#30 8305 XRAY ALU SHOCK ABSORBER-SET

Premium XRAY aluminum shock absorbers are specially developed and designed to work with both the T2 (electric touring) and NT1 (nitro touring) platforms. These unique black hardcoated aluminum shocks are loaded with all of the features needed for today's racing. Whether you need ultra-fine shocks for your lightweight electric touring car or ultra-reliable shocks for your nitro touring car, the new XRAY shocks have you covered.

The unique XRAY aluminum shock absorbers have interchangeable internal parts, giving you the option of installing 1 or 2 silicone O-rings. You can also choose between fully-adjustable 4-step pistons, or you can choose fixed 1-piece precision pistons. No matter what you choose, all pistons are ultra-true and round thanks to a very special mould design, resulting in ultra-free movement of the piston inside the shock body.

The XRAY aluminum shock absorbers come with all the necessary parts to build one pair of shocks (2 shocks). Springs and shock oil are not included and must be purchased separately.

Features

- The aluminum shock body is precision CNC-machined on the world's most precise German long-turn CNC machine and every piece is robot-inspected and measured to ensure maximum precision and tolerance. This is especially important with the inner diameter of the shock body to ensure that each one has an identical inner diameter to guarantee ultra-free shock piston movement. The aluminum shock body is machined from exclusive Swiss 7075 T6 aluminum ensuring maximum strength and rigidity. The shock bodies are black hardcoated using XRAY's own fully robotic colorcoating line with purpose-mixed color fluids, ensuring a very even layer of color coating is applied to each shock body. After the coating process, every shock body is manually checked with high-precision callipers to ensure that the inner diameter of each shock body is exactly within the very stringent tolerances.
- The shock cartridge has been designed for self-centering shim(s) to hold 1 or 2 silicone O-rings, guaranteeing perfect alignment in the shock body. A finely-threaded aluminum shock lower cap secures the silicone O-rings and shims in the shock body.
- Finely-threaded spring preload collars are used to make ride height quick and easy. Even in very dirty conditions it is still possible to very precisely adjust ride height.
- The upper aluminum cap features a small vent hole that makes shock assembly very predictable and easy, since excess shock oil will escape through this vent hole ensuring that only the proper amount of the oil is inside the shock assembly. A super-soft silicone membrane supported by a miniature foam pad (inserted inside the membrane) provides proper dampening characteristics.

Basic Setup: 1 O-ring Setup

For 1/10 electric and nitro touring cars (for example, XRAY T2 and NT1, respectively) XRAY suggests using the 1 O ring setup as a basic setup. The 1 O-ring setup will result in super-smooth action due to improved free movement of the shock rod, providing extra traction and damping.

When installing 1 silicone O-ring, use one O-ring and one think and thick shim in the lower shock body assembly.

Note that using the 1 O-ring setup (as opposed to the 2 O-ring setup) may cause the shock to leak very slightly through the single O-ring. THIS IS COMPLETELY NORMAL. Regular servicing and maintenance is required when using the 1 O ring setup to replace any lost shock oil.

Optional Setup: 2 O-ring Setup

Using the 2 O-ring setup ensures consistent damping throughout long finals, and less servicing and maintenance will be required due to less inherent oil leakage than the 1 O-ring setup. When using the 2 O-ring setup, the shocks will still work freely and smoothly but not as smoothly as with the 1 O-ring setup. When installing 2 silicone O-rings, there are two very thin shims between the O-rings to ensure that the O-rings fit properly in the lower shock body assembly.

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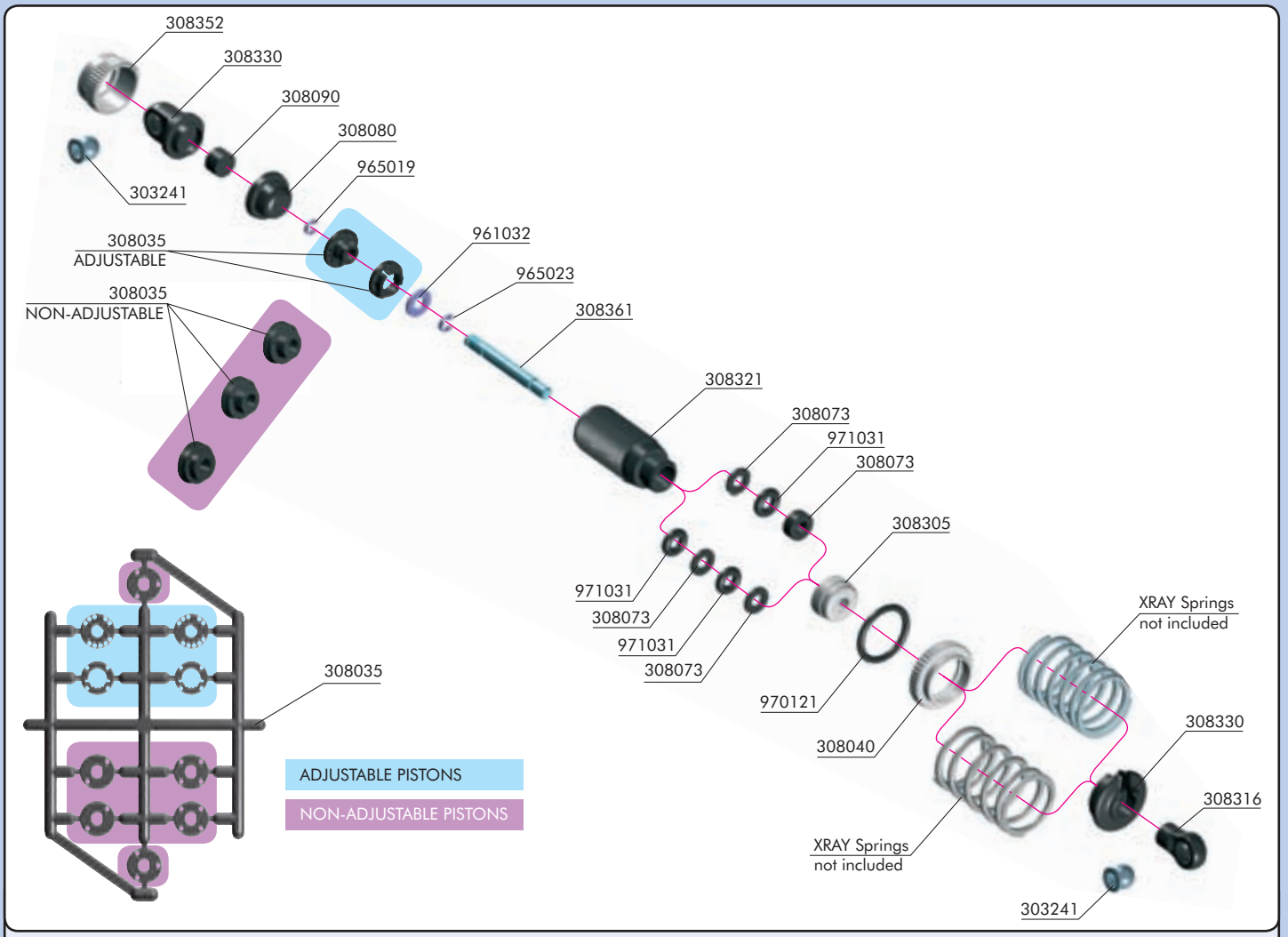
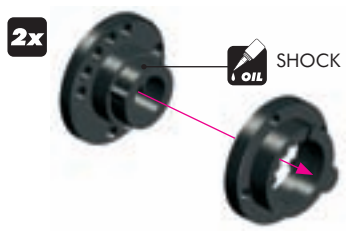


30 3241	BALL UNIVERSAL 5.8 MM HEX (4)
30 8035	COMPOSITE PISTONS ADJUSTABLE + NON-ADJUST. (SET 2+6)
30 8040	SHOCK ADJ. NUT ALU + O-RING (4+4)
30 8080	SHOCK ABSORBER MEMBRANES (4)
30 8090	SHOCK FOAM INSERTS (4)
30 8305	XRAY ALU SHOCK ABSORBER-SET 4-STEP (2)
30 8316	T2 COMPOSITE SHOCK BALL JOINT - OPEN (4)
30 8321	ALU XRAY SHOCK BODY (2)
30 8330	T2 COMPOSITE FRAME SHOCK PARTS 4-STEP
30 8352	T2 ALU SHOCK CAP-NUT WITH HOLE (2)
30 8361	T2 HARDENED SHOCK SHAFT (2)
96 1032	WASHER S 3.2 (10)
96 5019	E-CLIP 1.9 (10)
96 5023	E-CLIP 2.3 (10)
97 0121	O-RING 12.1x1.6 (10)
97 1031	SILICONE O-RING 3.1x1.6 (10)
30 8380	ADDITIONAL XRAY ULTIMATE RACING SPRINGS (20) - REAR
30 8390	XRAY SELECTED ULTIMATE RACING SPRINGS (24) - REAR
30 8382	XRAY PROGRESSIVE SPRING-SET D=1.4 (14 LB) GOLD (4)
30 8383	XRAY PROGRESSIVE SPRING-SET D=1.5 (17.5 LB) SILVER (4)
33 8183	XRAY SPRING-SET D=1.7 (28.5 LB) DARK-BLUE - SOFT-MED - FRONT (2)
33 8184	XRAY SPRING-SET D=1.7 (30.5 LB) VIOLET - MEDIUM - FRONT (2)
33 8185	XRAY SPRING-SET D=1.8 (33 LB) LIGHT-PURPLE - MED-MED HARD - FRONT (2)
33 8186	XRAY SPRING-SET D=1.8 (35.5 LB) PURPLE - MED-HARD - FRONT (2)
33 8187	XRAY SPRING-SET D=1.8 (38.5 LB) LIGHT-RED - HARD - FRONT (2)

ADJUSTABLE PISTONS



Carefully remove the shock pistons from the frame, and remove all excess plastic flash

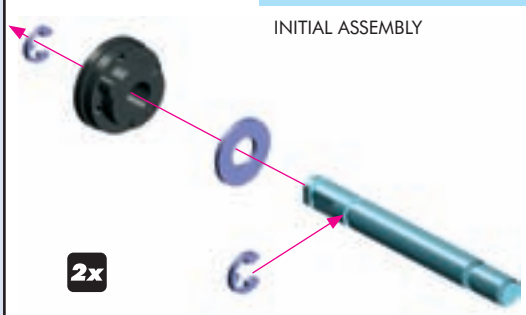
961032
S 3.2

965019
C 1.9

965023
C 2.3

ADJUSTABLE PISTONS

INITIAL ASSEMBLY

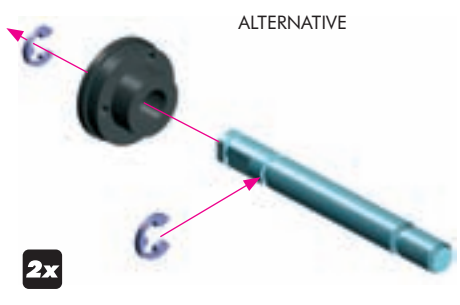


965019
C 1.9

965023
C 2.3

NON-ADJUSTABLE PISTONS

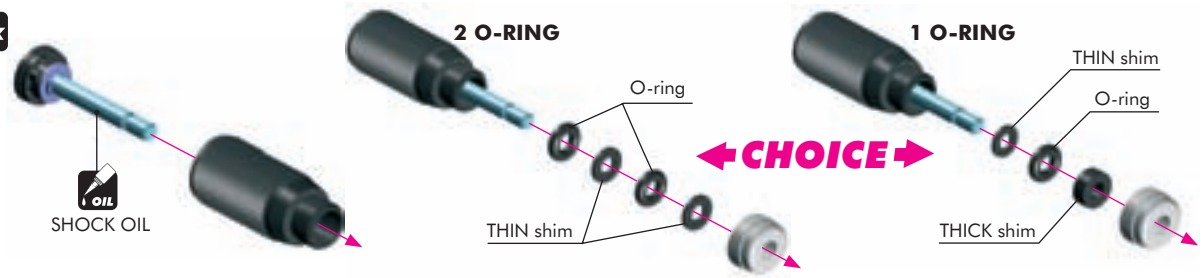
ALTERNATIVE



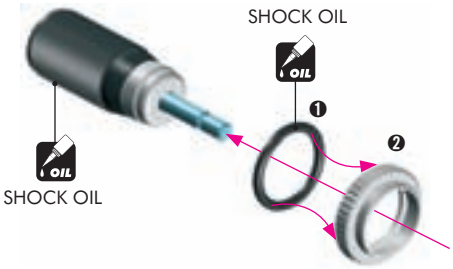
#30 8305 XRAY ALU SHOCK ABSORBER-SET

10
971031
O 3.1x1.6

2x



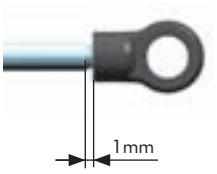
01
970121
O 12.1x1.6



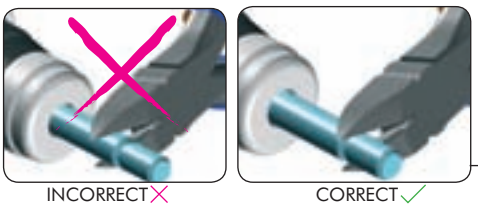
CUTAWAY VIEW

Be careful not to cross-thread the collar on the shock body.

2x



USE ONLY ball-joints #308316.

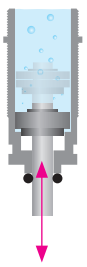


HINT: Pre-thread the ball joint using an M3 screw. WARNING! Be careful not to pre-thread too far, since the ball joint may split or the plastic threads may strip out

2x

SHOCK FILLING

1. Fully extend the piston rod so the piston is at the bottom of the shock body.
2. Hold the shock upright and slightly overfill the shock body with shock oil.
3. Let the oil settle and allow air bubbles to rise to the top. Slowly move the piston up and down until no more air bubbles appear. Add shock oil as necessary.
4. Pull the piston rod most of the way out of the shock body. Let the shock rest for 5 minutes to allow the air bubbles to escape.



2x

CUTAWAY VIEW

After you insert the membrane ensure that it sits properly all around the alu cup properly.

2x

When installing the shock cap assembly on the shock body, some oil will leak out... this is normal.

Fully tighten the cap and clean off any excess oil.

After the shock is assembled, the shock rod will push itself out of the shock body fairly quickly.

Follow the next procedure to adjust the rebound.

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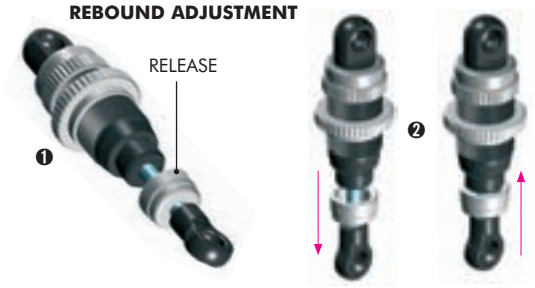
REBOUND ADJUSTMENT



After the shock is assembled you have to set the Shock Rebound.

1. To set the shock rebound, release shock lower cap.

2. VERY SLOWLY do the following: Fully pull out the shock rod, push it back in fully, and then fully pull it out once more. Repeat this procedure the following number of times to achieve the desired Shock Rebound setting:
10 times - approximately 75% rebound (high rebound - suggested for very low traction track)
15 times - approximately 50% rebound (medium rebound - suggested for standard track)
20 times - approximately 25% rebound (low rebound - suggested for very high traction track)

During the rebound adjustment procedure shock oil will leak out of the shock body through the O-ring(s) on the shock rod... this is normal. During the rebound adjustment procedure DO NOT open the upper shock cap.

REBOUND CHECK

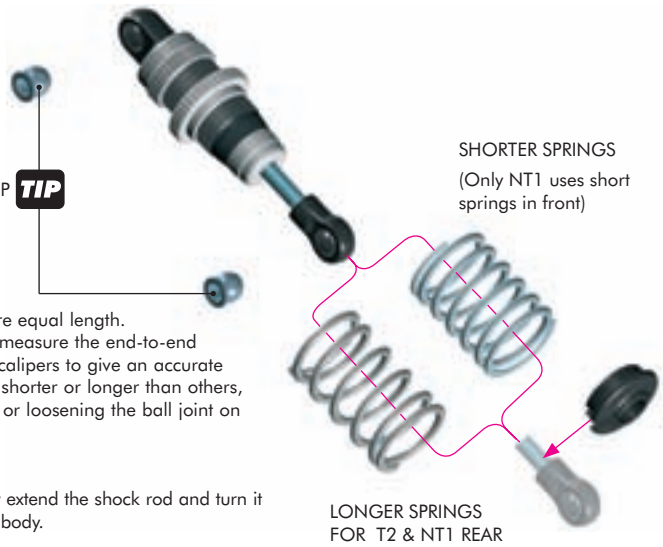
3. After you have set the Rebound Adjustment, re-install the shock lower cap.

4. Check the shock rebound setting by pushing the shock rod fully into the shock body, releasing it, and observing how far the shock rod extends by itself:
* 25% out of the shock body (low rebound)
* 50% out of the shock body (medium rebound)
* 75% out of the shock body (high rebound).
If the shock rod rebounds too much, return to Step 1 and repeat the procedure.

If the shock rod does not rebound enough, you will have to refill the shock with shock oil, and then repeat the bleeding and rebound adjustment procedure.

Cutaway view of assembled shock absorber

SET-UP BOOK
SHOCK DAMPING ADJUSTMENT
SPRING RATE SELECTION



Shock length adjustment:
It is VERY important that all shocks are equal length.
Fully extend the shock absorber and measure the end-to-end length; we recommend using digital calipers to give an accurate measurement. If a shock absorber is shorter or longer than others, adjust the shock length by tightening or loosening the ball joint on the shock rod.

Damping adjustment:
If you built the adjustable shocks, fully extend the shock rod and turn it slightly to lock the piston in the shock body.

Turning the shock rod fully CCW aligns 4 holes in the pistons (softest damping). Turning the shock rod fully CW aligns 1 hole in the pistons (hardest damping). The shocks have four settings, each of which can be felt by a slight "click".

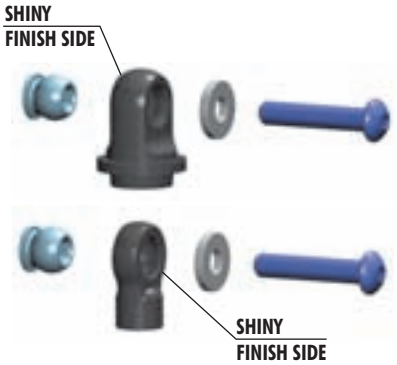
Set all four shocks initially to position 3 (3 holes open): turn fully CCW, then turn CW by 1 click.

TECH TIP

Follow this tech tip to properly install pivot balls into the top pivot and bottom ball joint.

Parts needed:
• M3 x 16 SH screw
• M3 shim

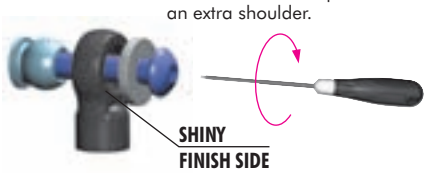
Note that the composite parts have two sides, noticeable around the pivot ball hole: one side has a shiny finish, the other side has a regular finish.



1

Install pivot balls into top pivot or lower ball joint as shown, on the proper sides.

Note that the lower pivot ball has an extra shoulder.



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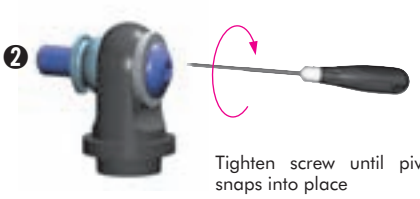
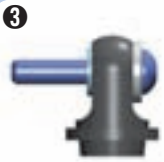


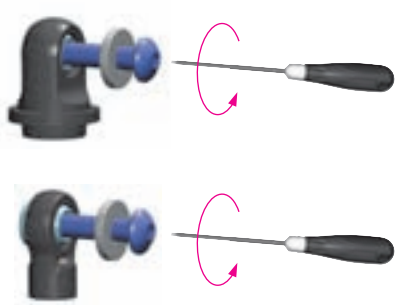
Tighten screw until pivot ball snaps into place

3



Ensure pivot balls move freely

4



Remove screw and shim

XRAY