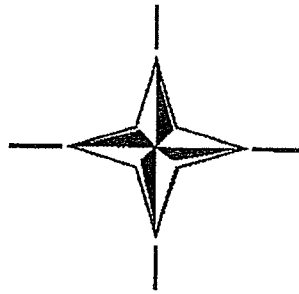


STANAG No. 4101
(Edition 2)

**NORTH ATLANTIC TREATY ORGANIZATION
(NATO)**

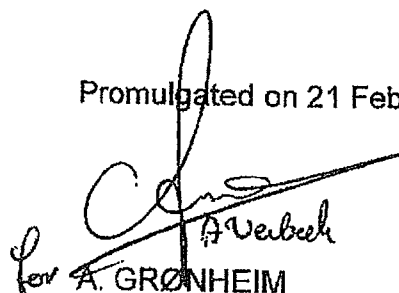


**MILITARY AGENCY FOR STANDARDIZATION
(MAS)**

**STANDARDIZATION AGREEMENT
(STANAG)**

SUBJECT: TOWING ATTACHMENTS

Promulgated on 21 February 2000


for A. GRÖNHEIM
Major General, NOAF
Chairman, MAS

**NORTH ATLANTIC TREATY ORGANIZATION
ORGANISATION DU TRAITE DE L'ATLANTIQUE NORD**

MILITARY AGENCY FOR STANDARDIZATION (MAS)
BUREAU MILITAIRE DE STANDARDISATION (BMS)
1110 BRUSSELS
Tel : 707.47.24
Fax : 707.57.18

21 February 2000

MAS(ARMY)0217-PPS/4101

STANAG 4101 PPS (EDITION 2) - TOWING ATTACHMENTS

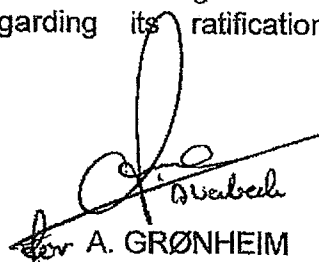
References:

- a. MAS(ARMY)(67)412 dated 20 September 1967 (Edition 1)
- b. AC/301-D/471 dated 22 May 1996 (Edition 2) (Ratification Draft 1)

1. The enclosed NATO Standardization Agreement which has been ratified by nations as reflected in page iii is promulgated herewith.
2. The references listed above are to be destroyed in accordance with local document destruction procedures.
3. AAP-4 should be amended to reflect the latest status of the STANAG.

ACTION BY NATIONAL STAFFS

4. National staffs are requested to examine page iii of the STANAG and, if they have not already done so, advise the Defence Support Division through their national delegation as appropriate of their intention regarding its ratification and implementation.


for A. GRØNHEIM
Major General, NOAF
Chairman, MAS

Enclosure:

STANAG 4101 (Edition 2)

RECORD OF AMENDMENTS

No.	Reference/date of amendment	Date entered	Signature

EXPLANATORY NOTES

AGREEMENT

1. This NATO Standardization Agreement (STANAG) is promulgated by the Chairman MAS under the authority vested in him by the NATO Military Committee.
2. No departure may be made from the agreement without consultation with the tasking authority. Nations may propose changes at any time to the tasking authority where they will be processed in the same manner as the original agreement.

3. Ratifying nations have agreed that national orders, manuals and instructions implementing this STANAG will include a reference to the STANAG number for purposes of identification.

DEFINITIONS

4. Ratification is "In NATO Standardization, the fulfilment by which a member nation formally accepts, with or without reservation, the content of a Standardization Agreement" (AAP-6).
5. Implementation is "In NATO Standardization, the fulfilment by a member nation of its obligations as specified in a Standardization Agreement" (AAP-6).
6. Reservation is "In NATO Standardization, the stated qualification by a member nation that describes the part of a Standardization Agreement that it will not implement or will implement only with limitations" (AAP-6).

RATIFICATION, IMPLEMENTATION AND RESERVATIONS

7. Page iii gives the details of ratification and implementation of this agreement. If no details are shown it signifies that the nation has not yet notified the tasking authority of its intentions. Page iv (and subsequent) gives details of reservations and proprietary rights that have been stated.

FEEDBACK

8. Any comments concerning this publication should be directed to NATO/MAS - Bvd Leopold III - 1110 Brussels - BE.

NATO STANDARDIZATION AGREEMENT
(STANAG)

TOWING ATTACHMENTS

- Annexes:
- A. Standard Dimensions for Towing Eye (Lunette)
 - B. Minimum Drawbar Horizontal and Vertical Articulation Angles from Central Towing Pintle to Facilitate Normal Towing Requirements (Tracked Vehicles)
 - C. Minimum Drawbar Horizontal and Vertical Articulation Angles from Central Towing Pintle to Facilitate Normal Towing Requirements (Wheeled Vehicles)

Related Documents: ISO-11406, Commercial Road Vehicles, Mechanical Coupling Between Towing Vehicles with Rear-mounted Coupling and Drawbar Trailers -Interchangeability.

AIM

1. The aim of this Agreement is to standardize the towing attachments on new procurement of tactical land vehicles for use by the NATO Armed Forces.

AGREEMENT

2. Participating nations agree to adopt certain design features which will ensure interoperability of the towing attachments (towing hooks, pintle assemblies or other devices) on new procurement of tactical land vehicles. This Agreement is also applicable to lunettes or towing eyes on all trailers required to be towed by such vehicles, including guns and other specialized equipment.

DEFINITIONS

3. The following definition is used for the purpose of this agreement:

Tactical Land Vehicle. A military vehicle, whether designed primarily for military use or adapted from a commercial vehicle, which has specialised military characteristics to fit it for use by forces in the field in direct connection with, or in support of, combat operations or the training of troops for such operations.

STANAG 4101

(Edition 2)

- 2 -

DETAILS OF AGREEMENT

4. Scope of Agreement

a. STANAG 4101 is for use by the following NATO Forces:

- (1) NATO Army Forces.
- (2) Those elements of NATO Naval and Air Forces operating in a ground role, eg. marines, naval landing parties and Air Force ground personnel.

b. This Agreement applies to the following:

- (1) New procurement of tactical land vehicles, also trailers and towed gun equipment designed to be towed by these vehicles.
- (2) Tactical land vehicles including trailers and towed guns which could be modified at reasonable cost without major adverse changes to their military characteristics.
- (3) Future designs of tactical land vehicles.

5. General

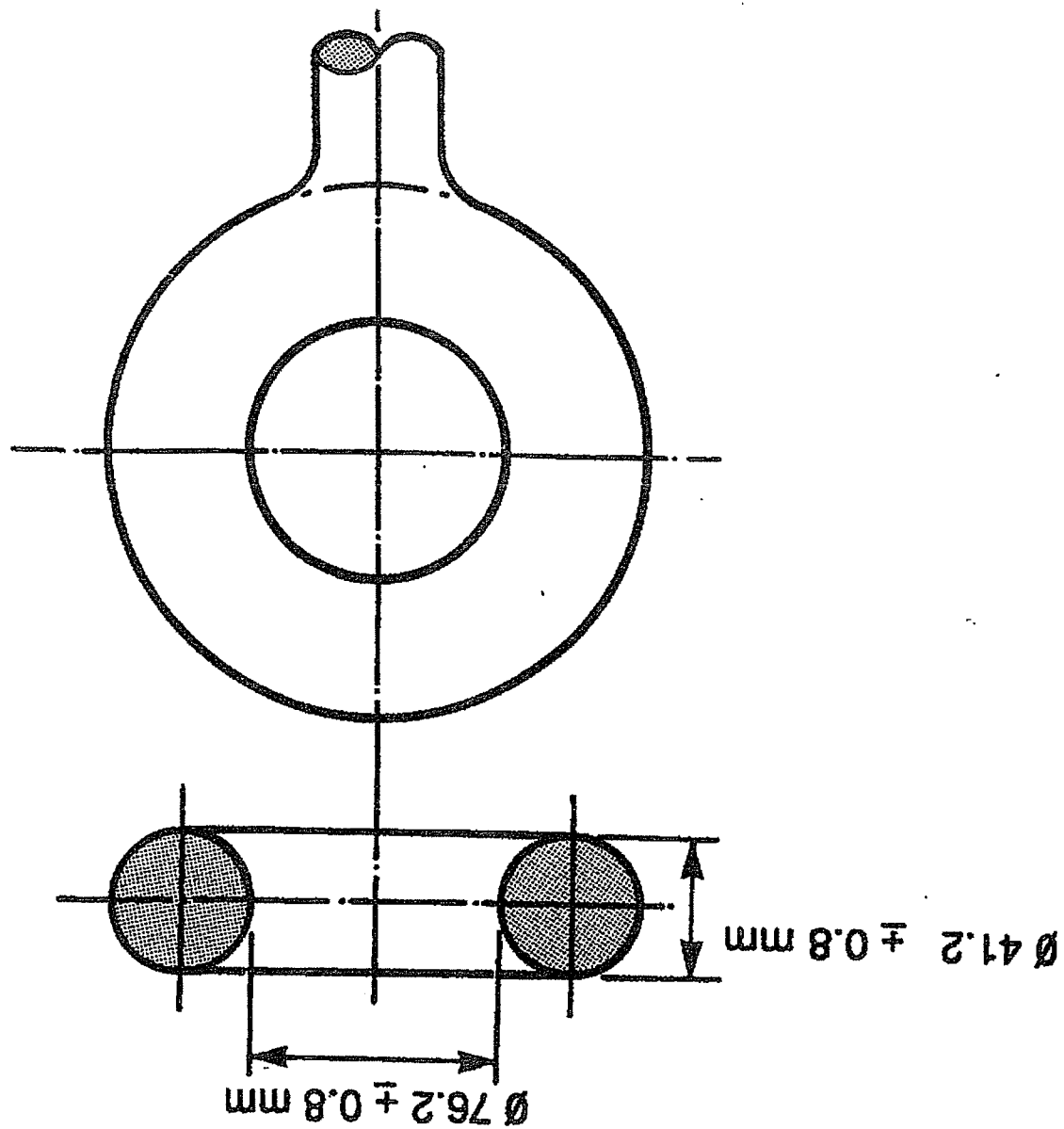
- a. Lunettes or towing eyes shall be in accordance with Annex A.
- b. Towing devices (pintle assembly or hook, pin and jaw) shall be of such a size that they will accept the 76.2 mm x 41.2 mm lunette or towing eye.
- c. The design of lunettes and pintle assemblies shall allow the maximum possible articulation of the connection. The minimum permissible articulation is shown in Annex B to this STANAG (Tracked Vehicles) and Annex C to this STANAG (Wheeled Vehicles). This articulation does not relate to the articulation between the vehicle and its trailer/towed gun.
- d. Longitudinal springing if required by any type of trailer, shall be incorporated in the lunette or towing eye. The towing device need not be sprung.

- e. To ensure full NATO interoperability between nations equipments provision must be made to enable the pintle assemblies to rotate, with the lunettes to be fixed to prevent them from revolving.
- f. The pintle assemblies or tow hooks on tactical land vehicles shall be positioned using the coupling axis and heights specified in ISO 11406 as a guide to establish horizontal articulation of the truck/trailer unit. ISO 11406 does not take into account the requirement for vertical articulation.
- g. Materials are to be acceptable to each national approving authority.

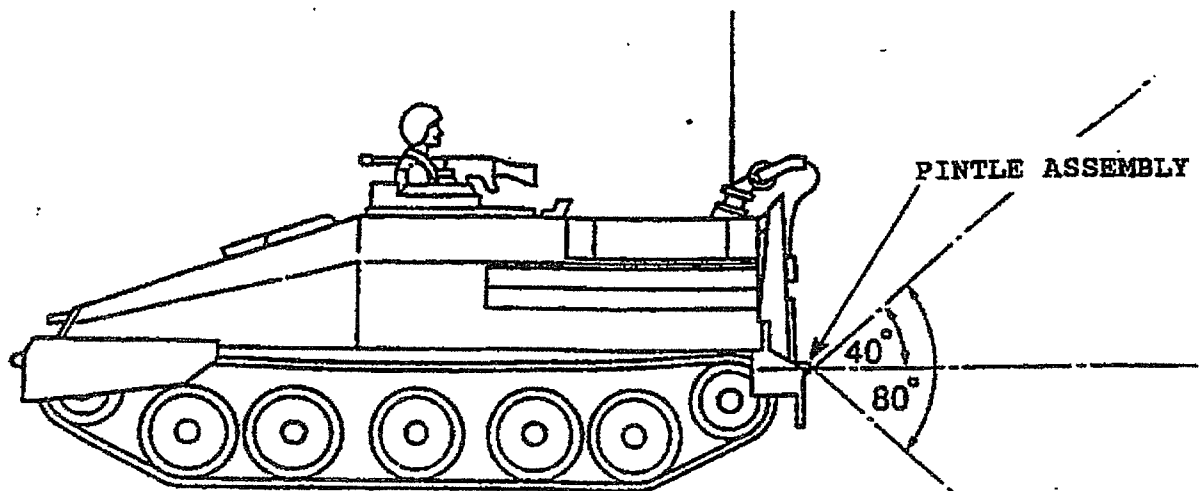
IMPLEMENTATION OF THE AGREEMENT

- 6. This STANAG is implemented when the necessary orders or instructions have been issued to ensure that the requirements covered by this Agreement are applied to the new procurement of tactical land vehicles.

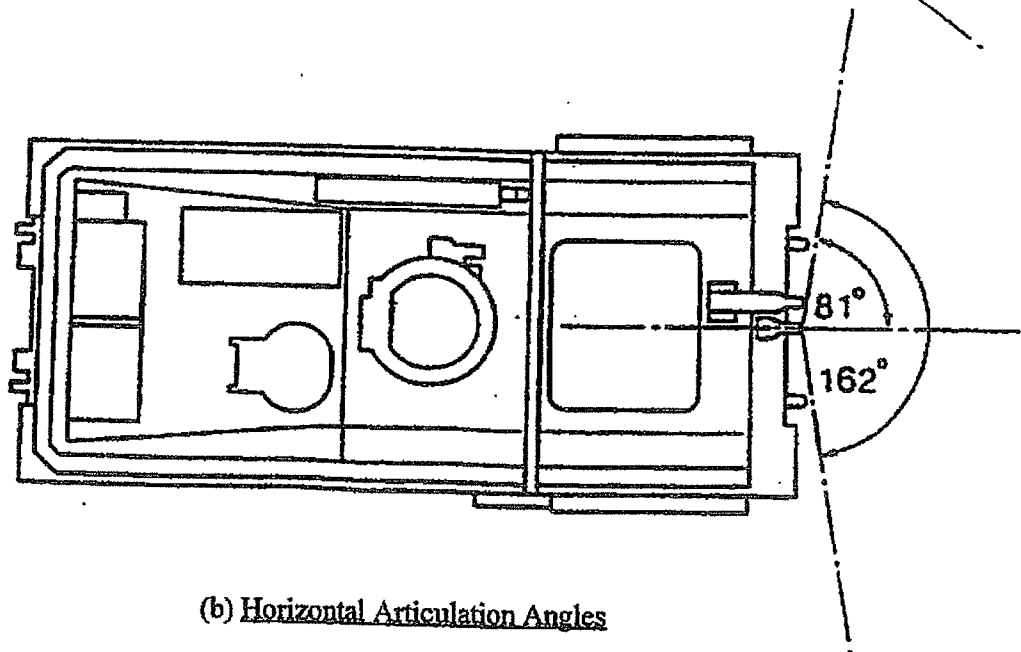
STANDARD DIMENSIONS FOR TOWING EYE (LUNETTE)



**MINIMUM DRAWBAR HORIZONTAL AND VERTICAL ARTICULATION ANGLES
FROM CENTRAL TOWING PINTLE TO FACILITATE NORMAL TOWING
REQUIREMENTS (TRACKED VEHICLES)**



(a) Vertical Articulation Angles

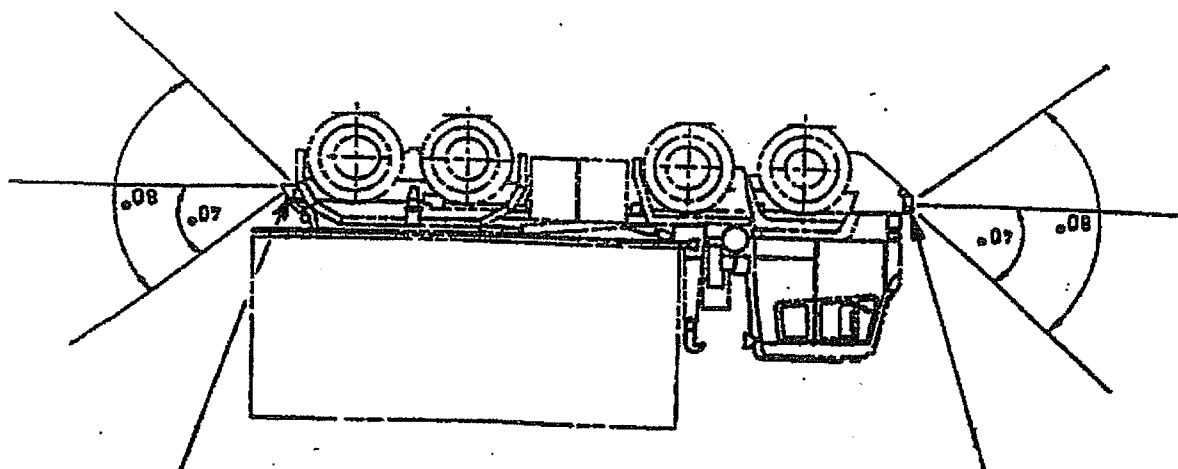


(b) Horizontal Articulation Angles

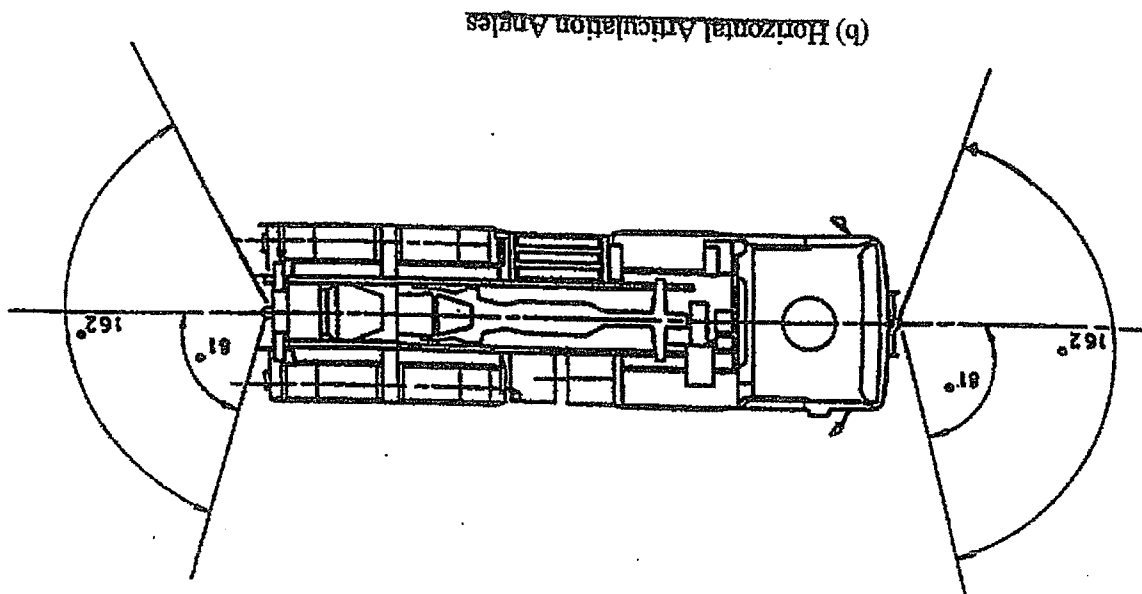
**MINIMUM DRAWBAR HORIZONTAL AND VERTICAL ARTICULATION ANGLES
FROM CENTRAL TOWING PINTLE TO FACILITATE NORMAL TOWING
REQUIREMENTS (WHEELED VEHICLES)**

PINTLE ASSEMBLY

PINTLE ASSEMBLY



(a) Vertical Articulation Angles



(b) Horizontal Articulation Angles