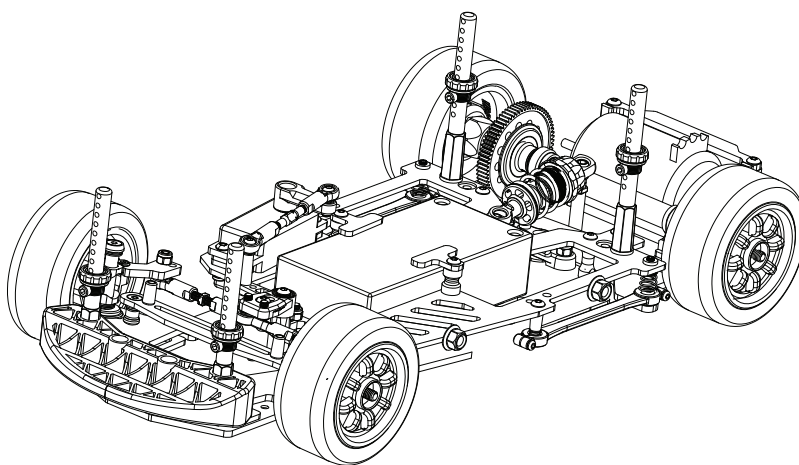


COMPETITION GRADE HIGH PERFORMANCE RADIO CONTROL RACING CAR CHASSIS KIT

VARIA MPAN-RR

1/10 SCALE ELECTRIC COMPETITION CAR KIT



INSTRUCTIONS MANUAL



Thank you for purchasing VBC Racing product.

Things that we should remind you.

This VBC Racing kit is a high performance, racing grade car kit intended for experienced racers. The kit compose of VBC formulated composite materials, top quality full carbon fiber chassis and high grade 7075 material which will give you a competitive edge over the others.

Novice racer should seek advice from more experienced racer before assembly.

Always keep this instruction manual handy at all times for quick reference even after completing the assembly.

Before your assembly, sand the chassis edges.

Sand the chassis edges with #600 sand paper and apply CA glue to the edges and counter sink holes.

Need help or support.

If you need help or you would like to leave us a comment, please email to our support team: support@vbc-racing.com or visit our web site www.vbcrcracing.com





Graphite Edges Protection Procedure

Welcome to the VARIA Experience

Thank you for purchasing the VARIA MPAN-RR.

In recent years, modern RC racing has continuously pushed the boundaries of absolute speed, downforce, and traction. While this pursuit of raw lap times has produced impressive machines, it has also gradually moved away from the authentic, physical sensation of real motorsport. Cars have become so glued to the track that driving them can feel more like operating on rails than mastering actual vehicle dynamics.

The **VARIA** Collection was born out of a passion to bring the soul back to RC racing. Our guiding philosophy behind VARIA is simple: *Real Dynamics, Real Physics, Real Engagement*. We set out to engineer platforms that faithfully recreate full-scale vehicle behavior at scale. With **VARIA**, performance is not determined solely by artificial grip, but by how skillfully you manipulate weight transfer, throttle modulation, trail-braking, and chassis setup.

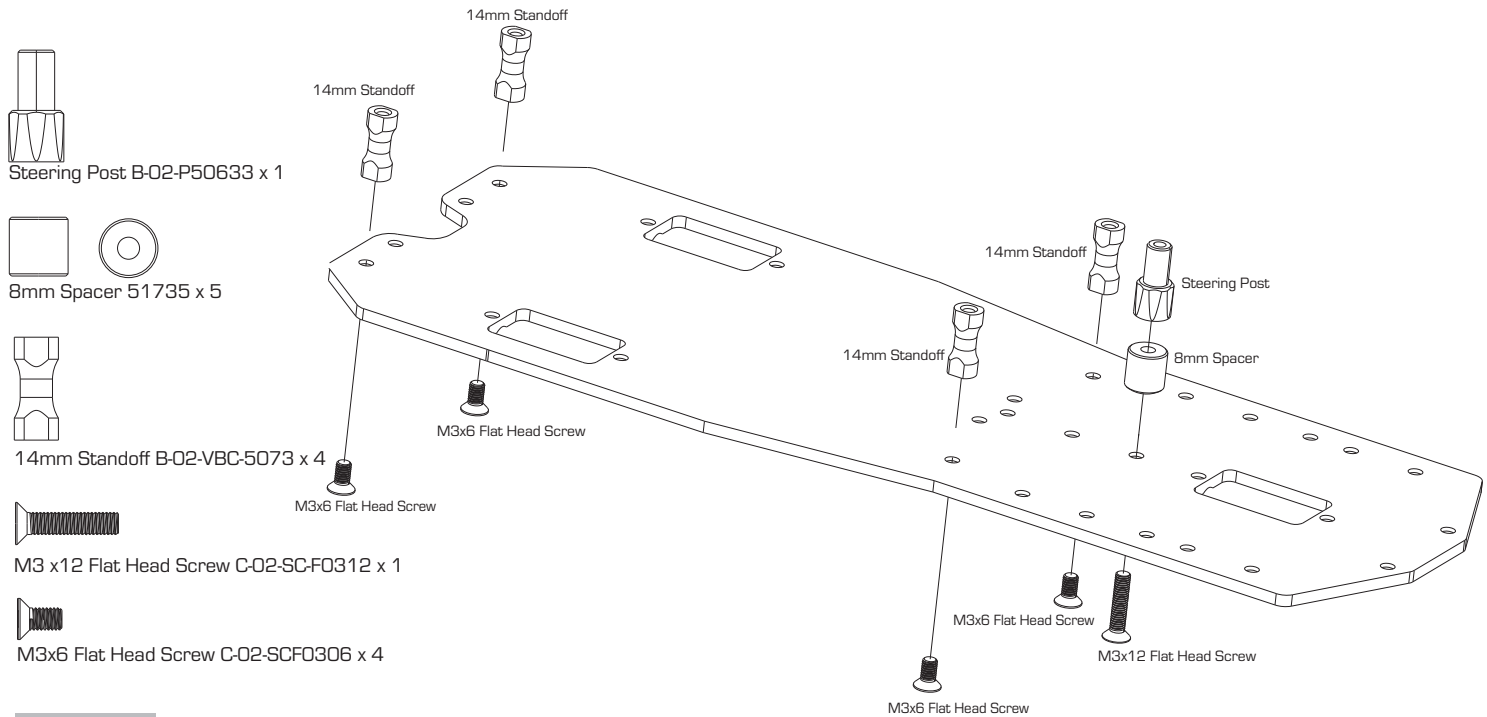
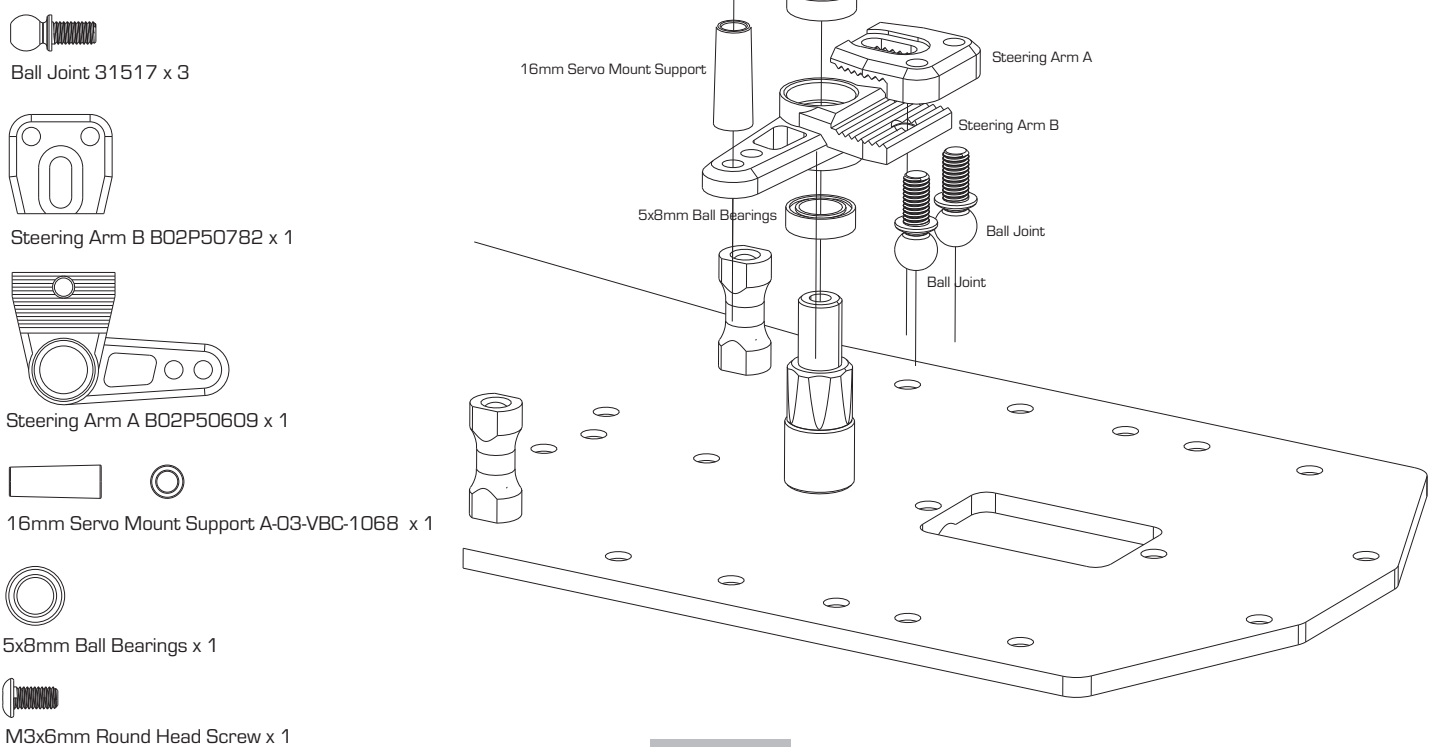


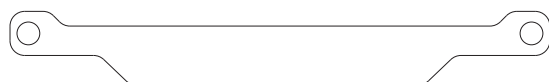
The **MPAN-RR** is the premier platform designed under this vision. Engineered as a rear-engine, rear-wheel-drive (RWD) chassis, it mimics the raw power delivery and distinct handling characteristics of iconic rear-engine sports cars. It demands respect, finesse, and deliberate control—rewarding precise inputs with unmatched driving satisfaction as you balance the rear end through sweeping corners and tight chicanes.

Every component in this manual has been meticulously designed and extensively tested to deliver an authentic, high-precision driving experience. Whether you are building this kit for scale-realistic club racing, tuning for optimal handling, or simply rediscovering the pure joy of driving real physics, we are thrilled to welcome you to the next chapter of VBC Racing.

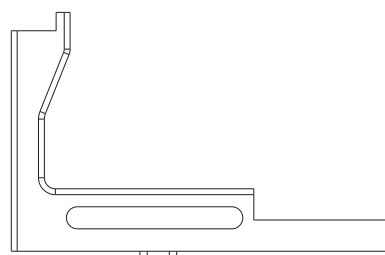
Take your time with the assembly, enjoy the build, and see you at the track.

VBC Racing

1*Main Chassis Assembly***2***Main Chassis Assembly*

3*Rear Pod Assembly*

Rear Pod Graphite Strut 51647 x 1



Rear Pod Mount B02P50664 x 2



21mm Aluminium Post B02P51644 x 1



2mm Spacer A-03-VBC-0052 x 2



Ball Joint B-02-VBC-0045 x 1



4.7mm Thin Ball Nuts B02P51288 x 1



Pivot Ball 5mm A-03-VBC-1027 x 3



M3x6 Round Head Screw C-02-SC-R0306



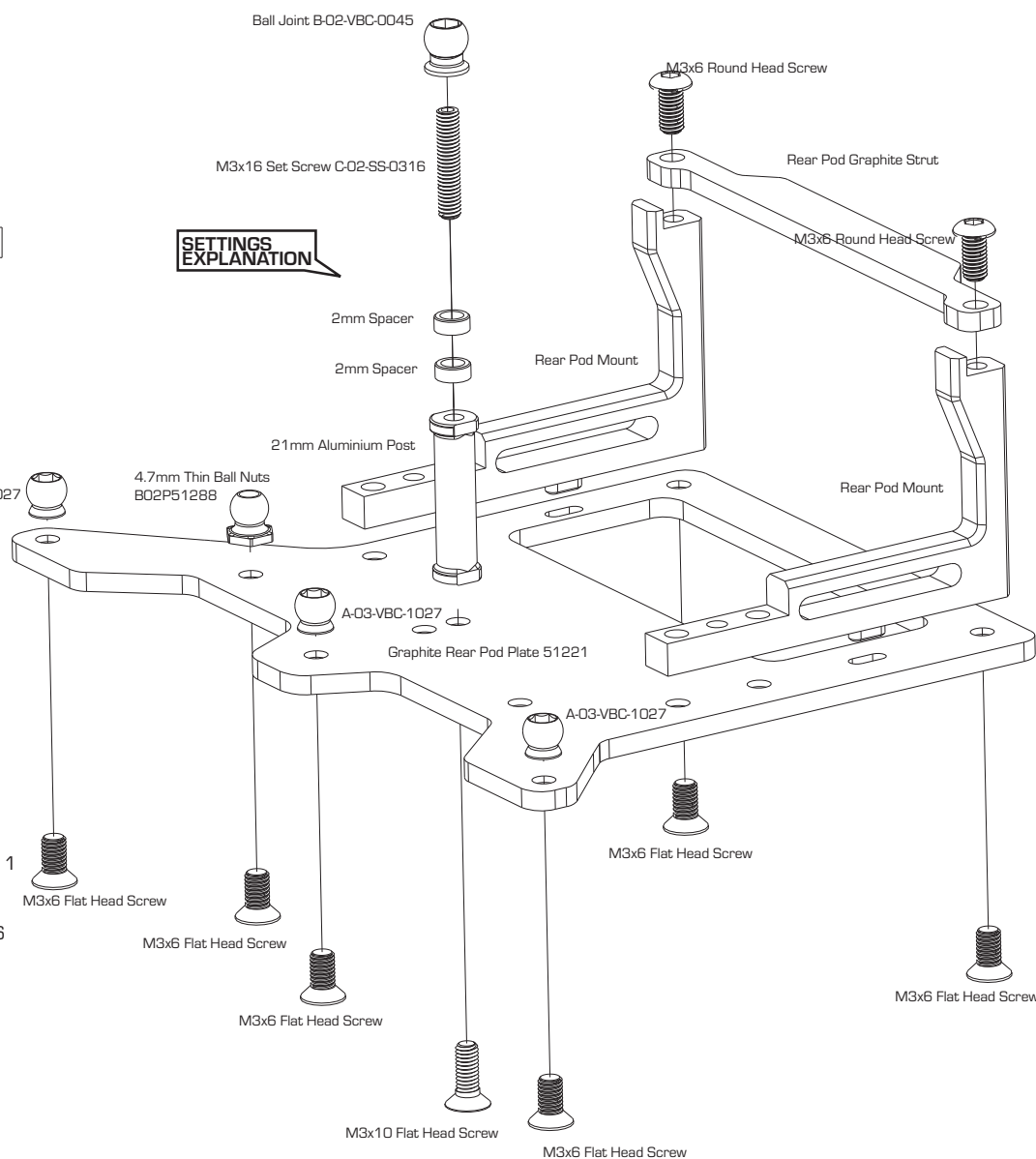
M3x16 Set Screw C-02-SS-0316



M3x10 Flat Head Screw C-02-SC-F0310 x 1

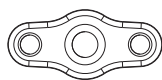


M3x6 Flat Head Screw C-02-SC-F0306 x 6

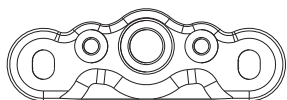
**SETTINGS
EXPLANATION****SETTINGS
EXPLANATION**

Increasing the standoff height makes the center shock stand up more vertically. This causes the car to respond much faster to initial acceleration and weight transfers. It increases suspension progression and gives the car more aggressive steering on corner exit. However, it can make the vehicle feel twitchy and unsettled over bumps.

Decreasing the standoff height lays the center shock flatter. This softens the initial suspension movement and helps the rear pod absorb bumps smoothly. It creates a calmer weight transfer, which improves stability on low-grip or bumpy surfaces. The trade-off is a slight reduction in initial steering response and a delayed feel on-power.

4*Rear Pod Assembly*

Center Pivot Top Clamp Plate A-03-VBC-1037 x 1



Center Pivot Bottom Support Mount A-03-VBC-1036 x 1



M2x6 Cap Head Screw C-02-SC-R0206 x 2

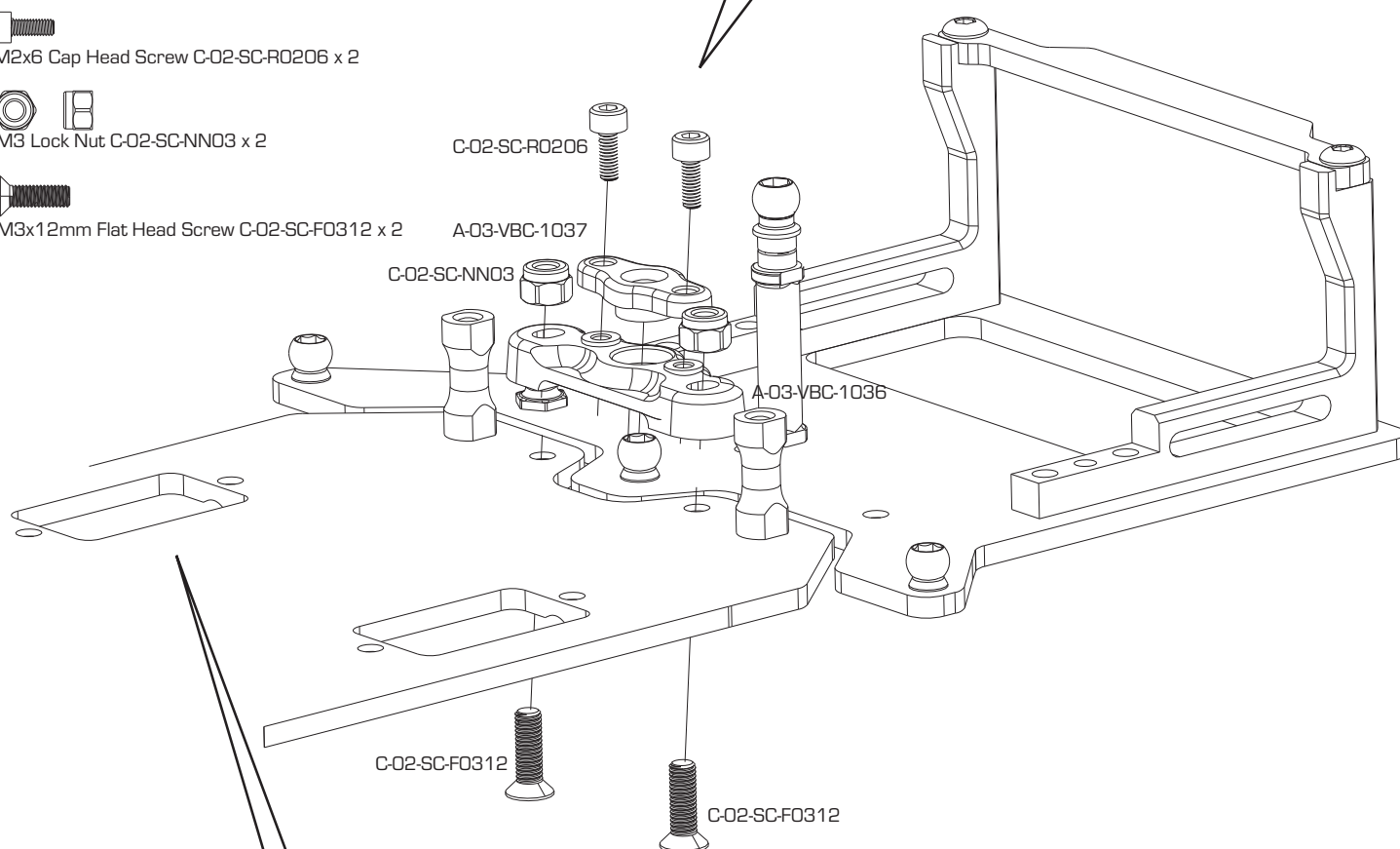


M3 Lock Nut C-02-SC-NN03 x 2



M3x12mm Flat Head Screw C-02-SC-F0312 x 2

When installing the center pivot top clamp plate, make sure the pivot can move freely without binding when screwing on the screws.

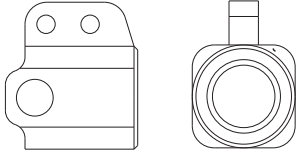

**EXCITING SETTINGS
EXPLANATION**

Adding weights to both sides near the rear of the main chassis creates a pronounced pendulum effect. Because the heavy motor is already cantilevered far back, adding extra weight further back greatly increases the rear polar moment of inertia.

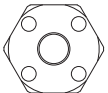
Under acceleration, this extra rear weight plants the rear tires heavily, generating immense straight-line traction. However, when entering and exiting corners, that rear-biased mass acts like a pendulum swinging wide. This makes the car much slower to rotate mid-corner, prone to heavy push or understeer on entry, and extremely snappy or difficult to catch once the rear tires finally break loose and spin out.

5

Front Suspension



Aluminium Steering Block 51706 x 2



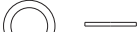
Hex Wheel Hub B02P30887 x 2



M3x3mm Set Screw C-02-SS-0303 x 2



M2x10 Shaft Pin B-02-VBC-0020 x 2



5x8x0.5mm Shim 51713 x 2



5x10 Ball Bearings C-02-BB-1005-B x 4



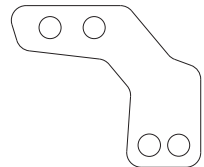
Wheel Axle B-02-VBC-2027 x 2



M3 Lock Nut C-02-SC-NN03 x 2



M3x6mm Round Head Screw C-02-SC-R0306 x 2



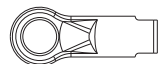
Graphite Steering Arm 51707 x 2



T1 Composite Spacer A-03-VBC-0051 x 2



Ball Connector 31518 x 2

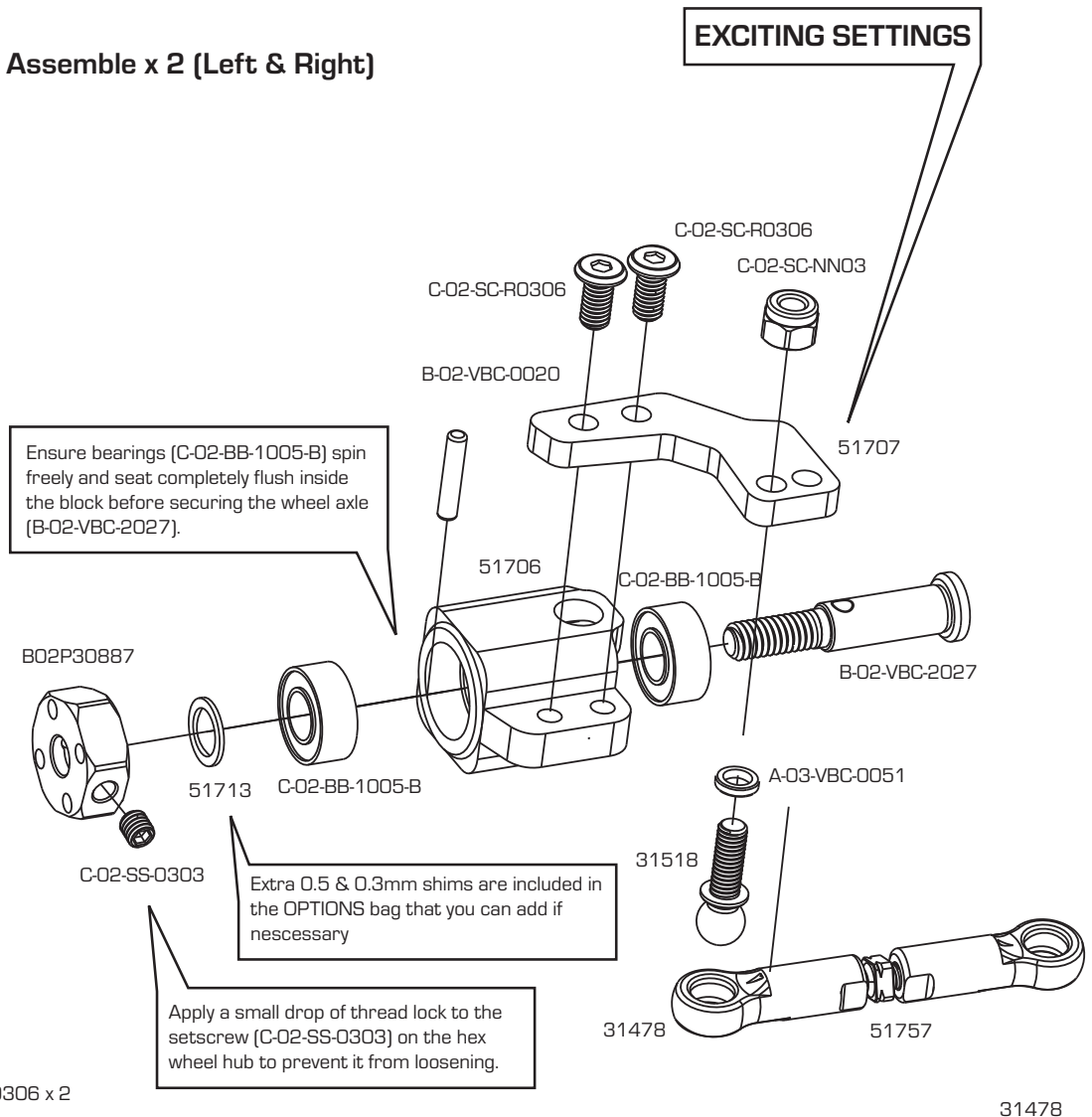


Ball Connector (Long) 31478 x 2



M3x20 Titanium Turnbuckle 51757 x 2

Assemble x 2 (Left & Right)



EXCITING SETTINGS

EXCITING SETTINGS
EXPLANATION

Changing the mounting position of the steering ball stud (31518) on the steering arm plate (51707) alters the effective steering arm length, directly impacting your **Ackermann geometry**, **steering speed**, and **overall steering response**:

Inner Hole (Shorter Steering Arm):

* **Faster Steering Response:** Gives a quicker, more aggressive turn-in feeling at the steering wheel because the steering link has more leverage to pivot the knuckle faster.

* **More Aggressive Ackermann (Increased Inside Wheel Angle):** The inside wheel turns noticeably sharper than the outside wheel in tight corners. This helps pull the car around tight hairpins, chicane transitions, and low-speed technical tracks, but can make the car feel more twitchy or aggressive on high-speed sweepers.

Outer Hole (Longer Steering Arm):

* **Smoother, More Linear Steering:** Slows down the initial steering speed slightly, providing a smoother, more progressive feel around center stick.

* **Less Ackermann (Flatter Wheel Angle Ratio):** Reduces the angle difference between the inside and outside tires. This provides greater high-speed stability, smoother corner entry, and keeps the car predictable and less "snappy" on open, fast-sweeping layouts or high-traction tracks.

6

Bushings Inserts



Ball Joint Bushing 51704 x 4



Ball Stud B-02-VBC-0045 x 4

Assemble x 4

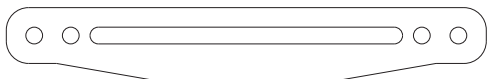
51704

B-02-VBC-0045

Gently press the ball stud into the bushing using pliers. The ball stud should sit tightly inside the bushing, but still be able to move smoothly when a bit of force is applied.

7

Front Suspension



Graphite Front Struct Plate 51709 x 1



Support Mount 8mm B02P50607 x 2



Mount Support 8mm A-03-VBC-1069 x 2



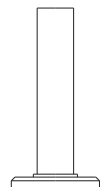
5mm O-Ring (Hard) 51712 x 4



1.0 Camber Spacer 51703 x 2



1.0 Camber Bottom Plate 51721 x 2



Kingpin 23mm 51703 x 2



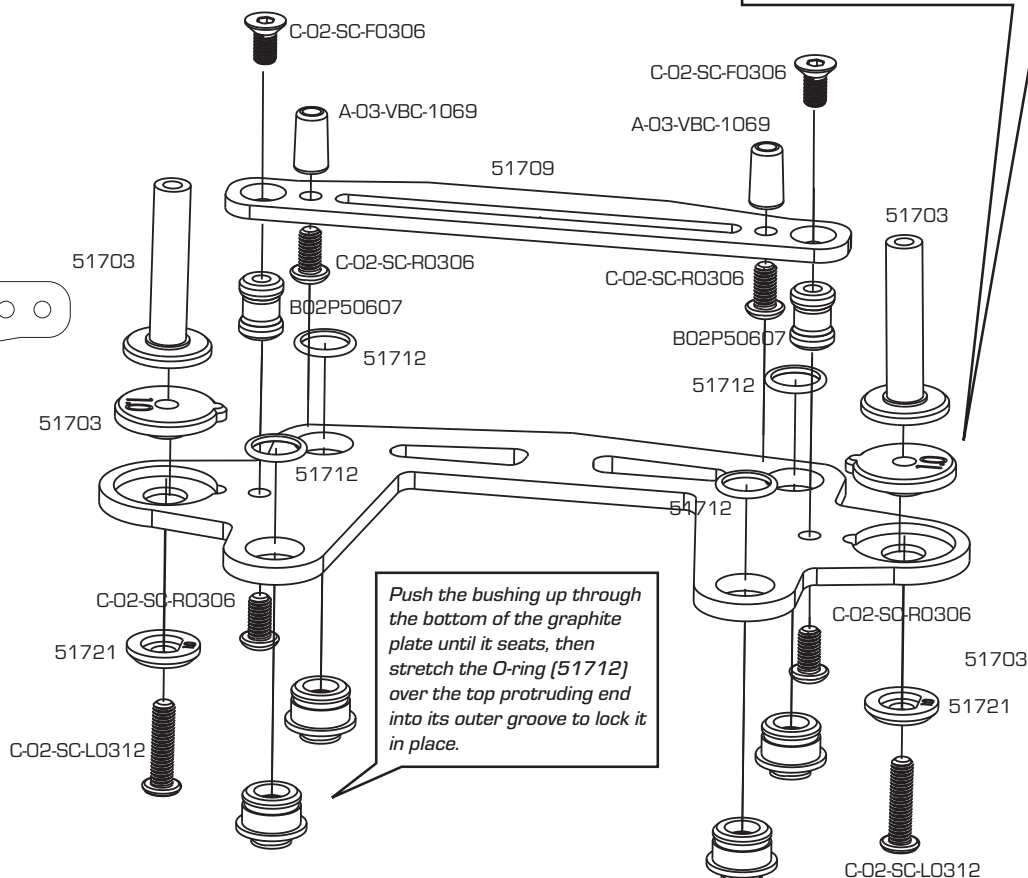
M3x6mm Flat Head Screw C-02-SC-F0306 x 2



M3x6mm Round Head Screw C-02-SC-R0306 x 4



M3x12mm Low Profile Screw C-02-SC-L0312 x 2



EXCITING SETTINGS EXPLANATION

Camber Angle Plate Assembly Guide (51703 & 51721)

Match Plate Angles: Select matching 1.0° upper (51703) and lower (51721) insert plates for your desired setup (0°, 1.5°, 1.5° and 2.0° are included in the OPTIONS bag). Ensure the numbers stamped on both parts match.

Key the Upper Insert: Drop the upper camber plate (51703) into the top recess of the graphite plate, aligning its outer tab into the matching cutout notch to prevent rotation.

Key the Lower Insert: Fit the lower insert (51721) into the matching recess on the bottom side of the graphite plate, aligning its index tab with the corresponding slot.

Insert the Vertical King Pin: Pass the main upper post component (51703) down through the top camber insert and graphite plate.

Fasten from Below: Secure the entire assembly by threading screw C-02-SC-L0312 up through the lower plate (51721) into the bottom of the central shaft. Tighten until snug so both angled inserts key firmly into the graphite plate without play.

Track Compatibility & Setup Recommendations

0°-0.5° Plates: Technical & Low-Grip Surfaces

Best For: Low-traction asphalt, slippery dust/dirt, or tight technical tracks with sharp hairpin turns where maximum initial steering bite is needed.

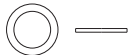
1.0° Plate: Standard / Base Setup

Best For: Medium-grip outdoor asphalt, indoor smooth surfaces, or balanced, flowy track layouts.

1.5°-2.0° Plates: High-Grip & Fast Surfaces

Best For: High-traction carpet, black CRC turf, grooved high-grip asphalt, or fast layouts with sweeping, high-speed corners.

8

Putting on Steering System

5x8x0.5mm Shim 51713 x 12



Aluminium Front Axle Washer B-02-VBC-6005 x 2



Front Spring (MED) 51710 x 2



M3x12mm Flat Head Screw C-02-SC-F0312 x 2

EXCITING SETTINGS [Springs]

This kit includes 3 types of springs
[MED] Silver default, [SOFT] purple & [HARD] black are in
the OPTIONS bag.

Soft Springs

Straights: Best for bumpy tracks; absorbs surface irregularities to maintain tire contact.

Corners: Maximum mid-corner grip on low-traction surfaces, but slower entry speed due to body roll.

Medium Springs

Straights: Ideal baseline balance between bump absorption and high-speed chassis stability.

Corners: Smooth, predictable steering response across most typical track conditions.

Hard Springs

Straights: Keeps the car flat and stable for maximum speed on smooth tracks.

Corners: Sharpest turn-in, faster entry/exit speeds, and prevents flipping on high-grip surfaces.

EXCITING SETTINGS [Kingpin Spacers]

Extra 5x8x0.5mm and 5x8x0.2mm 51777 spacers are included in the OPTIONS bag

Adding or removing the **51713 spacers** adjusts *spring preload* and *front ride height / droop* depending on where you place them:

Spacers Above or Below the Spring (51710 or 5x8x0.2mm 51777)

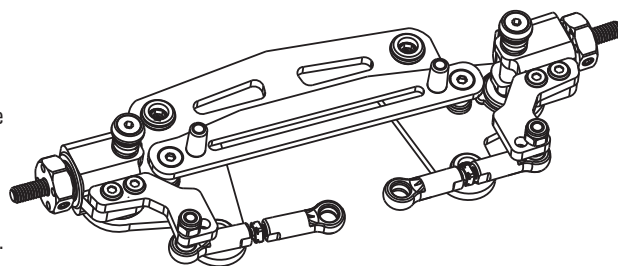
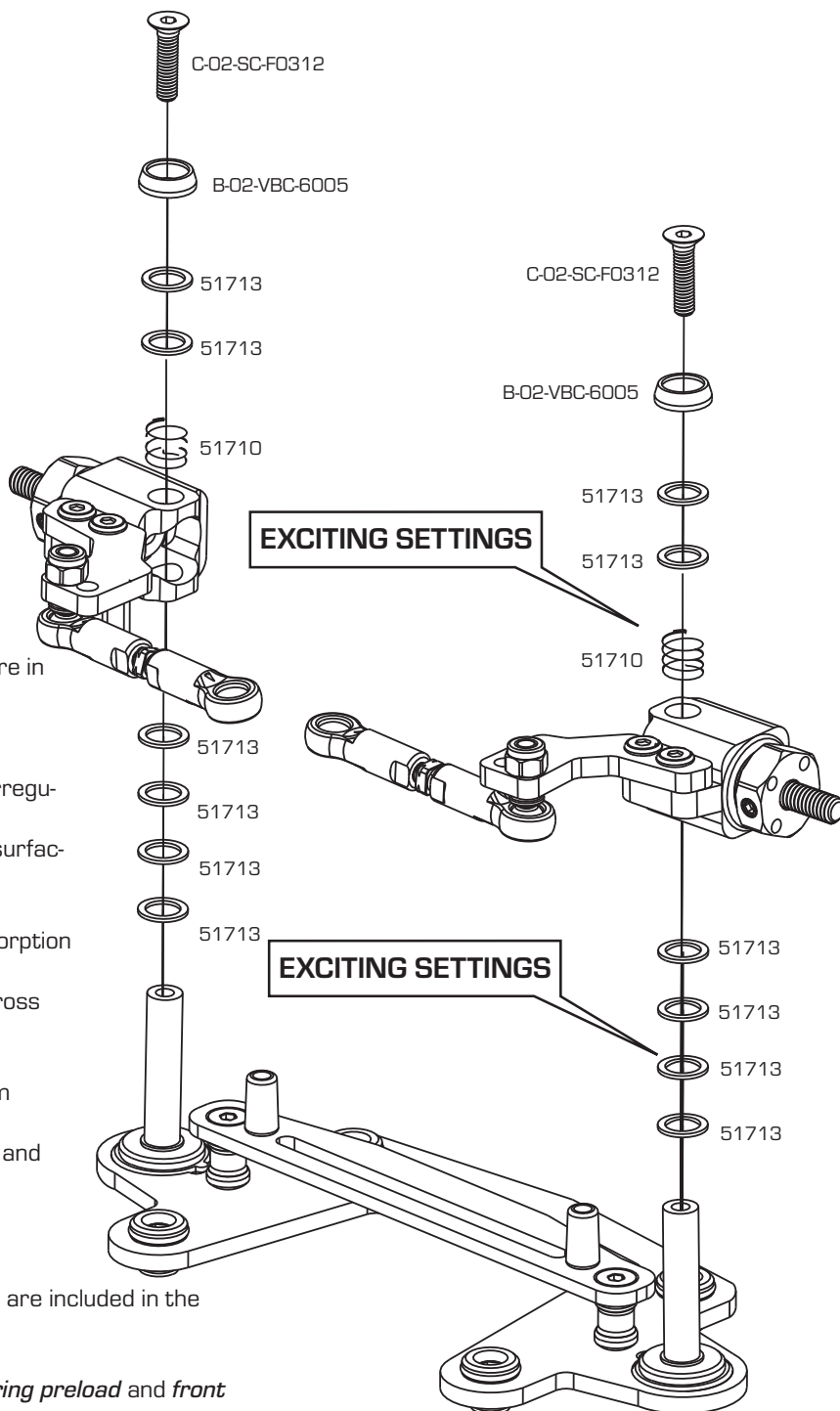
Adding Spacers: Increases spring preload (compresses the spring more). This raises the front ride height and makes the initial suspension travel feel stiffer, resulting in sharper turn-in response and less front chassis roll.

Removing Spacers: Decreases spring preload. This lowers the front ride height, giving the suspension more sag (droop) to absorb bumps better and generate more overall front traction on low-grip surfaces.

Spacers Beneath the Steering Block (At the Base)

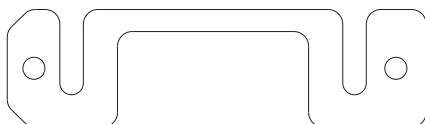
Adding Spacers: Raises the steering block assembly on the kingpin post. This lowers the front chassis ride height relative to the wheels and alters the front roll center and steering axle height.

Removing Spacers: Lowers the steering block on the kingpin post, raising the chassis ride height off the ground.



9

Installing Front Suspension to Chassis



2.0mm Ride Height Spacer 51646 x 2



M3 x 8 Flat Head Screw C-02-SC-F0308 x 2

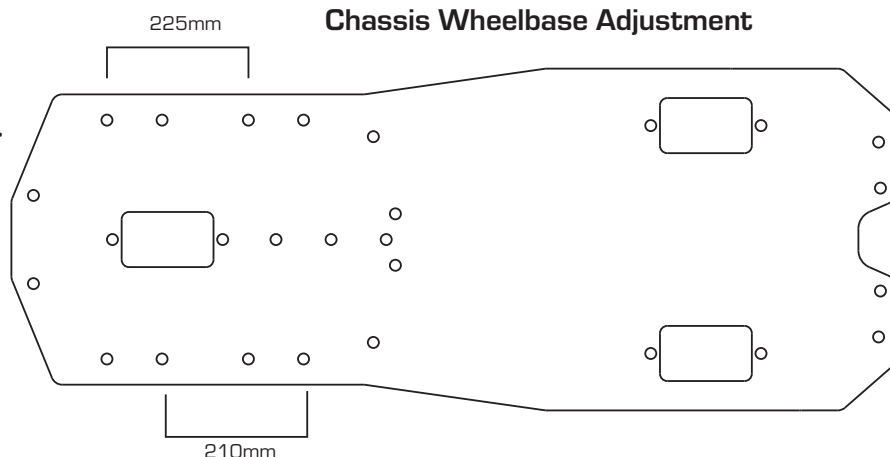


M3x12mm Flat Head Screw C-02-SC-F0312 x 2



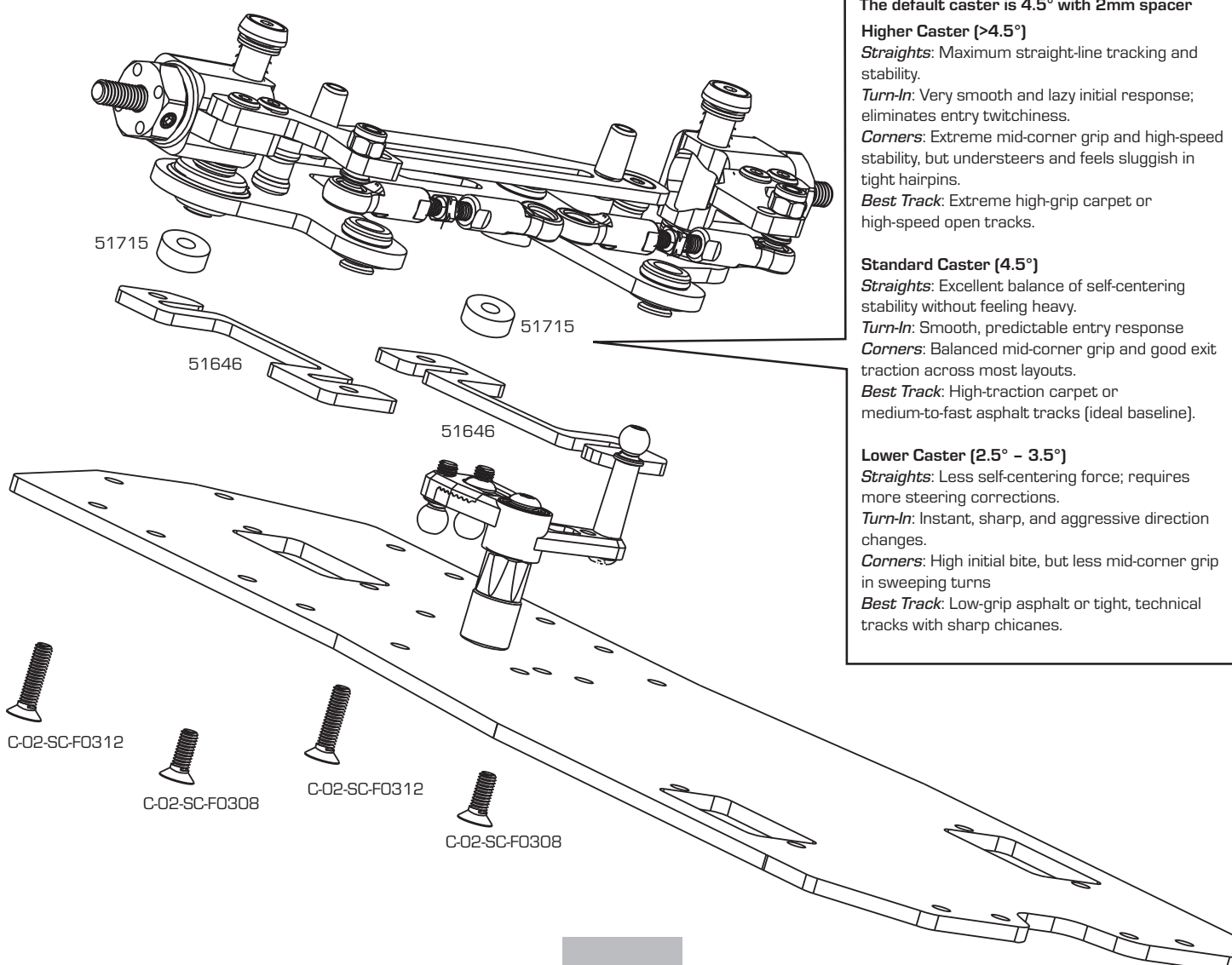
3mm Aluminium Spacer 51715 x 2

Chassis Wheelbase Adjustment



To accommodate 210mm or 225mm wheelbase M chassis car bodies.

For the ultimate driving experience, we strongly recommend pairing the MPAN-RR with an M-Chassis body shell that matches its rear-engine, rear-wheel-drive layout (such as Porsche 911 series replicas). Aligning the body design with the physical weight distribution of the chassis maximizes scale realism and authentic driving dynamics on the track.



The default caster is 4.5° with 2mm spacer

Higher Caster (>4.5°)

Straights: Maximum straight-line tracking and stability.

Turn-In: Very smooth and lazy initial response; eliminates entry twitchiness.

Corners: Extreme mid-corner grip and high-speed stability, but understeers and feels sluggish in tight hairpins.

Best Track: Extreme high-grip carpet or high-speed open tracks.

Standard Caster (4.5°)

Straights: Excellent balance of self-centering stability without feeling heavy.

Turn-In: Smooth, predictable entry response

Corners: Balanced mid-corner grip and good exit traction across most layouts.

Best Track: High-traction carpet or medium-to-fast asphalt tracks (ideal baseline).

Lower Caster (2.5° - 3.5°)

Straights: Less self-centering force; requires more steering corrections.

Turn-In: Instant, sharp, and aggressive direction changes.

Corners: High initial bite, but less mid-corner grip in sweeping turns

Best Track: Low-grip asphalt or tight, technical tracks with sharp chicanes.