

POST TRENCHING MACHINE  
**GRANCEOLA**



**ILMA**



*Our land is the sea*



# POST TRENCHING MACHINE

Through the execution of several projects, ILMA acquired a considerable experience in the operations of stabilization and protection of underwater pipelines.

It is not possible to use the same equipment for every kind of project; the post trenching machine (PTM) "Granceola" is the result of this considerations; it is suitable for pipelines or for bundles of pipelines from 02 inc. to 56 inc o.d. on its standard geometry.

## OUTLINE SPECIFICATIONS

### Main frame

Length:	8.20 m.
Width max:	5.30 m.
Height max:	6.20 m.
Weight in air:	9.30 tons
Weight in water:	0,49 tons

### Dredging section

N° 2 hydraulic cutters vertically adjustable  
N° 2 slurry pumps  
Delivery: 720 lt/sec. each.

### Umbilical

N° 18 hoses of various diameter  
from 1/2" to 1 1/4"

### POWER PACK

#### no. 2 Diesel engines

Make: Fiat Allis  
Type: 828 SRI 8V  
Power: 450 HP each

#### no. 4 Hydraulic pumps

Make: SAUER  
N° 2 Type: 24 - Power 140 HP each  
N° 2 Type: 23 - Power 110 HP each

#### no. 2 Cutters hydraulic motors

Make: SAUER  
Type: 24  
Power: 140 HP each

#### no. 2 Slurry pumps hydraulic motors

Make: SAUER  
Type: 23  
Power: 110 HP each

#### no. 1 Push-pull hydraulic pump

Make: Buker  
Type: A K 12  
Despl.: 18 lt/min

## MODUS OPERANDI

The standard modus operandi of Post Trenching Machine Granceola is as follows:

Pontoon proceeds towards the works site carrying on board the P.T.M., ancillary equipment, personnel etc. Pontoon is moored as close as possible to the sealine to be trenched.

Divers provide for the installation of marking buoys.

The pontoon crane lower the PTM on the sea bottom and a driver guides operations to position the machine astride the pipe.

Diver check that front trolley, push-pull clamps and stern trolley are properly positioned on the sealine.

Diver orders to close the stern clamp.

Diver orders to start on cutters and pumps.

Diver lowers the cutters down by the hydraulic device positioned on top of buoyancy tank; as soon as the cutters are down, engines are stopped.

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Diver checks that trolleys, cutters, pumps, clamps are properly positioned.  
 Diver is recovered on board.  
 Operators provide to start post trenching operations.  
 When the trenching operations are completed, all apparatuses are stopped.  
 Diver retrieves the cutters and pumps.  
 Clamps are opened.  
 Diver checks that the machine is completely free from pipe.

P.T.M. is recovered on board.

Machine is rigged on its supports.

Generally, when trenching in a river, it is preferable to operate with a stern current both for easier advancement and slurry brought away from trench.

In case of transverse current (with maximum value acceptable of 1,2 knots) the machine will list leeway; to cope with such abnormal situation, which is met only very close to shore and shallow water, the machine is held in upright position by means a rope tight from buoyancy tank to the barge.

The machine weight in water can be instantly read from a digital indicator fitted on the control panel; the values are transmitted to surface, via a high pressure hose, by means of two hydraulic jackets fitted on the front and back trolleys of machine. The values are registered on paper by a printer.

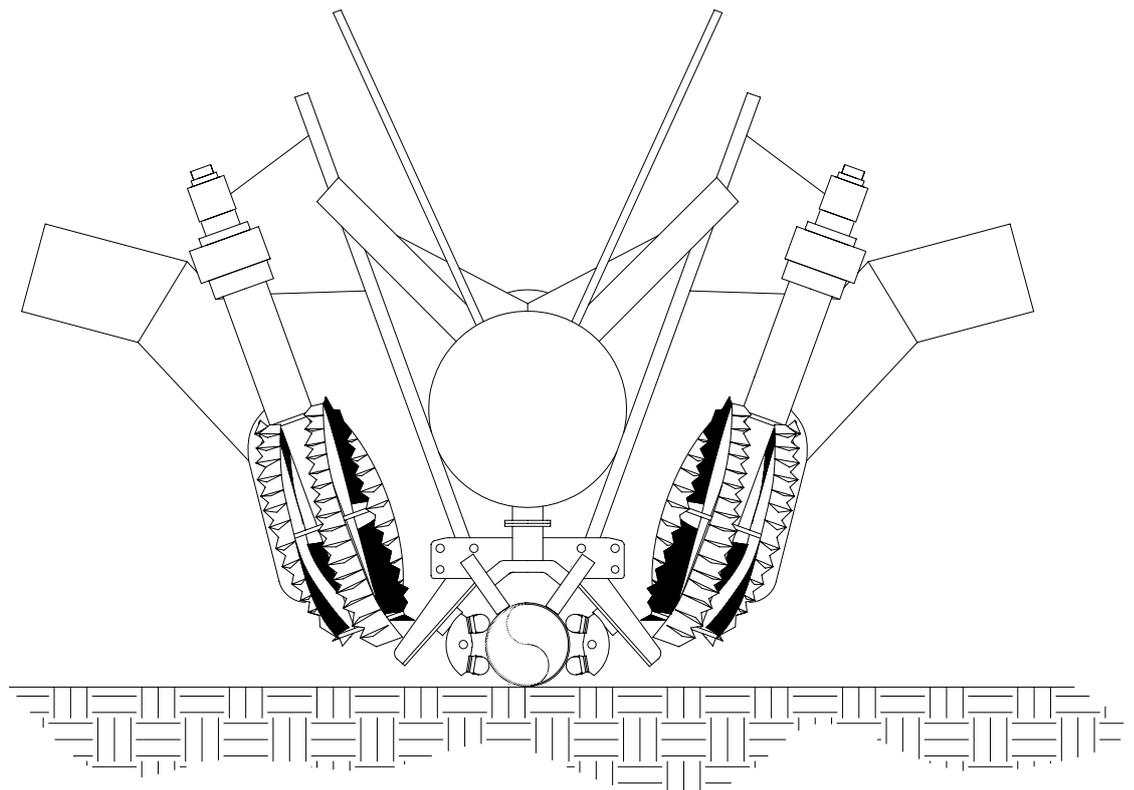
A depth gauge is fitted on the machine in order to indicate in real time the water depth. The depth can be read on a digital instrument fitted on the control panel.

The gauge can be used up to a maximum of 50 meters water depth and with a scale of 10 centimetres.

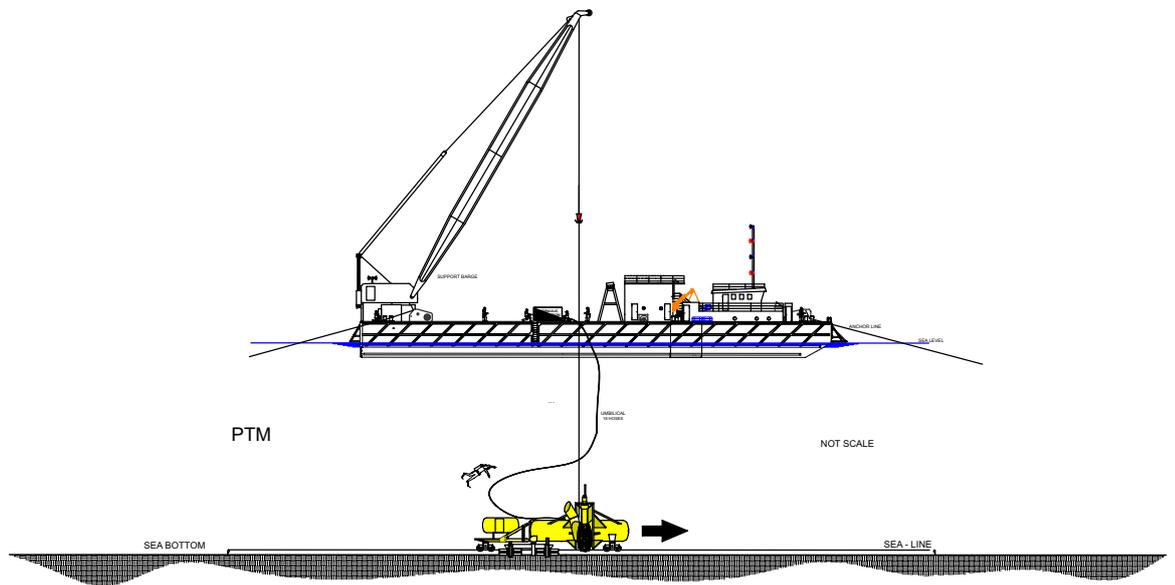
In case of sudden severe sea condition P.T.M. can be left on the sea bed by disconnecting the umbilical hoses that are equipped with directional check valves.

The P.T.M. is designed to prevent any contact between cutters and pipeline.

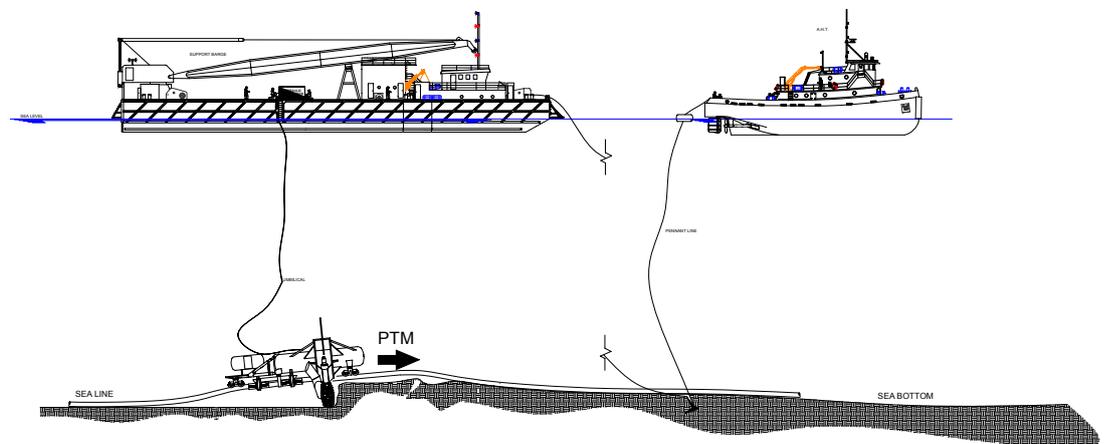
FRONT VIEW (installation)



## INSTALLATION



## OPERATION



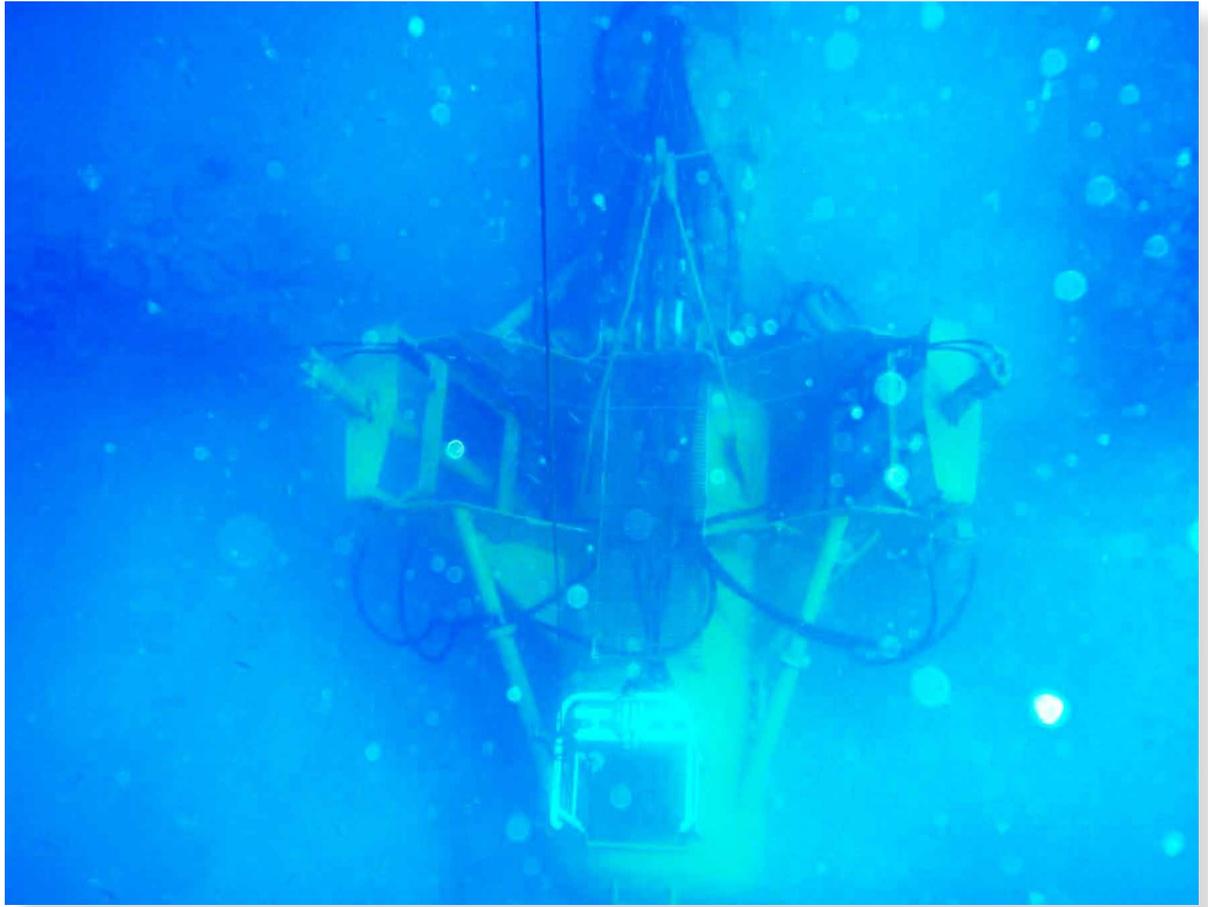


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