walvoil

MOTION BY PEOPLE

DJW

Joystick for safety-related applications

USER MANUAL













ELECTRONIC COMPONENTS & PHC SYSTEMS

Preface

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No part of this manual may be reproduced or transmitted by any electronic or mechanical means, including phocopying, recording, or any other storage and retrieval system, for purposes other than the purchaser's exclusively personal use, without explicit written permission from Walvoil S.p.A.
The data specified are provided solely to describe the product. The information provided does not relieve the user of the obligation to judge and verify. It should be remembered that our products are subject to a natural process of wear and aging Walvoil S.p.A. is in no way responsible for the consequences arising from any incorrect operations carried out by the user.
All instructions described in this manual must be followed.
The cover shows an example of application. The product delivered may differ from the image on the cover.
If you need a printed copy of the manual, please contact:
info@walvoil.com

Further information
This manual shows the product in the most common configurations.
For more detailed information or special requests, contact the sales department.

ATTENTION!
Technical specifications, drawings and descriptions contained in this manual refer to the standard product at the time of printing.
Walvoil, committed to continuous product improvement, reserves the right to make changes at any time without obbligation to provide notice.

THE MANUFACTURER IS NOT LIABLE FOR ANY DAMAGES TO PERSONS OR THINGS ARISING FROM IMPROPER USE OF THE PRODUCT.

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1. General information

1.1 Denominations

The following terms are used in this documentation:

Denomination	Meaning
DJW	Walvoil electronic joystick of the **DJW** series.
Product / Joystick	Generic term used to refer the **DJW** throughout this manual.
Roller	Auxiliary thumbwheel control integrated in the joystick.
Handle	The user-controlled part equipped with buttons, roller, operator presence sensor depending on the configuration.
Machine/system	Complete assembly of the application in which the **DJW** joystick is installed and used.
Integrator	Entity that integrates the product into the machine/system and performs its application validation.

1.2 Validity of the documentation

This documentation concerns the **DJW** joystick family for applications with safety requirements.
The configurations of the axes, rollers and buttons are indicated in the related drawing according to the ordered code.
The different variants of the **DJW** joystick are identified by a descriptive code structured as follows:

- the first five digits indicate the **DJW** code family and are: 18356;
- the last four digits are successive according to the ordered code.

1.3 Target users

This documentation is intended for machine and system manufacturers, integrators, assemblers, and maintenance technical staff.

The activities described in this documentation require technical skills and knowledge of specialist terms, and must be carried out exclusively by:

- qualified personnel or;
- personnel trained under the supervision of qualified personnel.

Qualified personnel means individuals who, thanks to training, experience and knowledge of applicable regulations, are able to:

- recognize the hazards associated with the activities to be performed;
- adopt appropriate safety measures;
- read and understand electrical diagrams and system documentation;
- correctly perform wiring and commissioning of electronic components;
- understand the interaction between electronic, mechanical and hydraulic components of the machine.

1.4 Supply and preservation

The manual is provided in paper and/or electronic format.
The manual is an integral part of the product and must be kept intact and available for consultation throughout the joystick's life cycle.
In case of damage or loss, request a copy at info@walvoil.com

1.5 Language

The original manual is written in italian and constitutes the reference for any translation.

1.6 Representation of information

To ensure safe and correct use of the product, this documentation uniformly uses safety instructions, symbols, terms, and abbreviations. The conventions used are described in the following sections.

Safety instructions are structured as follows:

- **Hazard pictogram**: draws attention to the danger.
- **Signal word**: identifies the level of severity.
- **Type and source of the danger**: describes the nature of the risk.
- **Consequences**: what can happen.

Signal word
Type and source of the danger. Measures to prevent hazards and/or consequences.

Hazard classes (in accordance with ANSI Z535.6 and ISO 3864 standards):

Pictogram / Word	Meaning
DANGER	A dangerous situation that, if not avoided, cause death or serious injuries.
WARNING	A dangerous situation that, if not avoided, can cause death or serious injuries.
CAUTION	A dangerous situation that, if not avoided, can cause minor or moderate injuries.
NOTICE	Damage to property/product: the product or surrounding area may be damaged.

1.7 Other pictograms

The following symbols are used to highlight important content, even if not relevant to safety.

Pictogram / Word	Meaning
	Indicates a prescription.
	Indicates a prohibition to perform an action.
	Indicates an important information.

General information

1.8 Abbreviations

Abbreviation	Meaning
ANSI	American National Standards Institute
CAN	Controller Area Network
CE	European Conformity
EMC	Electromagnetic Compatibility
EU	European Union
PPE	Personal Protective Equipment

1.9 Warranty



INFORMATION

The general warranty terms, including the warranty duration, are detailed at the following website: www.walvoil.it/allegati/general_sales_warranty_conditions.pdf or subject to specific written sales agreements. In the event of any discrepancy with the information provided in this section, the following shall prevail, in order of precedence:

- the specific written sales agreements;
- the general warranty conditions.

1.10 Limitation of liability



INFORMATION

Walvoil S.p.a. decline all liability for damages in the event of use other than the intended use and in all cases involving the forfeiture of the warranty.

2.1 Introduction

This chapter contains general and specific safety instructions for the use of the **DJW** joystick. It should be noted that the safety instructions:

- contribute to preventing personal injury and material damage;
- do not replace the risk assessment of the machine/system performed by the manufacturer/integrator;
- must be integrated with safety procedures and with the documentation of the machine/system in which the product is installed.



OBLIGATION

Read carefully this entire documentation before starting any operation on the product.

2.2 Intended use

Thr product is intended exclusively for professional use.
The **DJW** joystick has been developed to be integrated into a system or a machine in order to perform control functions.
It is used to monitor and actuate the inputs of the vehicle driver on board the work machine. The joystick may be put into service only after being installed in the machine/system for which it is intended and after the safety of the entire system has been verified.

Conditions for compliant use:

- installation, wiring and commissioning according to the technical drawing of the ordered code and this manual;
- the operational limits and environmental conditions specified in paragraph **4.3** are met;
- the operation of the joystick must be carried out exclusively by the driver on board the operating machine;
- system integration ensures that the machine enters a safe state in the event of a fault, loss of communication, or other abnormal conditions;
- validation by the integrator.

2.3 Reasonably foreseeable improper use

WARNING

Product damage due to non-compliant use.
Any use other than described as intended use is considered improper. Incorrect installation, configuration and use can compromise the safety of the system or the machine.

Walvoil S.p.a. is not responsible for damages resulting from improper use. The user is solely responsible for any risk arising from improper use. The following foreseeable forms of misuse are also considered improper (the list is not exhaustive):

- using the joystick as a support, handle, step or lifting point;
- subjecting the product to unforeseen mechanical loads (impacts, pulling on the wiring, twisting of the base);
- using the product outside the specified environmental and operating limits (temperature, humidity, vibrations, EMC);
- commissioning or using the product with non-compliant wiring or missing protections;
- disabling/bypassing diagnostics or monitoring functions provided by the product or system;
- excluding or tampering the operator presence sensor (if available) associated with the joystick;
- performing unauthorized mechanical/electrical modifications, repairs or updates to software and/or firmware configurations;
- using the product in safety-related applications without complying with the Safety Manual (code D2WWTE02I) and without ensuring the safety of the entire system, in accordance with the applicable Directives and/or Regulations.

Safety instructions

2.4 General safety instructions

DANGER

Risk of serious or fatal injuries.
Comply with the regulations in force in the country of use regarding accident prevention and environmental protection.

DANGER

Unexpected machine start-up! Risk of serious or fatal injuries.
Before installing or replacing the product:
- ensure that the machine /system is in a safe state;
- disconnect the power supply (de-energize) to prevent restart;
- discharge any residual energies according to the procedures provided for the machine/system.

WARNING

Applications with functional safety requirements! Risk of loss of safety function if integrated in an inappropriate way.
For safety applications:
- adhere to the joystick Safety Manual, code D2WWTE02I;
- adhere to the requirements on the integrator side;
- perform system validation according to the standards applicable to the machine/system.

EMC and shielding
Use cables and shields that comply with the machine specifications.

Do not open the product or perform unauthorized repairs.
The joystick is not repairable and must be replaced if faulty.

Despite the utmost care in preparing this document, it is not possible to consider all possible applications.
Please contact Walvoil S.p.A. if no indications are available for the specific application.

NOTICE

Carry out updates and configuration interventions only according to procedures and with equipment approved by Walvoil S.p.a.
Always verify the installed firmware version and check compatibility with the machine/system.

2.5 Personal Protective Equipment (PPE)



MANDATORY

The use of PPE is the responsibility of the product user. Comply with applicable safety regulations. All PPE must be intact.



MANDATORY

Mandatory use of protective gloves during handling and installation operations.

General warnings about damage to items and the product

This chapter contains indications to prevent damage to the product and material damage to the surrounding area.
The following instructions aim to protect the integrity of the joystick and the proper functioning of the machine/system.

3.1 General instructions

WARNING

Damage to the product due to non-compliant use. The product may be damaged and may not guarantee the expected performance.
Use the joystick exclusively according to the intended use and respect the operating limits. Do not use the product as a support, step, or lifting point.

Damage from shocks and mechanical stresses.
Protect the product from impacts, falls, excessive vibrations and base torsion. Do not apply lateral loads or unexpected moments on the lever/handle. Do not pull, bend or crush the wiring; use proper clamping and cable crimps.

Damage from chemical agents and improper cleaning.
Do not use aggresive solvents and products that may compromise plastics, seals, or markings. Clean only with suitable methods and cleaners. Avoid high-pressure jets directed at the product and liquids ingress into connectors.

NOTICE

Perform updates and configurations only with procedures and tools approved by Walvoil S.p.a.
Always verify the installed firmware version and check compatibility with the machine/system.

3.2 Transport and storage

NOTICE

Damage during transport and handling of the product.
Transport and store the product in the original packaging or an equivalent package that provides mechanical and environmental protection.
Do not transport the joystick by gripping the cable or the connector.
Protect the product from impacts, falls, excessive vibrations and twists of the base/handle.
Protect connectors and terminal from contaminants (dust, moisture, liquids) until connection.

Electrostatic discharges (ESD) on electronics and connectors. ESD discharges can damage electronics or reduce their lifespan.
Do not touch the connector pins with tools or fingers.
Keep connectors and terminals protected until connection.

General warnings about damage to objects and the product

3.3 Installation

WARNING

Damage to the product during removal of the packaging.
Do not use sharp tools near the product. Do not lift the joystick by grabbing the cables or connector. Keep the original packaging for any returns or future transport. Failure to respect the interface with the connector can lead to irreversible damage to the joystick.

Damage due to incorrect assembly.
Respect the required orientation and clearances to avoid mechanical interference during lever travel. Tighten the screws to the specified torque values (see paragraph **5.3**). Connect/disconnect the connector only with the system unpowered.
If the ordered code includes the base only, follow the indications shown in the drawing regarding the assembly of the handle.

Damage to the connector and infiltrations.
Do not force the connector; align correctly and tighten according to specification (see paragraph **5.3**). Check the integrity of seals, O-rings and caps. Avoid sharp bends on the cables near the connector.

3.4 Use

WARNING

Damage due to incorrect parametrization/configuration.
Commission the product only after a complete verification of the installation. Verify compatibility between the joystick HW/SW version and machine/system configuration. Perform firmware update interventions strictly according to procedures and with equipment approved by Walvoil S.p.A.

Damage due to out-of-spec operation.
Do not use the product beyond the temperature, humidity, vibration, and EMC conditions defined in paragraph **4.3**.
Protect the joystick from water/dust intrusion beyond the specified protection rating.

3.5 Repairs and modifications

WARNING

Damage and loss of performance due to unauthorized repairs/modifications.
Do not open the product or perform unauthorized modifications.
Repairs must be carried out exclusively by Walvoil S.p.A.: return the product to the manufacturer.

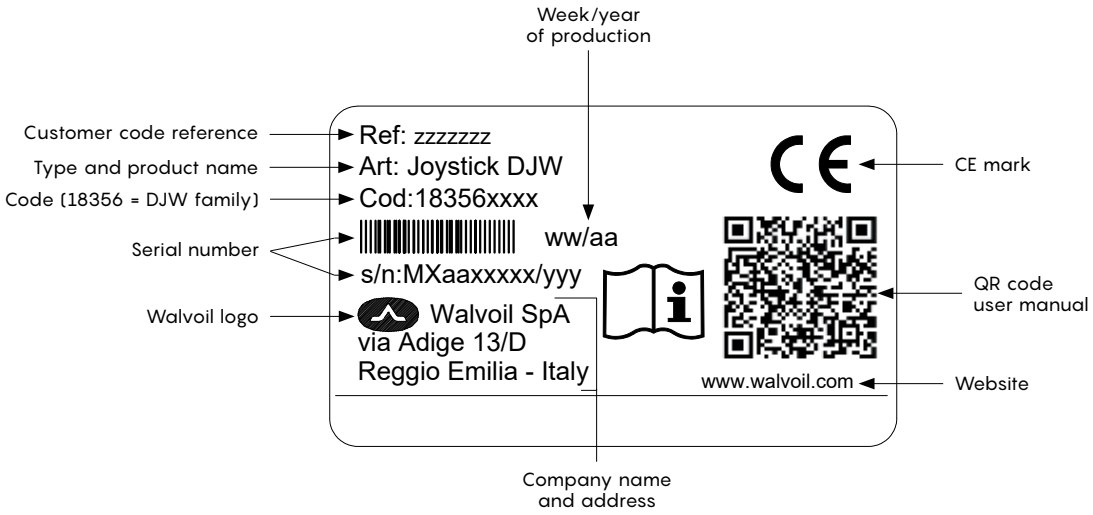
3.6 Notes on examples, figures and diagrams

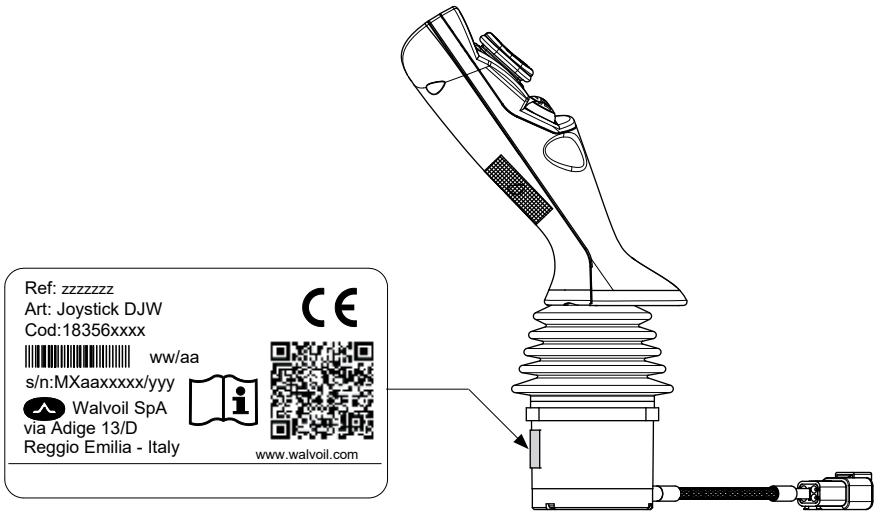
NOTICE

Examples, figures and diagrams in the manual are for illustrative purposes.
Always adapt values and solutions to the specific machine/system. If there are discrepancies between the manual and the documentation, the most up-to-date and applicable documentation takes precedence. If in doubt or for clarification, contact Walvoil S.p.A. support.

4.1 Identification plate

The joystick features depend on the ordered configuration. For complete identification of the configuration and permitted performance, refer to the technical drawing and the data plate attached to the joystick.





The identification details of the joystick are shown on the identification plate to be referred to when requesting assistance.

Product information

4.2 General description and operating principle

In the absence of external stresses, the handle is in central position (neutral position), all buttons and rollers are in the resting position. The handle can be directed by the operator along the X-Y axes within a variable angular displacement depending on the model, see paragraph **4.3**.
The movement of the handle and the rollers is acquired via Hall effect sensors and processed by a dual microcontroller system.
The joystick detects the pressing and releasing of the buttons, which may or may not have mechanical detents, through digital inputs. The joystick detects the presence of the operator via an integrated capacitive sensor in the handle, if provided for the specific product variant.
All information on the x-y axes status of the handle, status of the buttons, rollers and operator presence sensor are transmitted via the CAN bus interface.
In case of a failure of a joystick function, the affected function is deactivated or, in case of severe faults, the entire joystick is deactivated (for more information refer to Safety Manual code D2WWTE02I).

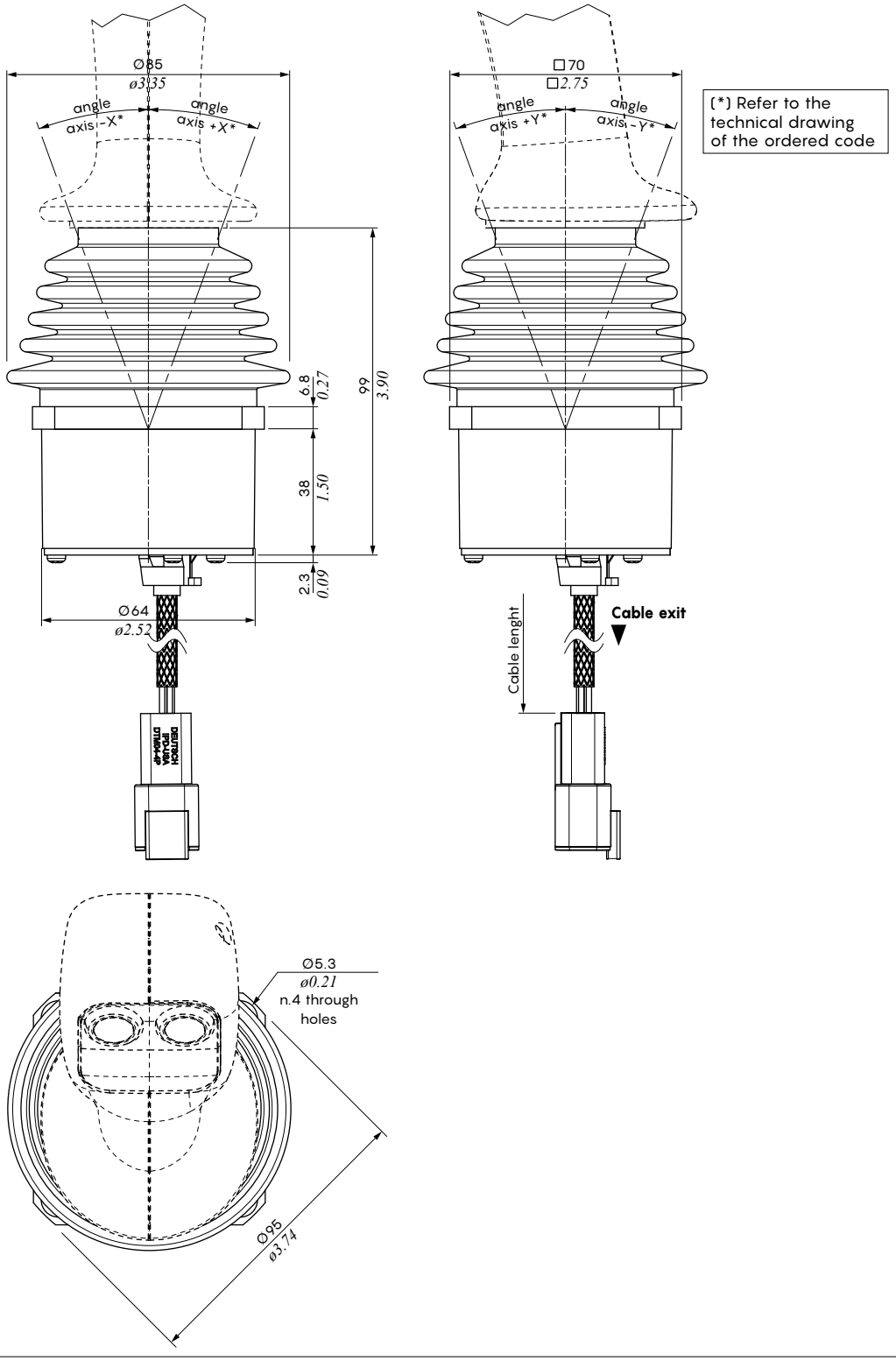
4.3 Technical data

Mechanical characteristics	
Dimensions	Refer to the technical drawing of the ordered code
Weight	<1 kg
Deflection angle x	Refer to the technical drawing of the ordered code
Deflection angle y	Refer to the technical drawing of the ordered code
Number of buttons	Refer to the technical drawing of the ordered code
Number of rollers	Refer to the technical drawing of the ordered code
Handle actuation force	<2.5 Nm
Overload force of the handle	30 Nm
Electrical characteristics	
EMC	Refer to the technical drawing of the ordered code
Supply voltage	10 - 32V
Current consumption without load	<200 mA
Environmental characteristics	
Operating temperature	-40 °C … 85 °C
Vibrations	10÷2000 Hz (3 g RMS) according to EN 60068-2-64:2008
Ip protection class	Refer to the technical drawing of the ordered code
Humidity	<90%
Maximum storage duration	2 years (average relative humidity of 60% and temperature between -20 °C and +40 °C. Short-term storage is allowed, up to 24 hours, at temperatures between -40 °C and -20 °C or between +40 °C and +85 °C)

4.4 Main joystick dimensions

The following drawings refer to the entire range of **DJW** joysticks and are provided for information purposes.
The cable exit position is for illustration purposes only; for the actual position referred to a specific product code, always refer to the related technical drawing.

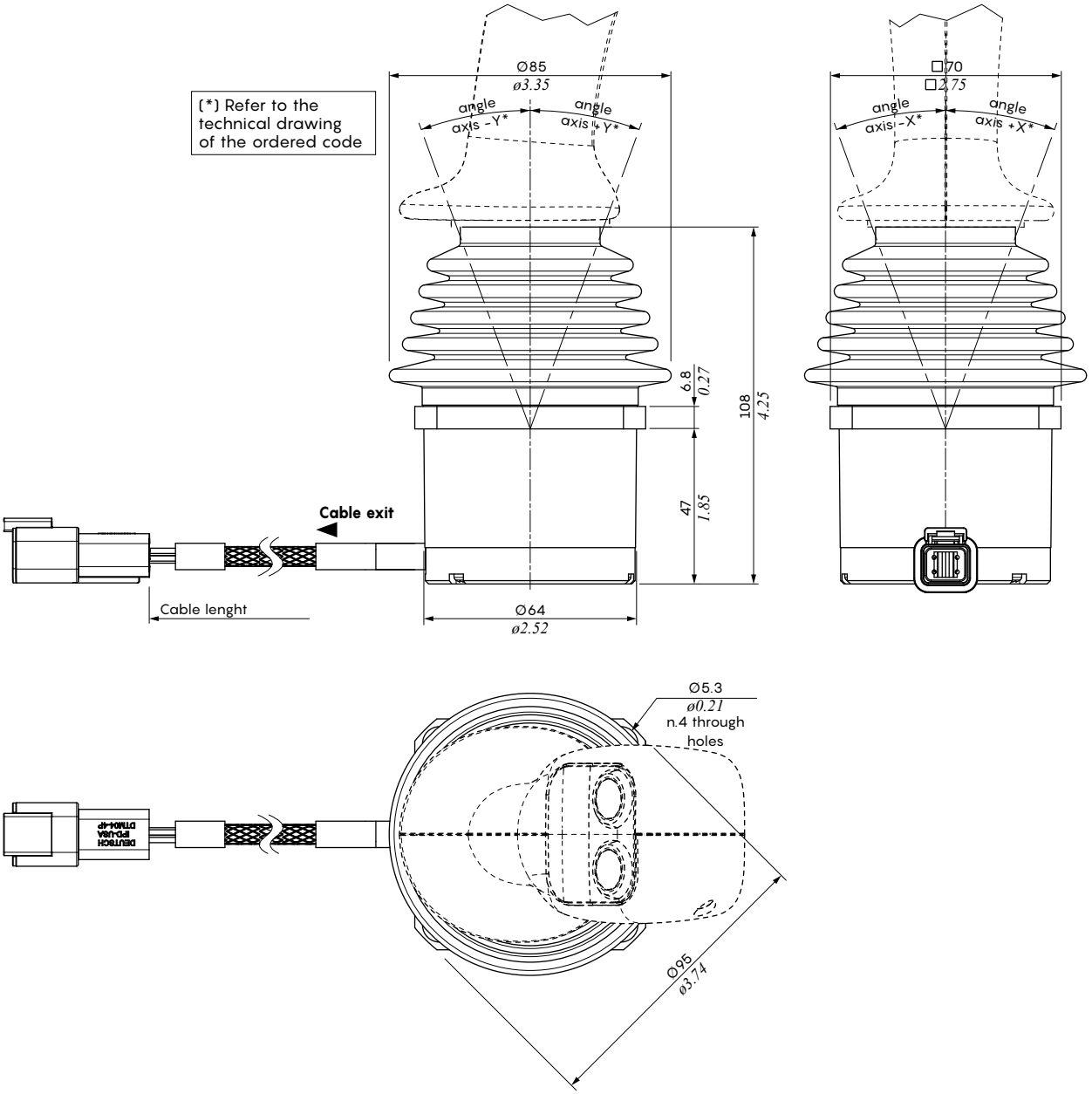
Joystick with bottom cable exit



Product information

4.4 Main joystick dimensions

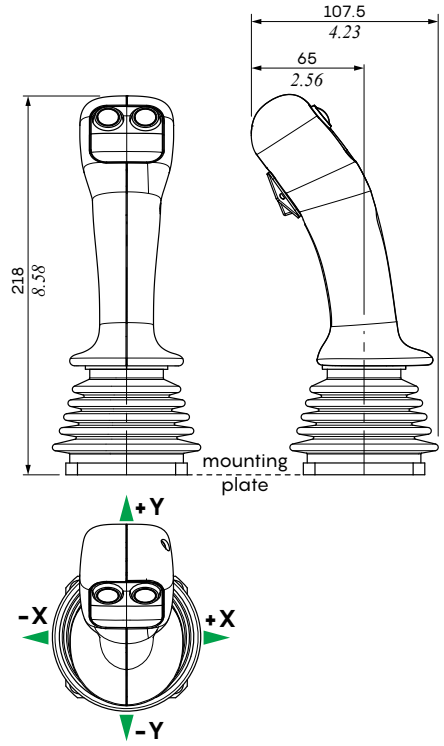
Joystick with side cable exit



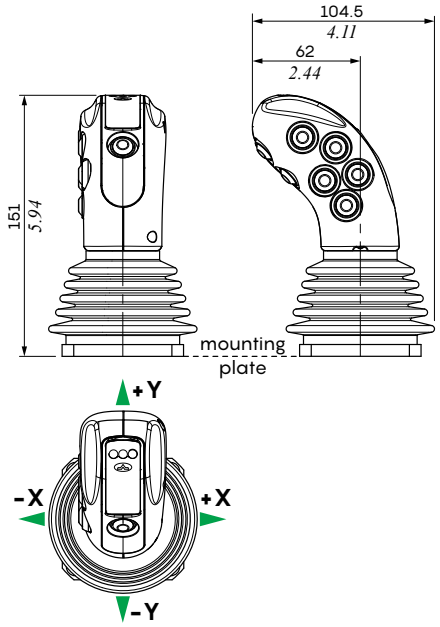
4.4 Main joystick dimensions

The overall dimensions of the **DJW** joystick equipped with the most requested multifunctional handles in the Walvoil range are shown below.

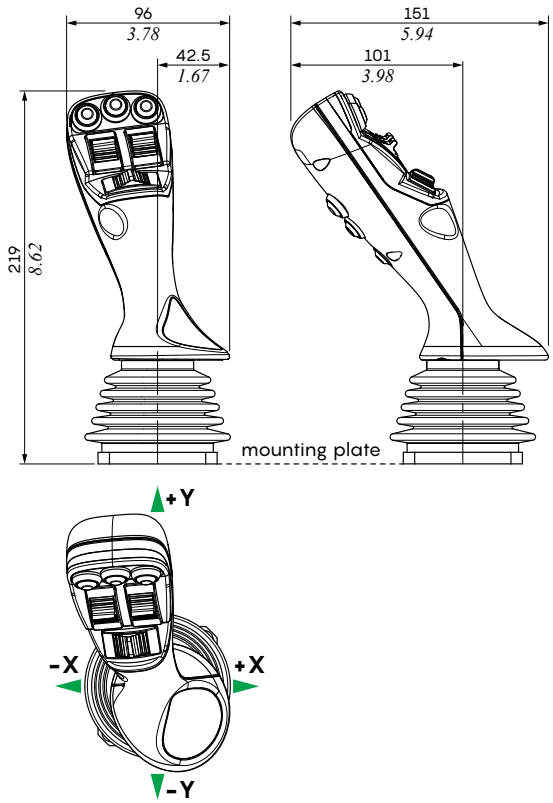
With XMH handle



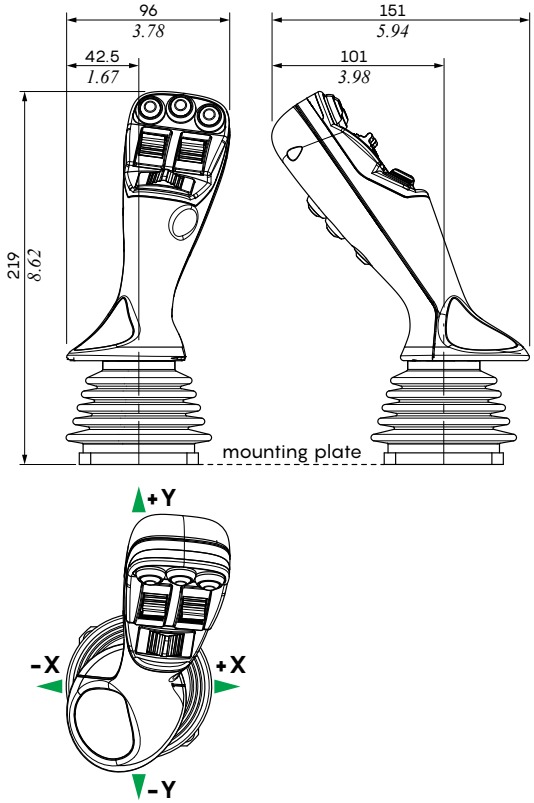
With AMH handle



With MTH handle for right hand



With MTH handle for left hand



Product information

4.5 Main components and contents of the package

The supply includes the joystick fully assembled or the base without the handle.

4.6 Transport and storage

Non-compliant transportation or storage may damage the joystick and reduce its service life. Upon receipt, check for any transport damage. In case of evident damage, immediately inform the carrier and Walvoil S.p.A.

5.1 Unpacking

Unpack the product only in a clean and dry area.
After opening the packaging, verify that:

- the joystick, or the base, is intact and free of visible damage;
- the article code matches what was ordered.

In case of evident damage or discrepancy, do not install or put the product into operation and contact Walvoil S.p.a.

NOTICE

Damage to the product during unpacking.
Do not use sharp tools near the product.
Do not lift or move the joystick by grasping the cable or connector.
Keep the original packaging for any returns.

5.2 Preliminary checks

Before proceeding with the installation, verify that the machine/system and the mounting area meet the following conditions:

- the control is ergonomic and does not require forced postures;
- the installation is vertical. An incorrect installation could cause incorrect outputs from the neutral position;
- the necessary procedures at the machine/system level to detect and manage joystick faults are implemented;
- in case of operator presence configuration, verify that the machine/system enables functions only after receiving the presence input;
- at machine/system startup, before enabling the joystick-related functions, verify that:
  - the joystick and any rollers are in neutral position;
  - the 'normally open' momentary buttons are in the not-pressed state;
  - the operator presence function is in the operator not present state;
- the stroke of the handle and rollers/buttons is free from obstacles;
- there are no sharp edges or elements that could damage the wiring;
- for mounting, use four countersunk head screws with hexagon socket (type UNI 5933), min. grade 8.8;
- provide adequate space on the armrest for mounting the base to avoid damage to the wiring during installation and/or operation;
- ensure proper connector/wiring fastenings to prevent damage due to vehicle vibrations;
- enough space is provided for connector insertion;
- unintentional actuation (impacts, accidental contacts) is not possible under foreseeable conditions;
- environmental conditions and operating limits specified in this documentation are respected;
- the CAN network of the machine/system is properly terminated, as the joystick does not have internal CAN terminations;
- CAN-BUS message presence is continuously monitored on a periodic basis. Messages must be checked at a frequency that allows the system or operator to react if CAN messages lose priority or are no longer received. Refer to the Safety Manual, code D2WWT202I, for more details.

Moreover, before installation:

- bring the machine or system to a safe condition and power off;
- check the availability of the necessary documentation, particularly wiring diagrams, and prepare suitable tools and mounting devices;

NOTICE

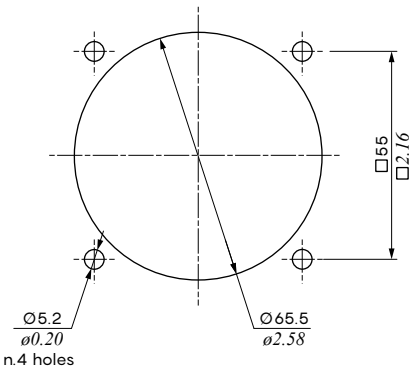
Damage and malfunction for non-rigid mounting.
Install the joystick on a flat and rigid surface capable of withstanding vibrations and operating loads of the machine/system.

Installation

5.3 Assembly

On the armrest where the joystick will be installed, provide a drilling jig with the interface as shown in the following figure.

Drilling jig



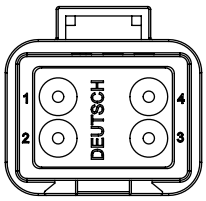
Comply with the following instructions:

1. if the joystick base only is supplied, mount the handle using fixtures and jigs that guarantee its correct orientation and prevent stresses on the base shaft during tightening;
2. prepare on the armrest or console the drilling jig with the interface shown in the reference figure;
3. place the joystick in the designated seat, ensuring the correct orientation and verifying that the wiring is not bent, crushed, or damaged during assembly;
4. insert the four fasteners provided;
5. tighten the fasteners progressively and evenly, applying a tightening torque of 6.6 Nm (-5/+15%);
6. at the end of tightening, verify that:
   - the joystick is firmly installed;
   - the grip can move freely along its full travel, without interference;
   - the wiring and connector are properly positioned and not subjected to pinching or abnormal stresses.
7. then, plug the connector as indicated in paragraph **5.4 Pin-out connector and electrical connection**.

5.4 Pin-out connector and electrical connection

The joystick interfaces with the machine/system via a CANbus network which trasmits information regarding the status of the axes, buttons, rollers and the operator presence sensor, if included.
The physical interface is realized through a connector. For the pin-out, contact arrangement and any specific parameetrs of the variant used, refer to the technical drawing of the ordered code.
Below is a connector example.

Deutsch DTM04-4P connector



Pin	Color	Function
1	Red	VBB
2	Black	GND
3	Yellow	CAN_H
4	Green	CAN_L

WARNING

Irreversible damage to the joystick due to incorrect connection.
Strictly rescpect the pin-out indicated in the applicable documentation. Failure to comply with the electrical interface specifications can cause irreversible damage to the product.

The joystick is powered through the VBB (positive supply) and GND (ground) pins.
Before proceeding with electrical connection:

- verify that the machine/system CAN network is correctly terminated;
- verify that the machine/system is in a safe, unpowered state;
- check that the connector, contacts, and seals are intact, clean, and free of moisture or contaminants;
- verify that the connections correspond to the applicable electrical diagram;
- connect the connector without forcing, respecting the correct alignment;
- verify electrical continuity and correctness of the connections made.

After applying the supply voltage, the joystick is raedy to be commissioned within one and a half seconds.

6. Commissioning and operation

6.1 Commissioning

DANGER

Unintended movements of the machine/system during commissioning! Risk of serious or fatal injuries.
Before commissioning, ensure that the machine/system and the hydraulic system actuators are in safe conditions.

Commission the joystick only if all of the following conditions are met:
- the mechanical and electrical installation has been completed correctly;
- the reference documentation is available, understood and applied;
- the machine/system does not report errors and is in proper operating condition;
- the joystick and rollers are in neutral position;
- the momentary push-buttons are in the resting state;
- the functions associated with the joystick are enabled by the machine/system only under the conditions provided by the application.

For CAN communication parameters, including Node ID, baud rate and Message ID, refer to the technical drawing related to the ordered code.

6.2 Control elements and related functions

The functions associated with the axes, buttons, rollers and the operator presence sensor depend on the ordered joystick configuration. For function identification, refer to the technical drawing of the ordered code.

6.3 Behaviour in case of anomalies during use

In the event of a loss of CAN communication, presence of diagnostic errors, anomalous commands response or unintended joystick behaviour, proceed as follows:
- release immediately commands;
- return the handle to the neutral position;
- bring the machine/system to a safe state;
- stop the work;
- consult paragraph **6.4** for troubleshooting.

6.4 Troubleshooting

The troubleshooting table shown below provides support for fault finding. The list is not exhaustive and does not replace the diagnostic of the machine/system.
If the joystick fails, the system may display an error code depending on the communication protocol used. For the description of error codes and their diagnostic conditions, refer to the technical drawing of the ordered code or to the system documentation.

Troubleshooting – Operator

Malfunction	Possible cause	Remedy
The joystick does not provide a signal or provides an incorrect signal.	The joystick and/or the connecting cable are mechanically damaged from the outside during use.	Contact the machine/system supplier.
	Moisture/water has penetrated the connector, for example due to damaged seals.	Properly remove moisture/water from the connector and restore the connection.
	Operation outside the environmental conditions, including electromagnetic compatibility (EMC).	Turn off the machine/system, wait for the return to the specified operating environmental conditions, then restart.
	Issues in the interface with the machine/system.	Refer to the user manual of the machine/system.
Inaccurate behavior of the joystick.	Excessive wear/mechanical stress.	Contact the machine/system supplier.

Troubleshooting – Maintenance

Malfunction	Possible cause	Remedy
The joystick does not provide a signal or prrovides an incorrect signal.	Incorrect connector interface engagement during wiring.	Check the correctness of the joystick pin-out and/or wiring. Eventually measure electrical continuity and voltages at the interface. Verify the diagnostic messages of the machine/system and connect to the diagnostic socket to check the presence/integrity of the joystick CAN messages.
	The joystick has been mechanically damaged from the outside during use.	Replace the entire joystick.
	Power supply absent or too low.	Measure the supply voltage at the joystick contacts and ensure that all contacts in the corresponding connector are correctly inserted and locked.
	Short circuit of the joystick output signals caused by insulation damage in the connected wiring.	Inspect the harnesses for evident damage. Replace damaged components or the entire joystick, if necessary.

7. Maintenance

The **DJW** joystick does not require adjustments or complex maintenance. The planned activities are mainly cleaning, care and inspections aimed at keeping the product in suitable condition and prompty detecting damages or anomalies.

7.1 Cleaning and care

External cleaning of the joystick:
- disconnect the system and put the machine in a safe condition.
- clean only with suitable methods and detergents.
- do not use aggressive solvents or products that could damage plastics, seals, or markings.
- avoid high-pressure water jets directed at the joystick and liquid ingress into connectors.

Care of connectors and wiring:
- keep connectors and wiring clean, dry and protected.
- if the product is disconnected, apply protective caps to prevent contamination.

7.2 Inspection

Inspection intervals must be defined by the machine/system manufacturer based on risk assessment.

General recommendations:
- before use: quick visual inspection;
- periodically: full inspection according to the machine/system maintenance schedule.

During the visual inspection verify:
- base and handle integrity (no cracks, deformations, impacts);
- integrity of seals/bellows (if present) and absence of ingress;
- readability of labels and markings;
- integrity of the connector, absence of oxidation, proper tightening;
- integrity of the wiring (abrasions, crushes, tight bends).

Perform a functional test under controlled conditions:
- return of the handle to neutral and absence of sticking;
- consistent response to controls;
- correct recognition of the operator presence sensor;
- absence of diagnostic errors on the system.

7.3 Fault management

In case of fault:
1. put the machine/system in a safe state;
2. consult the Troubleshooting section;
3. if necessary, proceed with removing and replacing the joystick (see the following paragraph).

The product contains mechanical and electronic components not intended to be repaired by the user.

7.4 Return and support

For assistance, contact Walvoil designated Customer Care by providing:
- item code
- serial number
- description of the application
- fault description
- diagnostic logs if available

8. Removal and disposal



OBBLIGATION

Remove the joystick only after de-energizing the system.
The management and disposal of the product at the end of its service life are the responsibility of the user and must be carried out in accordance with applicable legal provisions.
Only authorized personnel should perform disassembly and disposan operations.



PROHIBITION

Do not dispose of the joystick, its components or the packaging in the environment.



INFORMATION

Correct and environmentally friendly disposal allows for the recovery of valuable raw materials.

9. EC/EU declaration of conformity

Declaration of Conformity EC/EU

1. Joystick, for safety related applications, model DJW, serial number MXaaxxxxx/yyy*.
   (*) the aaxxxxx digits indicate the production batch, the yyy digits represent a sequential number.
2. Manufacturer: Walvoil S.p.A., Via Adige, 13/D - 42124 Reggio Emilia, ITALY
3. This declaration of conformity is issued under the sole responsibility of the manufacturer.
4. Object of the declaration:

Product	Joystick
Type	For safety related applications
Model	DJW
Serial number	MXaaxxxxx/yyy
Part Number	18356xxxx**



(**) the xxxx digits are a sequential number depending on the configuration.

5. The object of the declaration referred to in point 4 is in conformity with the following Union harmonisation legislation:
   a) Regulation (EU) 2023/1230 OJ L 165, 29.6.2023, from 20th January 2027
   b) Directive 2006/42/EC OJ L 157, 9.6.2006, until 19th January 2027
   c) Directive 2014/30/EU OJ L 96, 29.3.2014
6. Harmonised standards that were applied:
   1. EN ISO 12100:2010 – OJEU publication date 08.04.2011
   2. EN ISO 13849-1:2023 – OJEU publication date 15.05.2024
   3. EN ISO 13849-2:2012 – OJEU publication date 05.04.2013
   4. EN ISO 13766-2:2018 – OJEU publication date 19.03.2019
7. Other technical specifications that were applied:
   1. IEC 61508-1:2010
   2. IEC 61508-2:2010
   3. IEC 61508-3:2010
8. The product is subject to the conformity assessment procedure based on internal production control (Module A).
9. Person authorised to compile the technical file: Walvoil S.p.A. at the manufacturer's address indicated in point 2 of this declaration.

Signed for and on behalf of: Walvoil S.p.A.

Place and date of issue: Reggio Emilia, 16/10/2026

Name, function: Alberto Rocchi, Electronic Design Director

Signature

Original declaration

Notes

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