



INSTRUCTIONS FOR JUMP STARTING

WARNING; READ THESE INSTRUCTIONS IN FULL BEFORE ATTEMPTING TO USE THE JUMP LEADS

BEFORE CONNECTING THE JUMP LEADS

ENSURE THAT THE FOLLOWING SAFETY MEASURES ARE ADHERED TO:

1. Batteries give off flammable gases - **do not smoke or use naked flames.**
2. **Ensure that both batteries are of the same nominal voltage.** Battery or charging system damage or explosion can result if jump starting is attempted with batteries of differing voltage.
3. **Ensure that the two vehicles are not touching each other;** sparks and vehicle damage could result if they are.
4. **Ensure that the jump leads are in good condition;** breaks in the conductor or poor connections make starting difficult and can cause overheating and fire.
5. **Ensure that the ignition switches of both vehicles are in the off position and that both hand brakes are applied.** If the jump leads are connected whilst the ignition is switched on, sparks and fire may result.
6. **Always connect the batteries positive (red, +) to positive (red, +) and negative (black, -) to negative (black, -)** irrespective of the vehicles' earth terminations.
7. **Ensure that both vehicles are in NEUTRAL** (for vehicles with manual transmission) **or in PARK** (for vehicles with automatic transmission).

PROCEDURE FOR CONNECTING JUMP LEADS

- (a) Connect the jump leads one at a time.
- (b) Connect the positive lead (red) first.
- (c) Always attach each jump lead to the charged/donor battery first.
- (d) Complete both connections of the first lead before making the first connection with the second lead.
- (e) If the above procedure is followed correctly, **the fourth and final connection made will be the earth connection to the discharged battery.** Unlike the other connections which are made to the battery terminal post, **this final connection shall be made to a good earth point remote from the discharged battery.** A suitable earth point may be an engine mounting, chassis member, engine block or any other unpainted surface remote from the battery and **away** from fuel and brake lines.

PROCEDURE FOR STARTING.

- (a) Start the engine on the donor vehicle and **run it for about 1 minute at a fast tick-over;** in sub-zero temperatures this time should be extended to 2 minutes or 3 minutes.
- (b) With the engine of the donor vehicle still running, attempt to start the vehicle with the discharged battery. If nothing happens switch off the ignition on both vehicles and re-check all connections.
- (c) After starting the vehicle with the discharged battery, run this engine at a fast tick-over for several minutes to warm-up and then allow to idle.
Do not disconnect the jump leads with the engine of either vehicle running at above idle speed: this can cause damage to the charging circuits and to other electronic equipment.

PROCEDURE FOR DISCONNECTING THE LEADS.

- (a) **Detach the clip connected to the earth point on the vehicle that had the discharged battery** then disconnect the other end of this lead from the donor battery.
- (b) Disconnect the second lead first from the vehicle that had the discharged battery and then from the donor vehicle.



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