



CASTOLDI

ACES

The ultimate waterjet drive control system by Castoldi

ACES is suitable for single or multiple installations performed with Castoldi waterjet units. It provides control of engine rpm, waterjet steering nozzles and reversing buckets in both docking and cruising mode operations.



The Castoldi ACES is a totally integrated, electronic Control System based on a 32bit embedded processor using a dedicated CAN bus network protocol.

ACES is suitable for single or multiple installations performed with Castoldi waterjet units.

It provides control of engine rpm, waterjet slip ring monitors and reversing but also in both docking and crusing mode operations.



ACES has two switchable operating modes:

CRUISING MODE

(Control box + Electronic steering + Gauges)

Control box

Available with a single or twin lever, it manages the engine rpm and the waterjet bucket proportional control. Other functions are available through the switch panel to manage the waterjet built-in hydraulic clutch engagement/disengagement, the Clear-Duct unclogging system/grid opening, driving station recall and the engine rpm/reversing bucket synchro.

Each lever is equipped with a booster switch on the upper side, which can be used to accelerate the engine when the bucket is in intermediate positions, so to get high thrust at low speed for a fine direction control.



Electronic steering.

Simplifies the traditional steering hydraulic apparatus by eliminating all hoses running from the helm to the waterjet. It is equipped with an electromagnetic brake that allows adjustment of torque (hardness), helm rotation (number of turns) and settings to limit nozzle travel. In multiple installations, the steering nozzles are electronically synchronized (no tie rod required).



DOCKING MODE

(Joystick + Gauges or Display)

Joystick

Designed to assist the operator by simplifying all maneuvers. Inexperienced boaters will appreciate the simplicity of the “push to go” system, which is more intuitive than conventional controls, while master skippers will appreciate its ease of use for reducing time in docking operations.

The joystick can be moved freely along all its axes and rotated by turning the head.

It also incorporates a backlit switch panel for managing its activation, built-in hydraulic clutch engagement/disengagement, bow thruster activation (if present) and joystick emergency deactivation. A wireless version is also available, allowing full control from any position in the boat.



Gauges

Show the position of the steering nozzles and reversing buckets.



Display

Available as alternative to the gauges



BACKUP PANEL

When activated, bypasses the **ACES** system and provides the combined direct control of the reversing, steering, clutch, movable grid and engine rpm for all the waterjets.

FEATURES / TECHNICAL DATA

- Power supply 12 V or 24 V
- CAN bus communication
- Interface with all type of engines governor including mechanical, analogic and digital (PWM, NMEA, etc..)
- Nmea 4 x enclosures, sensors and connectors
- IP 67 watertight joystick, control box, steering system and gauges
- Complete optical insulation of electrical signals
- Independent smart backup system
- Operating temperature: - 40° to 85°

SCOPE OF SUPPLY

- Electronic steering system with steering wheel
- Joystick with switches
- Control box with switch panel
- Steering and reversing gauges or display
- Integrated compass
- Backup control system with panel

The control box and the steering system can be ordered apart from the **ACES** electronic control system

BENEFITS

- Fast and easy installation and setup
- Easy maintenance
- Easy retrofit
- Intuitive quick learning and user friendly
- Electronically synchronized steering nozzles in multiple waterjet installation (no steering linkage rod required)



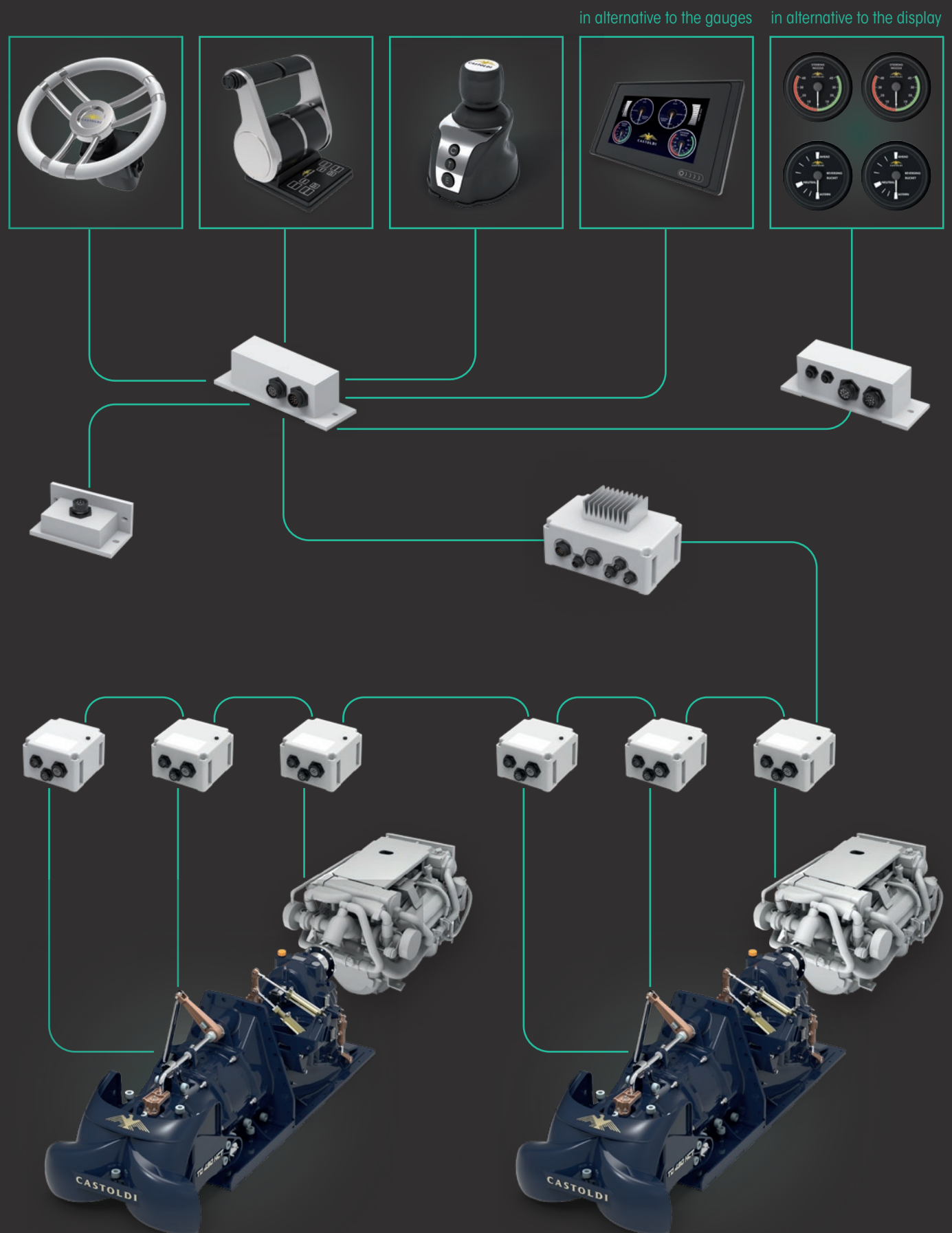
ADDITIONAL FUNCTIONS

- Multi-deck installations
- Dynamic Positioning: when activated allows the vessel to hold an exact position and orientation
- Smart Anchor: when activated allows the vessel to swing moored around a fixed GPS point keeping the bow up to the wind
- Autopilot interface
- Fire fighting docking mode
- USV interface for remote control platform

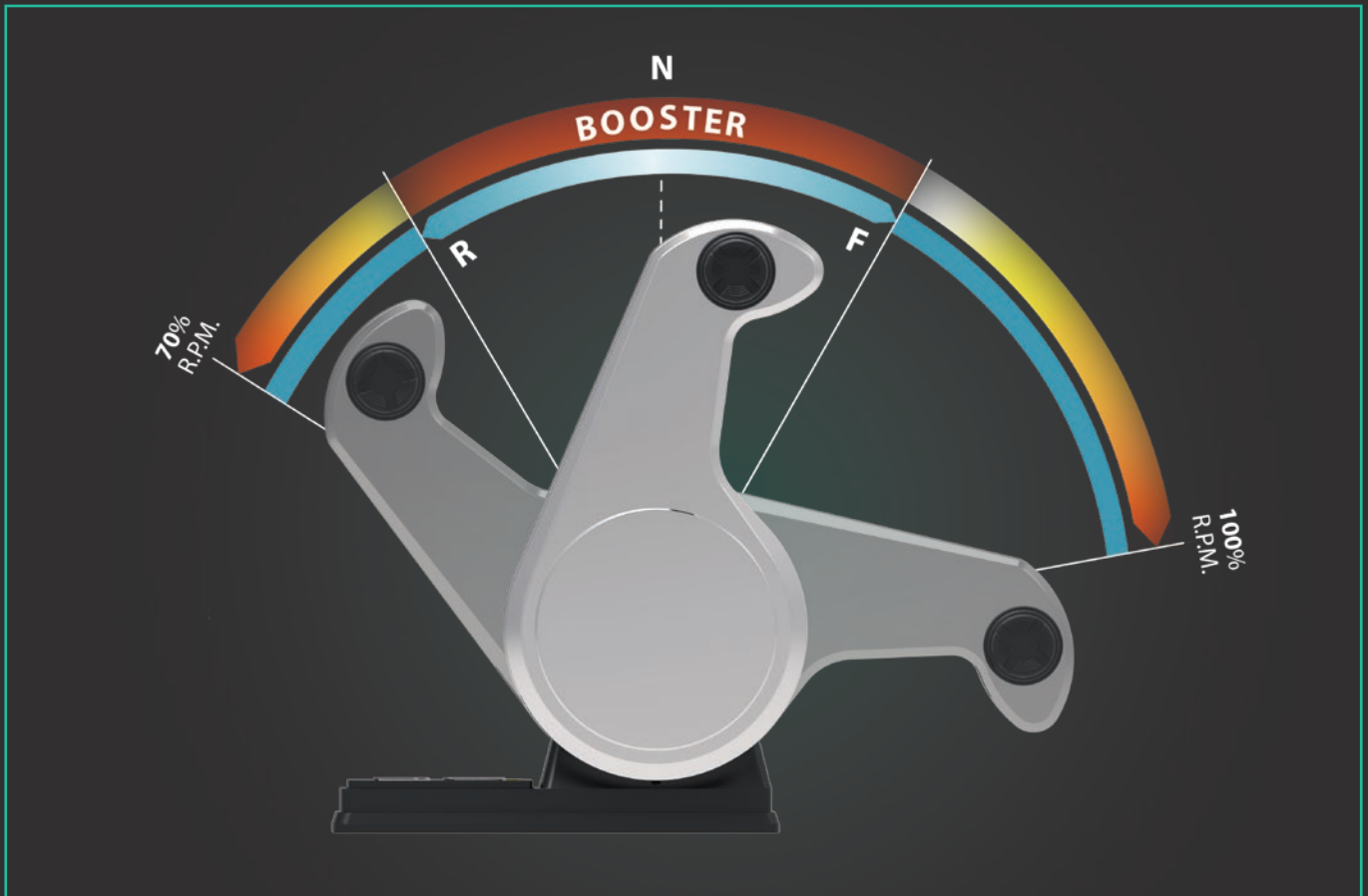
ADDITIONAL COMPONENTS

- Dual-redundant CAN-BUS system (suggested for triple and quadruple installations)
- Proportional joystick for steering (instead or with the steering wheel)
- Joystick with cruising mode function
- Azimuthal levers (instead of the twin lever control box - instead or with the steering wheel)

SYSTEM LAYOUT



CONTROL BOX

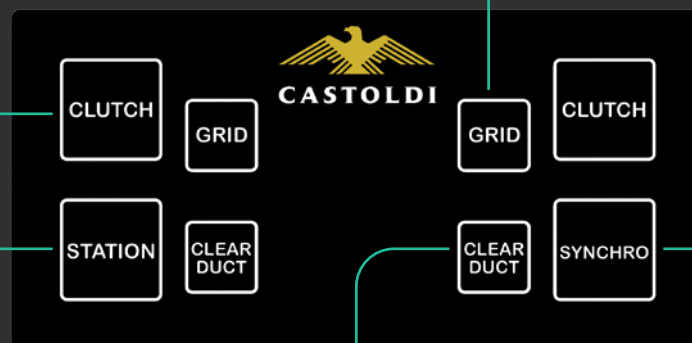


Clutch

Push to engage/disengage the waterjet built-in multi-disc hydraulic clutch

Grid

Push to activate the movable grid protecting the waterjet intake



Station

Push twice to call the control box at the boat startup or to switch from the joystick. Also available in multi-deck installations to call the desired station

Clear duct

Push and hold to activate the superior Clear-Duct unclogging system which performs the simultaneous operations of impeller rotation reversing and intake grid opening

Synchro

Push to synchronize, in multiple installations, the waterjet reversing bucket and the engine rpm so to drive with just one lever

JOYSTICK

C button

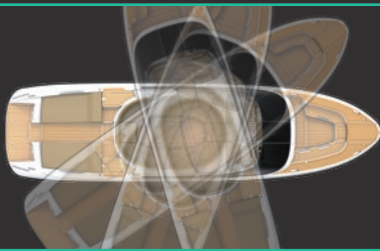
Push twice to call the joystick at the boat startup or to switch from the control box

T button

Push to activate and control the bow thruster, if present. Push with C button to activate the additional function: Dynamic Positioning and Smart Anchor

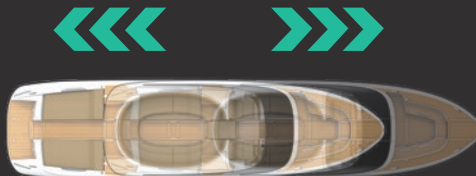
E button

Push to engage/disengage the waterjet built-in multi-disc hydraulic clutch



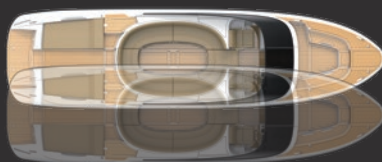
ROTATION

Rotating the knob the boat turns on its center. The turning speed is proportional to the rotation of the knob. The system works with an integrated compass to keep a constant center of rotation



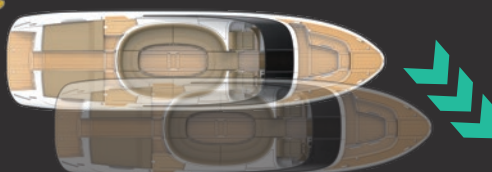
FORWARD AND BACKWARD

Moving the knob forward and backward the boat follows the set direction. The speed is proportional to the movement of the knob. The system works with an integrated compass to keep a constant direction



SIDEWAYS

Moving the knob sideways the boat shifts. The speed is proportional to the movement of the knob. The system works with an integrated compass to keep a fixed bow position



DIAGONAL

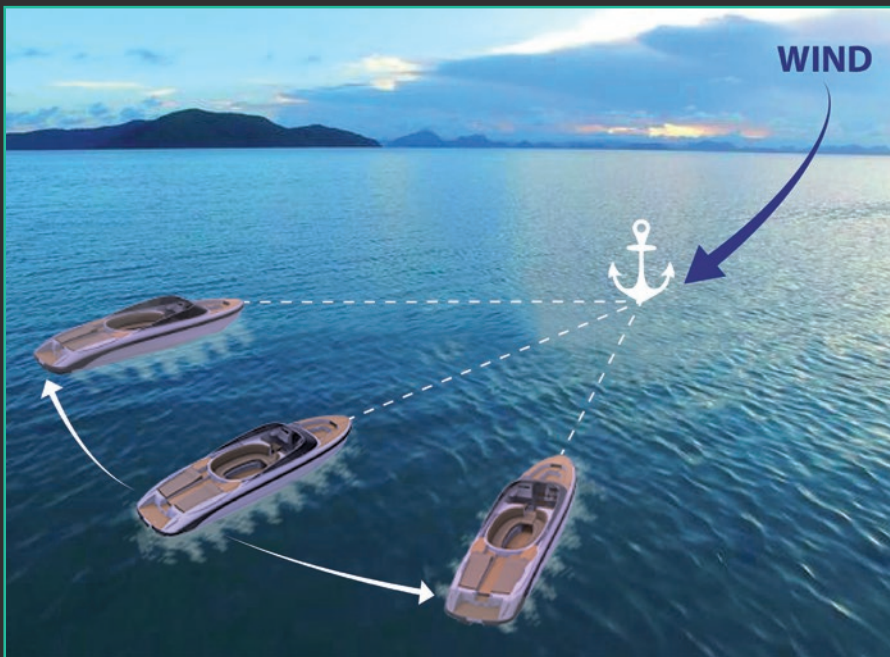
Moving the knob diagonally the boat follows the set direction. The speed is proportional to the movement of the knob. The system works with an integrated compass to keep a constant direction

ADDITIONAL FUNCTIONS



Dynamic positioning

When activated allows the vessel to hold an exact position and orientation.



Smart Anchor

When activated allows the vessel to swing moored around a fixed GPS point keeping the bow up to the wind.



Since 1962
Forerunners, always

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