



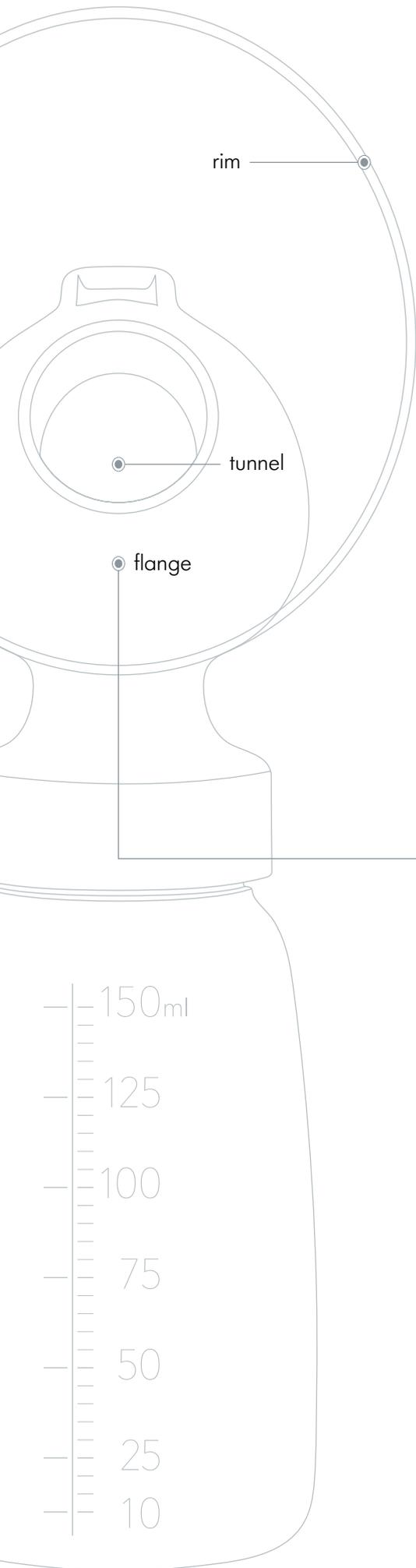
Redefining the principles of pump set design

The PersonalFit™ PLUS pump set for Symphony® is clinically proven to deliver more milk,¹ more comfort,^{1,2} and more efficiency¹ than standard pump set designs. The result is a next-generation pump set that helps more infants receive the life-giving benefits of human milk. To develop it, Medela embarked upon groundbreaking research based on its expertise in the science of expressing breast milk. This demonstrated – for the first time – the crucial role breast shield shape plays in optimising milk expression.

PersonalFit™ PLUS pump sets for Symphony®

More milk. More comfort. More efficiency.





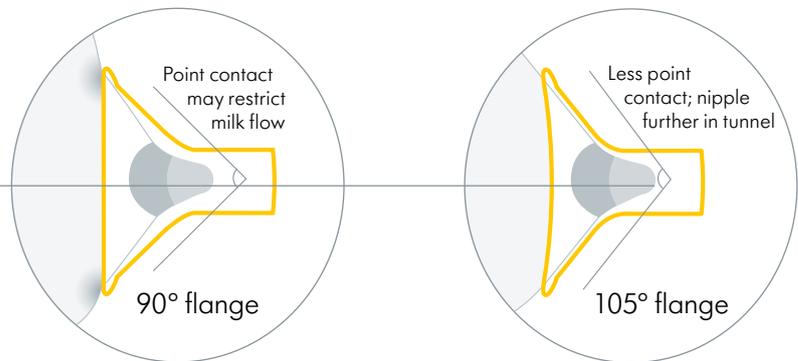
Innovation driven by research

How Medela made the breakthrough

Research has shown that a well-fitting breast shield is essential for comfortable, effective pumping.³ Ideally the nipple should be centred within the tunnel, with space to expand and move freely, which is why Medela breast shields come in a range of tunnel sizes. However, by observing pumping mothers, Medela's researchers noted that even when the tunnel size was correct, there was a mismatch between the breast shape and the shape of the other part of the shield, the flange – which, like most other breast shields, has had a standard 90° angle for the past 50 years.

Unique 3D breast scan database

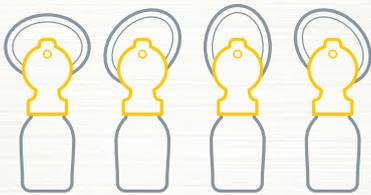
Medela's researchers used their unique database of 3D scans of different lactating breasts – the world's largest – to simulate and assess the fit of the 90° breast shield.⁴ They discovered that in two-thirds of cases the nipple tip did not reach into the tunnel. In addition, there was point contact at the rim, possibly resulting in localised breast tissue compression.⁴ If this tissue is compressed it potentially reduces milk flow from the ducts – Medela supported pioneering research into breast anatomy that revealed milk ducts were closer to the skin's surface than previously thought.⁵



By testing wider-angled flanges, the researchers found 105° better matched the contours of the scanned breasts, regardless of shape or size. In addition, the nipple was placed further into the tunnel and point contact was reduced at the rim – suggesting a more comfortable pumping experience for mothers, and the possibility of improved milk flow.⁴

Why an oval?

Medela product developers also altered the shape of the shield's opening from a circle to an oval that can be rotated 360°. This means the mother can hold it in different positions at the breast – horizontally, vertically or obliquely – whichever feels most comfortable for her. It maintains a good seal and fit in all these positions.



Tested in three extensive clinical studies

Results from more than 1,000 pumping sessions



More milk

After 15 minutes of pumping, 11% more milk was obtained

Forty-nine mothers in established lactation took part in a randomised controlled trial. They performed a total of 196 breast expressions with the standard and new pump sets.

Results: After 15 minutes of pumping, the PersonalFit™ PLUS pump set obtained 11% more milk than the standard design.¹ There was also a 4% improvement in breast drainage¹ – significant, as a key principle of maintaining milk production is to drain the breast well.⁶



More comfort

Mothers described pumping as more gentle and natural

Twenty-two pump-dependant mothers rated their experiences of using PersonalFit™ PLUS at home for seven days, and after seven days of using the standard pump set.

Results: Expressing breast milk with the PersonalFit™ PLUS pump set was described as feeling more gentle and natural.⁷



More efficiency

Significant improvement in usability and handling

Twenty-five healthcare professionals observed mothers using the new pump set in hospital for five days.

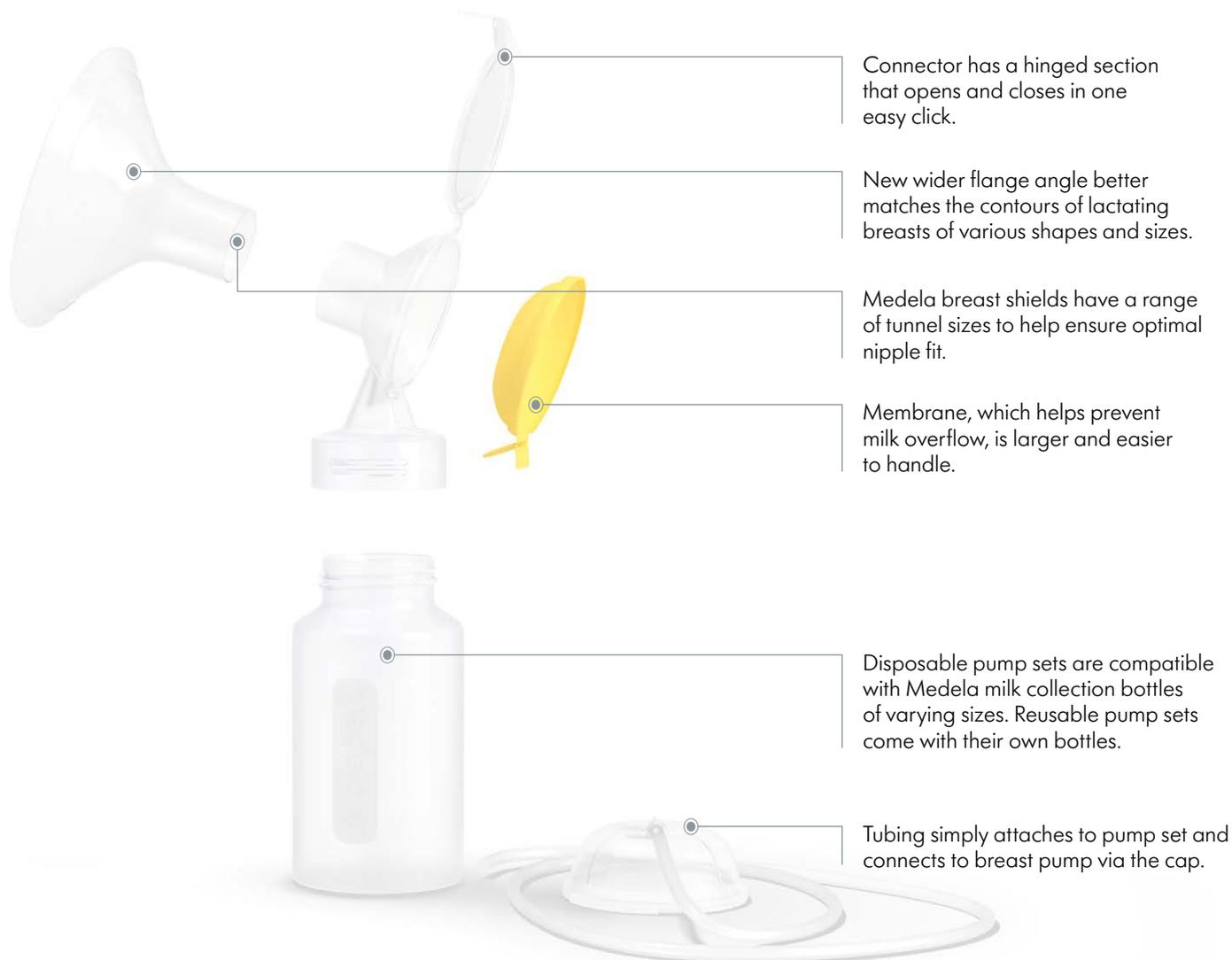
Results: They recorded significant improvements in the cleaning and overall usability and handling of PersonalFit™ PLUS.⁷

Designed for busy carers and mothers

As well as redesigning the breast shield, Medela refined the pump set's construction so it now consists of just a few parts, including the shield, connector with lid, overflow protection membrane, and tubing with Symphony® cap. The aim was to streamline the milk removal process to save time and effort, an improvement validated by usability tests in hospitals and homes.

Only Medela

Research is in Medela's DNA. Medela has successfully developed long-standing relationships with leading researchers, generating knowledge that often challenges fundamental principles. This provides a scientific basis for product development and clinical testing.



View the evidence

1 Prime DK et al. 6th ABM Europe Conference, Rotterdam, NL; 2018. 2 Clinical study. (NCT02492139). 2016. 3 Jones E, Hilton S. J Neonatal Nurs. 2009; 15(1):14–17. 4 Muther M et al. Breastfeed Med. 2016; 11(2):A28. 5 Ramsay DT et al. J Anat. 2005; 206(6):525–534. 6 Kent JC et al. J Obstet Gynecol Neonatal Nurs. 2012; 41(1):114–121. 7 Clinical study. (NCT02496429). 2015.

Discover what PersonalFit™ PLUS can do for your next generation. Go to medela.com/pfp or contact your Medela representative