

Technical Data		ECOTRON® 30.08	35.11	40.19	40.30	40.37	40.45
Power supply, main motor	kW	7.5	11.0	18.5	30.0	37.0	45.0
Auxiliary unit, oil/air cooler	kW	0.09	0.12	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
Flow rate, max.	l/min	0.8	1.2	1.9	3.4	3.8	4.3
Design pressure	MPa	420	420	420	420	420	420
Permissible operating pressure, max.	MPa	300	350	400	400	400	400
Continuous operating pressure, max.	MPa	300	350	380	380	380	380
Double strokes, max.	min <sup>-1</sup>	20	11	17	30	35	38
Intensification ratio		1:21.56	1:21.78	1:21.78	1:21.78	1:21.78	1:21.78
Accumulator, volume	l	0.88	0.88	2.49	2.49	2.49	2.49
Oil tank volume	l	60	100	130	130	130	130
Ambient temperature with oil/air cooler	°C	10-35	10-35	10-35	10-35	10-35	10-35
Air flow with oil/air cooler	kg/s	0.48	0.48	1.15	1.15	1.48	1.48
Ambient temperature with oil/water cooler	°C	10-45	10-45	10-45	10-45	10-45	10-45
Average water consumption with oil/water cooler	l/min	2	3	5	8	10	12

#### Supply Lines

Water inlet		1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Water pre-pressure without booster pump, min./max.	MPa	0.3-0.7	0.3-0.7	0.3-0.7	0.3-0.7	0.3-0.7	0.3-0.7
Water pre-pressure with booster pump, min./max.	MPa	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3
Drainage connection		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
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
Pneumatic connection for hose (O.D.)	mm	6	6	6	6	6	6
Supply voltage	V	400	400	400	400	400	400
Frequency	Hz	50	50	50	50	50	50
Current consumption at 400V/50 Hz	A	15.2	20.7	35.2	56.3	68.7	81.0
Protection type, control box		IP55	IP55	IP55	IP55	IP55	IP55
Protection type, all other components		IP54	IP54	IP54	IP54	IP54	IP54

#### Miscellaneous

Width	mm	1.190	1.400	1.400	1.400	1.800	1.800
Depth	mm	740	800	800	800	850	850
Height	mm	850	900	900	900	955	955
Total weight (with auxiliaries)	kg	600	650	700	750	950	970
Sound level, max.	dB(A)	≤ 83	≤ 83	≤ 85	≤ 85	≤ 85	≤ 85
Painting	RAL	7038	7038	7038	7038	7038	7038

Subject to technical alterations



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BHDH GmbH is a member of:



Best High Pressure & Drilling Technology

**HIGH PRESSURE PUMPS**



... for waterjet cutting

**ECOTRON®**

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

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

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

## MODULAR DESIGN

The ECOTRON® series in modular design allows the adaption of the high pressure system to the individual needs of the customer. A wide range of options is available.

## BASIC EQUIPMENT

The basic design of this high pressure pump includes hydraulic drive unit with oil/water heat exchanger, high pressure intensifier and accumulator. The operating pressure is continuously adjustable via manual valve between 50 and 400 MPa. All components are mounted on a base frame.

## RELIABILITY AND AND SERVICE-FRIENDLINESS

Standard hydraulic components ensure a high level of safety in operation and user-friendliness. The design of the base frame follows best practices and guarantees easy access to all components.

## OPTIMIZED HYDRAULIC SYSTEM

The hydraulic units used are characterized by highly dynamic controls. Use of a soft-switching hydraulic valve with specially designed control geometry guarantees extremely short switch-over times.

## LONG LIFE EXPECTANCY

Oil filtering and cooling take place in a separate and constant oil circuit, driven by an integrated gear pump. The excellent oil quality this achieves has a positive influence on operational safety and the life expectancy of the whole hydraulic system.

## AT THE CORE: 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.

## REDUCTION OF 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.

## FOLLOWING OPTIONS ARE AVAILABLE:

### PRESSURE ADJUSTMENT

Dual and electronic pressure adjustment is available as option. With the dual pressure system two different operating pressures (e.g. piercing and cutting pressure) are manually adjustable. The switch-over between both pressures is done internally and externally via digital signal. Electronic pressure control is done via proportional valve. With this option the working pressure is adjustable at the operating panel directly at the pump or via external analog signal.

### OIL/AIR COOLER

As alternative to oil/water heat exchanger an oil/air cooler is available.

## FEED WATER SUPPLY

The fitted pre-filtering unit with 5 µm and 1.2 µm filters guarantees optimum feed water supply.

## BOOSTER PUMP

If the feed water pressure is less than 0.3 MPa, an optional booster pump is available to increase the water pressure.

## HIGH PRESSURE 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, if needed for the piercing process with abrasive waterjet.

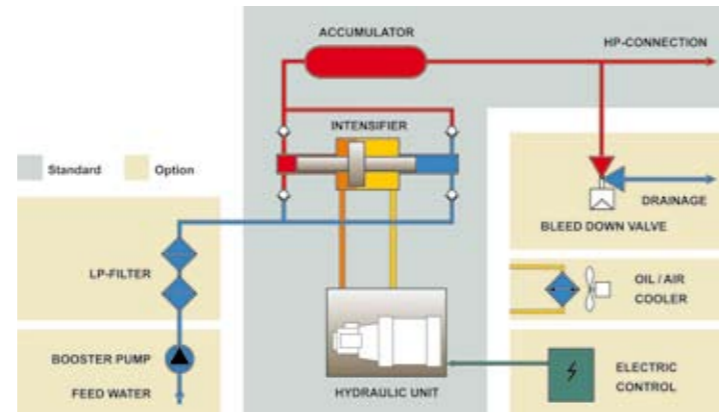
## PUMP CONTROL

Depending on the pressure control system (manual and dual or proportional) two different versions for the electric control of the high pressure pump are available. The switch box is directly mounted at the base frame of the pump. The control is done via the integrated panel. All warnings and monitoring functions are displayed in clear text. Important functions are remotely controllable and the connection to an external control is possible via interface.

## SOUND INSULATION

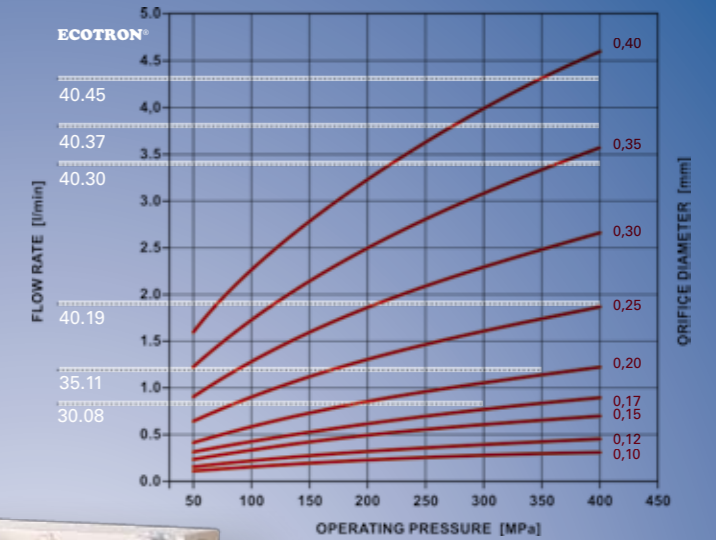
A sound insulated housing is available as option.

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



System diagram for high pressure pump ECOTRON®

# ECOTRON®



Correlation between operating pressure, flow rate and orifice diameter.



## ECOTRON® HIGH PRESSURE PUMPS

are built in compliance with Safety of Machinery Directive 98/37/EG and the Pressure Equipment Directive 97/23/EG. Depending on the type of used components there is a declaration of manufacturer or a declaration of conformity with CE mark included in the documentation.



Also an oil/air cooler is available for the hydraulic drive unit.



Constant water supply with booster pump in feed water line.



Optimum feed water supply with double filter unit.



External control of the bleed down valve for piercing process.