

TOP
RACING

Tokyo hobbies Optional Parts

PROTON

1/10 ELECTRIC TOURING MACHINE



INSTRUCTION MANUAL

INTRODUCTION

BEFORE YOU START

The Photon is a professional 1/10 scale touring car and should be built only by persons aged 16 years or older with previous experience building and operating R/C model cars. This is not a toy and is not intended for use by beginners or by children without direct supervision of a responsible, knowledgeable adult. Read the instruction manual carefully before building.

T.O.P. Racing shall not be liable for any loss, injury or damages, whether direct, indirect, special, incidental, or consequential, arising from the use, misuse, or abuse of this product and/or any product or accessory required to operate this product.

GENERAL PRECAUTIONS

- This product is not suitable for children under 16 years of age without the direct supervision of a knowledgeable adult.
- Assemble this kit only in places away from the reach of small children.
- First-time builders and users should seek advice from people who have building experience in order to assemble the model correctly and to allow the model to reach its performance potential.
- Exercise care when using tools and sharp instruments.
- Take care when building, as some parts may have sharp edges.
- Keep small parts out of reach of small children. Children must not be allowed to put any parts in their mouth, or pull vinyl bag over their head.
- Immediately after using your model, do not touch equipment on the model such as the motor and speed controller, because they generate high temperatures. You may seriously burn yourself by touching them.
- Follow the operating instructions for the radio equipment at all times.
- Do not put fingers or any objects inside rotating and moving parts, as this may cause damage or serious injury as your finger, hair, clothes, etc. may get caught.
- Be sure that your operating frequency is clear before turning on or running your model, and never share the same frequency with somebody else at the same time. Ensure that others are aware of the operating frequency you are using and when you are using it.
- Always turn on your transmitter before turning on the receiver in the car. Always turn off the receiver before turning off your transmitter.
- Keep the wheels of the model off the ground when checking the operation of the radio equipment.
- Disconnect the battery pack before storing your model.
- To prevent any serious personal injury and/or damage to property, be responsible when operating all remote controlled models.
- The model car is not intended for use on public places and roads or areas where its operation can conflict with or disrupt pedestrian or vehicular traffic.
- Do not use your model:
 1. Near real cars, animals, or people that are unaware that an RC car is being driven.
 2. In places where children and people gather
 3. In limited indoor spaces
 4. In wet conditions
 5. In the street
 6. In areas where loud noises can disturb others such as hospitals and residential areas
 7. At night or anytime your line of sight to the model may be obstructed or impaired in any way.

To prevent any serious personal injury and/or damage to property, please be responsible when operating all remote controlled models.

ELECTRICAL PRECAUTIONS

- Insulate any exposed electrical wiring (using heat shrink tubing or electrical tape) to prevent dangerous short circuits. Take maximum care in wiring, connecting and insulating cables. Make sure cables are always connected securely. Check connectors for if they become loose. And if so, reconnect them securely. Never use R/C models with damaged wires. A damaged wire is extremely dangerous, and can cause short-circuits resulting in fire.
- Low battery power will result in loss of control. Loss of control can occur due to a weak battery in either the transmitter or the receiver. Weak running battery may also result in an out of control car if your car's receiver power is supplied by the running battery. Stop operation immediately if the car starts to slow down.
- When not using RC model, always disconnect and remove battery.

- Do not disassemble battery or cut battery cables. If the running battery short-circuits, approximately 300W of electrical power can be discharged, leading to fire or burns. Never disassemble battery or cut battery cables.
- Use a recommended charger for the receiver and transmitter batteries and follow the instructions correctly. Over-charging, incorrect charging, or using inferior chargers can cause the batteries to become dangerously hot. Recharge battery when necessary. Continual recharging may damage battery and, in the worst case, could build up heat leading to fire. If battery becomes extremely hot during recharging, please ask your local hobby shop for check and/or repair and/or replacement.
- Regularly check the charger for potential hazards such as damage to the cable, plug, casing or other defects. Ensure that any damage is rectified before using the charger again. Modifying the charger may cause short-circuit or overcharging leading to a serious accident. Therefore do not modify the charger.
- Always unplug charger when recharging is finished.
- Do not recharge battery while battery is still warm. After use, battery retains heat. Wait until it cools down before charging.
- Do not allow any metal part to short circuit the receiver batteries or other electrical/electronic device on the model.
- Immediately stop running if your RC model gets wet as may cause short circuit.
- Please dispose of batteries responsibly. Never put batteries into fire.

EQUIPMENT RECOMMENDED (NOT INCLUDED)

- Radio Transmitter
- Radio receiver
- Batteries for Transmitter
- Electronic Speed Control
- Steering Servo
- 540 Type Motor or Brushless Motor System
- Pinion Gear (64 Pitch)
- 7.2V, 6 Cell Sub-C Battery Pack or suitable Li-Po Pack
- 190mm Body Shell
- Touring Car Wheels, Tires and Inserts

TOOLS RECOMMENDED (NOT INCLUDED)

- 1.5mm, 2.0mm, 3.0mm Allen Wrench
- 5.0mm, 5.5mm & 7.0mm Hex Socket Wrench
- Modelers Craft Knife
- Small Cross Head Screw Driver
- Turnbuckle Wrench
- Calipers/Ruler
- Camber Gauge
- Battery Strapping Tape
- Instant Glue/Thread Lock
- Shock Oil
- Thrust Grease, Diff. Grease, Joint Grease
- Paint (for Bodyshell)

NOTE:

- The Photon chassis uses the best available components. All replacement parts can be purchased from your local hobby or model shop.
- There are 2 versions of the Photon - the Rubber Asphalt Pro Edition and the Foam Carpet Pro Edition. Ask your local hobby shops for confirming which kit you would like to purchase.
- This instruction manual contains a blank setup sheet for your own setup record.

Enjoy building and driving your Photon!!



SPOOL (Rubber Asphalt Edition Only)

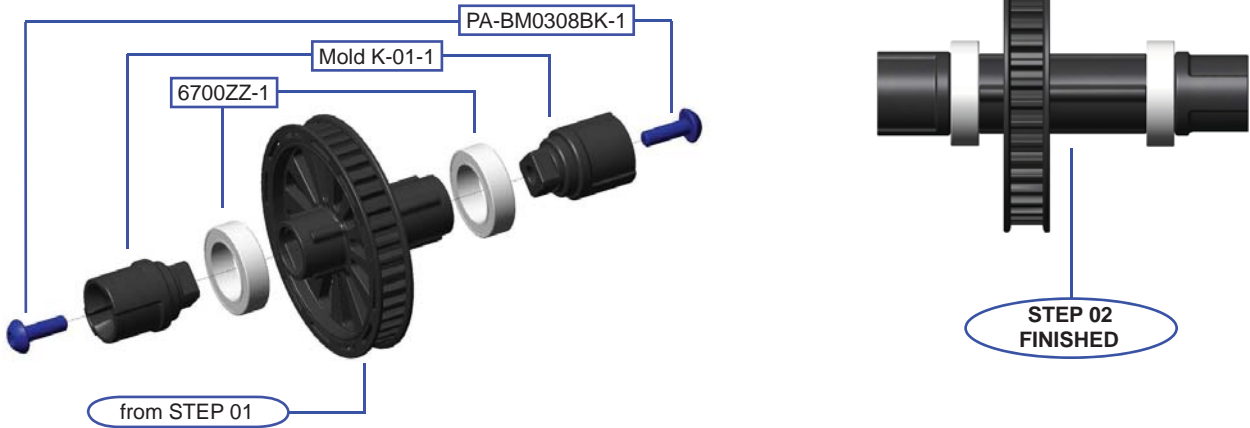
STEP 01



Note: Apply small amount of instant glue in between Mold J-03-1 and Mold J-01-1.

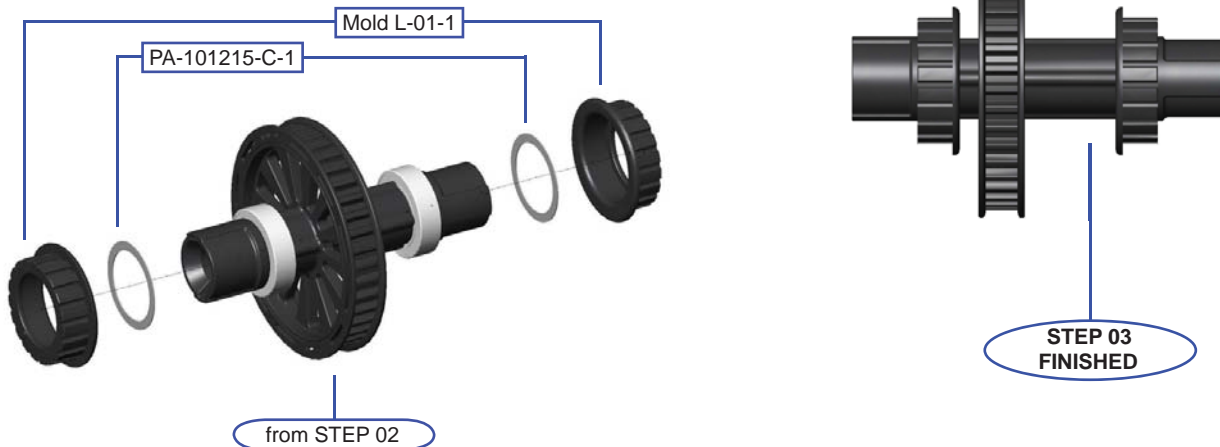
BAG A	Mold J-01-1	Spool	x 1
	Mold J-03-1	40T Flange - One-way/Spool	x 1

STEP 02



BAG A	6700ZZ-1	10 x15 x 4mm Bearing	x 2
	PA-BM0308BK-1	M3x8mm Button Head Screw	x 2
	Mold K-01-1	Spool Outdrive	x 2

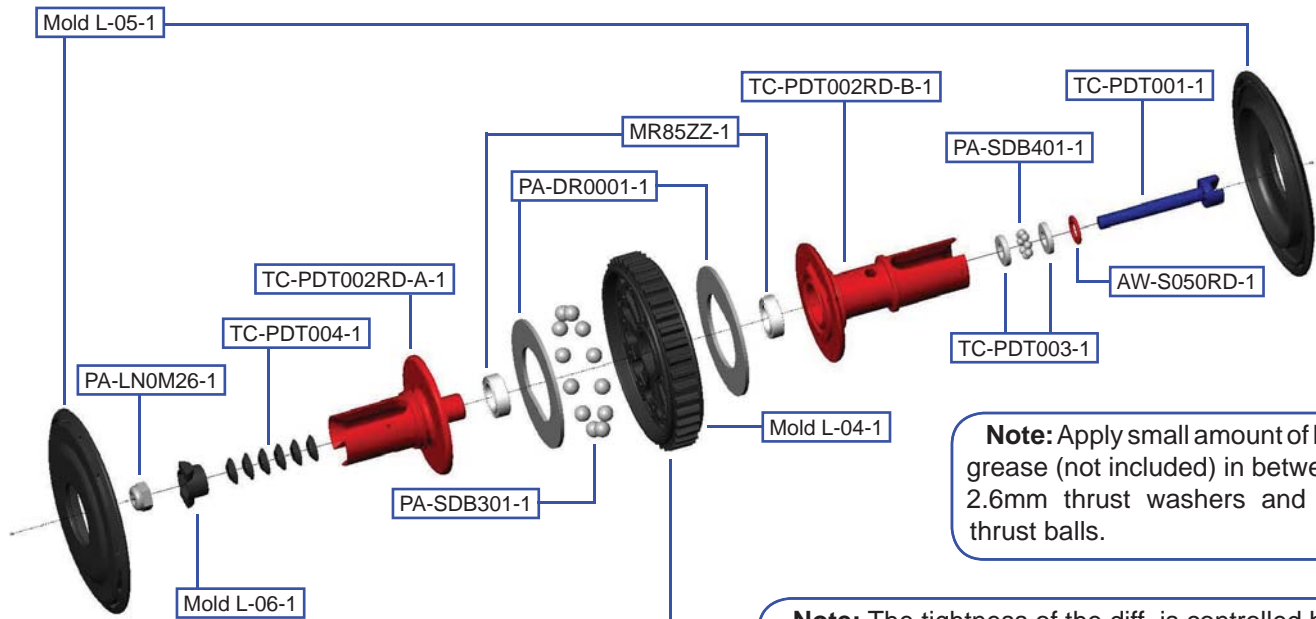
STEP 03



BAG A	PA-101215-C-1	12 x 0.3mm Shim	x 2
	Mold L-01-1	Bearing Cam	x 2

DIFFERENTIAL (Rubber Asphalt Edition - Make 1; Foam Carpet Edition - Make 2)

STEP 04

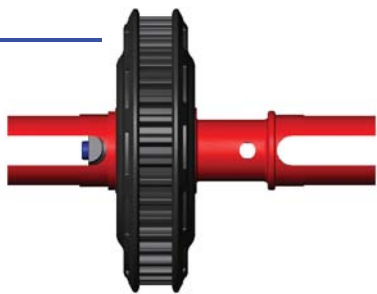


Note: Apply small amount of black grease (not included) in between the 2.6mm thrust washers and at the thrust balls.

Note: The tightness of the diff. is controlled by the diff. screw. It should be adjusted according to driving style and track condition.

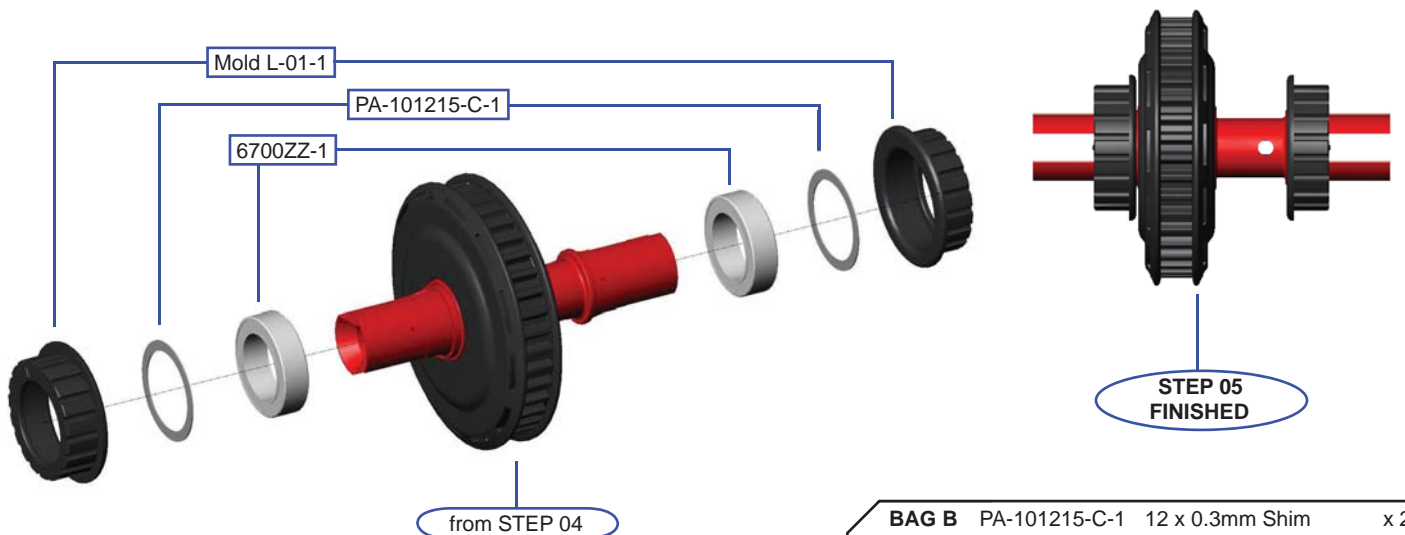
Note: Apply small amount of diff. grease (not included) in between the diff. rings and at diff. balls.

STEP 04 FINISHED



BAG B			
Mold L-04-1	40T Diff Pulley		x 1
Mold L-05-1	40T Flange/Dust Cover		x 2
Mold L-06-1	Differential Nut Retainer		x 1
PA-DR0001-1	Diff. Ring		x 2
PA-LN0M26-1	M2.6 Locknut		x 1
PA-SDB301-1	3mm Diff. Balls		x 12
PA-SDB401-1	Thrust Balls		x 8
TC-PDT001-1	M2.6 Diff. Screw		x 1
TC-PDT002RD-A-1	Alloy Diff. Outdrive - A		x 1
TC-PDT002RD-B-1	Alloy Diff. Outdrive - B		x 1
TC-PDT003-1	2.6mm Thrust Washer		x 2
TC-PDT004-1	Diff. Cone Washers		x 6
AW-S050RD-1	3 x 5.5 x 0.5mm Collar		x 1
MR85ZZ-1	5 x 8 x 2.5mm Bearing		x 2

STEP 05



STEP 05 FINISHED

BAG B			
PA-101215-C-1	12 x 0.3mm Shim		x 2
Mold L-01-1	Bearing Cam		x 2
6700ZZ-1	10 x 15 x 4mm Bearing		x 2

CENTER DRIVE

STEP 06

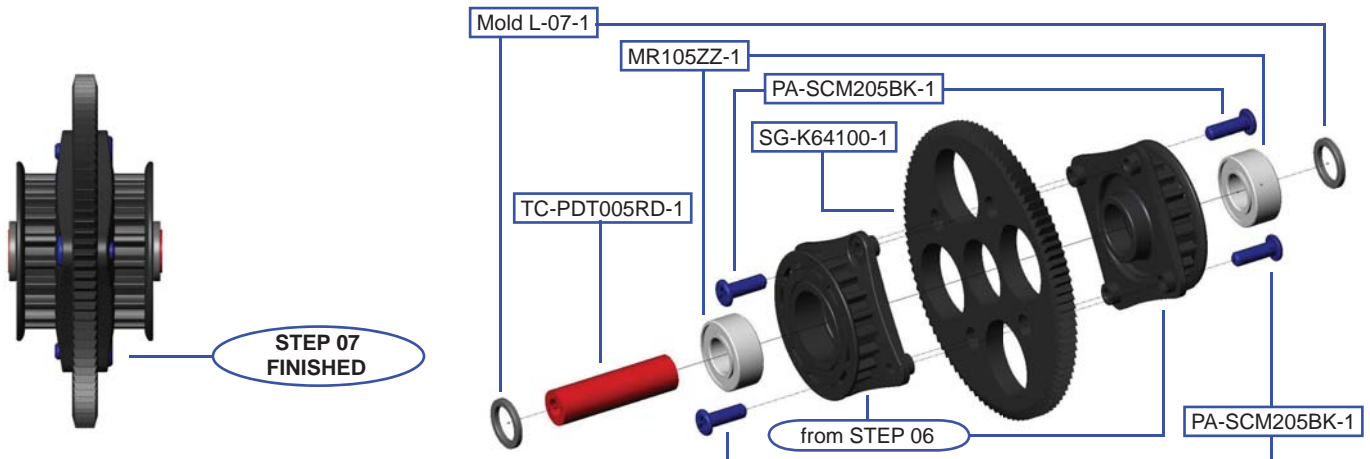


Note: Apply a small amount of instant glue in between the 20T pulley and 20T flange. Be careful not to let the glue go onto the teeth of the pulleys.

Make a total of 2 sets for this step.

BAG C	Part Name	Quantity
Mold L-02-1	20T Pulley	x 2
Mold L-03-1	20T Flange	x 2

STEP 07

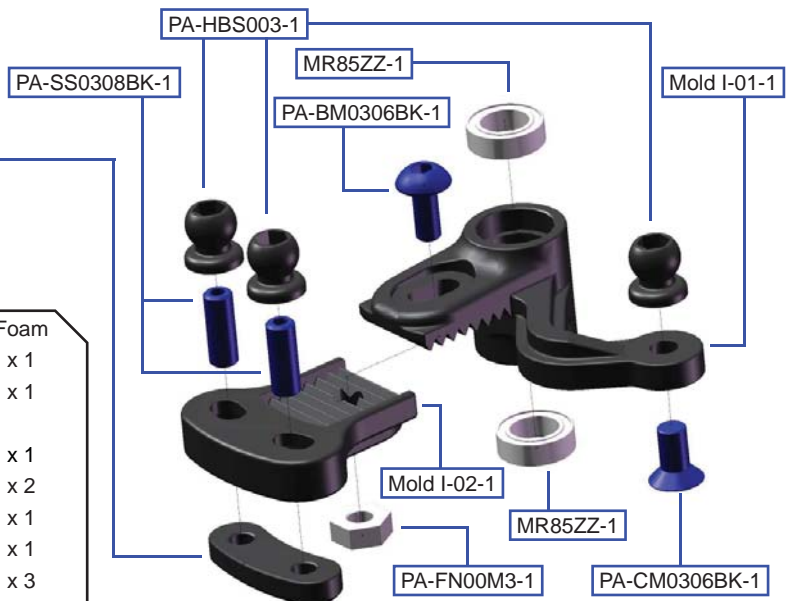
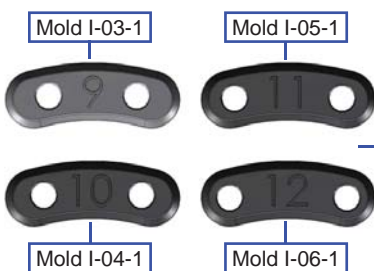


Note: Slightly ream out both sides of the four 3mm holes on the spur gear where the 20T pulleys go into, because plastic burr may exist at these locations. Use ONLY T.O.P. and Xenon spur gears. These are the ones that fit best with our 20T pulleys.

BAG C	Part Name	Quantity
Mold L-07-1	Center Shaft Spacer	x 2
MR105ZZ-1	5 x 10 x 4mm Bearing	x 2
SG-K64100-1	100T 64P Spur Gear	x 1
TC-PDT005RD-1	Centre Pulley Shaft	x 1
PA-SCM205BK-1	M2x5mm Chess Head Screws	x 4

STEERING CRANK

STEP 08



BAG C	Part Name	Rubber	Foam
Mold I-01-1	Bell Crank	x 1	x 1
Mold I-02-1	Bell Crank Extension	x 1	x 1
Mold I-04-1	BCE Insert #10	x 1	
Mold I-05-1	BCE Insert #11		x 1
MR85ZZ-1	5 x 8 x 2.5mm Bearing	x 2	x 2
PA-BM0306BK-1	M3x6mm Button Head Screw	x 1	x 1
PA-FN00M3-1	M3 Nut	x 1	x 1
PA-HBS003-1	5.3mm Ball (Steel)	x 3	x 3
PA-SS0308BK-1	M3x8mm Set Screw	x 2	x 2
PA-CM0306BK-1	M3x6mm Countersunk Screw	x 1	x 1

STEERING CRANK (cont'd)

STEP 08 cont'd



STEP 08
FINISHED

STEERING GEOMETRIES



Note: Radial Adjustments
This is our latest innovation of steering geometry adjustment. By using the following inserts, the steering width could be adjusted radially with minimal change in radial steering length. This would isolate the steering geometry change created by the steering length adjustment described in the Length Adjustments.

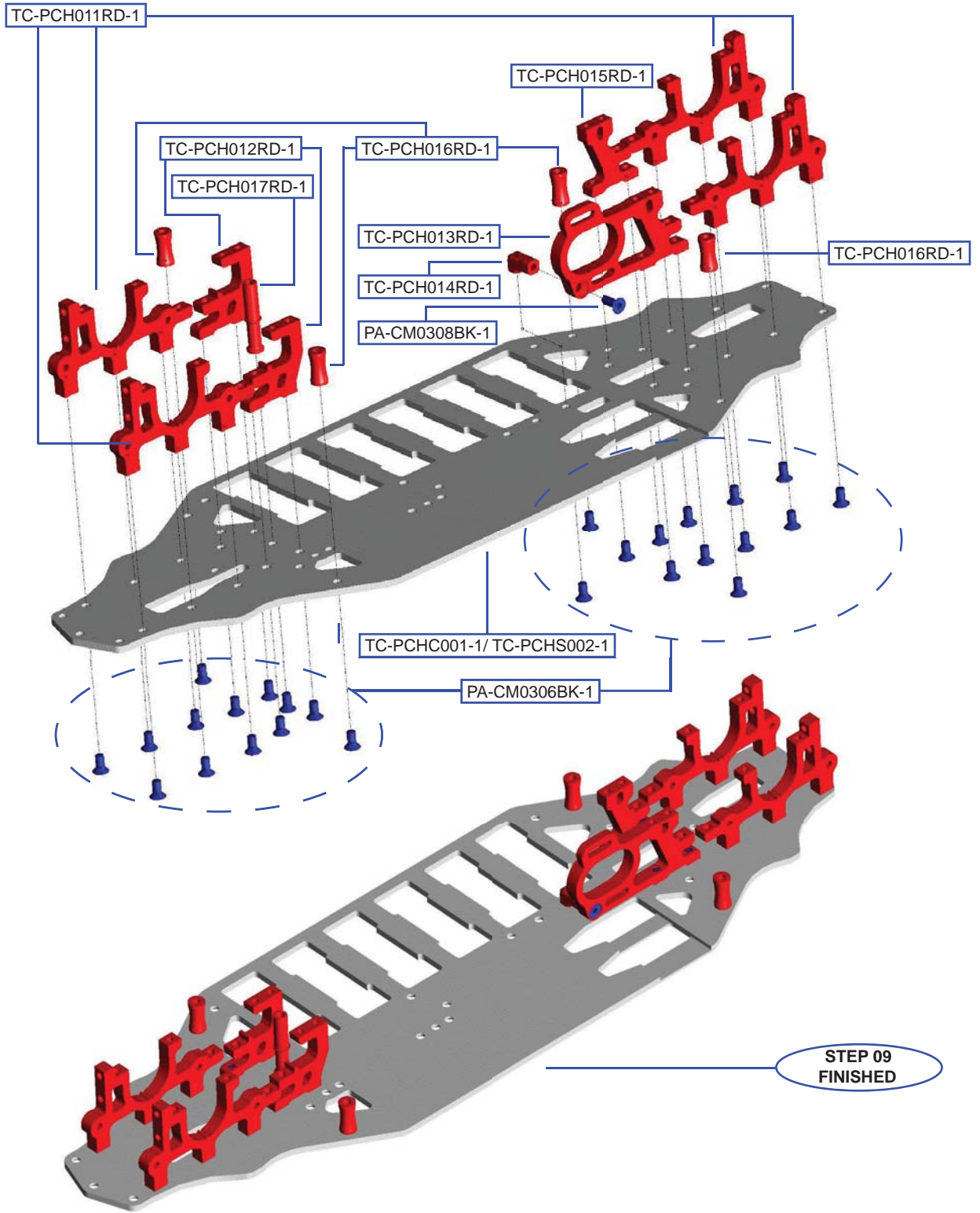
Note: Length Adjustments
There are a total of 3 steering length positions as shown above. Use Position C as the initial setup.



BAG C	Mold I-03-1	BCE Insert #9	x 1
	Mold I-04-1	BCE Insert #10	x 1
	Mold I-05-1	BCE Insert #11	x 1
	Mold I-06-1	BCE Insert #12	x 1

MAIN CHASSIS

STEP 09



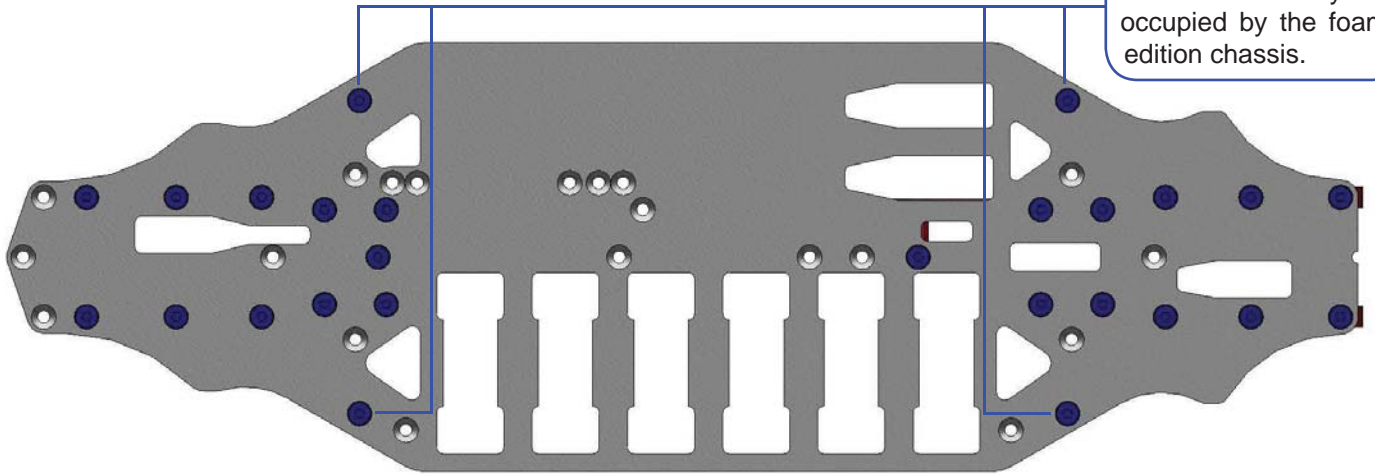
Note: Pay special attention to the parts table. Not all parts on the list are needed to complete this step, depending on whether your kit is rubber asphalt edition or foam carpet edition!!

BAG D	Part Number	Description	Rubber	Foam
	TC-PCHC001-1	6-cell Rubber Chassis (2.5mm)	x 1	
	TC-PCHS002-1	6-cell Foam Chassis (3.0mm)		x 1
	TC-PCH011RD-1	Bulkhead	x 4	x 4
	TC-PCH012RD-1	Steering Mount Plate	x 2	x 2
	TC-PCH013RD-1	Motor Plate	x 1	x 1
	TC-PCH014RD-1	Motor Plate Support	x 1	x 1
	TC-PCH015RD-1	Mount Plate	x 1	x 1
	TC-PCH017RD-1	Steering Post	x 1	x 1
	TC-PCH016RD-1	Standoff Post (12mm)		x 4
	PA-CM0306BK-1	M3x6mm Countersunk Screw	x 22	x 26
	PA-CM0308BK-1	M3x8mm Countersunk Screw	x 1	x 1

MAIN CHASSIS (con'd)

STEP 09 (con'd)

Note: These screw holes should only be occupied by the foam edition chassis.



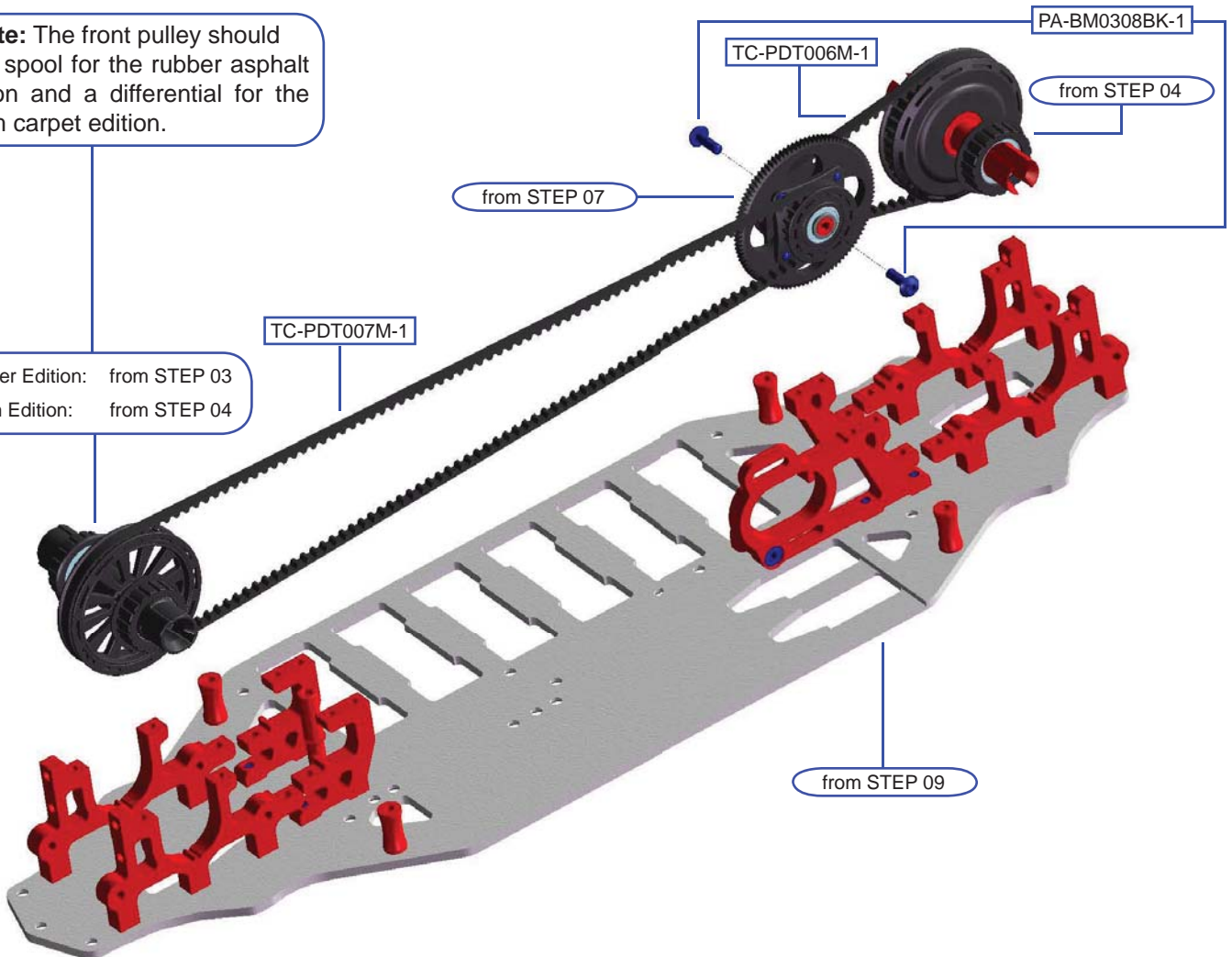
Note: To make sure all parts are assembled correctly, the above figure shows how the bottom of the chassis looks like and where the locations of the occupied screw holes should be.

TRANSMISSION

STEP 10

Note: The front pulley should be a spool for the rubber asphalt edition and a differential for the foam carpet edition.

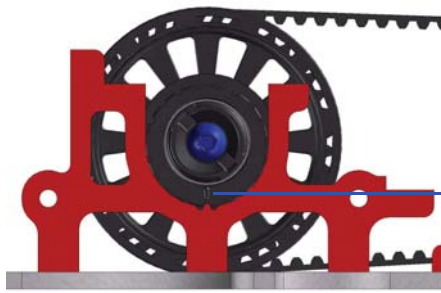
Rubber Edition: from STEP 03
Foam Edition: from STEP 04



BAG E	TC-PDT006M-1	189mm Rear Belt	x 1
	TC-PDT007M-1	516mm Front Belt	x 1
	PA-BM0308BK-1	M3x8mm Button Head Screw	x 2

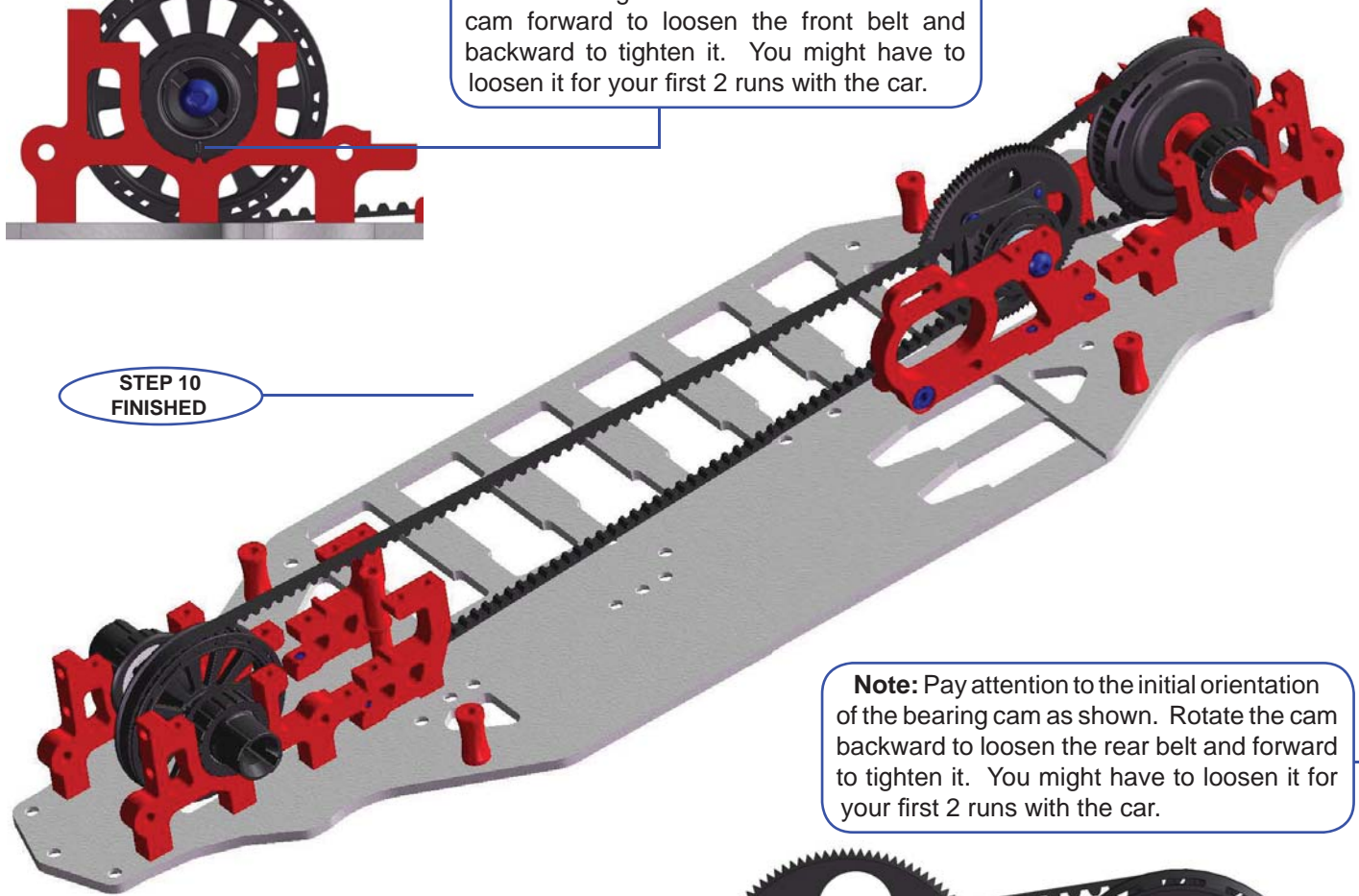
TRANSMISSION (con'd)

STEP 10 (con'd)



Note: Pay attention to the initial orientation of the bearing cam as shown. Rotate the cam forward to loosen the front belt and backward to tighten it. You might have to loosen it for your first 2 runs with the car.

STEP 10 FINISHED



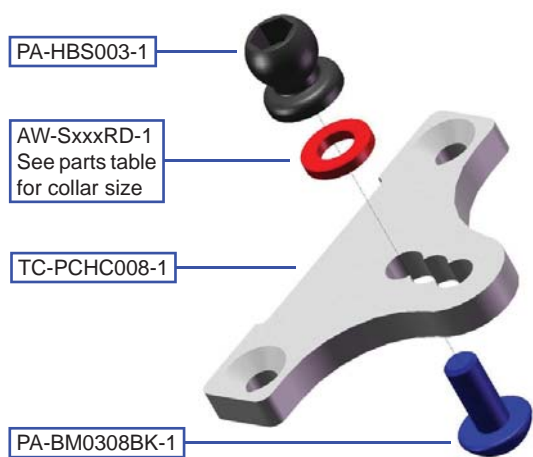
Note: Pay attention to the initial orientation of the bearing cam as shown. Rotate the cam backward to loosen the rear belt and forward to tighten it. You might have to loosen it for your first 2 runs with the car.



Note: Pay attention to the initial position of the center drive assembly. It is set at its lowest. The position should be heightened when using a larger spur gear to avoid touching the main chassis.

UPPER CHASSIS

STEP 11 (Make 2 x Front & 2 x Rear)



- PA-HBS003-1
- AW-SxxxRD-1
See parts table for collar size
- TC-PCHC008-1
- PA-BM0308BK-1



Note: This is the initial setup for the camber ball stud position of the rubber asphalt edition. Refer to the foam standard setup in Page 30 for the foam carpet edition.

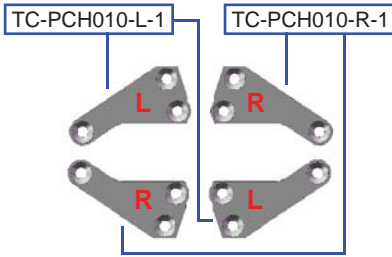
STEP 11F, R FINISHED

			Rubber		Foam	
			F	R	F	R
BAG F	TC-PCHC008-1	Camber Link Plate (2.5mm)	x 2	x 2	x 2	x 2
	AW-S250RD-1	3 x 5.5 x 2.5mm Collar	x 2			
	AW-S150RD-1	3 x 5.5 x 1.5mm Collar		x 2		
	AW-S200RD-1	3 x 5.5 x 2.0mm Collar			x 2	
	AW-S200RD-1	3 x 5.5 x 2.0mm Collar				x 2
	PA-HBS003-1	5.3mm Ball (Steel)	x 2	x 2	x 2	x 2
	PA-BM0308BK-1	M3x8mm Button Head Screw	x 2	x 2	x 2	x 2

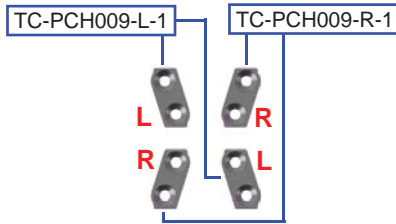
UPPER CHASSIS (con'd)

STEP 12

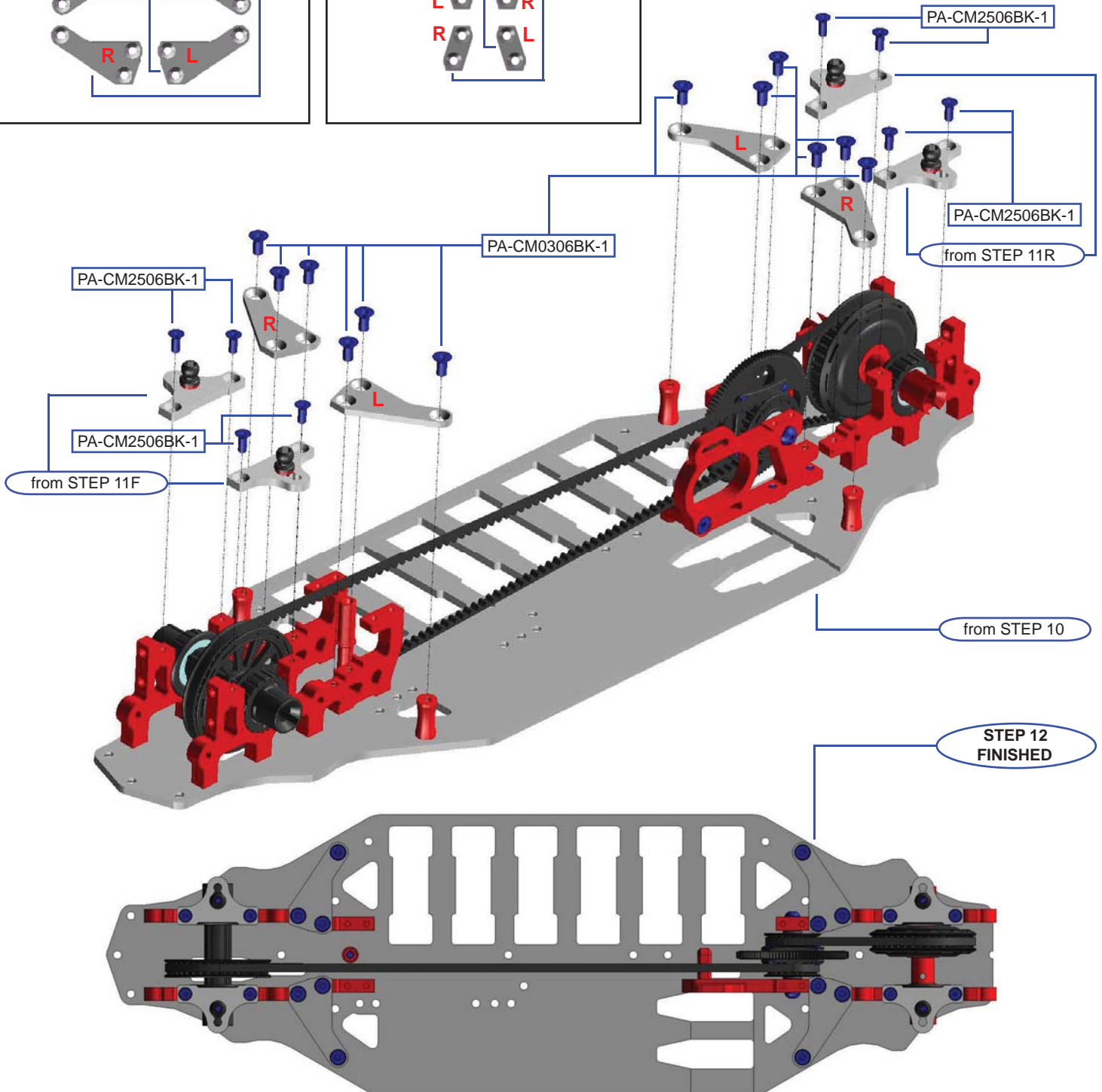
Note: Wings for Foam Carpet Edition



Note: Wings for Rubber Asphalt Edition



Note: The following figure shows only the foam carpet wing installation. Follow the orientations shown on the boxes on your left for the wing installation for the rubber asphalt and foam carpet edition, respectively.

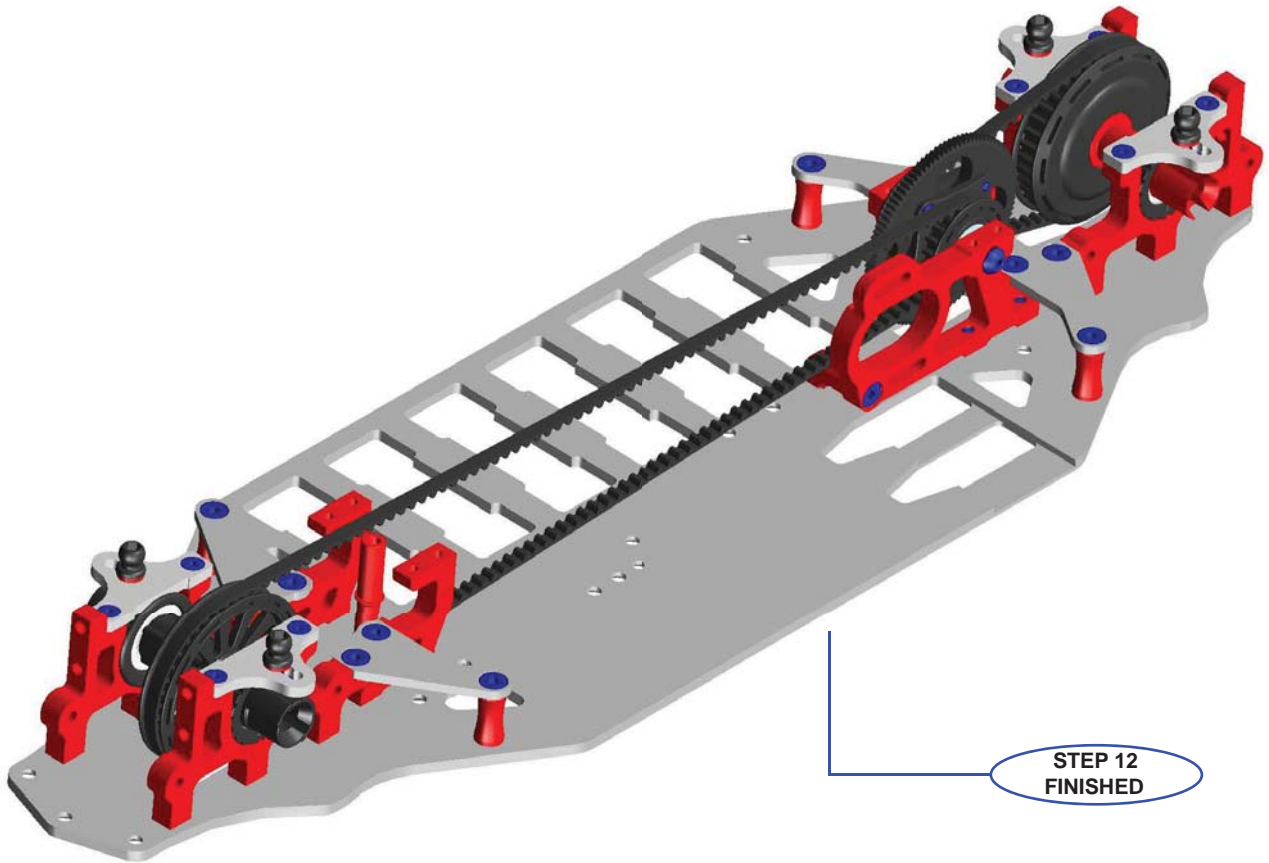


Note: Pay special attention to the parts table. Not all parts on the list are needed to complete this step, depending on whether your kit is rubber asphalt edition or foam carpet edition.

		Rubber	Foam
BAG F	TC-PCH009-L-1	Rubber Wing L Soft (2.0mm)	x 2
	TC-PCH009-R-1	Rubber Wing R Soft (2.0mm)	x 2
	TC-PCH010-L-1	Foam Wing L Hard(2.0mm)	x 2
	TC-PCH010-R-1	Foam Wing R Hard (2.0mm)	x 2
	PA-CM0306BK-1	M3x6mm Countersunk Screw	x 8 x 12
	PA-CM2506BK-1	M2.5x6mm Countersunk Screw	x 8 x 8

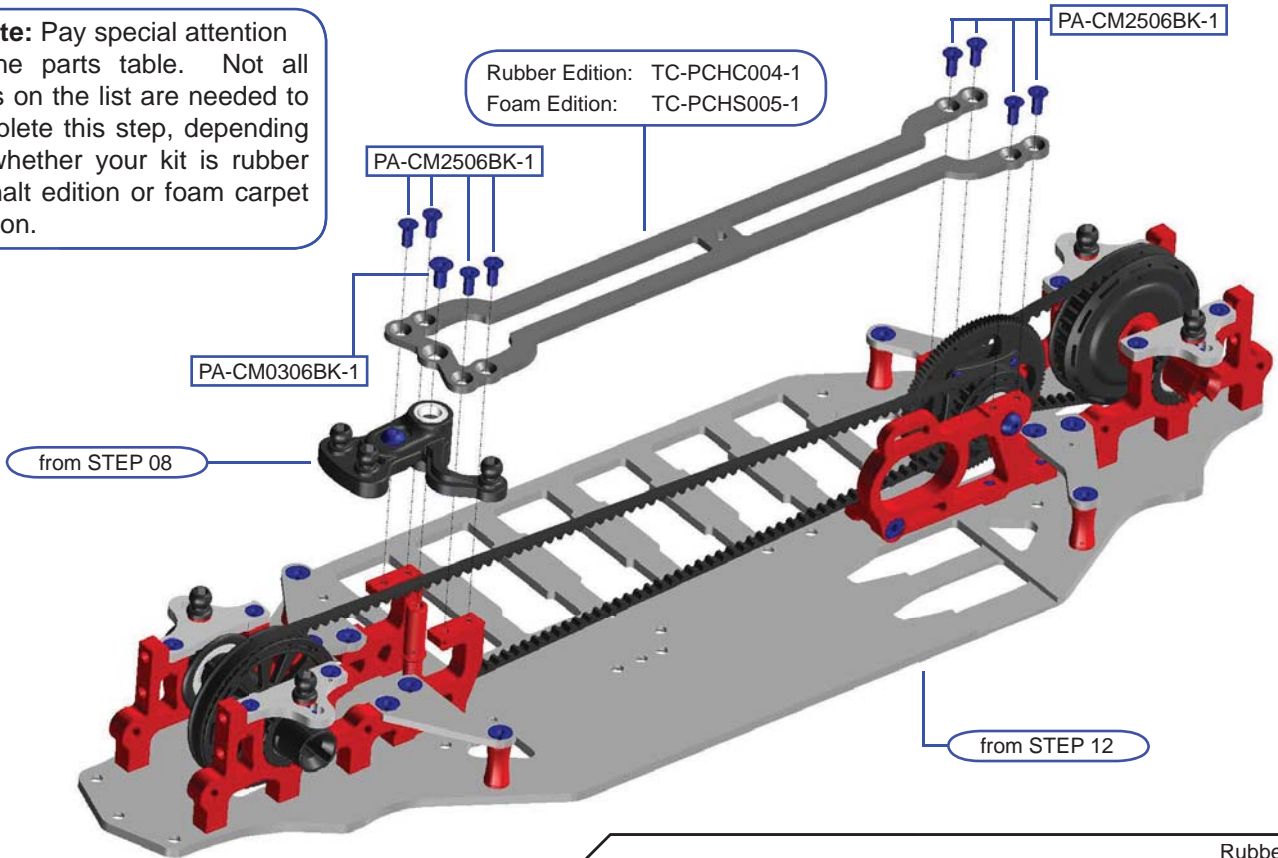
UPPER CHASSIS (con'd)

STEP 12 (con'd)



STEP 13

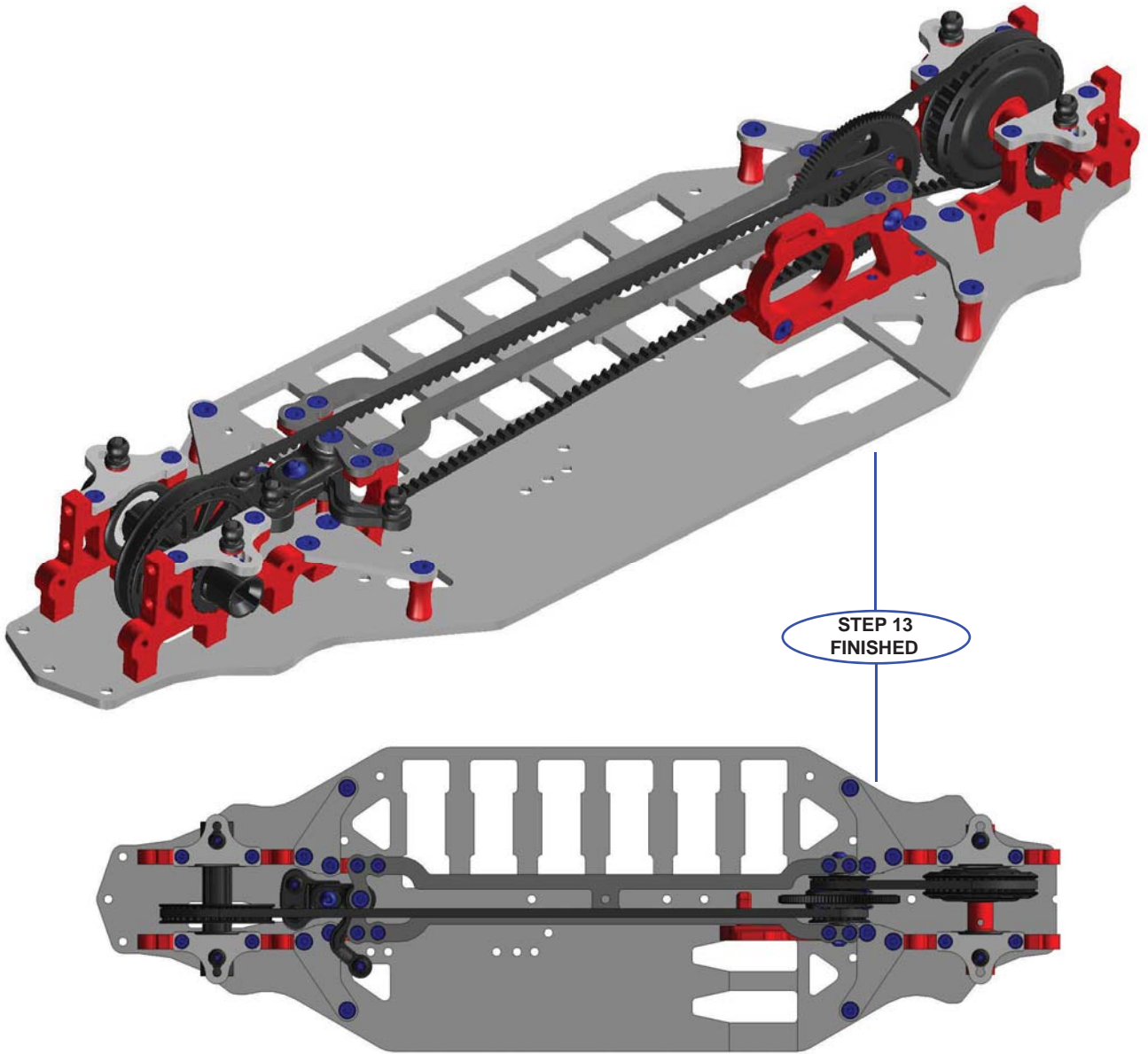
Note: Pay special attention to the parts table. Not all parts on the list are needed to complete this step, depending on whether your kit is rubber asphalt edition or foam carpet edition.



BAG F	TC-PCHC004-1	Rubber Top Deck (2.0mm) S	Rubber	Foam
	TC-PCHS005-1	Foam Top Deck (2.5mm) H		x 1
	PA-CM2506BK-1	M2.5x6mm Countersunk Screw	x 8	x 8
	PA-CM0306BK-1	M3x6mm Countersunk Screw	x 1	x 1

UPPER CHASSIS (con'd)

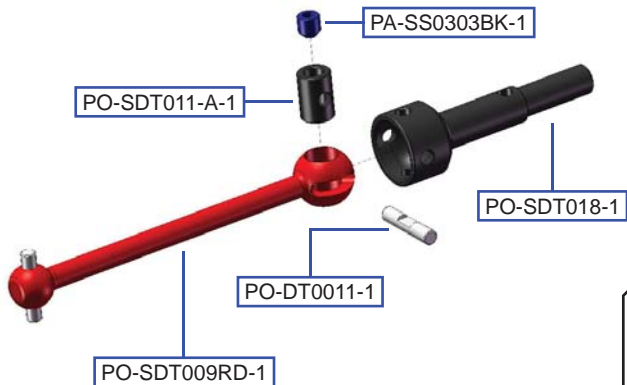
STEP 13 (con'd)



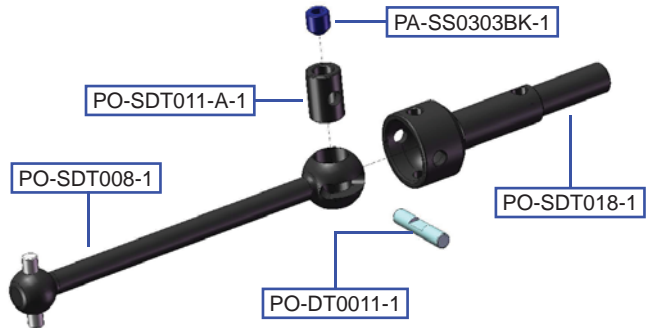
UNIVERSALS

STEP 14

STEP 14A: Make 4 alloy universals for foam edition and 2 for rubber edition.



STEP 14B: Make 2 steel universals for rubber edition.



BAG G	Part Name	Material	Rubber	Foam
PO-SDT009RD-1	46mm Universal Bone (Alloy)	Alloy	x 2	x 4
PO-SDT008-1	46mm Universal Bone (Steel)	Steel	x 2	
PO-SDT018-1	Universal Axle		x 4	x 4
PO-SDT011-A-1	Universal Insert		x 4	x 4
PO-DT0011-1	2 x 10mm Universal Pin		x 4	x 4
PA-SS0303BK-1	M3x3mm Set Screw		x 4	x 4

REAR HUB CARRIER ASSEMBLY

STEP 15 (Make 2)

Note: Use this screw hole instead for the setup of foam carpet edition, when installing PA-HBS003-1.

			Rubber	Foam
BAG G	Mold G-02-1	Rear Hub Carrier	x 2	x 2
	PO-DT1004RD-A-1	5.2mm Wheel Hub	x 2	x 2
	PO-DT1004RD-B-1	2 x 10mm Wheel Hub Pin	x 2	x 2
	PO-DT1004RD-C-1	M2 Wheel Hub Screw	x 2	x 2
	AW-S250RD-1	3 x 5.5 x 2.5mm Collar	x 2	
	AW-S200RD-1	3 x 5.5 x 2.0mm Collar		x 2
	AW-S200RD-1	3 x 5.5 x 2.0mm Collar		x 2
	MR105ZZ-1	5 x 10 x 4mm Bearing	x 4	x 4
	PA-HBS003-1	5.3mm Ball Stud	x 2	x 2
	PO-DT0006-1	Dog Bone C Drive	x 2	x 2
	PA-SS0310BK-1	M3x10mm Set Screw	x 2	
	PA-SS0312BK-1	M3x12mm Set Screw		x 2

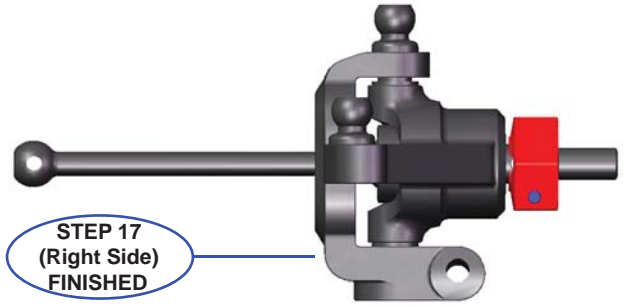
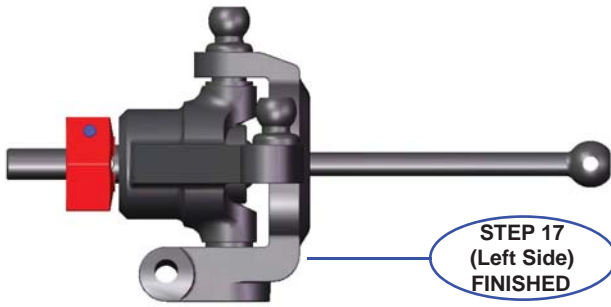
STEERING BLOCK ASSEMBLY

STEP 16A (Make 2 for Rubber Asphalt Edition ONLY)

			Rubber	Foam
BAG G	Mold G-01-1	Steering Block	x 2	
	PO-DT1004RD-A-1	5.2mm Wheel Hub	x 2	
	PO-DT1004RD-B-1	2 x 10mm Wheel Hub Pin	x 2	
	PO-DT1004RD-C-1	M2 Wheel Hub Screw	x 2	
	MR105ZZ-1	5 x 10 x 4mm Bearing	x 4	

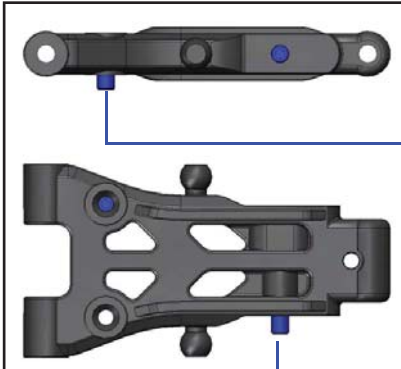
STEERING BLOCK ASSEMBLY (cont'd)

STEP 17 (cont'd)



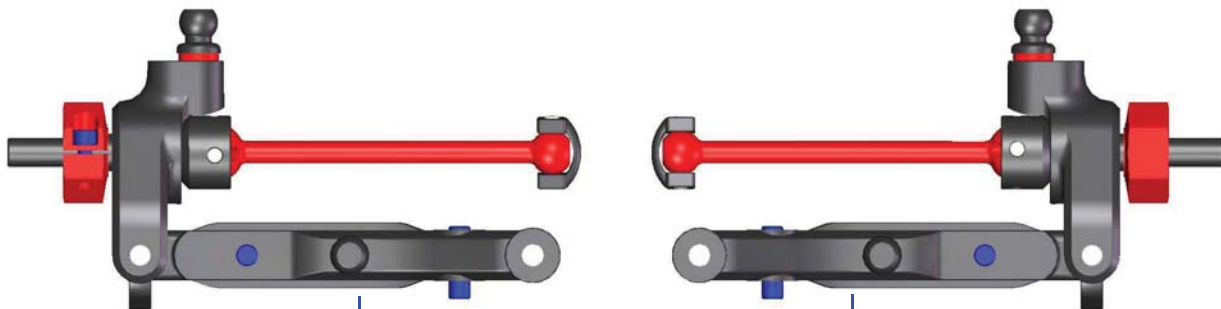
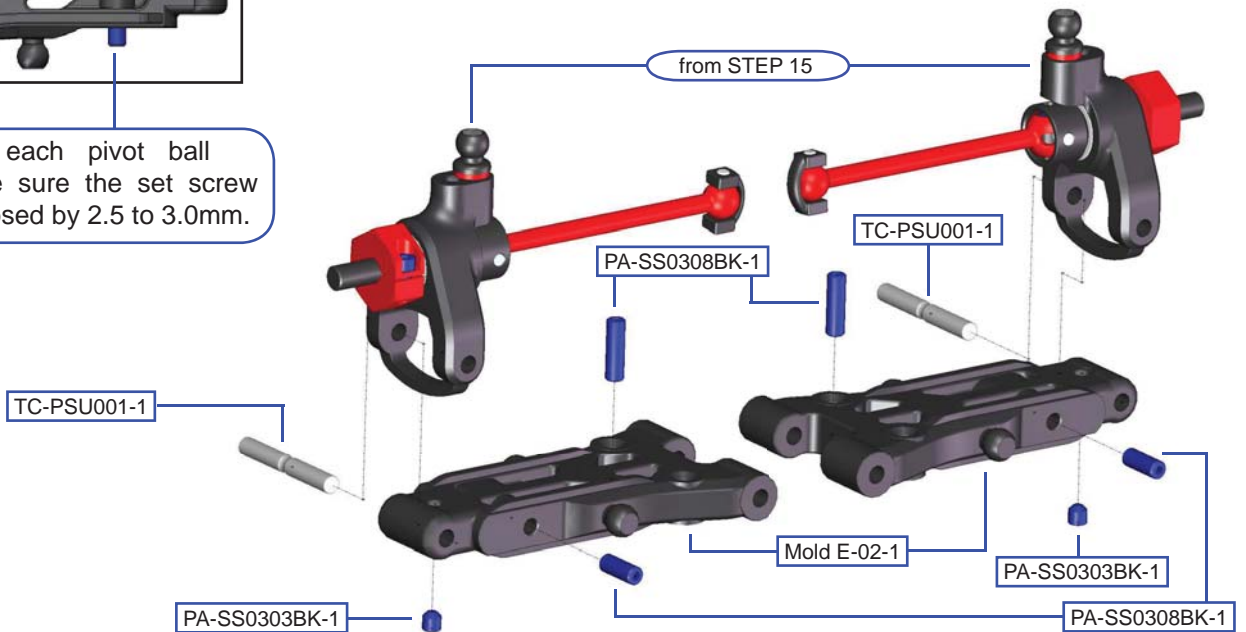
REAR SUSPENSION ASSEMBLY

STEP 18



Note: Downstop (droop) level should be adjusted based on your personal setup preference or according to the setup sheets on Page 29 for Rubber Asphalt Edition or Page 30 for Foam Carpet Edition.

Note: For each pivot ball location make sure the set screw thread is exposed by 2.5 to 3.0mm.

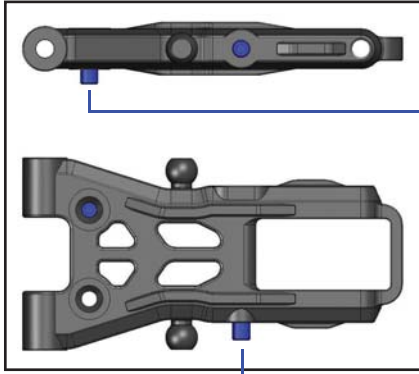


STEP 18 FINISHED

BAG H	Part Name	Quantity
	Mold E-02-1	Rear Suspension Arm x 2
	TC-PSU001-1	3mm x 23mm Hinge Pin x 2
	PA-SS0303BK-1	M3x3mm Set Screw x 2
	PA-SS0308BK-1	M3x8mm Set Screw x 4

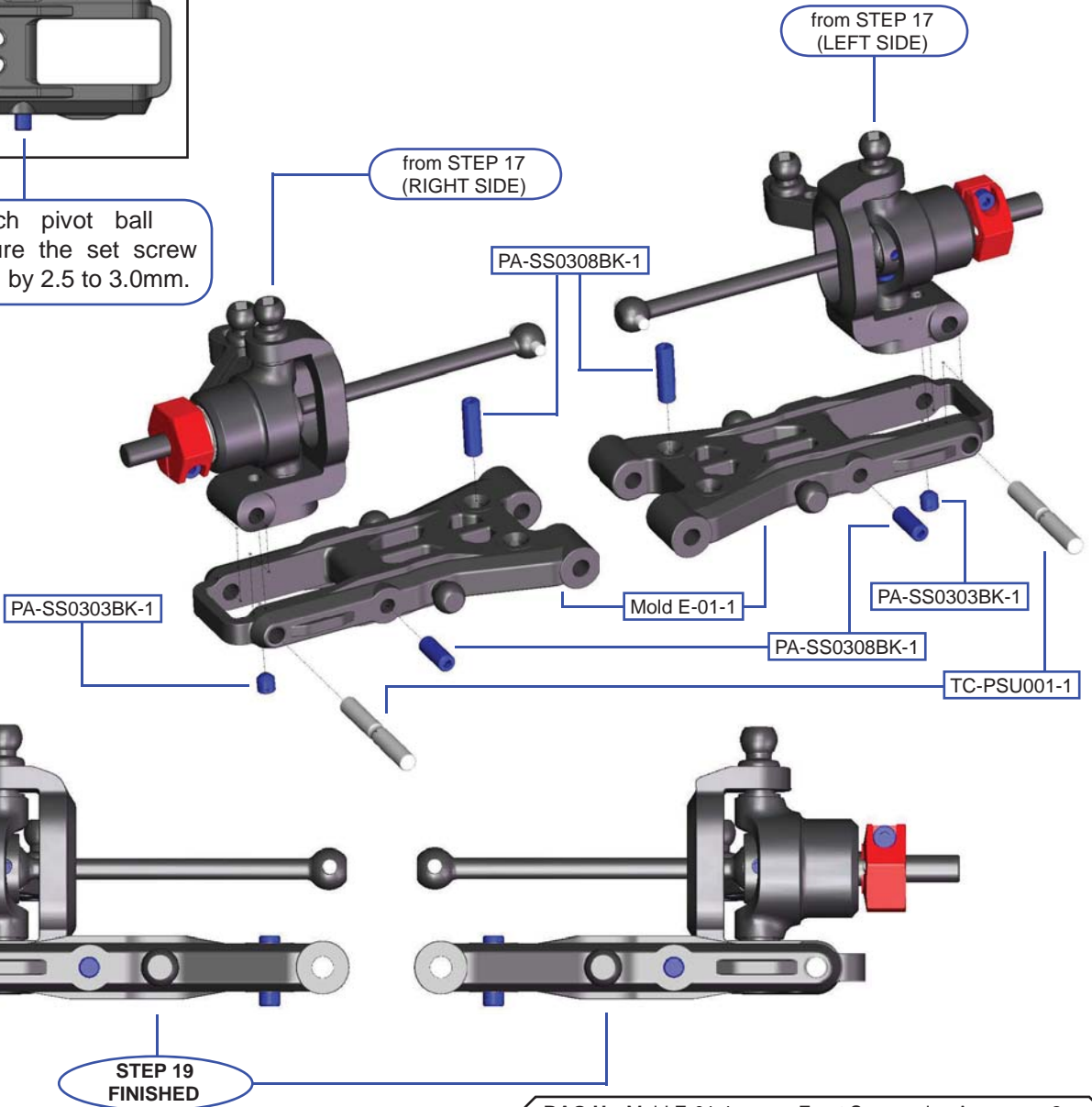
FRONT SUSPENSION ASSEMBLY

STEP 19



Note: Downstop (droop) level should be adjusted based on your personal setup preference or according to the setup sheets on Page 29 for Rubber Asphalt Edition or Page 30 for Foam Carpet Edition.

Note: For each pivot ball location make sure the set screw thread is exposed by 2.5 to 3.0mm.

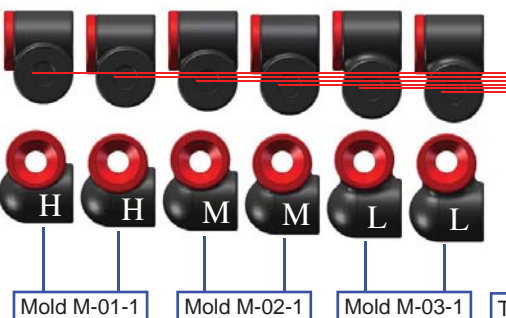


STEP 19 FINISHED

BAG H	Part Name	Quantity
	Mold E-01-1	Front Suspension Arm x 2
	TC-PSU001-1	3mm x 23mm Hinge Pin x 2
	PA-SS0303BK-1	M3x3mm Set Screw x 2
	PA-SS0308BK-1	M3x8mm Set Screw x 4

SUSPENSION MOUNT

STEP 20



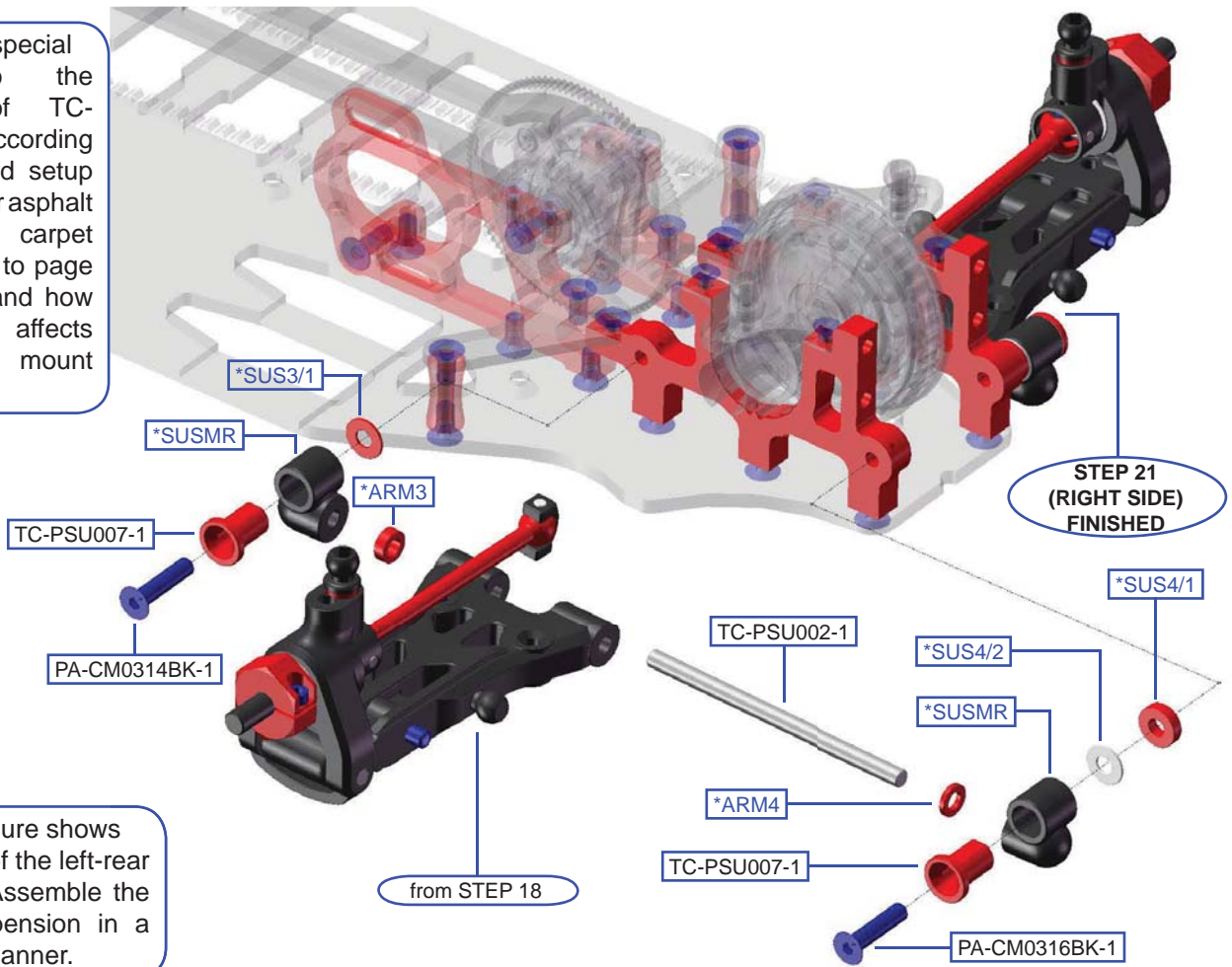
Note: Pay attention to the orientation of the suspension mount inserts based on your setup. The screw hole is vertically offset by 0.25mm.

Note: The alloy suspension mount insert is off-centered. To rotate the insert up side down would lower or heighten the suspension mount by 0.5mm. In combination with the 3 plastic suspension mounts with increment of 1.0mm, it would give you 6 steps of suspension mount height adjustments with 0.5mm increments.

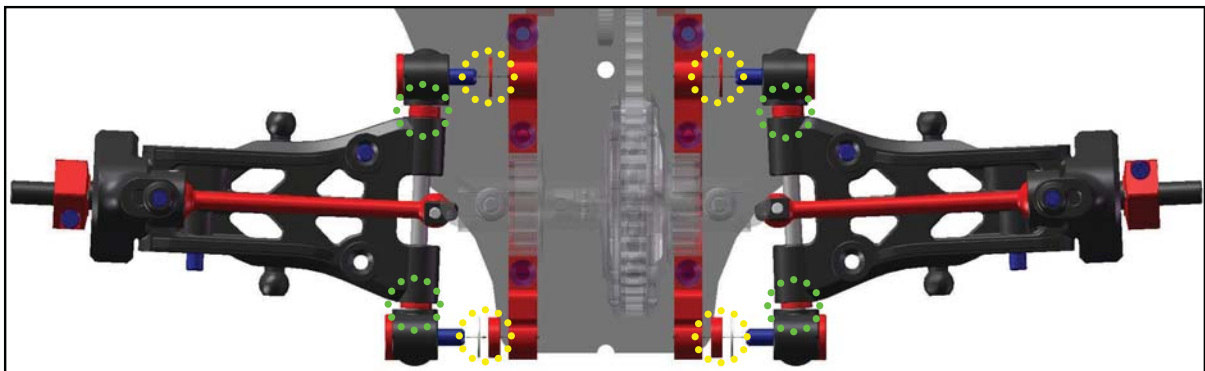
REAR SUSPENSION

STEP 21

Note: Pay special attention to the orientation of TC-PSU007 according to the standard setup sheet for rubber asphalt and foam carpet edition. Refer to page 15 to understand how the orientation affects suspension mount height.



Note: This figure shows the assembly of the left-rear suspension. Assemble the right-rear suspension in a symmetrical manner.



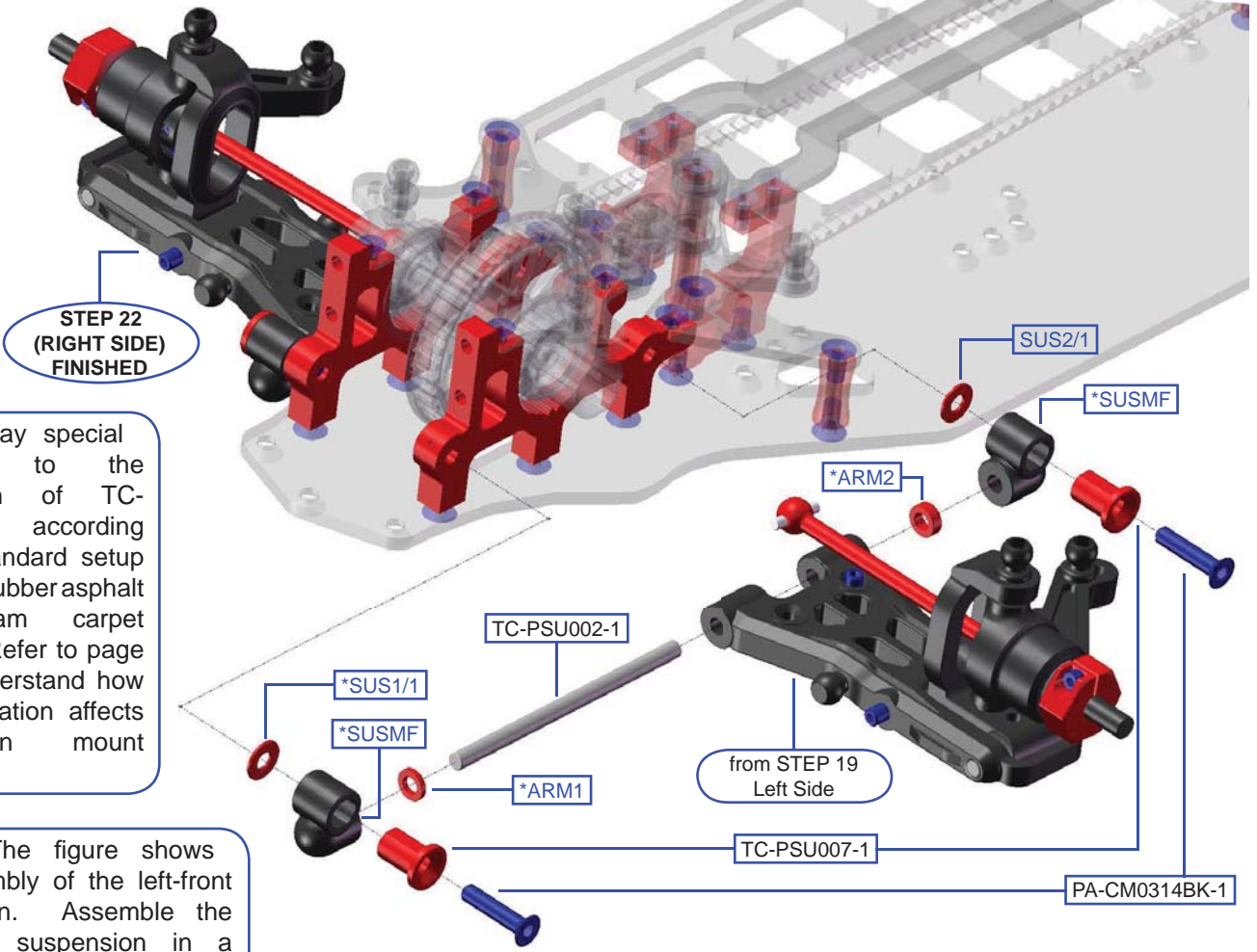
Note:

1. The thicknesses and positions of the large spacers determines tread width and toe angle (marked by "yellow dots").
 2. The thicknesses and positions of the small spacers determine the wheel base in the forward/rearward direction (marked by "green dots").
- *Refer to the setup sheets for more details.

BAG H	*SUSMR		Rubber	Foam
	Mold M-02-1	Suspension Mount M - MRC	x 4	
	Mold M-03-1	Suspension Mount L - LRC		x 4
	TC-PSU007-1	Suspension Mount Insert	x 4	x 4
	TC-PSU002-1	3mm x 51mm Hinge Pin	x 2	x 2
	*SUS3/1	AW-M100RD-1	Large 3mm Spacer (t = 1.0mm)	x 2
		AW-M100RD-1	Large 3mm Spacer (t = 1.0mm)	x 2
	*SUS4/1	AW-M300RD-1	Large 3mm Spacer (t = 3.0mm)	x 2
		AW-M300RD-1	Large 3mm Spacer (t = 3.0mm)	x 2
	*SUS4/2	AW-M040SV-1	Large 3mm Spacer (t = 0.4mm)	x 2
		AW-M040SV-1	Large 3mm Spacer (t = 0.4mm)	x 2
	*ARM3	AW-S150RD-1	3 x 5.5 x 1.5mm Collar	x 2
		AW-S200RD-1	3 x 5.5 x 2.0mm Collar	x 2
	*ARM4	AW-S150RD-1	3 x 5.5 x 1.5mm Collar	x 2
		PA-CM0314BK-1	M3x14mm Countersunk Screw	x 2
		PA-CM0316BK-1	M3x16mm Countersunk Screw	x 2

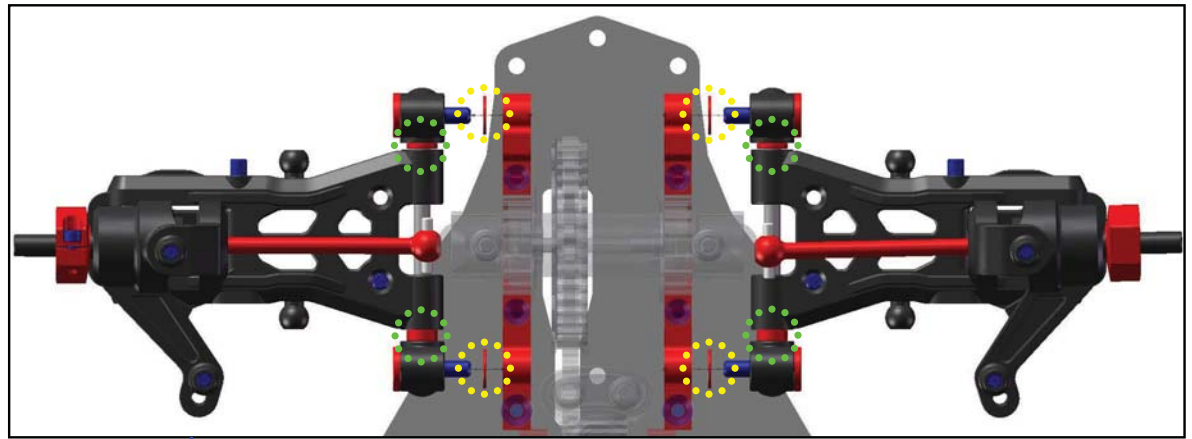
FRONT SUSPENSION

STEP 22



Note: Pay special attention to the orientation of TC-PSU007 according to the standard setup sheet for rubber asphalt and foam carpet edition. Refer to page 15 to understand how the orientation affects suspension mount height.

Note: The figure shows the assembly of the left-front suspension. Assemble the right-front suspension in a symmetrical manner.

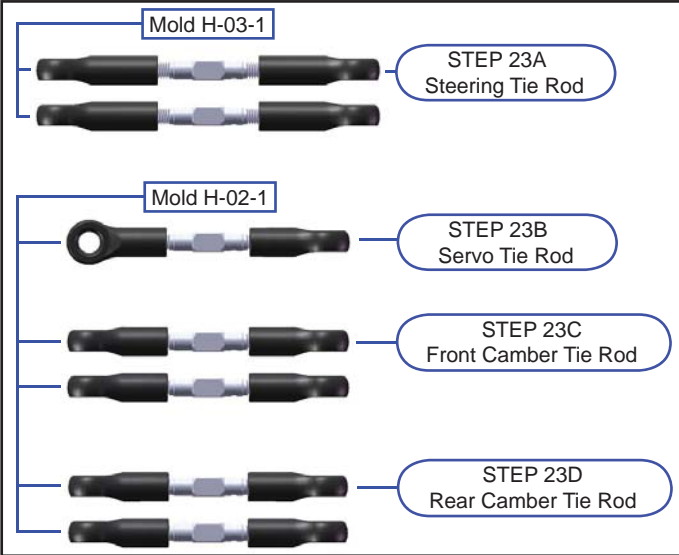


Note:
 1. The thicknesses and positions of the large spacers determines tread width and toe angle (marked by "yellow dots").
 2. The thicknesses and positions of the small spacers determine the wheel base in the forward/rearward direction (marked by "green dots").
 *Refer to the setup sheet for more details.

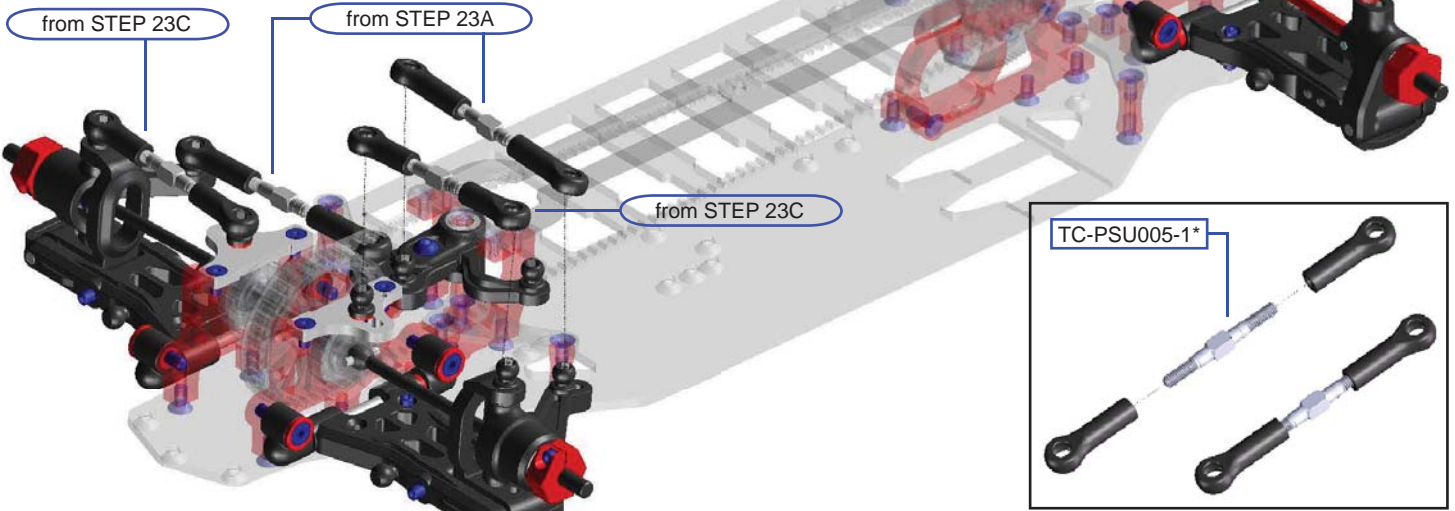
BAG H			Rubber	Foam
*SUSMF	Mold M-02-1	Suspension Mount B - MRC	x 4	
	Mold M-02-1	Suspension Mount B - MRC		x 4
	TC-PSU007-1	Suspension Mount Insert	x 4	x 4
	TC-PSU002-1	3mm x 51mm Hinge Pin	x 2	x 2
*SUS1/1	AW-M100RD-1	Large 3mm Spacer (t = 1.0mm)		x 2
	AW-M080SV-1	Large 3mm Spacer (t = 0.8mm)	x 2	
*SUS2/1	AW-M100RD-1	Large 3mm Spacer (t = 1.0mm)		x 2
*ARM1	AW-S150RD-1	3 x 5.5 x 1.5mm Collar	x 2	
	AW-S150RD-1	3 x 5.5 x 1.5mm Collar		x 2
*ARM2	AW-S150RD-1	3 x 5.5 x 1.5mm Collar	x 2	
	AW-S150RD-1	3 x 5.5 x 1.5mm Collar		x 2
	PA-CM0314BK-1	M3x14mm Countersunk Screw	x 4	x 4
	PA-CM0316BK-1	M3x16mm Countersunk Screw		

LINKAGE

STEP 23



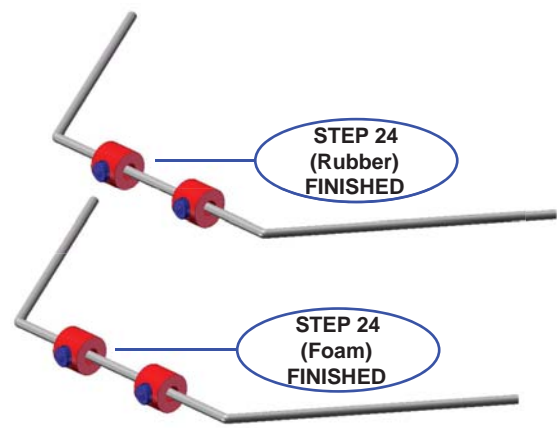
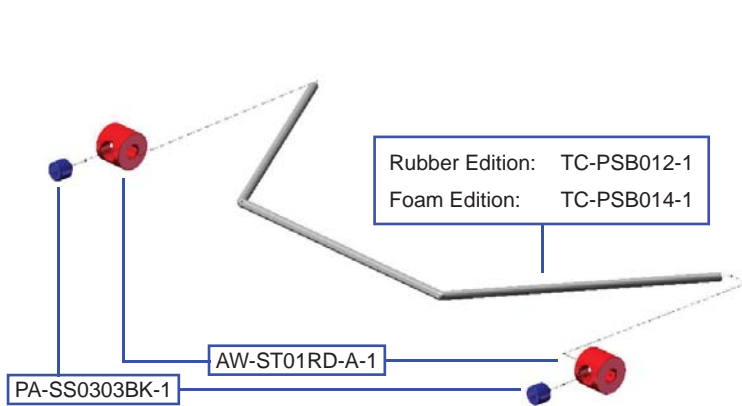
Note: You don't have to adjust the tie rod lengths at this point until by the end of the instruction manual according to page 26 for STEP 23B(servo tie rod adjustment) and page 28-29 for STEP 23A, C and D (camber and toe angle adjustments).



BAG I	Mold H-02-1	Ball Cup - 14.5mm	x 10
	Mold H-03-1	Ball Cup - 18.5mm	x 4
	TC-PSU005-1	3mm x 30mm Tie Rod (Steel)	x 7

STABILIZER BAR

STEP 24

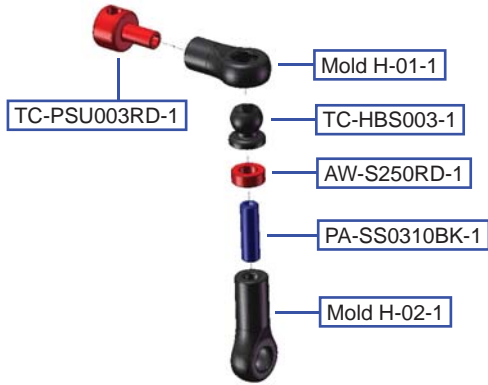


Note: Make 2 sets of stabilizer bar assembly (1.2mm) for rubber version and 1 set of (1.4mm) for foam version.

BAG I			Rubber	Foam
			x	x
	TC-PSB012-1	1.2mm Stabilizer Bar	x 2	
	TC-PSB014-1	1.4mm Stabilizer Bar		x 1
	AW-ST01RD-A-1	Aluminum Stopper (Red)	x 4	x 2
	PA-SS0303BK-1	M3x3mm Set Screw	x 4	x 2

STABILIZER LINK

STEP 25 (Rubber Asphalt Edition - Make 4; Foam Carpet Edition - Make 2)

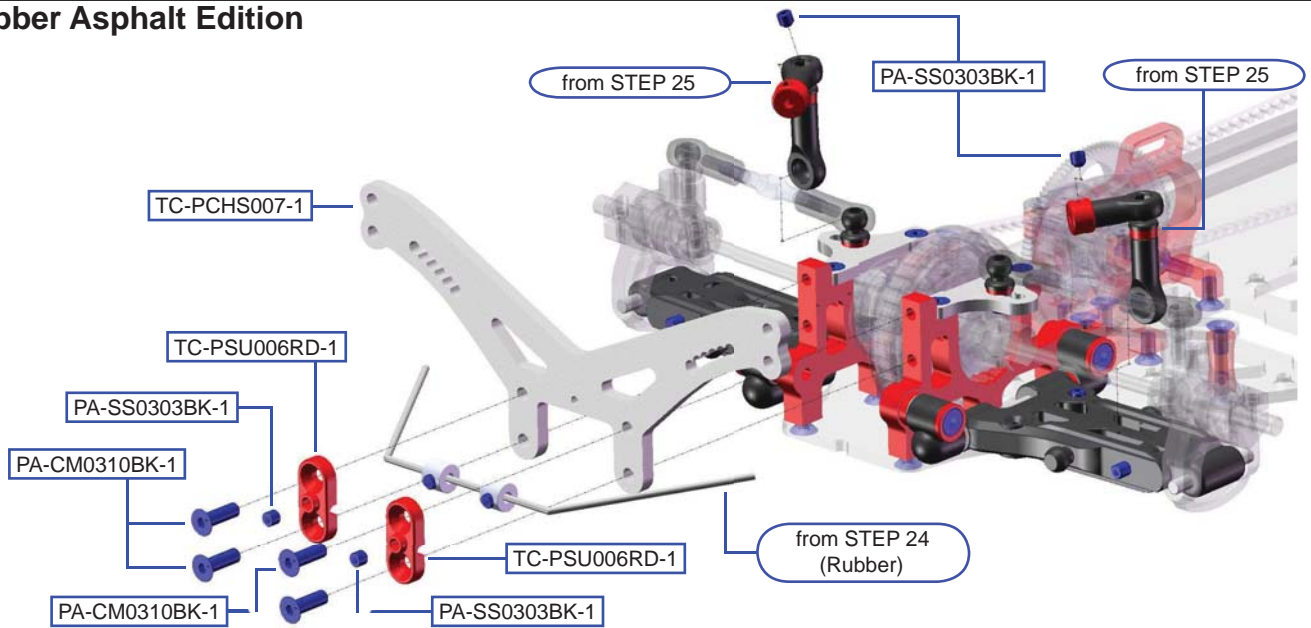


			Rubber	Foam
BAG I	Mold H-01-1	Ball Cup - 10.5mm	x 4	x 2
	Mold H-02-1	Ball Cup - 14.5mm	x 4	x 2
	TC-PSU003RD-1	Threaded Sway Bar Adjuster	x 4	x 2
	PA-HBS003-1	5.3mm Ball (Steel)	x 4	x 2
	AW-S250RD-1	3 x 5.5 x 2.5mm Collar (Red)	x 4	x 2
	PA-SS0310BK-1	M3x10mm Set Screw	x 4	x 2

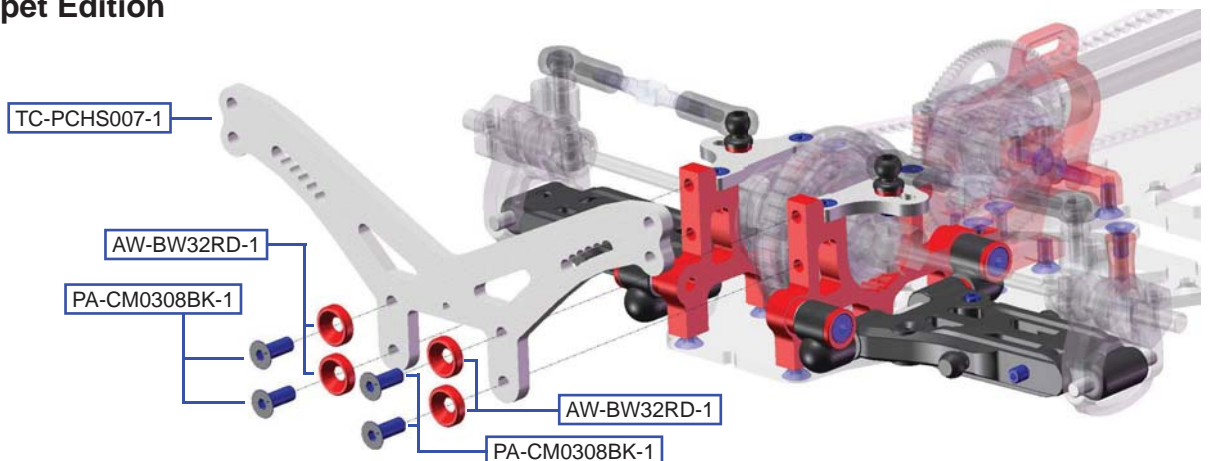
SHOCK TOWERS (REAR)

STEP 26

Rubber Asphalt Edition



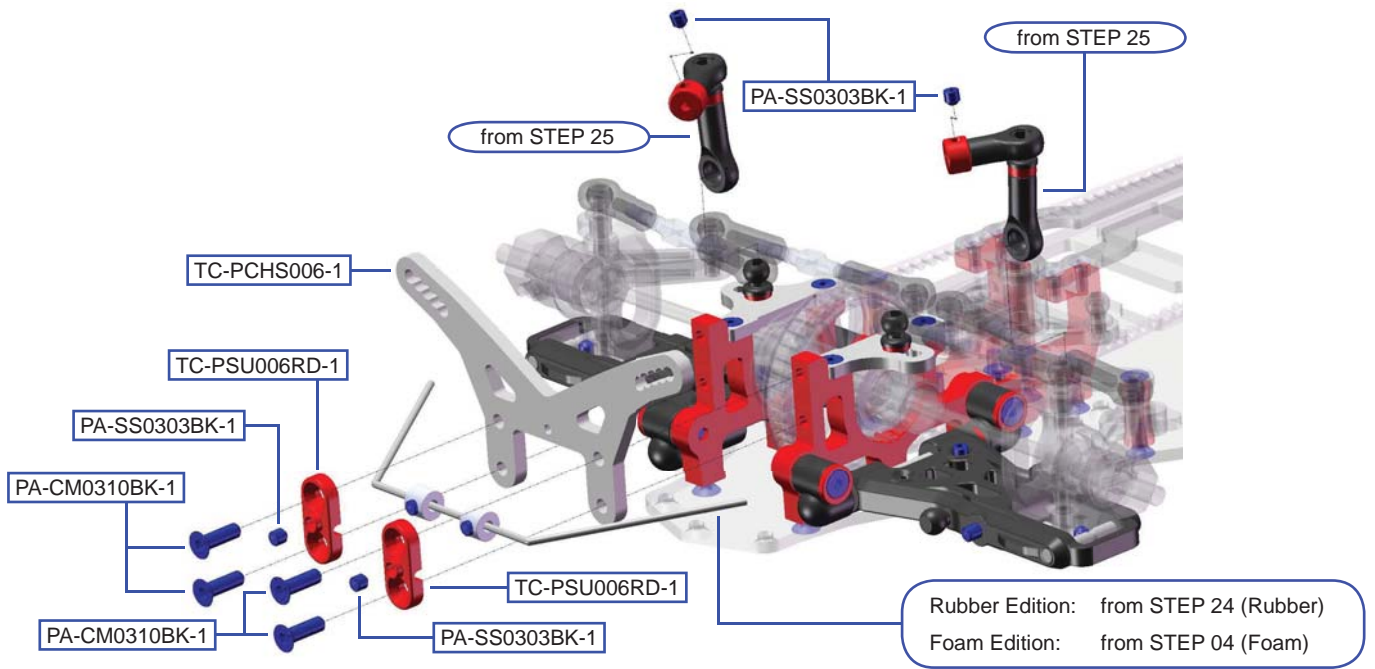
Foam Carpet Edition



			Rubber	Foam
BAG I	TC-PCHS007-1	Rear Shock Tower (3.0mm)	x 1	x 1
	TC-PSU006RD-1	Stabilizer Mount	x 2	
	PA-SS0303BK-1	M3x3mm Set Screw	x 4	
	PA-CM0310BK-1	M3x10mm Countersunk Screw	x 4	
	AW-BW32RD-1	Large Bevel Washer (Red)		x 4
	PA-CM0308BK-1	M3x8mm Countersunk Screw		x 4

SHOCK TOWERS (FRONT)

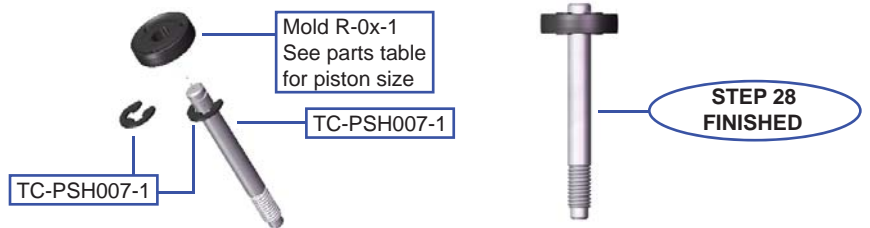
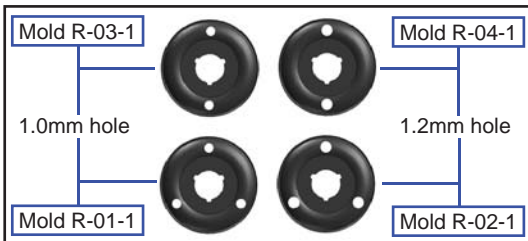
STEP 27



BAG I	TC-PCHS006-1	Front Shock Tower (3.0mm)	x 1
	TC-PSU006RD-1	Stabilizer Mount	x 2
	PA-SS0303BK-1	M3x3mm Set Screw	x 4
	PA-CM0310BK-1	M3x10mm Countersunk Screw	x 4

SHOCKS

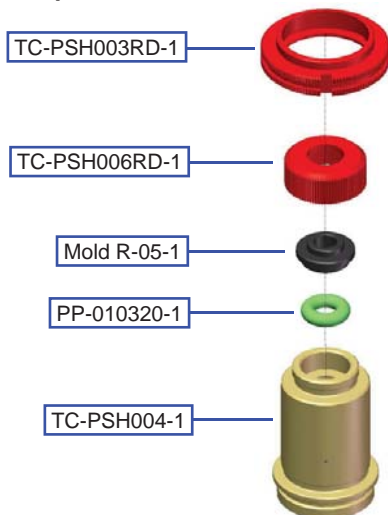
STEP 28 (Make 4)



Note: You could choose from a variety of shock piston to suit your needs.

BAG J	Mold R-01-1	Shock Piston 1.0 - 3 hole	Rubber	Foam
	Mold-R-02-1	Shock Piston 1.2 - 3 hole	x 4	x 4
	TC-PSH007-1	Shock Shaft	x 4	x 4
	PA-ER0020-1	E-Clip	x 8	x 8

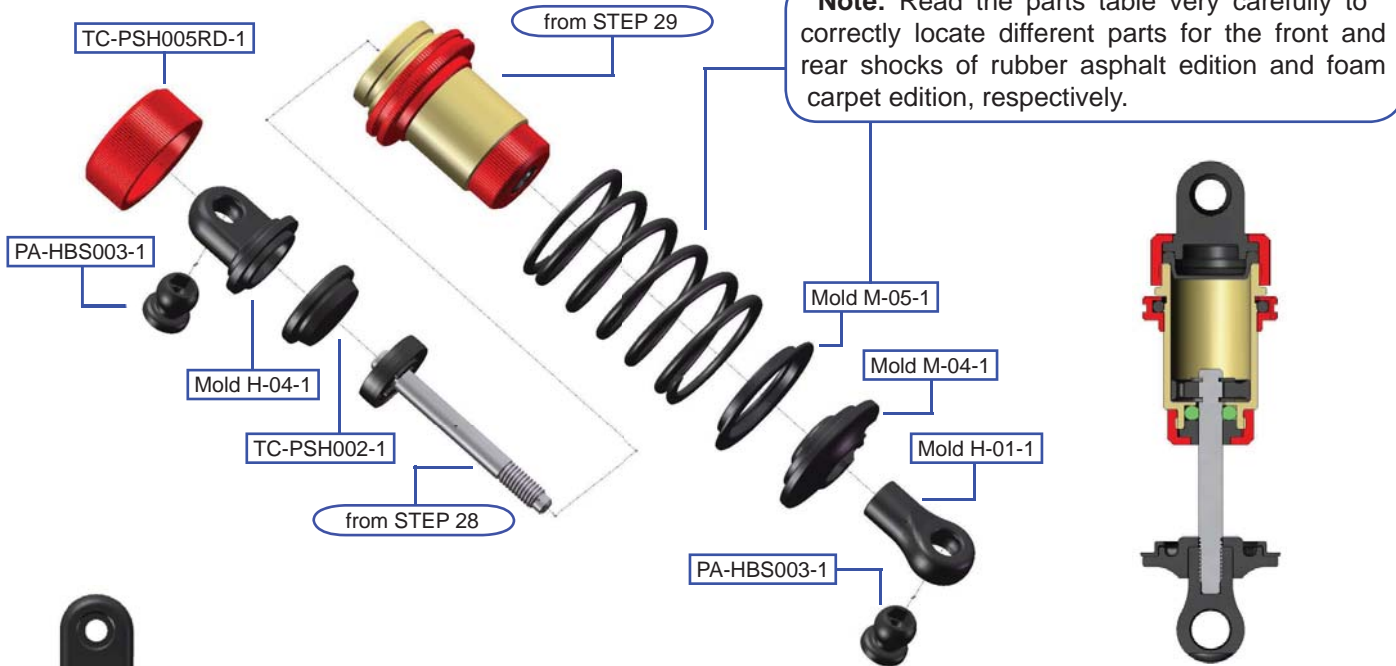
STEP 29 (Make 4)



BAG J	TC-PSH004-1	Shock Body	x 4
	TC-PSH006RD-1	Shock Bottom	x 4
	TC-PSH003RD-1	Shock Spring Adjuster	x 4
	Mold R-05-1	Damper O-Ring Holder	x 4
	PP-010320-1	3mm Silicon O-ring	x 4

SHOCKS (cont'd)

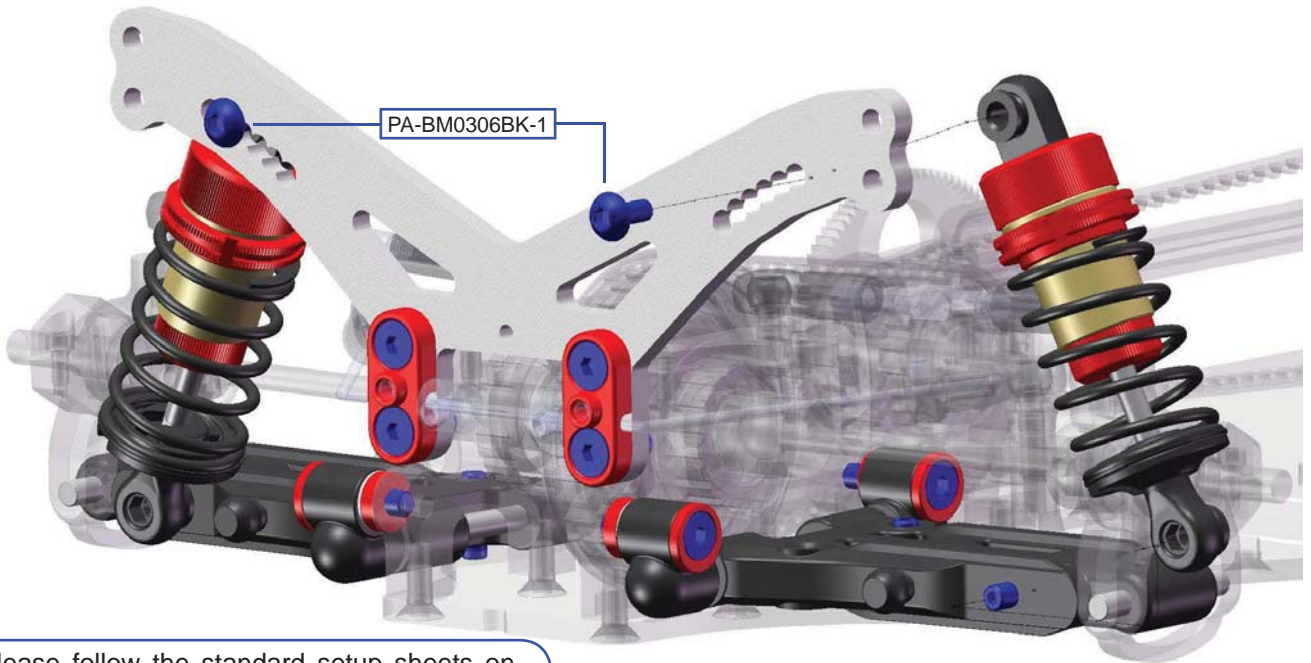
STEP 30 (Make 4)



STEP 30 FINISHED

BAG J	Part Name	Rubber		Foam	
		F	R	F	R
Mold H-01-1	Ball Cup - 10.5mm	x 2	x 2	x 2	x 2
Mold H-04-1	Damper Top Ring (Shock Top)	x 2	x 2	x 2	x 2
Mold M-04-1	Damper Spring Holder	x 2	x 2	x 2	x 2
Mold M-05-1	Spring Adjust Nut Spacer - 14mm	x 2	x 2		
TC-PSH002-1	Shock Bladder	x 2	x 2	x 2	x 2
TC-PSH005RD-1	Shock Cap	x 2	x 2	x 2	x 2
PA-HBS003-1	5.3mm Ball (Steel)	x 4	x 4	x 4	x 4
PS-TR15600	Shock Spring (14 x 1.5 x 6.00)	x 2			
PS-TR15650	Shock Spring (14 x 1.5 x 6.50)		x 2		
PS-TF17675	Shock Spring (13 x 1.7 x 6.75)				x 2
PS-TF14625	Shock Spring (13 x 1.4 x 6.25)				x 2

STEP 31 (REAR)

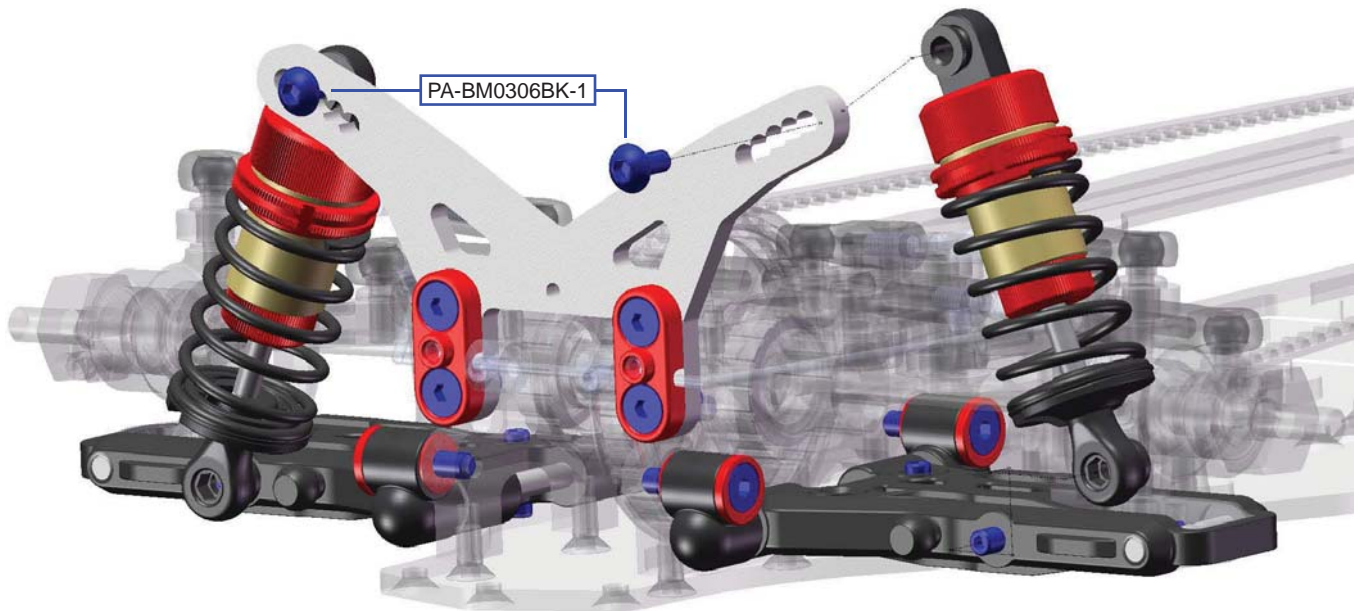


Note: Please follow the standard setup sheets on pages 29-30 as initial setups for shock locations of rubber asphalt edition and foam carpet edition, respectively.

BAG J PA-BM0306BK-1 M3x6mm Button Head Screw x 2

SHOCKS (cont'd)

STEP 32 (Front)

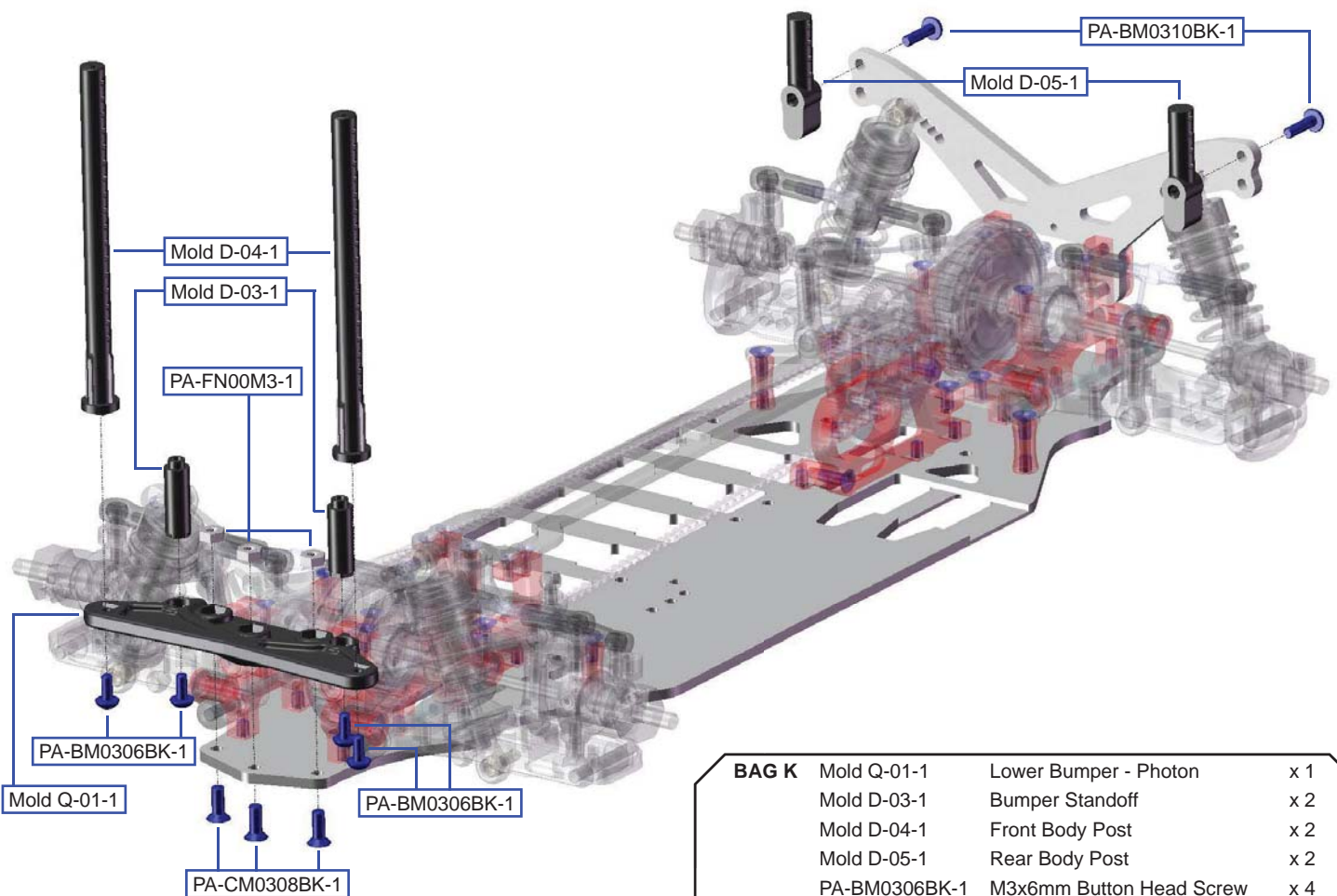


Note: Please follow the standard setup sheets on pages 29-30 as initial setups for shock locations of rubber asphalt edition and foam carpet edition, respectively.

BAG J PA-BM0306BK-1 M3x6mm Button Head Screw x 2

BUMPER & BODY POSTS

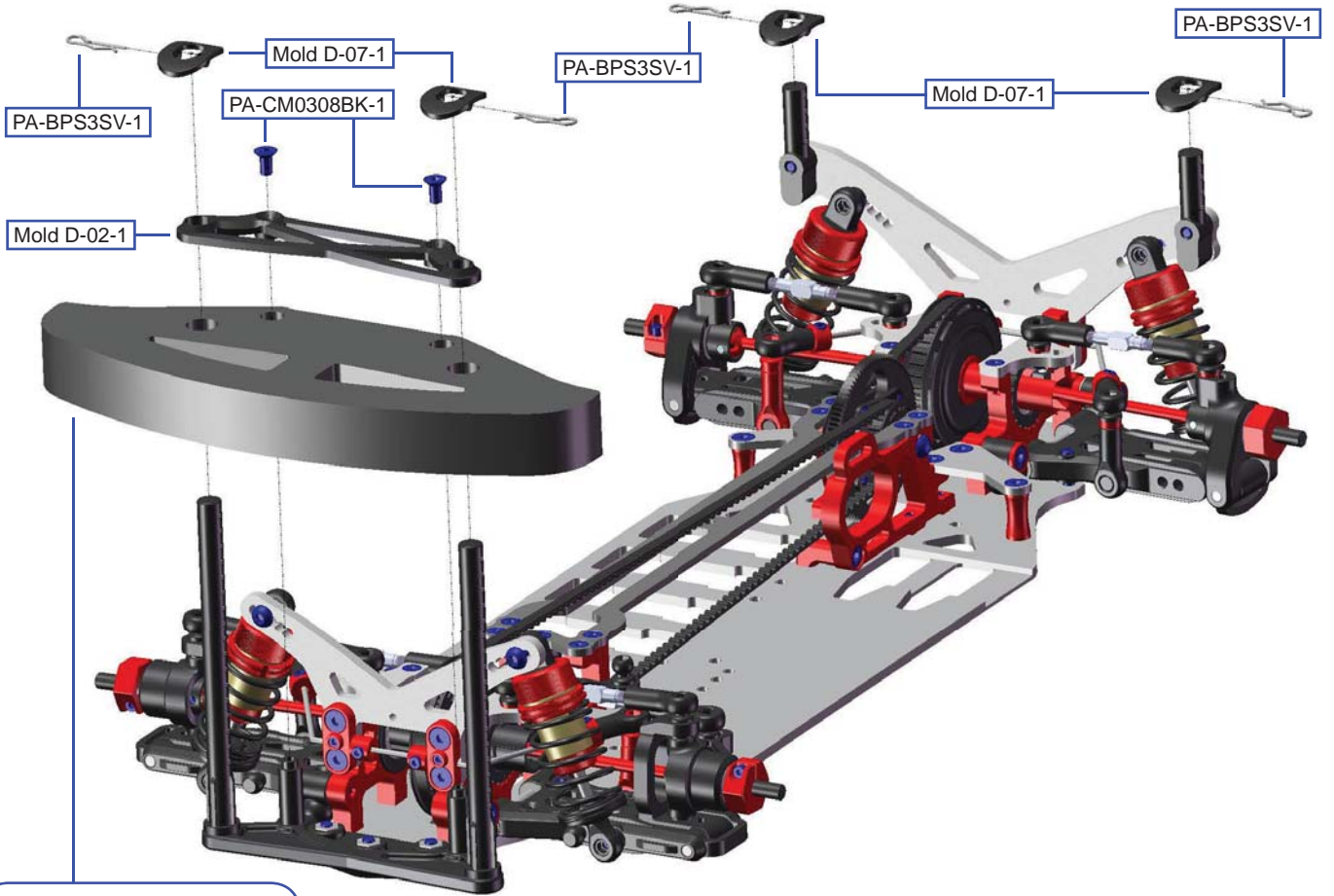
STEP 33



BAG K			
Mold Q-01-1	Lower Bumper - Photon		x 1
Mold D-03-1	Bumper Standoff		x 2
Mold D-04-1	Front Body Post		x 2
Mold D-05-1	Rear Body Post		x 2
PA-BM0306BK-1	M3x6mm Button Head Screw		x 4
PA-BM0310BK-1	M3x10mm Button Head Screw		x 2
PA-CM0308BK-1	M3x8mm Countersunk Screw		x 3
PA-FN00M3-1	M3 Nut		x 3

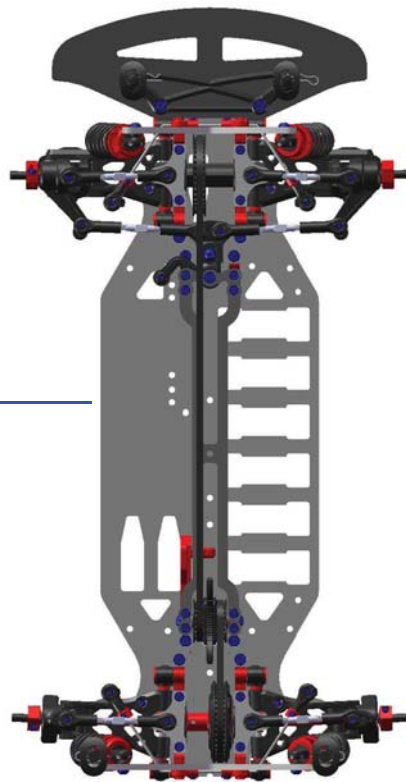
BUMPER & BODY POSTS (cont'd)

STEP 34

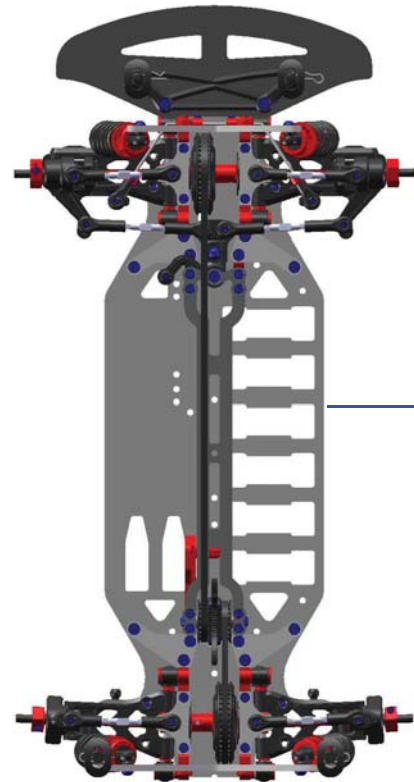


Rubber Edition: TC-PCH20R-1
 Foam Edition: TC-PCH20F-1

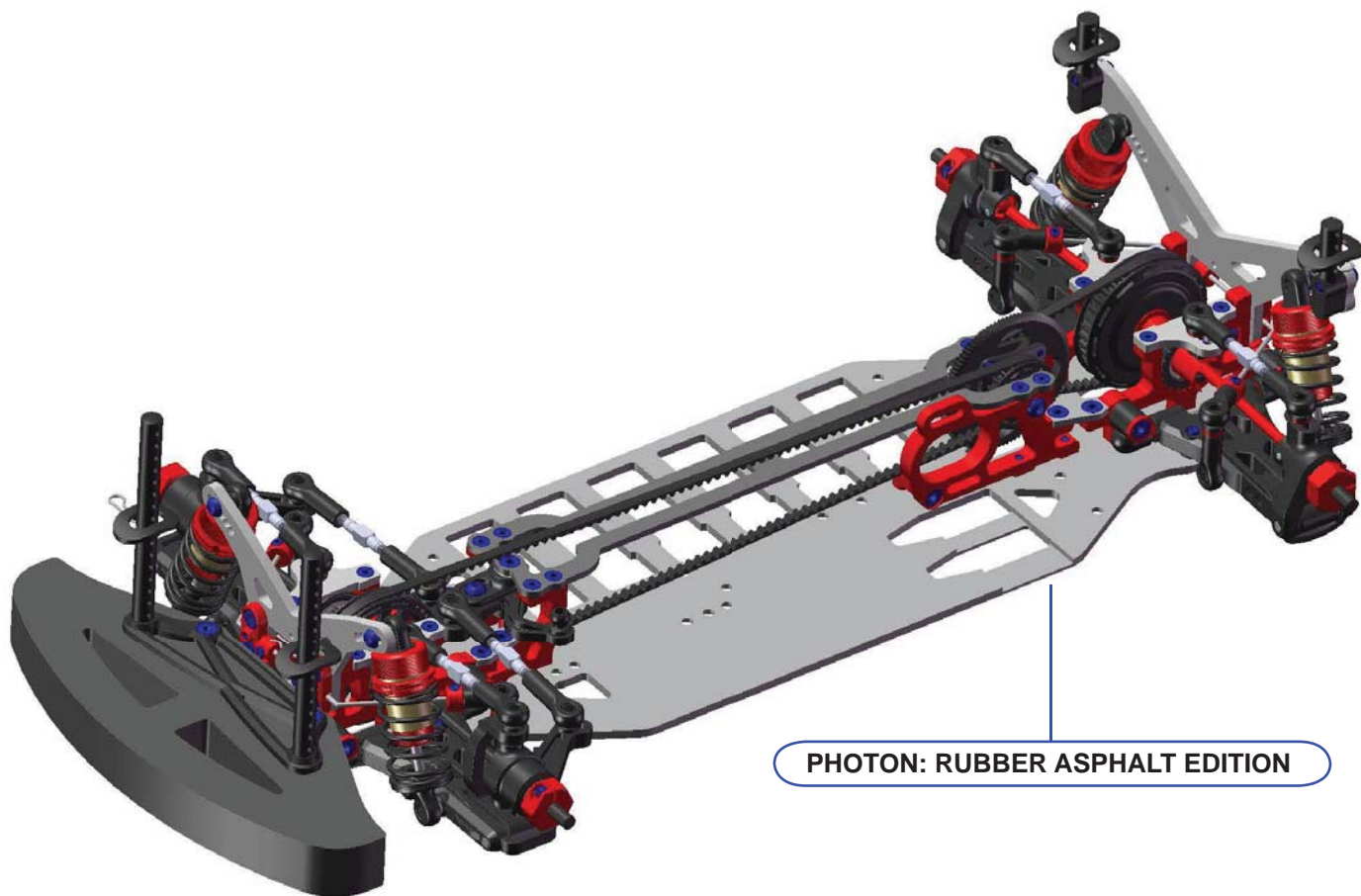
STEP 34
 (Rubber Edition)
 FINISHED



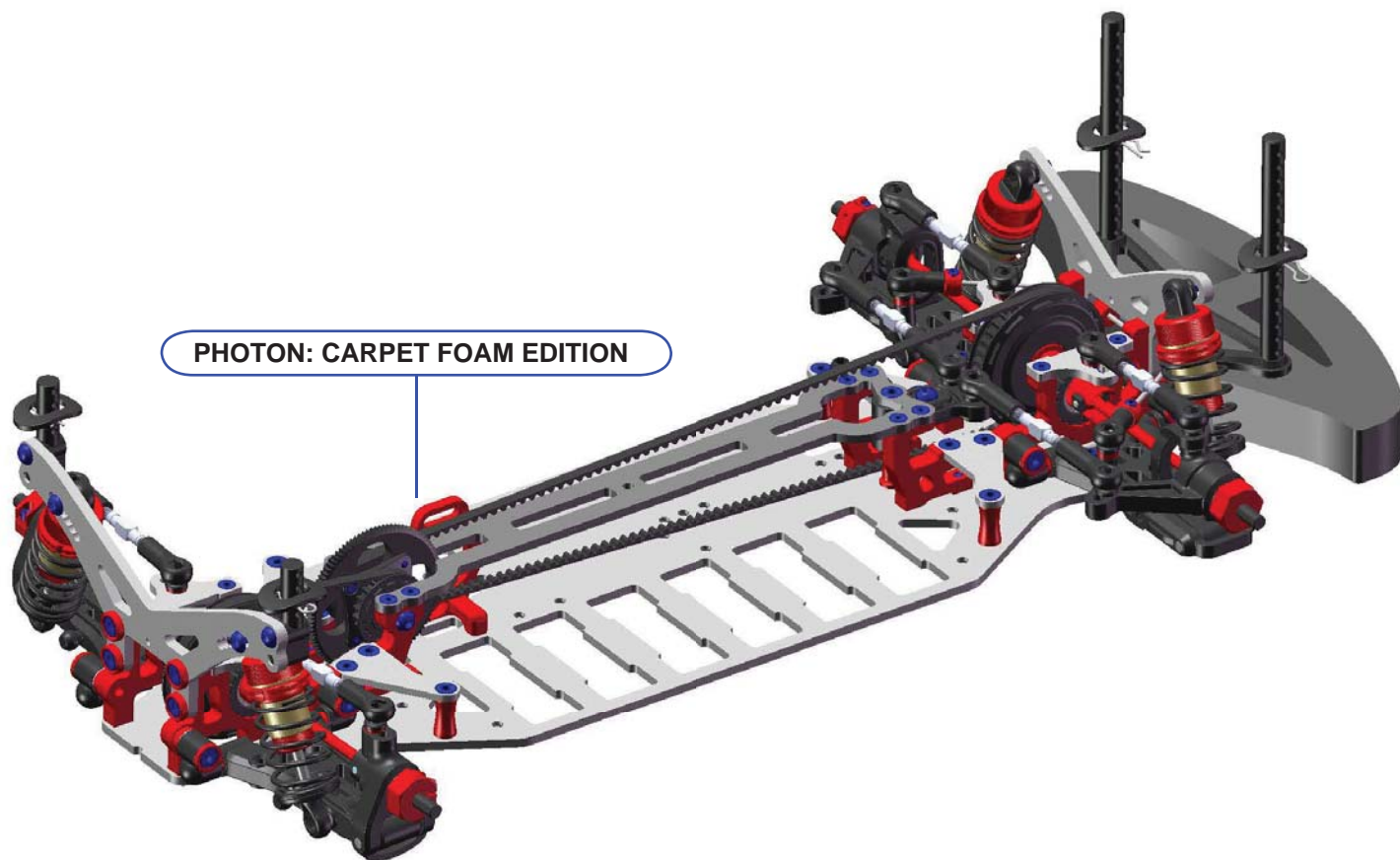
STEP 34
 (Foam Edition)
 FINISHED



			Rubber	Foam
BAG K	Mold D-02-1	Upper Bumper	x 1	x 1
	Mold D-07-1	Body Holder	x 4	x 4
	TC-PCH20R-1	Foam Bumper - Rubber Spec.	x 1	
	TC-PCH20F-1	Foam Bumper - Foam Spec.		x 1
	PA-BPS3SV-1	Body Clips	x 4	x 4
	PA-CM0308BK-1	M3x8mm Countersunk Screw	x 2	x 2



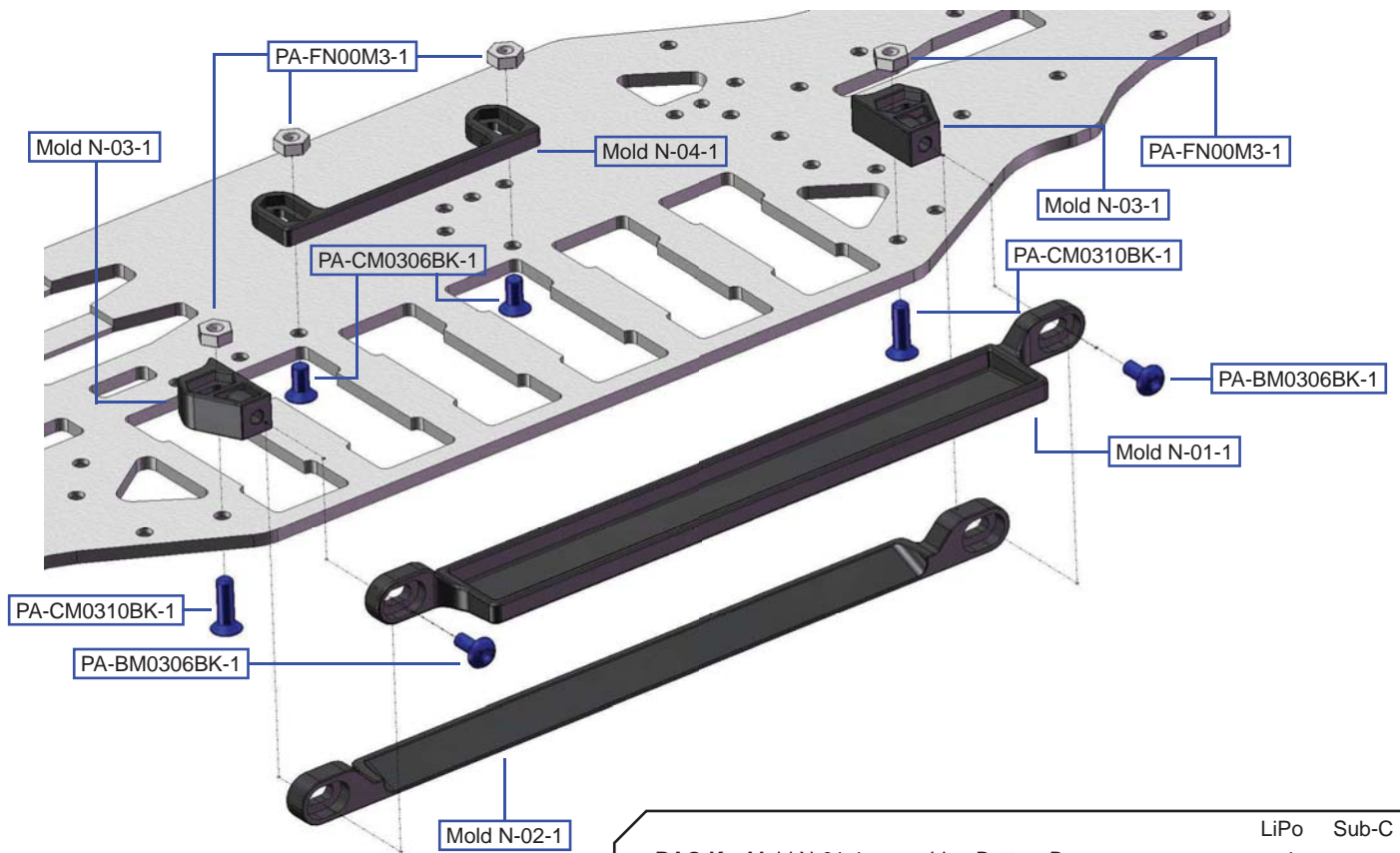
PHOTON: RUBBER ASPHALT EDITION



PHOTON: CARPET FOAM EDITION

LIPO / SUB-C BATTERY GUARD & WEIGHT TRAY

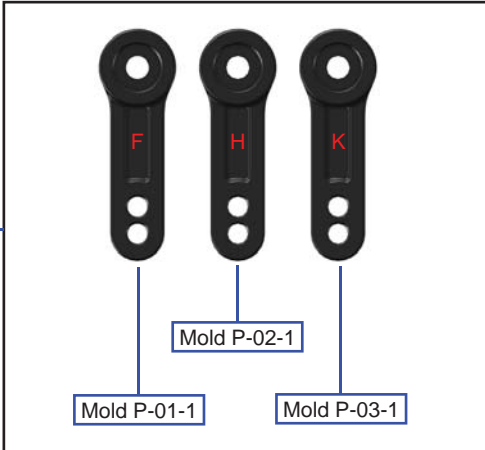
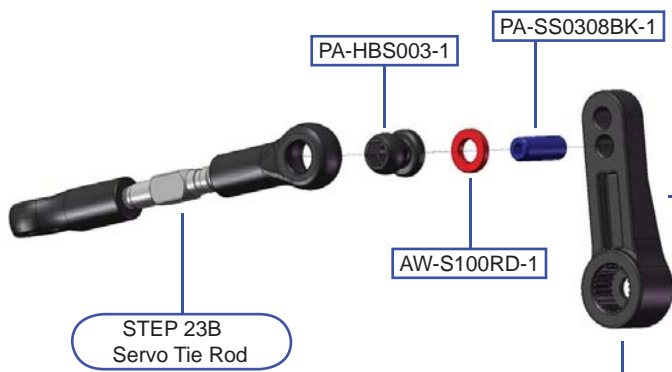
STEP 35



			LiPo	Sub-C
BAG K	Mold N-01-1	Lipo Battery Brace	x 1	
	Mold N-02-1	Sub-C Battery Brace		x 1
	Mold N-03-1	Lipo Mount	x 2	x 2
	Mold N-04-1	Lipo Positioner	x 1	x 1
	PA-FN00M3-1	M3 Nut	x 4	x 4
	PA-BM0306BK-1	M3x6mm Button Head Screw	x 2	x 2
	PA-CM0306BK-1	M3x6mm Countersunk Screw	x 2	x 2
	PA-CM0310BK-1	M3x10mm Countersunk Screw	x 2	x 2

SERVO HORN & LINKAGE

STEP 36

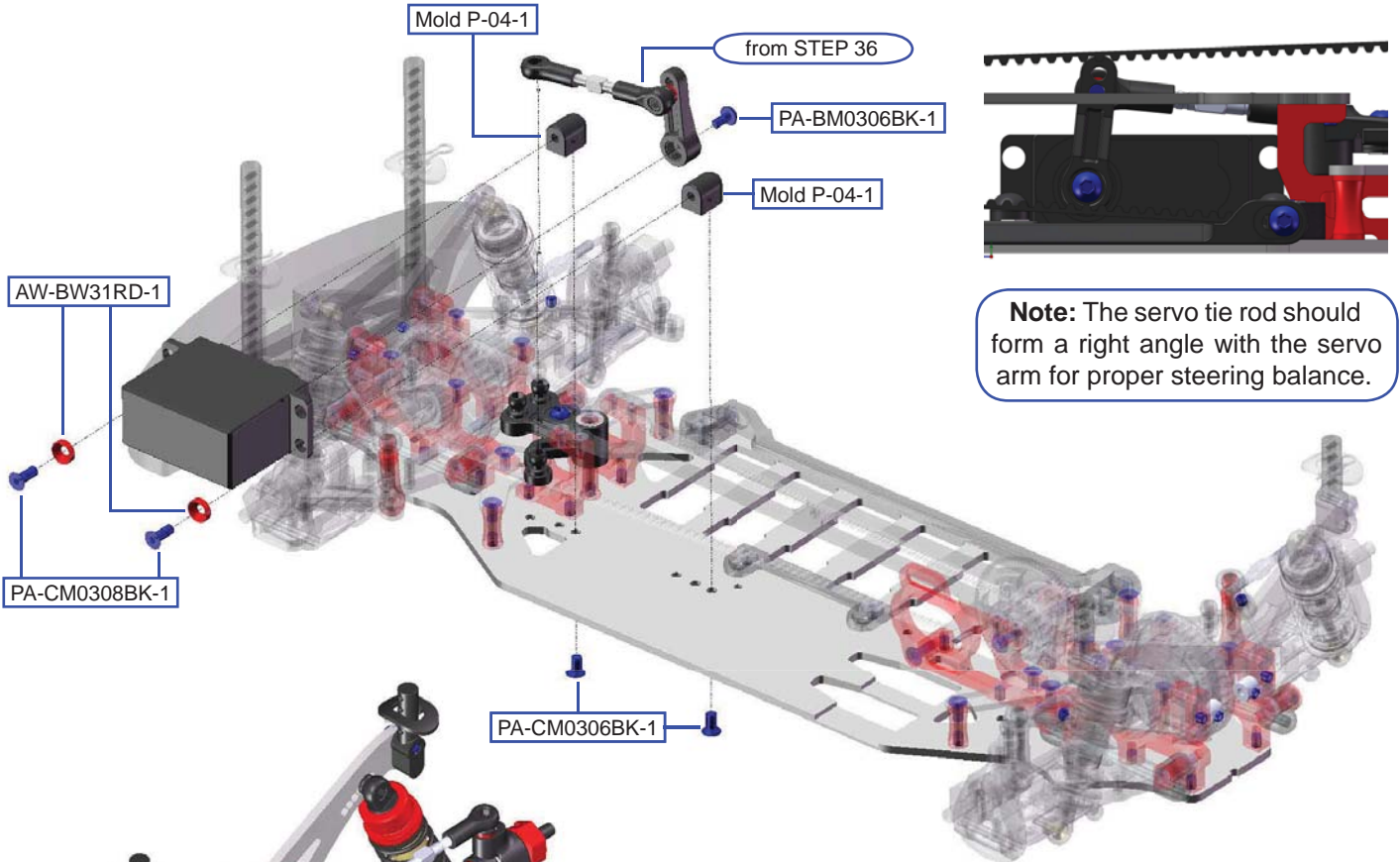


Note: Choose the correct servo arm for your servo arm manufacturer. Refer to the part list and figure on your right.

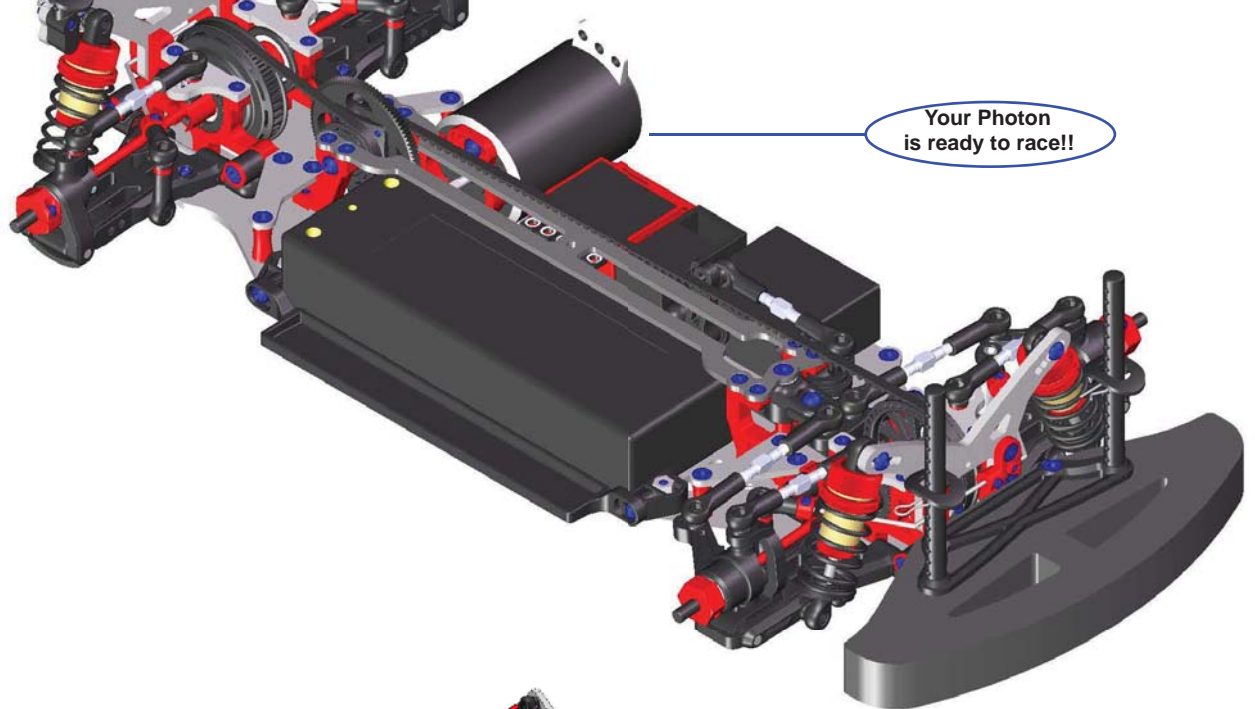
BAG L	Mold P-01-1	Servo Arm - Futaba	x 1
	Mold P-02-1	Servo Arm - Hitech	x 1
	Mold P-03-1	Servo Arm - KO/Sanwa	x 1
	PA-HBS003-1	5.3mm Ball (Steel)	x 1
	AW-S100RD-1	3 x 5.5 x 1.0mm Collar	x 1
	PA-SS0308BK-1	M3x8mm Set Screw	x 1

SERVO ARM & LINKAGE (cont'd)

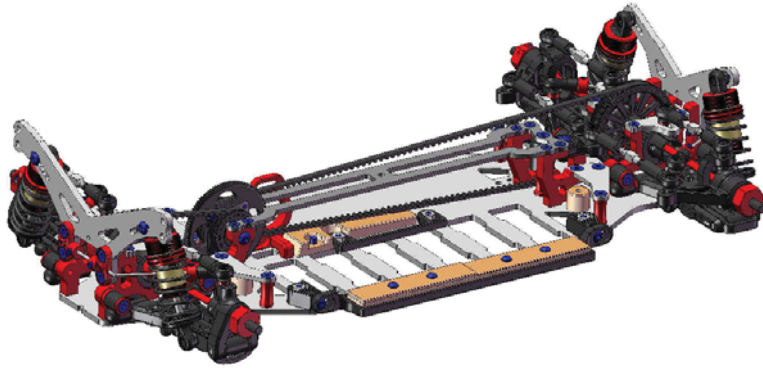
STEP 37



Note: The servo tie rod should form a right angle with the servo arm for proper steering balance.



Your Photon is ready to race!



Note: The figure on the left shows the Photon with our customized brass balancing weight. These are purchased separately.

BAG L	Mold P-04-1	Servo Mount - Large	x 2
	AW-BW31RD-1	Bevel Washer (Red)	x 2
	PA-BM0306BK-1	M3x6mm Button Head Screw	x 1
	PA-CM0306BK-1	M3x6mm Countersunk Screw	x 2
	PA-CM0308BK-1	M3x8mm Countersunk Screw	x 2

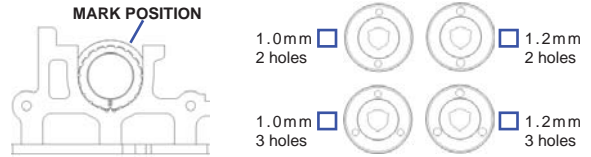
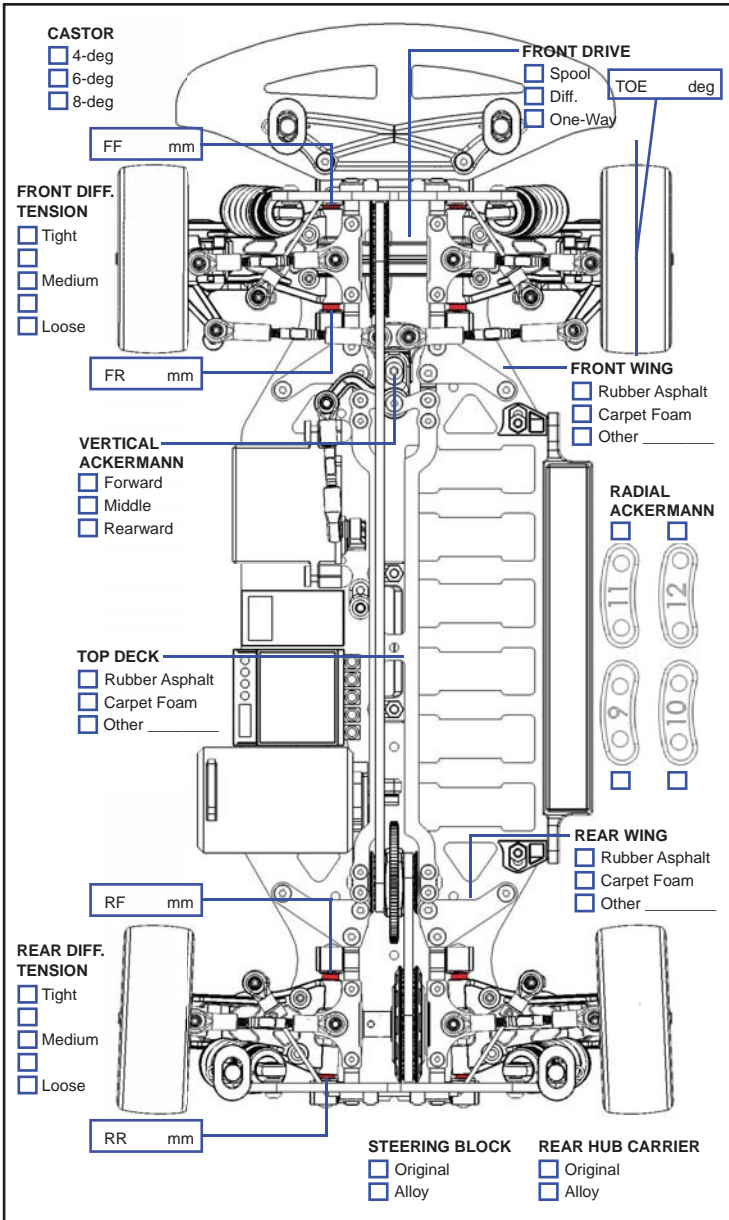
PHOTON SETUP RECORD



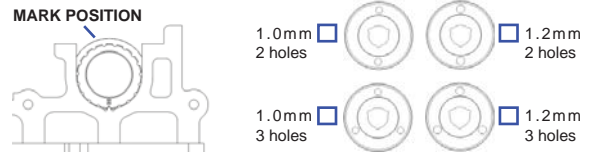
Name: _____ Date: _____ Track: _____

Condition: _____ Temperature: _____

- Rubber Asphalt Edition
- Foam Carpet Edition



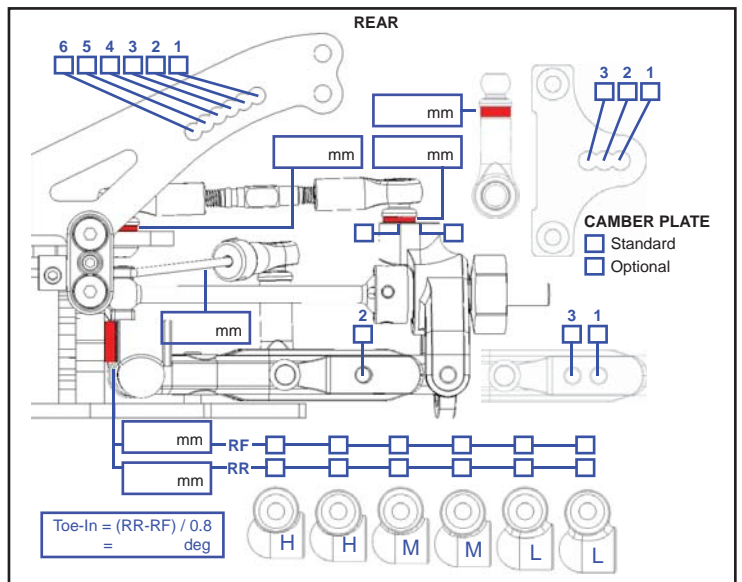
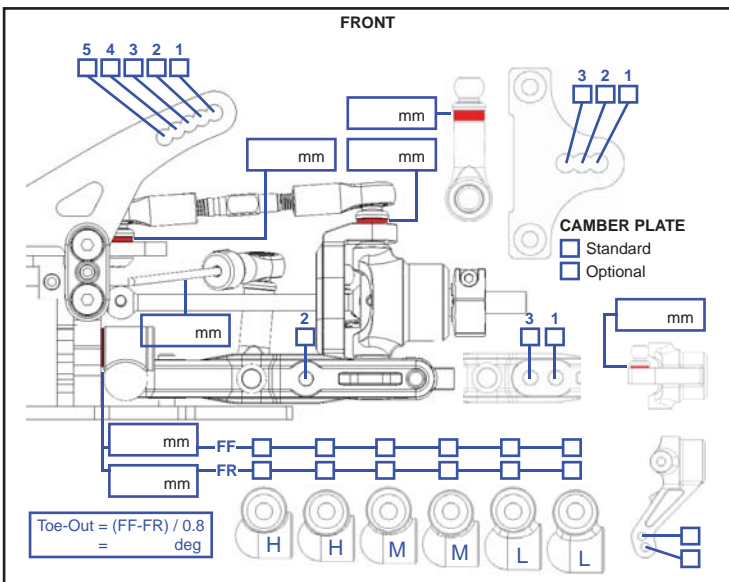
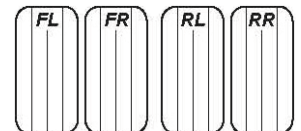
FRONT MEASUREMENTS		FRONT SHOCKS	
RIDE HEIGHT	mm	OIL WEIGHT	wt
CAMBER ANGLE	deg	PISTON	Standard/Optional
DROOP	mm	BLADDER	
WHEEL HUBS	mm	SPRING	
WHEEL SPACER	mm	NOTE	



REAR MEASUREMENTS		REAR SHOCKS	
RIDE HEIGHT	mm	OIL WEIGHT	wt
CAMBER ANGLE	deg	PISTON	Standard/Optional
DROOP	mm	BLADDER	
WHEEL HUBS	mm	SPRING	
WHEEL SPACER	mm	NOTE	

MOTOR	
SPUR GEAR	
PINION GEAR	
BATTERY	
BODY SHELLS	
WING	
ESC SETTING	

	FRONT	REAR
BRAND		
COMPOUND		
INSERT		
WHEEL		
TIRE TREATMENT		

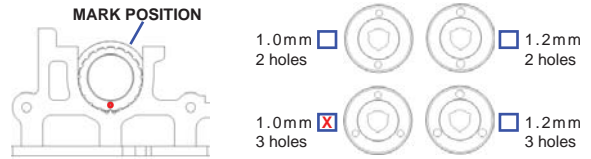
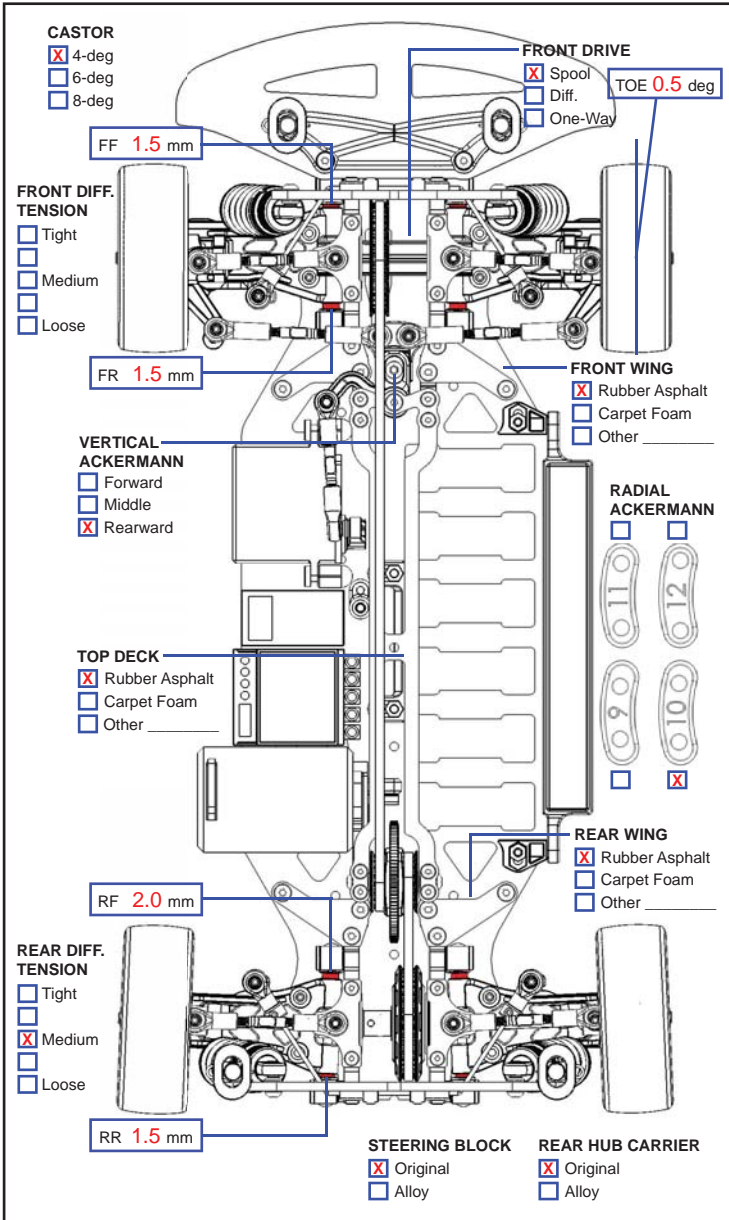


PHOTON SETUP RECORD

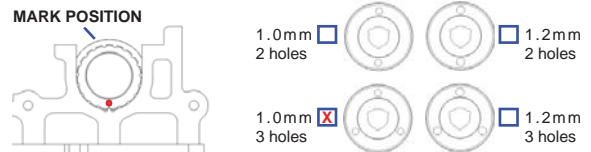


Name: _____ Date: _____ Track: Rubber Std. Setup

Condition: _____ Temperature: _____ Rubber Asphalt Edition Foam Carpet Edition



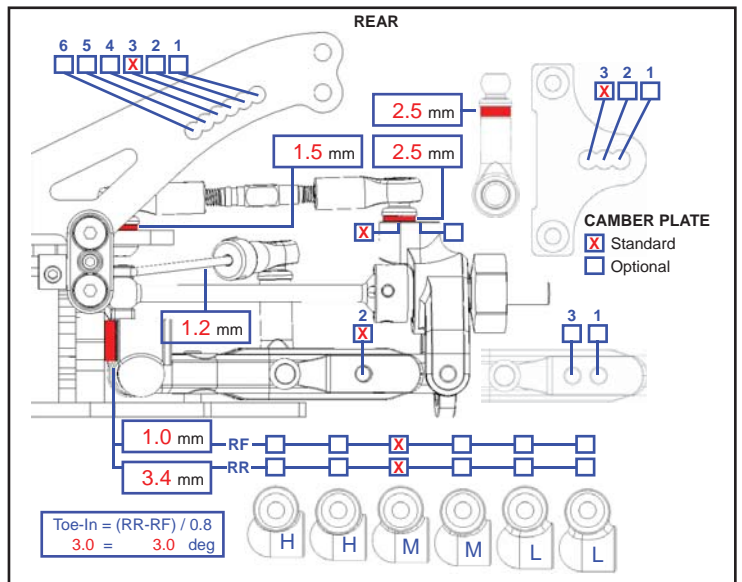
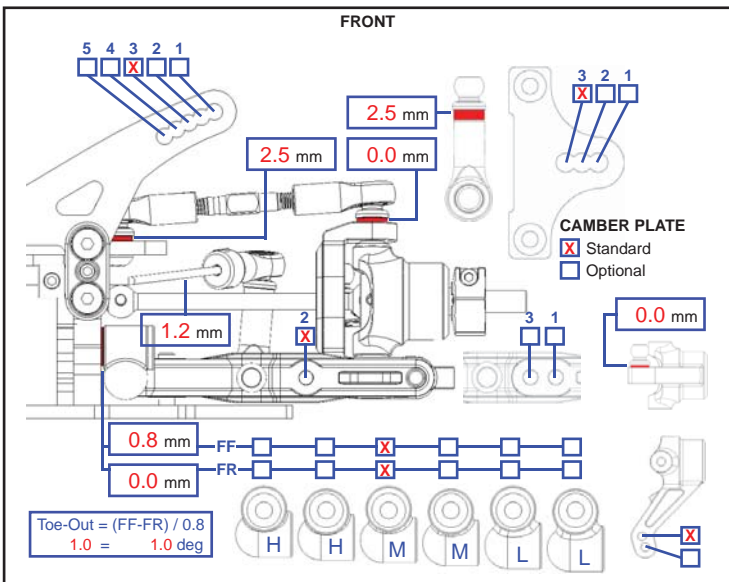
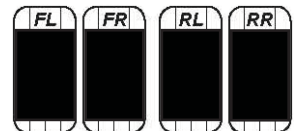
FRONT MEASUREMENTS		FRONT SHOCKS	
RIDE HEIGHT	5.0 mm	OIL WEIGHT	40 wt
CAMBER ANGLE	1.5 deg	PISTON	Standard/ Optional
DROOP	5.5 mm	BLADDER	STD.
WHEEL HUBS	STD 5.2 mm	SPRING	14mm 1.5 x 6.00
WHEEL SPACER	0.5 mm	NOTE	



REAR MEASUREMENTS		REAR SHOCKS	
RIDE HEIGHT	5.0 mm	OIL WEIGHT	40 wt
CAMBER ANGLE	1.5 deg	PISTON	Standard/ Optional
DROOP	5.5 mm	BLADDER	STD.
WHEEL HUBS	STD 5.2 mm	SPRING	14mm 1.5 x 6.50
WHEEL SPACER	1.0 mm	NOTE	

MOTOR	
SPUR GEAR	
PINION GEAR	
BATTERY	7.4V 5000mAh 40C
BODY SHELLS	PF Mazda Speed 6
WING	STD.
ESC SETTING	

	FRONT	REAR
BRAND	Sorex	Sorex
COMPOUND	36R	36R
INSERT	HaraV3	HaraV3
WHEEL	Solaris	Solaris
TIRE TREATMENT	FX-II	FX-II

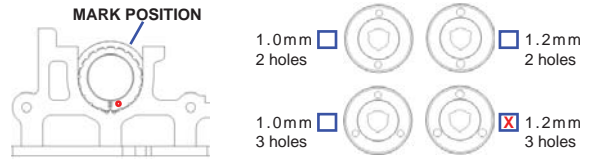
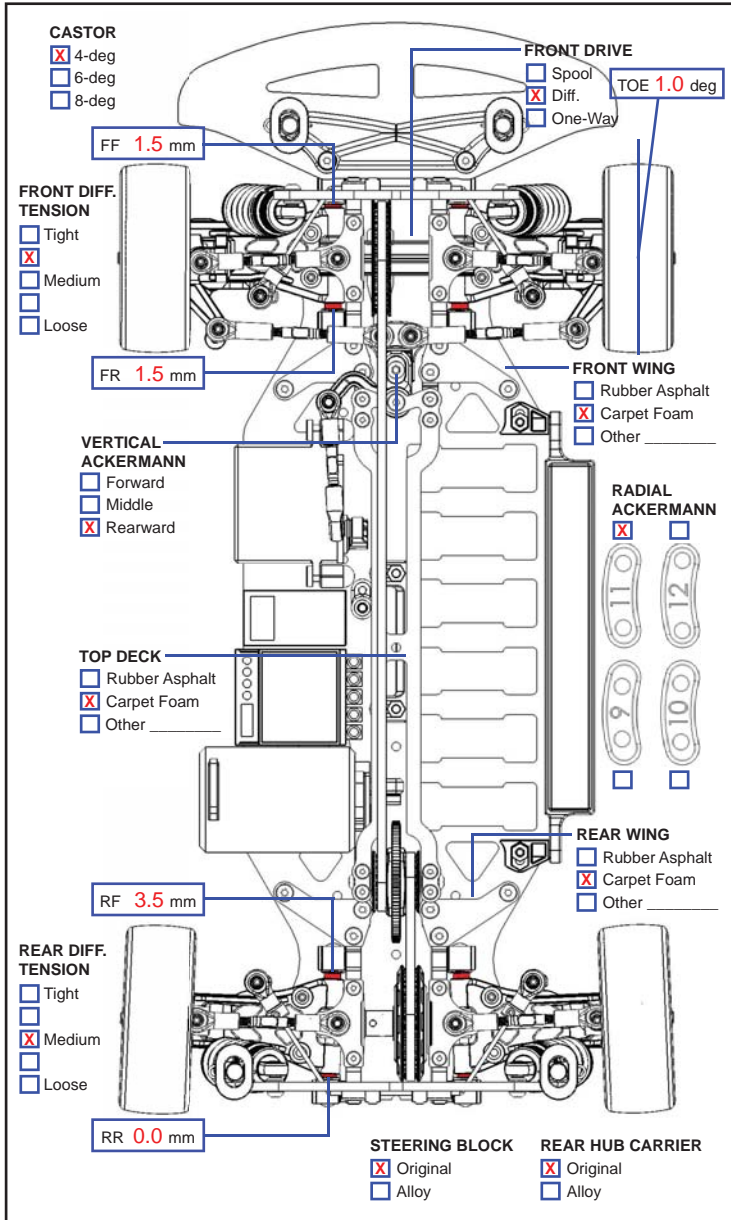


PHOTON SETUP RECORD

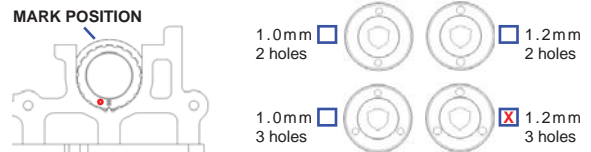


Name: _____ Date: _____ Track: Foam Std. Setup

Condition: _____ Temperature: _____ Rubber Asphalt Edition Foam Carpet Edition



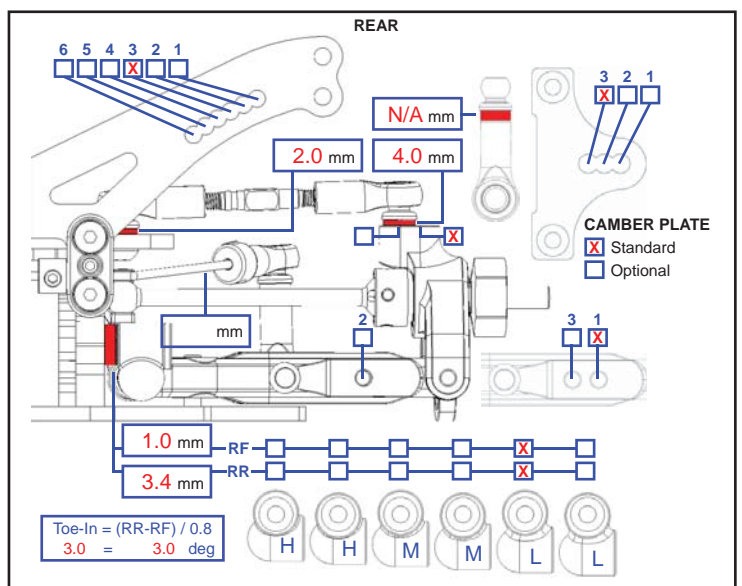
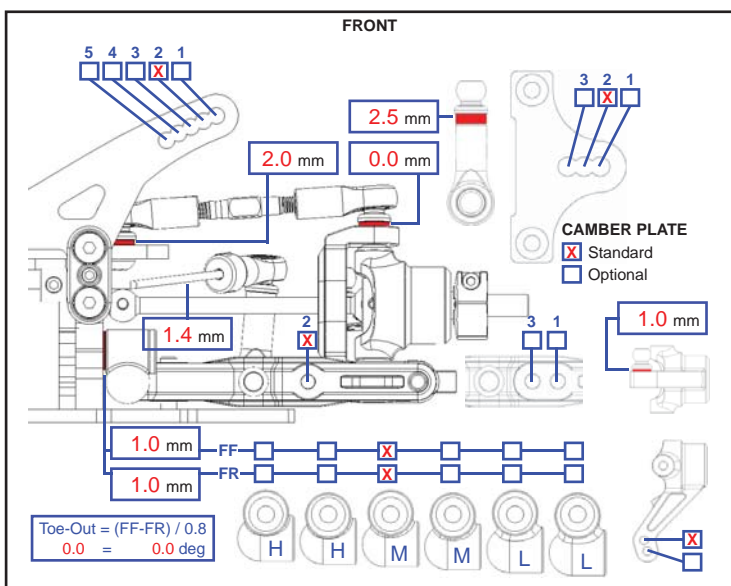
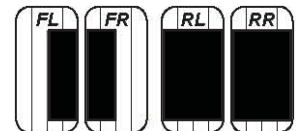
FRONT SHOCKS



REAR SHOCKS

MOTOR	4.5 BL
SPUR GEAR	64P-112T
PINION GEAR	64P-25T
BATTERY	7.4V LiPo
BODY SHELLS	R9F
WING	STD.
ESC SETTING	KO Propo 1.5

	FRONT	REAR
BRAND	Jaco	Jaco
COMPOUND	MAG.	MAG.
INSERT	N/A	N/A
WHEEL	N/A	N/A
TIRE TREATMENT	Jack	Jack





TOP

RACING

Tokyo hobbies *Optional Parts*

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