

GENERAL PURPOSE OFFSHORE CRANE**TECHNICAL SPECIFICATION****GENERAL:**

CRANE TYPE : OFFSHORE CRANE, GPCFO 2000 - 5020
 DRIVE SYSTEM : ELECTRO HYDRAULIC
 DESIGN RULES : LRS CHAPTER 3, SECTION 3
 TEMP. RANGE : AMBIENT TEMP. -20°C TO +45°C
 DESIGN TEMP. -10°C

PEDESTAL HEIGHT : 4,0 M

MAIN DATA:

	<u>50T/15M</u>	<u>20T/20M</u>	<u>AUX</u>
MAX LIFTING CAPACITY.....	50 T*	20 T*	10 T*
MAX OUTREACH.....	15 M	20 M	18,5 M
MIN OUTREACH.....	5 M		5 M
HOOK TRAVEL, MAX.....	500 M		500 M
HOOK SPEED			
Light load.....	70 M/MIN	100 M/MIN	
Fully loaded hook.....	25 M/MIN	100 M/MIN	
SLEWING SECTOR.....	360 DEGR		
SLEWING SPEED.....	0,7 RPM		
LUFFING TIME (AVERAGE UP/DOWN).....	70 SEC		
LIST/TRIM.....	5/2 DEGR		
WEIGHT.....	140 TON		

ELECTRIC DATA:

SHIP POWER SUPPLY..... 660V/50Hz/3ph

CRANE

MOTOR RATING

S1-100% ED.....	2x230 KW
S6-40% ED.....	2x340 KW
Enclosure.....	IP 55
Insulation class.....	F
Type starter.....	STAR/DELTA

NOTE: Weight and speed might vary within $\pm 5\%$

* Weight of wire rope will reduce the SWL during subsea operation.

1. CRANE CONTROL

1.1 The crane is provided with an operators cabin of steel welded design and equipped with windows of safety glass.
 A special type of window gasket prevent the glass from being pushed through by heavy sea or wind.

The cabin is suspended on rubber vibration dampers and equipped with air conditioning, heater, lighting, window wiper and a comfortable chair.

The crane control is mounted on consoles in the cabin, left and right side of the chair. All motions have stepless speed control from 0 to max.

The cabin control consoles also include:

- Start/stop of pump motor.
- Running lamp (green).
- Power available lamp (white).
- On/off switch for window wiper.
- On/off switch for cabin heater.
- On/off switch for cabin light.
- On/off switch for flood lights.
- Air conditioning control.
- Load monitor display with sea state setting.
- Depth monitor display.
- Warning horn.
- Warning light for low oil level.
- Warning light for high oil temperature.
- Warning light for high motor temperature.
- Selector switch by-pass low oil temperature and high motor temperature.
- Alarm off.
- Lamp test.

2. SAFETY SYSTEMS

2.1 Load Limiting system

All main hydraulic circuits are protected from overpressure by relief valves set to values corresponding to the crane capacity.

2.2 Hook stop

The hook movement will be automatically stopped in top and bottom position by limit switches.

2.3 Fail Safe Brakes

Both winch motor and slewing motors are provided with oversized fail safe brakes. The brakes are spring operated and pressure released.

2.4 Load holding valves

Winch motor, hydraulic cylinder and slewing motors are all provided with load holding valves which will freeze the movement in case of hose rupture or other failure causing pressure drop.

2.5 Hydraulic cylinder stop

The hydraulic cylinders are provided with limit switches reducing speed before end positions are reached.

- 2.6 Constant moment limiting system for main winch.
The main winch is equipped with a moment sensing system generating a stop signal if hook load x arm, reach the allowed maximum value.

3. **MACHINERY**

- 3.1 Slewing machinery
Consist of a ball or roller bearing slewing ring seated on machined surfaces.
Slewing ring bolts and nuts are made from special alloy steel and tightened up to an exact tension.
The slewing rings are all provided with internal gearing.
Slewing motor, brake and gear are built together to one complete unit.
- 3.2 Hydraulic cylinders
The hydraulic cylinders are designed for marine use.
- 3.3 Hoisting machinery consist of:
- Grooved drum with roller bearings and brackets.
 - Winch gear built into the drum with brake and hydraulic motor.
 - Flange mounted load holding valve.
 - Flange mounted hydraulic hook stop in top and bottom position.

The wire rope is of NON-ROTATING type and galvanized.

All wire sheaves are provided with double roller bearings on steel axles.

All bearings have grease nipple lubrication.

4. **HYDRAULIC POWER PACK**

- 4.1 Hydraulic Power Pack consist of two electric motors driving the pumps mounted inside in the machinery room.
The hydraulic oil circuits include full flow filters with changeable filter inserts.
- 4.2 Oil cooler
The crane is designed for continuous use in hot climate and provided with an oil cooler to keep the hydraulic oil temperature within acceptable limits.
- 4.3 Hydraulic pipes and hoses
All external mounted pipes are of stainless steel type.
Hydraulic hoses are made from rubber types with special good resistance against sea environment. All

hose assemblies are tested with 50% overpressure before they are mounted on the cranes.

5. ELECTRIC SYSTEM

5.1 Pump motor

The electric pump motors are of marine type. Type of enclosure IP55. Class of insulation "F". Ratings are given based on 45°C ambient temperature. Motor will be provided with anti-condensation heater for 220V.

Duty: S₆ - 40% ED.

Motors will be protected by thermic relay a thermistors.

5.2 Star/Delta Electric starter

The electric starter panel located in the crane machinery house will include a star/delta starter for the main pump motor and necessary contactors, relays, fuses etc.

The starter will as standard include following features:

- AMP meter in panel door.
- Control power on/off.
- Hour meter.
- Cooler fan auto run.

6. STEEL STRUCTURE

6.1 All structural steel used in our cranes will be supplied with certificate 3.1.b. according to DIN standard.

The quality is selected in accordance with classification societies requirements, to obtain necessary ductility for the lower temperature design limit.

All important welds are carried out in accordance with welding procedures and NDT check before painting.

7. SURFACE TREATMENT

7.1 Exterior

Abrasive blast clean of all surfaces to SA 2,5, SIS 055900.

Primer:

Zinc rich epoxy, two pack. Interzinc 72.

Dry film thickness 30 - 40 microns.

Intermediate coat:

Two component epoxy. Intercure 420 HS.

Dry film thickness 125 microns.

Top coat:

Two component acrylic. Interfine 629 HS.

Dry film thickness 50 microns.

Interior crane and inside pedestal:

Abrasive blast clean of all surfaces to SA 2,5, SIS 055900.

Primer:

Zinc rich epoxy, two pack. Interzinc 72.

Dry film thickness 30 - 40 microns.

Intermediate coat:

Two component epoxy. Intercure 420 HS.

Dry film thickness 75 microns.

Top coat:

Two component acrylic. Interfine 629 HS.

Dry film thickness 40 microns.

Colour top coat: White

Ladders and platforms:

Will be supplied hot dip galvanized.