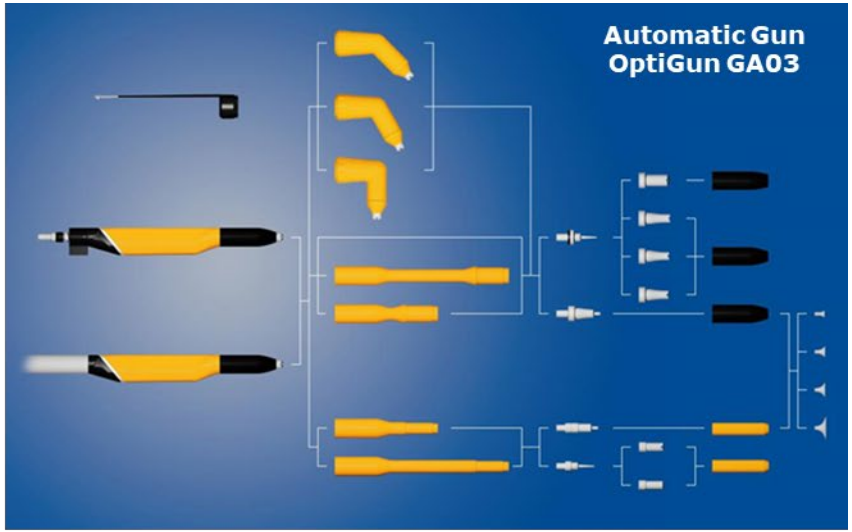
Gun nozzles for every application

Different extensions, flat spray, round spray and angle nozzles are designed to offer the best results even with difficult applications.

Compliant with **ATEX directive 94/9/EG**



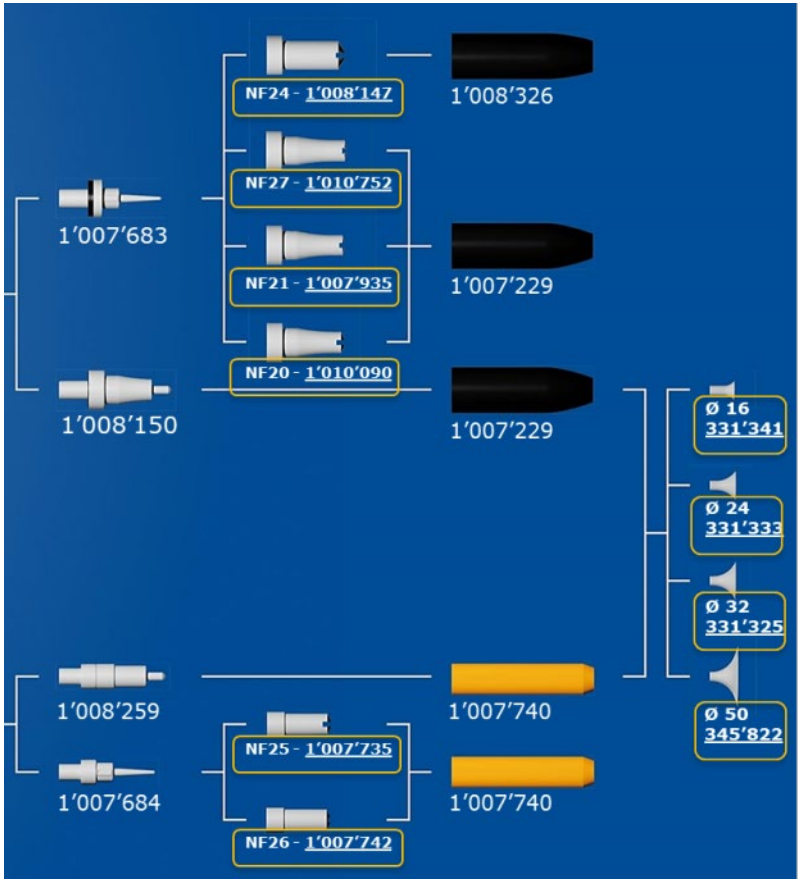
Compliant with **ATEX directive 94/9/EG**

Highest powder transfer efficiency

Perfect powder distribution

Consistent application quality

Overview Nozzle Assortment



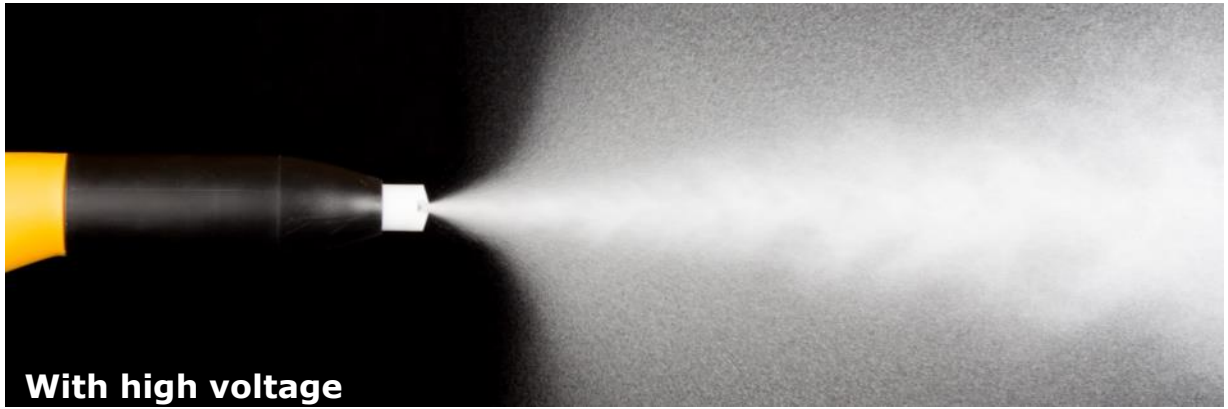
Gun nozzle design

- Powder coating requires a perfect combination of nozzle design and high voltage supply to achieve an homogeneous powder cloud.

- The high voltage field plays a very important role ensuring a perfect powder atomization and charging.

- Different object geometries to be coated require different nozzle geometries to ensure that the powder cloud is ideal and at the right speed.

Effect high voltage on powder cloud



Powder distribution NF27

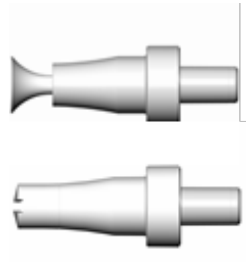
NF27 Homogeneous powder distribution

Gun nozzles and extensions

- The nozzles and extensions are interchangeable **for manual and automatic guns**, thanks to the compatible and smart gun shaft design.

- All nozzles and extensions are compliant to the **ATEX** directives.

- The use of high quality **non-stick materials** prevents powder accumulations and allows a **high quality color change**.

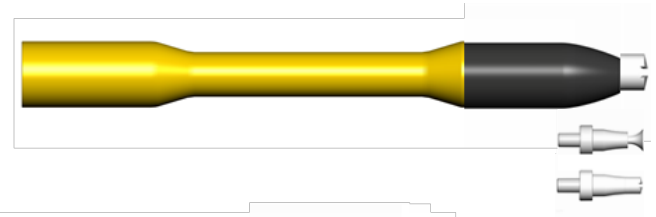


OptiSelect Pro
Type GM04

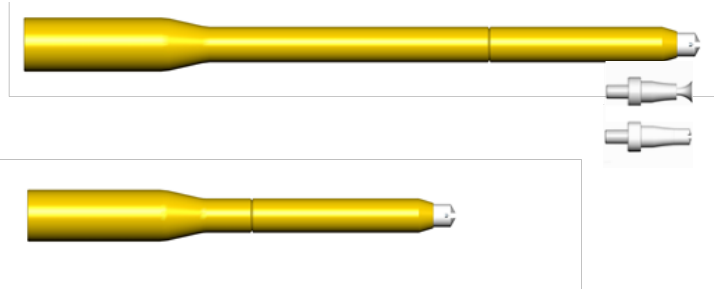
OptiGun GA03

Extensions for round and flat jet nozzles

- Manual and automatic guns can be provided with robust and solid nozzle **extensions of 150 and 300 mm length**. These nozzles are interchangeable with the standard nozzles and offer a perfect flexibility of use.

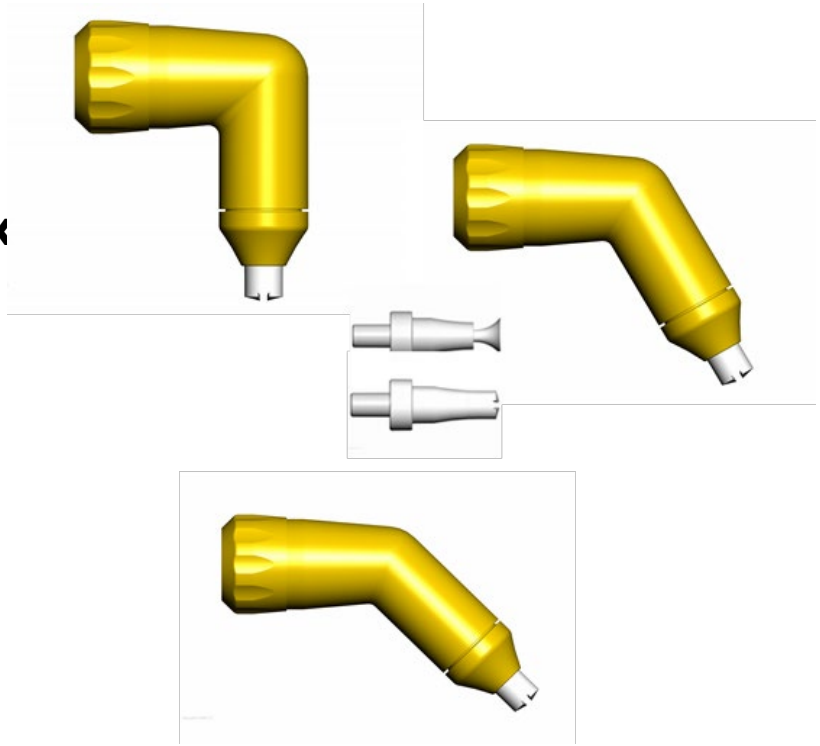


- Smaller and **light-weight extensions** are also available.
  - In manual applications they offer easy and stress-free operation over a long working time.
  - In automatic application, they are ideal for inside coating of narrow areas like in boilers.



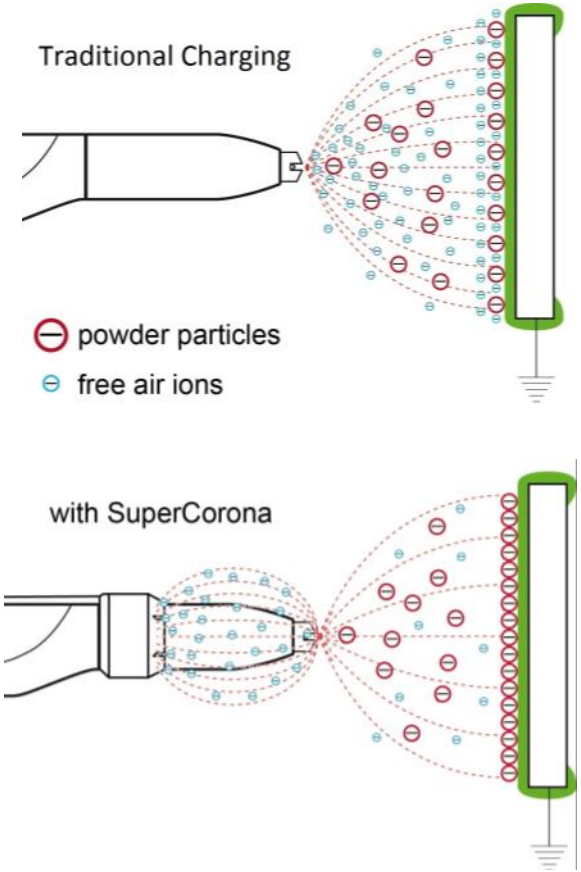
Angle nozzles for special applications

- A wide range of **45°, 60° and 90° angle nozzles** are available for challenging applications.
- The typical area of use are **complex geometries** like profiles, chassis, beam frames and cabinet coating.
- The angle nozzles are also ideal for variety of applications where **fixed guns** are needed.

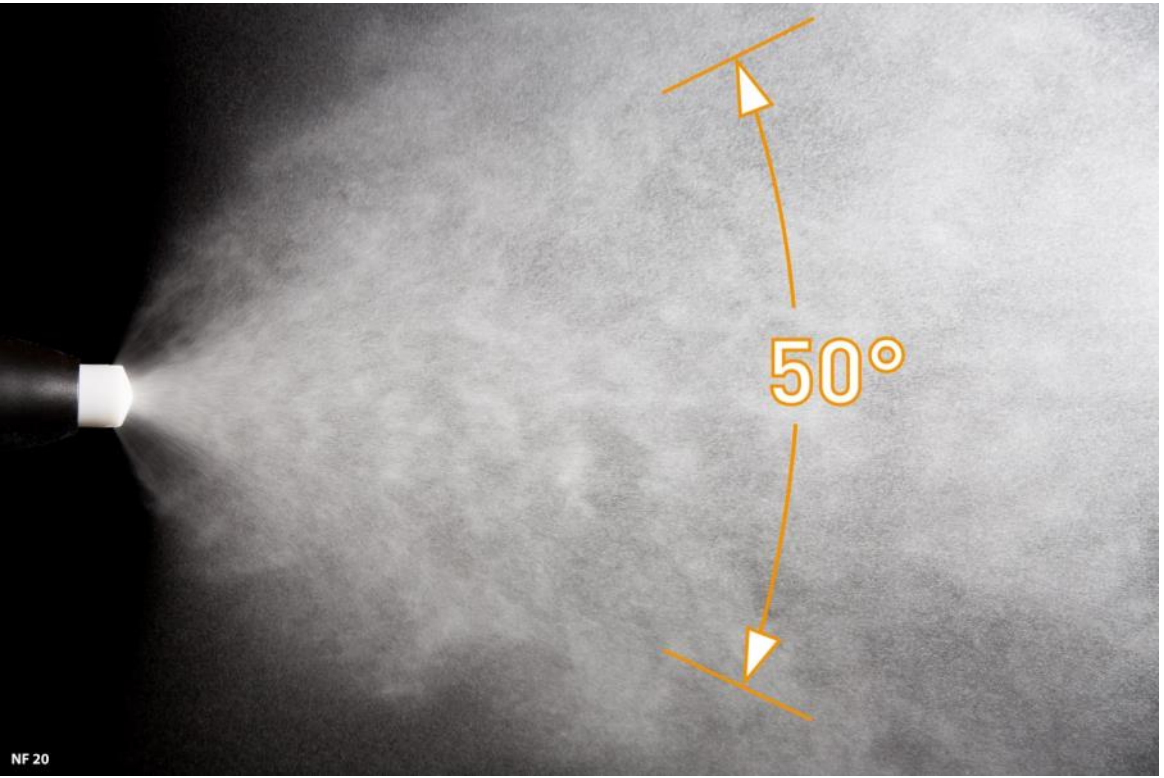


SuperCorona add-on to improve quality

- In a corona gun the high voltage electrode generates a big quantity of air ions
- Only a few air ions really charge the powder particles, the other ions remain free and are attracted by the surface to coat (which is grounded).
- The high accumulation of free ions on the surface to coat can produce an uneven powder layer and the so called "**orange peel effect**" or "**back-ionization**" problems.
- **SuperCorona** discharges the excessive free ions to ground and avoids overcharging of the powder and of the surface to coat.



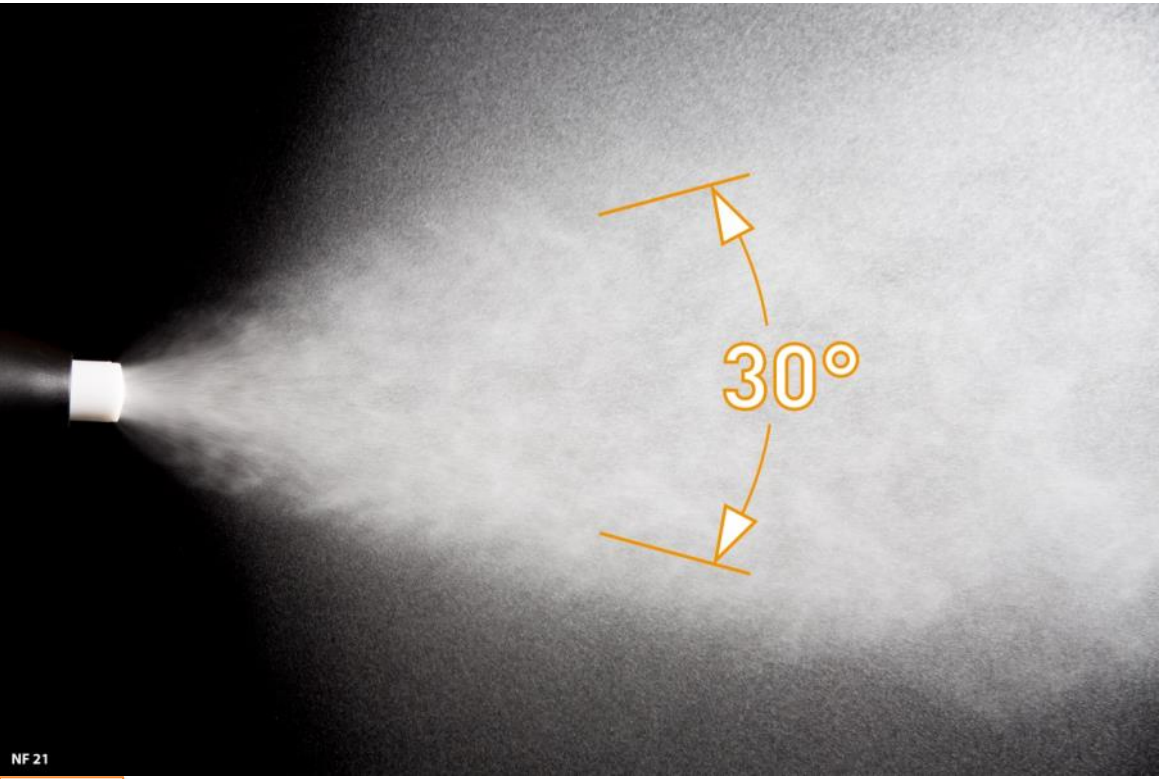
Flat jet nozzle / NF



- Flat jet nozzle type **NF20**
- Standard for Gema manual guns
- Ordering references:
  - NF20 complete with electrode holder (No. 1’010’160)
  - NF20 without electrode holder (No. 1’010’090)
- Field of application
  - Standard manual nozzle
  - Flat parts
  - Profiles
- Spray angle = 50°
- Velocity = moderate - low
- Target distance = max 250 mm

Back to overview

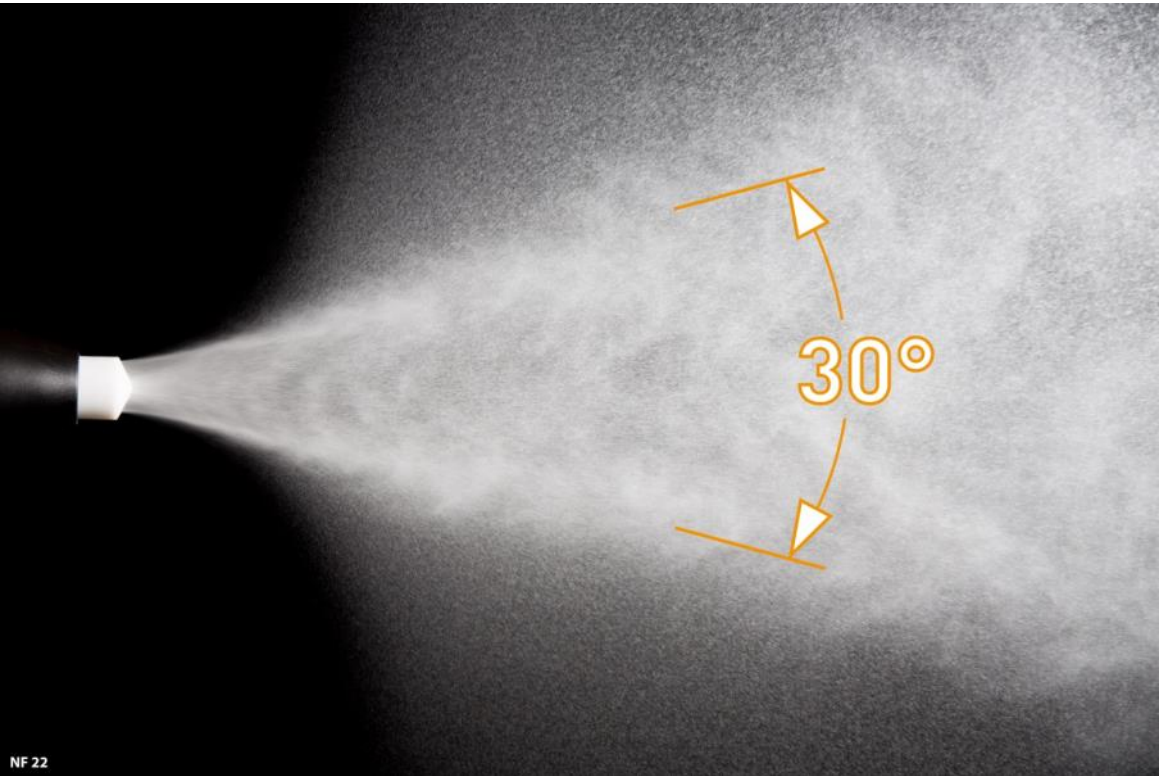
Flat jet nozzle / NF



- Flat jet nozzle type **NF21**
- Ordering references:
  - NF21 complete with electrode holder (No. 1’007’932)
  - NF21 without electrode holder (No. 1’007’935)
- Field of application
  - Automatic & manual nozzle
  - Complex parts (deep recess)
  - Target spraying
- Spray angle = 30°
- Velocity = high
- Target distance = max 400 mm

Back to overview

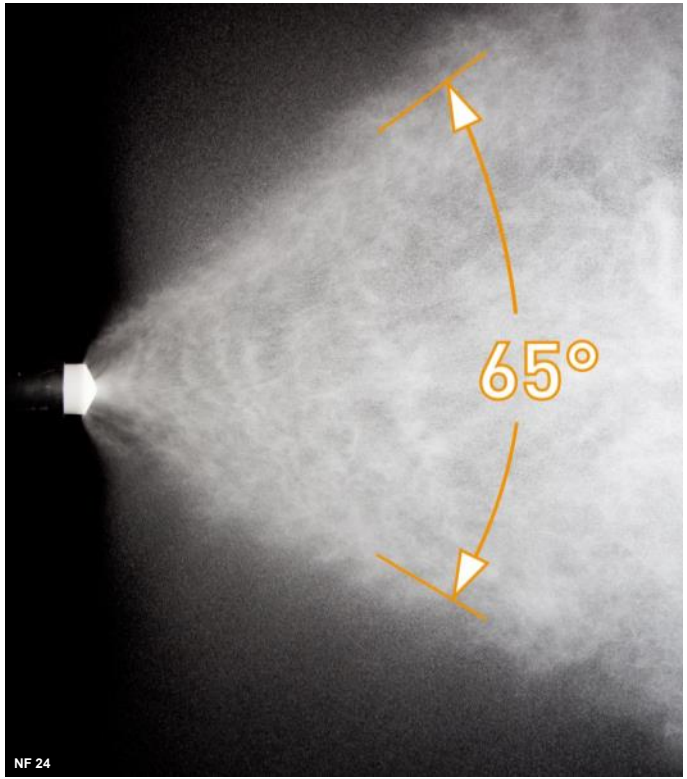
Flat jet nozzle / NF



- Flat jet nozzle type **NF22**
- Ordering references:
  - NF22 with electrode holder (No. 1’008’140)
  - NF22 without electrode holder (No. 1’008’145)
- Field of application
  - Automatic & manual nozzle
  - Complex parts (deep recess)
  - Target spraying
  - Robot applications
- Spray angle = 30°
- Velocity = high
- Target distance = max 450 mm

Back to overview

Flat jet nozzle / NF



- Flat jet nozzle type **NF24**
- Ordering references:
  - NF24 with electrode holder (No. 1’008’142)
  - NF24 without electrode holder (No. 1’008’147)
  - Remark: in combination with threaded sleeve Gema No. 1’008’326
- Field of application
  - Automatic & manual nozzle
  - Large object
  - Flat parts
  - Complex parts when nozzle close to the object
- Spray angle = 65°
- Velocity = low
- Target distance = max 200 mm

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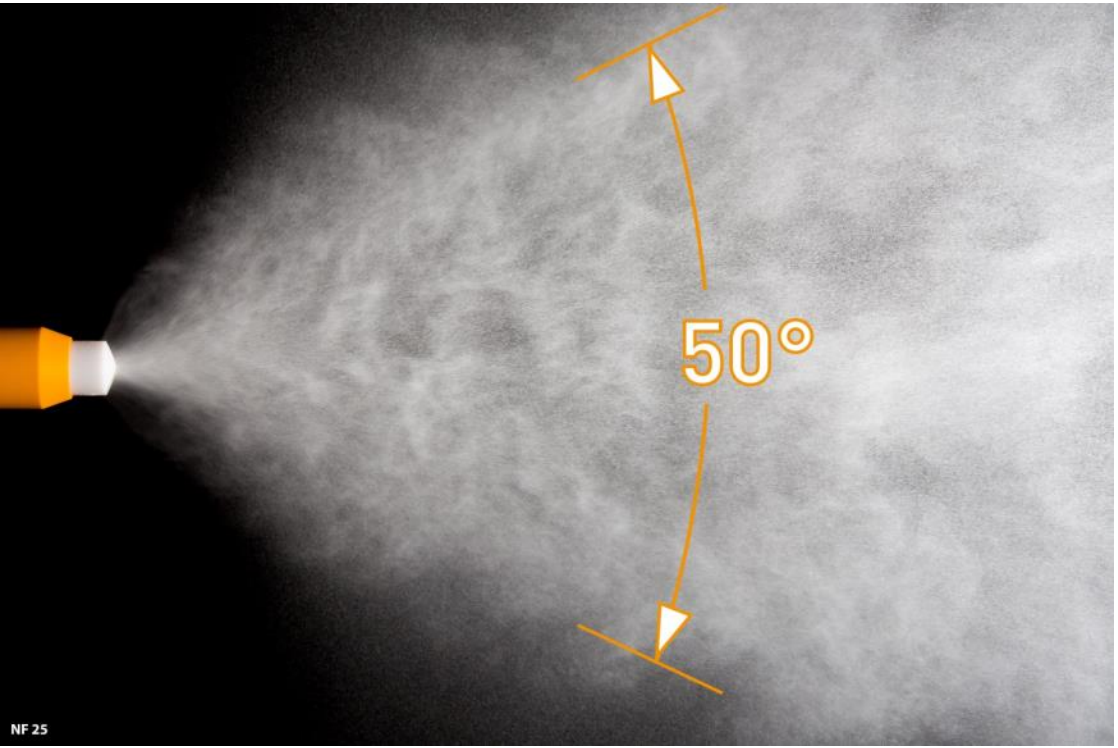
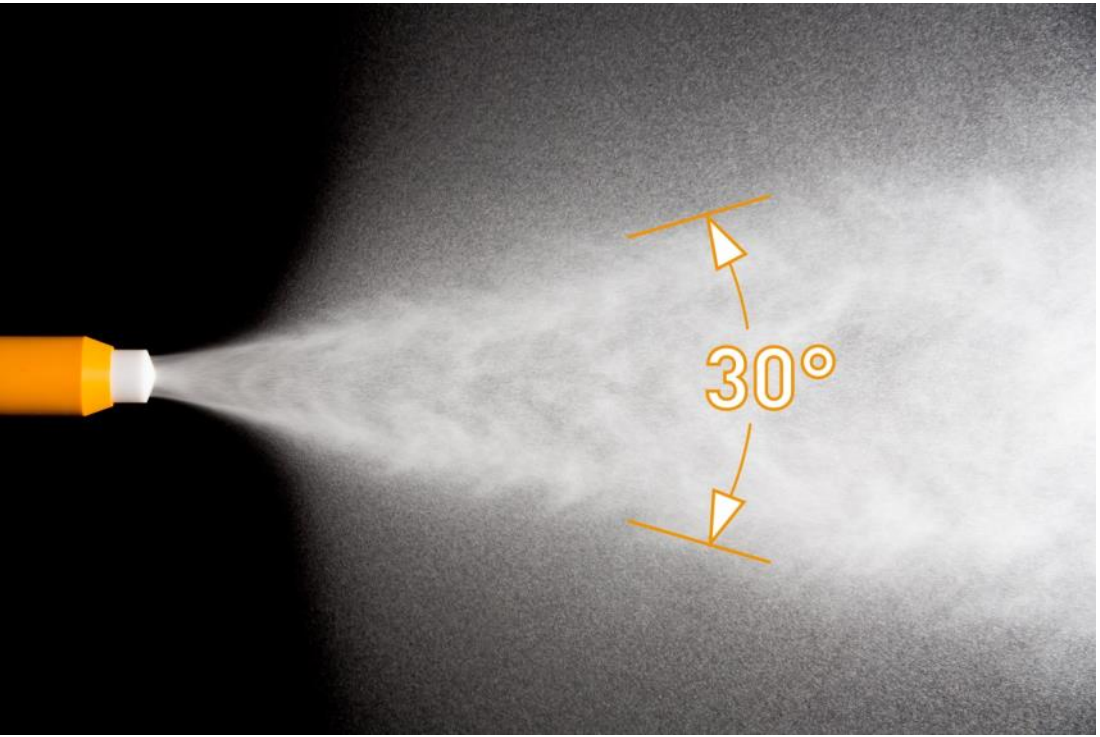
Flat jet nozzle / NF



- Flat jet nozzle type **NF25** (mini)
- Ordering references:
  - NF25 with electrode holder (No. 1’007’743)
  - NF25 without electrode holder (No. 1’007’735)
  - In combination with Ø 25 mm reduced diameter extension to penetrate into cavities
- Field of application
  - Powder cloud like NF20
  - Automatic & manual nozzle
  - Flat parts
  - Profiles
- Spray angle = 50°
- Velocity = moderate - low
- Target distance = max 250 mm

Back to overview

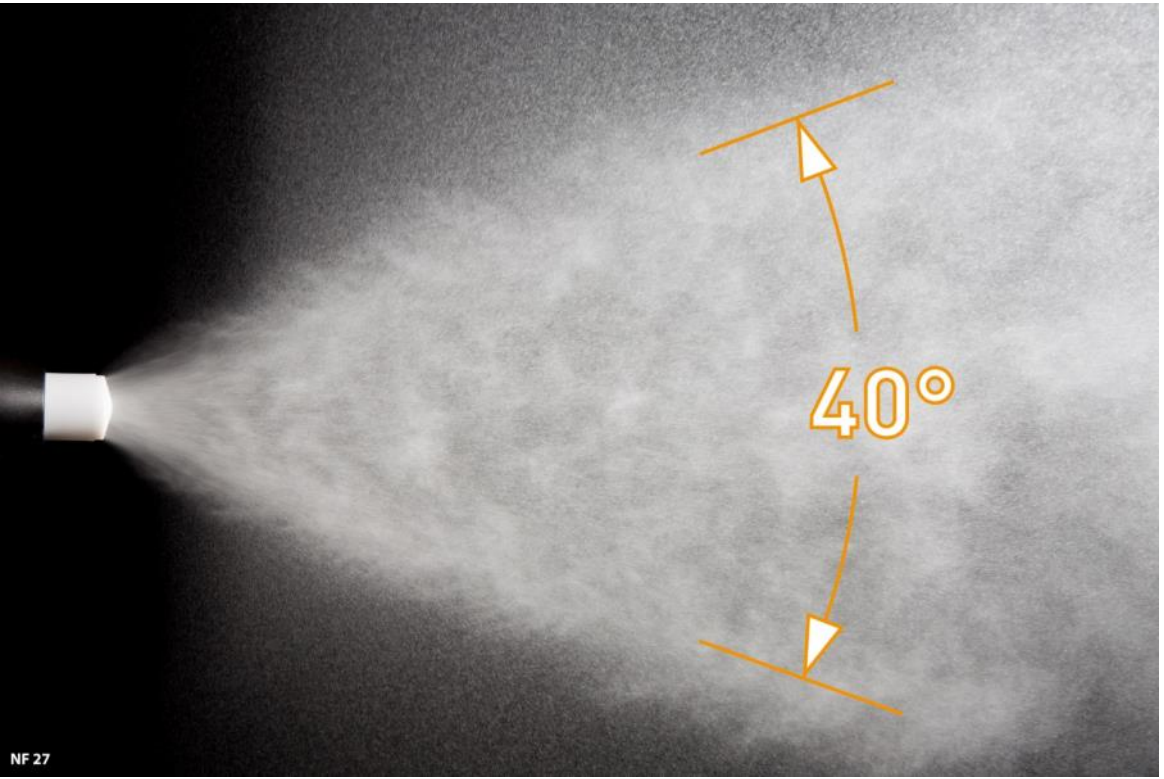
Flat jet nozzle / NF



- Flat jet nozzle type **NF26** (mini)
- Ordering references:
  - NF26 with electrode holder (No. 1’007’744)
  - NF26 without electrode holder (No. 1’007’742)
  - In combination with Ø 25 mm reduced diameter extension to penetrate into cavities
- Field of application
  - Powder cloud like NF22
  - Automatic & manual nozzle
  - Complex parts (deep recess)
  - Target spraying, Robot applications
- Spray angle = 30°
- Velocity = high
- Target distance = max 450 mm

Back to overview

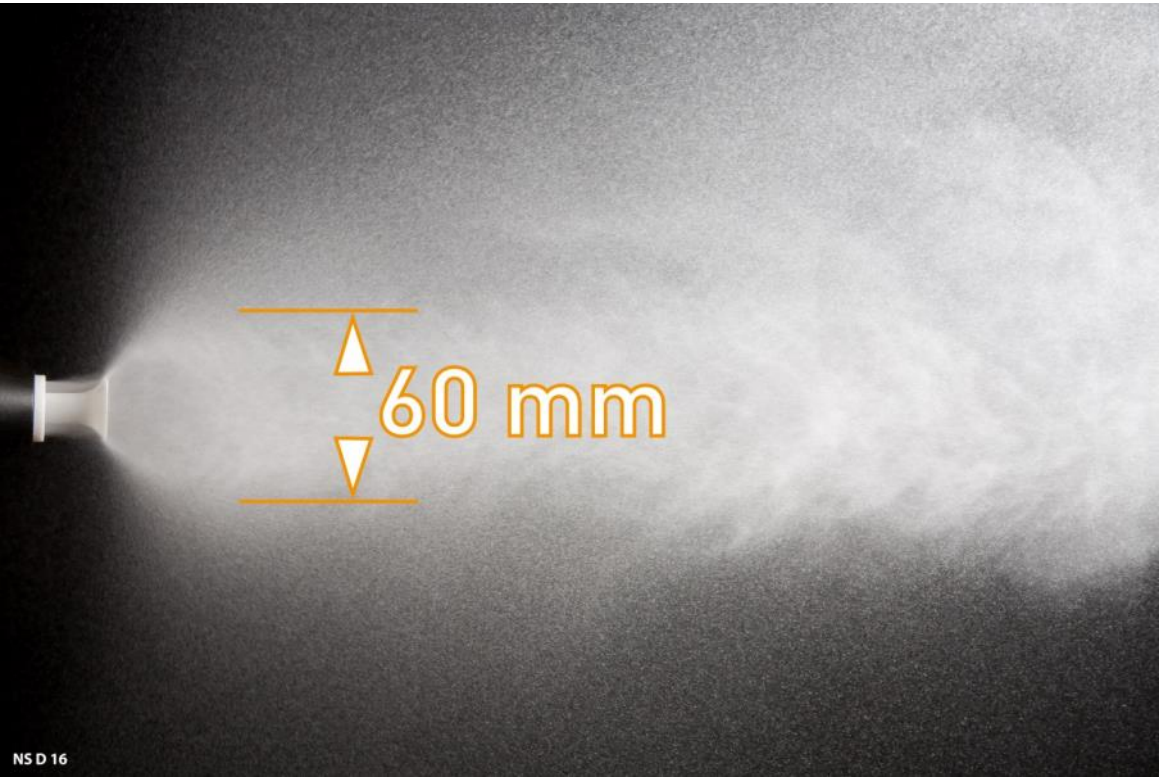
Flat jet nozzle / NF



- Flat jet nozzle type **NF27**
- Standard for automatic guns
- Ordering references:
  - NF27 with electrode holder (No. 1’010’754)
  - NF27 without electrode holder (No. 1’010’752)
- Field of application
  - Standard automatic nozzle
  - Profiles, complex parts
  - Flat parts
- Spray angle = 40°
- Velocity = high - moderate
- Target distance = max 350 mm
- Remark: Alternative for large flat objects or complex parts, when nozzle close to the object = NF24

Back to overview

Round jet nozzle / NS



- Round spray nozzle type **NS**
- Ordering references:
  - NS04 (No. 1’008’150), or
  - NS09 mini (No. 1’008’259)
  - Deflector **Ø16** mm (No. 331’341)
- Field of application
  - Automatic & manual nozzle
  - Flat parts
  - Low speed coating
- Max powder cloud = Ø 60mm
- Velocity = low
- Target distance = max 120 mm

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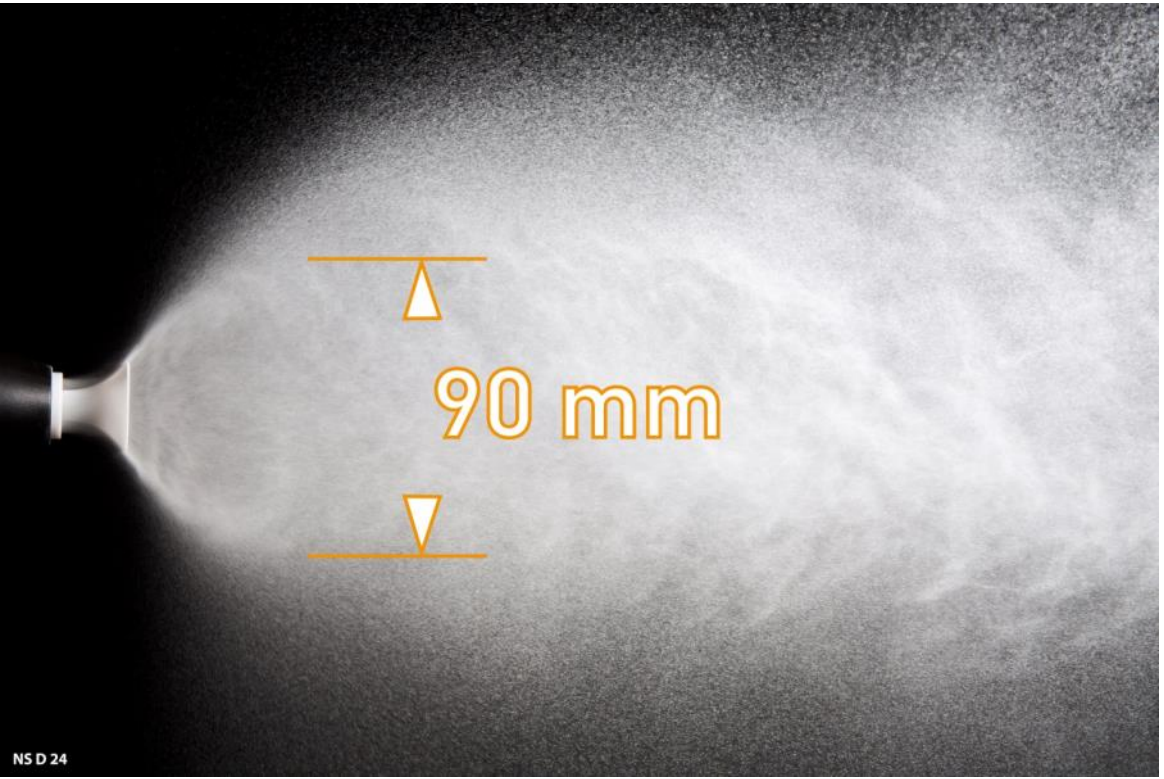
Round jet nozzle / NS



- Round spray nozzle type **NS**
- Ordering references:
  - NS04 (No. 1’008’150), or
  - NS09 mini (No. 1’008’259)
  - Deflector **Ø24** mm (No. 331’333)
- Field of application
  - Automatic & manual nozzle
  - Flat parts
  - Low speed coating
- Max powder cloud = Ø 90mm
- Velocity = low
- Target distance = max 160 mm

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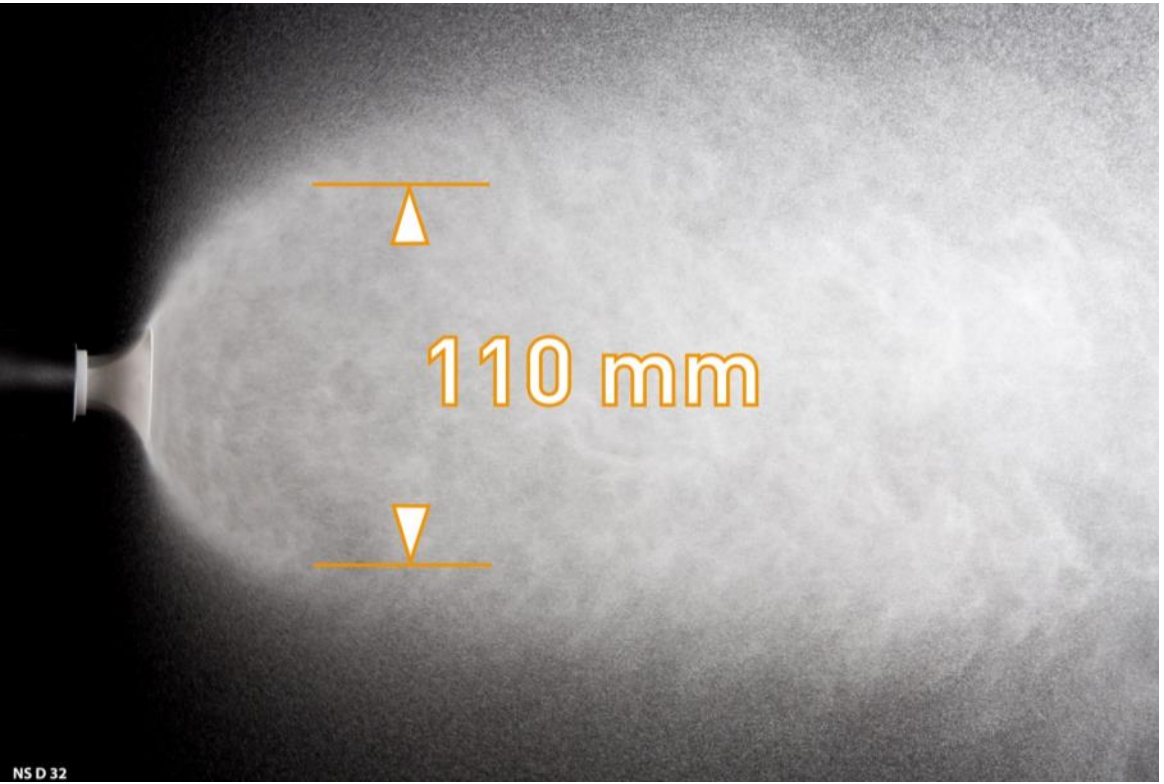
Round jet nozzle / NS



- Round spray nozzle type **NS**
- Ordering references:
  - NS04 (No. 1’008’150)
  - NS09 mini (No. 1’008’259)
  - Deflector **Ø32** mm (No. 331’325)
- Field of application
  - Automatic & manual nozzle
  - Flat parts
  - Low speed coating
- Max powder cloud = Ø 110 mm
- Velocity = low
- Target distance = max 160 mm

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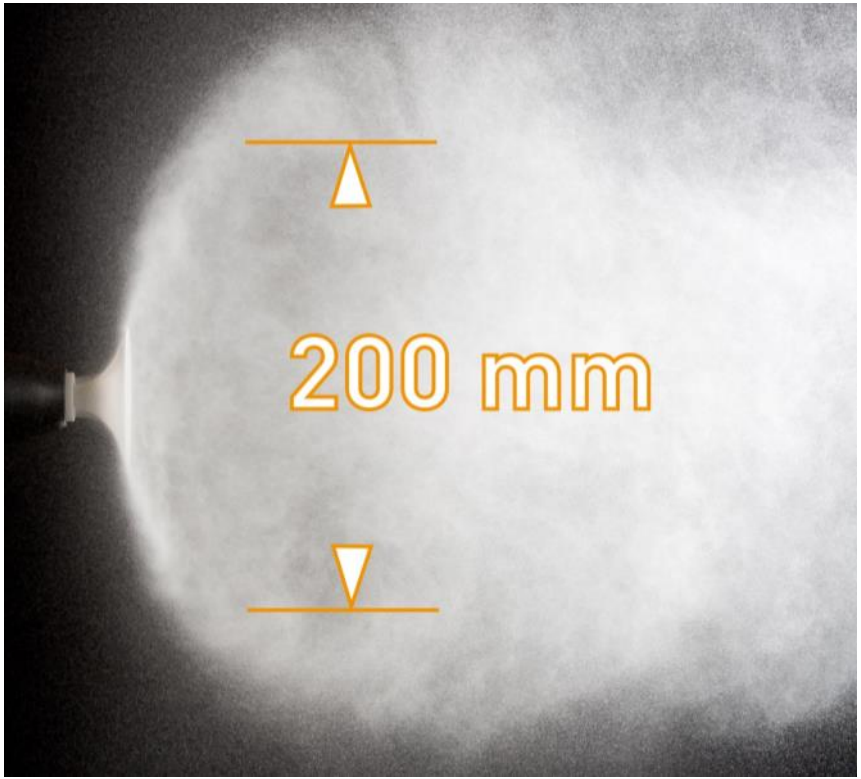
Round jet nozzle / NS



- Round spray nozzle type **NS**
- Ordering references:
  - NS04 (No. 1’008’150)
  - NS09 mini (No. 1’008’259)
  - Deflector **Ø50** mm (No. 345’822)
- Field of application
  - Automatic & manual nozzle
  - Flat parts
  - Low speed coating
- Max powder cloud = Ø 200 mm
- Velocity = low
- Target distance = max 180 mm

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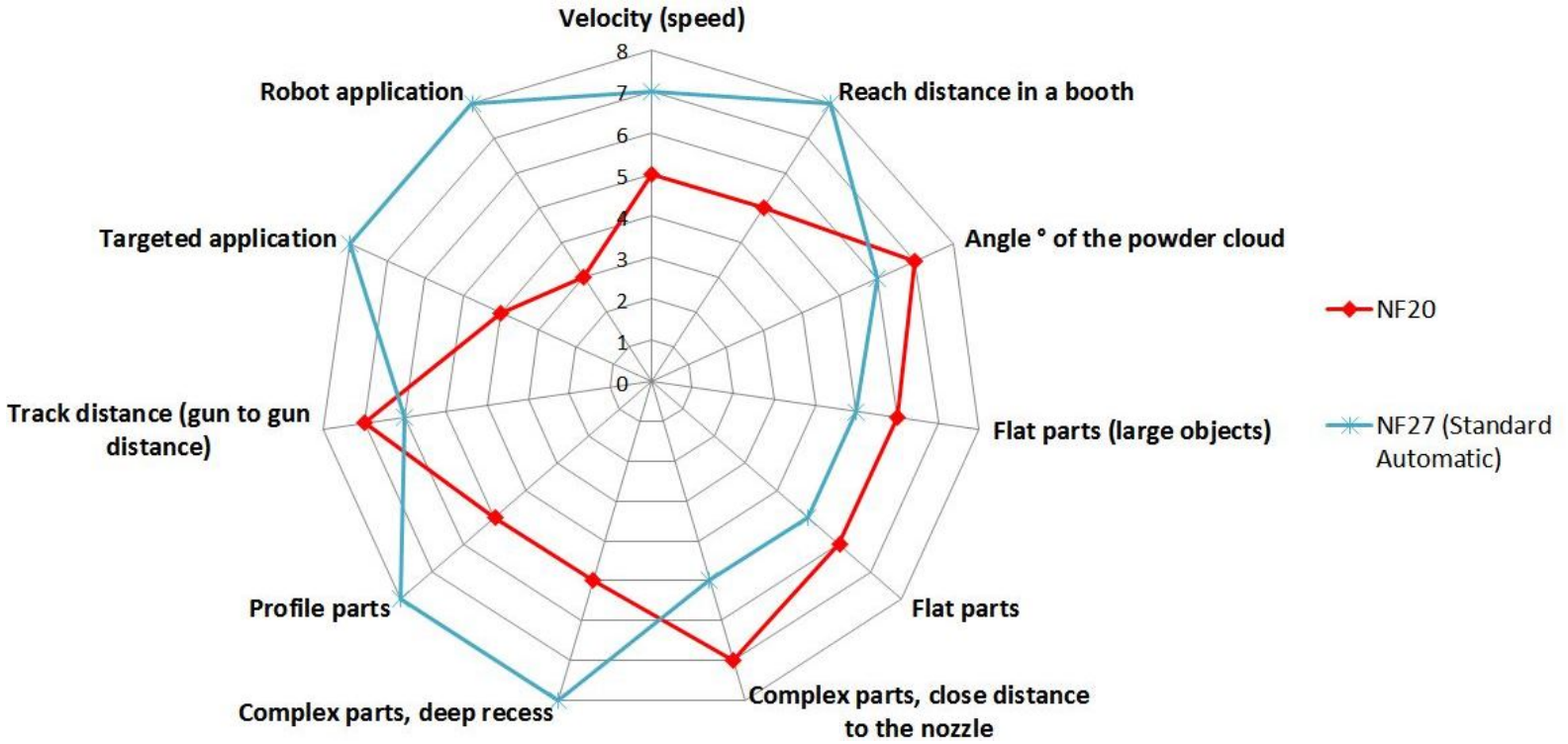
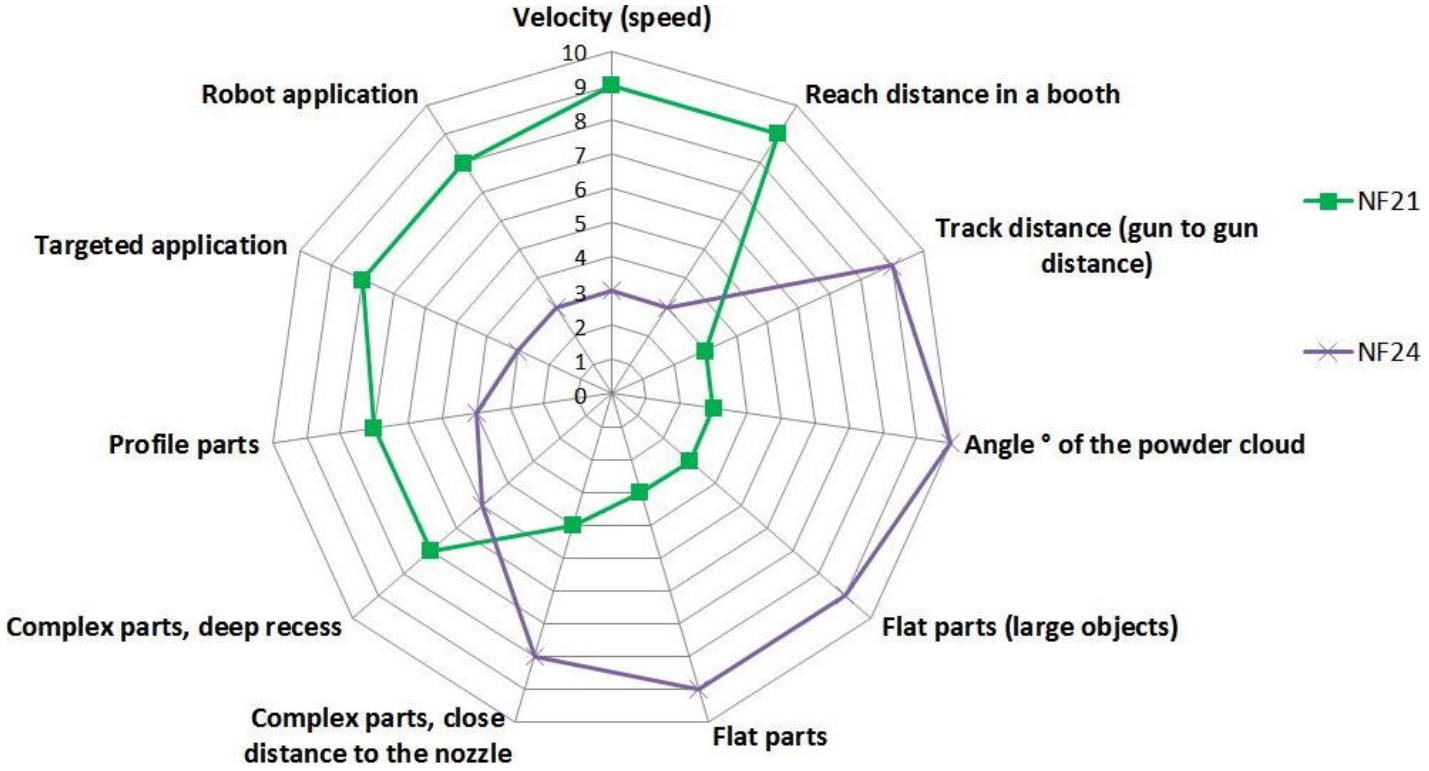
Comparison

NF 20 *standard for manual* $\alpha = 50°$
NF 27 *standard for automatic* $\alpha = 40°$



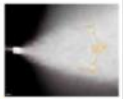
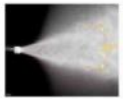
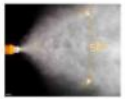
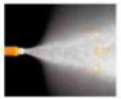
Comparison

NF 21 $\alpha = 30°$
NF 24 $\alpha = 65°$



Nozzle Assortment overview

NOZZLE ASSORTMENT for the OptiGun GA03 and OptiSelect GM03

Nozzle type	NF20	NF21	NF22	NF24	NF25	NF26	NF27	Deflector Ø 16 mm	Deflector Ø 24 mm	Deflector Ø 32 mm	Deflector Ø 50 mm
Gema No. with electrode holder	1'010'160	1'007'932	1'008'140	1'008'142	1'007'743	1'007'744	1'010'754	1'008'150 1'008'259 (mini)	1'008'150 1'008'259 (mini)	1'008'150 1'008'259 (mini)	1'008'150 1'008'259 (mini)
								+	+	+	+
Gema No. without electrode holder (Nozzle only)	1'010'090	1'007'935	1'008'145	1'008'147	1'007'735	1'007'742	1'0107'52	331 341	331 333	331 325	345 822
											
Powder cloud											
Standard scope of delivery	Manual application *Standard*						Automatic application *Standard*				
Application	Flat parts, profiles, manual applications	Complex parts deep recess, target spraying	Complex parts deep recess, target spraying, robot applications	Large objects, flat parts, manual applications, complex parts, when nozzle close to the object	Flat parts, profiles, manual applications	Complex parts deep recess, target spraying, robot applications	Profiles, complex parts, flat parts (Limitation: NF27 requires a minimal clearance between object and nozzle)				
Powder cloud α° / Powder cloud Ø	50°	30°	30°	65°	50°	30°	40°	Ø 60 mm	Ø 90 mm	Ø 110 mm	Ø 200 mm
Velocity Air setting @ [4 Nm^{3}/h]	moderate - low	high	high	low	moderate - low	high	high – moderate	low	low	low	low
Reach distance maximal automatic application Air settings @ [4 Nm^{3}/h]	250 mm	400 mm	450 mm	200 mm	250 mm	450 mm	350 mm	120 mm	160 mm	160 mm	180 mm
Remark				In combination with **threaded sleeve Gema Nr. 1'008'326**	In combination with **extension Ø 25mm,** reduced diameter to penetrate into cavities **Powder cloud like NF20**	In combination with **extension Ø 25mm,** educed diameter to penetrate into cavities **Powder cloud like NF22**					