



# CJRY - TYPE MARINE MACHINERY FLEXIBLE SHAFTREMOTE CONTROL DEVICE

Project No : \_\_\_\_\_

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## A, General

- 1, Characteristic: CDRY type M/E remote control device, which is divided into two kinds of operating consoles, as flush-type(may be integrated to WH/C) and floor-type, it may remote control M/E governing and gearbox reversing in W/H (or at other 4 different positions), it also may manual control M/E governing and gearbox reversing;
- 2, Structural Composition:
  - ① External dimension of flush-type is: Length 580 \*Width 500 \*Depth 800mm,or specially manufacture according to customer's requirements.
  - ② External dimension of floor-type is: Length 580 \*Width 500 \*Aft height 900mm,or specially manufacture according to customer's requirements.
  - ③ Composition of the unit: electronic flexible shaft manoeuvring system, main propulsion set state indication unit ( possessing functions as gearbox ahead, astern indication and dimmer); power supply is DC24V, auxiliary engine telegraph unit, extension alarm unit, emergency light telegraph(selective).
- 3, Type : CDRY-M/E type
- 4, Applied type: main propulsion set which is composed by middle high speed diesel engine and gearbox. Effective control distance from W/H to machinery location in no greater than 30m.
- 5, Product classification:single engine manoeuvring type and computer double engine manoeuvring type.
- 6, Ambient condition:
  - 6.1 Ambient temperature : -10℃~+55℃
  - 6.2 Relative humidity: relative humidity is 95% under the condition that ambient temperature is +40℃.
  - 6.3 Atmospheric pressure: 86~106kpa
  - 6.4 Vibration : 2~13.2Hz displacement ±1mm  
13.2~80Hz acceleration ±0.7g
  - 6.5 Working Voltage: DC24V(-10%~+6%)  
Battery DC24V± 20%
  - 6.6 Working Current : <30A

## B, Main Performance

- 1, Machinery flexible shaft manoeuvring system is imported from America MORSE

Company, manoeuvring system's classification as follows:

① MT-3 type manipulator(stainless steel material)

Manoeuvring function: single handle dual functions(governing, reversing interlocking).Applied to import diesel engine.

Manoeuvring mode : from manoeuvring position to engine room main propulsion set is flexible shaft driving.

Composition : Manipulator(installed in W/H ,standard configure 1 piece)1 piece  
M/E governing flexible shaft(installed between W/H and engine room )1 piece(length is undetermined)

Gearbox reversing flexible shaft(installed between W/H and engine room )1 piece(length is undetermined)

Flexible-shaft connection accessory(flexible-shaft union joint and press code,installed in engine room)each 2 pieces / engine

Controlled member: M/E governor is lever-type 0-45° revolution mode.

Gearbox is 0-45° handle manoeuvring hydraulic reversing type.

Advantage: firmness and wear well.

Disadvantage: handle is not easy to orient.

② SL-3 type manipulator(aluminium alloy material,engineering plastics encloser)

Manoeuvring function:single handle dual functions(governing, reversing interlocking).Applied to domestic diesel engine .

Manoeuvring mode:from maneuvering position to engine room main propulsion set is flexible shaft driving.

Composition :Manipulator(installed in W/H ,standard configure 1 piece)1 piece  
M/E governing flexible shaft(installed between W/H and engine room )1 piece(length is undetermined)

Gearbox reversing flexible shaft(installed between W/H and engine room )1 piece(length is undetermined)

Flexible-shaft connection accessory(flexible-shaft union joint and press code,installed in engine room)each 2 pieces / engine

Controlled member:M/E governor is lever-type 0-45° revolution mode.

Gearbox is 0-45° handle manoeuvring hydraulic reversing type.

Advantage: handle is easy to orient.

Disadvantage: incapable of long-term overload driving.

③ NB type or MN type manipulator(aluminium alloy material)

Manoeuvring function:single handle single function(governoring, reversing are separately operated).Applied to all kinds of import, domestic diesel engine.

Manoeuvring mode:from maneuvering position to engine room main propulsion set is flexible shaft driving.

Composition : Manipulator(installed in W/H ,standard configure 1 piece)1 piece  
M/E governing flexible shaft(installed between W/H and engine room )1 piece(length is undetermined)  
Gearbox reversing flexible shaft(installed between W/H and engine room )1 piece(length is undetermined)  
Flexible-shaft connection accessory(flexible-shaft union joint and press code,installed in engine room)each 2 pieces / engine

Controlled member: M/E governor is lever-type 0-45° revolution mode.

Gearbox is 0-45° handle manoeuvring hydraulic reversing type.

Advantage: capable of long-term overload driving, handle is easy to orient.

Disadvantage: operation is inconvenient.

## 2, Auxiliary engine telegraph unit:

- ① Mainly used for communication between W/H and engine room manoeuvring position.
- ② Communication position selector: W/H-STOP-LOCAL

## 3, Extension alarm unit:

Extend to WH/C according to alarm signal supplied by different main propulsion units. Mode of signal extension: 485 bus system.

## 4, Main propulsion set state indication unit:

M/E tachometer, stern shaft tachometer, M/E emergency stop push button, gearbox ahead, astern indication and dimmer, mute self checking function.

## 5, Emergency light telegraph(selective)

# C, Use and Adjustment

## 1, Operating Performance

Warm up:when handle is laid in neutral position , external bracing handle may proceed operation as governing warm up. After finished warming up, move handle to the neutral position, manipulator may proceed normal operation as governor, reversing.

Manoeuvring characteristic: When handle is pushed ahead, firstly proceed ahead

coupling, here control gearbox flexible shaft is manoeuvred, gearbox is ahead running. Keep on pushing handle, governor lever of M/E will turn along with handle's turning, here rotational speed of M/E will increase gradually. This operation is finished by single handle; astern operation is same.

## 2, Function:

Single / double handle manoeuvring

Stop governing warm up

Neutral safety switch is capable of preventing on-load (coupling state) start-up

Reversing voyage is adjustable.

## 3, Installation requirement of flexible shaft

(1) Flexible shaft should be little curved, avoid sharp curve, bending radius is greater than 203mm( bend angle is greater than 120°)

(2) For long line, flexible shaft should be supported with coil holder.

(3) Flexible shaft is connected with M/E and gearbox, the hunting angle of flexible shaft tie-in should be less than  $\pm 8^\circ$ .

## 4, Connection between manipulator and flexible shaft, connection between flexible shaft, M/E and gearbox.

See installation scheme in finished documents.

## D, Others:

1, System is serial order ,partly component(as electronic flexible shaft manoeuvring system, auxiliary engine telegraph, emergency light telegraph)may be ordered separately.

2, Note types of M/E and gearbox, content, quantity and installation mode of all kinds of control units at the time of order.

3, Provide classification society certificate and 3 sets of finishing documents.

4, If user has special requirement, we can specially design and manufacture.

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This document is edited by technical center of Henan Guangcai Electric Co.,Ltd.

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