



ABT4060 Sighting Board Set



Instruction Manual

1.0 Index

1.0	Index	2
2.0	Technical Specification	2
3.0	General Description.....	4
3.1	Measured Packing	4
4.0	Use of Gauge	4
4.1	Description of parts	4
4.2	The Sighting Board	4
4.3	The Intermediate Board	4
4.4	The Target Board.....	5
5.0	Procedure	5
6.0	Accessories.....	6
7.0	Maintenance.....	6

2.0 Technical Specification

Weight	- 13kg (set)	Size (stacked)	- 1585mm x 95mm x 45mm
Measures track lift	- 0-24mm in 0.25mm increments	Measures track lift	- 25mm-160mm in 5mm increments
Calibrated	- ± 0.8 mm accuracy		

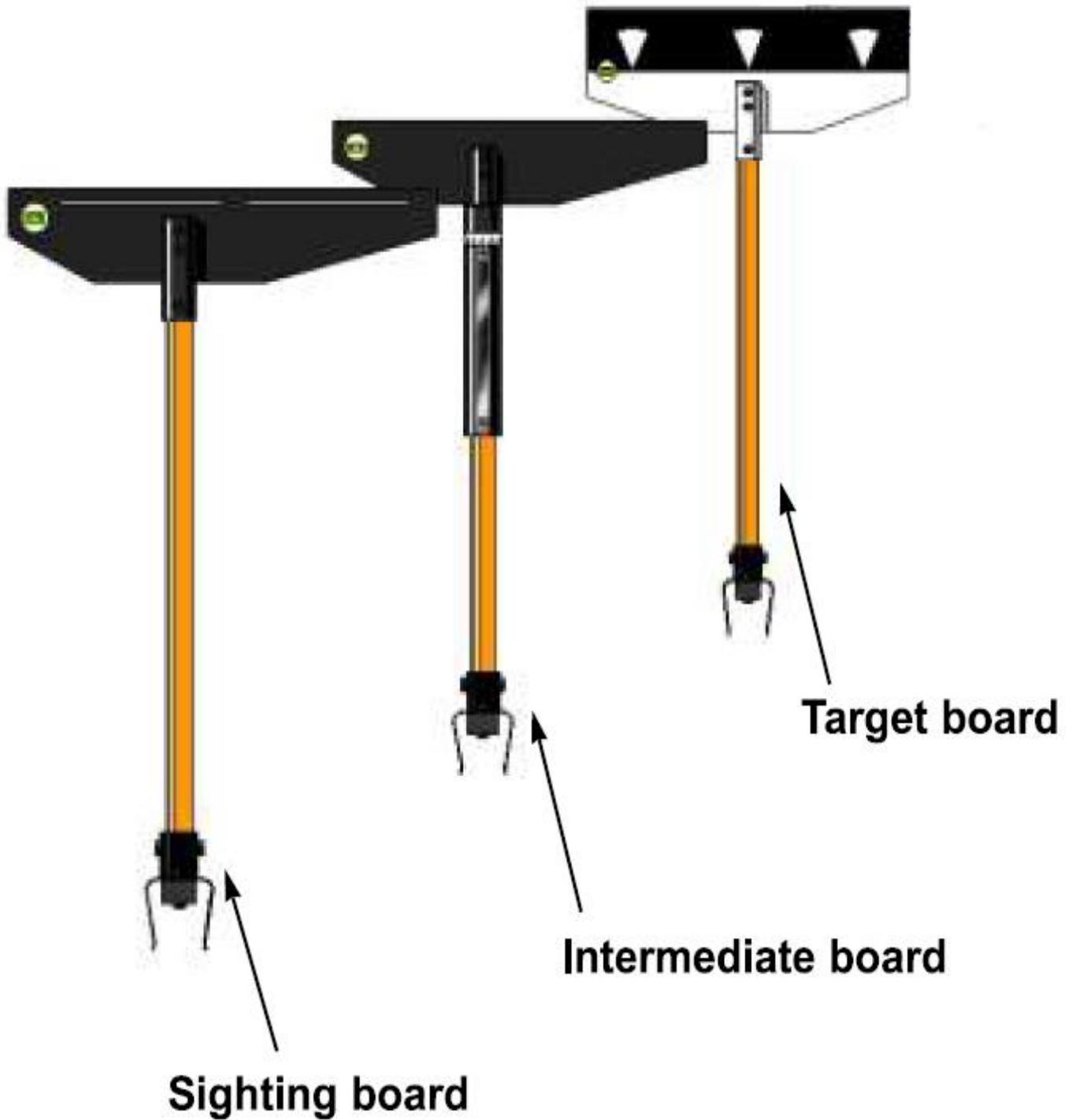


Figure 1 ABT4060 Sighting Board Set

3.0 General Description

The Abtus ABT4060 Sighting Board Set is a popular, quick and accurate way to measure vertical alignment, particularly suitable for repairing and lifting in these areas of subsidence. The boards are constructed from Nylon, Acetal and GRP, ensuring they are electronically non-conductive, lightweight and robust.

3.1 Measured Packing

In measured packing, the amount of packing a particular sleeper requires is determined by measuring how much the unloaded rail is below the desired level and how much the sleeper is depressed when traffic passes over it. When these measured quantities added together are placed under the sleeper the loaded rail is at the correct level.

4.0 Use of Gauge

4.1 Description of parts

The three boards have heavy-duty spring grip rail feet and integral spirit levels for vertical accuracy. The intermediate board is adjustable up to 24mm of lift in 0.25mm increments and a spring indexed system allows further measurement up to 160mm in 5mm increments. The target board is translucent allowing visibility in all daylight conditions, with the option of fitting in a backlight for use at night or in tunnels.

4.2 The Sighting Board

The sighting board cross head is provided with a slit through which the Intermediate and Target boards are sighted. On a level rail, and with the intermediate board adjusted to zero on the scale plate, the slit on the top edge of the intermediate board and the sighting line on the target board are at the same line of sight.

4.3 The Intermediate Board

The intermediate board cross head can be adjusted for height by one of two methods.

- i. Coarse adjustment from 0-160mm in 5mm increments
- ii. Fine adjustment from 0-24mm in 1mm increments

Coarse adjustment

If the rail section has a void deeper than 24mm and a considerable amount of packing is required, the coarse adjustment should be used.

The knurled hand nut at the top of the pole should be screwed down to zero.

Check that the pointer is visible through the scale window. If this is not the case, twist the crosshead until the inner shaft clicks into alignment with the outer pole. The pointer should now be visible in the scale window.

Fine adjustment

If the void to be measured is less than 24mm, the fine adjustment screw should be used. This is the knurled nut positioned at the top of the pole.

Begin by screwing the hand nut anti-clockwise, so that it rises up to the cross head. The arrow at the top of the scale window should line up with the 0mm mark on the ring scale. Ensure that the inner pole is pushed fully down. The hand nut should rest on top of the black plastic ferrule.

The intermediate board is now setup for fine adjustment. Rotate the hand nut clockwise and the cross head will rise up. One complete turn of the nut will move the cross head up 12mm. The bottom row of numbers on the ring scale should be used to read 0-12mm displacement. The second turn of the hand nut will raise the cross head a further 12mm. The top row of numbers on the ring scale should be used to read 12-24mm displacement.

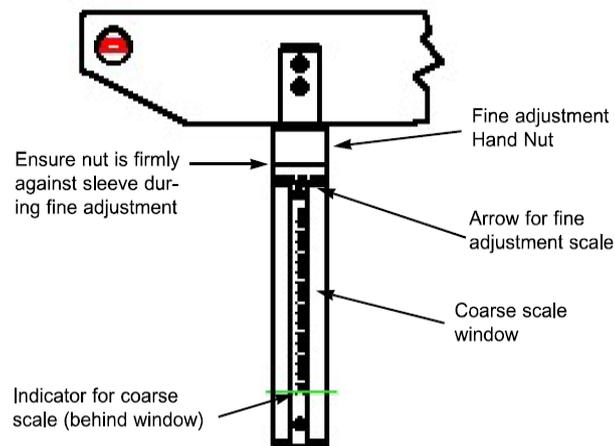


Figure 2 Intermediate Board

4.4 The Target Board

The target head is fitted with a laminated plastic target plate (black and white) which can be kept clean by wiping over from time to time.

5.0 Procedure

Before a length of track is measured packed it must be examined and the components replaced or repaired as necessary. It is essential that all fastenings are tight and that baseplate or chair seating's are hard up to the rail. Bull head rails should be properly locked up. Sleepers that are end or centre bound and faulty top in excess of 19mm (3/4") must be ordinarily shovel packed. Hollow sleepers are then detected by sounding at the ends near the baseplates or chairs with a pick shaft or hammer. A void meter should be applied where any sleeper is found hollow, or there is any doubt about it. The readings are chalked on the rail or sleeper accordingly.

The sighting boards are next brought into use to measure slacks in the rail top. Both rails are eyed for top and where possible the one needing least attention is selected for boning through with the sighting boards. If however one rail is "generally" higher than the other (allowance being made for cant) it should be selected, even if it requires attention. FOR THIS PURPOSE THE SELECTED RAIL IS KNOWN AS THE SIGHTING RAIL, AND THE OPPOSITE ONE AS THE CROSS LEVEL RAIL.

The sighting rail is then eyed for high spots about 30 metres apart and they are marked. At these points the cross level of the rails is checked. (On curved rails the correct required cant must be known and the cant slide set accordingly.)

When placing the sighting boards on the rail head, it is essential to ensure proper contact by pressing down in the base of the board with the sole of the foot, on either side of the upright.

Working towards oncoming traffic, the sighting board is placed on the first high spot and the target board on the second.

The intermediate board is set up on the rail between them at every alternate or fourth sleeper and at each joint sleeper in turn. It is levelled and adjusted on the line of sight as instructed by the person viewing through the sighting board slit, so that at the top edge of the intermediate board lines up horizontally with the sighting line on the target board head.

The adjustment i.e. the scale reading of the intermediate board is read and chalked on the rail or sleeper at each point. The sighting board is next moved to the high spot at which the target board was originally set up, the latter being moved to the next high spot ahead. The procedure with the intermediate board is then repeated.

6.0 Accessories

- ABT4067 Packing Shims (Metric)



- ABT3142/1 Canister for MSP (Metric) - Provides 2.0mm lift



7.0 Maintenance

Care should be taken to avoid dirt entering the various tool mechanisms, as this may reduce effectiveness. The tool may be cleaned by wiping with a damp cloth.

- **Set fulfils function of both J3 and Mk7 type sighting boards**
- **Measures void 0-24mm in 0.25mm increments**
- **Measures void 25-160mm in 5mm increments**
- **Asymmetric design allows for use on tighter curves with smaller boards**
- **Translucent target enables clear sighting in all conditions and may be back lit**
- **Fully non-conductive construction using GRP and Nylon 6**
- **Factory calibrated for guaranteed accuracy**
- **Convenient 750mm sighting height**