

# Goulds Model 3175 Maintenance Checks



## ✓ TORQUE VALUES

Torque Values, ft-lbs (N-m)		
Location	Recommended Torque	
Impeller Bolt	S, M, & L	220 (300)
	XL w/ 7/8" Bolt	220 (300)
	XL w/ 1.25" Bolt	704 (954)
Frame Adapter to Casing Bolts	12 inch casing	67 (91)
	14 inch casing	180 (244)
	18 inch casing	148 (201)
	22 inch casing	172 (233)
	28 inch casing	368 (499)
Frame to Frame Adapter Bolt	S, M, & L Group	170 (230)
	XL Group	510 (690)
Brg Housing to Frame Bolts	S, M, & L Groups	60 (80)
	XL Group	170 (230)
Brg End Cover to Brg Housing Bolts	S, M, & L Groups	12 (16)
	XL Group	59 (80)
Suction Sideplate Nut	S, M, & L Groups	54 (73)
	XL Groups	132 (179)
Adapter to Seal Chamber / Stuffing Box Cover	12 inch	12 (16)
	14, 18, 22 inch	30 (40)
	28 inch	105 (142)

Impeller Removal Tool			
PRDNO	Item #	Model	Description
76678 2239	958	3175	Impeller Puller, 3175 S, M, L and Old XL with 7/8" Impeller Bolt
A06037A 2239	958	3175	Impeller Puller, 3175XL with 1.25" Impeller Bolt*

\* Old 3175XL with 7/8" Impeller Bolt will need the P/N 76678 2239

## OPERATION CHECKS

### ✓ LUBRICATION

#### Recommended Lubricants:

Oil: ISO VG68 High Grade Turbine Oil [up to 180°F (80°C)]  
ISO VG100 [T>180°F (80°C)]

Oil Sump Capacity		
Frame	Quarts	Liters
<b>S</b>	5	4.75
<b>M</b>	4	3.79
<b>L</b>	4	3.79
<b>XL</b>	14	13.25

Grease: NLGI No. 2 Sodium or Lithium Base [up to 230°F (110°C)]  
NGLI No. 3 with oxidation stabilizers [T>230°F (110°C)]

Grease Amounts								
Frame	Initial Grease				Re-Grease <sup>1</sup>			
	Thrust (Angular Contact)		Radial (Cylindrical Roller)		Thrust (Angular Contact)		Radial (Cylindrical Roller)	
	Oz.	Grams	Oz.	Grams	Oz.	Grams	Oz.	Grams
<b>S</b>	10	283	9	255	4	113	4	113
<b>M</b>	18	510	14	397	7	198	6	170
<b>L</b>	23	652	16	454	10	283	7	198
<b>XL</b>	62	1,758	45	1,276	27	765	19	539

<sup>1</sup> Amount is based on purging half of the old grease from the housing reservoir.

#### Re-lubrication Interval:

Oil: Change after first 200 hours of operation for new bearings, every 3 months thereafter.

Grease: Re-grease every 3 months.

## ✓ IMPELLER ADJUSTMENT

Temperature, °F (°C)	Front Clearance, in (mm)
Up to 120° (50°)	0.015 (0.40)
120° (50°) - 210° (100°)	0.018 (0.45)
210° (100°) - 300° (150°)	0.020 (0.50)
300° (150°) - 390° (200°)	0.022 (0.55)
390° (200°) - 450° (230°)	0.026 (0.65)

## ✓ ALIGNMENT

Coupling to be aligned to within 0.002 in. TIR for both parallel and angular readings.

Cold Setting of Parallel Vertical Alignment	
Temperature, °F (°C)	Set Driver Shaft, in (mm)
Up to 50° (10°)	0.002 (0.05) - 0.004 (0.10) low
50° (10°) - 150° (65°)	0 - 0.002 (0.05) high
150° (65°) - 250° (120°)	0.004 (0.10) - 0.006 (0.15) high
250° (120°) - 350° (175°)	0.008 (0.20) - 0.010 (0.25) high
350° (175°) - 450° (220°)	0.012 (0.30) - 0.014 (0.36) high

## ✓ TEMPERATURE

Temperature Limits	
Pump Configuration	Suitability
Grease Lube	Up to 250°F (120°C)
Oil Lube w/o Cooler	Up to 250°F (120°C)
Oil Lube with Cooler	Up to 350°F (180°C) CI Only Up to 450°F (230°C) Steel Only

Note: Normal bearing operating temperatures run between 120° and 180°F (50° - 80°C). Bearing temperatures are generally 45°F (25°C) higher than the bearing housing/frame surface temperature.

## REBUILD CHECKS

## ✓ SHAFT END PLAY

Shaft End Play, in (mm)				
Range	Frame			
	S	M	L	XL
Min	0.001 (0.03)	0.001 (0.03)	0.001 (0.03)	0.001 (0.03)
Max	0.005 (0.13)	0.005 (0.13)	0.005 (0.13)	0.005 (0.13)

## ✓ BEARING TYPE, FITS, AND TOLERANCES

Bearing Types				
Frame	Inboard		Outboard	
	Goulds Part No.	Mfg. Part No.	Goulds Part No.	Mfg. Part No.
<b>S</b>	8050-31360	SKF 6313	R8057-3-1321	SKF 7313 BECBY
<b>M</b>	8050-31740	SKF 6317	R8057-3-1701	SKF 7317 BEGAM
<b>L</b>	8050-22240	SKF 6222	R8057-2-2229	SKF 7222 BECBM
<b>XL</b>	8050-32650	SKF 6326	R8057-3-2621	SKF 7326 BCBM

Bearing Fits and Tolerance, in (mm)				
Fit	Frame			
	S	M	L	XL
<b>Shaft OD</b>	2.5597 (65.016)	3.3472 (85.019)	4.3314 (110.018)	5.1194 (130.033)
<b>Inboard</b>	2.5592 (65.004)	3.3466 (85.004)	4.3308 (110.002)	5.1187 (130.015)
TIGHT	0.0012 (0.031)	0.0015 (0.039)	0.0015 (0.038)	0.0023 (0.058)
TIGHT	0.0001 (0.004)	0.0001 (0.004)	0.0001 (0.002)	0.0006 (0.015)
<b>Bearing ID</b>	2.5591 (65.000)	3.3465 (85.000)	4.3307 (110.000)	5.1181 (130.000)
<b>Inboard</b>	2.5585 (64.985)	3.3457 (84.980)	4.3299 (109.980)	5.1171 (129.975)
<b>Frame ID</b>	5.5118 (140.000)	7.0866 (180.000)	7.8740 (200.000)	11.0236 (280.000)
<b>Inboard</b>	5.5128 (140.025)	7.0876 (180.025)	7.8752 (200.030)	11.0248 (280.030)
LOOSE	0.0017 (0.043)	0.0020 (0.050)	0.0024 (0.060)	0.0026 (0.065)
LOOSE	0.0000 (0.000)	0.0000 (0.000)	0.0000 (0.000)	0.0000 (0.000)
<b>Bearing OD</b>	5.5118 (140.000)	7.0866 (180.000)	7.8740 (200.000)	11.0236 (280.000)
<b>Inboard</b>	5.5111 (139.982)	7.0856 (179.975)	7.8728 (199.970)	11.0222 (279.965)
<b>Shaft OD</b>	2.5597 (61.016)	3.3472 (85.019)	4.3314 (110.018)	5.1194 (130.033)
<b>Outboard</b>	2.5592 (65.004)	3.3466 (85.004)	4.3308 (110.002)	5.1187 (130.015)
TIGHT	0.0012 (0.031)	0.0015 (0.039)	0.0015 (0.038)	0.0023 (0.058)
TIGHT	0.0001 (0.004)	0.0001 (0.004)	0.0001 (0.002)	0.0006 (0.015)
<b>Bearing ID</b>	2.5591 (65.000)	3.3465 (85.000)	4.3307 (770.000)	5.1181 (130.000)
<b>Outboard</b>	2.5585 (64.985)	3.3457 (84.980)	4.3299 (109.980)	5.1171 (129.975)
<b>Housing ID</b>	5.5121 (140.007)	7.0869 (180.007)	7.8744 (200.010)	11.0248 (280.030)
<b>Outboard</b>	5.5128 (140.025)	7.0876 (180.025)	7.8752 (200.030)	11.0240 (280.010)
LOOSE	0.0017 (0.043)	0.0020 (0.050)	0.0024 (0.060)	0.0018 (0.045)
LOOSE	0.003 (0.007)	0.0003 (0.007)	0.0004 (0.010)	0.0012 (0.030)
<b>Bearing OD</b>	5.5118 (140.000)	7.0866 (180.000)	7.8740 (200.000)	11.0236 (280.000)
<b>Outboard</b>	5.5111 (139.982)	7.0856 (179.975)	7.8728 (199.970)	11.0222 (279.965)

## ✓ INDICATOR CHECKS

- Impeller Vane Runout:  $\leq 14''$  .006 in. TIR Max  
 $14'' \leq x \leq 18''$  .007 in. TIR Max  
 $18'' \leq x \leq 28''$  .008 in. TIR Max
- Shaft Straightness - 0.0005 in. TIR Max
- Shaft Runout - 0.002 in. TIR Max