OWNER'S MANUAL · COILOVER KIT

# Bilanx Owners Manual

Installation, ride height, damper adjustment and setup data.

Issued 2026-11-07  Adjuster 0–32 clicks  Shaftworks USA · Chino, CA

## 01 KIT CONTENTS

| DESCRIPTION | PCS |
|---|---|
| Front coilover assembly | 2 |
| Rear coilover assembly | 2 |
| Spanner wrench | 2 |
| Setup sheet | 1 |
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**NOTE**
Before you install this product, check the kit contents. If anything is missing, contact Shaftworks USA.

**NOTE**
There can be small differences between your product and the images in these instructions.

**WARNING**
Read this manual before you install this product. Suspension is an important part of the vehicle and its stability.

# 02 MOUNTING INSTRUCTIONS

**WARNING**
We strongly recommend having this product installed by a qualified shop.

**WARNING**
If you work with a lifted vehicle, make sure it is safely supported so it cannot tip over.

**NOTE**
See the vehicle service manual for vehicle-specific procedures and torque values.

1. Raise the vehicle and put it on jack stands at the factory lift points.
2. Remove the wheels.
3. Remove the upper and lower attachments and remove the original shock absorbers.
4. Install the Bilanx coilovers on the vehicle.
5. Fasten the upper and lower attachments. Tighten to the factory torque values.
6. Secure brake hoses and ABS wires so they cannot touch the coilover.
7. Reinstall all removed parts the same way they were before installation.
8. Set ride height and check bump travel and droop before driving (see Adjustments).
9. Have the vehicle aligned.

**NOTE**
Make sure all bolts are tightened to the correct torque, and that nothing fouls or restricts the coilover at full compression, full extension and full steering lock.

# 03 ADJUSTMENTS

> ⚠ **WARNING**
> Before you drive, make sure the setup matches the recommended setup data.
> Contact Shaftworks USA if you have any questions about setting up.

Your recommended damping and spring rates are on the setup sheet in the box.

**Check your dampers for a "Do not adjust" sticker.**

`DO NOT ADJUST` **STICKER PRESENT**

Damper length has been set for your car. Do not move the lower mount. Set ride height with the spring seat only.

**NO STICKER**

Damper length is not pre-set. You must check bump travel and droop for your car before driving.

Adjust in this order: **ride height and travel, then damping, then tuning.** Re-check alignment after any height change.

## RIDE HEIGHT AND TRAVEL

Ride height is set with the **spring seat**. Damper length is set at the **lower mount** and controls how travel is split between bump (compression) and droop (extension). A loose or preloaded spring at your chosen height is normal and does not change how the car handles.

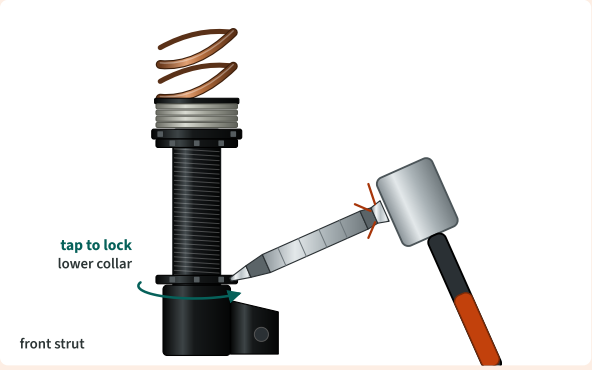
1. Loosen the lock ring with the supplied spanner.
2. Wind the spring seat up to raise the car, or down to lower it. Match left and right.
3. Tighten the lock ring against the seat. On front struts, lock it with a heavy-duty chisel or punch and a hammer (see Important below).
4. Settle the car (roll it back and forth), then measure hub center to fender lip at each corner.

## IMPORTANT

FRONT STRUTS ONLY

Do not use the adjustment spanner to lock the lower mount collar. The spanner is only for adjusting ride height. **If the lower mount is tightened with the spanner, it will come loose.**

Lock the collars (the spring seat lock ring and the lower mount collar) with a heavy-duty chisel or punch and a hammer: set the tip in a collar notch and strike it firmly in the tightening direction.




**Check droop: keep at least `50 mm` below ride height**

1. Measure tire bottom to fender at ride height.
2. Lift both wheels on that axle off the ground and measure again.
3. The difference is your droop.

**Check bump travel: keep at least `35 mm` at ride height**

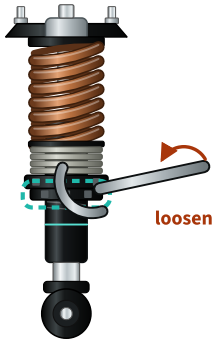
1. At ride height, slide the bump stop down the shaft until it touches the damper body.
2. Fit a zip tie on the shaft against the seal.
3. Drive the car normally (or a few laps), then measure how far the zip tie was pushed up. That is the travel you used.
4. If the bump stop is fully compressed in normal driving, you need more bump travel.

**UNDER 35 MM WITH DAMPER LENGTH ALREADY SET?**

With a "Do not adjust" sticker, or the lower mount at the groove limit, you may need a stiffer spring rate for that ride height. Contact us for a recommendation.

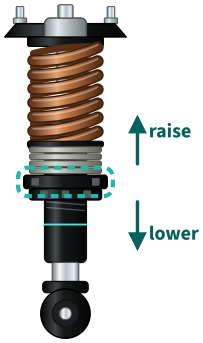
## SET RIDE HEIGHT

1



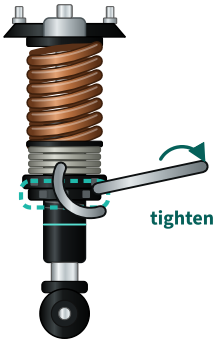

**Loosen the lock ring**
with the supplied spanner

2



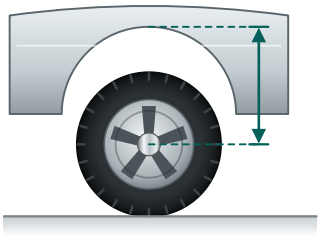

**Wind the spring seat**
up to raise, down to lower

3




**Tighten the lock ring**
against the seat

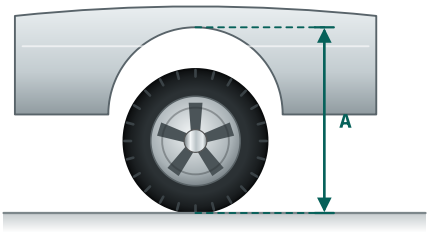
4



hub center → fender lip
**Settle, then measure**
hub center to fender lip

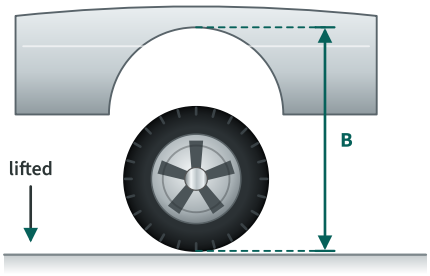
## CHECK DROOP: AT LEAST 50 MM

1




**A: measure at ride height**
tire bottom to fender

2




**B: lift both wheels**
and measure again

3

**B − A**

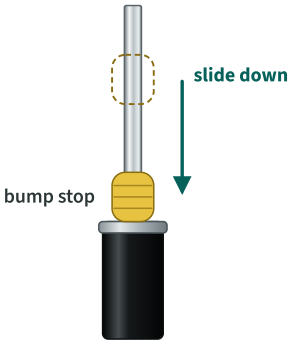
**= droop**

50 mm or more

**B minus A = droop**
keep it at least 50 mm

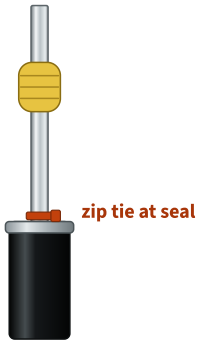
## CHECK BUMP TRAVEL: AT LEAST 35 MM

1



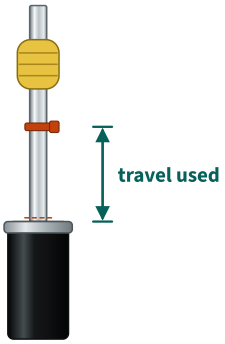

**Slide the bump stop down**
until it touches the body

2




**Fit a zip tie on the shaft**
against the seal

3




**Drive, then measure**
how far the zip tie moved

Ride height, droop and bump travel, step by step.

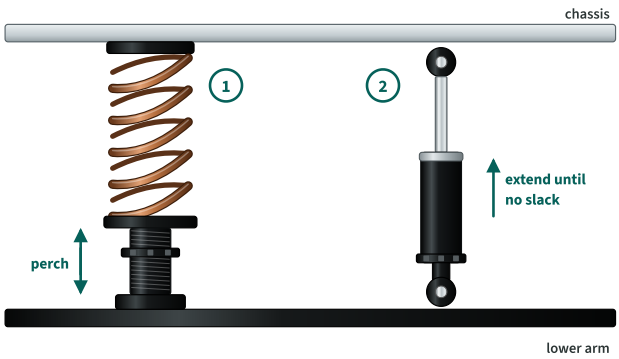
### No sticker? Balance bump and droop at the lower mount

Then reset ride height with the spring seat.

| CHANGE | BUMP TRAVEL | DROOP | THEN |
|---|---|---|---|
| Lower mount down (damper longer) | Less | More | Spring seat down the same amount |
| Lower mount up (damper shorter) | More | Less | Spring seat up the same amount |

Example: you have 25 mm of droop and want 50 mm → lower mount down 25 mm, spring seat down 25 mm. Ride height stays the same. Re-check bump travel after.

### Divorced rear springs

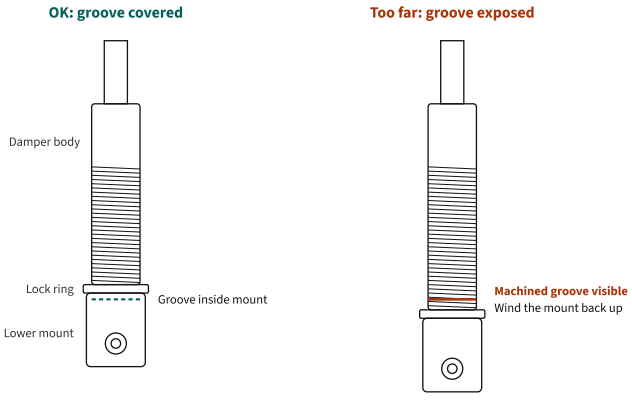



Some cars mount the rear spring separately from the damper, on its own adjustable spring perch. On these divorced setups, the spring sets ride height and the damper only sets travel.

1. **Set ride height with the spring and perch first.** Adjust the rear spring perch until the car sits at your target height.
2. **Then extend the damper** until there is no slack, so the spring is preloaded exactly to the damper's length.

### Minimum thread engagement

It is marked by the machined groove on the damper body. Never wind the lower mount down far enough to expose the groove. Re-check bump travel and droop after every ride height change.




Lower mount limit: the machined groove on the damper body must stay covered.

## DAMPER ADJUSTMENT

The adjuster on top of each damper has **about 32 clicks** of range. Clockwise is firmer, counterclockwise is softer, and it stops at both ends.

- **Count from full firm.** Turn clockwise gently until it stops: that is `0`. Count clicks counterclockwise from there (1, 2, 3… to about 32, full soft).
- **Start from the setup sheet.** Your recommended setting for each corner is on the setup sheet. Return to it whenever you lose track.
- **Change one end at a time,** 2 clicks at a time, and drive the same road or track to compare.
- **Keep left and right the same** unless you are corner-tuning on purpose.
- **Never force the adjuster** past its stop. It is a needle valve and can be damaged.

## BILANX ONE, P2 AND P3 ADJUSTERS

Bilanx dampers come in three levels. Each step up adds an adjuster, so you can tune more of the damper's behavior separately.

### Bilanx ONE

SINGLE ADJUSTABLE

**1** adjuster

**Damping** — **32** clicks

Top of damper

### Bilanx P2

DOUBLE ADJUSTABLE

**2** adjusters

**Rebound** — **32** clicks

Top of piston rod

**Compression** — **22** clicks

Reservoir

### Bilanx P3

TRIPLE ADJUSTABLE

**3** adjusters

**Rebound** — **32** clicks

Top of piston rod

**Low-speed compression** — **25** clicks

Reservoir

**High-speed compression** — **17** clicks

Reservoir

**Rebound**
How fast the damper extends: body control and how quickly the wheel returns.

**Compression**
Resistance to compressing.

**Low-speed compression**
Slow movements: roll, dive, squat and weight transfer.

**High-speed compression**
Fast movements: bumps, curbs and sharp edges.

1. Start from the settings on your setup sheet.
2. Count every adjuster from full firm, the same as the single adjustable. Turn clockwise gently until it stops: that is **0**. Count clicks counterclockwise from there.
3. Never force a knob past its stop at either end.
4. Set rebound first, then compression.
5. Change one adjuster, at one end of the car, 1–2 clicks at a time, and drive the same road or track to compare.
6. Keep left and right the same unless you are corner-tuning on purpose.
7. Write down every change.

**P3 TUNING TIPS**

If the car rolls, dives or squats too much, add low-speed compression. If it feels harsh or skips over bumps and curbs, soften high-speed compression.

**NOTE**

Route reservoir hoses so they cannot touch the tire, brakes or exhaust through full travel and full steering lock. Secure them with zip ties.

## COMPRESSION: HOW AND WHEN TO ADJUST

Compression controls how quickly the damper lets the car settle onto a tire. Low-speed compression (the P2 compression adjuster, or P3 low-speed) works on body movement: roll, dive and squat. High-speed compression (P3 only) works on bumps, curbs and sharp inputs.

- **Count from full firm:** clockwise to the stop is `0`. P2 compression has **22** clicks; P3 low-speed has **25** and high-speed has **17**.
- **Set rebound first,** then compression. Change one adjuster at one end of the car, 1–2 clicks at a time, and compare on the same corners.
- **If the car keeps improving when you reach the end of the adjuster,** the valving needs to move. Contact Shaftworks USA about a revalve.

| IF THE CAR… | CHANGE | WHY |
|---|---|---|
| **Understeers on entry**, slow corners | Softer front compression<br>`P3:` also softer front high-speed | Lets the front take load faster as you turn in, and keeps the tires biting over bumps. |
| **Understeers on entry**, fast corners | `P3:` softer front high-speed | Helps the front absorb bumps in fast corners. |
| **Understeers mid-corner**, front rolls hard | `P3:` firmer front high-speed | Slows how quickly the front rolls over, before you go to stiffer springs. |
| **Understeers on exit** | Firmer rear compression<br>`P3:` also firmer rear high-speed | Slows rearward load transfer and squat on throttle, so the front keeps its grip. |
| **Oversteers on entry**, slow corners | Firmer front compression | Slows weight transfer onto the front at turn-in. |
| **Oversteers on entry**, fast corners | `P3:` softer rear high-speed | Lets the rear absorb bumps at speed instead of skipping over them. |
| **Oversteers mid-corner** | Firmer rear compression<br>`P3:` also firmer rear high-speed | Supports the rear as it takes load and keeps it settled over bumps. |

If the rear is bottoming out mid-corner, check bump travel first (zip tie test); that is a spring or ride height problem, not compression.

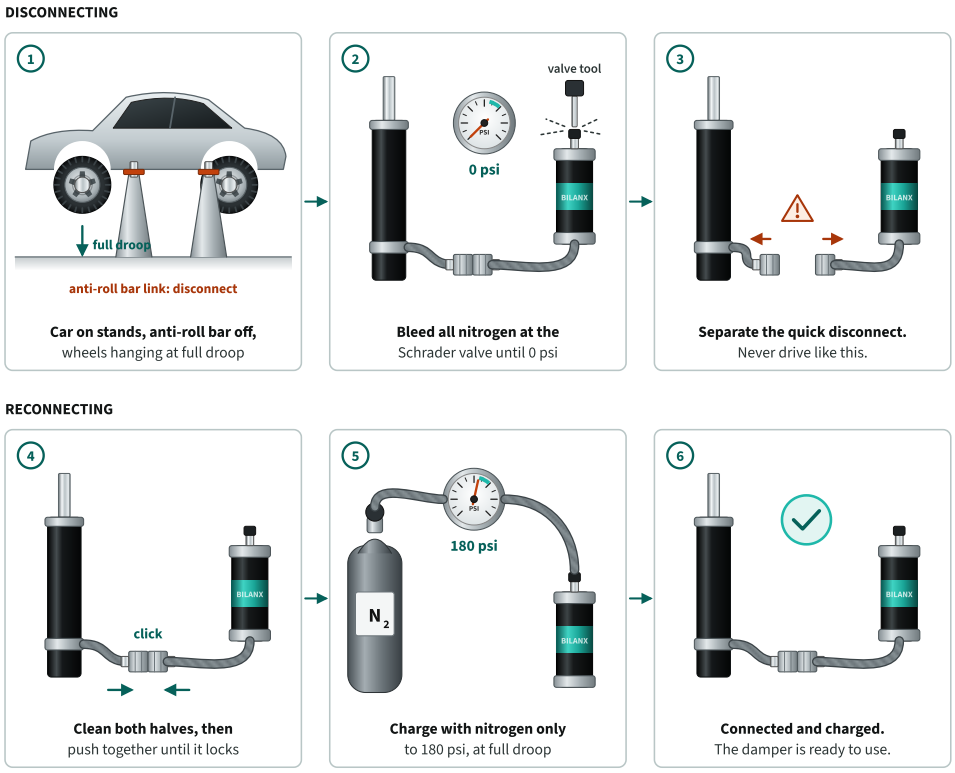
## REMOTE RESERVOIR QUICK DISCONNECT

**WARNING**

Never drive the car or cycle a damper with its reservoir disconnected. This damages the damper internals.

**WARNING**

The reservoir is charged with high-pressure nitrogen. Release all pressure before disconnecting.




### DISCONNECTING

1. Unload the damper. Put the car on jack stands and disconnect the anti-roll bar so the wheels hang at full droop, or remove the damper from the car.
2. Release all nitrogen pressure through the Schrader valve on the reservoir. Make sure no pressure is left.
3. Disconnect the reservoir at the quick disconnect. Keep both sides of the fitting clean.

### RECONNECTING

1. Check both sides of the fitting are clean, then connect the reservoir fully.
2. With the damper at full droop, charge the reservoir with nitrogen only (never air) to **180 psi** using a gauge.
3. The damper is ready to use.

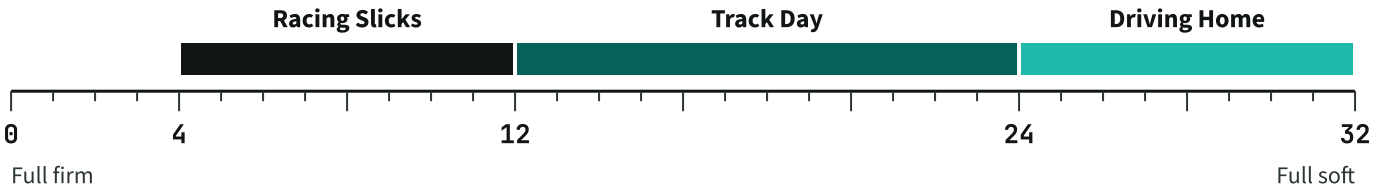
# 04 SETUP DATA

| 0–32 | 35 mm | 50 mm |
|---|---|---|
| Adjuster range, clicks from full firm | Minimum bump travel at ride height | Minimum droop at ride height |

| | |
|---|---|
| Lower mount limit | Machined groove on damper body must stay covered |
| Spring rates and recommended damping | See setup sheet |

## REBOUND STARTING POINTS

Clicks counterclockwise from full firm (0) to full soft (32).



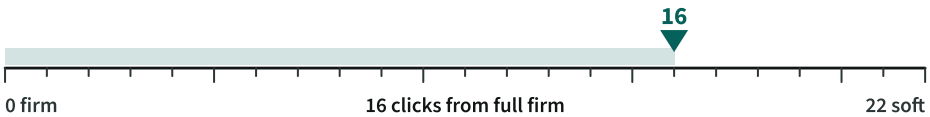

| USE | REBOUND (CLICKS) |
|---|---|
| ● Racing Slicks | 4–12 |
| ● Track Day / Performance Driving | 12–24 |
| ● Driving Home | 24–32 |

**NEED 0–4 CLICKS?**
If you need to run 0–4 clicks, contact Shaftworks USA about revalving.

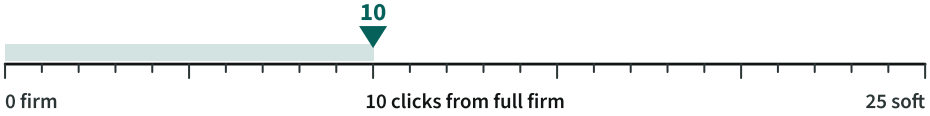
## COMPRESSION STARTING POINTS

Clicks counterclockwise from full firm (0). Start here, then tune with the compression table in Adjustments.

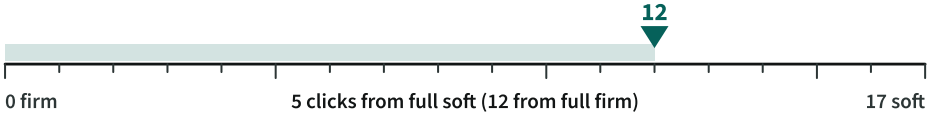
**Bilanx P2**
Compression




**Bilanx P3**
Low-speed compression




**Bilanx P3**
High-speed compression



# 05 TUNING GUIDE

Fix handling one change at a time, starting with the first item in each row.
Understeer means the front slides wide; oversteer means the rear steps out.

| IF THE CAR… | TRY (IN ORDER) |
|---|---|
| **Understeers on corner entry** | Softer front damping · firmer rear damping · raise rear height · firmer rear bar |
| **Understeers mid-corner / exit** | Firmer rear damping · firmer rear bar · stiffer rear spring |
| **Oversteers** | Softer rear damping · lower rear height · softer rear bar · stiffer front spring |
| **Lacks traction under power** | Softer damping on the drive wheels · softer bar on the drive axle |
| **Unsettled under braking** | Softer front damping · firmer rear damping |
| **Hits bump stops or bottoms out** | More ride height · firmer damping · stiffer spring (last resort) |
| **Feels harsh over bumps** | Soften damping 2 clicks at a time on the harsh end |

> **STILL NOT RIGHT?**
> Contact Shaftworks USA at **sales@shaftworksusa.com** with your settings and a description of the problem.

## RECOMMENDED SERVICE

| USE | SERVICE INTERVAL |
|---|---|
| **Competition vehicles** (optimal, consistent performance) | `Every 2 years` |
| **Racing** | As often as desired; `2–5 years` is expected |
| **Street use** | Every `18,000 miles` or `5 years`, whichever comes first |

Contact Shaftworks USA to schedule a rebuild.

# 06 WARRANTY, MOTORSPORT RISK AND RETURNS

## PRODUCT WARRANTY

**No warranty is provided.** Bilanx coilovers are full racing components, designed and sold for off-road and motorsport use only. They should not be installed on vehicles driven on public roads or highways.

It is the installer's responsibility to make sure parts are installed and set up correctly. Shaftworks USA assumes no responsibility or liability for damage resulting from improper installation, and any liability for consequential or incidental damages is expressly disclaimed. Shaftworks USA reserves all rights in determining any claim, and no claim will be considered for damage caused by abuse, negligence or mishandling.

### ⚠ WARNING: MOTORSPORT CAN BE DANGEROUS AND CAN RESULT IN INJURY OR DEATH.

Motorsport, for the purposes of this notice, is any automotive activity that takes place off public highways in a competitive or timed environment, including racing, time attack, autocross, drifting, rally and track days. Bilanx products are intended for these environments and are not intended for conventional passenger or highway use.

The purchaser and any user of Bilanx products expressly assume all risk of personal injury, property damage, economic loss, death or other loss arising from their use, whether in motorsport, on public roads or in any other setting. Shaftworks USA, its officers, employees and dealers are not liable for any such injury, damage or loss, directly or indirectly.

## RETURNS

- **Custom coilovers are non-returnable and non-refundable.** Every Bilanx set is built and valved to order. A buy-back may be considered case by case.
- Other items may be returned within **30 days** of purchase if unused, in the condition received and in the original packaging, with proof of purchase. Sale items cannot be refunded.
- Contact **sales@shaftworksusa.com** before sending anything back. Return shipping is paid by the customer and is non-refundable. Use a trackable service for items over $75.
- Inspect deliveries in front of the carrier before signing. Report an incorrect item within **2 days** of receipt.
- Refused or undeliverable shipments are subject to additional shipping costs and/or a **20%** restocking fee.

**Returns: Shaftworks USA, 13415 5th St Suite D, Chino, CA 91710**

Prices, specifications and policies are subject to change without notice. The current policies at shaftworksusa.com apply.

Shaftworks USA products are subject to continuous improvement and development. These instructions include the most up-to-date information available at the time of issue, but minor updates may occur.

For the latest information or any questions about this document, contact Shaftworks USA.

Bilanx Owners Manual

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**Shaftworks USA**
13415 5th St Suite D
Chino, CA 91710
sales@shaftworksusa.com

**www.shaftworksusa.com**