

## THOROUGHLY READ BEFORE ATTEMPTING TO INSTALL A HARDTOP

Thank you for purchasing our Hardtop product! We hope you enjoy the renewed look and play quality the Hardtop will provide. This product is a unique, new approach to reviving a badly worn playfield that is not a likely candidate for restoration by repairing the art and clear coating.

**There are a number of items we want to communicate BEFORE installation begins.**

1. This product is not a new playfield. It is a product that is produced to cover an existing playfield to both improve it's look and also improve play.
2. This product WILL damage or destroy additional art if it is removed for any reason.
3. If the liner is removed from the adhesive on this product, it is **not returnable**. Unless otherwise discussed with Outside Edge, the customer is responsible for all shipping charges if customer decides to return the unused Hardtop.
4. Great care in sanding and cleaning the original playfield is required to properly install a Hardtop. If you are concerned with your skill level, or do not feel confident, we suggest you find a qualified person to prepare the surface and install for you.
5. **BEFORE** any sanding begins, the Hardtop should be positioned onto the (clean) playfield **WITHOUT** removing the adhesive liner to make sure the fit looks correct.
6. Some fitting, trimming may be required. As you may imagine, these games have all seen their own "unique" past. Materials shrink, move, and so on over the years, and an absolute PERFECT fit may not be possible. However, if you see significant variations or issues, please contact us **BEFORE** you remove the adhesive back liner. It is a known fact that these machines had differences within the same title at times. There is no way to know every scenario or manufacturing change that occurred, so again, please contact us with "major" fit issues.
7. **Do not** attempt to adhere a Hardtop to a playfield that has raised inserts or anything else that inappropriately protrudes upward or above the intended playing surface. While the Hardtop does an excellent job of masking cupped inserts and other small concave depressions, anything protruding upwards is unacceptable and will need to be remedied.
8. The Hardtop is only intended to be properly installed on an entirely stripped of parts playfield topside.

9. Inserts: Any art that was originally printed onto the inserts needs removed as the Hardtop will have fresh art that will renew this area. To do this, DO NOT use harsh chemicals. These will need to be gently sanded and blended by sanding (suggesting a beginning use of 220 grit) a larger area around the inserts. Do not sand too aggressively in one area. The idea is to do as little as needed to remove the art and yellowed original coating. Leveling inserts and “eye dropper” filling cupped inserts is acceptable, but we suggest you research the correct methods, products, and procedure before attempting. To shine the inserts again after sanding, one of two methods can be used: 1.) Sand while using finer and finer grit until finally arriving at a wet sand of around 2000 grit. 2.) Sand down to a grit of 1000, then follow with a few light coats of gloss clear. You MUST let gloss dry and outgas for a minimum of 72 hours prior to installing the Hardtop. Be patient with this process, making sure the playfield is not left with high and low spots from aggressively sanding. **Lastly, using compressed air, gently blow out each insert to eliminate any dust hiding in the cracks and crevasses around the insert perimeters.** Do this BEFORE tack clothing the surface.
10. Do not attempt to install a Hardtop over any playfield that has mylar protectors. These need to be removed.
11. Never use abrasive products to polish a Hardtop! You can wax the playfield with a carnauba wax. A Hardtop is truly a unique product with a very hard coating on the playing surface. Abrasive products will damage this coating. The hard coating on a Hardtop is much harder than the traditional coatings currently used on modern pinball machines and will provide a long service life.
12. Caring for your new Hardtop is fairly straight forward. Keep it wiped down and free of debris. Waxing, with a carnauba wax, is encouraged but not required. Do not use old scratched or pitted pinballs.
13. Your playfield should be smooth, clean, and dust free prior to installing the Hardtop. We suggest a final use of a tack cloth just prior to final installation.
14. **Titles with star inserts on playfield:** The holes on your Hardtop are INTENTIONALLY undersized. This is because they must be final sized after your Hardtop is adhered. Please go to Youtube, or our website (in the FAQ area) to watch an installation video that covers this special scenario.

Thank you Adam Curry and Keith Campanelli for your install videos!

[https://www.youtube.com/watch?v=5x5CB7\\_xwS4](https://www.youtube.com/watch?v=5x5CB7_xwS4)

## Addendums:

- 1.) If you choose to clear coat your playfield prior to installing a Hardtop, it is IMPERATIVE to mask any switch contacts and mechanisms to avoid any overspray. We recommend sealing the entire surface with a thin coat of clear (allowing for proper drying and gas out times). A few (very few) failures have occurred on uncleared/unsealed surfaces, and a major suspected contributor are the years of unknown products used to clean and wax and obviously lots of dirt that has imbedded into the wood fibers of the field. When possible, sand to a level of confidence that you have a pristine/flat/clean wood surface, and when in doubt... seal! Any discoloration from virgin wood grain will be a clue that contaminants exist. Adhering the Hardtop over anything short of a pristine surface is asking for trouble.
- 2.) When sanding your playfield, always protect the underside of your playfield from getting dust into contacts and mechanisms.
- 3.) Pay special attention to areas around inserts when eliminating dust and debris. These areas can "hide" dust along the edges of inserts and later show up as floating debris under your hardtop and on top of inserts (essentially, trapped debris).
- 4.) Outside Edge strongly recommends the use of LED lamps for all Hardtop Installations. There has been at least 1 bond failure due to the use of 44 bulbs combined with extended (typically 12+ hours a day) time where the machine is powered up and spends much of it's time in attract mode. This mode keeps some lamps powered the majority of the time and can build up heat in localized areas that will potentially expand the Hardtop to the point that it could release in small pockets from the field. The solution is to (at a minimum) use 47 bulbs, or better yet, use LEDs to eliminate the heat buildup.

### Addendum 12/18/19

**Outside Edge is continually striving to improve our product. To that end, we are using a new adhesive on our Hardtops. This adhesive is extremely aggressive, and it's IMPORTANT that you do NOT touch it with your hands. Slowly release the liner by lifting the release liner with a blade (example, an Exacto knife), making sure not to let your fingers touch the adhesive. It is a good idea to use a smooth flat edge (like a squeegee for graphics of auto body work) to press the edge you plan to start with again before attempting to lift the liner for installation.**