

CENTRIFUGAL PUMP TECHNICAL MANUAL  
Model: XYZ-300  
Manufacturer: Industrial Pumps Inc.  
Date: November 2025

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## SECTION 1: TECHNICAL SPECIFICATIONS

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### Bearings:

- Drive end: SKF 6205-2RS deep groove ball bearing
- Non-drive end: NSK 6206 deep groove ball bearing

### Operating Conditions:

- Rated speed: 1475 RPM
- Maximum speed: 3000 RPM
- Motor power: 15 kW (400V, 3-phase, 50 Hz)
- Motor rating: 20 HP

### Mechanical Components:

- Mechanical seal: Type 21, carbon/ceramic seal faces
- Impeller: Bronze, closed type, 5 vanes
- Shaft: Stainless steel 316, diameter 25 mm
- Housing: Cast iron, ASTM A48 Class 30

### Dimensions:

- Overall length: 450 mm
- Overall width: 300 mm
- Overall height: 280 mm
- Weight: 45 kg

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## SECTION 2: BEARING SPECIFICATIONS

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### Drive End Bearing (SKF 6205-2RS):

- Type: Deep groove ball bearing
- Bore diameter: 25 mm
- Outer diameter: 52 mm
- Width: 15 mm
- Number of balls: 9
- Ball diameter: 7.94 mm
- Pitch diameter: 34.55 mm
- Contact angle: 0° (radial bearing)
- Lubrication: Lithium grease, filled at factory
- Seals: 2RS (double rubber seals, both sides)

### Non-Drive End Bearing (NSK 6206):

- Type: Deep groove ball bearing
- Bore diameter: 30 mm
- Outer diameter: 62 mm
- Width: 16 mm
- Number of balls: 9
- Ball diameter: 9.53 mm

- Pitch diameter: 42.50 mm
- Contact angle: 0° (radial bearing)
- Lubrication: Lithium grease, filled at factory

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### SECTION 3: MAINTENANCE SCHEDULE

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#### Regular Maintenance:

- Bearing lubrication: Every 6 months (use lithium-based grease)
- Mechanical seal inspection: Every 12 months
- Impeller inspection: Annually
- Shaft alignment check: Every 18 months
- Complete overhaul: Every 5 years

#### Lubrication Specifications:

- Grease type: Lithium complex, NLGI Grade 2
- Temperature range: -20°C to +120°C
- Grease quantity: 5 grams per bearing
- Re-lubrication interval: 2000 operating hours

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### SECTION 4: TROUBLESHOOTING

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#### Excessive Vibration:

- Check bearing condition (listen for noise)
- Verify shaft alignment
- Inspect impeller for damage or imbalance
- Check foundation bolts for looseness

#### Bearing Noise:

- Normal bearing life: 15,000 hours at rated speed
- Replace bearings if continuous noise detected
- Check for contamination in bearing housing
- Verify proper lubrication

#### High Temperature:

- Check cooling system
- Verify bearing lubrication
- Inspect mechanical seal for excessive friction
- Check motor load

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### SECTION 5: SPARE PARTS LIST

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#### Critical Spare Parts:

1. SKF 6205-2RS bearing (drive end) - Part #: B6205-2RS
2. NSK 6206 bearing (non-drive end) - Part #: B6206
3. Mechanical seal Type 21 - Part #: MS21-25
4. Impeller assembly - Part #: IMP-XYZ300
5. O-rings set - Part #: OR-XYZ300
6. Shaft sleeve - Part #: SS-25-316

Recommended Stock:

- Keep 2 sets of bearings in stock
- Keep 1 mechanical seal as backup
- Keep 1 complete O-ring set

SECTION 6: SAFETY INFORMATION

Warnings:

- Always disconnect power before maintenance
- Use proper lifting equipment (45 kg weight)
- Wear safety glasses and gloves
- Follow lockout/tagout procedures
- Ensure proper grounding

Operating Limits:

- Maximum pressure: 10 bar
- Maximum temperature: 80°C
- Minimum flow: 10 m³/h (to prevent overheating)
- Maximum flow: 150 m³/h

SECTION 7: INSTALLATION GUIDE

Foundation Requirements:

- Concrete foundation, minimum 150 mm thick
- Anchor bolts: M16, grade 8.8
- Vibration isolation: Rubber pads recommended
- Level tolerance: ±0.1 mm per meter

Alignment Procedure:

1. Install pump on foundation
2. Check baseplate level
3. Align motor and pump shaft (max offset: 0.05 mm)
4. Tighten foundation bolts evenly
5. Recheck alignment after tightening
6. Run pump and verify no excessive vibration

APPENDIX: WARRANTY INFORMATION

Warranty Period: 24 months from date of installation  
Coverage: Manufacturing defects, material defects  
Not Covered: Normal wear, improper maintenance, misuse

Contact Information:

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END OF MANUAL  
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