

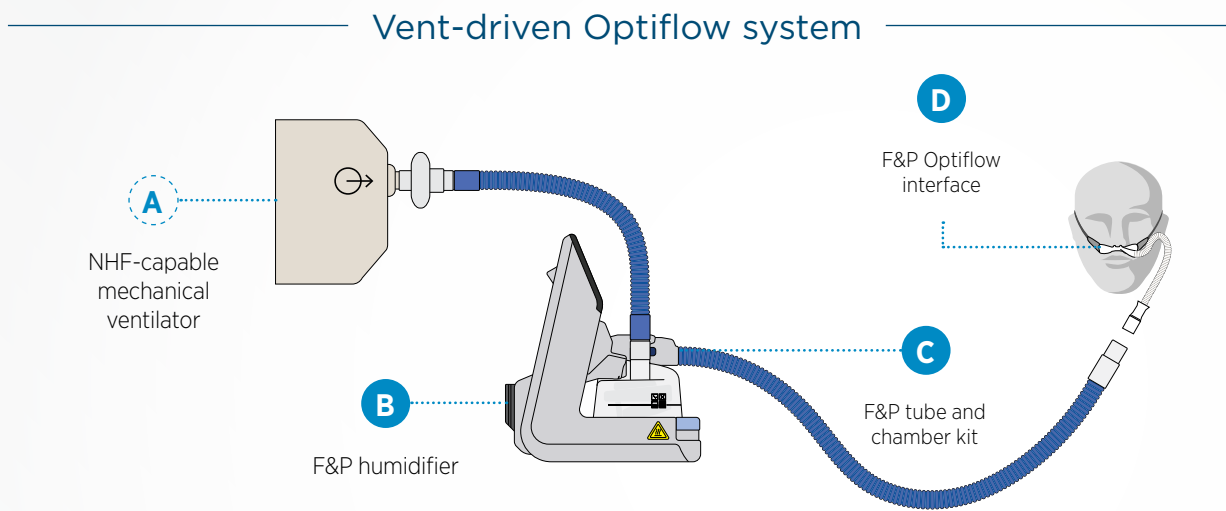
F&P Optiflow™ systems

Guideline recommendations for the use of Nasal High Flow (NHF) for acute respiratory support in adults are supported by a body of peer-reviewed and published evidence.

In a recent Fisher and Paykel Healthcare review of controlled studies using NHF as respiratory support in acute adult patients, the vast majority of the studies were found to have used Fisher & Paykel Healthcare (F&P) Optiflow systems with flow settings of 45 - 60 L/min* (see the link on the next page for more detail).

A number of respiratory support devices, such as the Philips V60 Plus**, provide NHF as a therapy option, making them suitable as independent flow generators that can be combined with F&P products to form vent-driven Optiflow systems.

The following figure demonstrates what is required to enable your NHF-capable mechanical ventilator to form part of a vent-driven Optiflow system.



A Flow driver	B Humidifier	C Tube and chamber kit	D Interface	System settings
NHF-capable mechanical ventilator†	F&P 850 System [‡] set to invasive mode	Adult Bi-level / CPAP circuit kit (e.g. RT219, RT319)	F&P Optiflow interface	37 °C ✓ 10 - 80 L/min [‡] 21 - 100% FIO ₂
	F&P 950™ System [§] set to Optiflow mode	Adult Bi-level / CPAP circuit kit (e.g. 950A61)		

Available from F&P

* The review is detailed in edition 11 of Flow Matters which is available from <https://resources.fphcare.com/content/optiflow-flow-matters-newsletter-edition-11-pm-621178.pdf>

** Philips is a registered trademark of Koninklijke Philips N.V.

† A mechanical ventilator with a NHF mode and able to act as an independent flow driver for delivering NHF therapy.

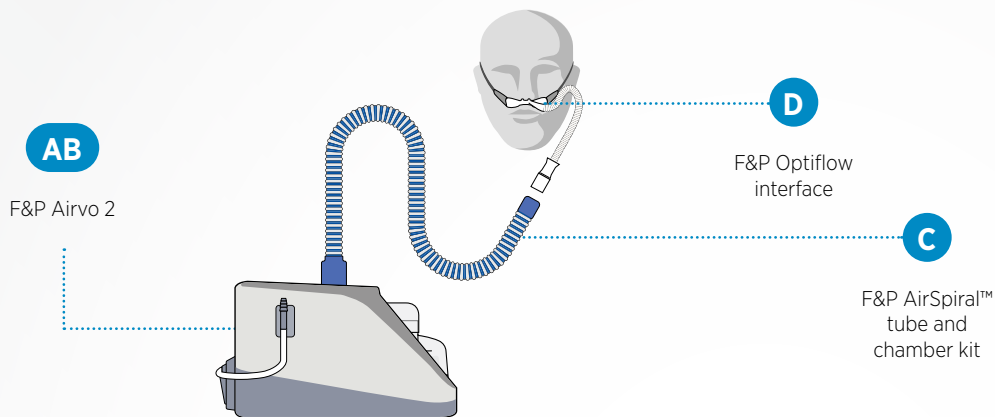
‡ The F&P 850 System includes the following: MR850 respiratory humidifier (e.g. MR850JHU), temperature probe (e.g. 900MR869), heater-wire adapter (e.g. 900MR805), mounting bracket (e.g. 900MR087) and waterbag pole (e.g. 900MR290).

§ F&P 950 System may not be available in all countries. The F&P 950 System includes the following: F&P 950 respiratory humidifier (e.g. 950JUS), mounting bracket (e.g. 900MR087) and waterbag pole (e.g. 900MR290).

¶ Flow rate limits based on internal F&P testing with the Philips V60 Plus set to high flow mode and a range of Optiflow interfaces: OPT942: 10 - 70 L/min, OPT944/6: 10 - 80 L/min, OPT1042: 10 - 60 L/min, OPT1044/6: 10 - 80 L/min. Flow rate limits may depend on the clinical application and flow source used.

The following figure demonstrates what is required for an Airvo™ Optiflow system:

Airvo Optiflow system



A	B	C	D	System settings
Flow driver	Humidifier	Tube and chamber kit	Interface	
F&P Airvo 2 [†]		F&P AirSpiral tube and chamber kit	F&P Optiflow interface	37 °C ✓ 10 - 60 L/min 21 - 100% FiO ₂ [‡]

Available from F&P



F&P Optiflow Flow Matters Edition 11 of 2020

Optiflow™ matters

Guideline recommendations for the use of nasal High Flow (NHF), also High Flow Nasal Cannula (HFNC), are supported by analyzed data from research investigating the effect of HFNC on clinical outcomes, such as the reduced need for tracheal intubation. When selecting an NHF system, it is important to review the entire system, including design and device limits, to provide the therapy proven to deliver the expected outcomes.

Summary

- The National Institute of Health (NIH), the Australia and New Zealand Intensive Care Society (ANZICS) and the Surviving Sepsis Campaign (SSC)¹ recommend NHF for use in COVID-19 related hypoxemia.¹
- These recommendations are supported by findings from the systematic reviews with meta-analysis.^{2,3}
- A review conducted by Fisher & Paykel Healthcare (F&P) showed that the flow rates used in the controlled published studies⁴ analyzed by the first meta-analysis² ranged from 10 L/min to 60 L/min and 82% of the studies required flows > 45 L/min.
- When this review was repeated on the 52 acute adult NHF controlled studies (with subjects > 18), found using a systematic search of the PubMed database, it was again shown that the flow rates ranged from 10 L/min to 60 L/min and that 85% of the studies required flows > 45 L/min.
- F&P Optiflow systems (including F&P Optiflow interface) and humidity settings of 37 °C were widely used.

Guideline recommendations

Recent guidelines for the clinical management of COVID-19 from organizations such as the NIH, ANZICS and SSC recommend the use of NHF as respiratory support in adults. These recommendations are supported by systematic reviews with meta-analysis which search for, review and analyze clinical data from controlled studies, such as Randomized Controlled Trials (RCTs). F&P conducted a review of the systems and settings used in studies from which analyzed data formed the basis of these recommendations.

¹The NIH is part of the U.S. Department of Health and Human Services, is the USA national medical research agency.
²The SSC is a collaboration between the Society of Critical Care Medicine (SCCM) and the European Society of Intensive Care Medicine (ESICM).
³www.fphcare.com

Reviews with meta-analysis

NHF recommendations from NIH COVID-19 Treatment Guidelines, the ANZICS COVID-19 guidelines, and the SSC Guidelines on the Management of Critically Ill Adults with Coronavirus Disease 2019 (COVID-19) are supported by the following systematic reviews with meta-analysis: Zhou et al. 2020, Chu et al. 2020, Ni et al. 2020, Rochwojaty et al. 2019 and Aguilera et al. 2020.⁴

Analyzed published studies

These five review analyzed data from 22 published studies (mostly RCTs) and one presentation.⁵ The studies represent various NHF applications, including primary respiratory support, pre-oxygenation prior to intubation, and post intubation respiratory support. The studies reported the NHF systems and settings that were used.

Systems and settings

The reported flow rates ranged between 10 L/min and 60 L/min with the majority requiring flow at the higher end of the range.

80% Required flows > 45 L/min

Of the 22 published and analyzed studies, 20 (91%) used F&P Optiflow systems, including a F&P Optiflow patient interface and a F&P humidity delivery system with humidity setting of 37 °C.

Fisher & Paykel HEALTHCARE



To learn more about the systems and used in NHF research, take a look at **Edition 11 of Flow Matters**, which can be downloaded from our Optiflow webpage.

[CLICK HERE TO DOWNLOAD](#)

[†] An integrated flow source and humidifier to deliver NHF therapy across the hospital, independent of medical air supply.
[‡] Provided an oxygen flow meter is available to deliver supplemental oxygen.