BFT

A Member of Dr. Aichhorn Group

Best Fluid Technology

HIGH PRESSURE PUMPS

... for waterjet cutting

ECOTRON®

QUALITY MADE IN AUSTRIA EUROPE

BFT, ONE OF THE WORLD'S LEADING SUPPLIERS OF HIGH PRESSURE PUMP SYSTEMS, PRESENTS:

ECOTRON®. THE HIGH PRESSURE PUMP DESIGN IS OPTIMIZED FOR MANUFACTURER OF WATERJET CUTTING SYSTEMS!

HIGH PRESSURE PUMPS SERIES ECOTRON® ARE CHARACTERIZED BY THE FOLLOWING FEATURES:

BASIC EQUIPMENT
The basic design of this high pressure pump includes a complete hydraulic drive unit with oil/air or water cooler, high pressure intensifier, accumulator and bleed down valve. The operating pressure is controlled by proportional valve and continuously adjustable via the touch panel between 50 and 400 MPa. All hydraulic and high pressure components are mounted on a base frame and covered by a sound insulated housing. The electric control is installed inside a switch box attached to the basic frame of the pump.

OPTIMIZED HYDRAULIC SYSTEM
The hydraulic unit is characterized by highly dynamic controls. Use of a soft-switching hydraulic valve with specially designed control geometry guarantees extremely short switch-over times. Oil filtering and cooling take place via the axial piston pump of the hydraulic drive. The excellent oil quality this achieves has a positive influence on operational safety and the life expectancy of the whole hydraulic system.

OIL COOLING
Oil/air as well as oil/water cooler are available as standard and installed on the base frame inside the pump housing. If the ambient temperature is lower than 35°C, an air cooler may be used. This eliminates the entire cooling water requirements. For higher temperatures the water cooler is available. Cooling water flow is controlled via thermostat.

FEED WATER SUPPLY
The feed water line is equipped with an on/off valve. If the pump is stopped there is no flow of water. The fitted pre-filtering unit with 5 µm and 1.2 µm filters guarantees optimum feed water supply. If the feed water pressure is lower than 0.3 MPa, an optional booster pump is available to increase the water pressure.

AT THE CORE - THE PRESSURE INTENSIFIER
The high pressure components in the intensifier are characterized by a long life expectancy. Besides the special stainless steels developed specifically for this application, a large plunger diameter and a long stroke both help to achieve this. Thanks to the special flange design and externally accessible check valves, the intensifier is easy to maintain. Wearing parts like seals and check valves can be replaced quickly and easily.

REDUCED PRESSURE FLUCTUATIONS
Depending on the flow rate of the pump, the integrated accumulator has a large volume of up to 2.49 liters. This reduces pressure fluctuations to a minimum and thus prevents wear on the high pressure system.

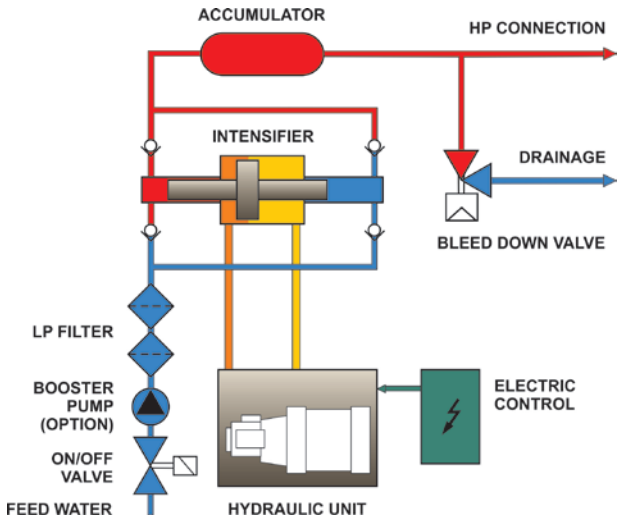
PRESSURE ADJUSTMENT
Electronic pressure adjustment via proportional valve is standard. At the operating panel two different operating pressures (e.g.: piercing and cutting pressure) are adjustable. The switch-over between both pressures is done internally and externally via digital signal. The working pressure is adjustable at the operating panel directly at the pump or via external analog signal from 0 to 10 V.

BLEED DOWN VALVE
This pressure release valve is installed within the high pressure line of the pump. The valve is activated via the stop button or the emergency stop circuit. In addition it can also be controlled externally, e.g. if needed for the piercing process with abrasive waterjet.

ELECTRIC CONTROL
The switch box is directly mounted at the base frame of the pump. Control is done via the integrated touch panel. Operating pressure of all ECOTRON® high pressure pumps is continuously adjustable between 50 and 400 MPa. All warnings and monitoring functions are displayed in clear text. Operating data are recorded and can be retrieved via the display.

REMOTE CONTROL SUPPORT
All important functions can be remotely controlled. External connectors are available for start/stop, emergency stop circuit, bleed down valve, malfunction and operating messages. Operating pressure setting is done via 0 to 10 V signal.

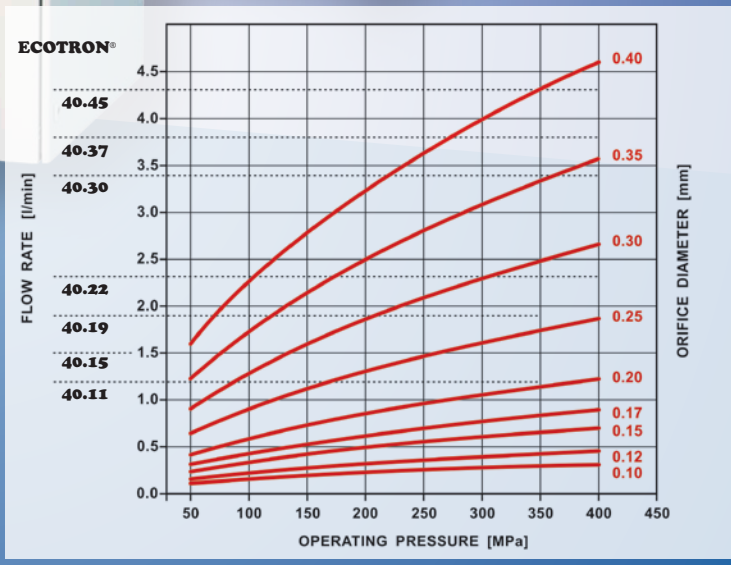
On request, multiple-voltage and multiple-frequency motors are available for ECOTRON® series high pressure pumps.



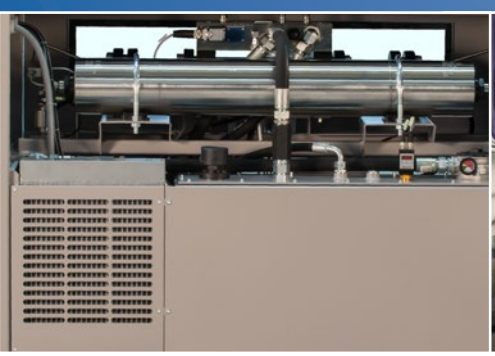
System diagram for high pressure pump ECOTRON®

ECOTRON®

ECOTRON®
HIGH PRESURE PUMPS
are built in compliance with Safety of Machinery Directive 98/37/EG and the Pressure Equipment Directive 97/23/EG. Depending on the typ of used components there is a installation instructions or a declaration of conformity with CE mark included in the documentation.



Correlation between operating pressure, flow rate and orifice diameter.



Large volume accumulator with 1.6 liters and oil/air cooler are standard.

Option: Booster pump with safety valve for constant supply of feed water.

Optimum feed water due to double filter unit with 5 and 1.2 µm.

External control of the bleed down valve for piercing process.

Technical Data	ECOTRON®	40.11	40.15	40.19	40.22	40.30	40.37	40.45
Power supply, main motor	kW	11.0	15.0	18.5	22.0	30.0	37.0	45.0
Auxiliary unit, oil/air cooler	kW	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Auxiliary unit, booster pump	kW	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Flow rate, max.	l/min	1.2	1.5	1.9	2.3	3.1	3.8	4.3
Design pressure	MPa	420	420	420	420	420	420	420
Permissible operating pressure, max.	MPa	350	350	400	400	400	400	400
Double strokes, max.	min^{-1}	20	11	17	30	35	38	40
Intensification ratio		1:21.78	1:21.78	1:21.78	1:21.78	1:21.78	1:21.78	1:21.78
Accumulator, volume	l	0.88	0.88	1.6	1.6	1.6	1.6	1.6
Oil tank volume	l	130	130	130	130	130	130	130
Ambient temperature with oil/air cooler	°C	10-35	10-35	10-35	10-35	10-35	10-35	10-35
Air flow with oil/air cooler	kg/s	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Amient temperature with oil/water cooler	°C	10-45	10-45	10-45	10-45	10-45	10-45	10-45
Water consumption with oil/water cooler, ca.	l/min	2	3	5	6	8	10	12
Supply Lines								
Water inlet		1/2“	1/2“	1/2“	1/2“	1/2“	1/2“	1/2“
Water pre-pressure with bosster pump, min./max.	MPa	0.1-2.5	0.1-2.5	0.1-2.5	0.1-2.5	0.1-2.5	0.1-2.5	0.1-0.3
Drainage connection		3/8“	3/8“	3/8“	3/8“	3/8“	3/8“	3/8“
High pressure connection for HP tubes 3/8“ and 9/16“		M20x1.5	M20x1.5	M20x1.5	M20x1.5	M30x2	M30x2	M30x2
Pneumatic pressure, min./max.	MPa	0.55-0.70	0.55-0.70	0.55-0.70	0.55-0.70	0.55-0.70	0.55-0.70	0.55-0.70
Pneumatic connection for hose (O.D.)	mm	6	6	6	6	6	6	6
Supply voltage	V	400	400	400	400	400	400	400
Frequency	Hz	50	50	50	50	50	50	50
Current back-up fuse (400V/50 Hz)	A	32	32	63	63	63	80	100
Protection type, control box		IP55	IP55	IP55	IP55	IP55	IP55	IP55
Protection type, all other components		IP54	IP54	IP54	IP54	IP54	IP54	IP54
Miscellaneaous								
Width	mm	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Depth	mm	800	800	800	800	800	800	850
Hight	mm	1,150	1,150	1,150	1,150	1,150	1,150	1,150
Total weight (with auxiliaries)	kg	760	775	810	830	900	1,000	1,050
Sound level, max.	dB(A)	≤ 76	≤ 77	≤ 78	≤ 79	≤ 80	≤ 80	≤ 85
Coating		Housing RAL 7036 Platin grey / Electric RAL 7035 light grey						

Subject to technical alterations

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BFT GMBH IS MEMBER OF:

AWT Arbeitskreis Wasserstrahltechnologie

MEMBER WJTA WaterJet Technology Association

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EN ISO 14001
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