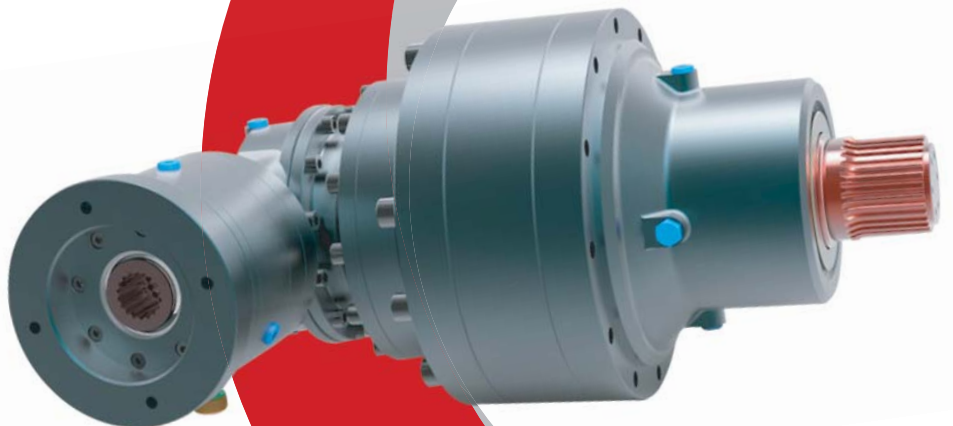


YH YoohanENS

Global networker Yoohan ENS



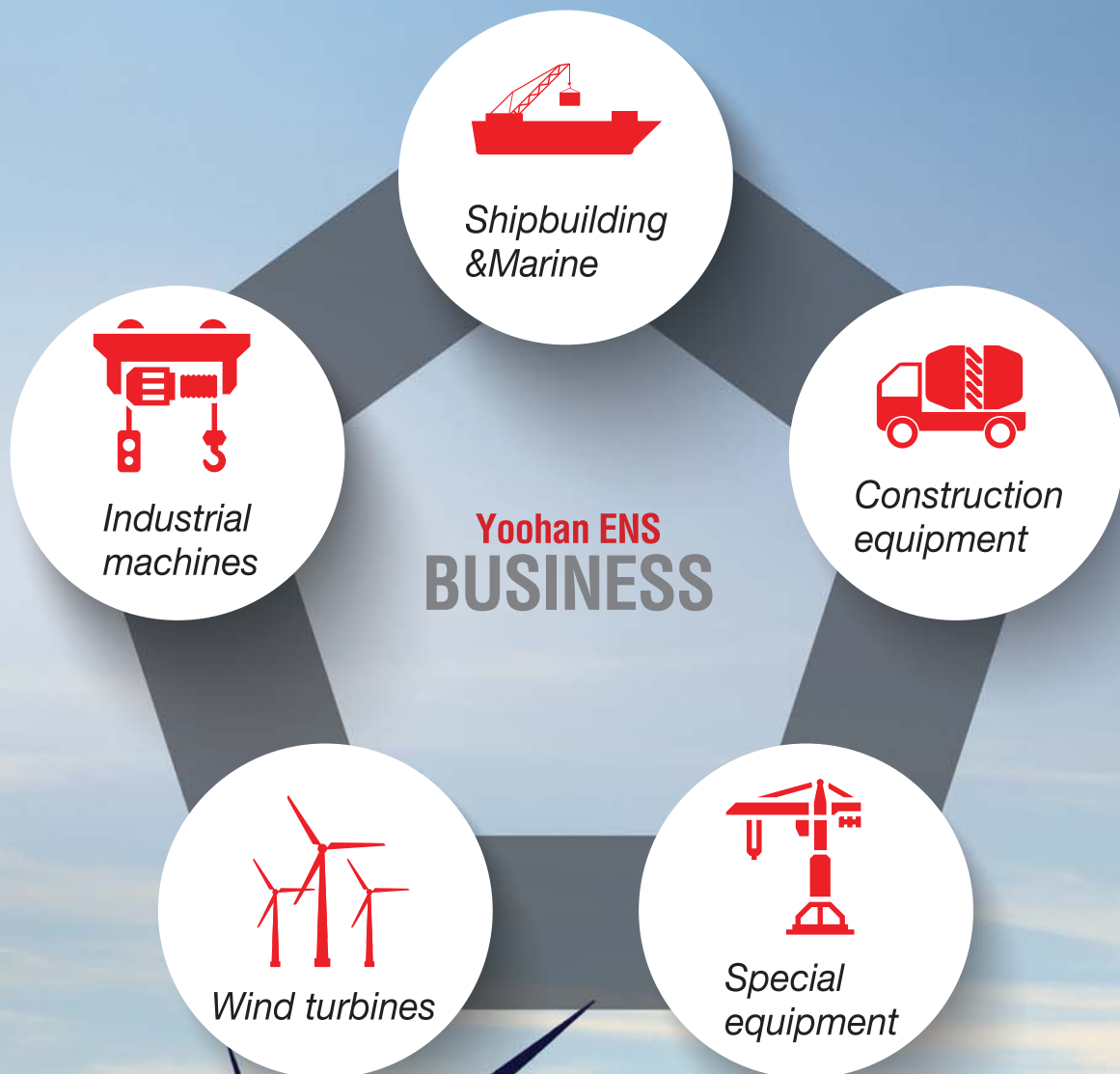
Value No.1
Solution Provider

Yooohan ENS

YH ENS tries to challenge continuously to become the company to grow with customers together .

We will be the best business partner with trust and expectation based on People, technique and value as our core value.

We will provide a differentiated service with accumulated technology and know-how as your business partner for happy value creation.



R&D

With creativity & passion, YH ENS R&D tries to challenge for improving professional competency.

- Develop planetary reducer for shipbuilding, construction equipment and wind power generators
- Provide 3D solution as customer's requirements
- Analyze the design verification and optimized design

➤ R&D development area

Reducer

- Reducer with the teeth of cycloid
- Minimized & lightened Planetary reducer with high efficiency
- Planetary reducer to be adaptable on high torque
- Satisfy with various specification for shipbuilding and wind power
- Many patent about planetary reducer and hydraulic brake

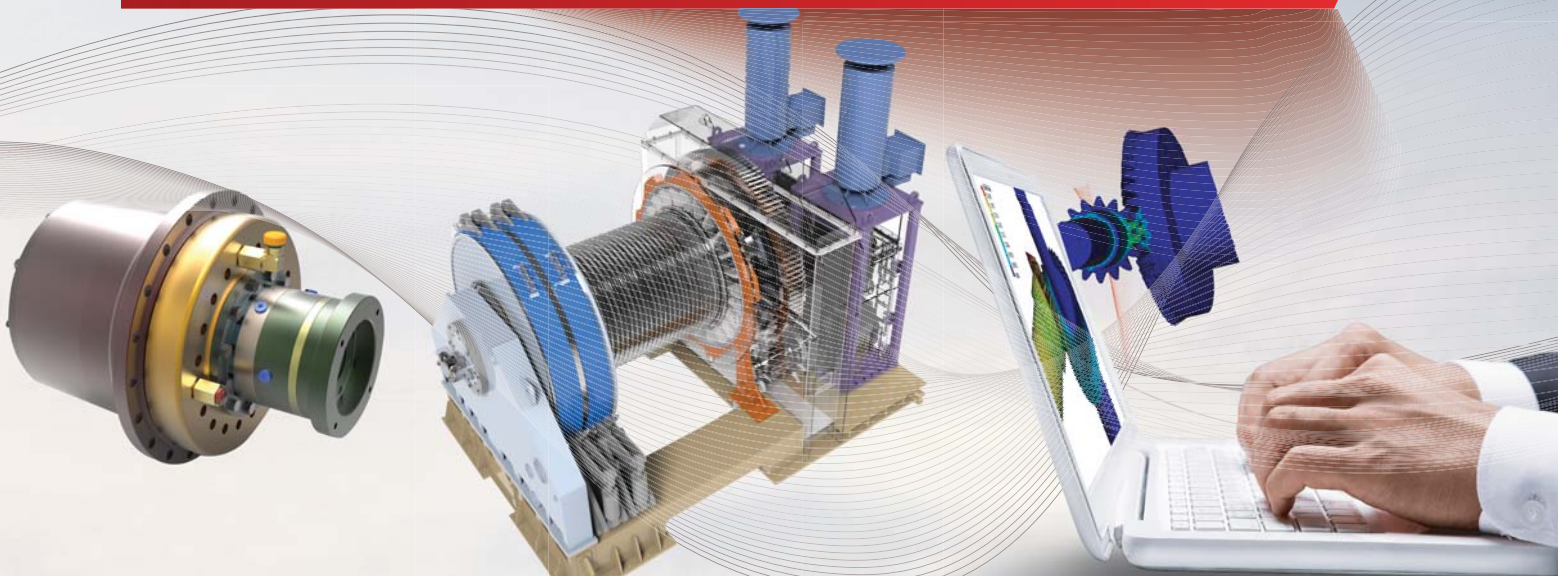
Design automation

- Gear teeth and Parametric 3D modeling
 - Gear strength analysis
 - Drawings & Kinematic simulation
- Template & Automation
 - Assembly template
 - Part template



It establishes trust in customers with continuous passion and new value creation.

- **People** : Future management with person
- **Technique** : New technology through continuous human resource cultivation
- **Value** : Social value realization with person & technique



Shipbuilding&Marine



> Application

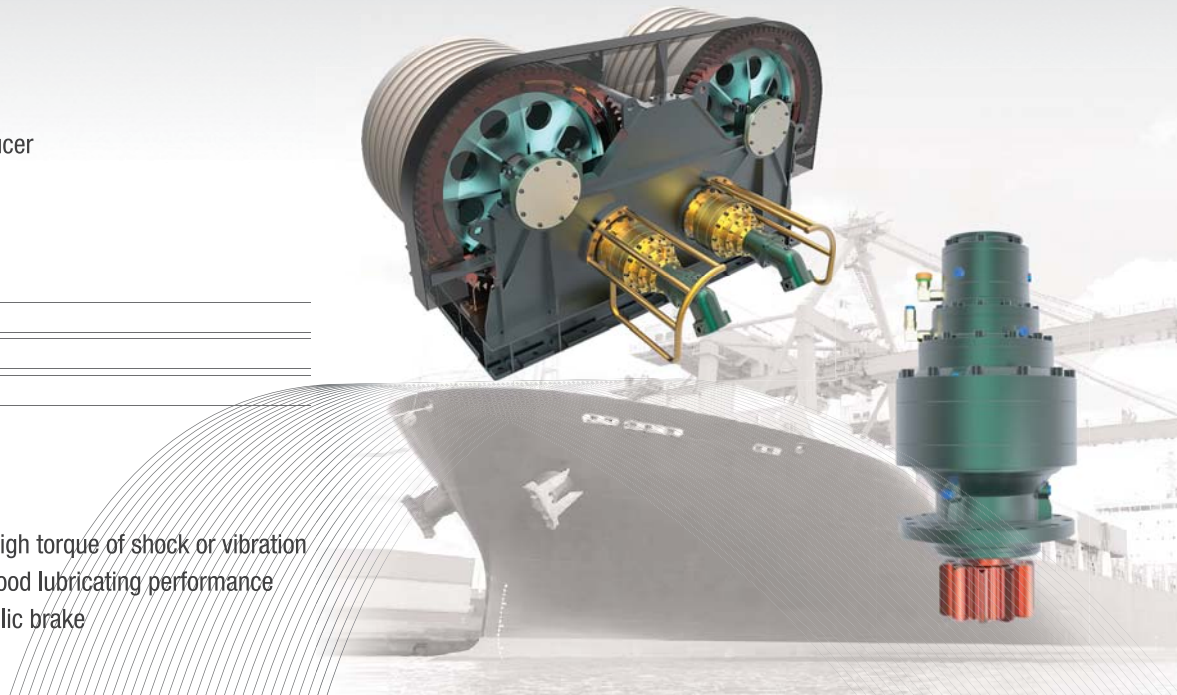
- Slewing reducer, Hoist reducer
- Reducer for Winch

> Specification

Gear Ratio	1/12 ~ 1/350
Stages	2,3,4
Break	Lining Type

> Features

- Planetary reducer against high torque of shock or vibration
- Excellent endurance with good lubricating performance
- Adjustable torque of hydraulic brake



Construction equipment



> Application

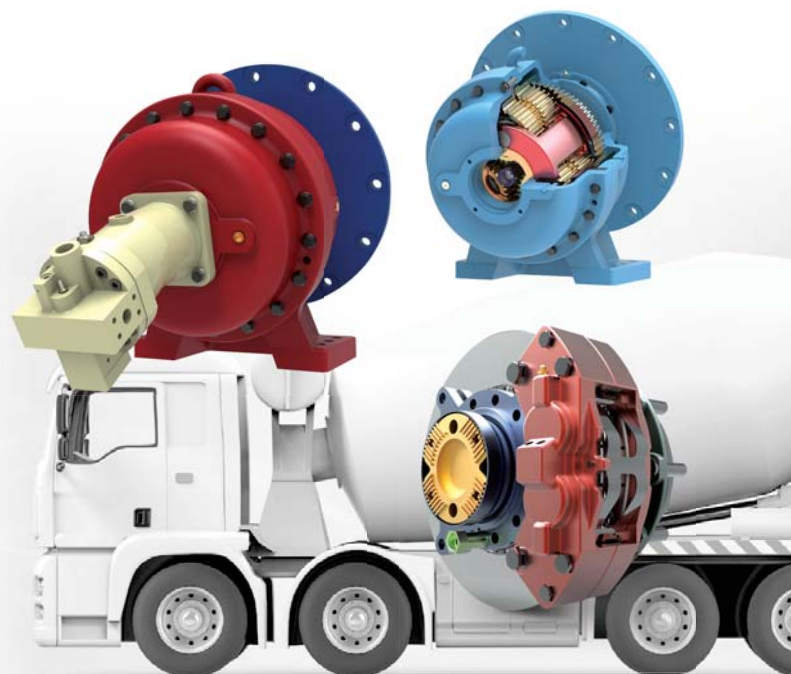
- Drum reducer module of mixer truck
- Drive reducer module of wheel hub
- Drive reducer module of driving

> Specification

Gear Ratio	1/3 ~ 1/350
Stages	1,2,3,4
Break	Lining Type, Disc Type

> Features

- High reducing ratio in minimizing & weight-lightening
- Outstanding endurance from shock & vibration
- Various oil brake system application (Lining type, Disc type)



Wind turbines



> Application

- Pitch drive reducer
- Yaw drive reducer

> Specification

Gear Ratio	1/3 ~ 1/350
Stages	2,3,4
Break	Optional

> Features

- Planetary reducer with low noise & high endurance
- Various reducing ratios according to customer's requirements
- Reducer for special application



Industrial machines

> Application

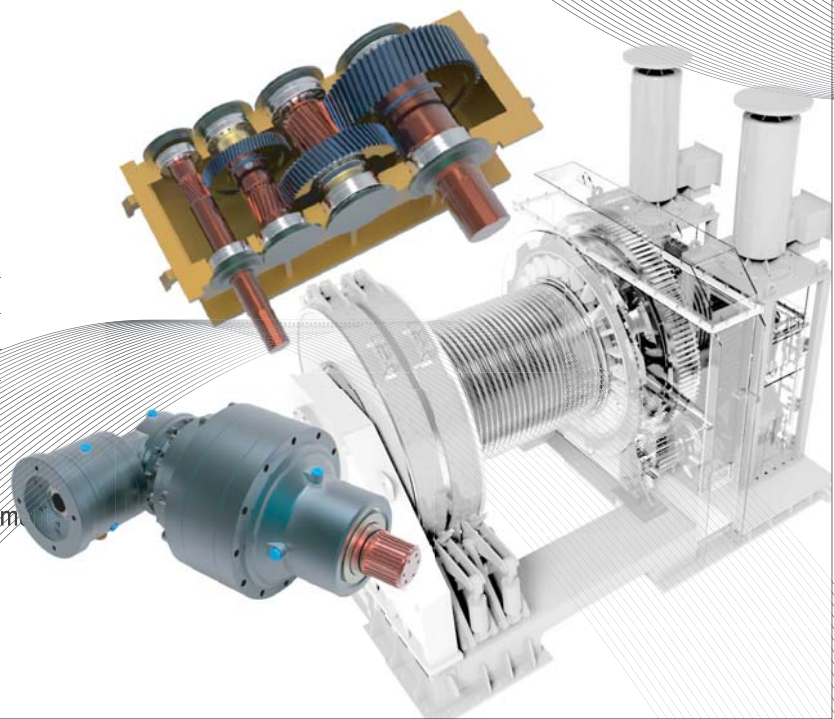
- Reducer / Increaser for industry plant
- Reducer / Increaser for iron industry plant

> Specification

Gear Ratio	1/3 ~ 1/350
Stages	1,2,3,4
Break	Optional

> Features

- Various specification & system according to customer's requirements
- 2-stage reducer system
- Reducer of special specification





Special equipment

➤ Application

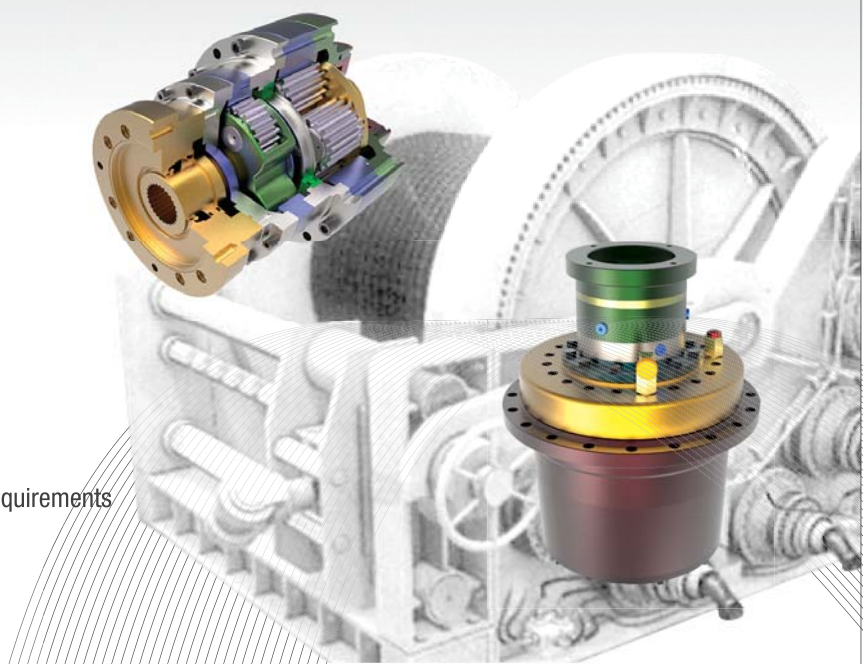
- Reducer/ Increaser for special equipment

➤ Specification

- System implementation & various specification according to various customer's requirements

➤ Features

- Special application and system
- Satisfy various customer's requirements
- Various specification & system according to customer's requirements



Development status

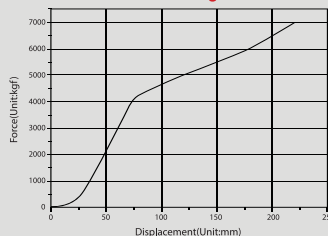
2-stage planetary reducer

➤ Test Conditions

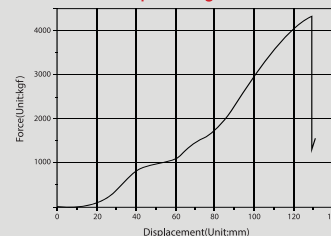
SPL No	Test Name	Test Velocity	Test Results	Remark
SPL#1	Slip strength test	1 mm/sec	2,048kgf.m	Horizontal length of jig to work on rotary system: 0.5m
	Brake strength test		3,368kgf.m	
SPL#2	Slip strength test		2,141kgf.m	
	Brake strength test		3,486kgf.m	



Brake strength test



Slip strength test

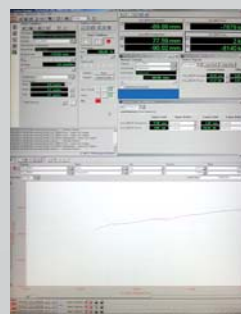




3-stage planetary reducer

Test Conditions

Test Name	SPL No.	Test Velocity	Test Results	Remark
Brake strength test	SPL#1	1mm/sec	31,735N·m	Vertical length of jig to work on rotary system : 0.4m
	SPL#2		31,932N·m	



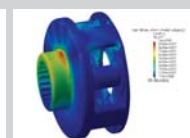
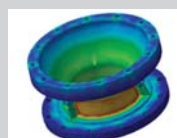
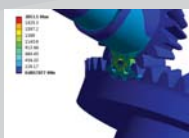
planetary reducer with hydraulic brake

Test Conditions

Product	Item	Target	Notes
Reducer for shipbuilding	Opening pressure of oil brake	40±5(bar)	Horizontal length of jig to work on rotary system: 0.8m
	Leakage	0(cc)	
	Max. pressure of oil brake	300over(bar)	
	Torque of oil brake	650over(Nm)	
	Max. torque	60,000over(Nm)	

Opening pressure of hydraulic pressure

Test product	Test picture	
SPL#1		
SPL#2		
No issue with (40±5)bar		





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