

L# 781

P06-1

second hand  
Hydraulic-Blast-Hole-Drill

Pφ6-1  
IN DE



# HBM 60

for vertical & vertical inclined & horizontal



## 1. General Specification

The HBM 60 is universal heavy duty hydraulic drilling machine in a compact design , with all necessary elements for drilling blast holes in vertical, vertical inclined and horizontal directions – infinitely variable between 0-30° & 0° and 135° with DTH Hammer and alternative with triconeroller- or stage bits in soft rock formations.

The machine offers a pull down & pull back of max. 60 kN. The force is variable adjustable according the requirement of the tools.

For the pull down adjustment for DTH drilling the machine offers a reduction and control system. The force is variable adjustable according the requirement of the hammer. Changing the drilling technology is quite easy and takes only a few minutes.

The complete work process is controlled and supervised by one operator from a safe and comfortable cabin.

The machine is designed for blast hole drilling (presplitting and production) in quarries and open pits. The HBM 60 meets all relevant statutory standards: CE, national and international safety rules, environmental protection and health protection of the operator.

Driven by a strong Diesel-engine this self propelled machine travels swiftly and safely over even the most difficult terrain.

The unique design of the machine allows travelling along the bench from hole to hole without any losses of time.

The well proven modular design of the machine, comprising chassis, superstructure, drill unit, pipe magazine, support frame, drive-unit, compressor-unit, hydraulic-unit, cabin, dust collector, etc. is highly functional and simply to service.

## 2. Detailed Specification

### 2.1. description

year of manufacture  
running hours total  
condition

1998  
apr. 7.500  
used / ready for operation.

### 2.2. drilling parameters

drilling method  
max. depth  
drilling angle

dth or rotary  
36 m  
infinitely adjustable  
vertical 60 – 90°  
horizontal 0 – 135° (+45° - 0° – 90°)

drill diameter range  
drill pipe diameter  
pipe handling system

90 mm – 127 mm  
76 mm  
for handling of 8+1 pipes – 4.000 mm long

### 2.3. dimensions (approx.)

transport  
length  
width  
height

9.200 mm  
3.300 mm  
3.600 mm

### 2.4. total weight

c. 16.500 kg

## 2.5. feed mast

### 2.5.1. system

construction	square steel hollow profile
effective length	4 m
down thrust (bit load)	0 – 60 kN (infinitely adjustable)
withdrawal force (hoist)	0 – 60 kN (infinitely adjustable)
feed rate	0 – 40 m/min. (infinitely adjustable)
hoist rate	0 – 40 m/min. (infinitely adjustable)
feed-system	roller chain - driven by hydraulic-constant-motor with gearbox & brake
feed control	joystick control
mast longitudinal adjustment	1.000 mm
axial mast-movement	by hydraulic-constant-motor with gearbox & brake
radial mast-movement	by hydraulic-cylinders

### 2.5.2. mast inclination adjustment

swivel range	vertical 60 – 90°
drilling range	horizontal 0 – 135° (+45° - 0° - 90°)

### 2.5.3. drill head

torque	max. 4.920 Nm (adjustable)
rotation	0 – 105 rpm.
flushing head	External
bullshaft adapter	with API REGULAR thread
cooling & greasing	permanent lubrication & cooling system for gearbox with filter unit

### 2.5.4. pipe handling system

magazin	
pipe magazine	revolver type
no. of rods	8 (+ 1)
diameter of pipe	76 mm
length of pipe	4000 mm

### 2.5.5. pipe braking device

clamp device	2 hydraulic cylinders
uncoupling device	2 hydraulic cylinders for clamping
	1 cylinder for turning

## 2.6. diesel engine

manufacturer	SCANIA
type	DS 9-90A
power at sea level	186 kW
power-rating	B-rating
rpm.	2.000 rpm.
fuel reservoir	1.000 l
electrical system	24 V DC

## 2.7. air compressor

manufacturer	Compare Demag
type	1-stage oil flooded rotary screw compressor
working pressure max.	13,5 bar - adjustable
capacity	12,5 m <sup>3</sup> /min.

## 2.8. undercarriage

### 2.8.1. crawler

type	heavy duty
size	B 4 - excavator
track length	2800 mm
track to track inside	1700 mm
track to track outside	2500 mm
track pad width	400 mm
track pad type	triple grouser
no. of track pads	44 pcs.
no. of track rollers	7+1 pcs.
no. of track guides	2 pcs.
propel system	hydrostatic planetary drive with spring set, hydraulic release brake, mounted in closed protection housing
towing force	2 x 150 kN
propel speed	0-3,0 km/h
gradeability	30 %
take up adjustment	high pressure grease gun for tensioning cylinder

### 2.8.2. leveling jacks

no. of cylinders	4
size of cylinders	100 mm tube diameter 85 mm rod diameter
stroke of cylinders	900 mm
jack pad diameter	400 mm / flexible mounted

## 2.9. hydraulic system

system	electro-hydraulic
reservoir	c. 350 l
hydraulic lines	hoses & high pressure steel tubes
pump drive	by direct to diesel engine mounted splitter box
2.9.1. main system	for feed, hoist, drill head and tramping
type	closed loop design
pumps	variable displacement piston
brand	Sauer-Danfoss
no.	2
2.9.2. auxiliary system	for oil coolers, cylinders, dust collector etc.
type	open loop design
pumps	gear pump design
brand	Sauer-Danfoss
no.	1 multistage pump
2.9.3. control valves	manifold mounted electro-hydraulic 24 V solenoid valves
brand	Bosch Rexroth etc.
2.10. electric system	
2.10.1. system	relay system
location	central mounted inside the cab, in one cabinet – protected against environmental influences
voltage	24 V + 12 V for Radio etc.
accumulators	2 units
2.10.2. lightning system	1 unit light in Cab 1 unit light inside engine compartment 4 units floodlights for work and area lightning
2.10.3. safety precautions	
emergency stop system	1 unit inside the cab (engine cut off) 1 unit outside the cab (engine cut off)
reverse moving	1 unit rope cut off at the mast (feed / hoist & drill head cut off) warning by flashlight and sound

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## 2.11. enclosures

The machine is secured by rigid enclosures for the complete engine- & compressor compartment. Additional all important elements (reservoirs, cab, tool-box) have lock-up devices for protection against unauthorized access.

## 2.12. dust collector

system overview

The dust-collector uses a special technology for filtering the air. Instead of conventional paper-filters, which must be often changed, this type uses special filter pads, which are made from synthetic sintered material. Each element can be replaced separately. The material is very robust and resistant against water and humidity.

The collector has an automatic-self-cleaning-device for removing the dust parts from the pads when the machine is not drilling. A special integrated pre-separator separates the bigger rock-parts so that just the dust reaches the filter pads. By this technology a mechanical abrasive effect of the pads is very low.

The filter pads can be cleaned manual by using water and compressed air.

Long working periods are possible with one set of filter pads.

hydraulic motor

electro & pneumatic

30 m<sup>3</sup>/min.

< 20 mg/m<sup>3</sup>

fan drive

control system

suction capacity

content of solids in exhaust air

## 2.13. operator's cab

### 2.13.1. general

The machine is equipped with a sound-, temperature- and dust insulated safety cabin with FOPS protection, which has been designed with ergonomic factors in mind. The cab is mounted with flexible connector to the frame – damping noise and vibration. The operator can monitor and control the entire drilling procedure from a comfortable position. Extensive safety glazing enables an unlimited view of the entire working environment. The rotation and height-adjustable (to operator weight and size), ergonomically designed driver seat is air suspended and equipped with folding armrests. The operating levers for the drilling and tramming operations are integrated in the armrests. Air condition and heating system as well as additional storage areas guarantee best working conditions.

< 80 dBA

pressurisation system & inlet air filter

tinted safety glasses (roof with guard)

for roof, site and front glass

lock up device for open cab door

CD-Radio

12 V socket

lockable door

sound level

dust insulation

glazing

washer & wiper

others

### 2.13.2. monitoring instruments

diesel engine

rpm.

temperature

oil pressure

working hours

working pressure

compressor

temperature

filter pollution

pressure gauges for all important hydraulic pressures

hydraulic

filter pollution

drill head

position control lights

machine level

optical angle indicator for machine level

## 2.14. DTH airline lubricator

general

the reservoir is working pressure less, avoiding the recurring security checks

reservoir

8,5 l

2.15. drill rods - used

diameter	76 mm
length	4.000 mm
wallthickness	8,8 mm
units	8

Pictures:





