

SHOP-TESTED

rust busters

Discover which of fourteen products rid rust from cast-iron surfaces and stop it from returning.



We taped off cast-iron table saw extension wings into equal sections, misted them for 24 hours to create rust, then removed the corrosion with various products.

To a woodworker, rust is a four-letter word. Unless you live in the dry climates of the Southwest, you must

always be vigilant against the red menace. With at least nine products marketed to woodworkers as rust removers and preventa-

tives, we decided to see how well they work, and uncover which products deserve a spot in your shop.

Before we could remove rust, though, we needed to create a consistent coat of it on two table saw extension wings. We sanded the wings to remove any previously applied rust protectants, then divided the surfaces into equal-size areas for each remover. We built the “wet box,” shown at left, and pumped moisture-laden air into the sealed box for 24 hours. After letting the rust stand for a day, we tested each of the removers and combination products (those designed to both remove rust and prevent its return) shown in the chart on the next page.

During this test, we noticed that some of the freshly cleaned surfaces began to haze over with orange rust within minutes. This so-called “flash rust” proves why removing rust isn’t enough; in most cases, you need to apply a protectant right away.

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THE RUST-MAKING TORTURE CHAMBER



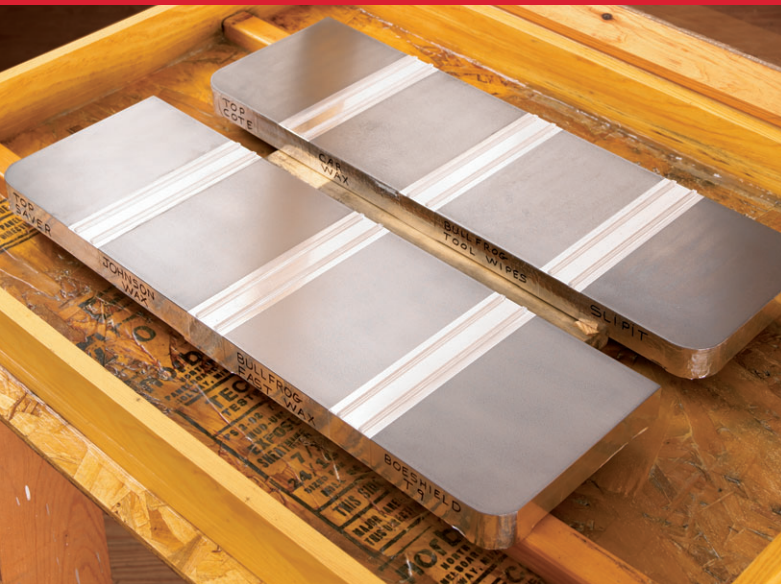
To accelerate the formation of rust, we built this “wet box” and connected it to a cold-air vaporizer. The box’s clear acrylic lid allowed us to observe the progress of the test, while a drain hose allowed excess moisture to trickle away.

Proving the protectants

To test the effectiveness of rust protectants, we sanded, cleaned, and sectioned off another pair of cast-iron tablesaw wings, and then applied the products according to the manufacturer's instructions. Next, we put the test pieces into the wet box, pumping moisture in continuously, noting when rust began to form and when the test area was completely rusted over.

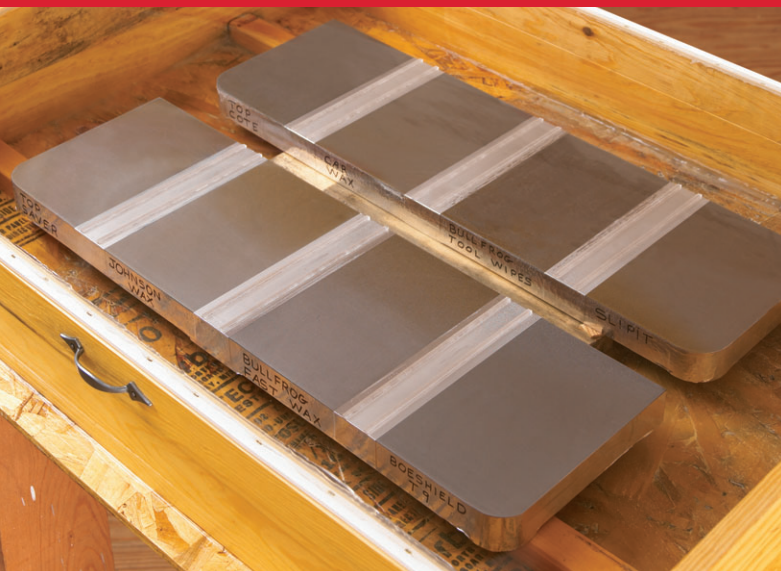
The series of photos, *below*, show the outcome and the clear difference in rust-prevention products. Remember that our tests accelerated rust formation far beyond what you can expect in even the most rust-prone areas of the country. (Much of the time in the wet box, water was actually standing on the test surfaces.) Even the protectants that failed in a few minutes in these conditions should last much longer under normal circumstances.

BEFORE



We applied a different rust protectant to each of the eight sections of these tablesaw extension wings and put them into the wet box. At this point, the wings have been treated but subjected only to normal humidity conditions.

AFTER 40 MINUTES



Flash rust already covers three of four sections of the back wing, and has started creeping across the center two sections of the front wing.

FOURTEEN

	PRODUCT	APPLICATION METHOD	TIPS FOR USE
REMOVERS	BOESHIELD RUST FREE	Spray on, scrub with synthetic abrasive pad or steel wool. Wipe dry with clean cloth.	For heavy rust, apply and let it stand for 5–20 minutes before scrubbing.
	BULLFROG RUST REMOVER	Brush on with disposable foam brush, let stand for one hour, rinse with water.	Before rinsing, scrub with a synthetic abrasive pad for better results.
	KLINGSPOR SANDFLEX BLOCKS	Rub rusted area with blocks to “erase” rust. Start with coarse block, then medium, then fine.	Keep a shop vacuum handy to suck up dust.
	NAVAL JELLY	Pour onto surface, let stand for 10–20 minutes, rinse with water.	Before rinsing, scrub with a synthetic abrasive pad for better results.
	WD-40	Spray on, scrub with synthetic abrasive pad or steel wool. Wipe dry with clean cloth.	Synthetic pads left a nicer-looking finish on the tabletop than steel wool.
	MINERAL SPIRITS	Soak steel wool or synthetic abrasive pad, and then scrub. Wipe with clean cloth.	Let it soak for about 2 minutes before scrubbing for best results.
PROTECTANTS	BOESHIELD T-9	Spray on, allow to dry 1 hour before use.	The test surface wasn't completely dry after one hour, so we gently wiped it dry.
	BOSTIK TOPCOTE	Spray on, allow to dry, then wipe off with clean cloth.	For best results, recoat and buff again.
	BULLFROG FASTWAX WITH RUST BLOCK	Spray on, then wipe off with a clean cloth.	You needn't wait for the protectant to dry before wiping it off.
	SLIPIT TOOL & SURFACE LUBRICANT	Spray on, then wipe off with a clean cloth.	None
	JOHNSON'S PASTE WAX	Apply with pad, allow to haze, then wipe with a soft cotton cloth.	None
	CARNUBA WAX	Apply with damp pad, allow to haze, then wipe with a soft cotton cloth.	None
COMBO*	BULLFROG TOOL WIPES	Wipe surface with this premoistened towelette and let dry.	Wipe the surface to wet it, then scrub with steel wool or pad, then wipe again.
	EMPIRE TOPSAVER	Spray on, scrub with synthetic abrasive pad, then wipe dry. Re-spray, and buff surface.	Refold the rag to a clean area frequently for best results.

* Combination products designed to remove rust *and* protect from future corrosion

NOTES:

1. Keep all chemicals out of the reach of children. When using chemicals, always wear gloves and protective eyewear.

AFTER 24 HOURS



Except for the section treated with Boeshield T-9 (right foreground), all sections have completely rusted over.

RUST-BUSTERS UNDER THE MAGNIFYING GLASS

SAFETY (1)	PERFORMANCE SUMMARY	RUST-REMOVAL EFFECTIVENESS (2)	RUST-PREVENTATIVE EFFECTIVENESS (2)	EASE OF APPLICATION (2)	PRICE (3)	FOR MORE INFORMATION
Nonflammable, nontoxic, biodegradable	Easy to use, but it took five applications to completely remove the rust.	B	N/A	A	\$9 for 8.5 oz.	800/962-1732 www.boeshield.com
Low odor, nonflammable, nontoxic, biodegradable	Effective, but rinsing with water is difficult and sloppy on stationary-tool tables, such as on a jointer or table saw. Emits vapors that prevent flash rust from returning.	D	N/A	C	\$9 for 16 oz.	800/426-7832 www.bull-frog.com
The only non-chemical rust solution in our test.	These blocks are tops for spot rust or hand tools, but they require a lot of elbow grease for larger areas, such as tabletops.	B	N/A	C	\$10 for 3 blocks	800/228-0000 www.woodworkingshop.com
Skin and eye irritant. Use in well-ventilated area.	Rinsing with water is difficult on stationary tools, and the product discolored our test piece, turning it a dull gray. All in all, the results don't justify the hassle.	D	N/A	D	\$3 for 8 oz.	800/321-0253
Flammable	For light rust, this is a quick fix, but it's not as effective on heavy rust.	C	N/A	A	\$2.50 for 11 oz.	888/324-7596 www.wd40.com
Flammable	Easy to use, but it took four applications to completely remove the rust. On heavily rusted surfaces, we couldn't completely remove the rust using mineral spirits.	C	N/A	A	\$4 for 1 gallon	Available anywhere coatings and solvents are sold
Extremely flammable	After only 24 hours in the wet box, T-9 stood head and shoulders above the other protectants, as you can see in the photo sequence, at <i>left</i> . Clearly, T-9 is the best protectant in the test.	N/A	A	A	\$12 for 12 oz.	800/962-1732 www.boeshield.com
Extremely flammable	Easy to use, and has a pleasant smell. It protected a little better than paste wax and carnauba wax in our test.	N/A	C	A	\$14 for 11 oz.	888/603-8558, ext. 7423 www.bostikfindley-us.com
Nonflammable, nontoxic, biodegradable	About as effective and easy to use as TopCote. However, it's much safer, especially around pilot lights and other possible ignition sources.	N/A	C	A	\$8 for 32 oz.	800/426-7832 www.bull-frog.com
Nonflammable, nontoxic	Of all the products sold to protect against rust, this one was least effective, with rust returning within 15 minutes in the wet box. Probably effective if applied regularly.	N/A	D	A	\$10 for 16 oz.	845/691-8400 www.slipit.com
Nonflammable, nontoxic	In our extreme test environment, neither of these products held up well, with rust returning in 20 minutes. However, applied regularly, both would probably be somewhat effective.	N/A	D	B	\$5 for 16 oz.	800/558-5252 www.scjbrands.com
Nonflammable, nontoxic		N/A	D	B	\$7 for 12 oz.	Available anywhere coatings and solvents are sold
Low odor, nonflammable, nontoxic, biodegradable	It's a tidy process, but the wipes tend to dry out in their container and work much better with the aid of an abrasive pad or steel wool. Less effective on heavy rust, and size is better suited to surface rust on hand tools.	B	B	A	\$9 for 25 wipes	800/426-7832 www.bull-frog.com
Flammable	Removed rust as well as any dedicated remover, and fared pretty well as a protectant, so it's a good one-stop product for both tasks. Everything you need comes with the kit, including gloves, abrasive pad, and wiping cloth.	A	B	B	\$20 for 8 oz.	866/700-5823 www.empiremfg.com

2. **A** Excellent **C** Average **N/A** Does not apply to this product.
B Good **D** Below average

3. Prices current at time of article's production and do not include shipping, where applicable.

The best of the rust busters

None of the products we tested did away with heavy rust with only one application. So for cleaning a large, heavily oxidized surface, such as a jointer table or table saw top, your first step should be to sand away as much as you can, then clean it with Empire TopSaver or Boeshield Rust Free. Both products proved easy to use with little mess. TopSaver also did well in the protection test, so it's our top choice for a combination product. For small areas of spot rust, we found ourselves going back to the Klingspor Sandflex Blocks. The rust ring caused by an errant soda can on a humid day came off quickly with these abrasive blocks, then vacuumed away.

There's only one choice for protectant as far as we're concerned: Boeshield T-9. After 24 hours in the wet box, the wing



Boeshield Rust-Free



Boeshield T-9



Empire TopSaver

section treated with T-9 was almost as clean as when it went in. We were curious to see how long it would take for this area to rust over, as the others did in a day, so we continued to pump moisture into the

box. After 380 hours in this extreme environment, rust finally overtook the T-9 protected area. 🌿

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