

TABLE 41mm

HAND REACH-UNRESTRAINED

VEHICLE RANGE: (1.25 <)

POPULATION MIX: 75/25 MALES-TO-FEMALES

(mm)

HORIZONTAL REACH FORWARD OF THE HR REFERENCE PLANE AT STATIONS LOCATED LATERALLY FROM THE CENTERLINE OF OPERATOR (C L/O) AND AT ELEVATIONS ABOVE THE REARMOST H POINT. THE ENVELOPE DESCRIBES A 95% LEVEL OF PERFORMANCE OF A DRIVER POPULATION COMPOSED OF 75% MALE AND 25% FEMALE DRIVERS WEARING A TYPE 1 LAP BELT RESTRAINT.

ELEVATION ABOVE HPT (mm)	STATIONS OUTBOARD OF C L/O (mm)							STATIONS INBOARD OF C L/O (mm)								
	400.	300.	250.	200.	100.	50.	0.	0.	50.	100.	200.	250.	300.	400.	500.	600.
800.	616.	678.	692.	700.	706.	711.	722.	712.	712.	711.	704.	697.	685.	646.	581.	483.
700.	695.	752.	764.	768.	770.	773.	782.	772.	773.	774.	771.	766.	757.	725.	668.	578.
600.	749.	800.	809.	811.	807.	808.	816.	807.	810.	812.	813.	810.	803.	777.	726.	645.
500.	780.	825.	831.	831.	823.	822.	827.	823.	826.	830.	833.	832.	828.	806.	761.	687.
450.	788.	831.	836.	834.	824.	822.	826.	825.	829.	832.	837.	836.	833.	813.	771.	700.
400.	793.	832.	836.	833.	821.	818.	821.	824.	827.	831.	836.	836.	834.	816.	776.	708.
350.	793.	830.	833.	829.	814.					827.	833.	833.	831.	815.	778.	712.
300.	791.	825.	826.	821.	805.					820.	826.	827.	826.	811.	776.	713.
250.	786.	818.	818.	811.	793.					811.	818.	819.	818.	805.	771.	711.
200.	780.	808.	807.	799.							808.	809.	808.	796.	764.	706.
100.	762.	786.	782.	772.							784.	786.	785.	774.	745.	691.
0.	743.	761.	765.	743.							760.	761.	761.	750.	723.	671.
-100.	726.	739.	731.	717.							739.	740.	739.	728.	702.	652.

TABLE 42mm

HAND REACH-UNRESTRAINED

VEHICLE RANGE: (1.25 <)

POPULATION MIX: 90/10 MALES-TO-FEMALES

(mm)

HORIZONTAL REACH FORWARD OF THE HR REFERENCE PLANE AT STATIONS LOCATED LATERALLY FROM THE CENTERLINE OF OPERATOR (C L/O) AND AT ELEVATIONS ABOVE THE REARMOST H POINT. THE ENVELOPE DESCRIBES A 95% LEVEL OF PERFORMANCE OF A DRIVER POPULATION COMPOSED OF 90% MALE AND 10% FEMALE DRIVERS WEARING A TYPE 1 LAP BELT RESTRAINT.

ELEVATION ABOVE HPT (mm)	STATIONS OUTBOARD OF C L/O (mm)							STATIONS INBOARD OF C L/O (mm)								
	400.	300.	250.	200.	100.	50.	0.	0.	50.	100.	200.	250.	300.	400.	500.	600.
800.	647.	705.	718.	725.	731.	738.	750.	736.	737.	737.	731.	723.	712.	676.	616.	527.
700.	723.	775.	786.	790.	792.	795.	805.	792.	795.	797.	795.	789.	781.	750.	696.	614.
600.	774.	822.	830.	831.	828.	829.	836.	826.	830.	833.	834.	831.	825.	798.	750.	674.
500.	804.	847.	853.	852.	844.	843.	847.	840.	845.	850.	854.	852.	847.	825.	782.	711.
450.	813.	853.	858.	856.	845.	843.	846.	841.	847.	852.	857.	856.	852.	832.	790.	722.
400.	818.	855.	859.	855.	843.	839.	841.	839.	845.	850.	857.	857.	853.	835.	795.	730.
350.	819.	854.	856.	852.	837.					846.	853.	854.	851.	834.	796.	733.
300.	817.	850.	851.	845.	828.					839.	847.	848.	846.	830.	794.	733.
250.	813.	843.	843.	836.	816.					830.	839.	840.	839.	824.	790.	730.
200.	806.	835.	833.	825.							829.	830.	829.	816.	783.	725.
100.	789.	813.	809.	799.							805.	807.	807.	795.	765.	710.
0.	768.	788.	781.	769.							780.	782.	782.	772.	743.	691.
-100.	748.	763.	755.	740.							758.	760.	760.	750.	723.	672.

DESIGN CRITERIA—DRIVER HAND CONTROLS LOCATION FOR PASSENGER CARS, MULTI- PURPOSE PASSENGER VEHICLES, AND TRUCKS (10 000 GVW AND UNDER)—SAE J1138

SAE Recommended Practice

Report of Human Factors Engineering Committee approved September 1977.

1. Scope—The purpose of this SAE Recommended Practice is to describe design criteria pertaining to the location and labeling of hand controls necessary to or frequently used during the operation of passenger cars, MPV, and trucks 10 000 GVW and under. The results of SAE human factors research have strongly influenced these recommendations, specifically in the areas of driver reach, control-locating performance, and control location expectancies. Deviations from this recommended practice should be made only after careful study of the various SAE publications on these subjects, as referenced here and in SAE J1139 (September, 1977), Supplemental Information—Driver Hand Controls Location for Passenger Cars, MPV's and Trucks (10 000 GVW and Under).

2. Introduction—The location of essential controls should be based, insofar as possible, on performance rather than design considerations and must be governed by human engineering practice as it pertains to hand reach, visibility, identification, and operating mode. These considerations may be mutually exclusive, in certain vehicles, because of conflicting design requirements. In these cases, the recommended practice should be followed starting with the highest priority considerations until all available control location space has been used.

Any restriction in the location of controls and displays must respect the need to accommodate not only safety requirements and serviceability, but also the spatial requirements necessary to package the components behind the