

ProLifter™

PCS Company's ProLifter™ is the only three dimensional (3D) ball lifter. Unlike other lifters that have issues with binding and excessive wear, the ProLifter™ is designed to allow free movement in all directions. Save time and money with the first and only non-binding, self aligning ProLifter™.

Features:

- Simple to design and install into a mold
- 3D Ball Lifter allows free movement in multitude of directions
- Non-binding, self-aligning at very low friction
- Easy construction for releasing molded undercuts
- Available in both blade and rod options
- H-13 material for easy machining

ProLifter™ assembly includes a three piece construction:

Bar or Rod

Bar

- Material: H-13 Tool Steel or equivalent
- Hardness: 38-42 HRC

Rod

- Material: H-13 Tool Steel or equivalent
- Hardness: 38-42 HRC

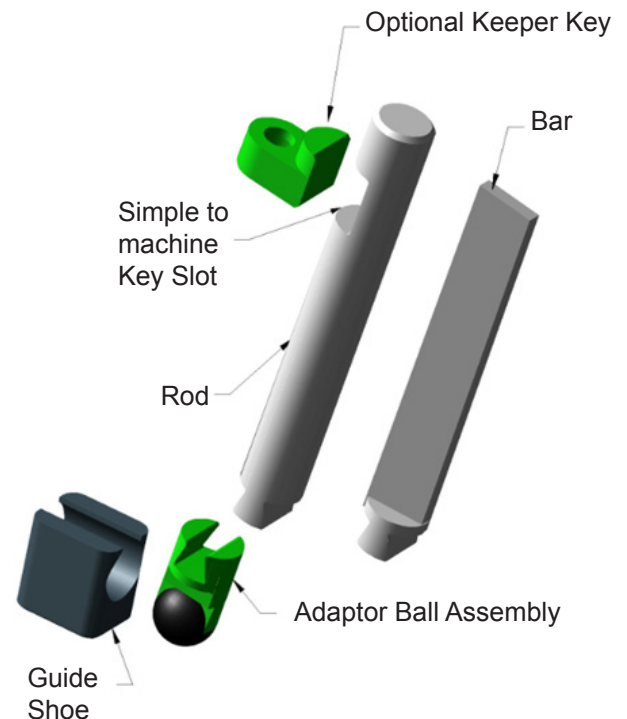
Adaptor Ball Assembly

- Material: Carbide Ball, H-13 Adaptor
- Core Hardness: 50-52 HRC

Guide Shoe

- Material: D2 or equivalent
- Hardness: 58-62 HRC

*Optional Keeper Key is available with Rod



DESIGN GUIDE

General Information

PCS ProLifter is a 3D Self Aligning Lifter that will compensate for any misalignment from accumulative manufacturing tolerance and compound angles not parallel to the stroke.

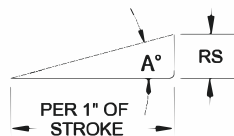
The lifter floats into position and will maintain precision close offs. A modular concept allows for multitude of combinations. Rods with or without cooling. Bars can be machined to unlimited size combination. Ball Adaptor and Shoe Sizes from 1/4" to 1".

1. Stroke and Angle Requirements

- Determine (RS) Release Stroke Required to Eject Part
- Determine the (ES) Ejector Stroke
- Determine the (A) Minimum Angle Required

Angle Deg. Per 1" of (ES) Ejection Stroke

5 Deg.	= (RS) .087489
8 Deg.	= (RS) .140541
10 Deg	= (RS) .176327
12 Deg	= (RS) .212557
15 Deg	= (RS) .267949



2. Lifter Guide Length Recommendation

Larger angles and longer Rod / Bar require longer guides

Guide Length to Rod Length Ratio

- 5 Deg. Angle Ratio up to 4.0 :1
- 8 Deg. Angle Ratio up to 3.5 :1
- 10 Deg. Angle Ratio up to 3.0 :1
- 12 Deg. Angle Ratio up to 2.5 :1
- 15 Deg. Angle Ratio up to 2.0 :1

3. Locking Angles / Positive Back Up

CAUTION: Locking angles can be used providing you have a positive backup stop to assure Molding Temperature or Molding Pressure does not lock the Lifter

4. Guide Shoe Options/ Timing

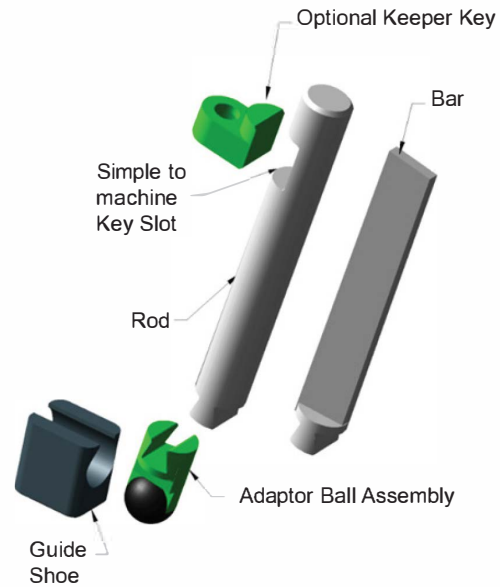
a) Standard Straight Guide Shoes

Will have delayed forward movement over the total stroke. Matched release angle needs to be on the part to avoid uneven ejection when using single stage ejection

b) Timing Lifter

Do final fitting at the lifter face first then adjust shoe height by grinding the bottom of the shoe or recommended timing shim

Note: Lifter does not require preload



5. Fitting Clearance / Hardness

a) Clearance

Fit the sliding components with .001-.0015 clearance to the guides. Rod guide mold pocket can have .005 clearance to allow it to float into position of the tapered lifter location. If needed, the back of the head of the angled bushing can be machined to fit the angled location. Shoe pocket can have .002-.005 clearance for easy assembly.

b) Hardness

Lifter Rods are H13 Tool Steel or equivalent, 38-42 HRC hardness. Lifter Bars are H13 Tool Steel or equivalent, 38-42 HRC hardness. May require additional treating depending on the mating wear surfaces to have sufficient hardness difference

