

# EDM

## Electronic Distance Measuring



### ***Athletics Measurement Setup Manual***

For

Leica

TPS-System1100

TPS-System 1200

Viva TS15



Simple set up and shut down instructions.

*Note: The operation of the EDM for each individual event is not included in this document.*

## 1. The EDM kit contains.

- 1.1 Leica EDM (models- System 1100, System 1200 and Viva TS15 may vary between states), Tripod, 2 charged batteries,
- 1.2 Accessories (1x check marker, 1x metal tape measure, 1x small hand-held spirit level, 3x non-slip triangular baseplates with spikes, 1x rebated timber block for edge locating of throwing circles, 1x clear acrylic disc for use on bottom of prism spike when working in the sand of horizontal jumps)

## 2. Tripod setup for Throwing events. (fig. 1 and fig. 2)

- 2.1 Position the EDM in a safe location where the safety of the operator and apparatus will not be compromised,
- 2.2 Set up in clear sight of all sector centres and circles if preparing for discus, javelin and shotput and in accordance with the requests of the Referee/Chief, (fig 1 and fig 2)
- 2.3 Set height of tripod top at chest height of the intended operator. 1.25m is a good average height.
  - 2.3.1 For speed of operation the sight tubes, above and below the instrument, are preferred to the optical lens,
  - 2.3.2 Shorter operators could use the lower sight tube aligning the white cross-hairs with the prism,
  - 2.3.3 Taller operators could use the upper sight tube aligning the white cross-hairs with the prism,
- 2.4 Level top of tripod with small hand-held spirit level,
- 2.5 Set legs of tripod so the operator will be standing in between two legs when reading the majority of throws, *not straddled over a single leg*. The leg opposite the operator should be pointing to the 'Common Impact Zone' of the athletes competing. Set the legs to between 1.5m and 2m apart giving the operator a wider zone of operations.

fig.1 SINGLE EVENT SETUP

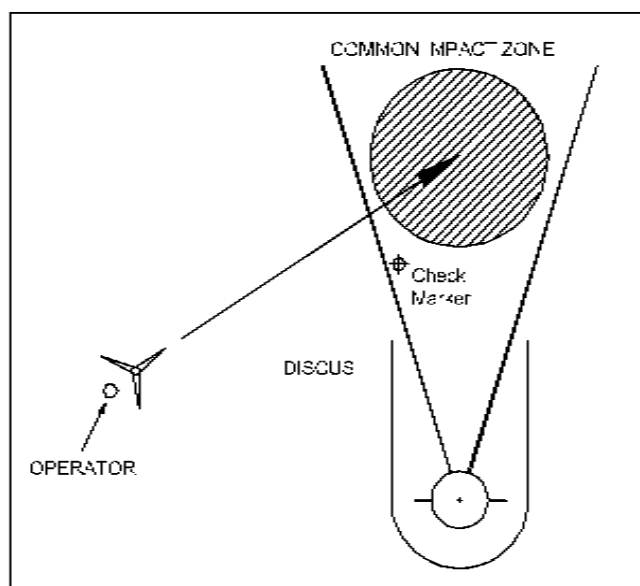
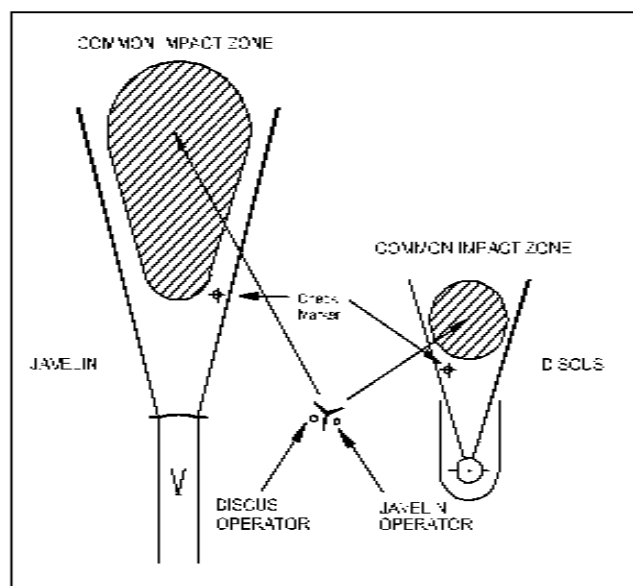


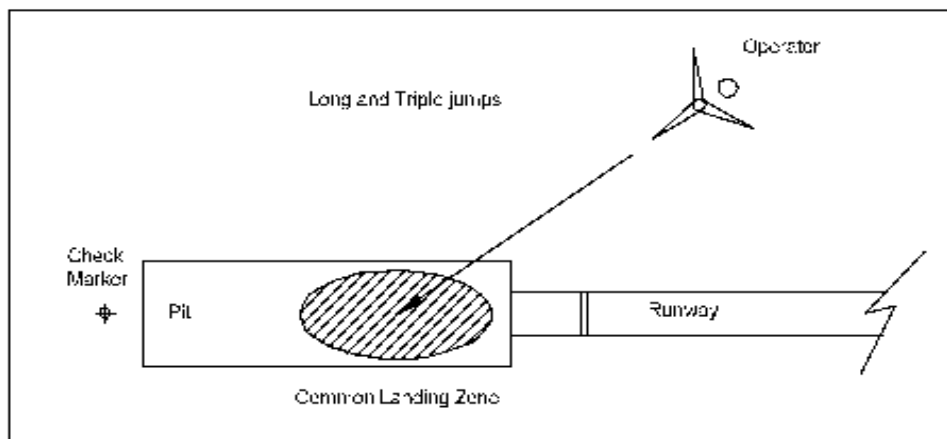
fig.2 MULTIPLE EVENT SETUP



### 3. Tripod setup for Jumping events. (fig. 3)

- 3.1 Position the EDM in a safe location where the safety of the operator and apparatus will not be compromised,
- 3.2 Set up in clear sight of take-off boards and landing area on the opposite side of the take-off board from the pit, and in accordance with the requests of the Referee/Chief,
- 3.3 Set height of tripod top at chest height of the intended operator. 1.25m is a good average height.
  - 3.3.1 For speed of operation the sight tubes are preferred to the optical lens,
  - 3.3.2 Shorter operators should use the lower sight tube aligning the white cross-hairs with the prism,
  - 3.3.3 Taller operators should use the upper sight tube aligning the white cross-hairs with the prism,
  - 3.3.4 A seated operator will require a lower setup position.
- 3.4 Level top of tripod with small hand-held spirit level,
- 3.5 Set legs of tripod so the operator will be positioned between two legs when reading the majority of jumps, *not straddled over a single leg*. The leg opposite the operator should be pointing to the 'Common Landing Zone' of the athletes competing. Set the legs to between 1.5m and 2m apart giving the operator a wider zone of operations.

fig. 3 Horizontal Jumps



### 4. Tripod setup on surfaces other than grass.

- 4.1 Triangular 'non-slip' tripod base-plates with spikes can be used on all other surfaces to secure the legs from slippage and should be made available with all EDM kits,
  - 4.1.1 Set tripod in place, as above.
  - 4.1.2 Lift each foot and place the base-plate under the leg locating the foot into the hole in the centre of the base-plate,
  - 4.1.3 Re-check level of tripod.

### 5. Place EDM instrument on tripod.

- 5.1 Screw the instrument in place on top of the tripod and align the shape of the instrument base with the

- top of the tripod,
- 5.2 Check and adjust the 3 levelling screws to be at mid-height of their travel,
- 5.3 Adjust the 3 levelling screws so the level bubble on the instrument is central,

**6. Turn on EDM instrument.**

- 6.1 Turn on and wait for Main Menu to load,
- 6.2 Check battery status,  
*"Protocols for use of the memory card are yet to be developed"*,
- 6.3 Set digital level
  - 6.3.1 Press 'shift' on - (System 1100 located below F5 and (System 1200), or 'Fn' (Viva TS15)
  - 6.3.2 Then Press F12 on - (System 1200) and (Viva TS15), and the spirit level button located below F2 on (System 1100)
  - 6.3.3 Adjust screen bubble level by turning the 3 adjusting screws to centralise the bubble and get the lowest possible 'tilt L' and 'tilt R' numbers. Note: Wind can make this operation difficult to achieve constant numbers. The target is 0.010 or lower.
  - 6.3.4 When satisfied press 'Continue' (F1)

**7. Set the Check Marker**

- 7.1 Throwing Events  
Place the Check Marker just inside the sector line between 25m and 30m from the foul line
- 7.2 Horizontal Jumps  
Place the Check Marker outside of the far end of the pit away from the take-off board

**8. Setup for EDM use.**

SYSTEM 1100, SYSTEM 1200	VIVA TS15
<ul style="list-style-type: none"> <li>● Choose Programs from the 'Main Menu' Press #2</li> <li>● Choose 'Athletics Measurements' Press #6</li> <li>● Select event Enter</li> </ul>	<ul style="list-style-type: none"> <li>● Will automatically go straight to Athletics Measurements</li> </ul> <p>Or</p> <ul style="list-style-type: none"> <li>● Select 'Go to Work' Press OK</li> <li>● Select 'Survey +' Press OK</li> <li>● Select page with 'Athletics Measurements' Press OK</li> <li>● Select event Press OK</li> </ul>

**9. Setup for events.**

- 9.0.1 After selecting the event of choice the instrument will ask you if;  
***"you want to use last definition of centre point and foul line as valid?"***
- 9.0.2 Select 'NO' for a new setup,
- 9.0.3 Select 'YES' for using the existing setup if the instrument has not been moved, the check marker has not been moved and it is a continuation of the same event or the same event but with a different

athlete and/or age group)

## 9.1 Javelin

- 9.1.1 Measure 'centre' point Set prism at 8m intersection of sector lines 'Distance' press F2
- 9.1.2 'Store' press F3
- 9.1.3 'Done' wait for 'Done' to appear then press F4
- 9.1.4 Measure 'Distance' Set prism on check marker located inside the sector press F2
- 9.1.5 'Store' press F3
- 9.1.6 Check measurement to the check marker with metal tape by Referee/Chief

## 9.2 Discus

- 9.2.1 Measure 'centre' point Set prism at circle centre 'Distance' press F2
- 9.2.2 'Store' press F3
- 9.2.3 'Done' wait for 'Done' to appear then press F4
- 9.2.4 Measure 'Distance' Set prism on check marker located inside the sector press F2
- 9.2.5 'Store' press F3
- 9.2.6 Check measurement to the check marker with metal tape by Referee/Chief

## 9.3 Hammer

- 9.3.1 Measure 'centre' point Set prism at circle centre 'Distance' press F2
- 9.3.2 'Store' press F3
- 9.3.3 'Done' wait for 'Done' to appear then press F4
- 9.3.4 Measure 'Distance' Set prism on check marker located inside the sector press F2
- 9.3.5 'Store' press F3
- 9.3.6 Place concentric inserts into discus circle if using for hammer. Check measurement to the check marker with metal tape by Referee/Chief

## 9.4 Shotput

- 9.4.1 Measure 'centre' point Set prism at circle centre 'Distance' press F2
- 9.4.2 'Store' press F3
- 9.4.3 'Done' wait for 'Done' to appear then press F4
- 9.4.4 Measure 'Distance' Set prism on check marker located inside the sector press F2
- 9.4.5 'Store' press F3
- 9.4.6 Check measurement to the check marker with metal tape by Referee/Chief

## 9.5 Long Jump / triple

- 9.5.1 Place prism on the 'right' side of the take-off line press F2
- 9.5.2 'Store' press F3
- 9.5.3 'Done' wait for 'Done' to appear then press F4
- 9.5.4 Place prism on the 'left' side of the take-off line press F2
- 9.5.5 'Store' press F3
- 9.5.6 'Done' wait for 'Done' to appear then press F4
- 9.5.7 Measure 'Distance' Set prism on check marker placed outside the far end of the pit press F2
- 9.5.8 'Store' press F3
- 9.5.9 'Done' wait for 'Done' to appear then press F4

**Note:** The above setups are based on the assumption that each athletics officials organisation has taken the appropriate steps to locate and clearly mark the centres of all throwing sectors and the 8m mark for javelin prior to any competition and preferably prior to the commencement of the athletics season.

## 10 Setup for multiple events.

- 10.1 When setting up for multiple events eg, discus and javelin, ensure the instrument is returned to the settings for the first event for which the EDM will be used.

## 11 To change battery.

- 11.1 Return to 'Main Menu' by hitting the 'Escape' Key (System 1100, 1200) or 'Return' key (VivaTS15),  
11.2 You will be asked  
**"do you want to exit without storing the last measurement?"** Enter "YES"  
11.3 Continue to hit the Escape / Return key till reaching the 'Main Menu',  
11.4 Turn off EDM at 'Main Menu',  
11.5 Exchange battery,  
11.6 Turn on,  
11.7 Follow commands to select the disrupted event, (refer to section 9.0.1 and 9.0.3)  
11.8 After selecting the event of choice the instrument will ask you if;  
**"you want to use last definition of centre point and foul line as valid?"** Enter "YES"  
11.9 Continue with event.

## 12 To turn off.

- 12.1 Return to 'Main Menu' by hitting the 'Escape' Key (System 1100, 1200) or 'Return' key (VivaTS15),  
12.2 You will be asked "if you want to exit without storing the last measurement?" Enter "YES",  
12.3 Continue to hit the Escape / Return key till reaching the 'Main Menu',  
12.4 Turn off EDM at 'Main Menu',  
12.5 Remove battery from instrument and place in EDM case,  
12.6 If battery is below 10% capacity remove the sticker and inform Technical to recharge,  
12.7 Stickers on batteries indicate the battery has been charged.

## 13 Pack up.

- 13.1 Unscrew instrument from tripod and place in EDM case,  
13.2 Dismantle and pack prism in EDM case,  
13.3 Remove check marker from field,  
13.4 Collapse and secure tripod with yellow top plate in position,  
13.5 Return to Technical shed.

## 14 EMERGENCY -----Instrument not functioning correctly mid event-----

- 14.1 DO NOT PANIC!  
14.2 DO NOT PRESS OTHER BUTTONS!

- 14.3 Simply return to 'Main Menu' by constantly hitting the;  
'Escape' Key (System 1100, 1200), 'Return' key (Viva TS15),
- 14.4 You will be asked;  
***"do you want to exit without storing the last measurement?"*** Select "YES"
- 14.5 Continue to hit the Escape / Return key till reaching the 'Main Menu',
- 14.6 Re-enter the event being interrupted, (refer to section 9.0.1 and 9.0.3),
- 14.7 After selecting the event of choice the instrument will ask you if;  
***"you want to use last definition of centre point and foul line as valid?"*** Select "YES"
- 14.8 Continue with event.

**\*\* If the problem persists-----Contact the EDM Co-Ordinator\*\***