PROCEDURE ON
APPROVAL OF RETRO FITMENT/ ADAPTATION KIT FOR FOUR WHEELED VEHICLE FOR PHYSICALLY CHALLENGED PERSON

1.0 OBJECTIVE

- To provide safe mobility to a person having lower limb physical disability.
- To standardize modifications in the four wheeled vehicles (M1 category) to make them suitable for a specific type of disability

2.0 POSSIOBLE MODIFICATIONS IN THE VEHICLE (M1 category)

Modifications to be carried out would solely depend upon the type and nature of physical disability of a person. Usually these modifications would involve shifting/ relocation/ adaptation of foot controls and/ or hand controls.

Vehicle with manual transmission as well as with automatic transmission may be considered for carrying out modifications. Details regarding type of disability, vehicle selection, recommended solution for retro fitment/ adaptation, etc are given in Annexure A.

3.0 APPROVAL OF RETRO FITMENT/ ADAPTATION KIT

3.1 Application for Approval

Kit manufacturer shall submit the already type approved vehicle model fitted with recommended retro fitment / adaptation kit along with technical information as per details given in Annexure B.

4.0 REQUIREMENTS

The vehicle model fitted with retro fitment/ adaptation kit shall be tested for:

4.1 Functional Brake Test

Vehicle shall be driven on a normal city road at 50 kmph speed (as indicated on speedometer). Service brake shall be applied and the stopping behavior of the vehicle shall be checked. During this test, the vehicle shall not show any instability or unsafe condition.

4.2 Functional Gradeability Test

The vehicle shall be driven on the gradient such as city fly over. While negotiating the gradient, brakes shall be applied. The vehicle shall not skid and roll back. There shall be provision of applying and releasing parking brake. On release of brake, the vehicle shall be able to easily climb the gradient.

4.3 Functional Steerability Test

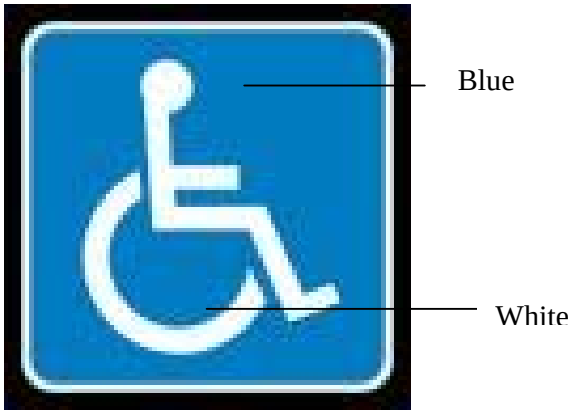
The vehicle shall be able to negotiate the steering course as per figure of **'8'.**

4.4 Accessibility and Operational Functionality of Hand Controls

Accessibility and operational functionality of various hand controls for the devices such as head lamps, direction indicators, horn, wind screen wiping system etc. Shall be checked.

4.5 Identification Symbol

The vehicle shall carry following symbol on the front and rear, indicating that the vehicle is meant for driving by a handicapped person. The symbol shall be made up of retro-reflective material (tape)



Size : 80 x 80 mm

Figure 3

4.6 Failure mode analysis as submitted by the installer shall be examined.

5.0 APPROVAL OF WORKSHOPS FOR THE FITMENT OF APPROVED KIT

The kit manufacturer shall identify the workshops, which shall carry out the fitment on his behalf. This shall be done on the basis of :

- Competence
- Availability of necessary of equipments
- Experience in the relevant field.
- Trained manpower etc.

6.0 TYPES OF PHYSICAL DISABILITIES THAT CAN BE CONSIDERED FOR USE OF ABOVE VEHICLES WITH RETRO FITTED/ADAPTATION KIT

Authorized medical practitioner shall examine type of physical disabilities of the person and may calculate degree of disability based on specific norms. Physical disabilities upto 25% may be acceptable for driving a vehicle fitted with retro fitment / adaptation kit.

Following are some typical disabilities of limbs, for consideration for driving :

a) Left leg (partial or full) : May be considered
b) Right leg (partial or full) : May be considered
c) Both leg (partial or full) : May be considered
d) Left /right / both hands (partial or full) : Not recommended under normal situations. May be considered under special case.

Following aspects may be considered for certifying the person with physical disability for his driving abilities of the vehicle fitted with retro fitment /adaptation kit.

a) Vision
b) Muscle strength, flexibility and range of motion
c) Co-ordination and reaction time
d) Judgment and decision making abilities
e) Ability to drive with adaptive equipment as specified above.

Medical report may contain specific recommendations on driving requirements or restrictions

ANNEXURE: A
(Ref. clause 2.0)

Sino. (1).	**Type of Physical Disability** (2)	**Vehicle Selection** (3)	**Recommended modifications** (4)
1	Impairment in both legs.	Manual clutch/ gear shift mechanism **OR** Automatic Transmission	a) Hand operated driving control for Clutch, Gearshift, Brake and Accelerator. **OR** a) In case of automatic transmission, hand operated driving control for Brake and Accelerator. b) Unit providing easy hand operated controls such as head lamps, direction indicators, horn, wind screen wiping system etc., c) Space for aids / crutches / wheel chair d) Symbol for vehicle for a person with physical disability
2	Impairment in left leg.	Manual clutch/ gear shift mechanism **OR** Automatic Transmission	a). Hand operated driving control for Clutch-Gear shift mechanism, **OR** a) In case of automatic transmission, no modifications required. b) Space for aids / crutches. c) Symbol for vehicle for a person with physical disability
3	Impairment in right leg	Manual clutch/gear shift mechanism **OR** Automatic Transmission	a). Hand operated driving control for Clutch-Gear shift mechanism and left accelerator pedal. **OR** a) In case of automatic transmission left accelerator pedal. b). Space for aids / crutches. c) Symbol for vehicle for a person with physical disability

ANNEXURE: B

TECHNICAL INFORMATION TO BE SUBMITTED BY THE RETRO FITMENT KIT MANUFACTURER

1.0	Retro fitment kit manufacturers name and address	
	Tel. No.	
	Fax No.	
	E mail address	
	Contact person	
	Website address, if any.	
2.0	Vehicle Model selected for retro fitment/adaptation.	
3.0	Details of modifications carried out on the original vehicle	
4.0	Authenticated drawings , in duplicate, with following details a) Kit identification / model No. b) List of kit components c) Details of individual component and assembly of kit on the vehicle e) Locations and fixing details for person's aids / crutches / wheel chair etc.	
5.0	Instruction / Maintenance manual	
6.0	Detailed explanation about safety in case accidental failure of modified controls other mechanisms	