

Edson

INTERNATIONAL

Edson CDi™ Steering System Installation Guide & Owner's Manual



Rating Specifications

Spacemaker CDi and Diamond Series CDi Specifications:

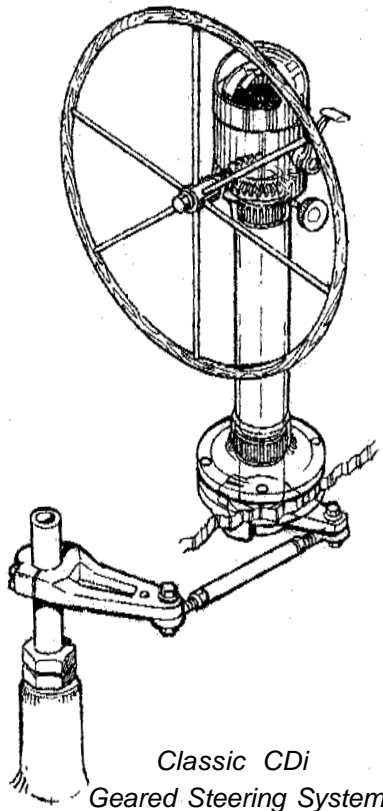
Maximum Wheel Turns Lock-to-Lock: 1.8 @ 72 degrees of rudder travel

Maximum Permissible Output Force: 2800 lb./12,500 N

Maximum Rudder Torque at Midships: 1860 lb.ft./257 Kgmf

Maximum Rudder Torque at Full Lock: 3300 lb.ft./ 457mkg

CDi Steerers fully comply with ISO13929 and are CE Approved.



*Classic CDi
Geared Steering System*



*Diamond Series™ CDi
Geared Steering System*

Basic System Components

1. Steering Pedestal
2. Output Lever
3. Stop Ring/Backing Plate
4. Draglink
5. Tiller Arm
6. Wheel (purchased separately)

General Description

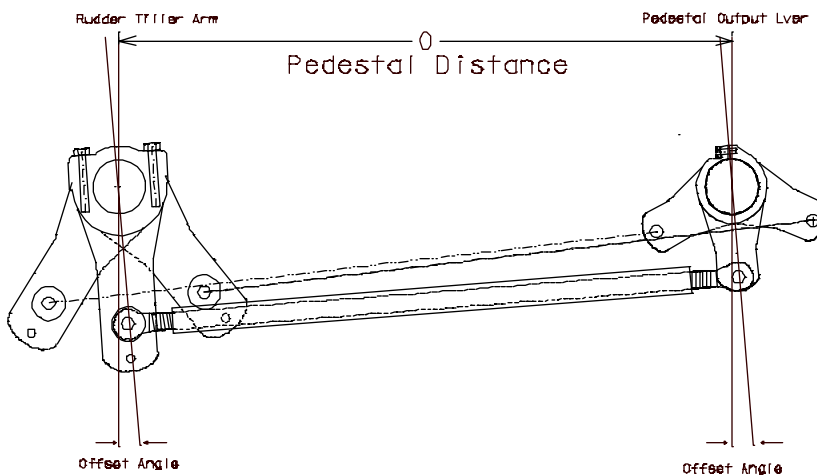
The **Edson CDi Geared Steering System** is the most advanced geared system for yachts available today. The combination of the *360°Circular Rack, Interlocking Gears, Large Diameter Downshaft, Oversize Stainless Bearings*, and all non-magnetic, marine-grade materials make the **Edson CD-i Geared Steering System** extremely reliable and sensitive. The pedestal includes the *Circular Rack Gear with Integral Wheel Shaft/Pinion Gear and Torque Tube* and is supplied standard with a wheel brake. Steering Wheels are available in a large number of sizes along with a full range of accessories for a custom look. The *Draglink* and *Tiller Arm* are machined to customer specifications for an exact fit. Refer to *EB-361 CDi Worksheet* to determine required measurements for CDi planning and installation. Please ask for special instructions for fastening tiller arms to composite shafts.

CD-i Installation Overview

The **Edson CDi Geared Steering System** has been designed to allow for ease of installation and adjustment. Please read over the following guidelines completely before starting the installation process. If you experience any problems, or have any questions concerning the installation or operation of the *CDi Steerer* that are not covered here, please contact your *Edson Distributor* or Representative, or *Edson Customer Service*. We will be happy to provide technical assistance.

Wide Angle Geometry

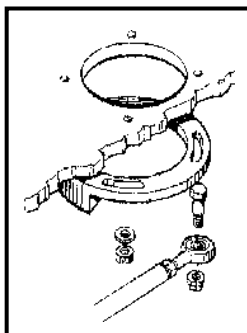
provides greater sensitivity and control. As you turn the wheel farther the angle between the draglink and the centerline increases (gets wider). This provides the most mechanical advantage where the rudder loads are highest and the greatest sensitivity with the rudder near midships.



Rudder Stops

Rudderstops are mandatory for any steering arrangement. The Rudderstop Ring / Backing Plate provides a simple to install rudderstop that also provides additional reinforcement to the cockpit floor. Proper alignment of the Rudderstop is critical for it to work correctly.

For proper placement of the Stop Ring, align the pedestal bolts with the degree marks along the bolt-hole slots that



correspond with the **Offset Angle** for your particular installation (see chart). For example, if the Offset Angle is 12 degrees, the bolts should be centered on the 12 degree mark on the bottom of the Rudder Stop Ring. The offset angle is

always forward.

Larger vessels should use conventional independent rudderstops at the tiller arm.



Warning!



**The wheel must be held firmly while backing down.
Failure to control the wheel in reverse can cause
damage to the steering equipment.**

CD-i Installation Instructions

1. After carefully locating the pedestal mark the center on the cockpit sole and cut a six inch diameter hole. Seal the cut edges of the deck with epoxy. Before mounting the pedestal be sure that the cockpit sole will carry the loads of the steerer and the pedestal. Remember the helmsman and crew will be using this for support in violent weather.

2. With the wheel installed place the pedestal on the deck making sure that the wheel is squared to the centerline. Mark the four mounting holes. Move the pedestal and drill one half inch clearance holes.

3. The stop ring is installed on the underside of the deck using the pedestal mounting bolts. Set the pedestal over the hole and loosely mount the stop ring below decks. For proper placement of the stop ring align the pedestal bolts with the bolt hole slots that correspond to the **Offset Angle** for your installation (see table below). Screw the stop ring to the deck. Once you have fitted the pedestal and set the appropriate offset, remove the

pedestal and bed the base and fasteners with an good quality marine sealant and fasten the pedestal and stop ring to the deck.

4. Spread the output lever at the split using the blade of a screwdriver. With the key inserted into the keyway slide the lever onto the output shaft and tighten the clamping bolts.

5. Attach the tiller arm to the ruddershaft. Be sure that the arm is offset forward the correct amount before drilling the rudder shaft for a pin. (Note: if your tiller arm is keyed then the angle is preset.)

6. Install the draglink on the pin of the output lever and the pin on the tiller arm. Adjust the length so that the output lever is centered between the stops when the rudder is centered to the boat.



Distance from C/L of Pedestal to C/L of Rudderpost	Offset Degrees Forward
7.5"-8.5" / 190mm-215mm	20
8.5"-9.4" / 215mm-240mm	18
9.5"-10.5" / 240mm-265mm	16
10.5"-11.5" / 265mm-290mm	14
11.5"-13" / 290mm-330mm	12
13"-17.7" / 330mm-450mm	10
17.7"-22.5" / 450mm-570mm	8
22.5"-31.5" / 570mm-800mm	6
31.5"-50" / 800mm-1300mm	4

Testing and Operation

Install a wheel on the *CDi Pedestal*. Turn the wheel from lock to lock. It should move smoothly and easily. The output lever should be centered between the stops while the rudder is centered. Check that all fasteners are tight. Examine the ball joints and the drag link while turning the system back and forth.

The draglink and balljoints should not bind or chafe on any gear or fittings. Examine the compass wiring (if fitted) and the engine control cable. They should be positioned so that they do not interfere with the operation of the steerer nor chafe on the downshaft or any steering components.

Steering Brake

The *CDi Steering Brake* operates on the downshaft after the gearing. This provides the helmsman the ability to easily over ride the brake operation for course changes. Because the brake operates after the gearing you may feel little resistance on the wheel rim while the brake is on.

To operate the brake, turn the handle on the starboard side of the pedestal clockwise until it is snug.

To release the break turn the handle counter clockwise until it spins easily.



**OVER TIGHTENING THE BRAKE
MAY DAMAGE THE BRAKE
MECHANISM OR CAUSE THE
STEERING TO JAM.**

Warnings



**THE WHEEL MUST BE HELD FIRMLY WHILE BACKING
DOWN.**

**ALLOWING THE STEERING WHEEL TO SPIN FREELY WHILE
OPERATING**

**THE VESSEL IN REVERSE CAN CAUSE SHOCK LOADING
WHICH MAY LEAD TO A LOSS OF STEERING OR DAMAGE TO
THE STEERING SYSTEM.**



**OPERATING THE AUTOPILOT WITH THE BRAKE ENGAGED
MAY CAUSE
PREMATURE BRAKE WEAR AND DAMAGE THE STEERING.**



CD-i Maintenance

The **Edson CD-i Geared Steering System** has been designed for years of trouble-free service. But as with all systems used in the harsh marine environment, proper maintenance and care is required so that the system stays in like-new condition.

Seasonally:

1. Remove the compass and the 4 screws holding the compass and/or engine control to the Pedestal Top. Apply anti-seize lubricant to the bolts when re-installing.
2. Lubricate the Rack and Pinion Gears with teflon grease such as Superlube, **Edson** part number 827-3.

Twice a Season:

1. Clean the pedestal and components with fresh water and wax all painted surfaces with a high-quality wax.
2. Grease Needle Bearings with Teflon grease.
3. Apply a small amount of the Teflon grease to the balls on the draglink assembly and move the ball joint side to side.

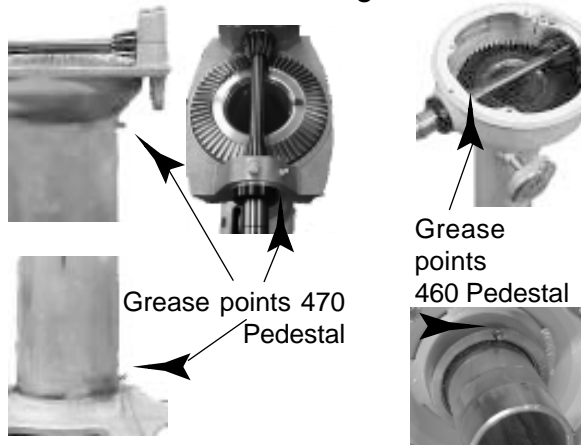
Monthly

1. Check that the output lever, drag link and tiller arm are secure. Check fasteners on the Output Lever and Tiller Arm.



Tech Tip: For proper alignment when re-installing the compass, we recom-

mend placing three or four pieces of tape on the pedestal and compass as shown. Slit the tape when removing compass for realignment during reassembly. Your compass **MUST** then be checked for accuracy before using the boat.



Now Available Onboard Spares Kit



CDi Spares Kit 312-CDi

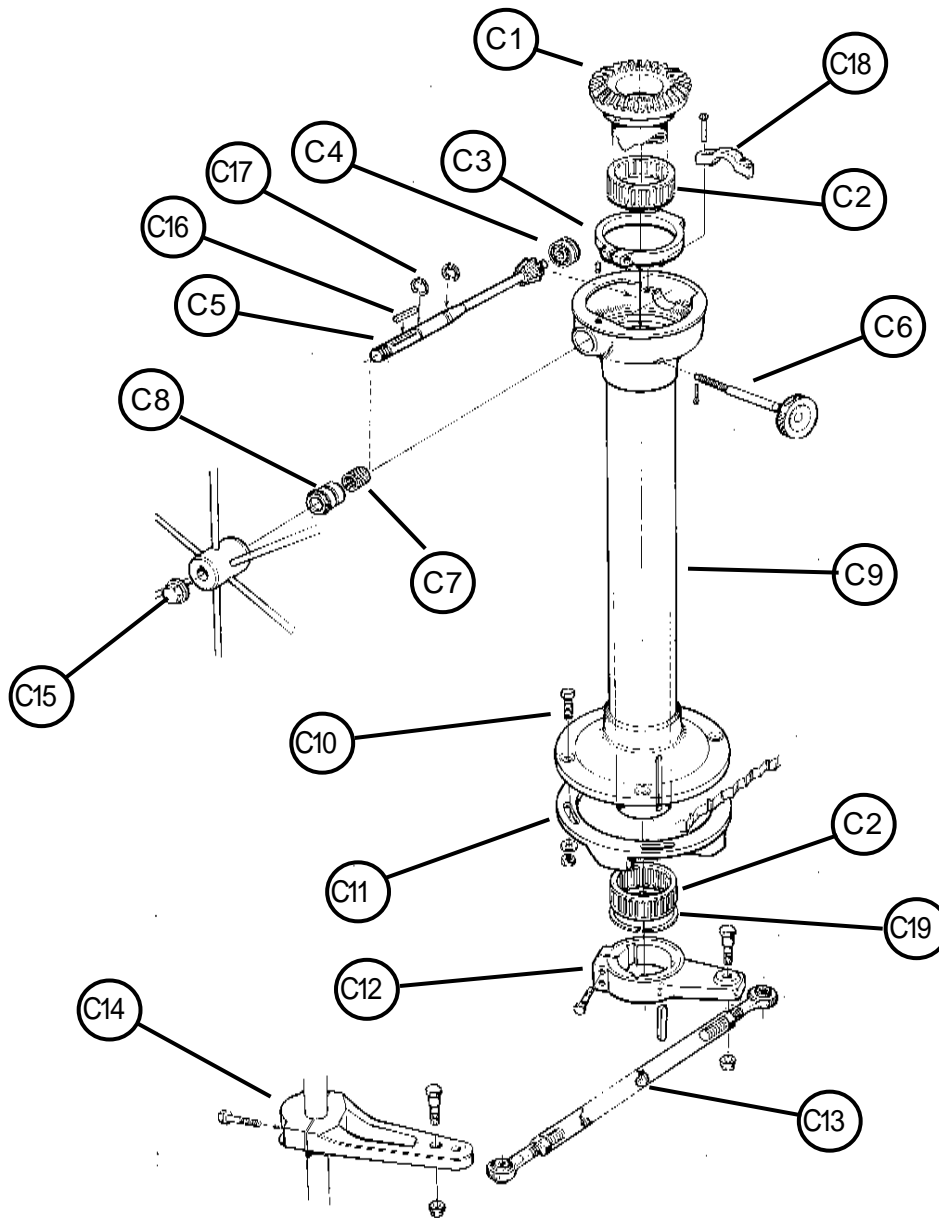
The ideal onboard spares kit for any Edson CDi Steering System.

Includes:

- 1- A-1737A RH Rod End
- 1- A-1737B LH Rod End
- 1-Wheel Shaft Key
- 1-SS Shaft Washer
- 1- SS Snap Ring
- 1- 3oz. Teflon Lube

Available from your Edson Dealer.

Classic™ CD-i Parts Diagram

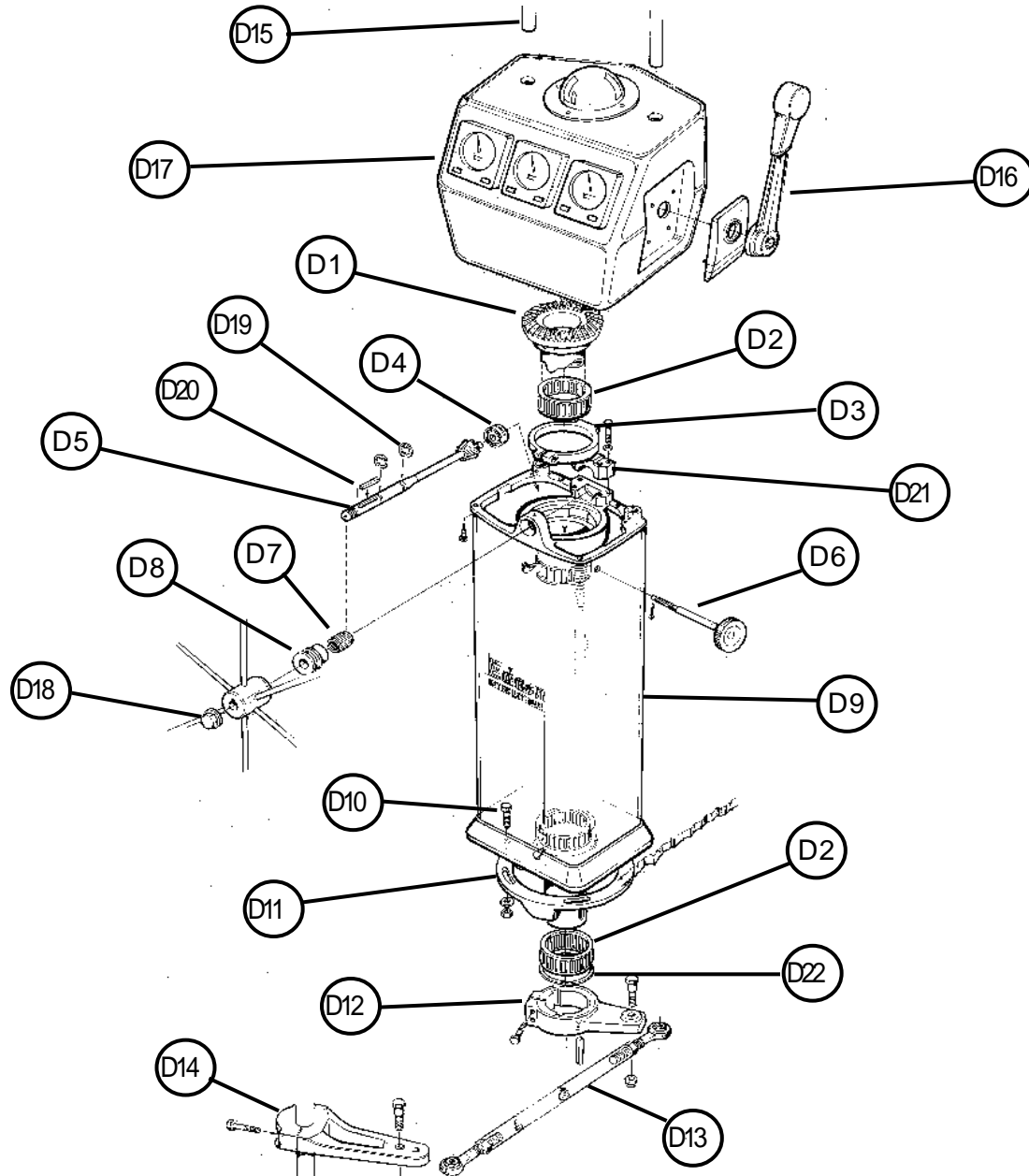


PARTS KEY

C1 - 360° Rack Gear with Downshaft
C2 - Stainless Needle Bearings
C3 - Brake Collar
C4 - Stainless Pinion Shaft Thrust Bearing
C5 - Wheel Shaft with Pinion Gear
C6 - Brake Handle / Shaft Assembly
C7 - Needle Bearing
C8 - Bearing Carrier
C9 - Pedestal Housing
C10 - (4) Pedestal Mounting Bolts

C11 - Rudder Stop Ring
C12 - Output Lever
C13 - Drag Link
C14 - Tiller Arm
C15 - Stainless Wheel Nut
C16 - Shaft Key
C17 - Snap rings
C18 - Bearing Cap
C19 - Lower Bearing Snap Ring

Diamond Series™ CD-i Parts Diagram



PARTS KEY

D1 - 360° Rack Gear with Downshaft
 D2 - Stainless Needle Bearings
 D3 - Brake Collar
 D4 - Stainless Pinion Shaft Thrust Bearing
 D5 - Wheel Shaft with Pinion Gear
 D6 - Brake Handle / Shaft Assembly
 D7 - Needle Bearing
 D8 - Bearing Carrier
 D9 - Pedestal Housing
 D10 - (4) Pedestal Mounting Bolts
 D11 - Rudder Stop Ring

D12 - Output Lever
 D13 - Drag Link
 D14 - Tiller Arm
 D15 - Integral Pedestal Guard
 D16 - Optional Single-Lever Engine Control
 D17 - Fiberglass Pedestal Head
 D18 - Stainless Wheel Nut
 D19 - Snap Rings
 D20 - 1/4" Shaft Key
 D21 - Bearing Cap (not shown)
 D22 - Lower Bearing Snap Ring