



QUATTROFLOW GUIDE

QF150SU & QF1200SU EZ-Set Design

BASICS, MATERIAL AND DESIGN INFORMATION, COMPATIBILITY CHART

Revision 1



Rev.	Date	Changes / Comment	Issued by	Checked by
1	May 2022	<u>Added</u> Section 1.2: Technical advice media temperature Section 1.4: Exemplary picture for EZ-Set version 1 Section 2.2: Updated chapter “no compatibility”	Dudda	Frerix
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1 Basics

1.1 Introduction

With the EZ-Set, Single-Use pump chambers can be replaced in short time without the use of special tools or torque wrenches. The comfortable handgrip design makes replacing the chamber so easy, even while wearing rubber gloves. EZ-Set reduces downtime between batches, allowing you to spend more time doing what is really important for your work. It's quick, it's easy, and it's safe.

- Easy installation of Single-Use pump chambers
- For Single-Use pump chamber sizes QF150SU and QF1200SU
- Nothing to screw in
- No torque wrenches needed
- Retrofittable on existing conventional Quattroflow Single-Use pumps
- The conventional design of single-use pump chambers and pump drives is still available

1.2 Components and function

The following exemplary pictures shows the setup of a Quattroflow Pump in EZ-Set design. The configuration is basically the same for the QF150SU and QF1200SU Series in EZ-Set design.

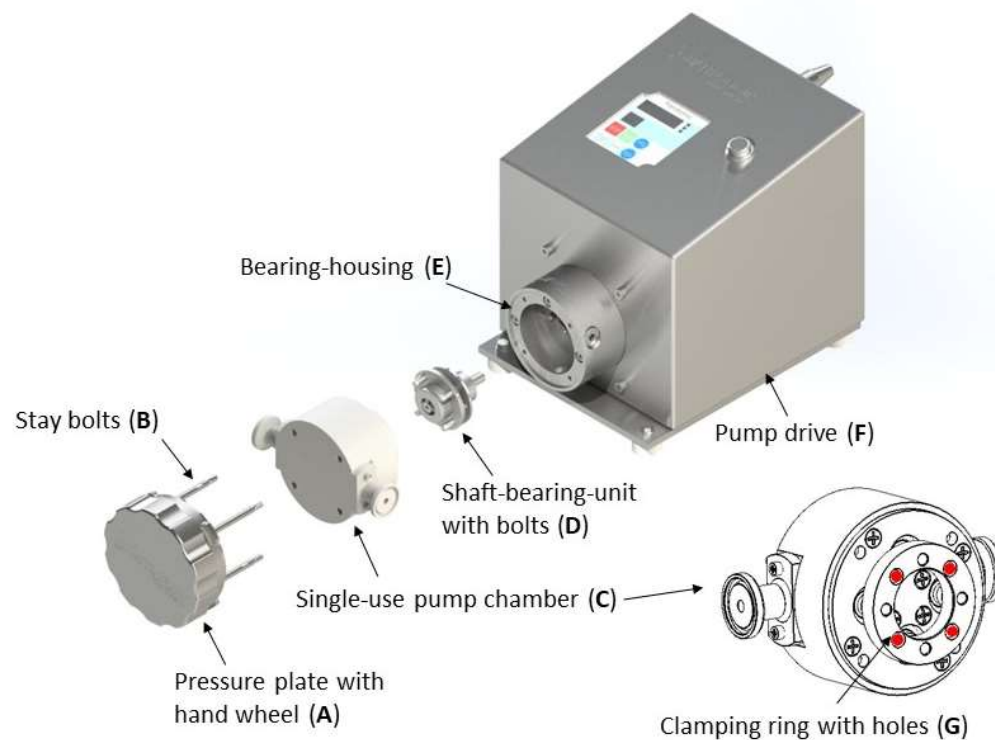


Figure 1 Exemplary picture: QF150SU in EZ-Set Design

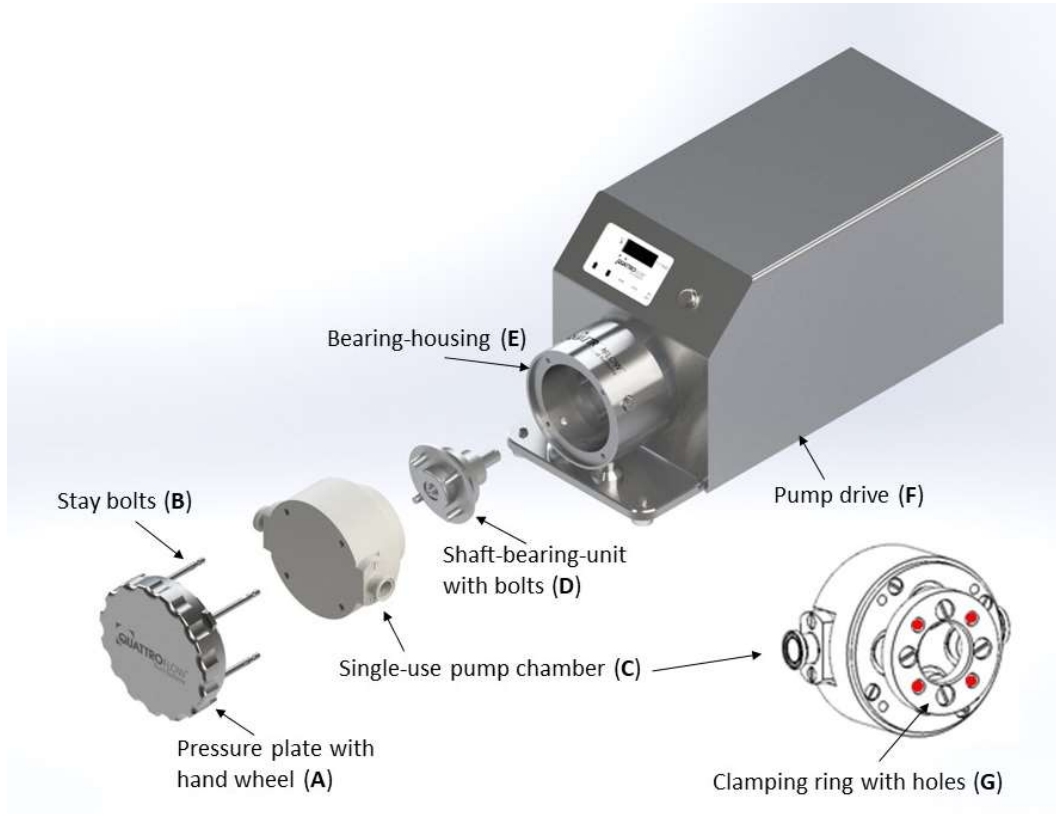


Figure 2 Exemplary picture: QF1200SU-HT in EZ-Set Design

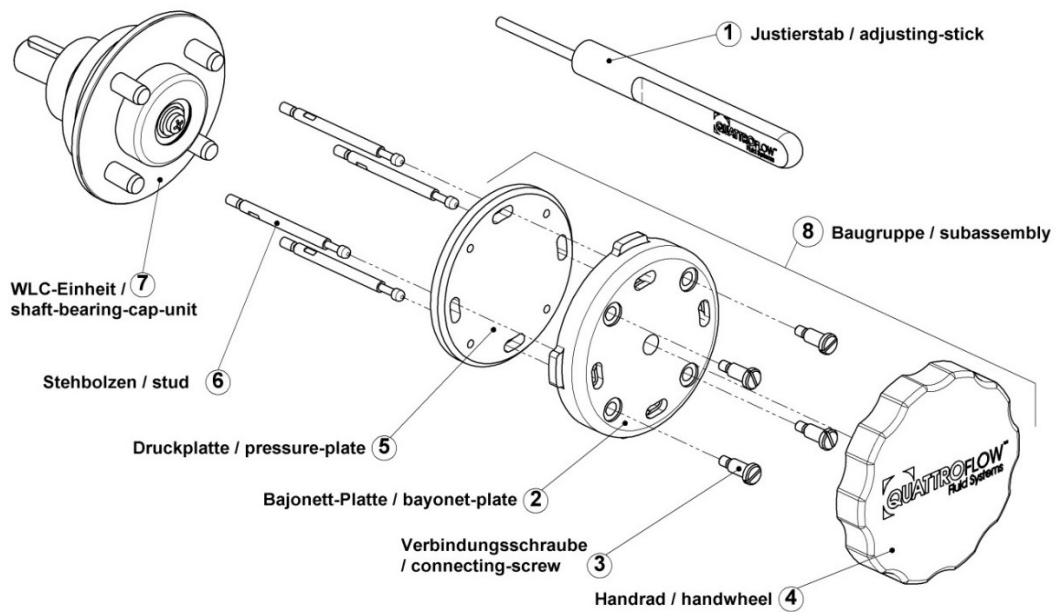


Figure 3 Components of EZ-Set shaft-bearing-unit and pressure plate with hand wheel

In comparison to the standard design, the EZ-Set shaft-bearing unit has four bolts on the cap (**D, 7**). The clamping ring made of PETP (**G**) at the rear side of the SU pump chamber has four additional holes to catch the bolts of the shaft-bearing-unit. Due to this mechanical connection, the clamping ring screw (only for the conventional QF1200SU Series) has not to be tightened anymore. For this reason, the QF150SU and QF1200SU pump chamber in EZ-Set design come without a clamping ring screw.

The EZ-Set pressure plate (**A, 4**) includes four long stay bolts (**B, 6**) that are screwed in the bearing housing (**E**) of the pump drive (**F**). The EZ-Set SU pump chamber (**C**) is pushed over these four bolts onto the short bolts on the shaft-bearing-unit (**D, 7**)

The pressure plate itself is working like a bayonet fastener with an integrated torque limiter (only for the updated version of EZ-Set, see chapter 1.4). The pump chamber is fixed at the ring drive unit by turning the hand wheel of the pressure plate. With this mechanism the needed torque is achieved to install the SU pump chamber properly on the pump drive. The conventional four front bolts (hexagon socket screw) are not needed anymore.



Please refer also to the recent user manuals for Quattroflow pumps and for EZ-Set to get more details about the installation and usage of a Quattroflow Pumps in EZ-Set design.



Technical advice media temperature

When using the EZ-Set pressure plate, an immediate temperature shift of the pumped medium $\Delta T > 15K$ must be excluded. In extreme cases, this could result in leakages.

1.3 Retrofitting of a conventional pump drive to EZ-Set design

For retrofitting of an existing pump drive from conventional design to EZ-Set design, both the pressure plate and the shaft-bearing-unit have to be replaced. Please note the compatibility chart in this guide to check, which pump chamber is compatible with the pump drive.

1.4 Different versions of EZ-Set

Until the present time there were two different versions of the EZ-Set pressure plate on the market:

Version 1: Hand wheel without integrated torque limiter

The outer ring of the pressure plate shows an arrow, that indicates the correct position to achieve the defined torque for installation of the SU pump chamber.

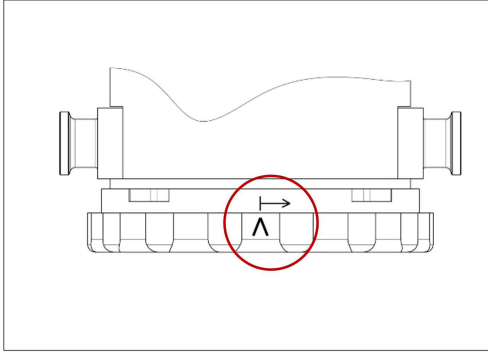


Figure 4 Indicator for EZ-Set version 1: arrow on hand wheel

Version 2: Hand wheel with integrated torque limiter

There is no arrow on the outer ring of the pressure plate.

The correct torque is achieved, when the hand wheel is freely spinning and when there is a hearable click-noise. Comparable to the function of a torque-limiting wrench.

This design improvement (implemented middle of 2019) had no influence on the performance of the pump or pump chamber. All new Quattroflow pumps in EZ-Set design are delivered with the new EZ-Set pressure plate. There was no change of the item numbers for the pressure plates.

There was no change of the Single-Use pump chambers and of the shaft-bearing-cap-unit.

2 Item numbers

2.1 Item numbers for compatible single-use pump chambers

This guide is valid for QF150SU and QF1200SU pump chambers made of machined Polypropylene (PP). The following table shows all item numbers of the conventional and EZ-Set pump chambers, that are affected.

Basically, all SU pump chamber in EZ-design contains the part **-EZ** in the item number.

Type	Item no.	Item no. example
QF150SU conventional	QF15DISP...-3	QF15DISPP-3 QF15DISPL14-3
QF150SU EZ-Set	QF15DISP...-3-EZ	QF15DISPP-3-EZ QF15DISPL14-3-EZ
QF1200SU conventional	QF12DISP...-3	QF12DISPP-3 QF12DISPL12-3
QF1200SU EZ-Set	QF12DISP...-3-EZ	QF12DISPP-3-EZ QF12DISPL12-3-EZ

Table 1 Item numbers SU pump chambers

Including gamma irradiated pump chambers whose item numbers contains **-GAMMA**

e.g. QF15DISPP-3-GAMMA, QF12DISPP-3-EZ-GAMMA

2.2 No compatibility

EZ-Set is not compatible with the following single-use pump chamber types:

- QF1200SU pump chamber made of injection molded Polyethylene (PE) with front connection ports
These item numbers contain code letter **-M**

e.g.: QF12DISPP-3-**M**

- QF1200SU pump chamber made of machined Polypropylene (PP) with front connection ports
These item numbers contain code letter **F**

e.g.: QF12DISFPP-3

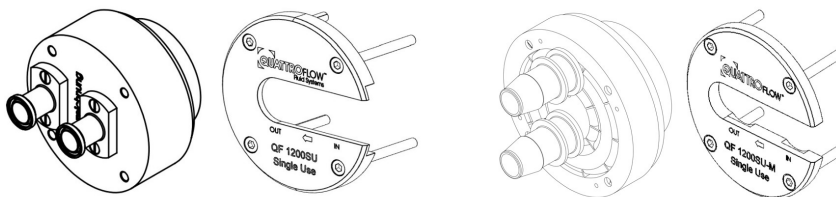


Figure 5 Exemplary drawings for QF1200SU PP front ports (left) und QF1200SU PE (right)

2.3 Item numbers and configurations for new pumps

If a complete new Quattroflow pump in EZ-Set design is ordered, the pump code contains the part **-EZ**

e.g. QF15ADEGNW-EZ, QF12SUHT5-EZ, PQ12OFSUHT5-EZ

In this case the pump will include the following parts in EZ-Set Design (standard configuration):

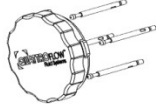
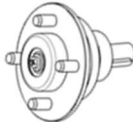
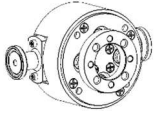

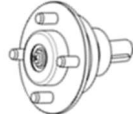

Pump Type	Item no.	Description	Comment	Exemplary pic.
QF150SU EZ-Set	PQ15DISKIT-EZ	Single Use - pressure plate, EZ-Set version	Included in pump drive. Made of stainless steel.	
	PSKITWLC153-EZ PSKITWLC155-EZ	Shaft-bearing- cap-unit, EZ-Set version 3 or 5° shaft	Included in pump drive. Made of stainless steel. Available with different shaft angles.	
	QF15DISP...-3-EZ *	Pump chamber made of PP, EZ- Set version	Including 3pc. Packed separately with own serial number	
QF1200SU EZ-Set	PQ12DISKIT-EZ	Single Use - pressure plate, EZ-Set version	Included in pump drive. Made of stainless steel.	
	PSKITWLC123-EZ PSKITWLC125-EZ	Shaft-bearing- cap-unit, EZ-Set version 3 or 5° shaft	Included in pump drive. Made of stainless steel. Available with different shaft angles.	
	QF12DISP...-3-EZ *	Pump chamber made of PP, EZ- Set version	Including 3pc. Packed separately with own serial number	

Table 2 Configuration and item numbers for new pumps

* Standardly with each new pump 3pc. SU pump chambers are included.

Optionally the pump drive in EZ-Set design can be ordered without Single-Use pump chambers. In this case the pump contains only the pressure plate and the shaft-bearing-unit in EZ-Set design. Please refer to the Quattroflow price list or contact the support team for more information.

3 Product differences – EZ-Set and conventional design

Only difference between conventional SU pump chambers and EZ-Set version is the design and material of the clamping ring, that is not produced wetted.

Design:

Four additional holes for the EZ-Set version (see table below, marked in red).

No clamping ring set screw for the EZ-Set version QF150SU (see table below, marked in green).

Material:

Material of the EZ-Set clamping ring (not product wetted): PETP

Material of the conventional clamp ring (not product wetted): PP

Specification:

Product specification and performance of the pump chamber (e.g. flow rate, max. pressure, temperature range) is unchanged.

Certification:

Material certification of all product wetted parts is unchanged.

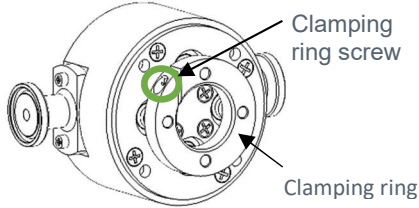
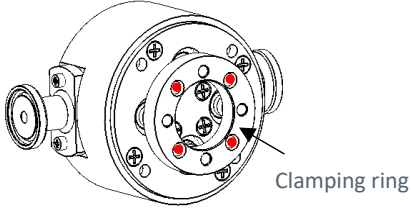
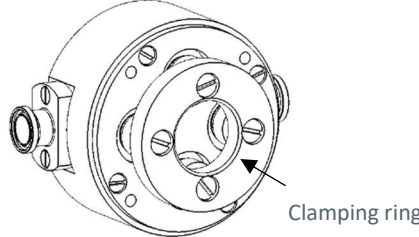
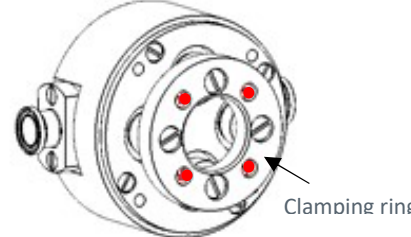
Type	Conventional design	EZ-Set design
QF150SU Example showing rear side of QF15DISPP-3 QF15DISP.....-3	 <p>Clamping ring screw</p> <p>Clamping ring</p>	 <p>Clamping ring</p>
QF1200SU Example showing rear side of QF12DISPP-3 QF12DISP.....-3	 <p>Clamping ring</p>	 <p>Clamping ring</p>

Table 3 Design changes SU pump chambers

4 Compatibility chart – EZ-Set and conventional design

The following table shows all compatible combinations of pressure plates with Single-Use pump chambers and shaft-bearing-cap units. The table includes the conventional and EZ-Set design with all item numbers:

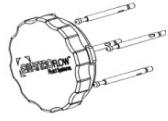
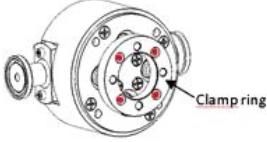
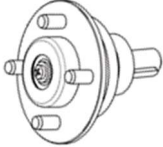


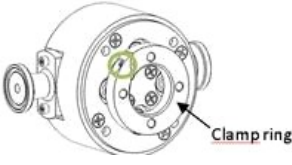


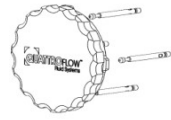
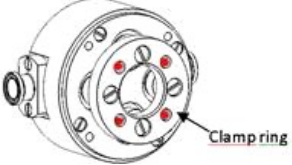
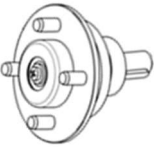


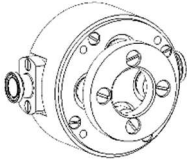


No:	Type	Pressure plate	SU chamber	Shaft-bearing-unit	Result
1a	QF150SU EZ-Set standard configuration	 PQ15DISKIT-EZ	 Clamp ring		✓Compatible
1b	QF150SU Option mixed	 PQ15DISKIT	EZ-Set chambers: QF15DISP.....-3-EZ	EZ-Set unit: PSKITWLC155-EZ PSKITWLC153-EZ	✓Compatible
2a	QF150SU Conventional standard configuration	 PQ15DISKIT	 Clamp ring		✓Compatible requires manual fastening of clamp-ring screw
2b	QF150SU Option mixed	 PQ15DISKIT-EZ	Conventional chambers: QF15DISP.....-3	Conventional unit: PSKITWLC155 PSKITWLC153	✓Compatible requires manual fastening of clamp-ring screw
3a	QF1200SU EZ-Set standard configuration	 PQ12DISKIT-EZ	 Clamp ring		✓Compatible
3b	QF1200SU Option mixed	 PQ12DISKIT	EZ-Set chambers: QF12DISP.....-3-EZ	EZ-Set unit: PSKITWLC125-EZ PSKITWLC123-EZ	✓Compatible
4a	QF1200SU Conventional standard configuration	 PQ12DISKIT			✓Compatible
4b	QF1200SU Option mixed	 PQ12DISKIT-EZ	Conventional chambers: QF12DISP.....-3	Conventional unit: PSKITWLC125 PSKITWLC123	✓Compatible

Table 4 Compatibility chart

The information contained in this document was checked for correctness and completeness at the time of publication. The product data may change without prior notice.



About PSG® Biotech

Formed in 2023, the product portfolio of PSG® Biotech features full lines of best-in-class pump, sensor and flow-meter technologies that have been designed to “Care For Every Drop” as they facilitate the safe transfer and precise metering of delicate and high-value biologics, medicines and therapeutics during their manufacture and handling.



Address and contact:

PSG Germany GmbH
Hochstraße 150-152
47228 Duisburg
Germany

Phone: +49 (0) 2065 89205-0 | Fax: +49 (0) 2065 89205-40

www.psgdover.com/biotech | psg-germany@psgdover.com