Administration Headquarters

50,000m² Manufacturing Plant and Logistics Center

AIGI ENVIRONMENTAL INCORPORATED

A Subsidiary of AIGI Industrial Group

81 Suyuan Avenue, Jiangning District, Nanjing 211100, PR China www.aigienvironmental.com

J090-2021P3V1.0E

AIGI®

SPLIT ROTARY SEALS

For Large Diameter

- **Bearings**
- **Gearboxes**
- **Fans**
- **Motors**

Introduction

Why Split ?

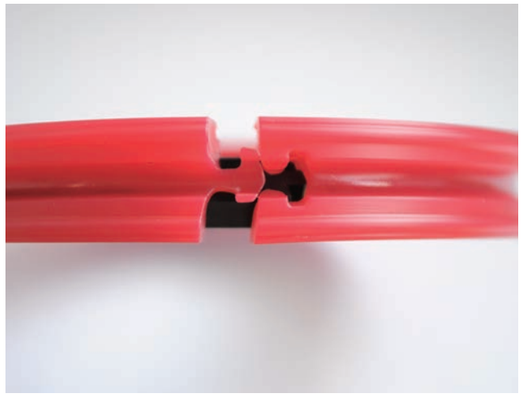
In today's ever more sophisticated plant environment most bearings are still protected by solid rotary seals, either rubber based or polymeric. When the rotary seal either wears out unexpectedly or simply fails, a common occurrence with rubber seals, the most costly maintenance and operations event occurs, unscheduled equipment shutdown which reduces operational output and drives maintenance costs significantly higher. With the recent introduction of **split rotary bearing seals** the duration and cost of these events can be dramatically reduced because of the very short amount of time required to replace the seal. In most cases the failed seal **replacement time can be reduced by 80%!** Simple and easy to use, split rotary seals can **reduce operational downtime and maintenance costs.**

Why Double Split ?

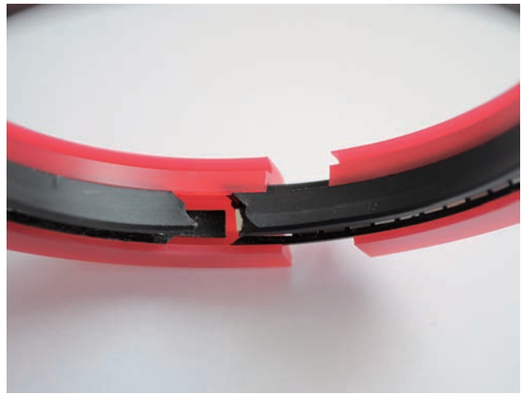
The latest innovation in rotary seal technology is the introduction of **double split rotary bearing seals**. These seals take the already convenient split seal technology a dramatic step further by not only reducing equipment downtime and production losses but also by actually extending seal life. Double split seal designs provide the same advantages of ease of installation and reduced equipment downtime but also **increase the level of seal performance and dramatically extend seal life.**

Why AIGI's Patented Design ?

AIGI has taken **double split rotary seal design to a new level** with the introduction of its **patented arrowhook™ seals**. These technologies allow for the incorporation of two independent seal surfaces into the design which **dramatically improves sealing performance**. The duo-lock design **improves the overall elasticity of the seal** while the wedge cutting technology **significantly upgrades the integrity of the split joint**. These improvements significantly extend the seal performance, life and range of use for split rotary seals.



OR*: *Arrowhook™ Lock



IR*: *Double Lock

Why do we call it "55" & "05" ?

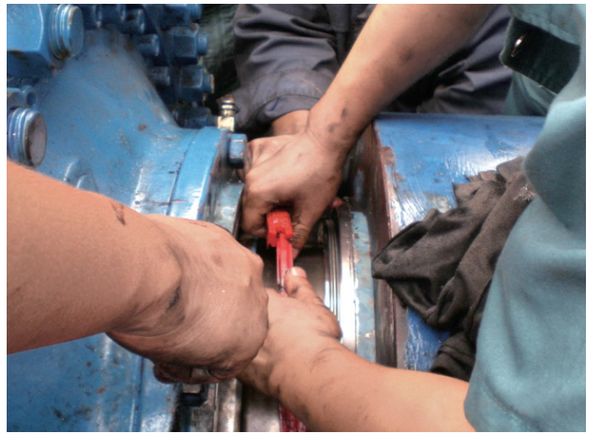
The double split rotary seal developed by AIGI has engineered splits at 2 locations, 55' and 5' as viewed on a clock face. These precision joints provide double security by maintaining the seal's elastic compensation ability as well as preventing leakage by the Id and OD faces.

*Duo-lock at **55'** & **5'** as viewed on a clock face*

★ Arrowhook + ★ 4 Rings + ★ 2 Cuts

***Arrowhook™** - Double split rotary seal*

Application



AIGI 5505 Arrowhook™ Series

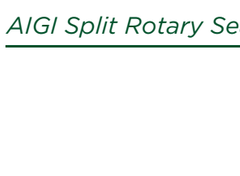
Internationally ***Patented***

AIGI 5505
General Application

AIGI 5505H
High Speed Application

Installation Guide

AIGI 5505



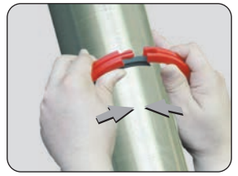
1. Open the seal, install it around the shaft

2. Connect and lock it

3. Replace the old seal, making sure the split joint faces upward

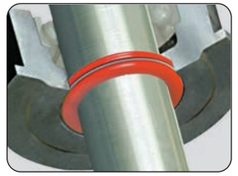
AIGI 5505H

1. Open the seal, install it around the shaft



2. Connect and lock it

3. Lock the spring



4. Replace the old seal, making sure the split joint faces upward

Features & Benefits

- Easy & fast installation
- No equipment disassembly required
- Low friction
- Reduces maintenance time by 80%

Design (AIGI 5505H)	Benefits (AIGI 5505H)
• Two Engineered Splits at 55” and 5”	• Double Security – Maintains Seal’s Elastic Compensation – No Leakage by the ID and OD Faces
• Ball & Socket Duo-lock	• Creates reactive force to avoid relaxation
• Inner & outer ring structure	• Effective, long life sealing performance
• Unique Ball and Socket Joint Design on OD Ring	• Duo-Lock split maintains joint integrity in vibrating equipment conditions

Application

- Low run out eqiupment

Technical Data

Item	Material	Temperature	Shaft Speed	Run Out
AIGI 5505	PU	-30 ~ 80°C	≤ 3m/s	≤ 0.2mm
AIGI 5505H	PU / PTFE	-30 ~ 80°C	≤ 12m/s	≤ 0.1mm

Size Range

Item	Shaft Diameter-d(mm)	Outer Diameter-D(mm)	Radial Width-H(mm)	Axial Thickness-L(mm)
AIGI 5505	d ≥ 20	D ≤ 400	H ≥ 10	L ≥ 11
AIGI 5505H	d ≥ 20	D ≤ 400	H ≥ 12.5	L ≥ 12

AIGI 5505 Arrowhook™ Series

Internationally Patented

AIGI 5505Z

Large Run Out Application

AIGI 5505HZ

Large Run Out & High Speed Application

Features & Benefits

- Easy & fast installation
- No equipment disassembly required
- Low friction
- Reduces maintenance time by 80%

Application

- Larger run out equipment

Technical Data

Item	Material	Temperature	Shaft Speed	Run Out
AIGI 5505Z	PU	-30 ~ 80°C	≤ 3m/s	≤ 2mm
AIGI 5505HZ-N	NBR	-35 ~ 110°C	≤ 10m/s	
AIGI 5505HZ-V	FKM	-20 ~ 160°C	≤ 15m/s	

Size Range

Item	Shaft Diameter-d(mm)	Outer Diameter-D(mm)	Radial Width-H(mm)	Axial Thickness-L(mm)
AIGI 5505Z	d ≥ 180	D ≤ 2000	H ≥ 15	L ≥ 15
AIGI 5505HZ-N	d ≥ 180	D ≤ 1350		
AIGI 5505HZ-V	d ≥ 180	D ≤ 580		

AIGI Single Split Rotary Seals

AIGI 522S-PU

AIGI 522S-N

AIGI 522S Wedge-shaped Cutting and Spring-energized Patented Technology

Features & Benefits

- Easy installation & removal
- OD Live-loading tighten Patented Design to make the installation firmly
- Patended reverse wedge cutting and spring-energized sealing technology, providing more holding power in cavity bore
- Less expensive than double split

Application

- Large Diameter, low speed,poor concentricity and large run out equipment

Technical Data

Item	Material	Temperature	Shaft Speed	Run Out
AIGI 522S-PU	PU	-30 ~ 80°C	≤ 3m/s	≤ 0.3mm
AIGI 522S-N	NBR	-35 ~ 110°C	≤ 10m/s	≤ 0.3mm
AIGI 522S-V	FKM	-20 ~ 160°C	≤ 15m/s	≤ 0.2mm

Size Range

Item	Shaft Diameter-d(mm)	Outer Diameter-D(mm)	Radial Width-H(mm)	Axial Thickness-L(mm)
AIGI 522S-PU	d ≥ 20	D ≤ 2000	H ≥ 7.5	L ≥ 7
AIGI 522S-N	d ≥ 20	D ≤ 1350		
AIGI 522S-V	d ≥ 20	D ≤ 580		

AIGI Patented Split Bearing Protectors

AIGI 322S

Design

- Updated split structure & material
- Non-contact seal
- Waterproof and dustproof

Benefits

- Substitute of traditional labyrinth seal
  Easy installtion & long seal life
- No shaft damage
- Dramatically extends bearing life

Application

- High speed eqiupment (not applicable for vertical equipment or grease bearings)

AIGI 322SQ

Design

- Split construction
- Direct bonding to housing face
- Patented self-positioning
- Copper construction
- High temperature rubber

Benefits

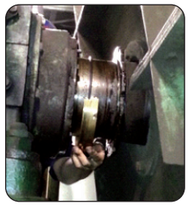
- No equipment modification required
- Easy installation
- Automatic alignment
- Safe usage in all plant environments
- Reliable continuous operation

Application

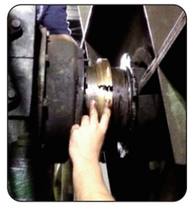
- Reducers, bearing housing and motors (not applicable for vertical equipment)

Installation Guide - AIGI 322S

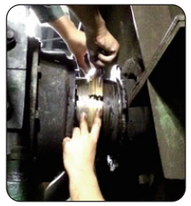
1. Bond and join split o-ring



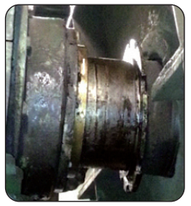
2. Install bottom half



3. Install top half



4. Tighten Bolts



5. Finish assembly

Technical Data

Item	Material	Temperature	Shaft Speed	Axial Movement	Run Out
AIGI 322S	Copper/ NBR (FKM)	-35 ~ 120°C (NBR) -20 ~ 200°C (FKM)	≤ 60m/s	± 0.4mm	± 0.3mm
AIGI 322SQ	Copper	≤ 120°C			

In addition to our split rotary seals, AIGI offers a complete line of -

Non-split Rotary Seals

- ***AIGI Bearing Protectors***

Item	Material	Temperature	Shaft Speed
AIGI 322A (for oil)	Copper / PTFE / NBR	-35~110°C	≤ 20m/s
	Copper / PTFE / FKM	-20~200°C	
AIGI 322B (for grease)	Copper / NBR	-35~110°C	≤ 12m/s
	Copper / FKM	-20~200°C	

- ***AIGI Composite Materials Rotary Seals***

AIGI 522-PU

AIGI 522-N

Item	AIGI 522-PU	AIGI 522-N	AIGI 522-V	AIGI 522-H
Material	PU	NBR	FKM	PTFE
Temperature	-30 ~ 80°C	-35 ~ 110°C	-20 ~ 160°C	-20 ~ 200°C
Shaft Speed	≤ 3m/s	≤ 10m/s	≤ 15m/s	≤ 20m/s
Run Out	≤ 0.6mm	≤ 0.5mm	≤ 0.4mm	≤ 0.2mm
Pressure	≤ 0.3bar			
Size Range (mm)	d ≥ 20, D ≤ 2000 H ≥ 7.5, L ≥ 7	d ≥ 20, D ≤ 1350 H ≥ 7.5, L ≥ 7	d ≥ 20, D ≤ 580 H ≥ 7.5, L ≥ 7	d ≥ 25, D ≤ 400 H ≥ 10, L ≥ 8

Continue

• AIGI Composite Materials Rotary Seals

Item	AIGI 523-PU	AIGI 523-N	AIGI 523-V	AIGI 523-H
Material	PU	NBR	FKM	PTFE
Temperature	-30~80°C	-35~110°C	-20~160°C	-20~200°C
Shaft Speed	≤ 3m/s	≤ 10m/s	≤ 15m/s	≤ 20m/s
Run Out	≤ 0.3mm			≤ 0.15mm
Pressure	≤ 0.5bar			
Size Range (mm)	d ≥ 20, D ≤ 400 H ≥ 7.5, L ≥ 7.5			d ≥ 20, D ≤ 400 H ≥ 7.5, L ≥ 9

AIGI 523
Energized Rotary Seal

• AIGI Metal-casing Duo-spring Seals

Item	AIGI MZG-PU	AIGI MZG-N	AIGI MZG-V	AIGI MZG-H
Material	PU	NBR	FKM	PTFE
Temperature	-30~80°C	-35~110°C	-20~160°C	-20~200°C
Shaft Speed	≤ 3m/s	≤ 10m/s	≤ 15m/s	≤ 20m/s
Run Out	≤ 3mm			≤ 1mm
Pressure	≤ 0.5bar			
Size Range (mm)	d ≥ 180, D ≤ 2000 H ≥ 15, L ≥ 15	d ≥ 180, D ≤ 1350 H ≥ 15, L ≥ 15	d ≥ 180, D ≤ 580 H ≥ 15, L ≥ 15	d ≥ 180, D ≤ 600 H ≥ 15, L ≥ 15

AIGI MZG
Energized Mill Rotary Seal

AIGI VA	
AIGI VS	

AIGI V-ring Water Seal

Material: NBR (FKM is also available)

The Most Complete & Innovative Rotary Seal Series

Available To You

Split Rotary Seals

Bearing Protectors

Non-split / Molded Rotary Seals