SCHIEBEL AN-19/2 MINE DETECTION SET (AN/PSS-12) MOD 7

General description

The AN-19/2 Mine Detecting Set is one of the most widely-used and easily-recognizable mine detectors in the world. It is built to military standards to meet the requirements of mine clearance on the battlefield and is now also used for humanitarian demining. It has been in daily use for the last 20 years in the world’s most mine-affected countries and is the standard detector for many NATO countries, including the US Army (designated as the AN/PSS-12). Because of its ease of use, low power requirement, lightweight design and the low mutual interference, the AN-19/2 is mission-suitable for all kinds of demining activities. The equipment is able to detect mines with minimum metallic content and can be used in shallow fresh or salt water. Unaffected by ambient temperature, the detection characteristics of the AN-19/2 qualifies the equipment for use in all climates. It is a reliable, long-life product based on rigorous quality control standards during manufacturing.

Although there have been several modifications to the original AN-19/2 pulse detector, culminating in the current modification 7, the method of operation has remained the same. Since many Schiebel AN-19/2 detectors have been in operation for more than ten years, the company offers a kit that upgrades older detectors to the latest technology.

This allows the user to retain the trusted and proven design of the AN-19/2 while increasing sensitivity and allowing operation of the detector in mineralized soils such as laterite and magnetite. The upgrade consists of a new search head and a new electronics card which allow the detector to act either as an AN-19/2 or an All Terrain Mine Detector (ATMID), depending on which search head is used. In the pulse-, or AN-19/2 mode, the detector operates in the same way as the original detector, yet with
upgrade combines both technologies in one detector, providing versatility in varied operating conditions.

**Working characteristics**
The search head emits an electromagnetic pulse, which induces eddy currents in nearby metal objects. These eddy currents give rise to a secondary field, which is detected by the search head receiving coil. The detected signal is processed in the electronics unit. The presence of a metal object is indicated by a tone in the headphone and by an optional visual LED signal, if fitted. The AN-19/2 detects mines at their operational depth (or deeper). Schiebel’s own testing uses a 0.15 steel pin (approximately the same signature as the Chinese type 72A anti-personnel mine) that can be detected when buried at 17 cm (or only 12 cm in light magnetic soil: for heavier magnetic soil the ATMID should be used). This is maintained in fresh/salt water (down to 2m). For large magnetic signature mines/ERW, the detector gives an over edge of target indication, enabling the same precise location as for smaller targets.

**Detectors in use to date**
The manufacturer says that more than 40,000 AN-19/2’s have been sold in four versions (Modification 2, 5 and 7) since 1990. It is impossible to say how many of each are in service, as many have been upgraded. Different versions are in use in mine-affected regions all over the world, including Afghanistan, Angola, Bosnia and Herzegovina, Croatia, Cambodia, Iraq, Kosovo and Mozambique. Clients include the UN, Mines Advisory Group, Cambodian Mine Action Centre, Handicap International, most NATO countries and many other armed forces (including Colombia, India and Sweden).

**Power supply**
The AN-19/2 is powered by four standard D cell batteries. The recommended alkaline cells provide approximately 70 hours operation. Similar rechargeable Nickel-cadmium cells provide approximately 35 hours. All recommended cells are available worldwide as are suitable automatic charges. Rechargeable cells last for at least one year if correctly used/charged.

**Factory support**
All detectors are covered by a 12-month, no-cost warranty and operator/maintenance training is provided (on site or at the factory, as requested) as part of the procurement package. Further training can be provided at cost. Spare parts, all interchangeable (regardless of detector version), are available for ten years after purchase. These can be obtained directly from the factory or from the worldwide network of Schiebel agents. Operator and maintenance manuals are provided in most major languages (e.g. English, French, German, and Spanish). Schiebel technicians/factory repairs are available worldwide to provide additional support whenever required.

Maintenance and support

The AN-19/2 requires little maintenance and can be upgraded to the latest modification state. Most repairs can be carried out, at field level, by Schiebel trained personnel. Workshop repairs can be carried out by Schiebel trained technicians, using the recommended tools and test equipment (digital multi-meter and oscilloscope).

Test and evaluation

The AN-19/2 has been comprehensively field-tested in all climates by the manufacturer and all detector specifications are fully proven. It has also been evaluated and selected by a wide range of operators, including the US Army and Mines Advisory Group; additional test reports are available on request from the manufacturer. The ECs joint research centre says the Schiebel AN-19/2 detects a VPROM 1 with a sufficient safety margin at all angles. 1. The detector performed above average in all types of soil (sand, clay, peat, and ferruginous). 2. The most significant tests passed by the detector are: International pilot project for technology cooperation, March 1999-June 2000, International Detector Test UNADP Mozambique, December 2000, US Army Communications Electronics Command - Nicaragua Filed Test, October 2001, European Commission Directorate General JRC-Institute for systems, informatics and Safety Test reports were partially published.

Technical specification

Detector

Model
SCHIEBEL AN-19/2 MINE DETECTION SET (AN/PSS-12) MOD 7
Detection technology used
ELECTRO MAGNETIC PULSE INDUCTION
Detector systems
Metal detectors

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**Dimensional data**

**Working length**
Min. length
1'200 mm
Max. length
1'600 mm

**Search head**
Size
267 mm
Weight
0.60 kg
Shape
Round

**Transport case**
Weight
2 kg
With equipment (full)
6 kg
Dimensions
800 x 315 x 125 mm
Hard | Soft case (material)
Metal
Weight, Hand-held unit
1 kg
Weight, carrying (operational detection set)
3 kg
Weight, additional equipment
2 kg
Weight, distribution/balance
kg

Other specifications
The Weight Carrying is subdivided in 2,2kg for the detection set plus 0,58kg for a set of batteries. Transport Additional Equipment is subdividet in 1,41kg for the carry bag plus 0,17kg for the headphones.
System status and deployment

Status
In development

Detectors systems in use to date
40,000 plus

Other types/models
ATMID, MIMID

Location of use
Worldwide

Environmental influence

Humidity (limitations)
Up to 95% RH

Water resistant
Yes

Shock/Vibration resistant
YES, MIL - STD - 810F

Environmental compensation
Auto

Temperature (limitations)

Storage
-55 to -55 °C

Operational
-40 to +70 °C

Operational hours/Operating endurance

At around 0°C
56h

At around 20°C
70h

At around 30°C
75h or more

Detection operation

Calibration / Set-up

Auto/Manual

Manual (Calibration not required, manual set up using single control for sensitivity.)

Duration
Less than 30 secs

Detection range/Sensitivity details/Detection performance / Working depth

Small metal content mines
72A -18cm, M14 -14cm

Anti tank mines
Metal Anti Vehicle Mines at 1m, Plastic Anti Vehicle Mines: nearly all types at operational threat depth

ERW
500LB BOMB
Output indicator (sound/display/other)
Sound + optional visual-led display

Pinpointing feature
Yes, by edge of target warbling tone.

Adjustment of search head angle
Easily adjusted by angle wing nut to cover all necessary operational situations (more than 180 degrees).

Soil influence
Can operate in light magnetic soil with reduced but normally acceptable performance.

Best use in
✓ Sand
✓ Peat
✓ Clay
✗ Ferruginous soil (laterite)

Optimal sweep speed
0.2/second

Search coil/antenna
Yes

Limitations
Medium and heavy (strong) magnetic soil.
Interference (with other detectors)
None at distance above 4m separation.

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Power

Power supply/source
Standard D size alkaline cells

Operating time
Approx. 70h

Power supply

Weight
Typical 0.58 kg

Batteries
4 X 1.5 V R20 ANSI size D
Rechargeable
Rechargeable NI-CAD cells can be used but operating time is reduced to 38h.

Costs

**Base price for the unit (US$)**
For one detector
US$ 2'001 - US$ 3'000
Reduction for higher quantity
On Request
Price with training
No

**Complete system price (US$)**
Price with training in factory
On request
Price with training in field
On request
Spare parts
On request
Extended warranty
On request
Total
On request
Possible to rent
On Request

Others

Duration of warranty
12 months
Additional equipment
optional upgrade to ATMID
Additional technical data
Compliant Standards Military: MIL-D-0023359G, ISO 9001, AQAP-4

Approved by

Others
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