



TRACOE *twist plus*

What is the new *twist plus*?

It is a longer and optimized version of the well-known standard *twist* tube.

Product Features

- Extended length of cannula
- Modified double-swivel neck flange and softer/thinner cuff
- Safe fixation of inner cannula in outer cannula
- Highly improved phonation

Product Features

- Minimized tube wall thickness of the outer and inner tube
- Significantly reduced outer diameter
- Large inner lumen
- Optimized fit of the inner and outer cannula at the tube end

Product Features

Extended length of cannula compared to *twist* standard:

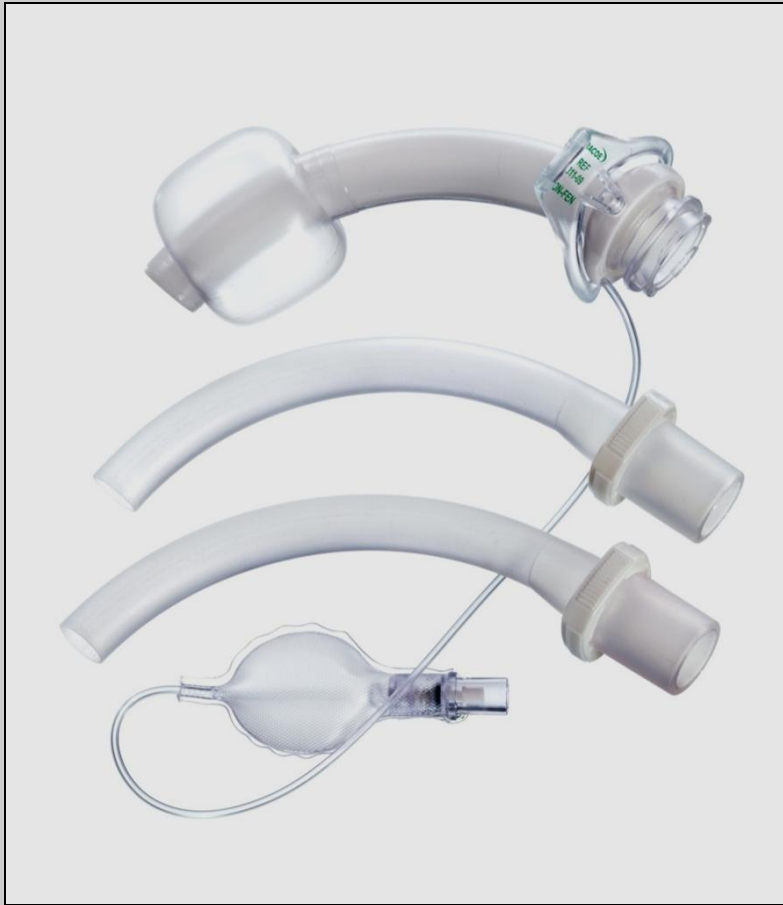
twist plus size 07: **85 mm** (+11 mm)

twist plus size 08: **88 mm** (+12 mm)

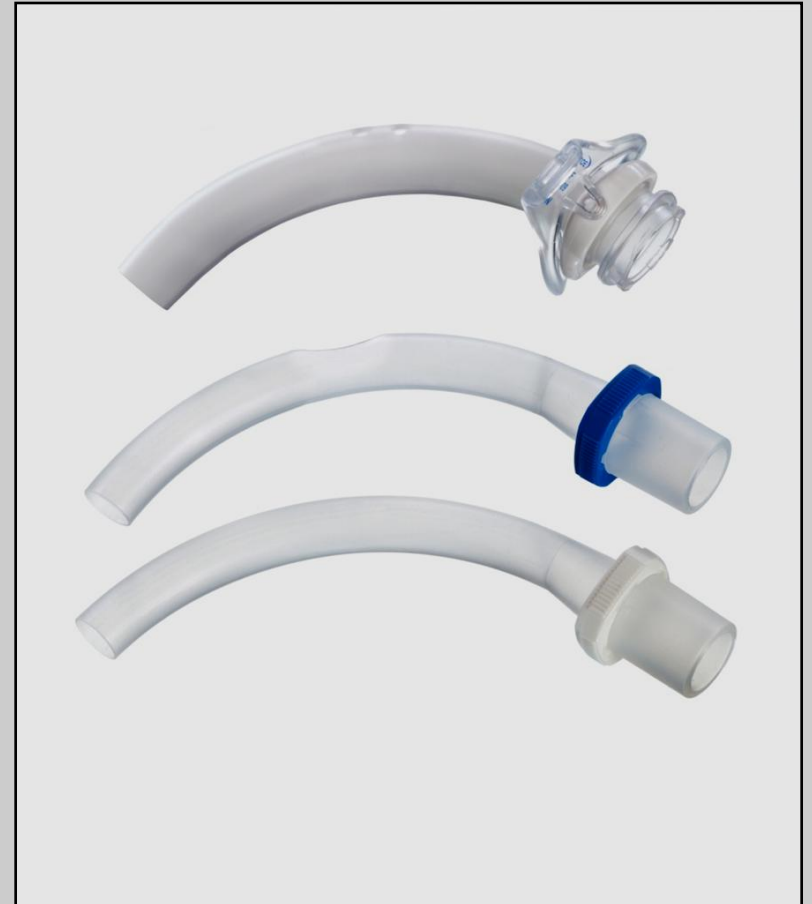
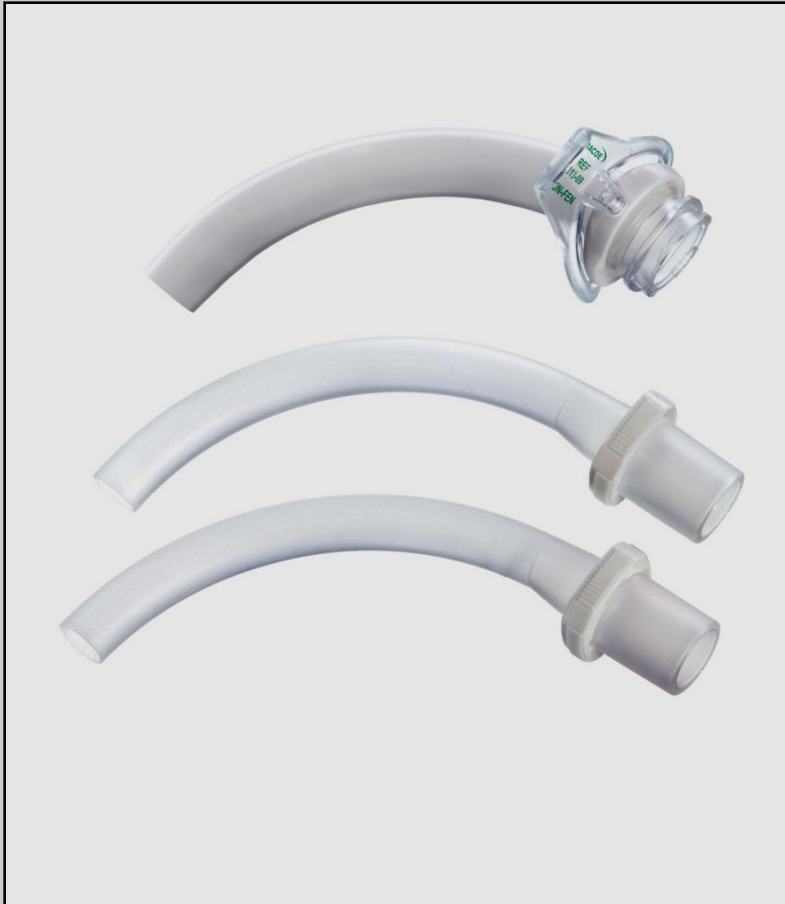
twist plus size 09: **90 mm** (+12 mm)

twist plus size 10: **92 mm** (+12 mm)

TRACOE *twist plus* REF 311 / 312



TRACOE *twist plus* REF 313 / 314



Measurements TRACOE *twist plus*

twist plus

Size	ID [mm]	OD end of cannula [mm] (without cuff)	OD behind neck flange [mm]	Length TL [mm]
07	7.0	9.8	10.1	85
08	8.0	10.8	11.1	88
09	9.0	11.8	12.1	90
10	10.0	12.8	13.1	92

twist (standard)

Size	ID [mm]	OD end of cannula [mm] (without cuff)	OD behind neck flange [mm]	Length TL [mm]
07	7.0	10.4	12.0	74
08	8.0	11.4	12.7	76
09	9.0	12.5	14.3	78
10	10.0	13.8	15.2	80

In Practice

Patients, who need a size 08 tube, can now use a size 09 tube

What is the advantage?

Air Flow Resistance

Example: Hagen-Poiseuille-Law of fluidics

$$\dot{V} = \frac{dV}{dt} = \frac{\pi r^4}{8\eta} \frac{\Delta p}{l} = \frac{\pi r^4}{8\eta} \frac{\partial p}{\partial z}$$

mit

Variable	Bedeutung	SI-Einheit
\dot{V}	Volumenstrom durch das Rohr	$\frac{\text{m}^3}{\text{s}}$
r	Innenradius des Rohres	m
l	Länge des Rohres	m
η	dynamische Viskosität der strömenden Flüssigkeit	Pa·s
Δp	Druckdifferenz zwischen Anfang und Ende des Rohres	Pa
z	Flussrichtung	

What does it mean in practice?

Tube size	06	07	08	09	10
Air stream relative to size 08 (= 100%)	32%	59%	100%	160%	244%

- Patient gets 100% air with a tube size 08 (= 8 mm ID)
- With a tube size 09 (= 9 mm ID) the patient gains with the same effort **60% more air**
- A tube size 07 (= 7 mm ID) reduces the air by 41%

Connecting Ring for Locking of Inner Cannula



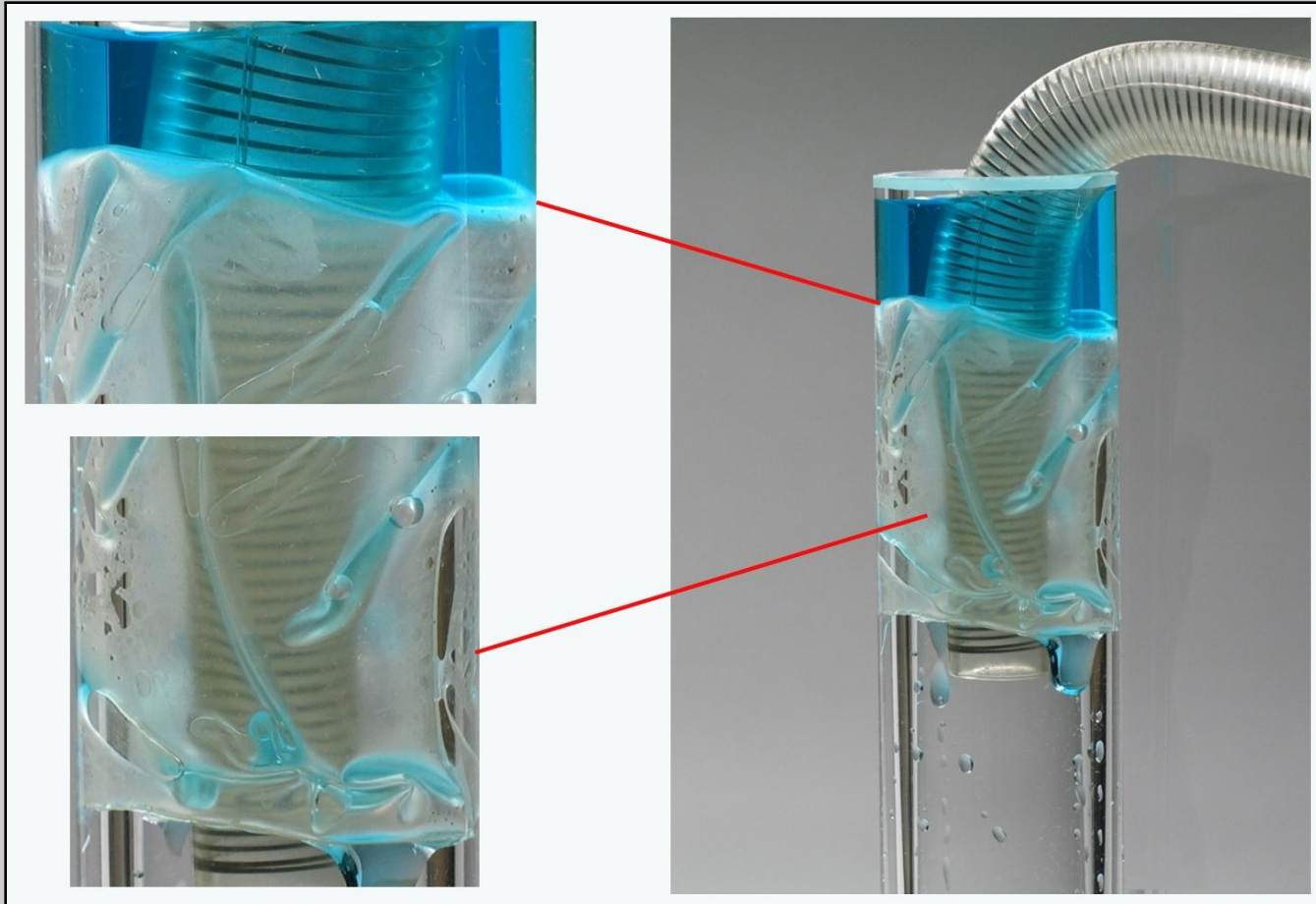
- Inner cannula and 15 mm connector are all made of one piece: no leakage or piping
- Inner cannula with separately attached connecting ring which provides a safe and strong locking to the outer tube

Improved Cuff

Thinner and softer cuff material

- Very few and narrow fold formations
- Better sealing
- Minimized aspiration channels

Minimized Aspiration Channels



Thinner and Softer Cuff

Deflated cuff stays very tight to the tube

→ Less traumatic insertion and tube change

→ Good phonation with deflated cuff

Improved Phonation

Because of reduced tube outer diameter

→ Air stream along the tube is maximized

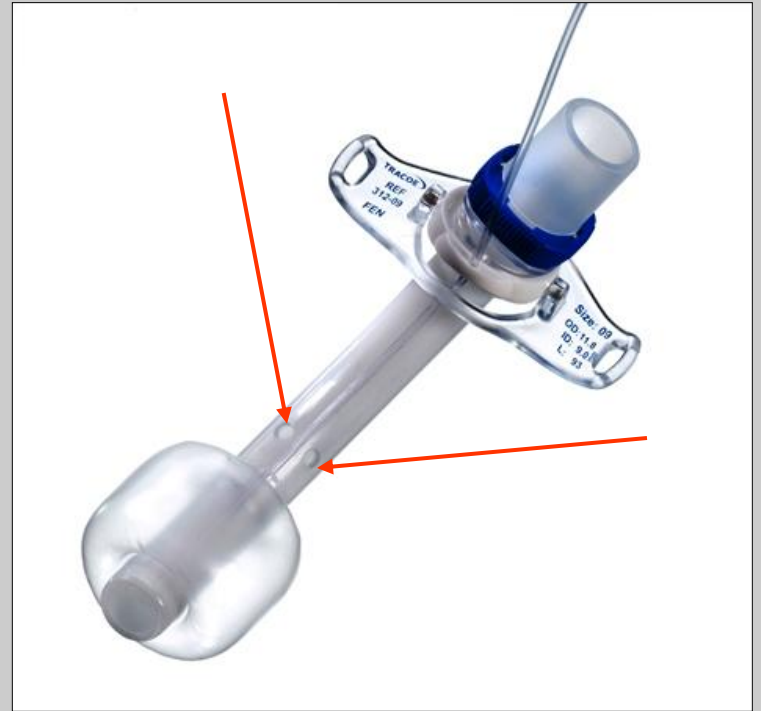
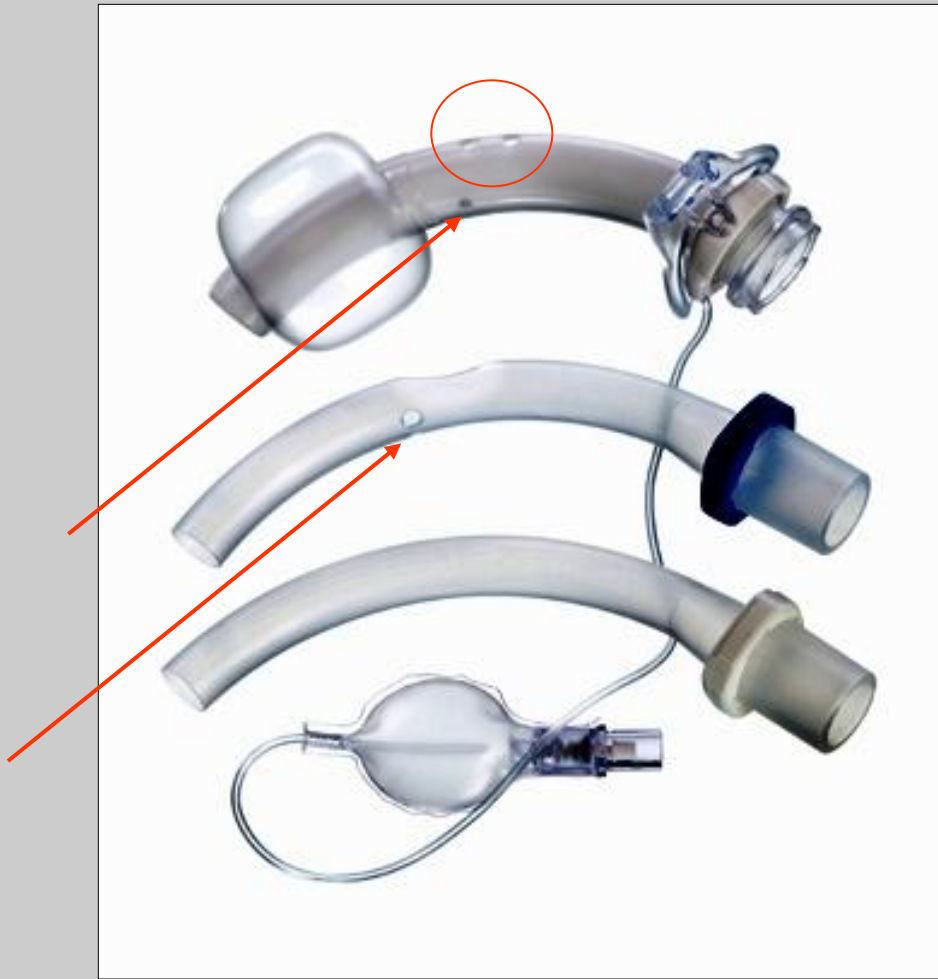
→ Good speaking quality even without fenestration

Double Fenestration

Multiple fenestration at the outer bend and two additional openings at the inner bend of the tube

→ Good phonation even when outer bend fenestration is completely or partly covered

Double Fenestration



Perforated Obturator

The perforated obturator will be used while inner cannula is already in place.



Advantage of a Perforated Obturator

The perforated obturator allows an insertion of the tube via guide wire (Seldinger technique)

This avoids a false passage!!!



Fig. 4-2. Cadaver dissection demonstrating the tracheostomy tube in a false passage anterior to the trachea.

Singular: Tracheotomy – Airway Management, Communication and Swallowing

Unique Selling Propositions

TRACOE *twist plus*

Significantly reduced outer diameter with large inner lumen

- Patients, who need a size 08 tube, can now use a size 09 tube and gain 60% more air

Double fenestration

- Good speaking quality even when outer bend fenestration is completely or partly covered
- Airway resistance is lower during expiration
- **Highly improved phonation**

Extended tube length

- well applicable on obese patients

Perforated obturator can be used while inner cannula is in place

TRACOE experc *twist plus*



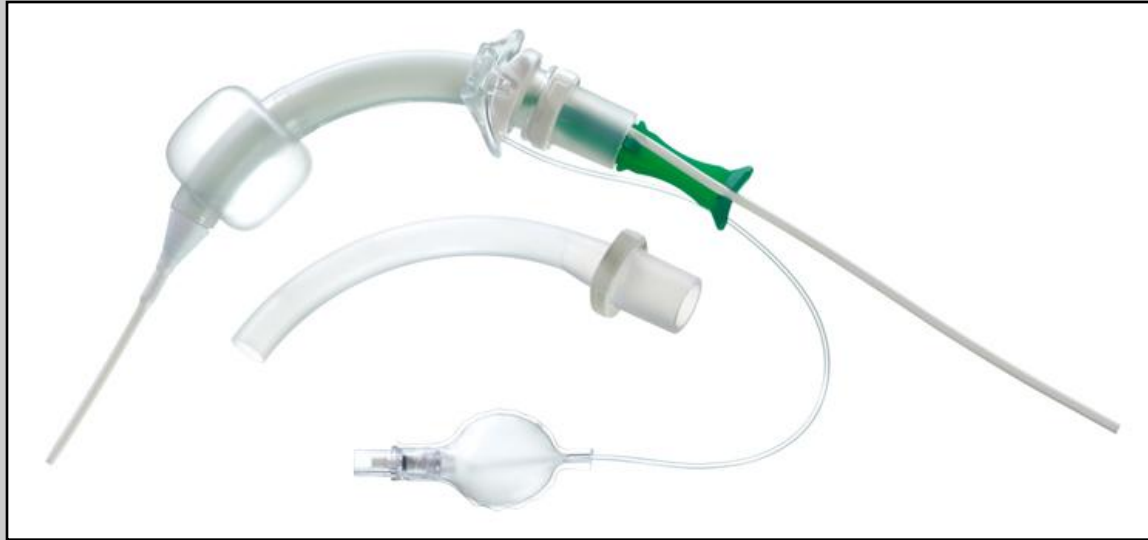
TRACOE experc *twist plus*



Atraumatic Insertion
System for PDT

New with TRACOE *twist plus*

The pre-mounted atraumatic inserter is already attached while inner cannula is in place.



After the inserter has been removed the ventilator can be attached immediately.

Correct handling of the atraumatic inserter



Correct handling of the atraumatic inserter

Please note:

Tube and inserter have to be grabbed as “one piece” and need to be held firmly together during the insertion.



This is necessary to secure the atraumatic function of the silicone sleeve by keeping the guiding catheter within the cannula.

Unique Selling Propositions

TRACOE experc set with TRACOE *twist plus*

- Pre-mounted atraumatic inserter
- Percutaneous insertion system will be used while inner cannula is in place
- Available as complete set with separately sterilized and packed twist plus P-tube and dilation set
- Tracheostomy P-tube set and dilation set are also separately available



REF 450-P *vario* standard tube
spiral-reinforced

TRACOE[®]
percutan

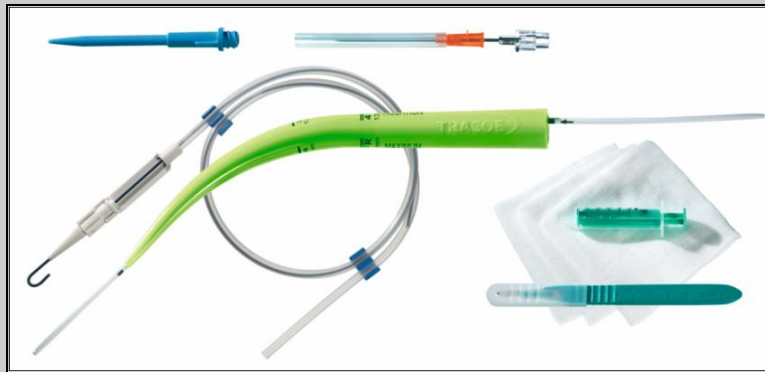


REF 301-P *twist* tube
unfenestrated

Modular System



REF 451-P *vario* XL tube
spiral-reinforced



REF 520 dilation set - Ciaglia technique



REF 302-P *twist* tube
fenestrated



REF 460-P *vario*
(coming soon)



REF 306-P *twist* tube
subglottic suction line



REF 470-P *vario*
(coming soon)



REF 311-P *twist plus* tube
unfenestrated



REF 312-P *twist plus* tube
fenestrated