

SPACEMAN™ ROCK MOVEMENT INDICATORS

DESCRIPTION

The SPACEMAN rock movement indicator is a dial type displacement gauge used as a “tell tale” to indicate progressive slow strata separation. The SPACEMAN comprises a base unit with a faceplate dial and indicator needle and an extension rod equipped with a point anchor. The rod is inserted into a borehole, the depth of which is determined to be in competent ground beyond the expected separation planes. The faceplate is located flush against the rock. Any rock movement results in the faceplate moving away from the anchor point. The spiral drive of the indicator needle amplifies any such movement, thus indicating any slight displacement as a discernible rotation of the needle. Typically, SPACEMAN rock movement indicators are installed at roadway intersections in bord-and-pillar coal mines, but can be used in any environment where strata separation needs to be monitored.

The purpose of the device is to indicate incremental movement of the rock in order that timely remedial action can be taken. The SPACEMAN is not a precise measuring instrument, serving rather to monitor and compare progression over a period, usually days.

FEATURES

- Permanent installations
- Early warning of strata separation
- Very slight rock movement is discernible
- Ease of installation.
- Calibrated faceplate
- Robust steel construction

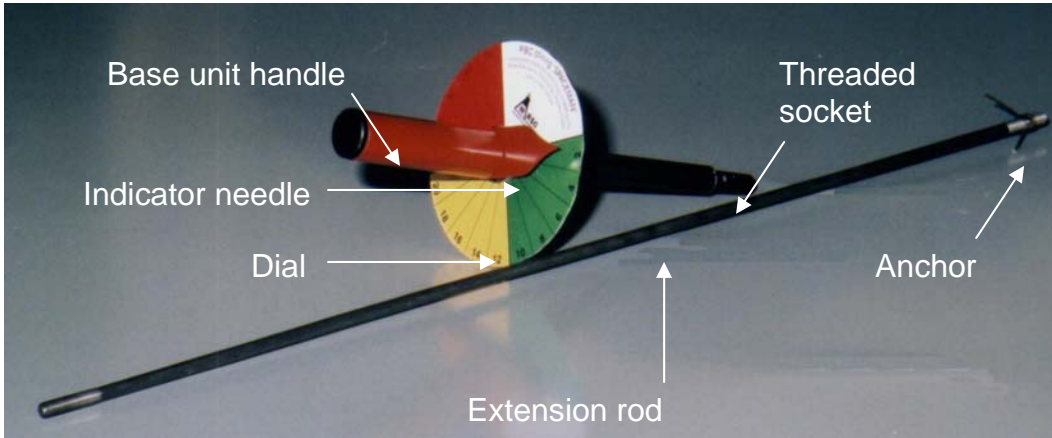
PHYSICAL PROPERTIES

Available displacement (full scale deflection)	Approximately 30 mm
Gradations	2 mm movement zones
Deflection-to-displacement ratio	Approximately 9 degrees / mm (30 mm over 270° deflection)
Insertion depth	At least 200 mm beyond local rock bolt depth
Length	Variable length extension rods provided. Coupled rods also available
Extension rod diameter	7 mm
Required hole diameter	Maximum 22 mm

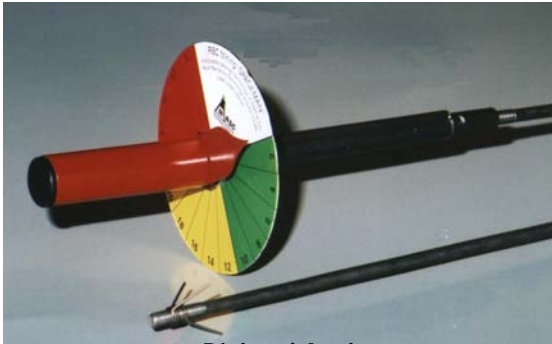


APPEARANCE

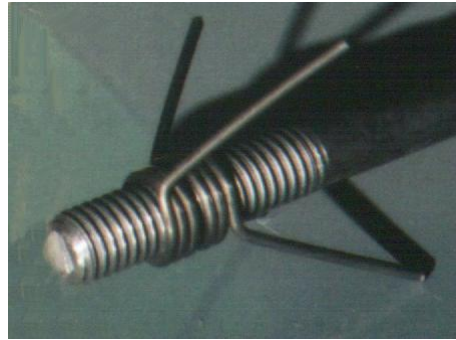
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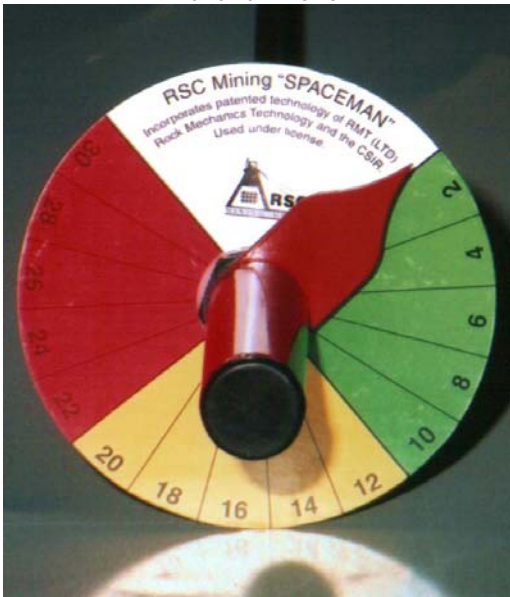
Base Unit with Extension Rod



Dial and Anchor



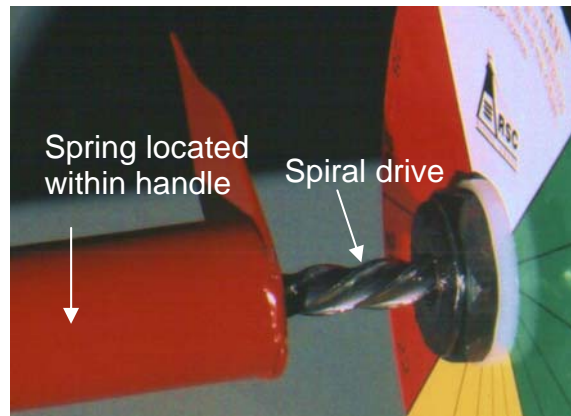
Anchor "barb"



Dial and indicator needle



Rod-to-rod coupling



Spiral drive within handle