



## HEU 320 - 40E HYDRAULIC EXPANDING UNIT FOR ROCK-BOLTING

### SPECIFICATIONS

WATER PRESSURE bar, max	320	HYDRAULIC PRESSURE bar	170 - 300
WATER SUPPLY PRESSURE bar, max	10	HYDRAULIC FLOW l/min, max	50
WATER TEMPERATURE °C, max	70	CONTROL VOLTAGE	24 VDC
WATER DISCHARGE l/min, max	20	FUSE, recomm. FUSE, max	8 A 10 A
		WEIGHT, kg	36

## INTRODUCTION

## HYDRAULIC EXPANDING UNIT FOR ROCK-BOLTING HEU 320-40E

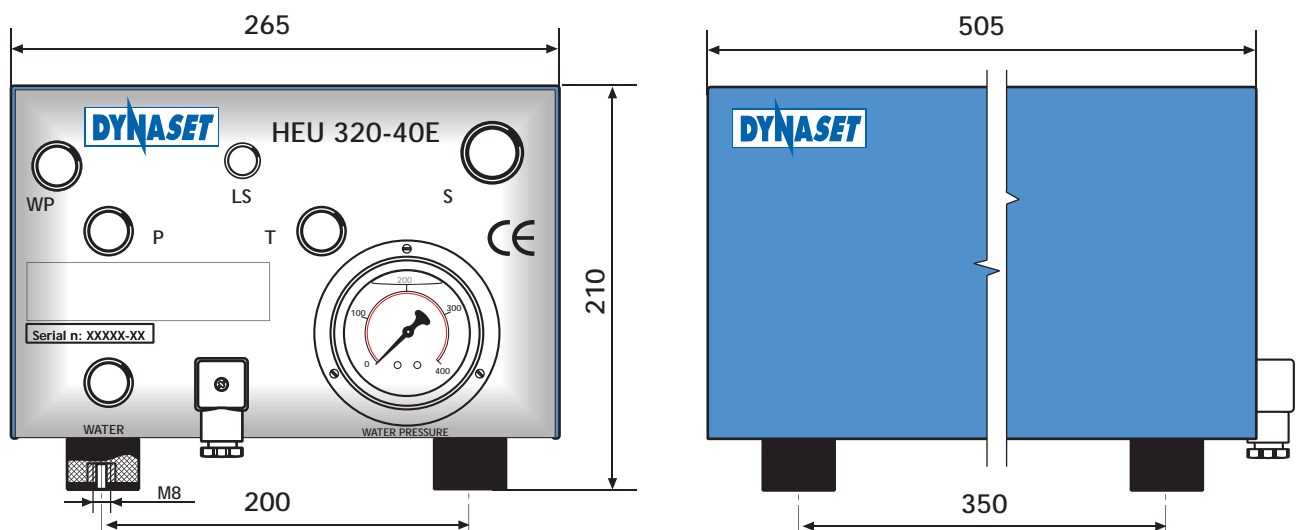
HYDRAULIC HIGH PRESSURE PUMP UNIT HEU 320-40E IS DESIGNED FOR RELIABLE AND CONTROLLED EXPANDING OF ROCK-BOLTS. HEU-PUMP HAS OUTFITTED WITH ELECTRIC LS-FUNCTION ENABLE USE IN ELECTRO-HYDRAULIC PUMP CONTROLS.

HEU-PUMP IS A COMPACT UNIT ASSEMBLED ON A STEEL CHASSIS BEING COMPRISED OF A PRESSURE CONVERTER WITH ALL NECESSARY COMPONENTS AND INSTRUMENTATION.

HEU-PUMP CAN BE INSTALLED TO ANY MINING MACHINE AND OPERATED WHETHER FROM A PLATFORM OR FROM GROUND.

CONNECT AN EXPANDING GUN AND WATER HOSE OF PROPER LENGTH AND PRESSURE CLASS TO HEU-PUMP ASSURES EFFECTIVE CARRYING OUT OF ANY BOLTING PROJECT.

HYDRAULIC CONNECTIONS			WATER CONNECTIONS		
P pressure	T return	LS	WP pressure	S intake	DR drain
1/2"	1/2"	1/4"	3/8"	3/4"	1/2"



DYNASET HEU-pump can be positioned deliberately, keeping in view following preconditions:

1. Easy service access to the unit should be ensured.
2. Pump should be mounted on sufficiently horizontal surface to enable proper working of leakage detecting bores, which are found on the bottom surface of a pressure converter. Leakage detecting bores are made to the zones, which separate oil and water chambers from each other.

If the draining from leakage detectors exceeds rate of 10 drops per minute, pump sealings should be replaced. The drain fluid can be water, hydraulic oil or their solution.

You can choose deliberately how to make pump's installation to your carrier: either fixed or as a quick release unit. In later case HEU-pump is easily detached and re-attached to carrier's hydraulic system with quick couplings, when pump can be moved from one carrier to another when necessary.

### NOTE !

DRAIN LINE OF THE HEU-PUMP IS PRESSURISED WHEN THE UNIT IS IN OPERATION! THEREFORE IT IS NECESSARY TO SECURE THE LINE WITH APPROPRIATE FITTING AND HOSE POINTING THE DRAIN BURST UNDER THE MACHINE OR OTHER SAFE DIRECTION.

OPERATION

HYDRAULIC EXPANDING UNIT FOR ROCK-BOLTING  
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BY PULLING EXPANDING GUN'S TRIGGER AN OPERATOR ACTIVATES THE HEU-UNIT

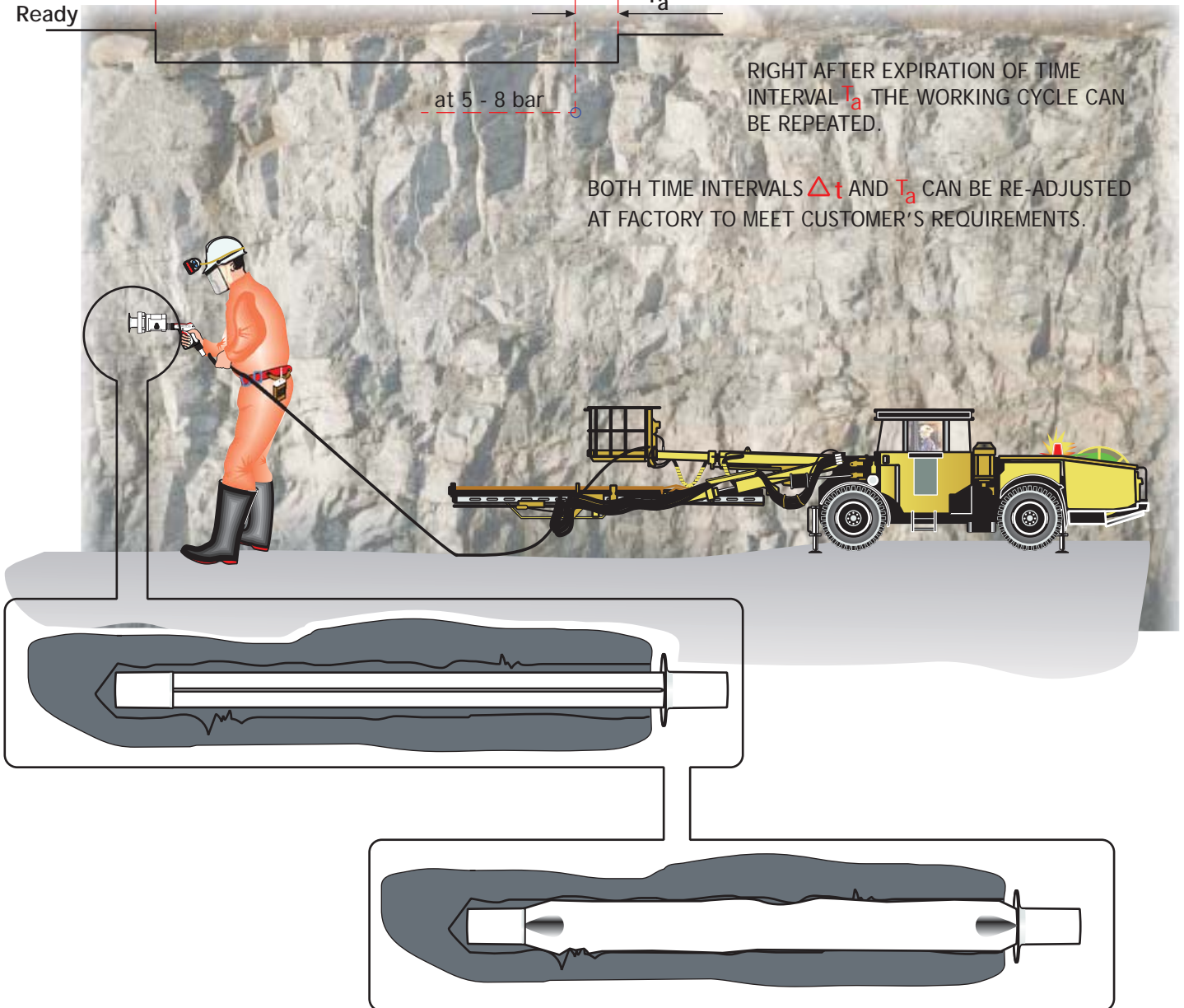
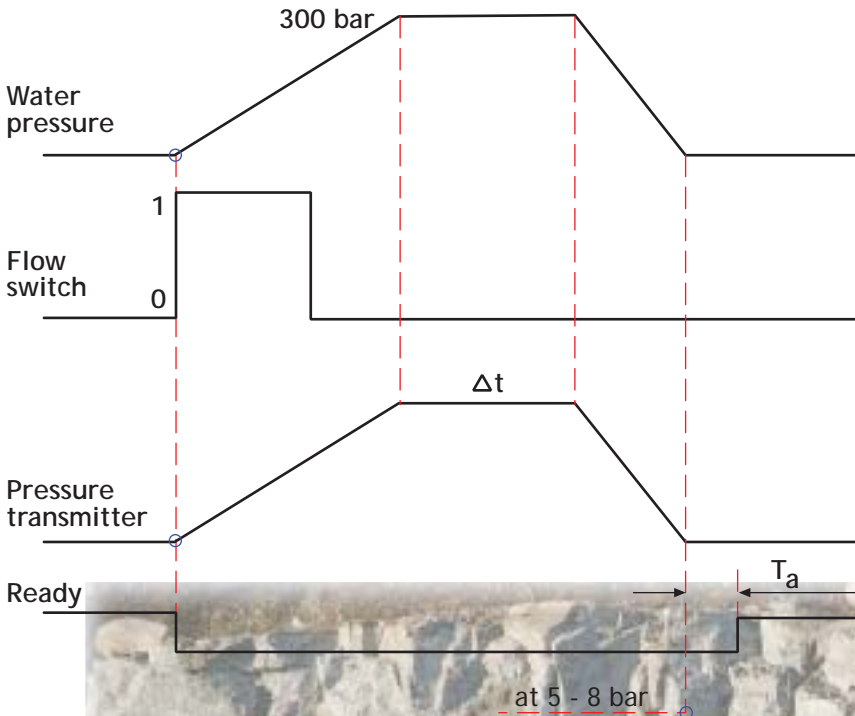
WATER PRESSURE STARTS TO INCREASE WHEN THE ROCK-BOLT IS GOING TO BE EXPANDED WITH HEU-UNIT PUMPED WATER.

FLOW SWITCH, HAVING RECOGNIZED THE PRESSURE GAIN, GIVES A PULSE ALLOWING THE PRESSURE INCREASING CLOSE TO THE MAXIMUM.

PRESSURE TRANSMITTER HOLDS THE MAXIMUM PRESSURE FOR THE PRE-ADJUSTED TIME INTERVAL ENSURING THE SECURE ANCHORING BY THE BEST FIT OF THE EXPANDED ROCK-BOLT TO THE BORE'S IRREGULARITIES

RIGHT AFTER EXPIRATION OF TIME INTERVAL  $T_a$  THE WORKING CYCLE CAN BE REPEATED.

BOTH TIME INTERVALS  $\Delta t$  AND  $T_a$  CAN BE RE-ADJUSTED AT FACTORY TO MEET CUSTOMER'S REQUIREMENTS.



## SAFETY PRECAUTIONS

The pressure in both hydraulic and pumping fluid circuits is considerably high. There at the technical condition of your equipment should be under constant scrutiny. Especially couplings, valves and hoses should be maintained tight and clean as well as kept under constant observation.

Hydraulic leakages must be rectified immediately to avoid injuries caused by pressure and hot oil blowouts.

Follow all your local safety instructions related to the high pressure hydraulics.

Hydraulic system of a carrier machine should be maintained according to the service program.

In order to exclude possible accidents, it is not allowed to clean or inspect HEU-pump when hydraulic or/and pumping fluid circuit is pressurized. Prior to any cleaning, inspection and service hydraulic system of your carrier machine must be stopped and both hydraulic and pumping fluid circuits dissipated.

Always wear appropriate clothing and safety equipment such as goggles, ear protection and safety shoes at all times when operating the HEU-unit.

When operating the tool, beware of machinery parts warmed by hot hydraulic oil.

Do not lift the tool by the water hose.

**NEVER POINT THE EXPANDING GUN AT BYSTANDERS OR ANY INAPPROPRIATE OBJECT!  
EXTERME CLEANLINESS MUST BE MAINTAINED WHEN CARRYING OUT ANY SERVICE DISSASSEMBLING OR REPAIR OF HRN-TOOL AND HYDRAULIC SYSTEM. THIS IS CRUCIAL TO ENSURE SAFE, RELIABLE AND LONG-LIFE OPERATION OF YOUR EQUIPMENT.**

Operators and maintenance personnel must always comply with local safety regulations and precautions in order to close out the possibility of damages and accidents.

All installation and service of both hydraulic and electric equipment must be performed by qualified and experienced personnel only.

## PUMPING FLUIDS

Water based fluids and sea water can be pumped without any special arrangements, however the HRN-tool MUST BE FLUSHED AND CLEANED THOROUGHLY after a working shifts with clean sweet water.

Same rule applies to pumping of gelatin and depositing fluids —after having done your job, flush HRN-tool with clean water or suitable solvent.

Solvents, fuels and oils can be pumped without any special arrangements.

Fluids with abrasives or high content of solids can be pumped as well, but should be kept in mind, that HRN-tool's service life time is considerably shortened.

Furthermore, if pumping solution is aggressive to NBR-rubber, special seals and hoses must be used.

## WARRANTY

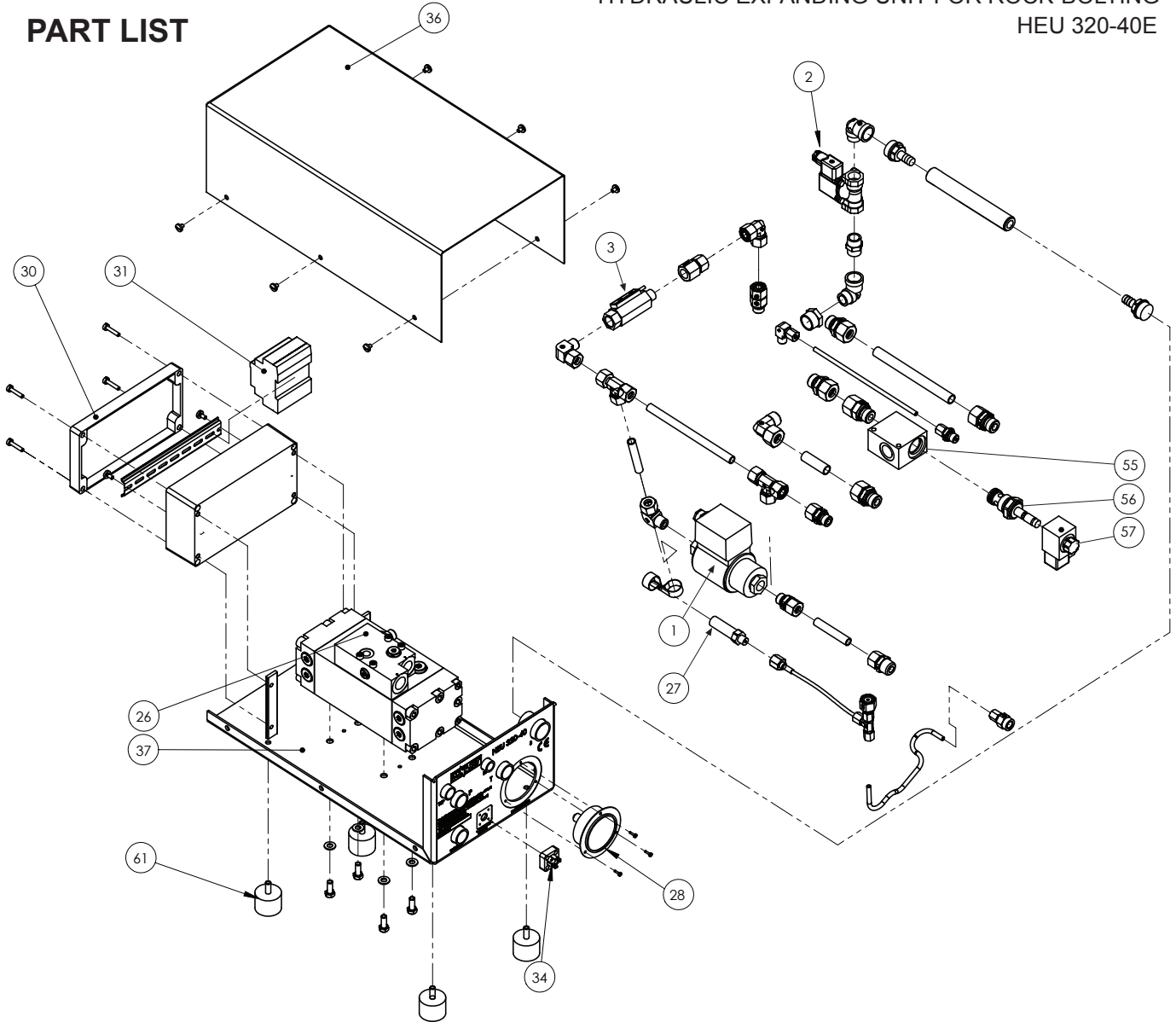
DYNASET products are warranted against defects in materials and workmanship for a period of 12 (twelve) months from the date of purchase. Exceptions are parts subject to normal wear and tear, such as seals and other parts that become worn through normal use of the unit.

Warranty covers detective parts solely. Expenditure incidental to shipping and replacement are not covered by present warranty.

The warranty is void if product has been modified, provided with parts other than original or misused.

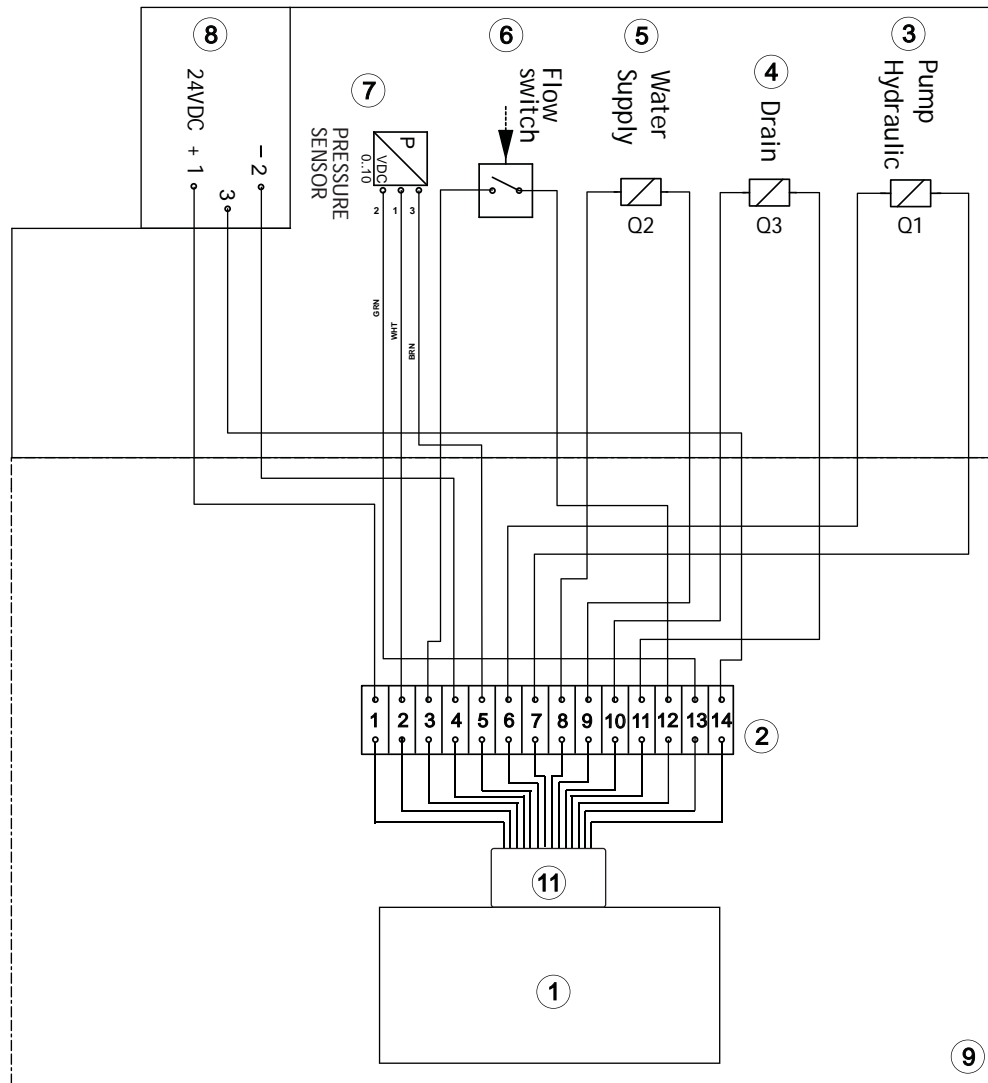
## HYDRAULIC EXPANDING UNIT FOR ROCK-BOLTING HEU 320-40E

### PART LIST



No	PART NUMBER	DESIGNATION	DETAILS	QUANTITY
	<b>9010141</b>	<b>HYDRAULIC EXPANDING UNIT</b>	<b>HEU 320-40E</b>	
1	6306788600	WATER SOLENOID VALVE	10 lpm/400bar/24VDC	1
2	6306780000	WATER SOLENOID VALVE	40 lpm/16 bar/24VDC	1
3	6306706000	FLOW SWITCH	450 bar R 3/8	1
26	04421790	PRESSURE CONVERTER	HPW420/20-50-AIS-VR-PA	1
27	4405530000	PRESSURE TRANSMITTER	400 bar/0-10 VDC R1/4	1
28	1501319000	PRESSURE GAUGE	D63 400 bar	1
30	4405255300	ENCLOSURE	120x220x80 Al IP54	1
31	4405168500	CONTROL UNIT	8/4 12/24 VDC	1
32	6306742000	INTAKE FILTER	80 mesh 50 lpm R3/4	1
34	4805963000	CONTROL CABLE CONNECTOR, BASE CONTROL CABLE CONNECTOR, PLUG	4-pole 4-pole	1 1
36	0409010174	COVER	HEU320	1
37	0409010163	CHASSIS	HEU320	1
55	13005720	HYDRAULIC VALVE		1
56	13005610	VALVE BODY		1
57	1300593000	VALVE CARTRIDGE COIL	24 VDC-20W	1 1
61	V100100000	RUBBER FEET KIT		1

## ELECTRIC DIAGRAM

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No	PART NUMBER	DESIGNATION	DETAILS	QUANTITY
1	4405168500	CONTROLLER	8/4 12/24 VDC	1
2	4806021000	TERMINAL BLOCK	L	13
3	1300593000	COIL	35x45/d13-L36-24V-20W	1
4	6306788600	WATER SOLENOID VALVE	SW2/2NC-10lpm/400bar-24VDC	1
5	6306780000	WATER SOLENOID VALVE	SW2/2NC-40lpm/16bar-24VDC	1
6	6306706000	FLOW SWITCH	450bar R3/8	1
7	4405530000	PRESSURE TRANSMITTER	0...400bar 0...10V R1/4 u	1
8	4805963000	HIRSCMAN CONNECTOR	4-POLE	1
9	4405255300	ENCLOSURE	120x220x80 AL IP54	1
	4605642000	DIODE	PCB 1A800V	4
11		CABLE		1