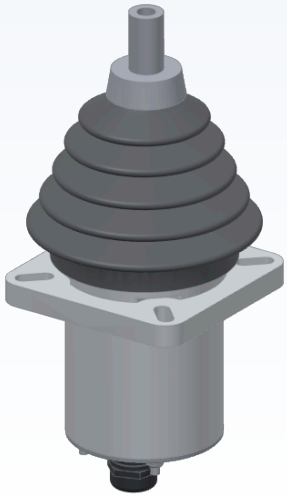
GUDAO TECH

Contactless proportional operator control

Joystick • Friction-Hold Type

Z-gate side lock / Z-gate centre lock / Straight-gate side lock

GUDAO TECH • Product and assembly drawings • 3 drawing sheets + specifications and contacts



Drawing Index (GD-BH-FR)

P1	Installation Drawing GD-BH-FR-01	Side view and overall length • mounting plate top view • panel cutout reference (Φ70 mm hole + 4 slot positions)
P2	Assembly Drawing GD-BH-FR-02	Isometric rendering with callouts • bottom cable-exit detail • BOM (9 items)
P3	Applicable Types GD-BH-FR-03	Z-gate side lock / Z-gate centre lock / Straight-gate side lock • design and sealing notes

Main Dimensions

Overall length	215.9 mm (129.3 mm above panel • 86.6 mm below panel)
Mounting plate	90×90 mm • R10 mm • thickness 10 mm • 26 mm including boss; 4 radial slots W 7 mm × L approx. 16.6 mm
Housing / boot	Steel housing Φ67 mm • bellows boot max. Φ100 mm (5 folds)
Cable exit	M18 waterproof cable gland at the bottom (8 mm off-centre) • M5 breather vent

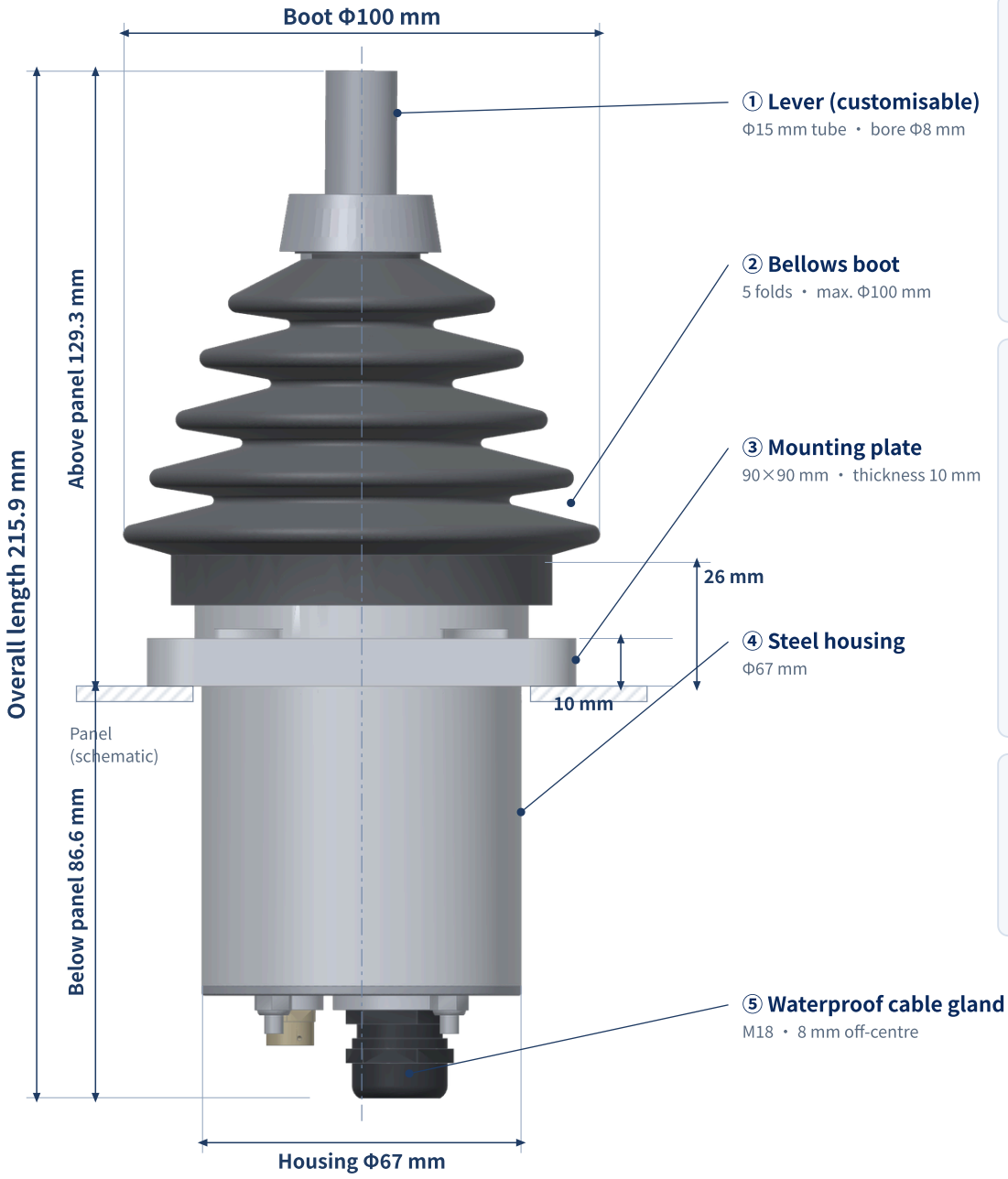
Dimensions measured from the 3D model; panel cutout dimensions are references only and tolerances follow approved drawings. Images rendered directly from the 3D model.

For selection reference only. Confirm product specifications, configurations and supply requirements with us; mutually approved technical documents or contractual terms shall prevail.

Joystick • Installation Drawing (Friction-Hold)

Z-gate side lock / Z-gate centre lock / Straight-gate side lock

GUDAO TECH



Mounting Interface

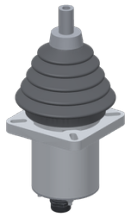
Plate	90×90 mm • R10 mm
Thickness	10 mm (26 mm with boss)
Slots	W 7 mm / L 16.6 mm
Spacing	60×60 mm – 73.6×73.6 mm
Panel hole	Φ70 mm (reference)
Housing	Φ67 mm • 86.6 mm below
Cable	M18 gland • 8 mm offset

Installation Steps

1. Machine a Φ70 mm hole and 4×Φ7.2 mm holes in the panel.
2. Insert the joystick from above; seat the plate on the panel top surface.
3. Fit screws through the slots; tighten diagonally.
4. Route the cable through the M18 gland; check boot and lever move freely.

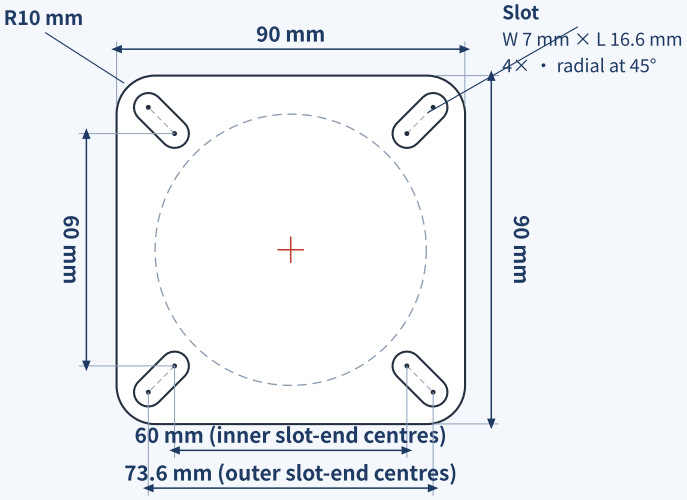
Dimension Notes

Measured from the 3D model (mm).
Datum: underside of mounting plate.
Confirm holes and fasteners on site.



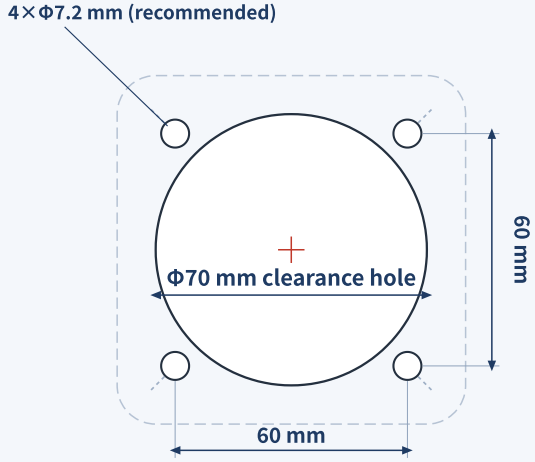
Isometric view (rendered from model)

Mounting plate • top view (mm)



Dashed circle: Φ70 mm top boss; red cross: mounting centre

Panel cutout reference (mm)

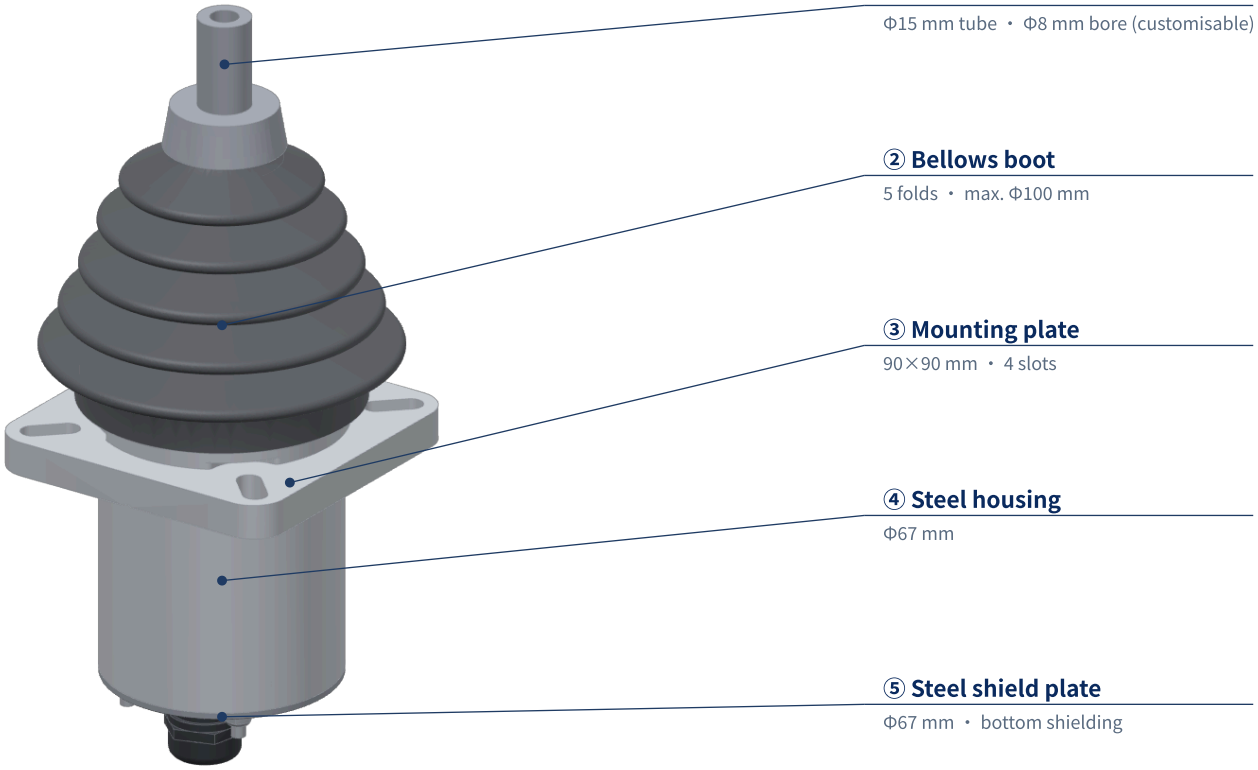


Φ67 mm housing passes through a Φ70 mm hole (ref.); dashed: plate outline
Hole spacing 60×60 mm, adjustable along slots to 73.6×73.6 mm

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Joystick • Assembly Drawing (Friction-Hold)

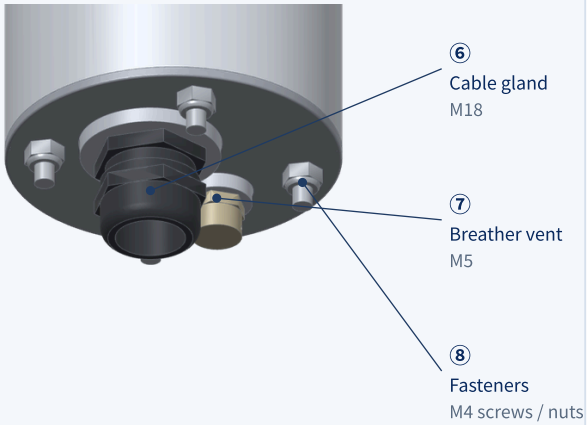
Z-gate side lock / Z-gate centre lock / Straight-gate side lock



Design Highlights

- One drawing set for Z-gate side lock, Z-gate centre lock and straight-gate side lock (friction-hold) versions.
- 4× M4×90 screws through plate and housing, secured by M4 lock nuts.
- Steel housing and bottom shield plate for EMC shielding and strength.
- M18 waterproof cable gland; M5 vent balances internal pressure.
- Φ15 mm lever tube; grip and buttons per project (grip not shown).

Bottom detail (cable exit and vent)



Cable gland offset 8 mm from centre; vent on the opposite side

Bill of Materials (BOM)

No.	Component	Specification	Qty
1	Lever interface (tapered multi-button adapter)	Φ15 mm tube / Φ8 mm bore • cone max. approx. Φ32 mm (other forms on request)	1
2	Universal bellows boot	5 folds • max. Φ100 mm	1
3	Mounting plate (V26-D70)	90×90 mm • R10 mm • thickness 10 mm • boss Φ70 mm / height 26 mm	1
4	Steel housing	OD Φ67 mm • length 65 mm	1
5	Steel shield plate	Φ67 mm • thickness 2 mm	1
6	Waterproof cable gland	M18 • 8 mm off-centre	1
7	Breather vent	M5	1
8	Screws / pin	M4×90 ×4 • M4×30 ×1 • M4×50 pin ×1	6
9	M4 lock nut	M4	5

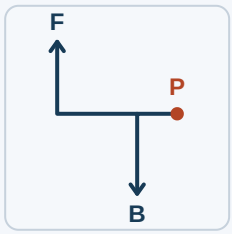
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Joystick • Applicable Types (Friction-Hold)

Z-gate side lock / Z-gate centre lock / Straight-gate side lock

Applicable Types

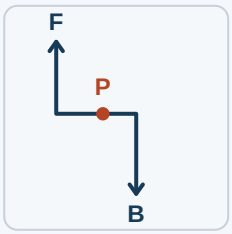
These installation and assembly drawings apply to the three friction-hold versions below, which share the same interface and outline:



Z-gate friction
Side neutral lock

Z-shaped path; push sideways at neutral to lock.

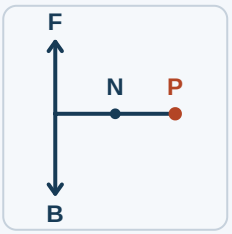
Grip / buttons per project



Z-gate friction
Centre neutral lock

Z-shaped path; locks at neutral within the path.

Grip / buttons per project



Straight-gate friction
Side neutral lock

Straight path; push sideways at neutral to lock.

Grip / buttons per project

Legend: F forward • B reverse • P neutral lock (red) • N neutral. Same symbols as gudao-tech.com; schematic, not to scale.

Design Notes

Friction hold

A friction mechanism holds the lever where it is released, suited to holding a gear or speed setting. A neutral lock prevents unintended operation.

Contactless Hall sensing

Hall sensors detect lever position without contact, so there is no potentiometer wear. Output: voltage, PWM or CAN.

Mounting

90×90 mm plate with 4 radial slots (hole spacing adjustable from 60×60 mm to 73.6×73.6 mm); the Φ67 mm steel housing passes through a Φ70 mm panel hole.

Sealing and cable exit

5-fold bellows boot protects the lever base; M18 waterproof cable gland and M5 vent at the bottom; protection IP65–IP68 depending on configuration.

Gate path, lock type and grip configuration of each model are subject to mutually approved technical documents. No safety or certification claim is made.

For selection reference only. Confirm product specifications, configurations and supply requirements with us; mutually approved technical documents or contractual terms shall prevail.

Joystick • Friction-Hold Type

For manual control of harvesters, road rollers, bulldozers and other construction and off-highway machines. One mounting interface covers three friction-hold versions: Z-gate side neutral lock, Z-gate centre neutral lock and straight-gate side neutral lock. Suitability is subject to validation on the machine.

Features and Benefits

Three friction versions • one drawing set

Z-gate side lock, Z-gate centre lock and straight-gate side lock share the same interface and outline, simplifying selection and replacement.

Contactless Hall sensing

No potentiometer contact wear; output selectable as voltage, PWM or CAN.

Panel mount • adjustable hole spacing

90×90 mm plate with 4 radial slots; hole spacing adjustable from 60×60 mm to 73.6×73.6.

Sealed cable exit

5-fold bellows boot; M18 waterproof cable gland and M5 vent; IP65–IP68 depending on configuration.

Specifications

Item	Value	Note
Applicable types	Z-gate side lock / Z-gate centre lock / Straight-gate side lock (friction-hold)	Share this drawing set
Sensing	Contactless Hall-effect position sensing	—
Operating angle	40° fore-aft	—
Breakout force	10–25 N (adjustable, customisable)	Per order configuration
End-of-travel force	10–25 N (adjustable, customisable)	Per order configuration
Output / wiring	Voltage / PWM / CAN (selectable)	Per order configuration
Mechanical life	Over 3 million cycles	—
Operating temperature	−30～+80 °C	—
Protection rating	IP65 – IP68	Depending on configuration
Weight	Approx. 400 g	—
Overall length	215.9 mm (129.3 mm above / 86.6 mm below panel)	Measured from 3D model
Mounting plate	90×90 mm • R10 mm • thickness 10 mm • boss Φ70 mm	Measured from 3D model
Slots / panel hole	4 slots W 7 mm × L 16.6 mm • spacing 60–73.6 mm • panel hole Φ70 mm	Measured from 3D model
Housing / boot	Φ67 mm steel housing • Φ100 mm bellows boot	Measured from 3D model
Cable exit / vent	M18 waterproof cable gland • M5 breather vent	—

Note: Dimensions are measured from the 3D model; performance values are subject to mutually approved technical documents. No safety-function or certification claim is made.

Contact Us

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Please mention "joystick" when adding us on WeChat so we can identify your enquiry.

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