

**E+M**

## **UNIVERSAL DRILLING RIG UH3**

Fully hydraulic universal drilling rigs  
for all drilling methods



Hook load            **320 kN**  
Torque                **21.000 Nm**

**E+M DRILLING TECHNOLOGIES GMBH**

**Tradition - Quality - Innovation - Partnership- Worldwide**



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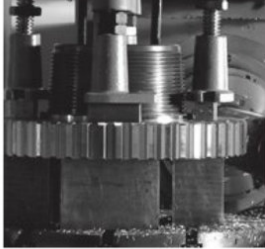


## **E+M - THE COMPANY WITH TRADITION. HIGHEST REQUIREMENTS FOR TOP QUALITY.**

Our company, founded in 1919, has developed the drilling equipment on its own from the beginning. For many decades, all new and practical experience gained is integrated in the design and production of our drilling technology.

A great number of companies benefit from this, among which also international drilling companies, which use E+M systems and equipment for executing their drilling orders.





## CLEAR AND TIDY. FULL CONTROL FOR A PRECISE WAY OF WORKING.

The E+M control panel:

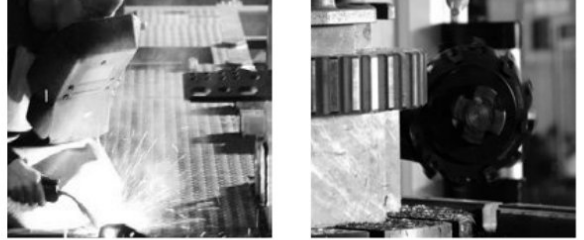
Basic settings, auxiliary controls, system monitoring are provided on the left.

For control and check at the drilling location, control elements and displays are provided at the right third. Thus the machine operator has the machine and the drilling firmly in view and under control.

The homologue arrangement of all operating and control elements characterises all E+M type series.

Additional devices like generators or compressors, which are installed on the machine, can be controlled by means of the control panel as well. Hydraulic measurement connections allow for the constant monitoring of drilling data.





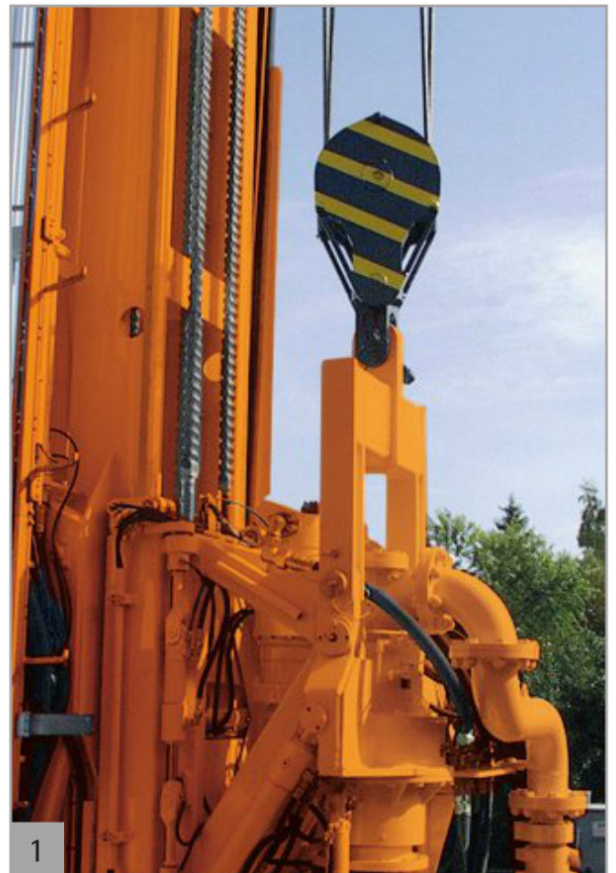
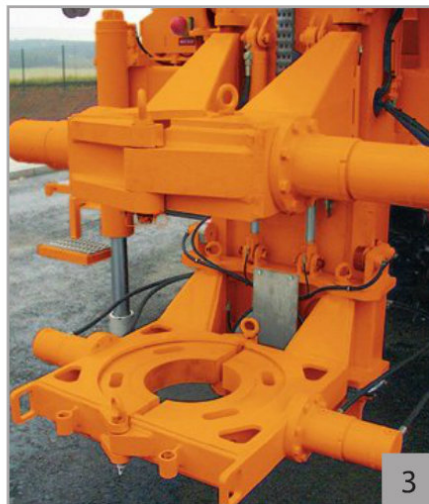
## DRILLING AT E+M. MANY-SIDED. EXACT CONTROL OF THE FEED OFF. APPLY MAXIMUM TRACTION FORCES.

Speeds and torques can be adjusted hydraulically. Down-stream gears permit to adjust the range between min. and max.

Top drive and drilling line winch determine the many-sided application options of the E+M universal drilling systems.

A clear passage in the top drive of up to 123 mm permits drilling for direct and individual flush drilling.

- 1) Drilling by main winch:  
Pulley and cross bar connects the top drive to the main winch.
- 2) Gate change gear at the hydraulically actuated top drive for max. speeds or max. torques.
- 3) Hydraulic grippers with high locking forces hold the rods piping.



Revolutions per minute	max. 320 min <sup>-1</sup>
Torque	max. 21.000 Nm
Stroke	7.600 mm



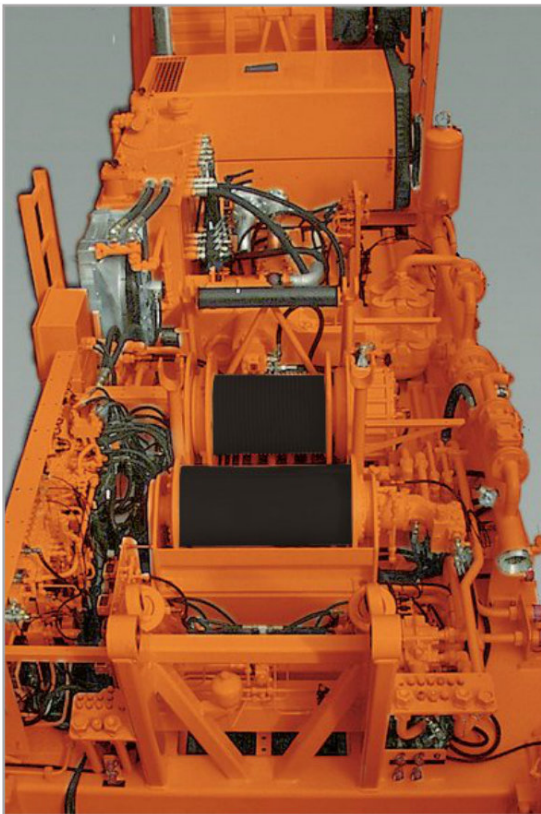


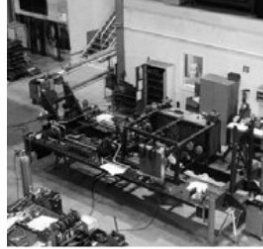
## THE E+M DRILLING PACKAGE: COMPACT. ALL YOU NEED IS PROVIDED ON THE FRAME OF THE DRILLING UNIT.

Energy and signal cable are base on thorough manual work in the available intermediate spaces. Decades of experience support solid and stable design for the tough application in drilling operation.

Drilling works make very different requirements. A universal drilling system, properly equipped and according to customer request, permits to archieve a great number of drilling orders. This assures efficiency.

- 1) E+M distribution pipe system with connection options for water and compressed air.
- 2) From the tarpaulin covered control platform, also with diesel air heating, the machine operator controls and monitors drilling process while being protected against weather.





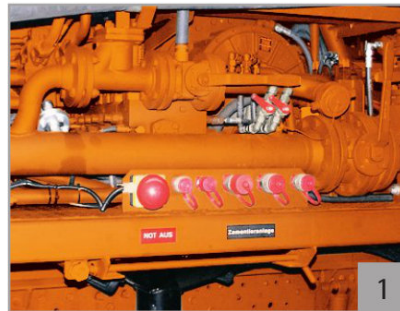
## HYDRAULIC MULTIPLE-CIRCUIT SYSTEMS, ADJUSTED TO THE REQUIRED CAPACITY REQUIREMENTS.

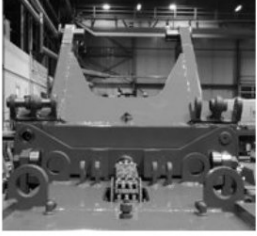
Easy-to-maintain hydraulic multiple-circuit systems assure safety as well as a high endurance during operation and always provide the respectively required capacity in a reliable way and more than sufficient.

At the control panel the machine operator has everything under control - also externally plugged power generators or compressors.

1) Hydraulic connections, external, e.g. for E+M cementation units, or stand-by mud pumps.

2) Capacity-regulated hydraulic pumps supply the energy intensive functions.  
Supply lines made of stainless steel assure a corrosion free oil supply.

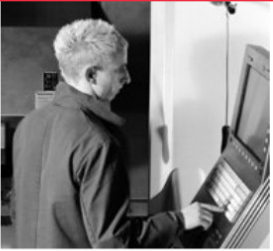




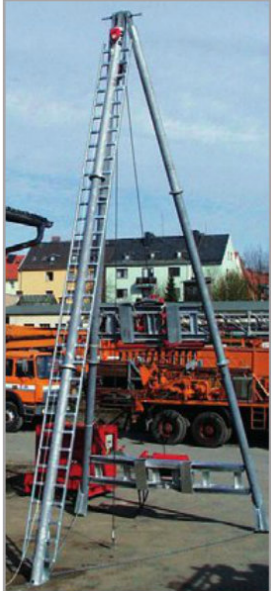
## E+M insight







### Drilling Accessories



Three-legged trestle with striking mechanism and winch for the education of well borers in Rostrup (Bau ABC)



Halogen lights



Heating jacket for piston pump



Discharge hose, freely suspended



Central lubrication unit



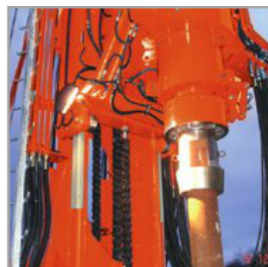
Compressors / Generators



Rod clamp / Casing clamp



Weather-proof housing



Rod bell



Oscillating tubing machine up to Ø 832 mm



Tension meter



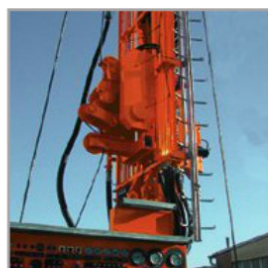
Recording instrument for tension meter



Auxiliary heating



Casing rotator up to Ø 445 mm



Striking mechanism



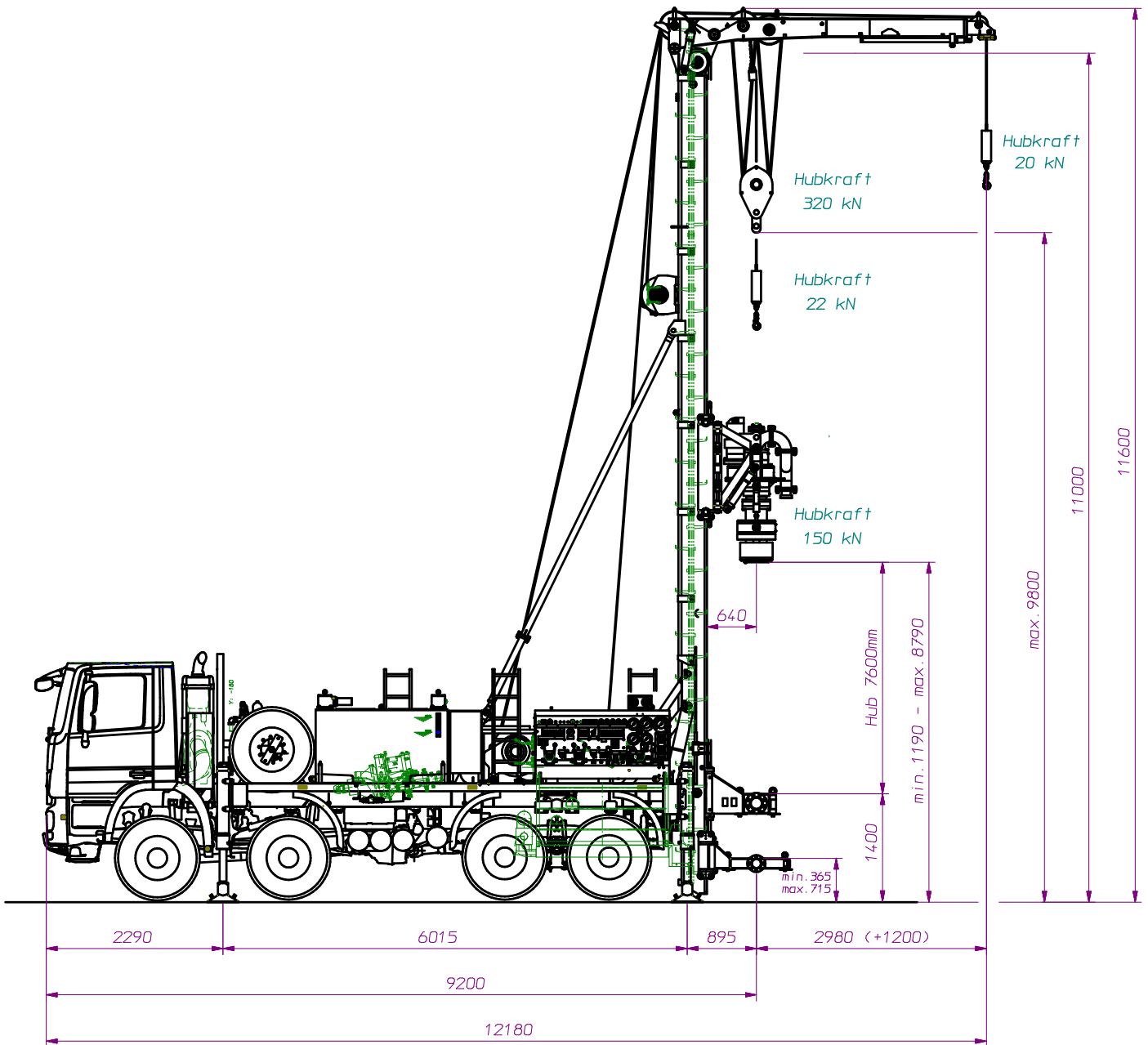
Centrifugal pump



## OVERVIEW - TECHNICAL DATA

Construction series		UH2	UH3	UH4
<b>Derrick with hydraulic feeding unit</b>				
Free mast height max.	[mm]	11.770	11.600	11.900
Top drive stroke max.	[mm]	8.000	7.600	7.600
Pressing force max.	[kN]	50	75	80
Traction force max.	[kN]	110	150	200
Hook load max.	[kN]	240	320	500
Mast extension max.	[mm]	-	3.000	5.000
<b>Auxiliary extension</b>				
Displacement path max.	[mm]	1.200	1.200	1.200
Load max.	[kN]	20	50	40
<b>Top drive / power swivel</b>				
Torque max.	[Nm]	14.200	21.000	30.000 / 51.000
Revolutions per minute max.	[min <sup>-1</sup> ]	300	320	367/140
Clearance max.	[mm]	100	123	140
Tilting / swivelling angle max.	[°]	70	85/102	85/106
Tilting moment max.	[kNm]	36	59	59
<b>Drilling cable winch, hydraulic, traction force max.</b>	[kN]	120	80	125
<b>Wire line winch, hydraulic, traction force max.</b>	[kN]	20	20	20
<b>Auxiliary cable winch, hydraulic, traction force max.</b>	[kN]	25	30	30
<b>Rod screwing device</b>				
Rod bell, mechanical Ø max.	[mm]	200	250	250
Clamp head, hydraulic Ø max.	[mm]	200	200	200
<b>Rod clamp, hydraulic</b>				
Clearance, opened / closed Ø max.	[mm]	700-300	1.150-300	1.450-330
Collet Ø max.	[mm]	254	273	324
<b>Casing clamp, hydraulic</b>				
Clearance, opened / closed Ø max.	[mm]	possible	1.150-420	-
Collet Ø max.	[mm]	-	419	-
<b>Break tong, hydraulic</b>				
Collet Ø max	[mm]	273	273	273
Breaking force max.	[Nm]	34.000	34.000	34.000
<b>Rotary casing rotator,-machine, hydraulic</b>				
		possible	possible/possible	possible/possible
<b>Striking mechanism, hydraulic, load / number of impacts</b>	[kN/i]	6/40	-	-
<b>Mud pumps, delivery rate / pressure max.</b>	[L/min] / [bar]	450/40	750/20	750/20
<b>Compressors / generators</b>		possible/possible	possible/possible	possible/possible
<b>Carrier vehicle / Chassis</b>		The types 6x4 or 8x8 are possible.		

All values are maximum values. These and the equipment elements are options. They also can exclude each other.



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