

M1, M2, AND M3 HYDROHAMMERS

Description

Hydrohammers are designed for use in building and mining industries, as well as in municipal engineering for breaking hard rocks, brittle materials, reinforced concrete of any strength, pavements, and frozen soil.

Hydrohammers are mounted instead of the dipper on the boom of hydraulic excavators of the second or third size group by means of a special damper; this reduces the dynamic action on the excavator boom to the value equal to that when a dipper is used. Hammer pistons are equipped with hydraulic brake, which protects the carrier vehicle from overloads at idle impacts.

Without yielding to the foreign analogues in performance standards, M1, M2, and M3 hammers are simpler, repair-suitable, more durable and reliable. These advantages are combined with lower price.

Technical specifications

	M1	M2	M3
Blow energy, kJ (kgm)	1 (100)	1-3 (100-300)	3-5 (300-500)
Maximum blow rate, b/min	up to 1000	300	300
Maximum fluid pressure, MPa	12	16	16
Maximum fluid rate, l/min	150	240	330
Recommended carrier vehicle	EO-2621	EO-3323	EO-3323
Overall dimensions, mm			
Length without replaceable tool	1200	1540	1900
Width	400	500	430
Height	490	680	725
Weight without replaceable tool, kg	425	650	750



M1 Hydrohammer



M2 Hydrohammer

Technical appraisal and economic advantages

The use of hydrohammers, for example, allows municipal services to give up completely thawing of frozen soils by burning coal. The hydrohammer easily rips up frozen soil; hence the duration and costs of earthworks in winter are considerably reduced, which is especially important for dealing with breakdowns in the underground pipelines. In addition, the ecological situation gets better.

Application areas

Hydrohammers are generally designed for breaking hard rocks, reinforced concrete, for ripping frozen soils in public services, industrial and civil engineering, construction of roads, airport runways and other constructions. They are also used for destruction of buildings and nonexplosive tunneling in mining.

Development stage

Prototypes of M1 and M3 hammers are produced.

More than 20 M2-hammers have been produced and used for over 10 years in public services of Siberian cities such as Novosibirsk, Tomsk, Kemerovo, Barnaul, Berdsk, and others. Two hammers are used to crush oversized lumps in open pits.

Patent situation

Design of hydrohammers is protected by RF patents.

Commercial Offers

Small-scale production of custom-made hammers.

Organization of joint venture.

Estimated cost

In case of small-lot production: M1: ~200,000 rubles; M2: ~300,000 rubles; M3: ~ 400,000 rubles.

Contacts

Dr.Sc. Igor V. Yakovlev, Deputy Director

Lavrentyev Institute of Hydrodynamics, SB RAS,

15, Prosp. Akademika Lavrentyeva, Novosibirsk, 630090, Russia.

Phone: (383) 333-18-47

Fax: (383) 333-16-12

E-mail: yakovlev@hydro.nc.ru

<http://www.hydro.nsc.ru>