

<p style="text-align: center;">AMARILLO GEAR COMPANY</p> <p style="text-align: center;">QUALITY SYSTEM WORK INSTRUCTION</p>		<p style="text-align: center;">Work Instruction Number QWI 15.1.1.3 Rev I</p>
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<p>Subject:</p> <p style="text-align: center;">WORK INSTRUCTION FOR SHIPPING</p>	<p style="text-align: center;">Date Issued 09/30/2005</p>	
	<p style="text-align: center;">Supersedes Revision H</p>	
<p>Reviewed by: John Lucas</p>	<p>Approved by: Tony Stephenson</p>	<p style="text-align: center;">Review/Approved Date 09/30/2005</p>

Objective

The purpose of this document is to provide guidelines for correct procedures for shipping new or repaired Amarillo Gear Company right-angle gear drives, fan drives and parts orders.

Scope

This work instruction defines the methods for the shipping clerk and/or designee to ship completed, new or repaired Amarillo Gear Company right-angle gear drives, fan drives and parts orders. Special information or instructions will be written on the drive card.

Required Equipment, Supplies and Forms

- 1.0 Drive card
- 1.1 Name plate
- 1.2 Parts order card
- 1.3 Repaired drive card
- 1.4 Packing ticket
- 1.5 Operating and maintenance instructions
- 1.6 Form No. 573
- 1.7 EEC forms (only on drives shipped to Europe)
- 1.8 Wooden skid

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- 1.9 Wooden boxes (for export shipments)
- 1.10 Tri-wall cardboard boxes (for domestic shipments)
- 1.11 Cardboard parts boxes (various sizes)
- 1.12 Clutches (various sizes)
- 1.13 LPS 3 brand rust inhibitor
- 1.14 Cortec VCI Rust Inhibitor
- 1.15 Drive covers (metal and fiberglass)
- 1.16 Foam Packaging System
- 1.17 Cortec VCI - 148 Paper
- 1.18 Cortec VCI - 12C Ziplock Bags

Process

- 2.0 **Part orders** will be brought to the shipping area with a Shop Order Pick List listing the customer, the part order number, and the parts to be shipped. The Person pulling the parts shall initial "Pulled" By:_____". The Assembly Foreman or designee will verify that all of the parts match the pick list, inspect for damage, rust, etc., and initial "Checked By:_____". The person who performed the verification shall place a card stating "This Order Checked By:_____". The parts will be boxed according to instructions on the pick list or the size or type of parts being shipped. The person who boxes the parts will initial "Boxed By_____". Some parts may require wood crating or foam packaging. When foam packaging is used, use a box large enough to allow at least 2" of foam between the edge of the box and the closest part. When he has finished the order it will be weighed and marked with the customer name, part order number, and the weight of the box or crate. The pick list will then be turned into the Traffic Manager and handled the same way as drive cards.
- 2.1 For export orders only, wrap all machined parts in VCI-148 Paper. Small items, such as NR pins may be placed in Cortec VCCI-126 Ziplock Bags in lieu of wrapping.
 - 2.2 When shipping torsional couplings, etch the date on the face of the coupling.
- 3.0 The Assembly Foreman or designee shall make a visual inspection and check the following items:
- 3.1 Drive cards are sent to shipping from the test stand after completion of test.

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- 3.2 Verify that all regular and optional external equipment listed on the drive card is installed on the gear drive.
 - 3.3 Single and double reduction fan drives with non-reverse option will be tagged that the drive has a non-reverse device.
 - 3.4 Insure that the model, serial number, and ratio are stamped on horizontal shaft for pump drives, vertical shaft for fan drives.
 - 3.5 When inspecting a repaired drive, verify that all external visible parts listed on repair card are on the drive.
- 4.0 The Shipping Clerk shall accomplish the following steps to prepare the drive for shipment:

NOTE: All solid wood packing materials (plywood is not included), including skids and export boxes, destined for Europe, Australia, Mexico, China, Taiwan, or Guatemala must bear a heat treat stamp indicating compliance with ISPM 15. The heat treatment stamp is applied by our skid supplier and looks like this:



- 4.1 Print name plates with the necessary information for that particular drive. After the nameplate is printed, the Shipping Clerk will then initial the top left-hand corner of drive card to avoid any duplication of the nameplate.
- 4.2 For export boxed fan drives, attach the cloth sack containing the breather and the warning tag by shrink wrapping them to the vertical shaft of the drive.
- 4.3 Operating and maintenance instructions shall be sent with all drives. EEC forms shall also be sent with drives being exported to Europe only. Add form #573 (Addendum to Cooling Tower Drive Operating and Maintenance Instructions for Sealed Gear Drives) to Operating and Maintenance Instruction packet on drives with an "S" at the end of the model # (B5S, 1105, etc.). Tag as sealed unit with warning not to open at installation.
- 4.4 All exposed, unpainted, machined surfaces shall be coated with rust inhibitor.
- 4.5 Attach a clutch onto pump drives. The size will be stated on the card.
- 4.6 Attach the keys into the keyways and the nameplate onto the inspection

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plate.

- 4.7 Attach the drive onto the skid and the covers onto the top of pump drives only.
 - 4.8 For export pump drives, 350hp or smaller, the oil is drained from the unit, and new oil is put into plastic jugs, and the jugs put into the export box unless otherwise specified on the drive card. The amount of oil is specified by the Operation and Maintenance instructions for that drive.
 - 4.9 For export boxed drives larger than 350hp. The oil remains in the drive and boxed according to the drive card. The box shall be marked to ensure that the drive remains upright.
 - 4.10 For Airfreight drives of all sizes, the oil is drained and the drive is sent without oil, a tag stating that the drive is being shipped without oil and must be filled to proper levels is attached to the drive. The warning tag shall be attached to an inspection plate bolt.
 - 4.11 After the drive is complete, it will be put in a holding area to allow the paint to dry for a determined amount of time according to paint specifications.
 - 4.12 Move the drive into the warehouse area to await shipment. Cardboard boxing and export boxing will only be used when specified on the drive card. **See NOTE after 4.0.**
 - 4.13 Parts orders shall be boxed and handled the same way as a gear drive.
 - 4.14 When all inspections are complete and verified, the Assembly Foreman or designee initials “**OK TO SHIP BY** _____” that has been stamped on the drive card by the test stand operator.
- NOTE:** Verify that all inspections on the drive card have been done.
- 4.15 Turn the drive card into the Traffic Manager.
 - 4.16 The Traffic Manager will print a bill of lading and a packing ticket. The packing ticket (including the invoice and ifle copies) shall be stamped “Add Lubricant Before Operating”.
 - 4.17 The Shipping Clerk picks up the packing ticket from the Traffic Manager. The packing ticket will be attached to the skid, box, export box, or pallet by matching the serial number, parts order number, or weight with the packing ticket.
 - 4.18 When the freight line driver picks up the freight, he will sign for it and pick up his copy of the bill of lading from the Traffic Manager.

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- 4.19 When the packing tickets are attached to the skid, export box, or pallet, a colored dot is attached to the packing list envelope. The dots are different colors, each representing a different freight line. The dispenser for the dots is labeled with the names of the freight lines and their corresponding colors. The forklift has an identical label attached to it. When the shipping clerk loads the drives he/she looks at the truck drivers paper work for the number of units to be shipped, he/she can then load the truck by color. For the less frequently used freight lines the forklift driver will have to visually check the packing ticket before the truck is loaded, because there are no colors for those freight lines.

Discrepancies

- 5.0 All discrepancies noted, and not covered in this work instruction, will be handled using the following procedures:
- 5.1 Report any discrepancy to an Assembly Department Manager.
- 5.2 Correct the problem with the drive or parts order, if possible
- 5.3 For problems that cannot be resolved immediately, return the drive to the Assembly department and return the parts order to the Parts Order department. The Assembly department manager shall initiate a nonconforming material report.

END OF WORK INSTRUCTION

Revision I

Original or last revision issue date 3/4/02

Changes or additions were made in the following places:

1. Title block
2. Process Paragraph 2.0 - Added information regarding foam packaging, requirement for "This Order Checked By: ____" card, and changed responsibility from Shipping Foreman to Assembly Foreman
3. Process Paragraph 3.0 - Changed responsibility from Shipping Foreman to Assembly Foreman
4. Paragraph 3.2 - Deleted instruction regarding paint kits
5. Process Paragraph 4.0 - changed responsibility from Shipping Foreman to Shipping Clerk
6. Process Paragraph 4.0 - Added NOTE requirement for heat treated lumber
7. Process Paragraph 4.1 - changed responsibility from Shipping Foreman to Shipping Clerk
8. Process Paragraph 4.12 - Added note to see paragraph 4.0 NOTE
9. Process Paragraph 4.14 - changed responsibility from Shipping Foreman to Assembly Foreman
10. Process Paragraph 4.17 - changed responsibility from Shipping Foreman to Shipping Clerk