

VECTRON®

We are

waterjet

THE NEW HIGH-PRESSURE PUMP WITH DIRECT DRIVE
Pure power, less effort: The drive systems of the future



WWW.BFT-PUMPS.COM



A Member of
Dr. Aichhorn Group

**The direct
drive pump
from BFT.**



Your advantages

1 DRIVE VIA CRANK DRIVE WITH FREQUENCY- CONTROLLED ASYNCHRONOUS MOTOR

Compared to standard intensifier pumps, the energy efficiency is approx. 25% higher

2 SIMPLE OPERATION

Colour touch display, available with several languages and comprehensive information output

3 ONLY 22 KW POWER CONSUMPTION

Ideal for small companies thanks to minimal power consumption

4 STEPLESS OPERATING PRESSURE CONTROL FROM 500 TO 3,800 BAR

Extends the range of applications of the entire cutting system

5 PRACTICALLY NO PULSATIONS DURING CONNECTION

No chipping with brittle materials, and that from 500 bar onwards

6 LOWEST PRESSURE FLUCTUATIONS OF ONLY +/- 1% AT FULL LOAD

Increased service life of the high-pressure components and improved cutting quality

7 NO OVERTHOOTING AND MINIMAL PRESSURE DROPS WHEN SWITCHING THE WATER JET ON AND OFF

Protects the entire high-pressure system from the pump to the cutting head
Protects the entire high-pressure system from the pump to the cutting head

8 NO POWER CONSUMPTION AT THE ASYNCHRONOUS MOTOR WHEN THE NOZZLE IS CLOSED

Reduced power consumption and higher energy efficiency

9 CLIENT CONNECTION VIA NETWORK CABLE

Transfer of the pump control into the control of the cutting system

10 CURRENT LIMITATION WHEN SWITCHING ON THE HIGH-PRESSURE PUMP VIA FREQUENCY CONVERTER

Reduced current consumption during start-up current

11 PERFORMANCE LEVEL c

12 NO DRIVE HYDRAULICS REQUIRED

The direct drive from electric motor to crank drive eliminates the need for an oil-hydraulic drive so no oil tank and thus no hydraulic components are required

13 PROFI-BUS CONNECTION AVAILABLE AS AN OPTION

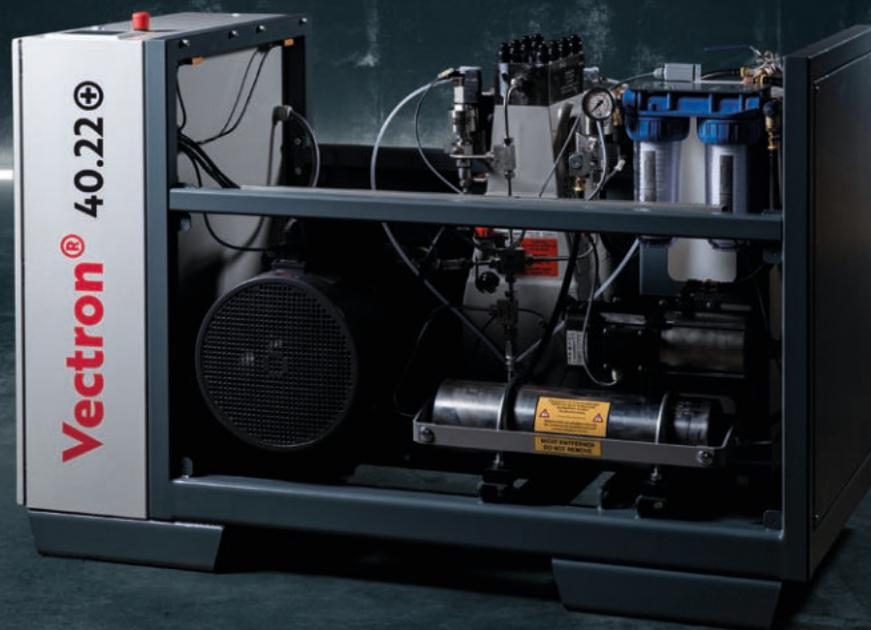
Only one control line required

VECTRON®

MINIMUM ENERGY CONSUMPTION FOR SMALL COMPANIES

The VECTRON® series operates in the power class of 22 kW with up to 3.5 l/min conveying capacity at an operating pressure of 3,800 bar.

The direct drive pump is ideal for smaller companies thanks to its low power consumption.



**BFT, THE WORLD'S LEADING PROVIDER
OF HIGH-PRESSURE PUMP SYSTEMS, PRESENTS:**

VECTRON®

Direct drive pump from BFT for your entry into waterjet cutting technology!

HIGH-PRESSURE PUMPS OF THE VECTRON® SERIES ARE DISTINGUISHED BY THE FOLLOWING FEATURES:

THE BASIC PRINCIPLE

A crankshaft is driven via a frequency-controlled electric motor. The water is brought to pressure via three pistons connected to the crankshaft. The VECTRON® pump series is the origin of an energy-efficient and environmentally friendly high-pressure unit for waterjet cutting.

ENERGY EFFICIENCY

The efficiency of these pumps is at about 90%. With its 22 kW, the pump has a minimal power consumption, so it is also optimally suited for smaller companies without a strong electrical connection.

OPTIMAL FEED WATER SUPPLY

The built-in pre-pressure pump and the double pre-filter unit with 5 µm and 1.2 µm ensure optimum water supply for the high-pressure pump.

CLOSED CONTROL CIRCUIT

The characteristic of the crank drive used with the three high-pressure plungers ensures minimum pressure fluctuations within the entire high-pressure system. The actual value of the operating pressure is measured via the built-in pressure transducer. The control system thus regulates the speed of the drive motor in a closed control circuit. A bypass valve prevents pressure peaks when the cutting valve is switched off. This improves the service life for all components subjected to high pressure and results in longer maintenance intervals.

OPTIMAL PRESSURE PROCESS

The combination of a frequency-controlled crank drive and built-in accumulator according to Pressure Equipment Directive 2014/68/EU, with a reservoir capacity of 0.88 litres, enables a harmonic pressure curve with fluctuations of less than +/-1% of the maximum operating pressure. This has a positive effect on the cutting result, especially in abrasive waterjet cutting.

VALVES IN THE HIGH- PRESSURE SYSTEM

A relief valve is built into the pump's high-pressure system. It is pneumatically actuated and activated via the stop button, a signal from the cutting system or via the emergency stop circuit. An integrated bypass valve ensures a constant engine speed even with frequent piercings. This means that, if necessary, e.g. for abrasive waterjet cutting, the piercing pressure can be steplessly adjusted from 500 MPa.

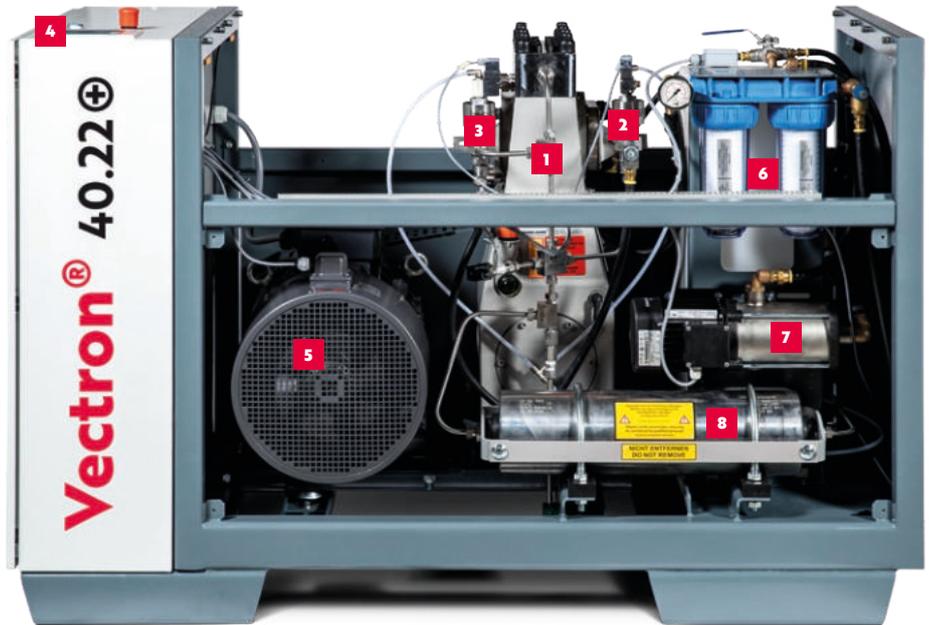
OPERATION VIA TOUCH DISPLAY

The pump is operated via touch display. The VECTRON® high-pressure pump can be steplessly adjusted from 500 to 3,800 bar. All warning and monitoring functions appear in plain text. Operating data are recorded and can be called up via the display.

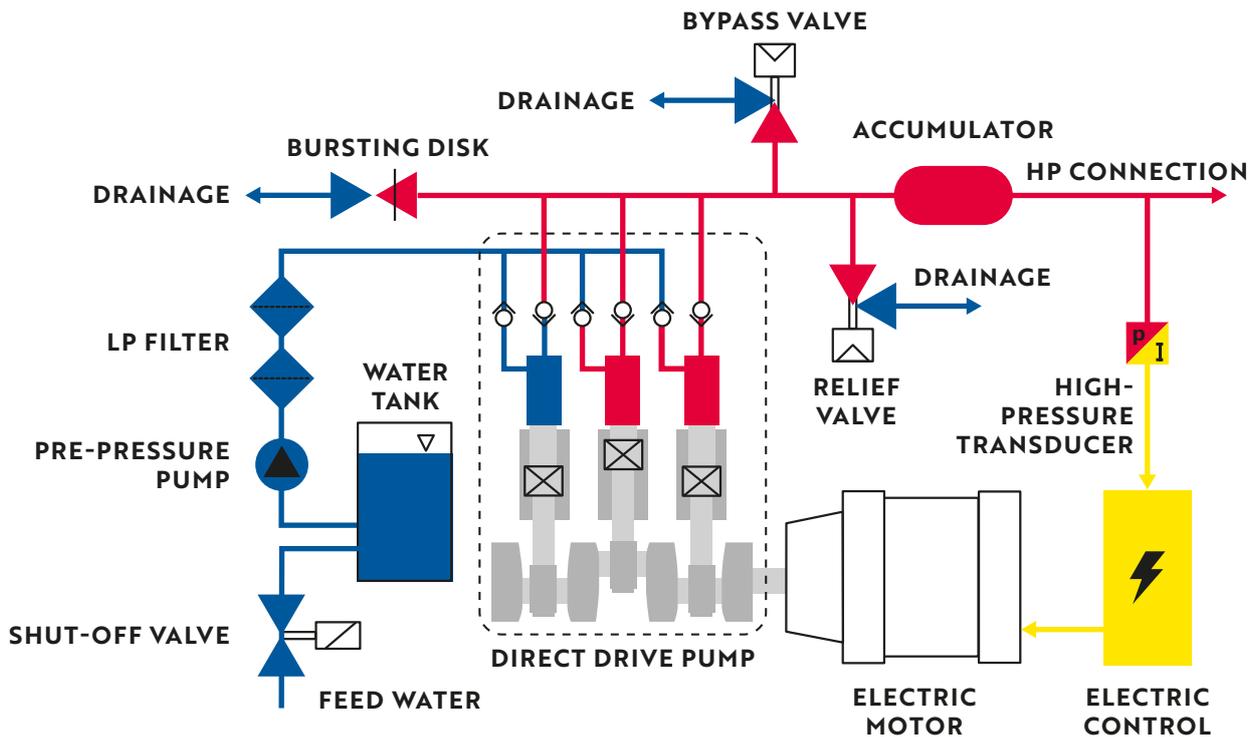
REMOTELY CONTROLLABLE

All important functions can be controlled remotely with client connection via network cable. External connections for start/stop, emergency stop circuit, pressure relief valve, error and operating messages are available. The target pressure value can be specified from 0 to 10 V via signal. All functions can also be controlled via UDP protocol. This only requires a connection via a network cable. As an option, control via Profinet or other Fieldbus systems is also possible.

- 1** DIRECT DRIVE PUMP
- 2** RELIEF VALVE
- 3** BYPASS VALVE
- 4** TOUCH DISPLAY
- 5** ASYNCHRONOUS ELECTRIC MOTOR (EXTERNALLY VENTILATED)
- 6** DOUBLE FILTER UNIT 5 AND 1.2 μ M
- 7** PRE-PRESSURE PUMP (SELF-PRIMING)
- 8** ACCUMULATOR (0.88 L)



SYSTEM DIAGRAM OF THE VECTRON® HIGH-PRESSURE PUMP



A frequency converter ensures harmonious pressure processes.



The water tank of the VECTRON® pump has a capacity of 60 l.



The VECTRON® connection strip (clockwise from top left: Feed water inlet, waste water, high-pressure connection, compressed air connection).



Also unique among BFT pumps is the belt drive of the VECTRON®.



TECHNICAL DETAILS VECTRON®

40.22+

Driving power, main motor	kW	22.0
Forced ventilation, main motor*)	kW	0.08
Pre-pressure pump*)	kW	0.43
Conveying capacity, max. (at 3,500 bar)	l/min	3.5
Design pressure	bar	4,000
Permissible operating pressure, max.	bar	3,800
Accumulator, storage volume	l	0.88

SUPPLY LINES

Water inlet		1/2"
Water pre-pressure min./max.	bar	1–10
Waste water connection		3/8"
High-pressure connection for HP pipes 3/8"		M20x1.5
Compressed air, min./max.	bar	5.5–7
Compressed air connection		3/8"
Supply voltage	V	400
Frequency	Hz	50
Wire cross-section / preliminary fuse*), min.		5x16/63A
Protection class, control cabinet		IP55
Protection class, remaining components		IP54

MISCELLANEOUS

Width	mm	1,750
Depth	mm	800
Height	mm	1,200
Total weight (without additives)	kg	900
Sound level, max.	dB(A)	≤78
Coating	Housing RAL 7031 blue-grey / electrics RAL 7035 light grey	

*) On request, can vary depending on version

**) Corresponds to minimum values, local requirements and regulations are to be taken into account!

Technical changes reserved



A Member of
Dr. Aichhorn Group

BFT GMBH

Industriepark 24, A-8682 Hönigsberg

T. +43 3862 303 303 | F. +43 3862 303 304

E. info@bft-pumps.com

WWW.BFT-PUMPS.COM

BFT GMBH IS
A MEMBER OF:

