP/m) – low stability				
P310-2	110 dtex	50 ... 167 dtex	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
P410-2	167 dtex	78 ... 240 dtex	1.6 mm	$q_{vn} = 1.189 \times (p_e + 1)$
Medium interlacing density (70 – 90 FP/m) – medium to high stability				
P211-2	78 dtex	20 ... 140 dtex	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$
P212-2	167 dtex	78 ... 330 dtex	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
P213-2	330 dtex	110 ... 630 dtex	1.6 mm	$q_{vn} = 1.189 \times (p_e + 1)$
P215-2	450 dtex	240 ... 800 dtex	1.8 mm	$q_{vn} = 1.506 \times (p_e + 1)$
P312-2	660 dtex	330 ... 1100 dtex	2.06 mm	$q_{vn} = 1.859 \times (p_e + 1)$
P313-2	990 dtex	660 ... 1200 dtex	2.2 mm	$q_{vn} = 2.315 \times (p_e + 1)$
P412-2	1200 dtex	800 ... 2000 dtex	2.5 mm	$q_{vn} = 2.772 \times (p_e + 1)$
P414-2	1800 dtex	990 ... 2400 dtex	3.0 mm	$q_{vn} = 3.875 \times (p_e + 1)$
High interlacing density (80 – 160 FP/m) – low stability				
P140-2	78 dtex	20 ... 110 dtex	0.92 mm	$q_{vn} = 0.393 \times (p_e + 1)$
High interlacing density (80 – 160 FP/m) – light to medium stability				
P141-2	50 dtex	... 67 dtex	0.88 mm	$q_{vn} = 0.360 \times (p_e + 1)$
P142-2	78 dtex	... 110 dtex	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
P143-2	110 dtex	50 ... 167 dtex	1.24 mm	$q_{vn} = 0.712 \times (p_e + 1)$
P243-2	167 dtex	78 ... 240 dtex	1.4 mm	$q_{vn} = 0.911 \times (p_e + 1)$
P244-2	330 dtex	140 ... 390 dtex	1.57 mm	$q_{vn} = 1.142 \times (p_e + 1)$

Type	Ideal count	Count range	Ø Air channel	Air consumption formula
P246-2	450 dtex	200 … 630 dtex	1.77 mm	$q_{vn} = 1.451 x (p_e + 1)$
P247-2	660 dtex	390 … 800 dtex	2.0 mm	$q_{vn} = 1.785 x (p_e + 1)$

Series S

Type	Ideal count	Count range	Ø Air channel	Air consumption formula
High interlacing density (80 – 160 FP/m) – light to medium stability				
S1	78 dtex	… 110 dtex	1.1 mm	$q_{vn} = 0.562 x (p_e + 1)$
S2	110 dtex	50 … 167 dtex	1.24 mm	$q_{vn} = 0.712 x (p_e + 1)$
S3	167 dtex	78 … 240 dtex	1.4 mm	$q_{vn} = 0.911 x (p_e + 1)$
Medium interlacing density (70 – 90 FP/m) – medium to high stability				
S12	167 dtex	78 … 330 dtex	1.4 mm	$q_{vn} = 0.911 x (p_e + 1)$
S13	330 dtex	110 … 630 dtex	1.6 mm	$q_{vn} = 1.189 x (p_e + 1)$
S14	450 dtex	240 … 800 dtex	1.8 mm	$q_{vn} = 1,506 x (p_e + 1)$
S16	660 dtex	330 … 1100 dtex	2.06 mm	$q_{vn} = 1,859 x (p_e + 1)$
S18	1200 dtex	800 … 2000 dtex	2.5 mm	$q_{vn} = 2.772 x (p_e + 1)$

All specifications are non-binding reference values.
q_{vn} = air consumption per thread [m^3/h] (DIN1343; applies from 0.8 bar); p_e = over pressure [bar]

18.3.2 Air savings: examples

Series APe versus P

Type	Air consumption formula	Type	Air consumption formula	Air savings[1]	
APe141	$q_{vn} = 0.320 x (p_e + 1)$	P141-2	$q_{vn} = 0.360 x (p_e + 1)$	11.2 %	0.120 m^3/h
APe142	$q_{vn} = 0.474 x (p_e + 1)$	P142-2	$q_{vn} = 0.562 x (p_e + 1)$	15.7 %	0.265 m^3/h
APe143	$q_{vn} = 0.602 x (p_e + 1)$	P143-2	$q_{vn} = 0.712 x (p_e + 1)$	15.5 %	0.331 m^3/h
APe243	$q_{vn} = 0.786 x (p_e + 1)$	P243-2	$q_{vn} = 0.911 x (p_e + 1)$	13.8 %	0.377 m^3/h
APe244	$q_{vn} = 1.042 x (p_e + 1)$	P244-2	$q_{vn} = 1.142 x (p_e + 1)$	8.7 %	0.298 m^3/h
APe246	$q_{vn} = 1.234 x (p_e + 1)$	P246-2	$q_{vn} = 1.451 x (p_e + 1)$	15.0 %	0.675 m^3/h
APe247	$q_{vn} = 1.577 x (p_e + 1)$	P247-2	$q_{vn} = 1.785 x (p_e + 1)$	11.6 %	0.649 m^3/h

1) Average values; data in m^3/h at an overpressure of 2 bar
q_{vn} = air consumption per thread [m^3/h] (DIN1343; applies from 0.8 bar); p_e = over pressure [bar]

18.3.3 Compressed air requirements

Overpressure	0.5 … 6.0 bar

For the compressed air quality requirements, see page [▷ 70]

19 KFJet

19.1 Features and Benefits

The KF jet insert is the optimal solution for knot-free air interlacing of DTY yarns. Although the yarn is intermingled, it shows no visible interlacing knots. Consequently, the fabric does not have any interlacing knots, either.

19.2 Technical data

19.2.1 Application area

Type	Typical range [dtex]	*(Max. limits of application)*	Overfeed
KF050	**... 100**	*(... 130)*	3 ... 6 %
KF150	**78 ... 200**	*(78 ... 240)*	3 ... 6 %
KF250	**130 ... 330**	*(130 ... 360)*	3 ... 6 %
KF450	**240 ... 660**	*(240 ... 700)*	3 ... 6 %

All specifications are non-binding reference values.

19.2.2 Air consumption

Type	Air channel diameter	Formula
KF050	0.9 mm	q_{vn} = 0.350 x (p_e + 1)
KF150	1.0 mm	q_{vn} = 0.488 x (p_e + 1)
KF250	1.3 mm	q_{vn} = 0.784 x (p_e + 1)
KF450	1.7 mm	q_{vn} = 1,391 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

19.2.3 Compressed air requirements

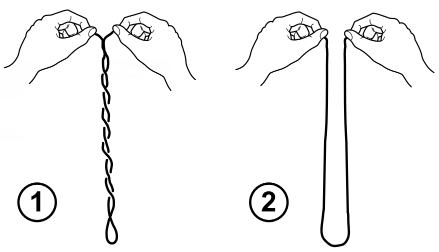
Overpressure	2.0 ... 4.0 bar

For the compressed air quality requirements, see page [▷ 70]

20 DetorqueJet-3

20.1 Features and Benefits

The DetorqueJet-3 is a highly compact jet without moveable parts. The jet is placed after the set heater and before the third delivery shaft and can be used for both S and Z textured yarns.



1	Torque in textured yarn
2	Torque-free / twist-free yarn

20.2 Technical data

20.2.1 Application area

Type	Count [dtex]
21-3	20 ... 167
22-3	167 ... 330

All specifications are non-binding reference values.

20.2.2 Air consumption

Type	Air channel diameter	Formula
21-3	2 x 0.7 mm	$q_{vn} = 0.43 \times (p_e + 1)$
22-3	2 x 1.0 mm	$q_{vn} = 0.86 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

20.2.3 Compressed air requirements

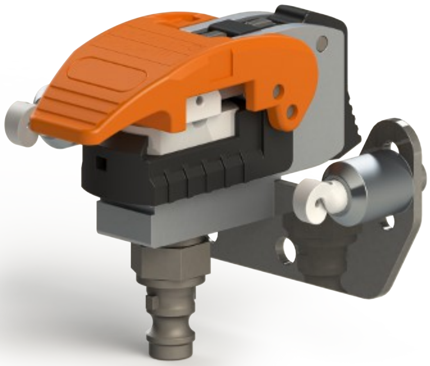
Overpressure	0.5 ... 2.5 bar

For the compressed air quality requirements, see page [70]

21 SlideJet-DT15-2

21.1 Features and Benefits

The SlideJet-DT15-2 is used in the high-quality manufacturing and processing of high value flat yarns. The jet is a modular system with a universal quick-lock housing and numerous easily replaceable jet inserts.



21.2 Technical data

21.2.1 Application area

Type	Count [dtex]			Interlacing knots		
	Knitting, weft yarns	Warp yarns	Single count	Number [FP/m]	Length	Stability
Normal interlacing, for microfilament yarns						
P132-2	... 167	... 110	... 3.5	... 75	short	weak
P133-2	... 220	... 167	... 4.0	... 70	short	weak
P231-2	... 330	... 230	... 4.5	... 60	medium	medium
P232-2	... 660	... 400	... 6.0	... 50	medium	medium
P331-2	... 1200	... 900	... 7.0	30 ... 45	long	medium
P431-2	... 2400	... 1600	... 12.0	30 ... 40	long	medium
High interlacing stability at higher processing speeds						
P235-2	... 330	... 230	... 4.5	... 70	medium	high
P236-2	... 520	... 350	... 5.5	... 65	medium	high

All specifications are non-binding reference values.

21.2.2 Air consumption

Type	Air channel diameter	Formula
P132-2	1.1 mm	q_{vn} = 0.562 x (p_e + 1)
P133-2	1.2 mm	q_{vn} = 0.689 x (p_e + 1)
P231-2	1.4 mm	q_{vn} = 0.911 x (p_e + 1)
P232-2	1.7 mm	q_{vn} = 1,343 x (p_e + 1)
P235-2	1.4 mm	q_{vn} = 0.911 x (p_e + 1)
P236-2	1.6 mm	q_{vn} = 1.189 x (p_e + 1)
P331-2	2.2 mm	q_{vn} = 2,250 x (p_e + 1)
P431-2	2.8 mm	q_{vn} = 3,644 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

21.2.3 Compressed air requirements

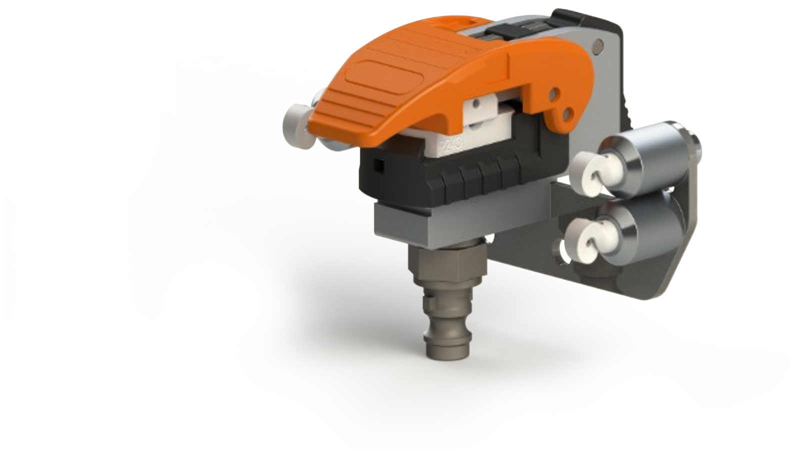
Overpressure	1.0 ... 6.0 bar

For the compressed air quality requirements, see page [▸ 70]

22 SlideJet-HFP15-2

22.1 Features and Benefits

The SlideJet-HFP15-2 is used during the cost-effective manufacture and processing of filament yarns during the air covering process. The jet is a modular system with a universal quick-lock housing and numerous easily replaceable jet inserts.



22.2 Assortment

Series APh

Designed to ensure maximum knot stability for downstream processes, such as weaving. A comprehensive series of tests have shown that up to 100% stability can be achieved at a load of 1 cN/dtex. This allows higher machine speeds and results in increased productivity. Alternatively, the sizing application can be reduced, which has a positive impact on costs and the environment.

Series Px1x

Tried-and-tested series P211-2 to P412-2 with vortex chamber for particularly high interlacing stability. For all combinations of elastane with textured and staple fibre yarns up to 700 m/min.

Series Px4x

Series P141-2 to P247-2 with patented air twist chamber for very regular interlacing with a maximum number of interlacing knits up to speeds of 1,000 m/min.

22.3 Technical data

22.3.1 Application area

Type	Typical range [dtex]	*(Max. limits of application)*
Medium interlacing density – high to very high stability		
APh212	**78 … 167**	*(50 … 240)*
APh213	**167 … 330**	*(110 … 390)*
APh215	**240 … 450**	*(167 … 660)*
Medium interlacing density – medium to high stability		
P211-2	**50 … 95**	*(20 … 110)*
P212-2	**78 … 167**	*(50 … 240)*
P213-2	**167 … 330**	*(110 … 390)*
P215-2	**240 … 450**	*(167 … 660)*
P312-2	**330 … 660**	*(240 … 720)*
P412-2	**660 … 990**	*(560 … 1200)*
High interlacing density – medium stability		
P141-2	**… 50**	*(… 67)*
P142-2	**… 67**	*(… 95)*
P143-2	**50 … 95**	*(… 110)*
P243-2	**78 … 167**	*(67 … 200)*
P244-2	**167 … 330**	*(95 … 390)*
P246-2	**240 … 450**	*(200 … 560)*
P247-2	**450 … 720**	*(390 … 800)*

All specifications are non-binding reference values.

22.3.2 Air consumption per thread

Type	Air channel diameter	Formula
P141-2	0.9 mm	q_{vn} = 0.376 x (p_e + 1)
P142-2	1.1 mm	q_{vn} = 0.562 x (p_e + 1)
P143-2	1.24 mm	q_{vn} = 0.712 x (p_e + 1)
P243-2	1.4 mm	q_{vn} = 0.911 x (p_e + 1)
P244-2	1.57 mm	q_{vn} = 1.142 x (p_e + 1)
P246-2	1.77 mm	q_{vn} = 1.451 x (p_e + 1)
P247-2	2.0 mm	q_{vn} = 1,785 x (p_e + 1)
P211-2	1.30 mm	q_{vn} = 0.786 x (p_e + 1)
P212-2, APh212	1.4 mm	q_{vn} = 0.911 x (p_e + 1)
P213-2, APh213	1.6 mm	q_{vn} = 1.189 x (p_e + 1)
P215-2, APh215	1.8 mm	q_{vn} = 1.506 x (p_e + 1)
P312-2	2.05 mm	q_{vn} = 1.859 x (p_e + 1)
P412-2	2.5 mm	q_{vn} = 2,772 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

22.3.3 Compressed air requirements

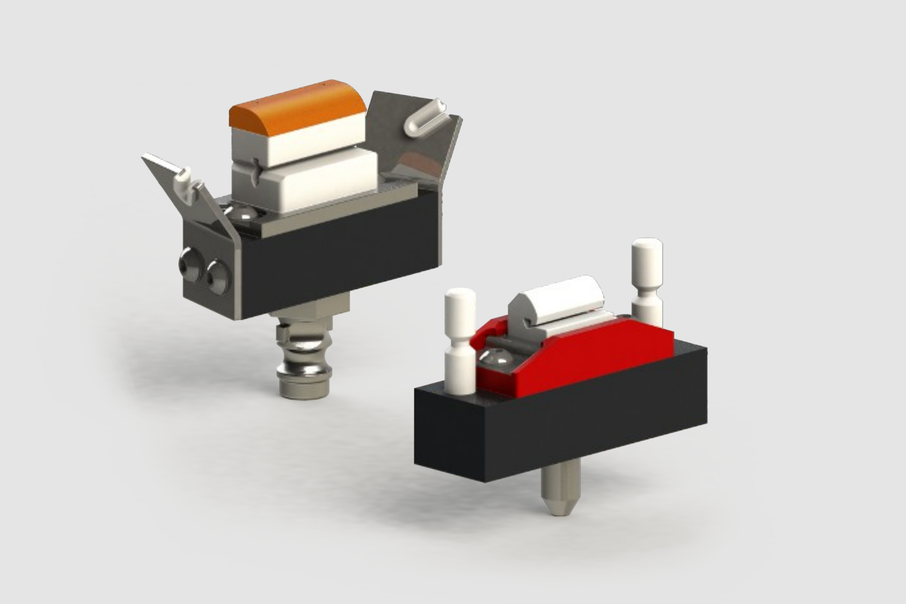
Overpressure	0.5 … 6.0 bar

For the compressed air quality requirements, see page [▸ 70]

23 DSW-Jet

23.1 Features and Benefits

The DSW Jet offers vast potential for optimising existing machines. On the one hand, considerable air savings of up to 30% can be achieved in the DSY (differential shrinkage yarn) process. Combining FDY and POY yarn makes it possible to create interesting structural effects in the fabric. On the other hand, a higher number of knots as well as knot uniformity with the same air consumption can be achieved in the DW draw-packaging process for plain yarns when POY and FDY yarns are combined.



23.2 Assortment

Series				Process
HP	FJ	HN	PJ	
●	●	◑	○	DSY (Differential-Shrinkage-Yarn)
●	●	●	◑	FOY (Fully Oriented Yarn)
◑	◑	●	○	FOY doubling (co-mingle 2 yarns)

● = Recommended, ◑ = Possible, trials required, ○ = Not recommended

23.3 Technical data

23.3.1 Application area & air consumption

Type	Count range in the jet	Ø Air channel	Air consumption formula
Series HP & FJ – Maximum interlacing performance			
HP113A/WP10	... 95 dtex	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
HP134A/WP20	55 ... 167 dtex	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$
HP165A/WP30	110 ... 300 dtex	1.6 mm	$q_{vn} = 1.190 \times (p_e + 1)$
FJ13.1	33 ... 220 dtex	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$
Series HN – Medium interlacing performance			
HN112A/CN15	... 78 dtex	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
HN132A/CN14	33 ... 220 dtex	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$
HN163A/CN26	110 ... 330 dtex	1.6 mm	$q_{vn} = 1.190 \times (p_e + 1)$
Series PJ – Average interlacing performance			
PJ11.0	... 110 dtex	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
PJ13.0	... 350 dtex	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$

Winding speed up to 1,500 [m/min.]
All specifications are non-binding reference values.
p_e *= overpressure [bar]*
q_{vn} *= air consumption per thread [m^3/h] (standard conditions according to DIN1343)*

23.3.2 Compressed air requirements

Overpressure:	
– Series HP & HN	2.0 ... 6.0 bar
– Series PJ & FJ	1.0 ... 4.0 bar

For the compressed air quality requirements, see page [▹ 70]

24 WarpJet-KV

24.1 Features and Benefits

The WarpJet is used for efficient interlacing during warping. The fast and simple threading from above is combined with easy cleaning and reduced machine downtimes.

24.2 Assortment

Series WJ

The cost-effective design for optimum interlacing performance.

Series HP

For the highest quality requirements for interlacing performance and positional uniformity.

24.3 General view

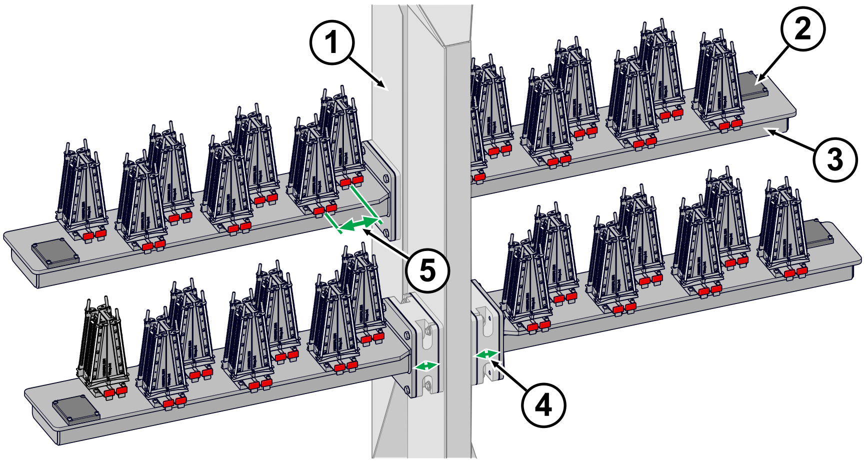


Fig. 2 Example: 28 x WarpJet-KV with carrier for 1792 threads

1	Carrier for compressed air supply unit (not included in scope of delivery)
2	Closing plate for unused connection points
3	WarpJet-KV carrier
4	55 mm spacer for bottom carrier (optional)
5	WarpJet-KV clearance 110 mm

24.4 Technical data

24.4.1 Application area

Type	Typical range [dtex] (in the jet)	*(Max. limits of application)*
HP090A/WP01	... 55	*... 70*
HP113A/WP10	... 110	*... 140*
HP134A/WP20	55 ... 167	*40 ... 200*
WJ11.0	... 110	*... 167*
WJ13.0	110 ... 330	*110 ... 370*

All specifications are non-binding reference values.

24.4.2 Air consumption per thread

Type	Air channel diameter	Formula
HP090A/WP01	0.9 mm	$q_{vn} = 0.376 \times (p_e + 1)$
HP113A/WP10	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
HP134A/WP20	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$
WJ11.0	1.1 mm	$q_{vn} = 0.562 \times (p_e + 1)$
WJ13.0	1.3 mm	$q_{vn} = 0.786 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

24.4.3 Compressed air requirements

Overpressure	0.5 ... 4.0 bar

For the compressed air quality requirements, see page [70]

25 TexJet-ATY

25.1 Features and Benefits

The TexJet-ATY produces superior yarn at high processing speeds. It is used for the production of very fine to coarse yarns made of polyester, polyamide, and polypropylene and in the production of high-grade flame and effect yarns.

25.2 Assortment

Series Dx0

For voluminous yarns, technical applications, and fashion.

Series Dx1

Is used for producing microfibre, effect, and flame yarns. Possible end products include sportswear, leisurewear, and sewing yarns.

Series Dx2

Highly suited to sportswear, leisurewear, automotive, and technical yarns.

Series Dx3

For extremely compact yarns, automotive, and household textiles.

Series Dx4

For fashion, sportswear, leisurewear, and household textiles.

Series Dxx St

For glass filament yarns.

25.3 Technical data

25.3.1 Application area

Type	Total count of feed [dtex]	Single filament counts [dtex]	Max. overfeed effect yarns	Winding speed [m/min]
Series Dx0 – For bulky yarns and high overfeed				
D40	330 ... 1100	0.8 ... 5.5	... 160 %	... 600
D50	600 ... 2500	4.0 ... 12.0	... 160 %	... 600
D60	1800 ... 3500	4.0 ... 12.0	... 160 %	... 500
D70	2500 ... 4500	4.0 ... 12.0	... 160 %	... 500
Series Dx1 – For more volume, covering capacity, overfeed and higher texturing speed				
D11	60 ... 250	0.5 ... 2.5	... 70 %	... 1200
D21	200 ... 450	0.5 ... 2.5	... 70 %	... 1000
D41	330 ... 800	0.5 ... 2.5	... 60 %	... 900
Series Dx2 – For compact, particularly stable yarns with small, tight loops				
D002	10 ... 50	0.5 ... 1.5	... 60 %	... 400
D02	44 ... 90	0.5 ... 1.5	... 40 %	... 800
D12	80 ... 250	0.8 ... 3.5	... 60 %	... 1000
D22	150 ... 480	0.8 ... 3.5	... 60 %	... 900
D32	330 ... 800	0.8 ... 5.5	... 60 %	... 800
D42	600 ... 1100	0.8 ... 5.5	... 60 %	... 800
D52	600 ... 2500	4.0 ... 12.0	... 50 %	... 800
D62	1800 ... 3500	4.0 ... 12.0	... 40 %	... 600
Series Dx3 – For extremely compact, highly stable yarns				
D03	44 ... 90	0.5 ... 1.5	... 40 %	... 700
D13	80 ... 250	0.8 ... 3.5	... 50 %	... 700
D23	150 ... 480	0.8 ... 3.5	... 50 %	... 700
D33	330 ... 800	0.8 ... 5.5	... 50 %	... 700
D43	660 ... 1100	0.8 ... 5.5	... 50 %	... 700
Series Dx4 – For effect yarns				
D14	60 ... 250	0.5 ... 2.5	... 70 %	... 700
D24	150 ... 480	0.8 ... 3.5	... 70 %	... 700
D34	330 ... 800	0.8 ... 5.5	... 70 %	... 700
D44	600 ... 1100	0.8 ... 5.5	... 70 %	... 700
Applications with polypropylene yarns (PP)				
D42	150 ... 480	3.0 ... 8.0	... 30 %	... 500
D52	350 ... 1100	3.0 ... 8.0	... 30 %	... 500
D62	800 ... 2200	3.0 ... 8.0	... 30 %	... 500
D70	1200 ... 3500	3.0 ... 8.0	... 30 %	... 500
Series Dxx St – for glass filament yarns				
D70 St	1360 ... 25000	4.0 ... 17.0 µm		

All specifications are non-binding reference values.

25.3.2 Air consumption per thread

Type	Air channel diameter	Formula
D002	3 x 0.40 mm	q_{vn} = 0.26 x (p_e + 1)
D02, D03	3 x 0.50 mm	q_{vn} = 0.37 x (p_e + 1)
D11, D12, D13	3 x 0.60 mm	q_{vn} = 0.54 x (p_e + 1)
D14	1 x 0.90 mm	q_{vn} = 0.40 x (p_e + 1)
D21, D22, D23	3 x 0.75 mm	q_{vn} = 0.81 x (p_e + 1)
D24	1 x 1.15 mm	q_{vn} = 0.60 x (p_e + 1)
D32, D33	3 x 0.90 mm	q_{vn} = 1.21 x (p_e + 1)
D34	1 x 1.30 mm	q_{vn} = 0.90 x (p_e + 1)
D40, D41, D42, D43	3 x 1.00 mm	q_{vn} = 1.46 x (p_e + 1)
D44	1 x 1.50 mm	q_{vn} = 1.10 x (p_e + 1)
D50, D52	3 x 1.20 mm	q_{vn} = 2.05 x (p_e + 1)
D60	3 x 1.35 mm	q_{vn} = 2.56 x (p_e + 1)
D62	3 x 1.40 mm	q_{vn} = 2.75 x (p_e + 1)
D70	3 x 1.60 mm	q_{vn} = 3.59 x (p_e + 1)
D70 St	3 x 1.70 mm	q_{vn} = 4.03 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

25.3.3 Compressed air requirements

Overpressure	7.0 ... 14.0 bar **

*** Glass fibre yarns 2 – 5 bar*

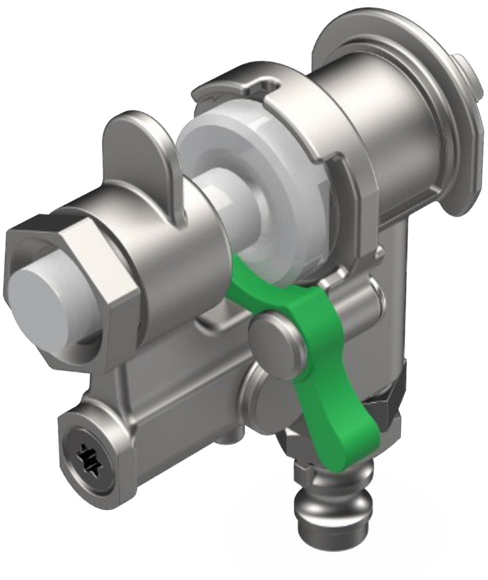
For the compressed air quality requirements, see page [▹ 70]

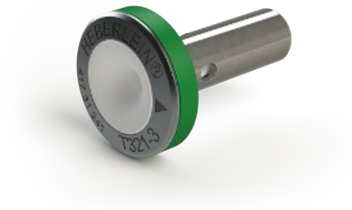
26 HemaJet-LB06

26.1 Features and Benefits

The rugged HemaJet-LB06 jet housing is compatible with all jet core series (T, A, S) of the previous products HemaJet-LB02 & -LB04, and thus offers a perfect combination for all requirements in air texturing processes.

The distance between the impact body and the jet core can be easily adjusted using various gauges.





26.2 Technical data

26.2.1 Application area

Type	Total count of feed [dtex]	Single count [dtex]	Max. overfeed effect yarns	Winding speed [m/min]
Series T - Compact, uniform yarns				
T311, T311-3	30 ... 350	1.0 ... 2.5	... 60 %	... 650
T321, T321-3	150 ... 550	1.5 ... 4.0	... 70 %	... 650
T341	250 ... 1100	2.5 ... 6.0	... 80 %	... 500
T351	500 ... 3000	... 22.0	... 80 %	... 500
Series A – Compact, stable yarns, high texturing speed				
A317, A317-3	44 ... 250	0.5 ... 2.5	... 45 %	... 1000
A327	150 ... 450	0.75 ... 3.5	... 45 %	... 900
A347, A347-3	330 ... 1000	0.75 ... 5.5	... 45 %	... 800
A357	800 ... 2000	... 12.0	... 40 %	... 700
Series S – Softer, textile yarns through a greater overfeed potential and higher texturing speed				
S315, S315-2	22 ... 250	0.5 ... 2.5	... 60 %	... 1000
S325, S325-3	200 ... 450	0.75 ... 4.5	... 70 %	... 900

All specifications are non-binding reference values.

26.2.2 Air consumption

Type	Air channel diameter	Formula
A317, S315, T311 A317-3, S315-3, T311-3	3 x 0.60 mm	$q_{vn} = 0.54 \times (p_e + 1)$
A327, S325, T321 S325-3, T321-3	3 x 0.75 mm	$q_{vn} = 0.81 \times (p_e + 1)$
A347, T341 A347-3	3 x 1.00 mm	$q_{vn} = 1.46 \times (p_e + 1)$
A357, T351	3 x 1.20 mm	$q_{vn} = 2.05 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

26.2.3 Compressed air requirements

Overpressure	8.0 … 14.0 bar

For the compressed air quality requirements, see page [70]

26.3 Accessories

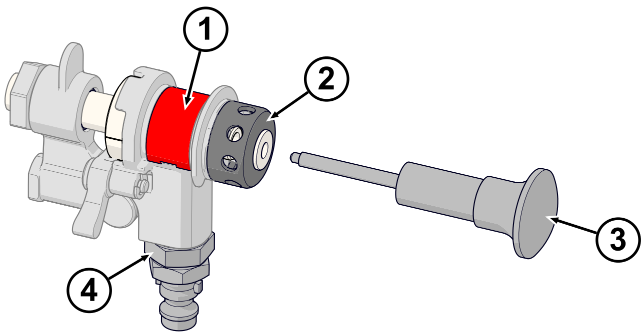


Fig. 3

1	Colour markings	2	Yarn inlet guide
3	Jet core ejector	4	Attachments

27 HemaJet jet cores ST series

27.1 Features and Benefits

The proven series of jet cores in hardened steel, especially designed for air texturing of glass-filament yarns.

Air texturing uses air to intermingle the individual glass filaments of a multifilament yarn. This provides the yarn with greater volume. In addition to this structural change, multiple yarns with different features can also be blended at the same time. The end products can be used for both thermal and acoustic insulation.

27.2 Technical data

27.2.1 Application area

Type	Total count of feed [dtex]	Single count
Series T St (Ø 8 mm) – glass filament yarns		
T140 St	1360 ... 6000	4 ... 17 µm
T341 St	680 ... 2000	4 ... 17 µm
T351 St	1000 ... 6000	4 ... 17 µm
T361 St	1000 ... 8000	4 ... 17 µm
Series TE St (Ø 10 mm) – glass filament yarns		
TE370 St	1360 ... 25000	4 ... 17 µm
TE372 St	1360 ... 25000	4 ... 17 µm

All specifications are non-binding reference values.

27.2.2 Air consumption

Type	Air channel diameter	Formula
T140 St	1 x 2.00 mm	q_{vn} = 2.00 x (p_e + 1)
T341 St	3 x 1.00 mm	q_{vn} = 1.46 x (p_e + 1)
T351 St	3 x 1.20 mm	q_{vn} = 2.05 x (p_e + 1)
T361 St	3 x 1.35 mm	q_{vn} = 2.75 x (p_e + 1)
TE370 St	3 x 1.70 mm	q_{vn} = 4.03 x (p_e + 1)
TE372 St	3 x 1.70 mm	q_{vn} = 4.03 x (p_e + 1)

p_e = overpressure [bar]
q_{vn} = air consumption [m^3/h] (standard conditions according to DIN1343)

28 ATYJet-RC

28.1 Features and Benefits

The ATYJet-RC combines the best of established HemaJet T-jet technology with a modern, performance-optimised design.

28.2 Technical data

28.2.1 Application area

Type	Total count of feed	Single filament counts	Max. overfeed effect yarns	Winding speed
RC311	80 … 360 dtex	1.0 … 2.5 dtex	… 60 %	… 650 m/min
RC321	150 … 500 dtex	1.0 … 3.5 dtex	… 60 %	… 650 m/min

All specifications are non-binding reference values.

28.2.2 Air consumption

Type	Air channel diameter	Formula
RC311	3 x 0.60 mm	$q_{vn} = 0.54 \times (p_e + 1)$
RC321	3 x 0.75 mm	$q_{vn} = 0.81 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption [m^3/h] (standard conditions according to DIN1343)

28.2.3 Compressed air requirements

Overpressure	7.0 … 12.0 bar

For the compressed air quality requirements, see page [▸ 70]

29 HemaJet-EO52

29.1 Features and Benefits

The HemaJet-EO52 is used in the production of high quality bulky air-textured yarns such as polyester, nylon, polypropylene, and glass fibres.

29.2 Technical data

29.2.1 Application area

Type		N50/V180 white	N70/V180 blue	N110/V220 yellow	N180/V250 black
Total count of feed [dtex]	PES/PA	156 ... 500	500 ... 1320	1300 ... 2000	2500 ... 3500
	PP	---	78 ... 150	150 ... 1300	1200 ... 2500
Total count of final yarn [dtex]	PES/PA	300 ... 850	850 ... 1400	1400 ... 3200	3200 ... 6000
	PP	---	200 ... 800	300 ... 2500	2000 ... 5000
	Glass			... 1500	... 10000
Single filament count [dtex]		1.5 ... 5.5	1.5 ... 5.5	2.2 ... 7.0	3.0 ... 10.0
Yarn overfeed	Core	8 ... 20 %	8 ... 20 %	8 ... 20 %	8 ... 20 %
	Effect	60 ... 300 %	60 ... 300 %	60 ... 300 %	60 ... 300 %
	Single/parallel	< 30 %	< 30 %	< 30 %	< 30 %
Winding speed [m/min]		50 ... 500	50 ... 500	50 ... 500	50 ... 500

All specifications are non-binding reference values.

29.2.2 Air consumption

Type	Air channel diameter	Formula
N50/V180	2 x 1.4 mm	$q_{vn} = 1.20 \times (p_e + 1)$
N70/V180	2 x 1.4 mm	$q_{vn} = 1.20 \times (p_e + 1)$
N110/V220	2 x 1.6 mm	$q_{vn} = 1.95 \times (p_e + 1)$
N180/V250	2 x 2.0 mm	$q_{vn} = 2.55 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption [m^3/h] (standard conditions according to DIN1343)

29.2.3 Compressed air requirements

Overpressure	6.0 ... 14.0 bar

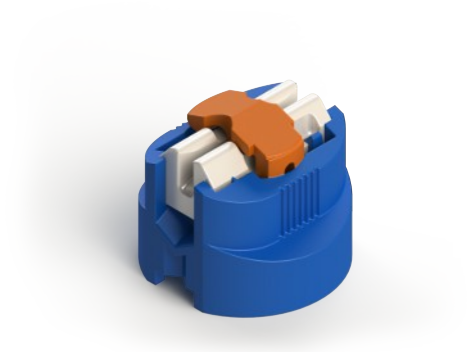
For the compressed air quality requirements, see page [▸ 70]

30 Wetting Head

30.1 Features and Benefits

The wetting head is used to prepare the filament yarn to be textured in the air texturing process (ATY). The core thread is usually wetted during a specific process, especially in a process where core and effect yarn is air textured.

The wetting process is used to soften the sizing agent (spin finish), which ultimately improves the texture. Many years of practical use with different machine configurations have shown that the wetting head ensures optimum water transfer to the yarn. The higher the total count range of the feed yarn, the more wetting that is required.



30.2 Assortment

Three different wetting heads with various flow rates (l/h) are available. The wetting head features an integrated splash guard cap.

A wide range of feed yarns such as PES, PA, PP can be covered in the three wetting head sizes.

30.3 Technical data

30.3.1 Application area

Type	Count [dtex]	Water flow rate [l/h]
DN62 (grey)	... 300	0.8 ... 2.4
DN80 (black)	... 600	1.4 ... 4.0
DN120 (blue)	> 600	3.2 ... 6.2

All specifications are non-binding reference values.

30.3.2 Water flow rate

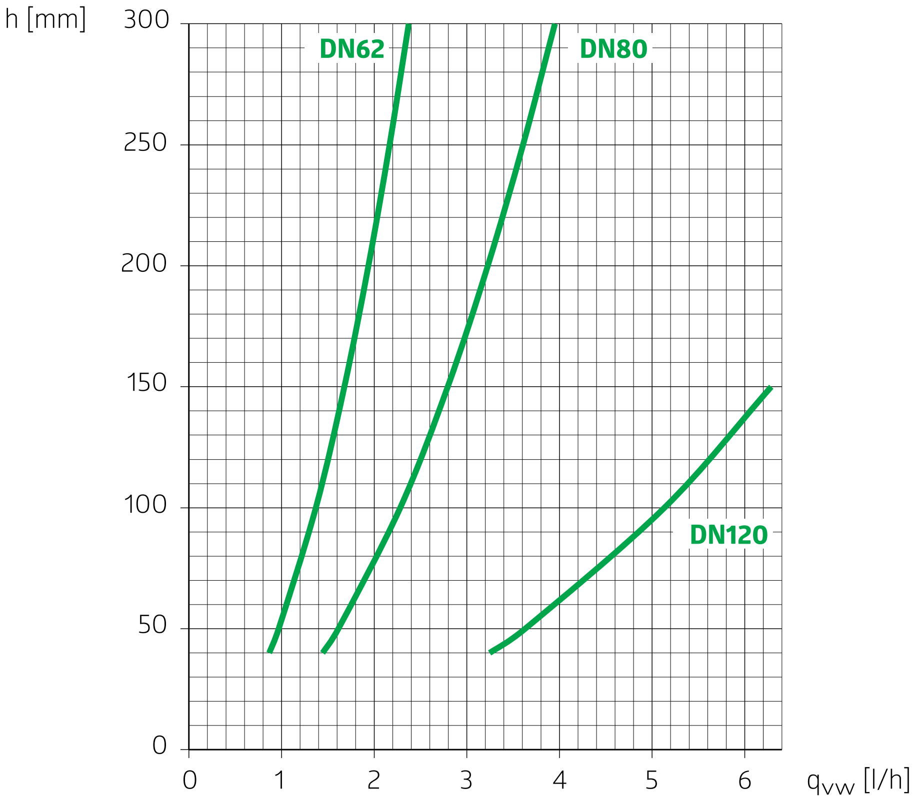


Fig. 4
h = Water column [mm]
q_{vw} = Theoretical water flow rate [l/h]

30.3.3 Demands on the thread wetting system

Water delivery rate

Depending on the count, the following water delivery rates must be available per thread position for wetting the thread:

... 500 dtex	0.8 ... 1.5 l/h
... 2000 dtex	0.8 ... 2.5 l/h
... 5000 dtex	1.5 ... 3.5 l/h

Water quality

In order to prevent damaging or scaling of the jets, the water of the thread wetting system must be filtered and softened.

- Max. particle size: 1 µm
- Water hardness: < 10° dH*

** (10° dH = 17.8° fH, 12.5° eH, 10° aH)*

31 AirSplicer-POY

31.1 Features and Benefits

The light, robust splicer for splicing POY multifilament yarns during false-twist texturing (DTY). The integrated automatic splicing function guarantees maximum reproducibility. The resulting short, knot-free splices have a high degree of uniformity and strength and thus cause significantly fewer problems in downstream processes compared to knotted splices.

31.2 Technical data

31.2.1 Application area

Type	Synthetic fibre count range [dtex]
T18	20 ... 150
T20	50 ... 200
T22	100 ... 450

All specifications are non-binding reference values.

31.2.2 Compressed air requirements

Overpressure	4.0 ... 6.0 bar

For the compressed air quality requirements, see page [▸ 70]

32 AirSplicer-3 Flex

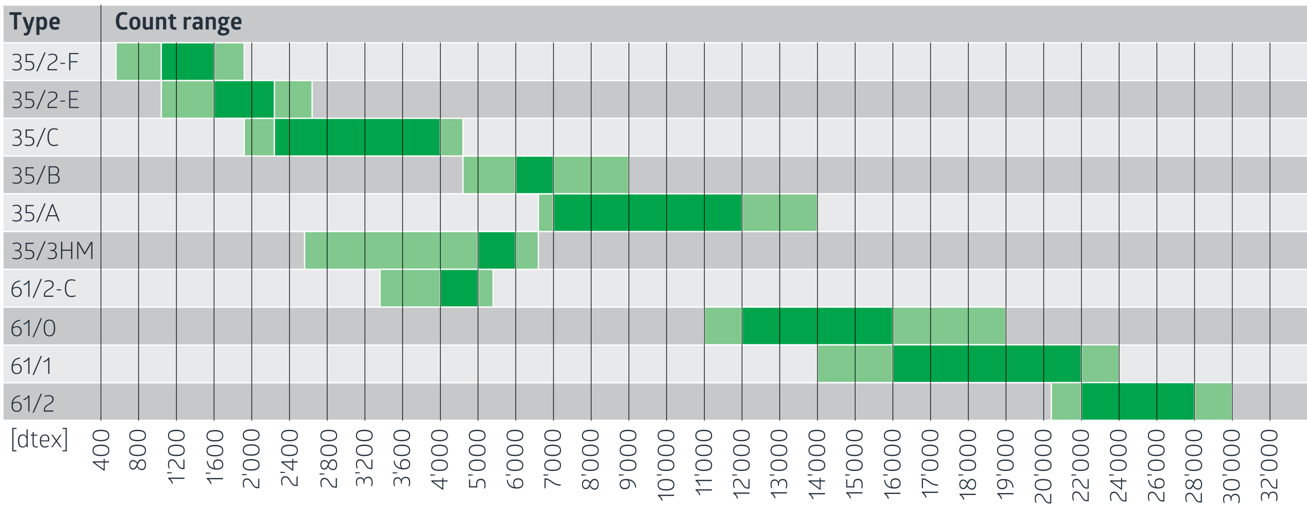
32.1 Features and Benefits

The AirSplicer-3 Flex covers an exceptionally large count range when splicing textile and technical multifilament yarns. The unit's width can be adjusted to accommodate a wide variety of blow chambers (splice nozzles), depending on the type of material and splice strength requirements.
The integrated automatic splicing system ensures maximum reproducibility of the splices. Wear parts, such as blades or thread clamps can be replaced very easily. The ergonomically shaped handle simplifies operation.

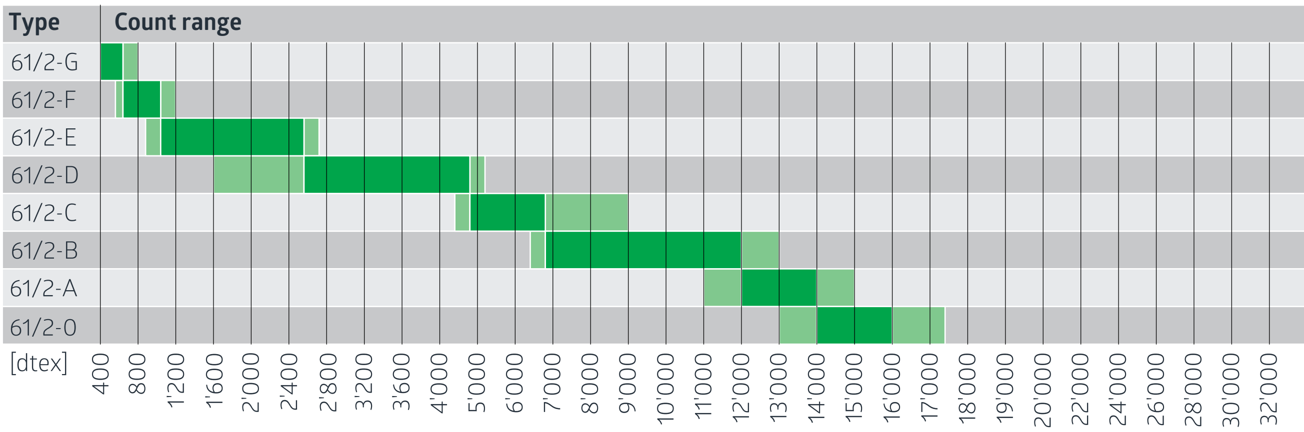
32.2 Technical data

32.2.1 Application area

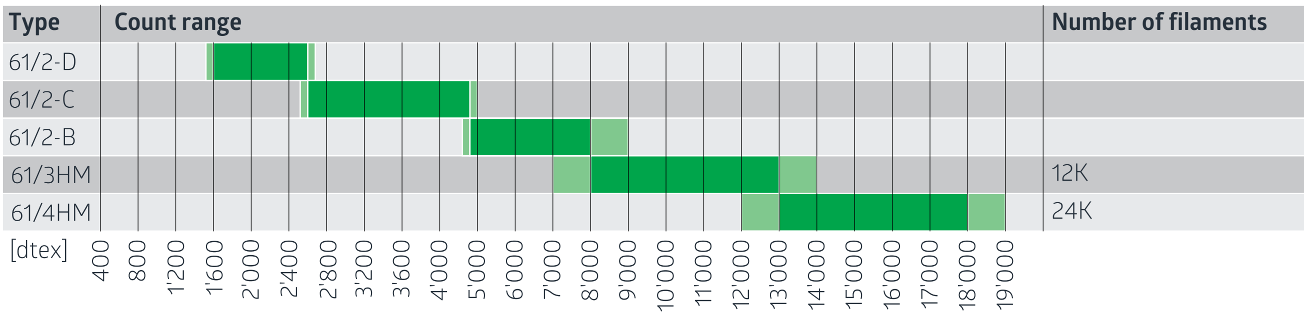
Synthetic multifilament yarns



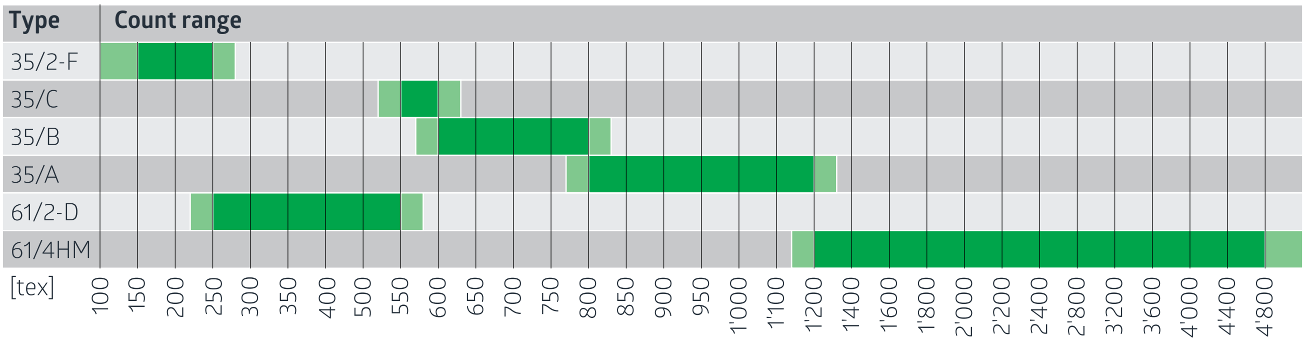
Aramid multifilament yarns



Carbon multifilament yarns



Glass multifilament yarns



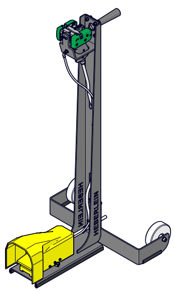
32.2.2 Compressed air requirements

Overpressure	4.0 … 8.0 bar

For the compressed air quality requirements, see page [▸ 70]

32.3 Accessories

Stand for AirSplicer-3 Flex



33 AirSplicer-17-2

33.1 Features and Benefits

The AirSplicer-17-2 produces a splice with flat, neatly bound yarn ends and maximum strength. Part-oriented, synthetic filament yarns (POY) can also be spliced, as can fine viscous or nylon fine hosiery yarns, fine carbon and glass fibre yarns, or BCF yarns.

33.2 Technical data

33.2.1 Application area

Type	BCF [dtex]	Cellulose [dtex]	Dyneema® [dtex]	Glass [tex]	Synthetics [dtex]
T-18		40 … 300	… 200		20 … 150
T-20			… 400		50 … 200
T-22			… 800		100 … 450
T-18X			20 … 150		
T-20X			50 … 200		
T-22X			100 … 450		
G	… 600	400 … 900		… 70	400 … 900
F	… 1000	900 … 1800		70 … 200	900 … 1800
E	… 1500			200 … 400	1800 … 2500
C	… 2500				

All specifications are non-binding reference values.

33.2.2 Compressed air requirements

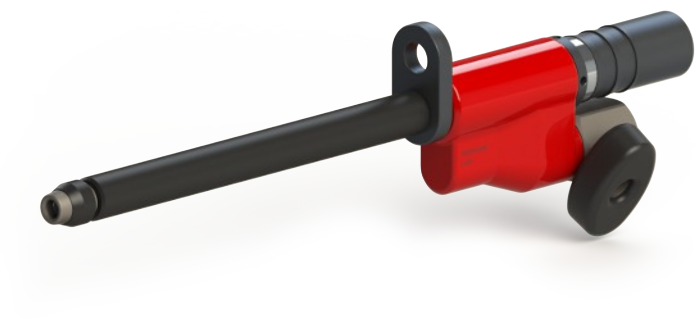
Operating pressure of AirSplicer-17-2	4 … 6 bar

For the compressed air quality requirements, see page [▸ 70]

34 Lufan-3

34.1 Features and Benefits

The Lufan-3 is used for threading yarn on textile machines while they are operating. With products for the entire range of yarns and process parameters, our aspirators are in a class of their own. They stand out due to their low weight, extreme durability, and a remarkably powerful suction capacity.



34.2 Assortment

Lufan HS7-3, HS10-3

For high-speed spinning processes of up to 8,000 m/min.

Lufan LC7-3, LC10-3

For spinning processes of up to 5,000 m/min; low air consumption; also suitable for part-oriented yarns.

Lufan HS18-3

For the threading of fibre tows in staple fibre plants of up to 2,000 m/min.

Lufan TF15-3

For rovings, technical yarns, tapes, and mono-filaments of up to 2,000m/min (100,000 dtex at 350 m/min).

Lufan-3 TP Twin-Power

Thanks to the twin system, the Lufan-3 TP delivers even higher suction power with the same pressure. With sufficient suction power, the compressed air network can also be operated at a lower pressure – thus reducing consumption.

34.3 Technical data

34.3.1 Application area

Type	Typical range [dtex]	*(Max. limits of application)*	Winding speed [m/min]
Textile Yarns			
HS5-3, HS5-3TP	**50 ... 1600**	*(50 ... 3000)*	... 8000
HS7-3, HS7-3TP	**330 ... 3000**	*(50 ... 6000)*	... 8000
LC7-3	**330 ... 3000**	*(50 ... 6000)*	... 5000
Technical & BCF yarns			
HS10-3	**1600 ... 8000**	*(330 ... 10000)*	... 8000
HS10-3P	**1600 ... 10000**	*(330 ... 15000)*	... 8000
HS12-3TP	**3000 ... 15000**	*(1600 ... 20000)*	... 8000
LC10-3	**1600 ... 8000**	*(330 ... 10000)*	... 5000
Synthetic yarns in staple fibre plants			
HS18-3	**3000 ... 70000**	*(330 ... 100000)*	... 2000
Different yarns, tapes, etc.			
TF15-3	**1600 ... 25000**	*(330 ... 100000)*	... 2000

All specifications are non-binding reference values.

34.3.2 Air consumption per thread

Type	Formula
HS5-3TP, HS7-3TP, HS12-3TP	$q_{vn} = 67 \times (p_e + 1)$
HS5-3, HS7-3, HS10-3, HS10-3P	$q_{vn} = 58 \times (p_e + 1)$
HS18-3	$q_{vn} = 34 \times (p_e + 1)$
LC7-3, LC10-3	$q_{vn} = 38 \times (p_e + 1)$
TF15-3	$q_{vn} = 28 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption per thread [m^3/h] (standard conditions according to DIN1343)

34.3.3 Compressed air requirements

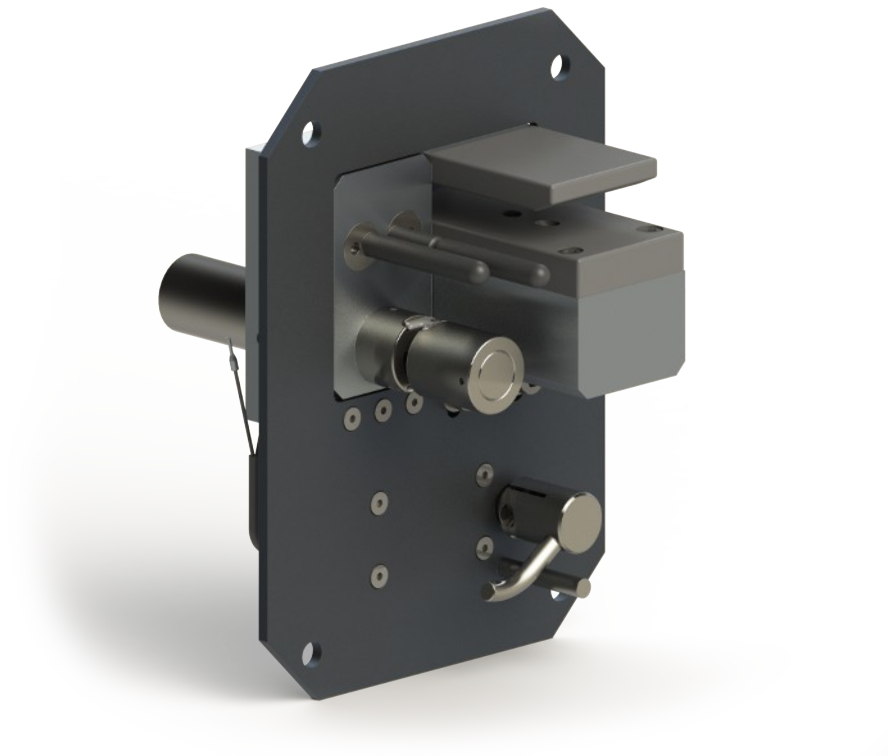
Max. overpressure	– HS: 20 bar – LC & TF: 15 bar
Operating pressure	– HS: 5 ... 14 bar – LC & TF: 5 ... 10 bar

For the compressed air quality requirements, see page [▸ 70]

35 Splicing/cutting unit

35.1 Features and Benefits

The splicing unit simplifies the handling of individual ends when spinning them in or stringing them up in systems for manufacturing synthetic staple fibre tows. The new end to be threaded is spliced with the general tow in the vicinity of the single spinning position and then cut.



35.2 Intended use

The splicing/cutting units are designed for synthetic staple fibre production systems in order to join the single yarns of a spinning position to the textile tow.

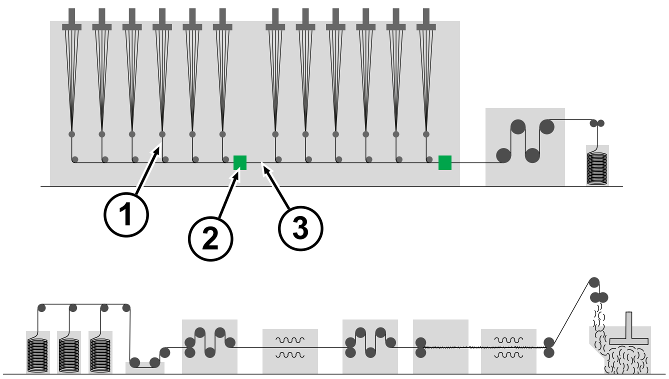


Fig. 5

1	Single yarn	3	Tow
2	Splicing/cutting unit		

35.3 Technical data

35.3.1 Application area

Type	Distance between splicing plates	Count range [dtex]
081	8 mm	... 400'000
101	12 mm	400'000 ... 600'000
	13 mm	600'000 ... 700'000
	14 mm	700'000 ... 800'000
	15 mm	800'000 ... 1'000'000
1041	8 mm	1'000'000 ... 1'200'000
1042	8 mm	1'200'000 ... 1'400'000

All specifications are non-binding reference values.

35.3.2 Air consumption

Type	Air channel diameter	Formula
081	2x 8 mm	$q_{vn} = 59.5 \times (p_e + 1)$
101	2x 10 mm	$q_{vn} = 93.0 \times (p_e + 1)$
1041	2x 10 mm / 1x 4 mm	$q_{vn} = 100.4 \times (p_e + 1)$
1042	2x 10 mm / 1x 4 mm	$q_{vn} = 100.4 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption [m^3/h] (standard conditions according to DIN1343)

35.3.3 Compressed air requirements

Operating pressure	– Splicing unit: 4 ... 10 bar – Cutting unit: 4 ... 6 bar
Maximum residual oil content (2*)	0.1 mg/m^3
Maximum residual dust content (3*)	– Particle size 5 µm – Particle density 5 mg/m^3
Maximum residual water content (5*)	– Residual water 7.732 g/m^3 – Pressure dew point + 7 °C

** Quality class according to DIN ISO 8573-1*

36 LufanStat

36.1 Features and Benefits

The LufanStat is used for aspirating, the LufanStat-Cut for aspirating and cutting yarns and cables.

36.2 Assortment

LufanStat

For aspirating technical filament yarns, staple yarn tows, and carpet yarns made of various fibre raw materials for speeds up to 2,000 m/min and counts up to max. dtex 10,000.

LufanStat-Cut

Suction and cutting blocks combine the functions of cutting and suctioning. For technical filament yarns, fibre tows, and carpet yarns up to 5,000 m/min. On request, with electropneumatic control.

36.3 Technical data

36.3.1 Application area

Type	Max. count [dtex]	Thread speed [m/min]	Yarn is twisted during extraction
LufanStat (without cutting function)			
65	... 2000	... 2000	no
80	... 10000	... 2000	no
10/6/2	... 15000	... 5000	yes
LufanStat-Cut (with cutting function)			
10/6/2-I00-I5	... 15000	... 5000	yes
LC10-I100-I5	... 35000	... 5000	yes
LC15-I100-I5	... 35000	... 5000	yes
LC15-I100-I7	... 35000	... 5000	yes

All specifications are non-binding reference values.

36.3.2 Air consumption

Type	Formula
LufanStat (without cutting function)	
65	$q_{vn} = 10 \times (p_e + 1)$
80	$q_{vn} = 13 \times (p_e + 1)$
10/6/2	$q_{vn} = 12.5 \times (p_e + 1)$
LufanStat-Cut (with cutting function)	
10/6/2-I00	$q_{vn} = 12.5 \times (p_e + 1)$
LC10-I100	$q_{vn} = 38 \times (p_e + 1)$
LC15-I100	$q_{vn} = 19 \times (p_e + 1)$

p_e = overpressure [bar]
q_{vn} = air consumption [m^3/h] (standard conditions according to DIN1343)

36.3.3 Compressed air requirements

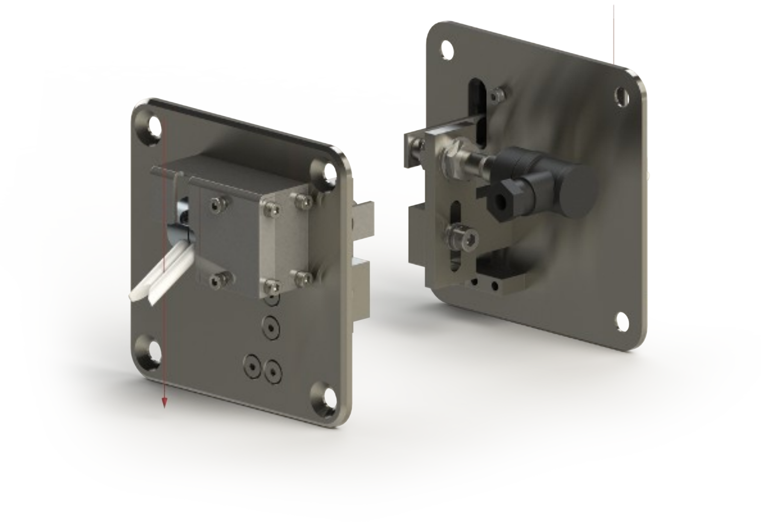
Aspirating unit operating pressure	– Type 65, 80, 10/6/2: 4 ... 10 bar – Type LC10-I100, LC15-I100: 4 ... 15 bar
Cutting unit operating pressure	– 4 ... 10 bar
Maximum residual oil content (2*)	0.1 mg/m^3
Maximum residual dust content (3*)	– Particle size 5 µm – Particle density 5 mg/m^3
Maximum residual water content (5*)	– Residual water 7.732 g/m^3 – Pressure dew point + 7 °C

** Quality class according to DIN ISO 8573-1*

37 DripDetector

37.1 Features and Benefits

The DripDetector detects thicker sections in a yarn and thus provides information about the condition of the spinneret. Without the DripDetector, the condition is only evident after a significant loss in quality. The DripDetector allows you to perform preventative maintenance on the spinneret.



37.2 Technical data

37.2.1 Performance values

Features	
Adjustable gap width	0.3 ... 2.5 mm
Max. fibre thickness	30000 dtex
Max. cable speed	2500 m/min
Voltage supply	10 ... 36 V DC
Current consumption	200 mA
Switching function	Opener
Switch output	PNP

37.2.2 Connection diagram

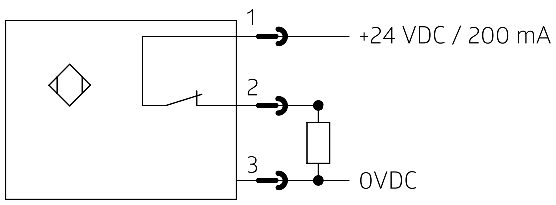


Fig. 6

38 Annex

38.1 Requirements for compressed air purity

38.1.1 Compressed air purity for jets & splicers

Maximum residual oil content (2*)	0.1 mg/m³
Maximum residual dust content (2*)	– Particle size 1 µm – Particle density 1 mg/m³
Maximum residual water content (5*)	– Residual water 7.732 g/m³ – Pressure dew point + 7 °C

** Quality class according to DIN ISO 8573-1*

38.1.2 Compressed air purity for aspirators

Maximum residual oil content (2*)	0.1 mg/m³
Maximum residual dust content (3*)	– Particle size 5 µm – Particle density 5 mg/m³
Maximum residual water content (5*)	– Residual water 7.732 g/m³ – Pressure dew point + 7 °C

** Quality class according to DIN ISO 8573-1*

Heberlein Technology AG
Bleikenstrasse 11, 9630 Wattwil, Switzerland
T +41 71 987 44 44, F +41 71 987 44 45, info@heberlein.com, www.heberlein.com