

# JIS

JAPANESE  
INDUSTRIAL  
STANDARD

Translated and Published by  
Japanese Standards Association

---

**JIS D 6801** : 1994

(Reaffirmed : 2000)

## **Glossary of terms relating to automatic guided vehicle systems**

---

ICS 01.040.53 ; 53.060

Reference number : JIS D 6801 : 1994 (E)

PROTECTED BY COPYRIGHT

D 6801 : 1994

## Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently JIS D 6801 : 1990 is replaced with this Standard.

Date of Establishment: 1990-02-01

Date of Revision: 1994-03-01

Date of Reaffirmation: 2000-08-20

Date of Public Notice in Official Gazette: 2000-08-21

Investigated by: Japanese Industrial Standards Committee  
Divisional Council on Distribution of Goods

---

JIS D 6801 : 1994, First English edition published in 2005-11

Translated and published by: Japanese Standards Association  
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

---

In the event of any doubts arising as to the contents,  
the original JIS is to be the final authority.

© JSA 2005

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

ASL/HB

PROTECTED BY COPYRIGHT

 **Documents**  
Document Sharing Hub

## Glossary of terms relating to automatic guided vehicle systems

**1 Scope** This Japanese Industrial Standard specifies primary terms (hereafter referred to as “terms”) and their definitions related to automatic guided vehicle systems (including automatic guided tractors and automatic guided fork-lift trucks).

**2 Classification** Terms are classified as follows:

**(1) Types of automatic guided vehicles**

- (a) General classifications
- (b) Classification of steering systems
- (c) Classification of transfer systems
- (d) Classification of guidance systems

**(2) Mechanisms and functions**

- (a) Driving
- (b) Steering
- (c) Transfer
- (d) Guidance
- (e) Others

**(3) System operation**

- (a) Operation
- (b) Data input
- (c) Travel and control

**(4) System composition**

- (a) Control equipment
- (b) Communication
- (c) Signals and detection
- (d) Peripheral devices and attachments
- (e) Charging

**(5) Performance and characteristics**

- (a) Traveling

- (b) Layout
- (c) Specifications
- (d) Dimensions
- (e) Designation

(6) **Safety**

- (a) Safety equipment
- (b) Travel safety
- (c) Alarms and others

**3 Terms and definitions** For the purpose of this Standard, the following terms and definitions apply. Corresponding English and customary terms are shown here for reference only.

Remarks : When terms appear in brackets “( )” in the column of terms, priority should be given to the term without brackets.

(1) **Types of automatic guided vehicles**

(a) **General classification**

| Num<br>ber | Term          | Reading              | Definition                                                                                                                                                                                                                                                                                               | Corresponding<br>English<br>(informative) |
|------------|---------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| 1101       | 無人搬送車         | MUZIN<br>HANSÔ SYA   | rail-less vehicle to the body of which cargo is loaded manually or automatically. This vehicle travels automatically to designated locations where its cargo is unloaded manually or automatically (see attached drawing 1).<br>A liberal definition includes unmanned tow cars and unmanned fork-lifts. | automatic<br>guided<br>vehicle (AGV)      |
| 1102       | 無人けん引車        | MUZIN<br>KEN'I N SYA | rail-less vehicle towing carriages to which cargo is loaded and unloaded manually or automatically. This vehicle travels automatically to designated locations (see attached drawing 2).                                                                                                                 | automatic<br>guided tractor               |
| 1103       | 無人<br>フォークリフト | MUZIN<br>HÔKURIHUTO  | rail-less vehicle equipped with a mast for hoisting and lowering a cargo transfer fork, automatically loads cargo to the fork, travels automatically to designated locations and executes automatic loading work (see attached drawing 3).                                                               | automatic<br>guided fork-lift<br>truck    |

## (b) Classification of steering systems

| Number | Term       | Reading                    | Definition                                                                                                                                         | Corresponding English (informative) |
|--------|------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1201   | 前輪ステアリング方式 | ZENRIN SUTEARINGU HÔSIKI   | steering method which determines the direction of movement by rotation of the steering wheel shaft (see attached drawing 4).                       | front wheel steering                |
| 1202   | 2 輪速度差方式   | NIRIN SOKUDOSA HÔSIKI      | steering method which determines the direction of movement by the difference in the speed between two drive wheel shafts (see attached drawing 5). | two-wheel speed difference          |
| 1203   | 独立ステアリング方式 | DOKURITU SUTEARINGU HÔSIKI | Each of all wheels is equipped with a steering wheel shaft to determine the direction of movement (see attached drawing 6).                        | individual steering                 |

## (c) Classification of transfer systems

| Number | Term      | Reading           | Definition                                                                                                                                                                                                    | Corresponding English (informative) |
|--------|-----------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1301   | 自動移載式     | ZIDÔ ISAI SIKI    | Automatically executes transfer operations with a ground transfer device and without human assistance. The category includes the chain conveyor type, roller conveyor type, push-pull type, and lift up type. | automatic transfer                  |
| 1302   | 手動移載式     | SYUDÔ ISAI SIKI   | direct transfer by human work force (see attached drawing 7)                                                                                                                                                  | manual transfer                     |
| 1303   | スライドフォーク式 | SURAI DO HÔKUSIKI | automatic transfer performed by a slide-fork (see attached drawing 8)                                                                                                                                         | slide-fork transfer                 |
| 1304   | チェーンコンベヤ式 | TYÊN KONBEYA SIKI | automatic transfer performed by a chain conveyor (see attached drawing 9)                                                                                                                                     | chain conveyor transfer             |
| 1305   | ローラコンベヤ式  | RÔRA KONBEYA SIKI | automatic transfer performed by a driving roller conveyor (see attached drawing 10)                                                                                                                           | roller conveyor transfer            |
| 1306   | プッシュプル式   | PUSSYU-PURUSIKI   | automatic transfer performed by a push-pull arm (see attached drawing 11)                                                                                                                                     | push-pull transfer                  |
| 1307   | リフトアップ式   | RIHUTO APPUSIKI   | automatic transfer performed by the up/down movement of a lifting device (see attached drawing 12)                                                                                                            | lifter deck transfer                |

## (d) Classification of guidance systems

| Number | Term  | Reading          | Definition                                                               | Corresponding English (informative) |
|--------|-------|------------------|--------------------------------------------------------------------------|-------------------------------------|
| 1401   | 固定経路式 | KOTEI KEIRO SIKI | guidance by providing a constant set of guide materials on the guidepath | fixed guidepath                     |

| Number | Term   | Reading               | Definition                                                                                                                                          | Corresponding English (informative) |
|--------|--------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1402   | 半固定経路式 | HANKOTEI KEIRO SIKI   | guidance by providing an intermittently placed set of guide materials on the guidepath                                                              | adjustable guidepath                |
| 1403   | 自律走行式  | ZIRITUSÔKÔ SIKI       | The guidepath is determined by the vehicle without the use of guide materials.                                                                      | autonomous travel                   |
| 1404   | 地上援助式  | TIZYÔ ENZYO SIKI      | traveling according to instructions given by a guidance control apparatus provided on the ground without relying upon guide materials               | ground guidance                     |
| 1405   | ガイド式   | GAIDO SIKI            | guidance by providing guide materials continuously or intermittently                                                                                | guidance by guidepath               |
| 1406   | ガイドレス式 | GAIDORESUSIKI         | guidance without providing guide materials                                                                                                          | guidance without guidepath          |
| 1407   | アクティブ式 | AKUTIBUSIKI           | vehicle recognition of signals generated by guide materials                                                                                         | active guidance                     |
| 1408   | パッシブ式  | PASSIBUSIKI           | vehicle judgement of data provided by guide materials                                                                                               | passive guidance                    |
| 1409   | 電磁誘導式  | DENZI YÛDÔ SIKI       | guidance by the detection of a magnetic field generated by an electric current conveyed through guide wires provided in or on the guidepath surface | electromagnetic guidance            |
| 1410   | 光学誘導式  | KÔGAKU YÛDÔSIKI       | guidance by the optical detection of guide tape or the like provided on the guidepath surface                                                       | optical reflection guidance         |
| 1411   | 磁気誘導式  | ZIKIYÛDÔ SIKI         | guidance by the detection by a sensor of magnetic objects provided in or on the guidepath surface                                                   | magnet guidance                     |
| 1412   | 磁性体式   | ZISEITAI SIKI         | guidance by the detection by a magnetic substance sensor of magnetic objects provided in or on the guidepath surface                                | magnetism guidance                  |
| 1413   | 床面はり付式 | YUKAMEN HARITUKE SIKI | Guide materials are pasted on the guidepath surface.                                                                                                | on-floor type                       |
| 1414   | 床埋込式   | YUKA UMEKOMI SIKI     | Guide materials are buried in the guidepath surface.                                                                                                | buried type                         |

## (2) Mechanisms and functions

### (a) Driving

| Number | Term      | Reading               | Definition                                                          | Corresponding English (informative) |
|--------|-----------|-----------------------|---------------------------------------------------------------------|-------------------------------------|
| 2101   | 前輪        | ZENRIN                | forefront wheels determined in accordance with vehicle construction | front wheel                         |
| 2102   | 駆動輪       | KUDÔRIN               | wheel used to drive the vehicle                                     | drive wheel                         |
| 2103   | 従属輪 (従動輪) | ZYÛZOKURIN (ZYÛDÔRIN) | wheel without a driving function                                    | idler wheel                         |

| Number | Term    | Reading      | Definition                          | Corresponding English (informative) |
|--------|---------|--------------|-------------------------------------|-------------------------------------|
| 2104   | ドライブモータ | DORAIBU MÔTA | motor used to drive the drive wheel | drive motor                         |
| 2105   | ホイールモータ | HOÏRU MÔTA   | drive motor equipped with wheels    | wheel motor                         |

## (b) Steering

| Number | Term      | Reading           | Definition                                     | Corresponding English (informative) |
|--------|-----------|-------------------|------------------------------------------------|-------------------------------------|
| 2201   | ステアリング機能  | SUTEARINGU KINÔ   | function to control the direction of movement  | steering                            |
| 2202   | ステアリングモータ | SUTEARINGU MÔTA   | motor for turning the steering wheel shaft     | steering motor                      |
| 2203   | ステアリング装置  | SUTEARINGU SÔTI   | equipment to control the direction of movement | steering equipment                  |
| 2204   | ステアリング制御  | SUTEARINGU SEIGYO | control to pursue the direction of movement    | steering control                    |

## (c) Transfer

| Number | Term       | Reading                   | Definition                                                                                     | Corresponding English (informative) |
|--------|------------|---------------------------|------------------------------------------------------------------------------------------------|-------------------------------------|
| 2301   | 自動移載       | ZIDÔ ISAI                 | to carry out transfer of articles automatically by AGV or external power                       | automatic transfer                  |
| 2302   | 在荷（載荷）     | ZAICA (SAIKA)             | state where cargo is loaded                                                                    | load presence (loaded)              |
| 2303   | 空荷         | KÛKA                      | state where cargo is not loaded                                                                | empty load                          |
| 2304   | 移載装置       | ISAI SÔTI                 | a device which executes transfer between the vehicle and the ground (see attached drawing 13.) | transfer equipment                  |
| 2305   | 荷積み（載荷）    | NIZUMI (SAIKA)            | transfer operation to load cargo onto an AGV                                                   | loading                             |
| 2306   | 荷卸し（脱荷）    | NIOROSI (DAKKA)           | transfer operation to unload cargo from an AGV                                                 | unloading                           |
| 2307   | 直積み（直積み載荷） | ZIKAZUMI (ZIKAZUMI SAIKA) | loading operation to load cargo placed directly on the guideway surface                        | loading from floor                  |
| 2308   | 直置き（直置き脱荷） | ZIKAOKI (ZIKAOKI DAKKA)   | loading operation to place cargo directly on the guideway surface                              | unloading on floor                  |
| 2309   | 段積み        | DAN ZUMI                  | loading operation to load cargo in a multistage configuration                                  | stacking                            |
| 2310   | 段ばらし       | DAN BARASI                | loading operation to dismount stacked cargo one item at a time                                 | dispensing                          |
| 2311   | アプローチ距離    | APURÔTI KYORI             | the distance between the place where the AGV enters the loading state and the loading site     | creep distance                      |

| Number | Term | Reading       | Definition                                                               | Corresponding English (informative) |
|--------|------|---------------|--------------------------------------------------------------------------|-------------------------------------|
| 2312   | 荷役原点 | NIYAKU GENTEN | the point where the AGV enters the loading state and begins the approach | home position                       |

## (d) Guidance

| Number | Term  | Reading   | Definition                                                                                                                | Corresponding English (informative) |
|--------|-------|-----------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 2401   | 誘導線   | YÛDÔ SEN  | an electric wire provided in or on the guidepath surface, connected to a ground oscillator and used for guidance purposes | guidepath wire                      |
| 2402   | 誘導テープ | YÛDÔ TÊPU | tape provided on the guidepath surface and used for guidance purposes                                                     | guidepath tape                      |
| 2403   | 誘導路   | YÛDÔ RO   | route on the floor surface marked by guide materials (see attached drawing 14)                                            | guidepath                           |
| 2404   | 誘導体   | YÛDÔ TAI  | materials provided in or on the guidepath surface to be used for guidance                                                 | guide materials                     |

## (e) Others

| Number | Term   | Reading            | Definition                                                                                                                                                      | Corresponding English (informative) |
|--------|--------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 2501   | 自動連結   | ZIDÔ RENKETU       | The tractor and coupler part of a trailer are coupled automatically according to a program.                                                                     | automatic coupling                  |
| 2502   | 自動切離   | ZIDÔ SETURI        | The tractor and coupler part of a trailer are decoupled automatically according to a program.                                                                   | automatic uncoupling                |
| 2503   | けん引車   | KEN'I N SYA        | a vehicle equipped with a power unit for traction purposes                                                                                                      | tractor                             |
| 2504   | トレーラ   | TORÊRA             | a driven carriage without a power unit                                                                                                                          | trailer                             |
| 2505   | 連結器    | RENKETUKI          | a device used for coupling of a tractor and a trailer                                                                                                           | coupler                             |
| 2506   | スカート   | SUKÂTO             | a safety cover to prevent workers' toes from being caught in the clearance between the lower part of an AGV and the guidepath surface (see attached drawing 13) | skirt                               |
| 2507   | 車上制御装置 | SYAZYÔ SEIGYO SÔTI | a device mounted on an AGV used to control vehicle operation (see attached drawing 13)                                                                          | onboard controller                  |
| 2508   | 手動操作箱  | SYUDÔ SÔSA BAKO    | a box used for manual operation of an AGV                                                                                                                       | manual operation box                |
| 2509   | 速度制御   | SOKUDO SEIGYO      | control to increase, decrease or maintain speed at a constant rate                                                                                              | speed control                       |