



AEROSPACE RECOMMENDED PRACTICE

ARP1836™**REV. D**

Issued 1985-07
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Revised 2026-05

Superseding ARP1836C

Aircraft Cargo Conveyor/Belt Loader

RATIONALE

Five-Year Review. Added the designation "Belt loader" to align with IATA AHM. Editorial changes and alignment with AHM 925A.

1. SCOPE

This SAE Aerospace Recommended Practice (ARP) outlines the functional and design requirements for a self-propelled belt conveyor for handling baggage and cargo at aircraft bulk cargo holds. Additional considerations and requirements may legally apply in other countries. As an example, for operation in Europe (EU and EFTA), the applicable EN standards shall be complied with.

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 1-877-606-7323 (U.S. and Canada only) or 1-724-776-4970 (outside U.S. and Canada), www.sae.org.

AIR1375	Minimum Safety Requirements for Special Purpose Airline Ground Support Equipment
ARP1247	Aircraft Ground Support Equipment - General Requirements
ARP1328	Aircraft Ground Support Equipment - Wind Stability Determination
ARP1558	Interface Protection - Ground Equipment to Aircraft
ARP1816	Charger for Battery Powered Ground Support Equipment
ARP1817	Battery Industrial, Lead-Acid Type, for Use in Electric Powered Ground Support Equipment
ARP1838	Pictograms for Ground Support Equipment
ARP1892	Electrical Connectors for Use in Battery Powered Ground Support Equipment

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<https://www.sae.org/standards/content/ARP1836D/>

Documents

Standard, visit Sharing Hub

2.2 IATA Publications

Available from International Air Transport Association, Publications Assistant, SS135-800 rue du Square-Victoria, Montréal, Quebec H3C 0B4, Canada, Tel: 1-514-874-0202, www.iata.org.

AHM 907	Basic Requirements for Electrically Powered GSE (e-GSE)
AHM 910	Basic Requirements for Aircraft Ground Support Equipment
AHM 913	Basic Safety Requirements for Aircraft Ground Support Equipment
AHM 925	Functional Specification for Self-Propelled Conveyor Belt Loader

2.3 EN Publications (Mandatory in EU and EFTA Countries)

Available from CEN, Comité Européen de Normalisation, rue de Stassart 36, B1050 Brussels, Belgium, Tel: 32 2 550 08 11, www.cencenelec.eu.

EN 1915-1	Aircraft Ground Support Equipment General Requirements - Part 1: Basic Safety Requirements
EN 12312-3	Aircraft Ground Support Equipment Specific Requirements - Part 3: Conveyor Belt Vehicles

3. DESIGN REQUIREMENTS

Design, systems, hardware, and material used in the manufacture of the conveyor must meet automotive standards and good industry practices. The belt loader shall be designed for easy access to those areas that require frequent checks for servicing.

3.1 Physical Characteristics

3.1.1 For narrowbody aircraft, overall dimensions of the aircraft cargo conveyor shall be within 347 inches (8.81 m) long and 88 inches (2.23 m) wide. The vehicle shall have a minimum front to rear wheelbase of 110 inches (2.8 m) for belt loader with boom length above 315 inches (8 m).

For loading Maindeck or widebody aircraft, the overall dimension could be different.

Overall height should be kept as low as possible consistent with good operation, safety, and ground clearance.

3.1.2 The belt loader must be capable of servicing the aircraft for which use it is designed. This requires a range of travel of the forward end of the conveyor of a minimum of 38 inches (0.97 m), from the ground in the conveyor full down position, to the full up position. The rear end of the conveyor must maintain 17 to 33 inches (0.45 to 0.85 m) through the entire height range of the forward end and extend to a minimum height of 50 inches (1.27 m).

3.1.3 The turning radius as measured from the outside corner of the vehicle without the belt shall not be greater than 25 feet (7.62 m). The following characteristics shall be met under normal operating conditions and loads:

- a. Approach angle: 16 degrees (0.28 rad) minimum
- b. Ramp breakover angle: 10 degrees (0.18 rad) minimum
- c. Departure angle: 10 degrees (0.18 rad) minimum

3.1.4 The conveying belt shall be 23 inches (0.58 m) wide. It shall be weather proof with anti-slip surface. Usable conveyor bed width shall be a minimum of 27 inches (0.69 m) with guides and a maximum of 40 inches (1.02 m) overall. Lateral guide rails shall be installed on each long side of the boom. At least one guide should be retractable below the belt surface. Their internal surface shall be smooth. They shall extend a minimum of 100 mm (4 inches) above the belt. The rails shall be shorter than the boom and stop 20 inches (0.5 m) minimum from the aircraft end of the boom and 60 inches (1.5 m) minimum before the ramp end of the boom. Retractable handrails in the retracted position may be used as guiding device (see 6.5).

- 3.1.5 The belt conveyor shall have tire tread suitable for outdoor use and all performance requirements as specified in this document.
- 3.1.6 The minimum ground clearance shall be at least 5 inches (0.13 m).
- 3.1.7 The belt loader chassis shall have rub rails on both sides for protection against damage.
- 3.1.8 To minimize aircraft damage, the forward end of the conveyor support structure shall be protected with a bumper as recommended in ARP1558.

Bumper does not extend across the front of the conveyor bed, but is mounted to the support structure on either side of the conveyor bed, reducing finger pinching hazard. Side bumper can also be achieved with wheels.

- 3.1.9 The operator's control area shall have adequate room to safely and efficiently operate the belt loader. Recommended dimensions to accomplish this are shown in Table 1 and Figure 1.

Table 1 - Operator station interior dimensions

Table 1A - Dimensions A through N

Dimension	Inches	Centimeters	Description
A	18.0 min 22.0 max	45.72 min 55.88 max	Seat width
B	15.0 min	38.1 min	Seat position-lateral
C	5.0 min	12.7 min	Elbow room
D	14.5 min	36.83 min	Knee room
E	6.5 min	16.51 min	Side room
F	16 min 18 max	40.64 min 45.72 max	Steering wheel diameter
G	2.5 max	6.35 max	Brake-accel. separation
H	2.5 max	6.35 max	Steering column - brake separation
I			Not used
J	27.0	68.58	Small man eye level
K			Not used
L	31.5	80	Average man eye level
M	18 min 20 max	45.72 min 50.8 max	Seat backrest height
N	29 min	73.66 min	Knee room

Table 1B - Dimensions O through Z

Dimension	Inches	Centimeters	Description
O			Not used
P	18 min (±3)	45.72 min (±7.62)	Seat position-fore-aft
Q	13 min 17 max	33.02 min 43.18 max	Seat length
R	10 min 17 max	25.4 min 43.18 max	Seat cushion height
S	25 min	63.5 min	Steer height
T			Not used
U	3.0 max	7.62 max	Shift lever
V	26 min	66.04 min	Leg room
W	11 min 14 max	27.94 min 35.56 max	Braking
X	14.5 min	36.83 min	Foot room
Y	4.0 max	10.16 max	Brake pedal travel
Z	8.0 max	20.32 max	Brake pedal height