



Stealth
Advanced PS & RS
Product Manual

BAYSIDE[®]
MotionGroup
PRECISION IN MOTION



Stealth Advanced PS & RS Precision Gearhead

Product Manual

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Product Manual

Stealth Advanced PS & RS

Precision Gearhead

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I. Introduction

Thank you for your purchase of the Stealth Advanced precision gearhead. The Stealth Advanced gearheads are designed to meet the most demanding automation applications. This manual provides installation and maintenance information for the PS and RS 40 through 300 frame size gearheads. Please read the entire manual before operating this product as there are important enhancements to this product that can affect its operation and maintenance.

The Stealth Advanced gearhead is an enhancement and a replacement of the existing Stealth planetary gearheads. The major enhancements are:

- **Oil Lubrication**

- Oil provides better lubrication, reduces friction and operating temperatures.

- **Magnetic Oil Fill/Drain Plug**

- The magnetic plug attracts normal wear particles keeping them away from the gear mesh.

- **Reduced Seal Diameters**

- Reduces the linear velocity between shaft and seal. Further reduces heat and wear.

- **Output Wave Seal Technology**

- Creates a hydrodynamic film between seal and shaft and reducing heat and wear.

- **Front Output Seal Cap**

- Completely captures and protects output seal.

II. Packaging / Unpacking

The gearhead is packaged in a crate/carton with high density foam padding to avoid any damage during transportation. The gearhead is wrapped in plastic to maintain cleanliness and should be handled with appropriate care.

All appropriate gearhead documentation (including this manual) will be found on top of the gearhead. The gearhead can be lifted out of the crate/carton and placed on a secure surface.

Please inspect the gearhead for any signs of damage that may have occurred during shipment before disposal of packing materials. If any damage is found please call Bayside at any one of the locations listed on the back of this manual.

III. Maintenance

Gearhead Preventative Maintenance Program

Under normal conditions, Bayside recommends the change of the lubrication and seals every 10,000 hours of operation, or every 12 months. Where operating conditions or applications are severe, such as gearhead case temperatures over 100° C (212° F), or in the presence of chemical fumes, it is recommended to change the lubrication and seals at every 5000 hours of operation, or every 6 months. Please call Bayside at 1-800-305-4555 for assistance.

Changing Gearhead Lubricant

When lubrication replacement becomes necessary the gearhead should be run for 15 minutes first. Next place a suitable oil pan underneath the gearhead. Locate and slowly loosen the oil plug located near the top of the gearhead (this will allow lubricant to drain easier). Next slowly remove the oil plug nearest the bottom of the gearhead to allow the oil to drain out. Once the oil is completely drained clean the magnetic drain plug of any metal particles and reinsert the bottom plug back into the gearhead. Next fill the gearhead with new lubricant to amount stated in section VI. Lubrication.

Note: PS40 gearheads are grease filled and can only be factory serviced. Please call Bayside at any one of our locations for service .

Gearheads Used as Spares / Replacements

If one gearhead is to be used as a possible replacement for several gearheads all with different orientations, then the oil fill level of the gearhead must be adjusted before operation. The oil fill level can be adjusted quite easily by following instructions in section "Changing Gearhead Lubricant" above. Make sure to contact Bayside or lubricant manufacturer (see Section VI. Lubrication) beforehand to obtain extra lubricant if required.

Changing Gearhead Orientation

Should it be necessary to change the orientation of the gearhead the oil fill level must be adjusted as well. Depending on the original fill level, oil may have to be drained or added. Bayside recommends completely changing the oil any time fill levels are adjusted (unless the gearhead has never been used). For instructions on replacing gearhead oil see "Changing Gearhead Lubricant" above.

IV. Storage

Stealth gearheads can be stored up to one year in 0 to 35° C (32° F to 95° F) temperatures. The gearhead should be stored with both the input pinion and the output shaft horizontal regardless of the ordered orientation.

Lubrication

V. Lubrication

Orientation

For instructions on changing gearhead lubricant please see section III. Maintenance.

Bayside's Stealth gearheads are factory filled with synthetic gear oil. The level of oil is based on the operating orientation of the gearhead noted at the time of purchase. The correct operating orientation of the gearhead can be determined by observing the part number on the label. The last digit of the part number should read: H,U,D,E, or F. The letter stands for the following:

H = output shaft horizontal

U = output shaft pointing up

D = output shaft pointing down

E = RS input facing up (right angle gearheads only)

F = RS input facing down (right angle gearheads only)

There is also a "orient" section on the label that states the factory filled orientation for your convenience. It correspondingly will read:

Horizontal

Shaft Up

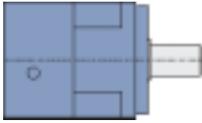
Shaft Down

Input Up

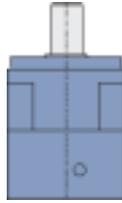
Input Down

NOTE: Stealth gearheads ordered before July 8th, 2002 were grease filled and therefore did not require orientation information. Although these gearheads can operate in any orientation without the need for oil level adjustments, they do not have the same performance enhancements. These gearhead part numbers will end in either a number or the letter B. Also there will be no "orient" section or it will state "n/a".

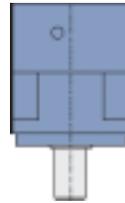
PS: Orientation



Horizontal orientation (**H**)

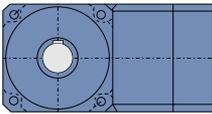


Output shaft pointing up (**U**)

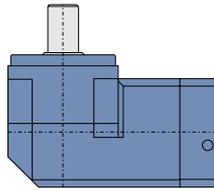


Output shaft pointing down (**D**)

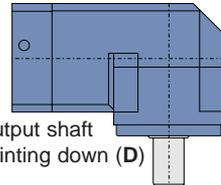
RS: Orientation



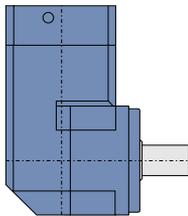
Horizontal orientation (**H**)



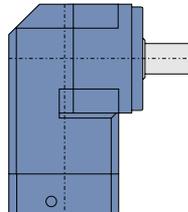
Output shaft pointing up (**U**)



Output shaft pointing down (**D**)



RS input facing up (**E**)



RS input facing down (**F**)

Lubrication

Lubrication Fill Quantities

For replacement oil please contact Bayside or the oil manufacturer directly at the following numbers:

Bayside America: 1-800-305-4555
 Bayside Germany: (49) 521-20853-0
 Bayside United Kingdom: (44) 1536-267040
 Bayside Asia: (65) 545-7757
 Mobil (specify SHC630)
 United States: http://www.mobil.com/mobil_lubes/industrial/distributors/dist_dir.html
 Worldwide: http://www.mobil.com/mobil_worldwide/index.html

PS Series

Factory Lubricant: Mobil SHC630

| Lubricant Level (ml) | | | | |
|-----------------------------------|---------|-----------------|-----------------------|-----------------|
| Gearhead 3:1, and 100:1 ratios | | Horizontal (H) | Output Shaft Vertical | |
| | | | Facing Up (U) | Facing Down (D) |
| PS60 | 1 stage | 21 | 21 | 21 |
| | 2 stage | 33 | 50 | 50 |
| PS90 | 1 stage | 58 | 58 | 58 |
| | 2 stage | 95 | 145 | 145 |
| PS115 | 1 stage | 130 | 130 | 130 |
| | 2 stage | 190 | 280 | 280 |
| PS142 | 1 stage | 210 | 210 | 210 |
| | 2 stage | 340 | 480 | 480 |
| PS180 | 1 stage | 450 | 450 | 450 |
| | 2 stage | 725 | 1100 | 1100 |
| PS220 | 1 stage | 900 | 1400 | 1400 |
| | 2 stage | 1700 | 3000 | 3000 |
| PS300 | 1 stage | Consult Factory | Consult Factory | Consult Factory |
| | 2 stage | Consult Factory | Consult Factory | Consult Factory |

RS Series

Factory Lubricant: Mobil SHC630

| Lubricant Level (ml) | | | | | |
|--|-----------------------|-----------------|-----------------|---------------------------|-----------------------------|
| Gearhead 5:1 and 100:1 ratios | Output Shaft Vertical | | | Output Shaft Horizontal | |
| | Horizontal (H) | Facing Up (U) | Facing Down (D) | RS Input Facing Up (E) | RS Input Facing Down (F) |
| RS60 | 44 | 76 | 66 | 66 | 66 |
| RS90 | 150 | 220 | 200 | 200 | 200 |
| RS115 | 300 | 500 | 440 | 440 | 440 |
| RS142 | 550 | 900 | 780 | 780 | 780 |
| RS180 | 1270 | 1780 | 1780 | 1600 | 1600 |
| RS220 | 2700 | 4100 | 4500 | 4100 | 4500 |
| RS300 | Consult Factory | Consult Factory | Consult Factory | Consult Factory | Consult Factory |

Step 5. Secure the gearhead to the motor using the (4) socket head cap screws and (4) lock washers supplied. (Fig. 4)

Step 6. Check that the gearhead is fully seated onto the motor flange.

Step 7. Refer to the torque specification from the following table. Using the supplied Allen wrench, tighten the pinion bolt to the noted torque specification using a torque wrench.



Fig. 4

Step 8. Reinsert and tighten the threaded plug in the pinion bolt access hole.

Screw Tightening Torques

| Frame Size (mm) | Motor Shaft Diameter | | Screw Size | Tightening Torque | |
|--------------------|----------------------|-----------------|------------|-------------------|----------|
| | mm | (inches) | | Nm | (in-lbs) |
| 40 | <6.35 | (<.250) | M2.5 | 1.21 | (11) |
| 60 | 5.8 - 16 | (.230 - .630) | M4 | 4.6 | (41) |
| 90 | 6.4 - 16.0 | (.250 - .630) | M4 | 4.6 | (41) |
| | 16.0 - 19.0 | (.630 - .748) | M5 | 9.5 | (84) |
| 115 | 9.5 -19.1 | (.375 - .751) | M5 | 9.5 | (84) |
| | 20.0 - 24.0 | (.787 - .946) | M6 | 16 | (140) |
| 142 | 12.7 -24.0 | (.500 - .945) | M6 | 16 | (140) |
| | 25.4 -35.0 | (1.00 - 1.379) | M8 | 39 | (345) |
| 180 | 15.8 - 35.0 | (.624 - 1.378) | M8 | 39 | (345) |
| | 38.0 - 42.0 | (1.496 - 1.654) | M10 | 77 | (681) |
| 220 | 25.4 - 35.2 | (.945 - 1.388) | M10 | 77 | (681) |
| | 38.0 - 55.0 | (1.496 - 2.165) | M12 | 135 | (1195) |
| 300 | ALL | ALL | M12 | 135 | (1195) |

Note: Torques shown above are minimum tightening values. Bolts can be safely tightened up to 25% higher for increased holding torques. Optionally, Loctite 242 can be applied to the threads of the pinion bolts.

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