



VESTIL MANUFACTURING CORP.

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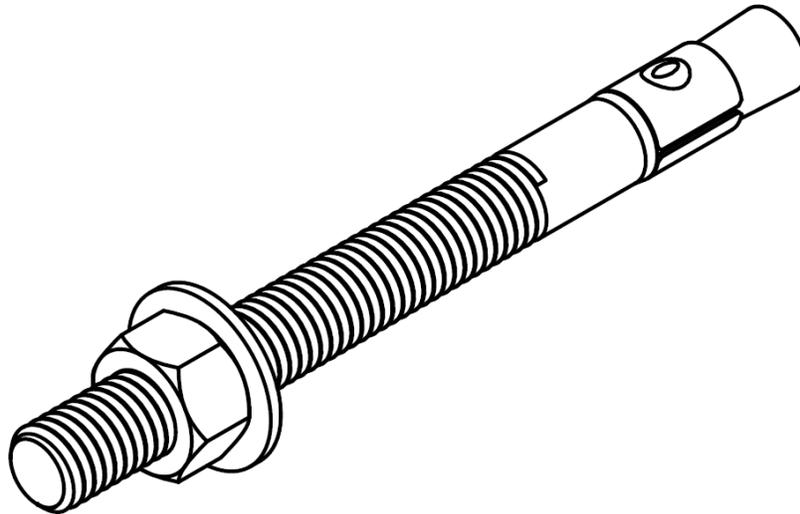
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AS-SERIES CONCRETE ANCHORS



Receiving Instructions

After delivery, remove the packaging from the product. Inspect the product closely to determine whether it sustained damage during transport. If damage is discovered, record a complete description of it on the bill of lading. If the product is undamaged, discard the packaging.

NOTE: The end-user is solely responsible for confirming that product design, use, and maintenance comply with laws, regulations, codes, and mandatory standards applied where the product is used.

Technical Service & Replacement Parts

For answers to questions not addressed in these instructions and to order replacement parts, labels, and accessories, call our Technical Service and Parts Department at (260) 665-7586. The Department can also be contacted online at <https://www.vestil.com/page-parts-request.php>.

Electronic Copies of Instruction Manuals

Additional copies of this instruction manual may be downloaded from <https://www.vestil.com/page-manuals.php>.

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SIGNAL WORDS

SIGNAL WORDS appear in this manual to draw the reader's attention to important safety-related messages. The following are signal words used in this manual and their definitions.

⚠ DANGER

Identifies a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY**. Use of this signal word is limited to the most extreme situations.

⚠ WARNING

Identifies a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY**.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE** injury.

NOTICE

Identifies practices likely to result in product/property damage, such as operation that might damage the product.

SAFETY INSTRUCTIONS

We strive to identify hazards associated with the use of our products. However, no manual can address every risk. The end-user must apply sound judgment whenever assembling, using, inspecting, or maintaining this product.

⚠ WARNING

Material handling is dangerous. Improper or careless operation might result in serious personal injuries.

- **Failure to read and understand the entire manual before installing, inspecting or servicing the product.**

Read the manual to refresh your understanding of proper use and maintenance procedures as necessary.

- ONLY use these anchors to attach equipment/fixtures to even, level, concrete surfaces. DO NOT attempt to anchor equipment/fixtures to sloped surfaces.
- ONLY use these anchors to attach equipment/fixtures to dry concrete where the anchors will remain dry. Water must not pool or soak any anchor.
- DO NOT use an anchor unless it is in satisfactory condition. Inspect anchors according to the [INSPECTION](#) instructions on p. 5 to determine whether it is in satisfactory condition.
- DO NOT over tighten an anchor.
- DO NOT modify wedge anchors in any way. Modifications automatically void the [LIMITED WARRANTY](#) on p. 6 and might make it unable to function as designed.

NOTICE

Proper use and maintenance are essential for keeping this product in *SATISFACTORY CONDITION*.

- Always install, use, inspect, and maintain this product in accordance with the instructions in this manual and consistent with any training relevant to all other devices, machines, equipment, etc. used with this product.
- Only use approved replacement parts. To order replacement or spare parts for this equipment, contact the factory.

SPECIFICATIONS

Information about each wedge anchor or wedge anchor kit is provided on Vestil's website at <https://www.vestil.com/product.php?FID=1442>. The following table also provides anchor bolt dimensions and other relevant for each model number.

Anchor Bolt Model No.	Nominal Size Dia. x Length	Description	Thread/Sleeve Dia.	Fixture hole diameter	Overall Length	Sleeve Length	Min. embedment depth	Weight Each
AS-383	3/8" x 3"	Wedge anchor, single	3/8"	1/2"	3"	0.75"	1.5"	0.1 lb.
AS-383-4PK	3/8" x 3" (4PK)	Wedge anchor, 4 pack	3/8"	1/2"	3"	0.75"	1.5"	0.4 lb.
AS-124	1/2" x 4 1/2"	Sleeve anchor, single	1/2"	5/8"	4.5"	3.75"	2.25"	0.2 lb.
AS-124-4PK	1/2" x 4 1/2" (4PK)	Sleeve anchor, single	1/2"	5/8"	4.5"	3.75"	2.25"	0.8 lb.
AS-125	1/2" x 5 1/2"	Wedge anchor, single	1/2"	5/8"	5.5"	0.75"	2.25"	0.3 lb.
AS-125-4PK	1/2" x 5 1/2" (4PK)	Wedge anchor, 4 pack	1/2"	5/8"	5.5"	0.75"	2.25"	1.1 lb.
AS-344	3/4" x 4 1/4"	Wedge anchor, single	3/4"	7/8"	4.25"	1.125"	3.375"	0.6 lb.
AS-344-4PK	3/4" x 4 1/4" (4PK)	Wedge anchor, 4 pack	3/4"	7/8"	4.25"	1.125"	3.375"	2.4 lb.
AS-346	3/4" x 7"	Sleeve anchor, single	3/4"	7/8"	7"	5.75"	3.25"	1.0 lb.
AS-346-4PK	3/4" x 7" (4PK)	Sleeve anchor, 4 pack	3/4"	7/8"	7"	5.75"	3.25"	3.5 lb.
AS-584	5/8" x 5"	Sleeve anchor, single	5/8"	3/4"	5"	4"	2.75"	0.4 lb.
AS-584-4PK	5/8" x 5" (4PK)	Sleeve anchor, 4 pack	5/8"	3/4"	5"	4"	2.75"	1.6 lb.

NOTE: 1" = 2.54cm; 1 kg = 2.2 lb.

Masonry drill bits	Nominal Size Dia. x Length	Description	Thread/Sleeve Dia.	Overall Length	Weight Each (oz.)	Weight Each (lb.)
BIT-3/8	3/8" x 6"	Concrete drill bit	3/8"	6"	1.7 oz.	0.106 lb.
BIT-1/2	1/2" x 6"	Concrete drill bit	1/2"	6"	3.0 oz.	0.185 lb.
BIT-3/4	3/4" x 6"	Concrete drill bit	3/4"	6"	6.4 oz.	0.401 lb.

TORQUE SPECIFICATIONS

Anchor model no.	Anchor diameter	Torque Value
AS-383	3/8"	25 – 30 lb·ft
AS-383-4PK	3/8"	25 – 30 lb·ft
AS-124	1/2"	50 – 60 lb·ft
AS-124-4PK	1/2"	50 – 60 lb·ft
AS-125	1/2"	50 – 60 lb·ft
AS-125-4PK	1/2"	50 – 60 lb·ft

Anchor model no.	Anchor diameter	Torque Value
AS-584	5/8"	75 – 90 lb·ft
AS-584-4PK	5/8"	75 – 90 lb·ft
AS-344	3/4"	150 – 175 lb·ft
AS-344-4PK	3/4"	150 – 175 lb·ft
AS-346	3/4"	150 – 175 lb·ft
AS-346-4PK	3/4"	150 – 175 lb·ft

SELECTING AN ANCHOR FOR YOUR APPLICATION

NOTE: "Fixture" refers to the item being attached to concrete.

A. Wedge anchors

The minimum length necessary of a wedge anchor for an application is calculated by adding the thickness of the material being fastened/anchored to the ground plus the minimum embedment depth for the diameter of wedge anchor used plus space for the nut and washer. Space allocated for the nut and washer is generally equal to the diameter of the wedge anchor used. The formula looks like this:

$$F + E + N = ML$$

F = fixture thickness; **E** = embedment depth; **N** = nut & washer thickness; **ML** = minimum recommended anchor length. All variables must have be expressed in the same units.

For example, to anchor a piece of 4x4 timber to a concrete surface with a 1/2" wedge anchor the minimum length of wedge anchor would be 3.5" (F) + 2.25"(E) + 0.5"(N; space for nut and washer estimated as diameter of anchor) = 6.25" (ML). The minimum length of 1/2" diameter wedge anchor to use for this application would be 6.25".

The depth of the hole in the concrete necessary for a wedge anchor should be *at least* the overall length of the anchor minus the thickness of the material/fixture being fastened to concrete.

B. Sleeve anchors

The minimum length of a sleeve anchor required for a particular application is calculated by adding 1) The thickness of the material being fastened to concrete; 2) The minimum embedment depth; and 3) The thickness of the nut and washer together. The formula for sleeve anchor length is the same as the formula for calculating wedge anchor length: **F + E + N = ML**.

The depth of the hole in the concrete for a sleeve anchor should, at minimum, be the overall length of the anchor minus the thickness of the material/fixture being fastened to concrete.

INSTALLING ANCHOR BOLTS

NOTE: If the anchor must be installed through a hole in a fixture, make sure that the fixture hole diameter is larger than the diameter of the wedge anchor being used. The [SPECIFICATIONS](#) table on p. 3 provides a "Fixture hole diameter" figure for each anchor bolt model number.

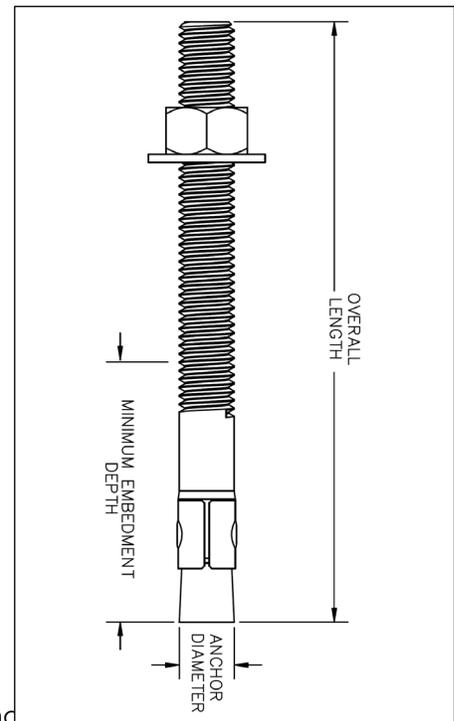
1. Drill a hole in the concrete for each anchor bolt using a hammer drill in hammer mode. Use of a solid carbide-tipped drill bit that meets ANSI standard B212.15 is recommended. The diameter of the drill bit must match the "Thread/sleeve diameter" in the [SPECIFICATIONS](#) table (above) of the anchor being installed.

- Be sure that the shank of the drill bit is clean before installing it in the drill chuck.
- The drill bit must firmly seat in the chuck.
- Drill holes perpendicularly to the concrete surface. The drill must not wobble while drilling. If a hole is not straight, the anchor will not embed properly.
- Do not ream out an anchor hole.
- Do not drill beyond the fluting of the drill bit.
- Remove debris/dust in stages as each hole is drilled.
- Do not pour water into the hole while drilling.
- Avoid impenetrable objects, like rebar, embedded in the concrete which could damage or destroy the drill bit.
- Do not attempt to realign an off-center hole, or straighten/chan

2. Drill the hole for the anchor. The depth of the hole in the concrete for either a wedge anchor or a sleeve anchor should, at minimum, be the overall length of the anchor minus the thickness of the material/fixture being fastened to concrete.

3. Use a wire brush, compressed air, and/or a vacuum to remove all debris & dust from the hole. Debris/dust removal should occur in stages as each hole is drilled.

4. Wind the hex nut onto the threaded end of your anchor. The top of the nut must be flush with the top of the anchor in order to protect the threads from damage during installation.



5. Insert the bottom of the anchor (the end opposite the hex nut) into the selected hole.
6. Strike the nut of the anchor with a hammer to drive the anchor into the hole. Drive the anchor into the hole until at least 6 threads are below the surface of the concrete or the surface of the item being attached.
7. Finger tighten the nut.
8. Use a torque wrench to tighten the nut to the torque value that corresponds to the diameter of your anchor. Torque specifications are provided for each model number in the [TORQUE SPECIFICATIONS](#) table on p. 3.

RECORD OF SATISFACTORY CONDITION

Immediately after installing your anchors, make a record of their condition and operation. Indicate the embedment depth and the torque specification used to install each anchor. Photograph the anchors. Take close range photographs of the nuts, the portions of the equipment/fixture anchored to the floor around the anchors, and the concrete surface around the anchors. Collect all writings and photographs in a file. This file is a record of the anchors in *SATISFACTORY CONDITION*. **Compare all inspection results to this RECORD to determine if the anchors are in satisfactory condition.** Replace all anchors that are not in satisfactory condition.

INSPECTIONS

Inspections and repairs should only be performed by qualified persons. Compare the results of each inspection to the [RECORD OF SATISFACTORY CONDITION](#) (the "RECORD"). Do not use the anchored equipment/fixture unless all anchors are in satisfactory condition. Replace anchors that are not in satisfactory condition before returning the equipment/fixture to service. **DON'T GUESS! If you have any questions about the condition of an anchor, speak with [TECHNICAL SERVICE](#) personnel.** The phone number is provided on the cover page of this manual. **Never make temporary repairs of damaged or missing parts.** Only use manufacturer-approved replacement parts. Inspect the anchored equipment/fixture according to the inspections & maintenance instructions in the applicable owner's manual. Perform those inspections in conjunction with the following instructions.

At least once per month, or more frequently as instructed in the owner's manual of the anchored equipment/fixture, closely examine each anchor and nut for significant wear, bends, cracks, corrosion or rust. Confirm that each anchor is tightened to the correct specification. The anchor hole and concrete around the periphery must not be damaged, chipped, damp, crumbly, distorted, or elongated. Anchors must not be able to wobble inside the anchor hole. Anchors must not be able to slide up/down to any degree when tightened to the appropriate torque specification.

MAINTENANCE

The following steps should be utilized in conjunction with inspections.

Step 1: Tag the equipment/fixture, "Out of Service."

Step 2: Remove any dirt or other matter from all anchor surfaces, the concrete around each anchor, and the parts of the equipment/fixture in around the point of contact with an anchor.

Step 3: Conduct the scheduled [INSPECTION](#).

Step 4: Perform all necessary adjustments, replacements and/or repairs as indicated during the inspection.

Step 5: Make a dated record of all repairs, adjustments and/or replacements.



LIMITED WARRANTY

Vestil Manufacturing Corporation ("Vestil") warrants this product to be free of defects in material and workmanship during the warranty period. Our warranty obligation is to provide a replacement for a defective, original part covered by the warranty after we receive a proper request from the Warrantee (you) for warranty service.

Who may request service?

Only a warrantee may request service. You are a warrantee if you purchased the product from Vestil or from an authorized distributor AND Vestil has been fully paid.

Definition of "original part"?

An original part is a part used to make the product as shipped to the Warrantee.

What is a "proper request"?

A request for warranty service is proper if Vestil receives: 1) a photocopy of the Customer Invoice that displays the shipping date; AND 2) a written request for warranty service including your name and phone number. Send requests by one of the following methods:

<u>US Mail</u>	<u>Fax</u>	<u>Email</u>
Vestil Manufacturing Corporation 2999 North Wayne Street, PO Box 507 Angola, IN 46703	(260) 665-1339 <u>Phone</u> (260) 665-7586	info@vestil.com Enter "Warranty service request" in the subject field.

In the written request, list the parts believed to be defective and include the address where replacements should be delivered. After Vestil receives your request for warranty service, an authorized representative will contact you to determine whether your claim is covered by the warranty. Before providing warranty service, Vestil will require you to send the entire product, or just the defective part (or parts), to its facility in Angola, IN.

What is covered under the warranty?

The warranty covers defects in the following original, dynamic parts: motors, hydraulic pumps, motor controllers, and cylinders. It also covers defects in original parts that wear under normal usage conditions ("wearing parts"), such as bearings, hoses, wheels, seals, brushes, and batteries.

How long is the warranty period?

The warranty period for original dynamic components is 30 days. For wearing parts, the warranty period is 30 days. Both warranty periods begin on the date Vestil ships the product to the Warrantee. If the product was purchased from an authorized distributor, the periods begin when the distributor ships the product. Vestil may, at its sole discretion, extend a warranty period for products shipped from authorized distributors by up to 30 days to account for shipping time.

If a defective part is covered by the warranty, what will Vestil do to correct the problem?

Vestil will provide an appropriate replacement for any covered part. An authorized representative of Vestil will contact you to discuss your claim.

What is not covered by the warranty?

The Warrantee (you) is responsible for paying labor costs and freight costs to return the product to Vestil for warranty service.

Events that automatically void this Limited Warranty.

- Misuse;
- Negligent assembly, installation, operation or repair;
- Installation/use in corrosive environments;
- Inadequate or improper maintenance;
- Damage sustained during shipping;
- Collisions or other accidents that damage the product;
- Unauthorized modifications: Do not modify the product IN ANY WAY without first receiving written authorization from Vestil.

Do any other warranties apply to the product?

Vestil Manufacturing Corp. makes no other express warranties. All implied warranties are disclaimed to the extent allowed by law. Any implied warranty not disclaimed is limited in scope to the terms of this Limited Warranty. Vestil makes no warranty or representation that this product complies with any state or local design, performance, or safety code or standard. Noncompliance with any such code or standard is not a defect in material or workmanship.