The Engineering Society
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SAE J925 DEC87

Minimum Service Access Dimensions for Off-Road Machines

SAE Standard
Revised December 1987

Submitted for Recognition as an American National Standard

The Engineering Society For Advancing Mobility Land Sea Air and Space®
400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

OFF-HIGHWAY MACHINERY STANDARD

Submitted for recognition as an American National Standard

SAE J925

Issued July 1965
Revised Dec. 1987

Superseding J925 OCT84

Ø MINIMUM SERVICE ACCESS DIMENSIONS FOR OFF-ROAD MACHINES

Report of Human Factors Technical Committee

This SAE Standard is technically equivalent to ISO 2860 1983 except Fig. 3.3

INDEX KEY WORDS: Access Systems, Safety, Construction and Industrial Machinery, Design Dimensions, Forestry, Mining, Agriculture Tractors

1. SCOPE AND PURPOSE:

This SAE Standard pertains to off-road, self-propelled work machines as defined in categories one through five of SAE J1116 JUN86. It is intended to provide engineers and designers with information in order that access openings provided in equipment and machinery for purposes of inspection, adjustment and maintenance are made large enough for the intended function by the man in the field or shop.

2. FIELD OF APPLICATION:

2.1 This standard specifies the minimum service access openings on off-road machinery for:

1. The hand
2. The head
3. The body
4. Arm reach
5. Two handed reach

NOTE: Refer to SAE J185 for whole body access.

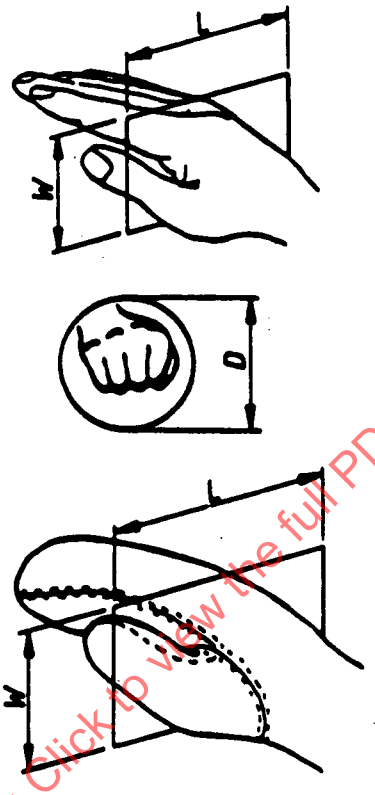
2.2 The larger openings for access with arctic clothing are for off-road equipment intended for use in cold environment.

2.3 Based on available anthropometric data, the recommended openings are the smallest that will accommodate 95% of the worldwide operator population. In most cases, openings larger than the recommended minimum will be useful and allow greater efficiency.

3. MINIMUM ACCESS OPENINGS:

The dimensions shown in paragraphs 3.1 to 3.4 are recommended minimum for limited activity through the opening. Larger openings will be needed in specific instances, depending upon the nature of the task, size and mass of the parts, etc.

3.1 Hand Access:



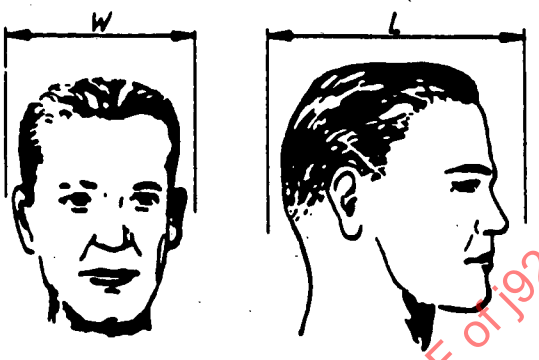
Dimensions in millimeters

Minimum dimensions	Square	Round	Rectangular	
	W = L	D	W	L
Hand bare	110	110	65	110
With arctic mitten	150	150	100	150

NOTE - Optional on all corners, maximum 25 mm radius.

FIGURE 1 - Recommended Minimum Dimensions for Hand Access, 95th Percentile

3.2 Head Access:



Dimensions in millimeters

Minimum dimensions	Square	Round	Rectangular	
	W = L	D	W	L
Head bare	230	230	210	230
With arctic clothing	280	300	280	300
With hat, helmet	310	330	290	330

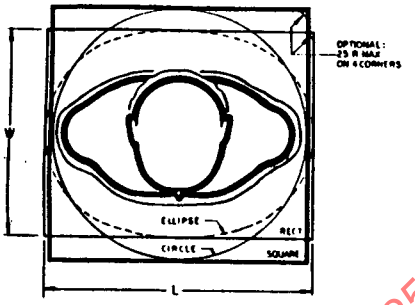
NOTES

[1]Optional on all corners, maximum 25 mm radius.
[2]Arctic clothing includes helmet and parka hood.

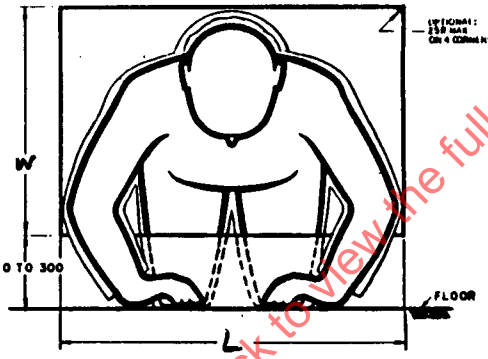
FIGURE 2 - Recommended Minimum Dimensions for Head Access, 95th Percentile

3.3 Body Access:

TOP AND BOTTOM ACCESS



SIDE ACCESS



Top & Bottom Access — Dimensions in millimeters

Minimum dimensions	Square	Round	Rectangular		Elliptical	
	W = L	D	W	L	Min. axis	Maj. axis
Normal clothing	540	580	330	580	330	580
Arctic clothing	650	690	410	690	410	690

FIGURE 3 - Recommended Minimum Dimensions for Body Access, 95th Percentile

Side Access

Dimensions in millimeters

Minimum dimensions	Square	Round	Rectangular		Elliptical	
	W = L	D	W	L	Min. axis	Maj. axis
Normal clothing	720	760	660	760	660	760
Arctic clothing	830	870	740	870	740	870

NOTE - Optional on all corners, maximum 25 mm radius.

FIGURE 3 (Continued) - Recommended Minimum Dimensions for Body Access, 95th Percentile

3.4 Reach Access:

3.4.1 Arm Access:

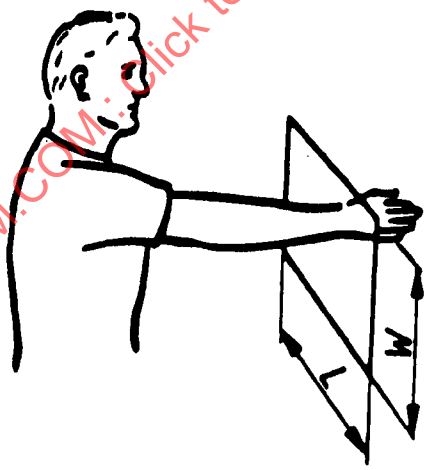


FIGURE 4 - Recommended Minimum Dimensions for Arm Reach Access, 95th Percentile

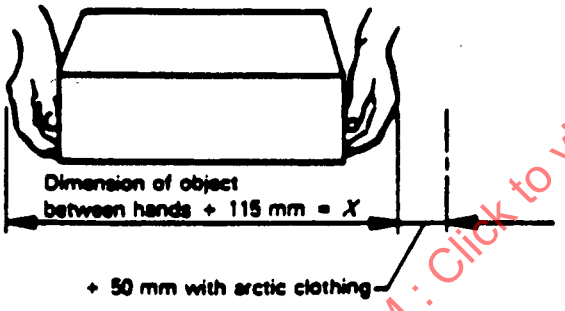
Dimensions in millimeters

Minimum dimensions (one arm)	Square	Round	Rectangular	
	W = L	D	W	L
Arm bare	200	200	150	200
With arctic clothing	250	250	200	250

NOTE - Optional on all corners, maximum 25 mm radius.

FIGURE 4 (Continued) - Recommended Minimum Dimensions for Arm Reach Access, 95th Percentile

3.4.2 Two-Handed Access:



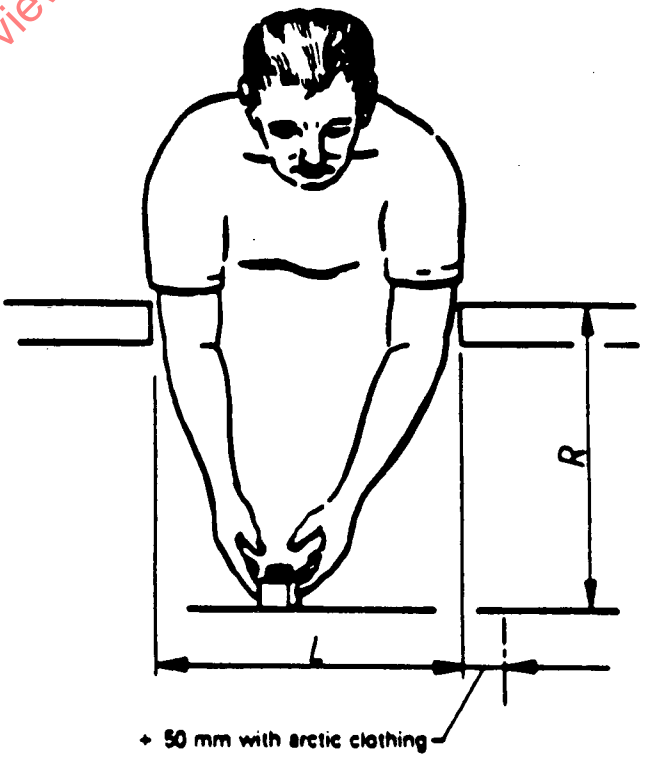


FIGURE 5 - Recommended Minimum Dimensions for Two-Handed Access, 95th Percentile

Dimensions in millimeters

Minimum dimensions (two hands)	Required reach	Rectangular	
	R	W[1]	L
Arm bare	R	150	$\frac{3}{4}$ R + X but 200 min. 560 max.
Arctic clothing	R	200	$\frac{3}{4}$ R + 50 mm + X but 250 min. 650 max.

1) W = height of opening

FIGURE 5 (Continued) - Recommended Minimum Dimensions for Two-Handed Access, 95th Percentile

The phi (Ø) symbol is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. If the symbol is next to the report title, it indicates a complete revision of the report.