SERVOTRON®

We are waterjet

THE HIGH-PRESSURE PUMP WITH PATENTED SERVO DRIVE
Pure performance, less effort: The drive systems of the future

PATENTED · EXCLUSIVE FROM BFT ·

GREEN EFFICIENCY · GREEN EFFICIENCY ·

BFT
A Member of
Dr. Aichhorn Group

WWW.BFT-PUMPS.COM

Cut more energy efficiently than ever before.

Your advantages

1 **DRIVE VIA FREQUENCY-CONTROLLED SERVO DRIVE**
Impressive acceleration to 2,700 rpm in only 60 ms

2 **SIMPLE OPERATION**
Colour touch display, available with several languages and comprehensive information output

3 **UP TO 25 % ENERGY SAVINGS**
Reduced current consumption at start-up current

4 **STEPLESS OPERATING PRESSURE CONTROL FROM 100 TO 4,000 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 100 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 OVERSHOOTING 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

8 **LOGBOOK INTEGRATED INTO THE CONTROL**
Simplified handling, output of operating data via USB connection

9 **CLIENT CONNECTION VIA NETWORK CABLE**
Transfer of the pump control into the control of the cutting system

10 **DUE TO THE SERVO DRIVE, NO POWER CONSUMPTION WHEN THE NOZZLE IS CLOSED**
Reduced power consumption and higher energy efficiency

11 **PERFORMANCE LEVEL c**
PL=d available as option

12 **INCLUDED:**
- 2.49 l accumulator
- Ceramic plunger
- Temperature sensors at the
- non-return valves
- Assembly tool
- Spare parts package
- Frequency converter

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SERVOTRON®

PATENTED TECHNOLOGY FOR MAXIMUM ENERGY EFFICIENCY

The SERVOTRON® and SERVOTRON® series operate in the power classes 37 kW or 45 kW with 3.8 or 4.6 l/min conveying capacity at 4,000 bar operating pressure. The patented combination of servo motor and intensifier ensures energy savings of up to 25%.

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

SERVOTRON®
A new dimension in energy efficiency for your waterjet applications!

THE PATENTED SERVOTRON® SERIES HIGH-PRESSURE PUMPS ARE DISTINGUISHED BY THE FOLLOWING FEATURES:

THE BASIS
With the patented SERVOTRON®, BFT can offer a new level of high-pressure pumps. The unique combination of intensifier in conjunction with a servo drive implements unprecedented energy efficiency as well as reliability. This system makes SERVOTRON® one of the most environmentally friendly high-pressure pumps for waterjet cutting.

REGULATION DYNAMICS AND ENERGY EFFICIENCY
With the SERVOTRON® high-pressure pump, an internal gear pump is coupled with a highly dynamic, frequency-controlled servo drive: In approximately 60 milliseconds, the motor is accelerated from zero to up to 2,700 rpm. This drive concept has a decisive advantage, i.e. improved energy efficiency! In comparison with asynchronous motors, the efficiency of this new drive concept with a frequency-controlled servo drive is approximately 15% higher.

THE INTENSIFIER – THE CORE PART
The distinguishing features of the intensifier are the long service lives of the patented high-pressure seals and the non-return valves. The special design of the external non-return valves ensures that the intensifier is very easy to maintain. Wear parts like high-pressure seals and non-return valves can be replaced individually. A complete disassembly of the intensifier is not necessary.

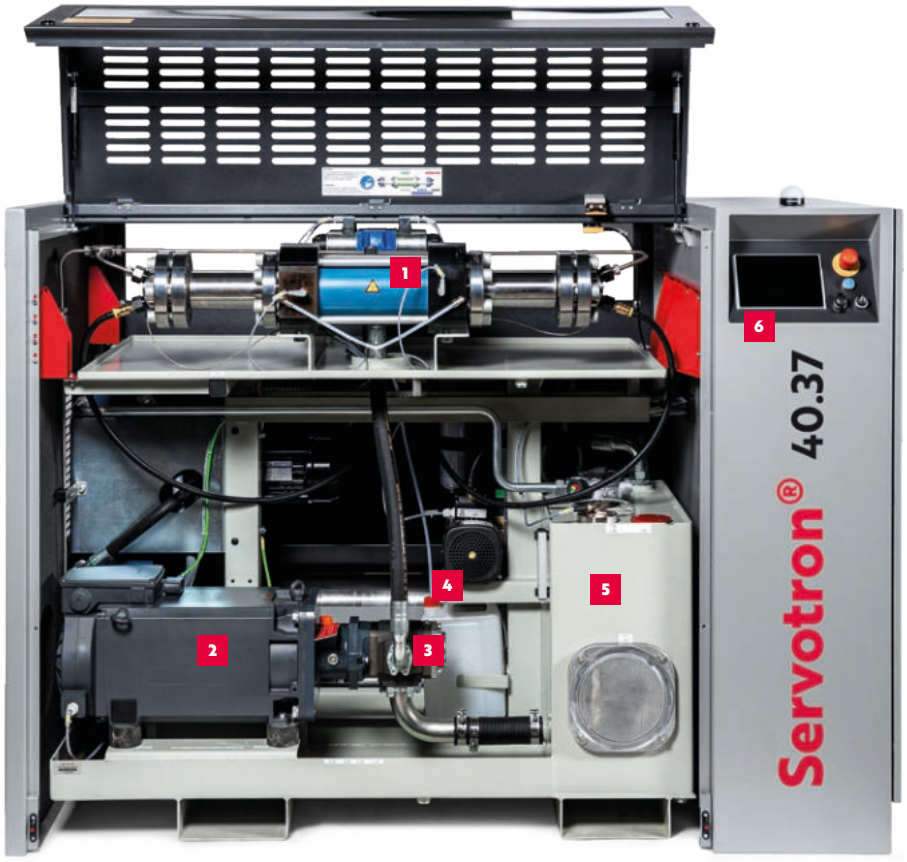
LONG SERVICE LIFE AND HIGH OPERATIONAL RELIABILITY
The new high-pressure pump is equipped with a large accumulator. Thanks to the combination of highly dynamic servo drive and 2.49 l damping volume in the accumulator, the pressure fluctuations in the high-pressure system are only +/- 1% of the maximum operating pressure. This protects the entire pump system, extends the service lives of high-pressure seals and non-return valves and also has a positive effect on the cutting result.

OPTIMAL PRESSURE PROCESS
When switching the cutting valve on and off, there is practically no pressure overshoot. The integral pressure transducer measures the actual operating pressure so that it can be adjusted immediately, if necessary. This means a significant reduction of pressure oscillations within the pump and at the same time a longer service life of all the high-pressure components that are located between high-pressure pump and cutting head.

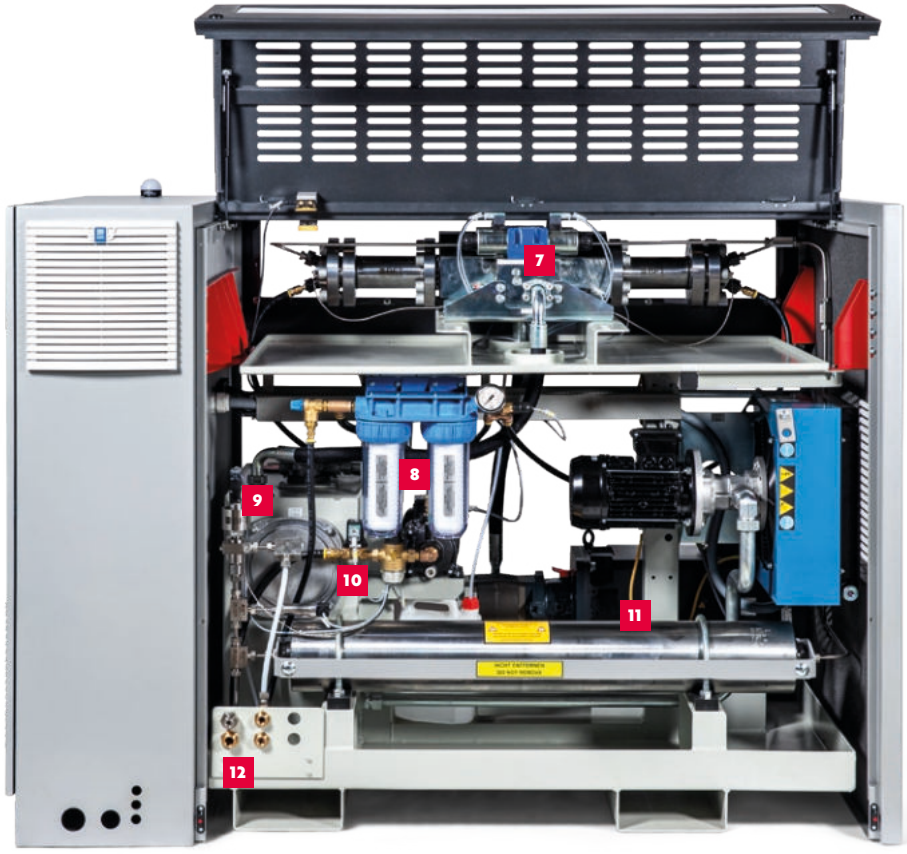
OPERATION VIA TOUCH DISPLAY
The pump is operated via touch display. The SERVOTRON® high-pressure pump has stepless settings from 100 to 4,000 bar. All warning and error messages are displayed in plain text. Operating data of individual components are recorded and evaluated. Using this data and customer-specific settings, the pump automatically reports when wear parts need to be replaced. This function supports the system operator and facilitates maintenance. Operating data and service lives of the individual components are stored and can be read out via a USB interface. In addition, the pump has a diagnostic system.

REMOTELY CONTROLLABLE
The pump display can be mirrored to a PC via a client connection using a network cable. This makes remote control of the pump very easy. Furthermore, an interface is available for external signals such as start/stop, pressure target value, emergency stop, pressure relief as well as error and operating messages. Data can also be exchanged and the pump remotely operated via the UDP communication protocol.

1 INTENSIFIER
2 SERVO MOTOR
3 INTERNAL GEAR PUMP
4 PRE-PRESSURE PUMP
5 OIL TANK
6 TOUCH DISPLAY



7 HYDRAULIC SWITCH BLOCK
8 DOUBLE FILTER UNIT
5 AND 1,2 µM
9 RELIEF VALVE
10 PRESSURE TRANSDUCER
11 ACCUMULATOR
12 CONNECTION STRIP

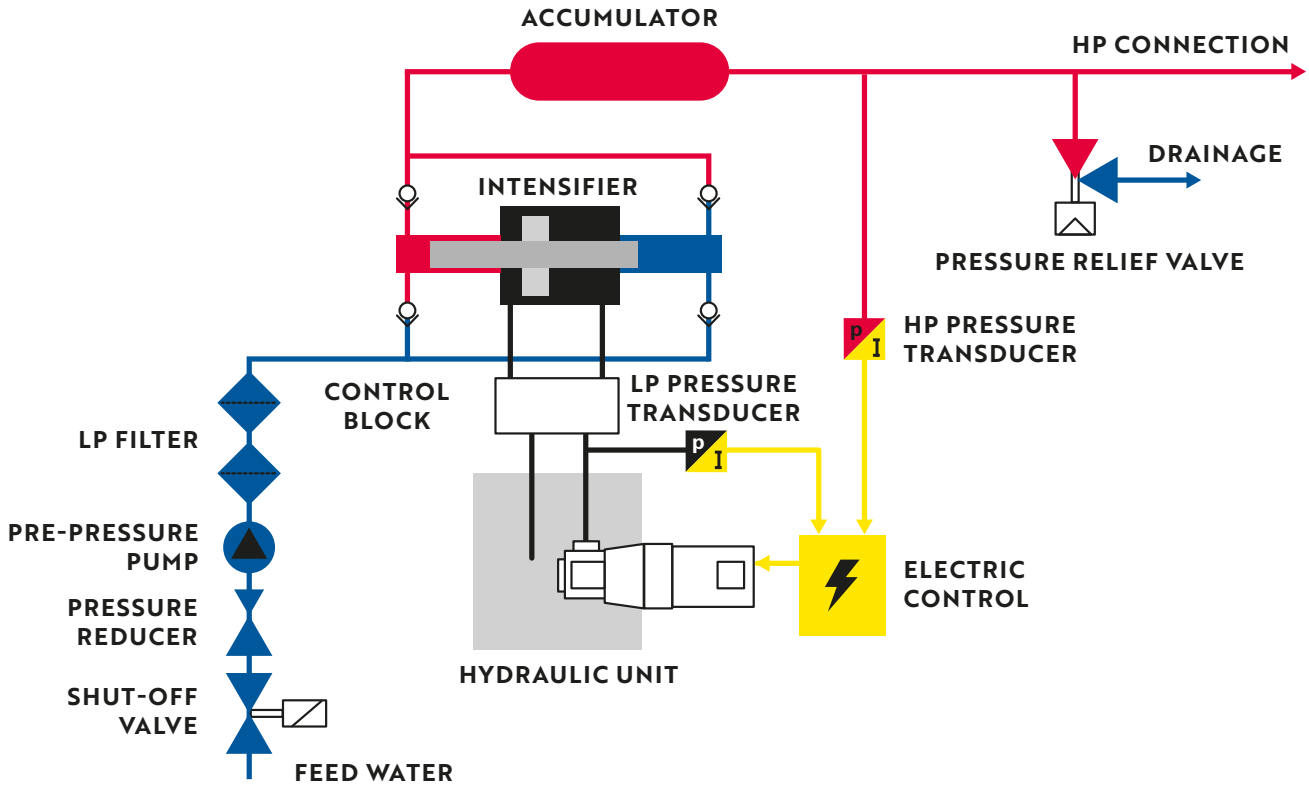


The connection strip of the SERVOTRON® simplifies commissioning (clockwise from top left: high-pressure connection, waste water connection, compressed air connection, feed water inlet).

The pump is operated via touch display.

A spare parts package is also included in the delivery scope of each pump.

SYSTEM DIAGRAM OF THE SERVOTRON® HIGH-PRESSURE PUMP



TECHNICAL DETAILS SERVOTRON®		40.37	40.45+
Driving power, main motor	kW	37.0	45.0
Auxiliary unit, oil/air cooler*)	kW	1.1	1.1
Auxiliary unit, pre-pressure pump*)	kW	0.25	0.25
Max. conveying capacity	l/min	3.8	4.6
Design pressure	bar	4,200	4,200
Permissible operating pressure, max.	bar	4,000	4,000
Double stroke rate, max.	rpm	26	32
Intensification ratio		1:21.78	1:21.78
Accumulator, storage volume	l	2.49	2.49
Oil tank volume	l	95	95
Ambient temperature oil /air cooler	°C	10–35	10–35
Ambient temperature oil/water cooler	°C	10–45	10–45
Water consumption with oil/water cooler, approx.	l/min	9.0	10.0

SUPPLY LINES			
Water inlet		1/2″	1/2″
Water pre-pressure min./max.	bar	1–25	1–25
Waste water connection		3/8″	3/8″
High-pressure connection for HP pipes 3/8″		M20x1.5	M20x1.5
Compressed air, min./max.	bar	5.5–7	5.5–7
Compressed air connection		3/8″	3/8″
Supply voltage	V	400–480	400–480
Frequency	Hz	50–60	50–60
Nominal current, main motor	A	80	100
Wire cross-section / preliminary fuse*), min.	mm^2/A	5x35/80	5x35/100
Protection class, control cabinet		IP55	IP55
Protection class, remaining components		IP54	IP54

DIVERSES			
Width	mm	1,950	1,950
Depth	mm	970	970
Height	mm	1,400	1,400
Total weight (without additives)	kg	1,150	1,160
Sound level, max.	dB(A)	≤73	≤74
Coating	Silver grey / dark grey		

*) On request, can vary depending on manufacturer and pump capacity

**) Corresponds to minimum values, local requirements and regulations must be taken into account.

Technical changes reserved

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BFT GMBH IS A MEMBER OF:

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