nexen®

AIR CHAMP® PRODUCTS

User Manual

TKF Conveyor Clutch

Model 5H20C

Product No. 911388

FORM NO. L-20227-A-0601

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.

Technical Support:
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www.nexengroup.com

WARNING

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 or cause injury or death.

Comply with all applicable codes.

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ISO 9001 Certified

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INTRODUCTION

Read this manual carefully, making full use of its explanations and instructions. The “Know How” of safe, continuous, trouble-free operation depends on the degree of your understanding of the system and your willingness to keep all components in proper operating condition. Pay particular attention to all NOTES, CAUTIONS, and WARNINGS to avoid the risk of personal injury or property damage. It is important to understand that these NOTES, CAUTIONS, and WARNINGS are not exhaustive. Nexen cannot possibly know or evaluate all conceivable methods in which service may be performed, or the possible hazardous consequences of each method. Accordingly, anyone who uses a procedure that is not recommended by Nexen must first satisfy themselves that neither their safety or the safety of the product will be jeopardized by the service method selected.

The Model 5H20C Conveyor Clutch operates on static air pressure. Torque is adjusted by simply varying the air pressure. The Tooth Clutch design provides long life without premature wear and slip as encountered with wrap spring devices.

INSTALLATION

1. Slide Hub Collar (Item 6) onto Hub of Clutch, and align hole in Hub Collar with hole in Hub of Clutch (See Fig. 1.
2. Install customer supplied Key into shaft keyway (See Fig. 1).
3. Slide Conveyor Clutch onto shaft (See Fig. 1).
4. Install and tighten Set Screw (Item 18) to 6 ft. lbs. [8.5 N•m] torque (See Fig. 1).

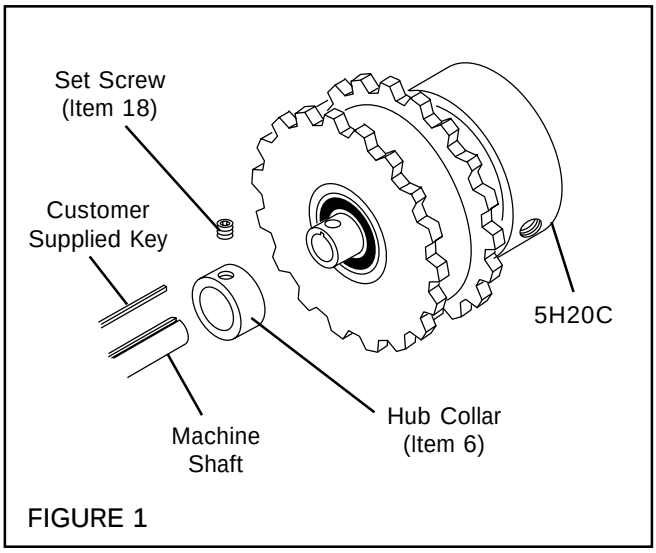


FIGURE 1

AIR CONNECTIONS

For quick response, a short air line between the control valve and the Conveyor Clutch is recommended. Where long air lines are required, a Quick Exhaust Valve should be used to insure rapid disengagement.

Locate air inlet in the six o'clock down position to allow condensation in the air chamber to drain out of the exhaust port.

NOTE: Rigid pipe or tubing when connected directly to the Conveyor Clutch will prevent proper actuation due to the necessary movement of the air chamber and hose upon engagement. Use flexible hose or tubing only.

Due to bearing seal drag, the outer portion of the Conveyor Clutch will rotate causing hose breakage when the Conveyor Clutch is engaged. Resting the air line against a support that is mounted parallel to the Conveyor Clutch center line stops this rotation.

LUBRICATION

Pneumatically actuated devices require clean, pressure regulated, and lubricated air for maximum performance and long life. The most effective and economical way to lubricate Nexen Clutches is with an air line lubricator, which injects an oil mist into the air chamber.

Locate lubricator above and within ten feet of the Clutch, and use a low viscosity oil, such as SAE-10.

NOTE: Synthetic lubricants are not recommended.

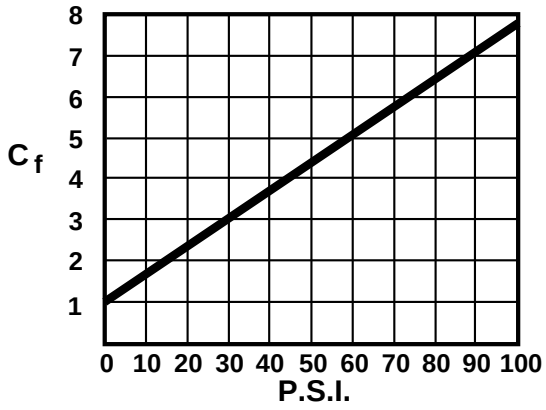
LUBRICATOR DRIP RATE SETTINGS

1. Determine C_F (See Chart 1).
2. Multiply C_F by 0.30, (the Average Air Chamber Volume of the "5H20-P" Clutch) to determine cu.in./ Min..
3. Divide cu. in. / Min. by 1728 to find cu. ft. / Min. (SCFM).
4. Multiply cu. ft. / min. (SCFM) by cycles per minute.

   NOTE: Nexen recommends one drop of oil every 20 SCFM.

5. Divide twenty by the result of Step 4 to determine time in minutes between drops of oil formed in the Lubricator Sight Gauge.

TABLE 1



HUB SPLINE

Although the Hub Spline has been lubricated at the factory with a high temperature lubricant such as NEVER-SEEZ® or equivalent anti-seize lubricating compound. Nexen recommends periodic lubrication of this component to insure smooth clutch engagement and disengagement

NOTE: Clutch must be disassembled in order to lubricate Hub Spline (See REPLACEMENT PARTS for disassembly instructions.

FACE TEETH

Lubricate Drive Ring and Drive Flange face teeth with NEVER-SEEZ® or equivalent whenever visual inspection shows a need for lubrication.

BEARINGS

All bearings are pre-lubricated and sealed; therefore lubrication of the bearings is not required.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SOLUTION
Failure to Engage	Control Valve malfunction or low air pressure	Check system for air leaks or replace Control Valve.
	Lack of lubrication on Hub Spline or in Air Chamber.	Lubricate Hub Spline and check Air Chamber lubrication.
	Using rigid pipe or tubing for air line connections.	Use flexible pipe or tubing for air line connections.
Failure to Disengage	lack of lubrication on Hub Spline or in Air Chamber.	Lubricate Hub Spline and check Air Chamber lubrication.
	Unexhausted air due to Control Valve malfunction.	Replace Control Valve.
	Broken Return Springs.	Replace Return Springs.
Tooth Wear or Clicking Sound	Excessive engagement RPM or unintentional disengagement due to torque overload.	Contact Horton for Clutch Specifications.
Bearing Failure	Limit air pressure to 80 PSI. Excessive air pressure increases the thrust load on the Bearings	
	Stay within the maximum specified speed limits as specified. (MAX. Speed 5200 RPM)	

PARTS REPLACEMENT

CLUTCH REMOVAL

1. Shut off air supply to Clutch and remove Air Line from Clutch.
2. Disengage Clutch from machine by removing chain from sprocket.
3. Remove Set Screw (Item 18) (See Fig. 2).
4. Slide Clutch and Hub Collar (Item 6) off shaft of machine (See Fig. 2).
5. Remove Hub Collar (Item 6) (See Fig. 2).

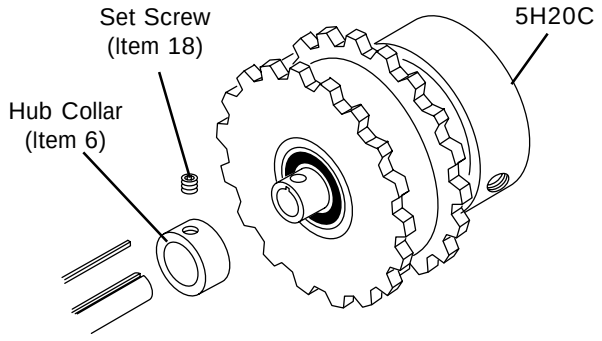


FIGURE 2

BEARING REPLACEMENT (DRIVE SPROCKET)

1. Remove Retaining Ring (Item 17) (See Fig. 3).

WARNING

Special attention should be exercised when working with retaining rings. Always wear safety goggles when working with spring or tension loaded fasteners or devices.

2. Slide Cylinder/Piston Assembly off Hub (Item 1) (See Fig. 3).

3. Remove Retaining Ring (Item 16) (See Fig. 4).

4. Press Hub (Item 1), and Bearings (Item 9) out of Drive Sprocket (Item 3) (See Fig. 4).

5. Remove Retaining Ring (Item 17), and press Hub (Item 1) out of Bearings (Item 9) (See Fig. 4).

6. Clean bore of Drive Sprocket with fresh safety solvent.

7. Slide new Bearings (Item 9) onto Hub (Item 1) (See Fig. 4).

8. Install Retaining Ring (Item 17) (See Fig. 4).

9. Apply Loctite® 601 to O.D. of new Bearings (Item 9), then press Hub (Item 1), and Bearings into Drive Sprocket (Item 3) (See Fig. 4).

   NOTE: When installing new Bearings, carefully align Bearing O.D. with bore of Drive Sprocket to prevent Bearing misalignment. Always support new Bearings when pressing them into the Drive Sprocket.

10. Install Retaining Ring (Item 16) (See Fig. 4).

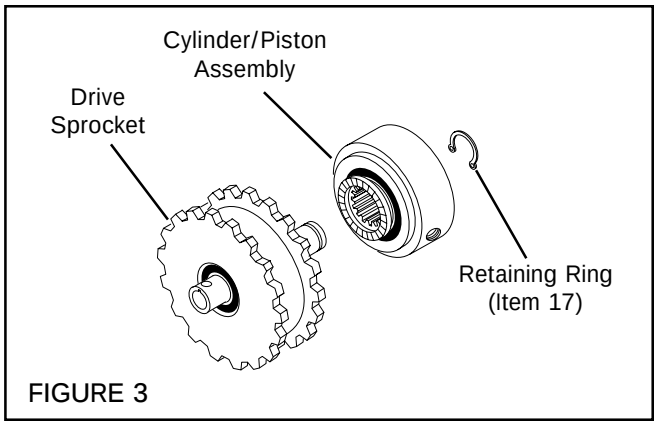


FIGURE 3

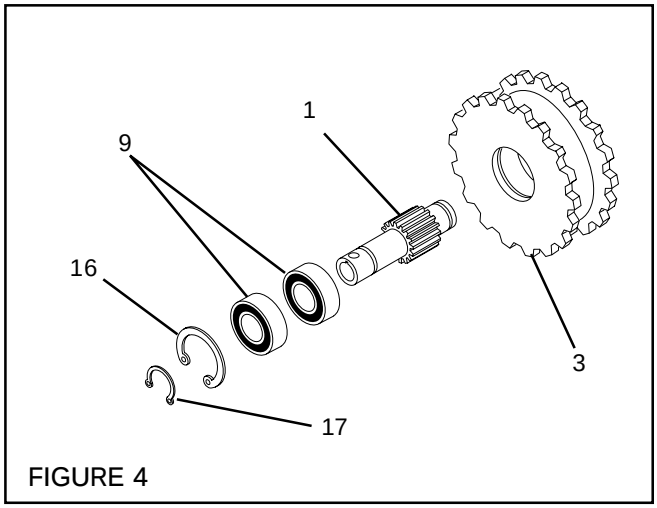


FIGURE 4

BEARING REPLACEMENT (CYLINDER/PISTON ASSEMBLY)

1. Separate Cylinder (Item 5) and Piston (Item 4) (See Fig. 5).

2. Press Drive Ring (Item 2) out of Cylinder (Item 5), and Bearing (Item 9) (See Fig. 5).

3. Press Bearing (Item 9) out of Cylinder (Item 5) (See Fig. 5).

4. Clean bore of Cylinder (item 5) with fresh safety solvent.

5. Apply Loctite® 601 to O.D. of new Bearing (Item 9), and press Bearing into Cylinder.

   NOTE: When installing new Bearings, carefully align Bearing O.D., with bore of Cylinder or Piston, to prevent Bearing misalignment. Always support new Bearings when pressing them into the Cylinder or Piston.

6. Slide Drive Ring (Item 2) into Bearing (Item 9), and Cylinder (Item 5) (See Fig. 5).

7. Remove Retaining Ring (Item 10) (See Fig. 5).

⚠ WARNING

Special attention should be exercised when working with retaining rings. Always wear safety goggles when working with spring or tension loaded fasteners or devices.

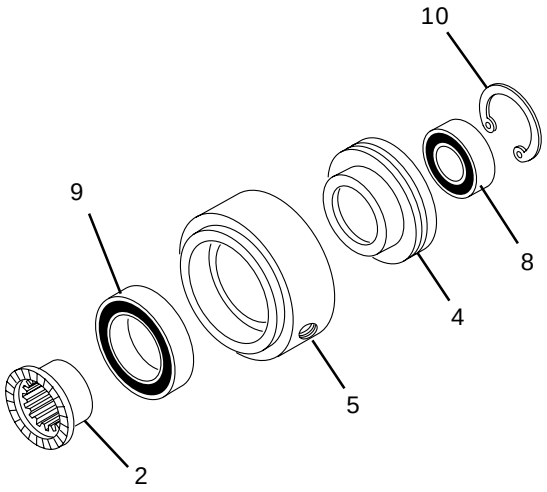


FIGURE 5

8. Press Bearing (Item 8) out of Piston (Item 4) (See Fig. 5).

9. Clean bore of Piston (Item 4) with fresh safety solvent.

10. Apply Loctite® 601 to O.D. of new Bearing (Item 8), and press Bearing into Piston.

11. Install Retaining Ring (Item 10) (See Fig. 5).

O-RING & BACK-UP RING REPLACEMENT

1. Separate Cylinder (Item 5) and Piston (Item 4) (See Fig. 6).

2. Remove O-rings (Items 13& 14) and Back-up Rings (Items 12& 15) from Cylinder and Piston (See Fig. 6).

3. Clean O-ring grooves of Cylinder and Piston; then lubricate new o-rings and o-ring grooves of Piston and Cylinder with fresh O-ring lubricant.

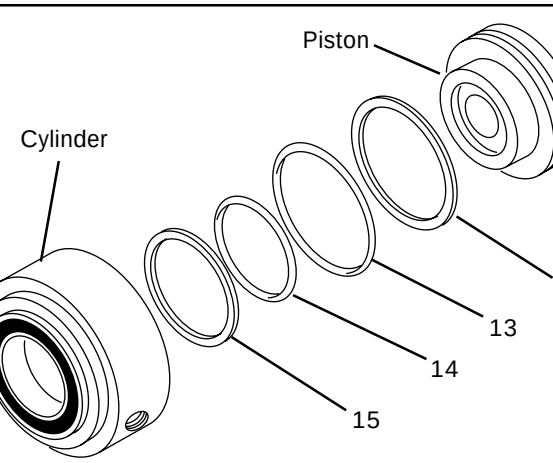


FIGURE 6

4. Install new O-rings (Items 13 & 14) and Back-up Rings (Items 12 & 15) (See Fig. 6).

   NOTE: When installing new O-rings and Back-up Rings, make sure curved surface of Back-up Ring matches surface of O-ring. Back-up Rings must be installed on the non-pressurized side of the O-rings (See Fig. 7).

5. Carefully slide Piston (Item 4) into Cylinder (Item 5), to avoid damaging seals.

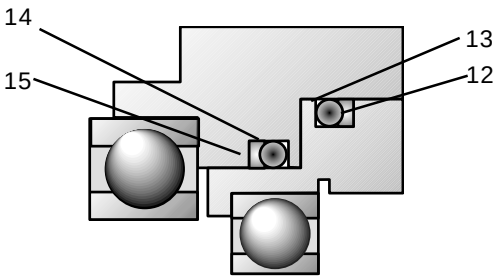


FIGURE 7

5H20C REASSEMBLY

1. Slide Drive Ring (Item 2) into Cylinder/Piston Assembly (See Fig. 8).

2. Install Compression Springs (Item 20) into respective holes of Drive Ring (Item 2) (See Fig. 8).

3. Lubricate splines of Hub (Item 1) with NEVER-SEEZ®.

4. Slide Cylinder/Piston Assembly onto Drive Sprocket/Hub Assembly (See Fig. 9).

5. Install Retaining Ring (Item 17) (See Fig. 9).

WARNING

Special attention should be exercised when working with retaining rings. Always wear safety goggles when working with spring or tension loaded fasteners or devices.

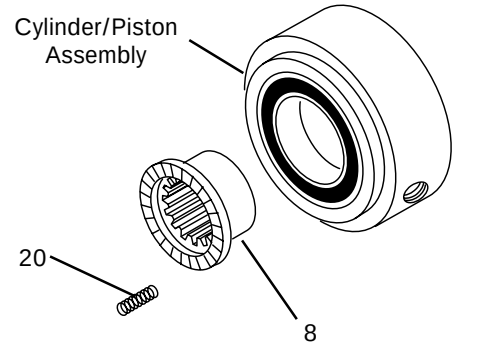


FIGURE 8

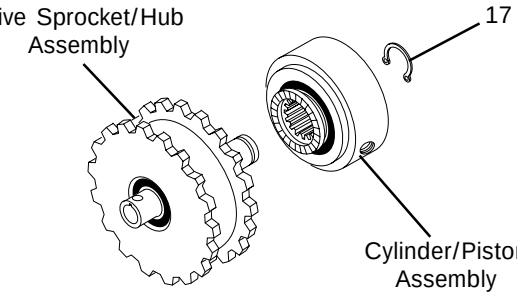


FIGURE 9

REPLACEMENT PARTS

The item or balloon number for all Nexen products is used for part identification on all product parts lists, product price lists, unit assembly drawings, bills of materials, and instruction manuals.

When ordering replacement parts, specify model designation, item number, part description, and quantity. Purchase replacement parts through your local Nexen Distributor.

PARTS LIST

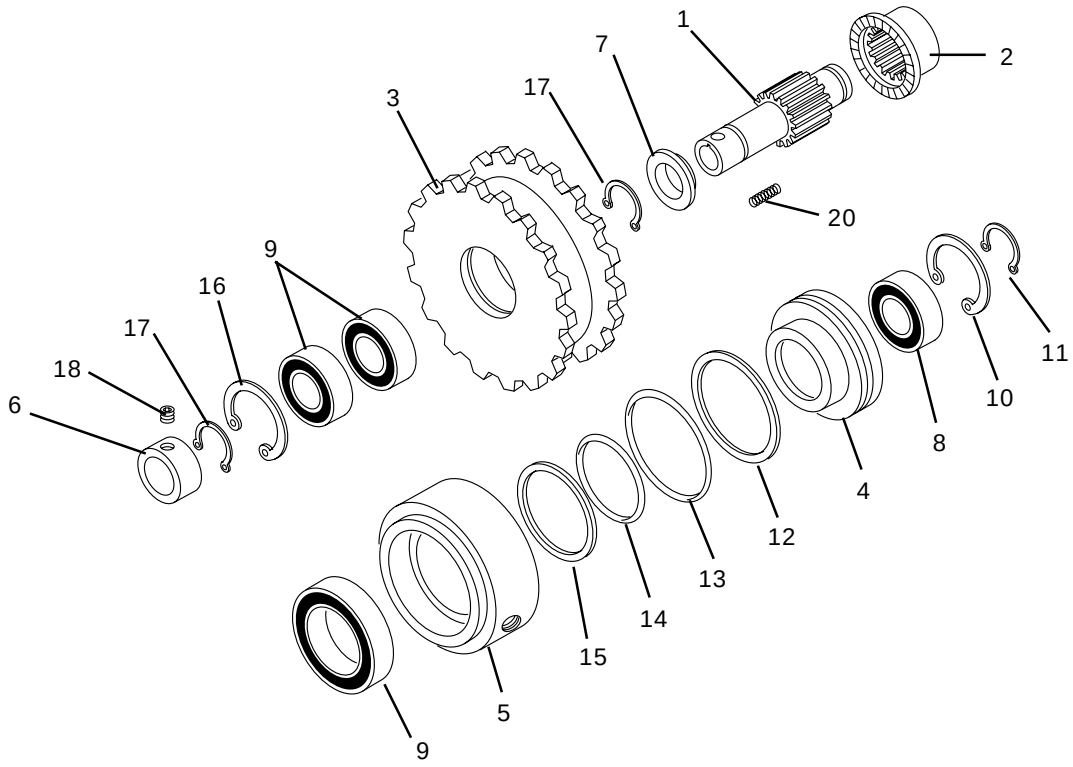


FIGURE 10

ITEM	DESCRIPTION	QTY.
1	Hub	1
2	Drive Ring	1
3	Sprocket	1
4	Piston	1
5	Cylinder	1
6	Hub Collar	1
7	Backing Plate	1
8[1]	Ball Bearing	1
9[1]	Ball Bearing	3
10	Retaining Ring (Int.)	2
11	Retaining Ring (Ext.)	1
12[1]	Back Up Seal (Large)	1

ITEM	DESCRIPTION	QTY.
13[1]	O-ring Seal (Large)	1
14[1]	O-ring Seal (Small)	1
15[1]	Back Up Seal (Small	1
16	Retaining Ring (Int)	1
17	Retaining Ring (Ext)	1
18	Set Screw	1
19	Key (Square)	1
20[1]	Compression Spring	3
22	Hose Assembly (Not Shown)	1

[1] Denotes Repair Kit Item / Repair Kit No. 911387

WARRANTIES

Warranties

Nexen warrants that the Products will be free from any defects in material or workmanship for a period of 12 months from the date of shipment. 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 of the Buyer for any breach of the warranties set out above will be, at the sole discretion of Nexen, a repair or replacement with new, serviceably used or reconditioned Product, or issuance of credit in the amount of the purchase price paid to Nexen by the Buyer for the Products.

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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 images, 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.

Limitation of Damages

In no event shall Nexen be liable for any consequential, indirect, incidental, or special damages of any nature whatsoever, including without limitation, lost profits arising from the sale or use of the Products.

Warranty Claim Procedures

To make a claim under this warranty, the claimant must give written notice of the alleged defect to whom the Product was purchased from and deliver the Product to same within one year of the date on which the alleged defect first became apparent.

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