

SIFTER SYSTEMS | ROTAR CLEANER

Rotar International BV | The Netherlands

GENERAL DESCRIPTION

Rotar International BV is a manufacturer of hydraulic attachments for excavators and wheeled loaders in the Netherlands.

It supplies several Rotar Cleaner screening attachments suitable for wheeled loaders, excavators, skid-steer loaders as well backhoe loaders.

The *Rotar Cleaner* (also called the “Rotar Bermsifter”) is a commercial, off-the-shelf product designed for clearance of AP mines. Rotar also offers customised units, such as units with a special digging width related to the outside tyre width of the carrying vehicle.

The most common application of the Rotar Cleaner is for clearance of AP mines in large soil and gravel areas, such as riversides and berms beside roads. The attachment can load, screen, clear and unload in an efficient “one man – one machine” operation. Vehicles using the equipment for mine clearance must be armoured and the operator must be fully protected against possible mine blasts.

Rotar supplies several sizes of Rotar Cleaners in two different versions – for wheeled loaders (the HPL Series) and for excavators (the HEX-Series).



ROTAR CLEANER | Filling the rotar drum

CLEARANCE METHODOLOGY

The drum/centrifuge of the Rotar Cleaner is mounted in a solid frame. The drum is built in two parts: two-thirds of the radius is the bucket and one-third is the closing door. Inside it has solid round vertical bars 45 mm apart. An insert screen fits into the drum to regulate the gap for sifting. The caps of the screen are covered by a 2 mm steel plate.

The Rotar Cleaner can load and screen soil at the same location. (It can also be moved without losing soil already loaded.) While the drum is sifting material, some mines can explode. All oversize material left within the bucket must be stored and inspected for any unexploded devices. The drum is locked mechanically during operation.

The Rotar Cleaner is heavy duty but easy to operate and service. It can clear up to 250 m²/h depending on soil conditions. When using a wheeled loader, the bucket width must be wider than the outside tyre width to protect against detonations from the underside. All hydraulic components are protected by V-shaped defence plates.

MACHINES IN USE TO DATE

Since 1998, some 25 units have been supplied to Afghanistan, Angola, Chile, Honduras, Iraq, Mozambique and Thailand. The best selling unit is the extended HPL 1500 XXL, suitable for common-size wheeled loaders of 12 to 15 tons.

ENGINE, FUEL AND OIL

Depends on the carrier machine used.

FACTORY SUPPORT

Spare parts are available Rotar or the supplier of the carrier machine. Training and installation can be part of the purchasing package, which also includes instruction and installation manuals, in hard copy or digital format on request.

The equipment has a one-year warranty. A spare parts catalogue is supplied.

MAINTENANCE AND SUPPORT

- > Daily: Greasing every eight hours / checking of locking mechanism (tighten strainers).
- > Weekly: Inspections of fasteners around machine, other attachments and chain.

TESTS AND EVALUATIONS

One test report is available from the Institute for Defense Analyses, 4850 Mark Center Drive, Alexandria, VA 22311-1882, USA: www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA460322&Location=U2&doc=GetTRDoc.pdf

REPORTED LIMITATIONS AND STRENGTHS

Limitations

- > For use in clearance of AP mines or small-calibre ammunitions only.

Strengths

- > Commercially available as off-the-shelf products.
- > Simple technology, using common, trade-marked components.
- > Permits adapting a standard carrier vehicle for demining purposes.
- > Performed well against AP mine detonations within the bucket.
- > Can be serviced in the field or in any small workshop.

DIMENSIONAL DATA

1. Length without attachment	Depending on carrier
2. Length total	700 mm - 1,500 mm (rotar only)
3. Width without attachment	
4. Width total	1,290 mm - 3,430 mm (rotar only)
5. Clearing Working width	885 mm - 2,889 mm (rotar edge width)
6. Height Overall	700 mm - 1,500 mm (rotar only)
7. Mass Basic vehicle	4,000 - 35,000 kg
8. Mass Detachable unit(s)	400 - 3,500 kg
9. Mass Overall	5,000 to 40,000 kg

OPERATIONAL DATA

10. Wheels Tracks (description)	
11. Ground Bearing Pressure (kPa)	Depending on carrier
12. Hill climbing ability (in degrees)	Not given
13. Number of Chains Chisels Tools	N/A
14. Beat pattern (hits per m ²) at different operating speeds	N/A
15. Length of Chains Tools	N/A
16. Diameter of flail drum	610 mm - 1,170 mm
17. Rotation Speed	28 rpm
18. Clearance Working depth in varying terrain	0 - 500 mm
19. Working Speed (m ² /h)	
> Light Soil Medium Vegetation	250 m ² /h
> Medium Soil Medium Vegetation	150 m ² /h
> Heavy Soil Dense Vegetation	100 m ² /h
20. Control of Clearance Working depth	
21. Additional attachable working tools	Screen meshes / plates
22. Armour	On request
23. Remote controlled	N/A
> greatest distance	
24. Transportation	Land / sea / air
> short distances	
> long distances	
> sea transport	
> air transport	

SYSTEM STATUS AND DEPLOYMENT

25. Machines in use	Wheeled loaders and excavators with rotar
26. Other types	Occasionally solid rubber tyres
27. Location of use	Afghanistan, Angola, Iraq, Mozambique
28. Totally cleared so far (m ²)	Not given

ENGINE | FUEL | OIL

29. Engine	Depending on carrier
30. Engine power at the flywheel	Depending on carrier
31. Sufficient power supplied to working tool	40 up to 150 kw
32. Fuel capacity	Depending on carrier
33. Fuel consumption	Depending on carrier
34. Separate engine for working unit	N/A
35. Cooling system	Depending on carrier
36. Oil capacity (both engines)	Depending on carrier
37. Hydraulic oil capacity (both engines)	Depending on carrier

COSTS

38. Cost of system	35,000 - 95,000 euros
39. Other costs	
> training	In consultation
> spare part set chains belts	Sustainment package 2,500 - 5,000 euros
> repair costs for one year	Not given
40. Availability for hire	No

OTHER

41. Operator comfort	Depending on carrier
42. Air conditioning	Depending on carrier