






Harmonic Gearhead (HG)



In accordance with Nexen's established policy of constant product improvement, the specifications contained in this manual are subject to change without notice. Technical data listed in this manual are based on the latest information available at the time of printing and are also subject to change without notice.

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	<div data-bbox="553 615 850 667"> DANGER</div> <p>Read this manual carefully before installation and operation. Follow Nexen's instructions and integrate this unit into your system with care. This unit should be installed, operated and maintained by qualified personnel ONLY. Improper installation can damage your system, cause injury or death. Comply with all applicable codes.</p>	
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This document is the original, non-translated, version.

Conformity Declaration: In accordance with Appendix II B of CE Machinery Directive (2006/42/EC):

A Declaration of Incorporation of Partly Completed Machinery evaluation for the applicable EU directives was carried out for this product in accordance with the Machinery Directive. The declaration of incorporation is set out in writing in a separate document and can be requested if required.

This machinery is incomplete and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the applicable provisions of the Directive.

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ISO 9001 Certified

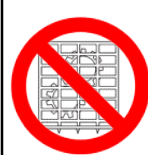
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GENERAL SAFETY PRECAUTIONS


	<p>WARNING</p> <p>Use appropriate guarding for rotating components. Failure to guard could result in serious bodily injury.</p>
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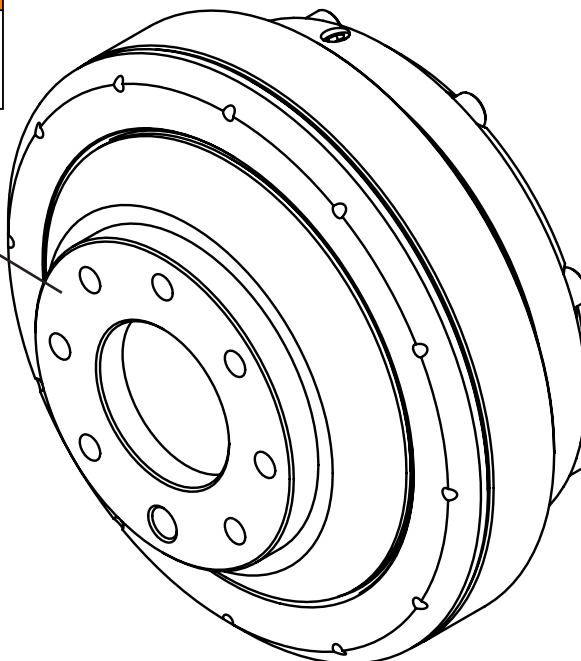
	<p>WARNING</p> <p>Ensure proper guarding of the product is used. Nexen recommends the machine builder design guarding in compliance with OSHA 29 CFR 1910 "Occupational Safety and Health Hazards".</p>
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	<p>WARNING</p> <p>Failure to properly support the load before disengaging the HG system could cause serious harm to operators or equipment.</p>
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	<p>CAUTION</p> <p>Watch for sharp features when interacting with this product. The parts have complex shapes and machined edges.</p>
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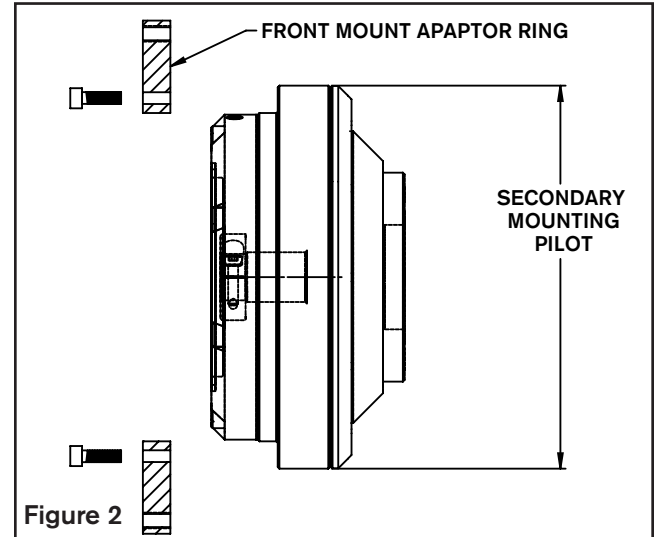
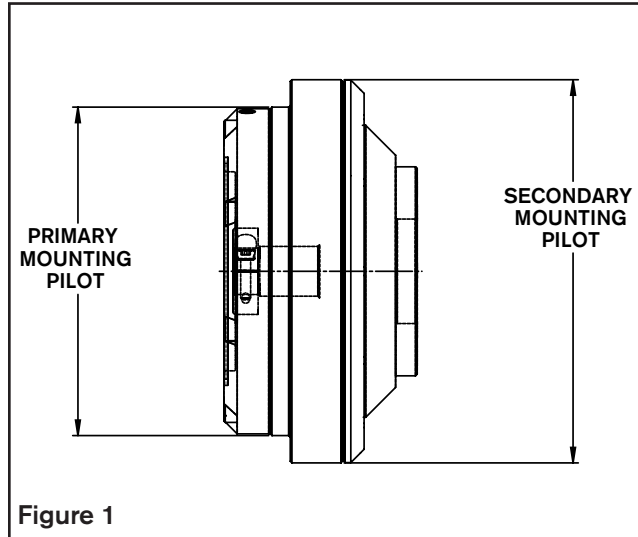
	<p>CAUTION</p> <p>Use lifting aids and proper lifting techniques when installing, removing, or placing this product in service.</p>
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	<p>WARNING</p> <p>Use appropriate guarding for rotating components. Failure to guard could result in serious bodily injury.</p>
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HG REQUIREMENTS

- The HG can be mounted in any orientation, however must meet the recommended mounting specifications found later in this document.
- There are two pilot options on the HG product. If using the primary mounting pilot the product can be mounted directly to the machine frame or pre-loader. If the secondary mounting pilot is desired, it will require a transition plate as shown below.



HG INSTALLATION

The order in which the HG is assembled to the motor and machine is not critical, and should be done in whichever order provides for the least amount of difficulty to the machine assembler.

INSTALLATION OF MOTOR TO HG

- Before installing the motor into the HG:
 - Wipe the motor shaft, pilot, and mounting face clean. Wipe the internal pilot and motor mounting face of the HG clean.
 - Ensure that the HG's clamp collar is positioned over the slotted portion of the motor shaft bore such that the slots do not line up (HG17 only).
 - Remove clamp collar access set screw.
 - Insert the long blade of a hex bit (included) through the clamp collar screw access hole in the motor adapter and engage with the clamp collar screw head.
- Apply a serviceable thread locking compound to the threads of the motor face mounting screws and a thin film of anti-sieze compound to the motor shaft.
- Slowly and gently guide the motor into the input of the HG. During this part of the procedure, the weight of the motor should be adequately supported. **Never** allow the motor to be suspended from HG until the motor mounting screws are installed.

Note: Ensure black input gasket seal is seated uniformly into radial groove of motor adaptor.

- Once the motor shaft and pilot are fully seated within the HG input, tighten the motor face mounting screws according to Table 1. After the motor face screws are tightened the clamp collar screw can be tightened, also according to Table 1.

Table 1

HG Installation Fasteners			
Size	HG Mounting Screw Torque	Motor Mounting Screw Torque	Clamp Collar Screw Torque
17	32 in-lbs	28 in-lbs	18 in-lbs
25	32 in-lbs	28 in-lbs	18 in-lbs
32	84 in-lbs	71 in-lbs	37 in-lbs
50	275 in-lbs	292 in-lbs	84 in-lbs

- Once motor has been fully assembled to HG, remove the hex bit from the clamp collar access hole and save for future disassembly needs.
- Reinstall clamp collar access set screw.

INSTALLATION OF HG TO MACHINE FRAME

1. Before installing the HG into the machine frame:
 - a. Wipe the HG pilot and mounting face clean. Wipe the internal pilot and HG mounting face of the machine frame.
 - b. Apply a serviceable thread locking compound to the threads of the HG mounting screws.
 - c. Gently guide the HG into the machine frame. Install HG mounting screws, using a star pattern while tightening to the torque values shown in Table 1. These screws should be tightened to 25% of this value in the first iteration of the star pattern, 50% in the second iteration, and 100% in the final iteration.

HG OPERATION


	⚠ DANGER This product has moving parts that can crush or cut appendages. Provide adequate spacing or guarding from any operating product.
	⚠ WARNING Ensure proper guarding of the product is used. Nexen recommends the machine builder design guarding in compliance with OSHA 29 CFR 1910 "Occupational Safety and Health Hazards".
	⚠ WARNING Use appropriate guarding for rotating components. Failure to guard could result in serious bodily injury.
	⚠ WARNING Never exceed maximum operating speeds listed for your product. (See Table 2).

TABLE 2

Harmonic Gearhead Maximum Speeds		
Product / Ratio	Motor RPM	Output RPM
HG17 / 50:1	7300	146
HG17 / 80:1	7300	91
HG17 / 100:1	7300	73
HG17 / 120:1	7300	61
HG25 / 50:1	5600	112
HG25 / 80:1	5600	70
HG25 / 100:1	5600	56
HG25 / 120:1	5600	47
HG32 / 50:1	4800	96
HG32 / 80:1	4800	60
HG32 / 100:1	4800	48
HG32 / 120:1	4800	40
HG50 / 80:1	3500	44
HG50 / 100:1	3500	35
HG50 / 120:1	3500	29

DISENGAGING AND REMOVAL OF THE HG

1. De-couple the load from the HG.

	⚠ WARNING Failure to properly support the load before disengaging the HG could cause serious harm to operators or equipment.
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2. Disconnect the power source, ensuring that no torque can be applied to the HG.

3. The motor/HG mechanism assembly can then be disassembled from the machine, following the reverse order of assembly steps.
4. If the motor is to be disassembled from the HG, it will be necessary to direct a flashlight beam into the clamp collar access hole in order to align the clamp collar screw so that the hex key can easily be re-engaged to loosen it. The HG will need to be slowly backdriven so that the input rotates to achieve this alignment.

LUBRICATION

The gearcase of the HG has been filled with a high quality synthetic extreme pressure grease and is considered to be "lubed for life". It is not recommended, therefore, that the geared pinion be field-serviced. Contact Nexen in the event that the HG requires maintenance.

The HG can be mounted in any orientation and requires no special provisions for sealing or venting when operating within the recommended ambient temperature range of -5 to 40° C (23 to 104° F) and max product housing temperature of 90° C (194° F). Contact Nexen for applications requiring the HG to operate outside of this temperature range.

WARRANTY

Warranties

Nexen warrants that the Products will (a) be free from any defects in material or workmanship for a period of 12 months from the date of shipment, and (b) will meet and perform in accordance with the specifications in any engineering drawing specifically for the Product that is in Nexen's current product catalogue, or that is accessible at the Nexen website, or that is attached to this Quotation and that specifically refers to this Quotation by its number, subject in all cases to any limitations and exclusions set out in the drawing. NEXEN MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. This warranty applies only if: (a) the Product has been installed, used and maintained in accordance with any applicable Nexen installation or maintenance manual for the Product; (b) the alleged defect is not attributable to normal wear and tear; (c) the Product has not been altered, misused or used for purposes other than those for which it was intended; and (d) Buyer has given written notice of the alleged defect to Nexen, and delivered the allegedly defective Product to Nexen, within one year of the date of shipment.

Exclusive Remedy

The exclusive remedy for the Buyer for any breach of any warranties provided in connection with this agreement will be, at the election of Nexen: (a) repair or replacement with new, serviceably used, or reconditioned parts or products; or (b) issuance of credit in the amount of the purchase price paid to Nexen by the Buyer for the Products.

Agent's Authority

Buyer agrees that no agent, employee or representative of Nexen has authority to bind Nexen to any affirmation, representation, or warranty concerning the Products other than those warranties expressly set forth herein.

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TO THE EXTENT PERMITTED BY LAW NEXEN SHALL HAVE NO LIABILITY TO BUYER OR ANY OTHER PERSON FOR INCIDENTAL DAMAGES, SPECIAL DAMAGES, CONSEQUENTIAL DAMAGES OR OTHER DAMAGES OF ANY KIND OR NATURE WHATSOEVER, WHETHER ARISING OUT OF BREACH OF WARRANTY OR OTHER BREACH OF CONTRACT, NEGLIGENCE OR OTHER TORT, OR OTHERWISE, EVEN IF NEXEN SHALL HAVE BEEN ADVISED OF THE POSSIBILITY OR LIKELIHOOD OF SUCH POTENTIAL LOSS OR DAMAGE. For all of the purposes hereof, the term "consequential damages" shall include lost profits, penalties, delay damages, liquidated damages or other damages and liabilities which Buyer shall be obligated to pay or which Buyer may incur based upon, related to or arising out of its contracts with its customers or other third parties. In no event shall Nexen be liable for any amount of damages in excess of amounts paid by Buyer for Products or services as to which a breach of contract has been determined to exist. The parties expressly agree that the price for the Products and the services was determined in consideration of the limitation on damages set forth herein and such limitation has been specifically bargained for and constitutes an agreed allocation of risk which shall survive the determination of any court of competent jurisdiction that any remedy herein fails of its essential purpose.

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Buyer shall inspect all shipments of Products upon arrival and shall notify Nexen in writing, of any shortages or other failures to conform to these terms and conditions which are reasonably discoverable upon arrival without opening any carton or box in which the Products are contained. Such notice shall be sent within 14 days following arrival. All notifications shall be accompanied by packing slips, inspection reports and other documents necessary to support Buyer's claims. In addition to the foregoing obligations, in the event that Buyer receives Products that Buyer did not order, Buyer shall return the erroneously shipped Products to Nexen within thirty (30) days of the date of the invoice for such Products; Nexen will pay reasonable freight charges for the timely return of the erroneously shipped Products, and issue a credit to Buyer for the returned Products at the price Buyer paid for them, including any shipping expenses that Nexen charged Buyer. All shortages, overages and nonconformities not reported to Nexen as required by this section will be deemed waived.

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