

Advanced

RACING SUSPENSIONS

A stylized graphic of a suspension system, showing a coil spring and shock absorber, rendered in white lines against a black background.

1698 Midwest Blvd.
Indianapolis, IN 46214
317.271.7100



quarter midget catalog

5500 Series

Quarter Midget Shock



The M1 Piston has allowed us to create a shock that is all around superior in today's quarter midget suspension market. We have been able to create a more consistent shock, especially through the long runs.

We are able to control the flow by placing set screws into the holes on the compression and rebound side of the piston allowing us to keep a consistent and smooth valving curve throughout the shock.

Any previous ARS Shock can be updated to our latest valving with the M1 Piston.

We are continuously working to provide the best quarter midget shock available. The combination of a base valve design, which allows for very low rod pressure, and a check valve make the ARS quarter midget shock superior.

Air Valve

An Air Valve Shock allows for a more technical and precise suspension tuning curve. The Gas Pressure allowed in the shock will change the spring rate but allow all dampening ranges to remain the same. This allows for fine tuning but a certain amount of minimum pressure must be maintained in the shock at all times in order for the shock to work correctly. Example being a 1-3 valving on compression needs to maintain no less than 15psi and a 4 or higher on compression no less than 25psi.



A Non-Air Valve Shock is most common among our customers. This type of shock has no maintenance compared to the Air Valve shock. You do not need to set any pressures or check them between every race. They remain very consistent, allowing for you to bolt them on and go!

Non-Air Valve

Springs

ARS has designed a complete line of quarter midget springs that are not only very accurate in spring rate but are also consistent in free length. Even more important, the line of springs have a very constant spring frequency through the complete range of springs from 70 to 170 pounds. The entire line of springs has the same number of coil winds within 1/2 of a turn. This creates a constant spring frequency when changing from one spring to another spring. Many inferior coil spring manufacturers use the same coil diameter in 4 sequential rates (Ex. 105-120) and just vary the number of coil winds. This system doesn't change the spring rate, but creates a very inconsistent response in spring change.

The complete line of coil springs was designed to be as light as possible and still provide a smooth response through the irregularity in the race track.

The gloss black powder coated springs are manufactured from the highest quality chrome silicone material and shot peened and preset to ensure the springs accuracy. The ARS coil-over springs are available in the following rates:

5" long x 1 5/8" I.D. Springs

5x050	5x070	5x080	5x085	5x090	5x095
5x100	5x105	5x110	5x115	5x120	5x125
5x130	5x135	5x140	5x150	5x170	



Shock Numbering System

The First number is Rebound, the Second number is Compression.

Example: 5501/3 is #1 on Reb. and #3 on Comp.

5503 is #3 on Reb. & Comp.

5504/3 is #4 on Reb. and #3 on Comp.

AV= Air Valve (shock has an air valve to change the gas pressure)

M1= M1 Piston Installed Inside Shock

M1X= Valving curve that creates more grip

E= Extended Eye (Eye is 3/4" longer than standard)

R= Shock has soft rebound (#1 Valving)

S= Shorty Shock (Has a Shorter Body, Shaft & Eye)



The short shock eyes cannot be install on a standard length shaft. The standard length shock with a short eye will bottom out internally instead of externally causing damage to the shock. Extended shock eyes can be installed on all shocks.

Quarter Midget Shock Dimension Chart

Shock #	Description	Extended	Compressed	Actual Stroke
5500	Qtr Midget Std Eye	10.500	7.700	2.800
5500E	+3/4" Extended Eye	11.250	8.450	2.800
5500S	Shorty Model	9.25	9.950	2.300

Shock Valving Recommendations

Quarter Midget on Asphalt (250-295LBS. Classes)

Left Front:

#3 Valving (baseline)

#4/3 (4 rebound /3 compression)

Frees the chassis up throughout the corner for tracks with a lot of grip.

#3R (same as 1 rebound /3 compression)

Tightens chassis up throughout the corner to create more side-bite.

#2/3 (2 rebound /3 compression)

Tightens chassis up throughout the corner to create more side-bite.

Left Rear:

#2/3 Valving (baseline)

#3 (3 rebound /3 compression)

Frees chassis up on entry and tightens chassis up on exit,

#4/3 (4 rebound /3 compression)

Frees chassis up on entry and tightens chassis up on exit.

#3R (1 rebound /3 compression)

Allows weight to transfer to RF corner and makes front end turn more positive.

Right Front:

#3 Valving (baseline)

#4 (4 rebound /4 compression)

Tightens chassis on corner entry, but will turn better on exit.

#4/3 (4 rebound /3 compression)

Frees the chassis up on corner entry and turns better on exit (for flat or slow tracks)

#3/4 (3 rebound /4 compression)

Tightens the chassis more throughout the corner. (Great for high banked tracks.)

Right Rear:

#3 Valving (baseline)

#4 (4 rebound /4 compression)

Frees chassis up on entry and tightens chassis up on exit.

#4/3 (4 rebound /3 compression)

Tightens chassis throughout corner. (Best for track that is rough or has poor grip)

#3R (same as 1 rebound /3 compression)

Frees the chassis up throughout the corner

#3/4 (3 rebound /4 compression)

Frees the chassis up throughout the corner.

Quarter Midget on Asphalt (325-340LBS. Classes)

Left Front:

#4 Valving (baseline)

#5/4 (5 rebound /4 compression)

Frees chassis up throughout the corner for tracks with a lot of grip.

#3/4 (3 rebound /4 compression)

Tightens chassis up throughout the corner to create more side-bite.

Left Rear:

#4 Valving (baseline)

#5/4 (5 rebound /4 compression)

Frees chassis up on corner entry and tightens chassis up on exit.

#3/4 (3 rebound /4 compression)

Allows weight to transfer to RF corner and make front end turn more positive.

Right Front:

#3/5 Valving (baseline)

#4 (4 rebound /4 compression)

Allows chassis to transfer from RF quicker.

Right Rear:

#3/5 Valving (baseline)

#4 (4 rebound /4 compression)

Tightens the chassis up throughout the corner.

Quarter Midget on Dirt (250-290LBS. Classes)

Left Front:

#2/3 Valving (baseline)

#3 (3 rebound /3 compression)

Frees the chassis up on corner exit.

Left Rear:

#2/3 Valving (baseline)

#3 (3 rebound /3 compression)

Doesn't transfer weight as quick to RF

Right Front:

#3 Valving (baseline)

#1/3 (1 rebound /3 compression)

Tightens the chassis up throughout the corner.

#4/3 (4 rebound /3 compression)

Turns better throughout the corner and makes chassis free on corner exit

Right Rear:

#3 Valving (baseline)

#4/3 (4 rebound /3 compression)

Tightens the chassis up throughout the corner.

Quarter Midget on Dirt (325-340LBS. Classes)

Left Front:

#2/4 Valving (baseline)

#3 (3 rebound /3 compression)

Frees the chassis throughout the corner.

Left Rear:

#2/4 Valving (baseline)

#3 (3 rebound /3 compression)

Frees the chassis up on corner exit.

Right Front:

#4 Valving (baseline)

#3 (3 rebound /3 compression)

Frees the chassis up on corner entry and tightens chassis on corner exit.

Right Rear:

#3/4 Valving (baseline)

#3 (3 rebound /3 compression)

Tightens chassis up over 3 /4 valving

Options to correct a front end push condition (Understeer)

Shock Adjustments:

Tight on **CORNER ENTRY:**

- 1) Increase rebound in LR Shock
- 2) Increase Compression in RR Shock
- 3) Increase Rebound in Front Shocks
- 4) Reduce Compression in Front Shocks

Tight in **MIDDLE OF CORNER:**

- 1) Increase Compression in RR Shocks
- 2) Increase Rebound in Front Shocks
- 3) Reduce Compression in Front Shocks
- 4) Increase Pressure in RR Shock

Tight on **CORNER EXIT:**

- 1) Reduce Rebound in LR Shock
- 2) Increase Compression in RR Shock
- 3) Increase Rebound in Front Shocks
- 4) Increase Pressure in RR Shock

Chassis Adjustments:

Tight on **CORNER ENTRY:**

- 1) Increase Rear Tire Stagger
- 2) Move RR Tire out on Axle
- 3) Reduce Front Spring Rate
- 4) Lower Front Panhard Bar
- 5) Narrow RF Wheel Offset

Tight in **MIDDLE OF CORNER:**

- 1) Increase Rear Tire Stagger
- 2) Move RR Tire out on Axle
- 3) Reduce Front Spring Rate
- 4) Increase RR Spring Rate
- 5) Reduce Cross Weight in Chassis
- 6) Lower Front Panhard Bar
- 7) Narrow RF Wheel Offset

Tight on **CORNER EXIT:**

- 1) Increase Rear Tire Stagger
- 2) Move RR Tire out on Axle
- 3) Increase RR Spring Rate
- 4) Reduce LR Spring Rate
- 5) Reduce Cross Weight in Chassis
- 6) Raise Rear Panhard Bar

Options to correct a loose rear end condition (Oversteer)

Shock Adjustments:

Loose on **CORNER ENTRY:**

- 1) Increase Compression in Front Shocks
- 2) Reduce Rebound in LR Shock
- 3) Reduce Rebound in LF Shock
- 4) Reduce Compression in RR Shock
- 5) Reduce Pressure in Rear Shocks

Loose in **MIDDLE OF CORNER:**

- 1) Increase Compression in Front Shocks
- 2) Reduce Compression in RR Shock
- 3) Reduce Rebound in LF Shock
- 4) Reduce Rebound in RF Shock
- 5) Reduce Pressure in Rear Shocks

Loose on **CORNER EXIT:**

- 1) Reduce Compression in RR Shock
- 2) Increase Rebound in LR Shock
- 3) Reduce Rebound in Front Shocks
- 4) Reduce Pressure in RR Shock

Chassis Adjustments:

Loose on **CORNER ENTRY:**

- 1) Reduce Rear Tire Stagger
- 2) Move RR Tire in on Axle
- 3) Increase Front Spring Rate
- 4) Raise Front Panhard Bar
- 5) Reduce Rear Spring Rate
- 6) Extend Front Axle Width

Loose in **MIDDLE OF CORNER:**

- 1) Reduce Rear Tire Stagger
- 2) Move RR Tire in on Axle
- 3) Increase Front Spring Rate
- 4) Reduce RR Spring Rate
- 5) Raise Front Panhard Bar
- 6) Lower Rear Panhard Bar

Loose on **CORNER EXIT:**

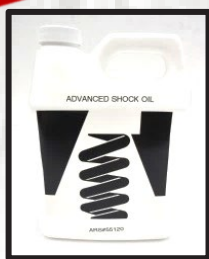
- 1) Reduce Rear Tire Stagger
- 2) Move RR Tire in on Axle
- 3) Reduce RR Spring Rate
- 4) Increase LR Spring Rate
- 5) Increase Cross Weight in Chassis
- 6) Lower Rear Panhard Bar

****A Loose Corner Exit problem may be amplified by a tight middle of corner problem that must be corrected first.****

Tune Sheet
Quarter Midget

HARDWARE

Please Visit AdvancedRacingSuspensions.com or
Call (317) 271-7100 to order parts



ARS #55120
Shock Oil
(1 Quart)



ARS #55987
Bushing Removal Tool



ARS #55994
Bleeding Bell



ARS #55162
Short Eye



ARS #5516
Standard Eye



ARS #5521
Extended Eye



ARS #5509
Cone Style Coil-Over Kit
ARS #5511 Adjusting Nut
ARS #5514 Cone Style Spring Seat



ARS #5510
Flat Style Coil-Over Kit
ARS #5511 Adjusting Nut
ARS #5515 Flat Style Spring Seat



ARS #40887
Gas Gauge



ARS #5508
Thrust Bearing Kit
Fits Between Spring
and Adjusting Nut



ARS #5533
Air Valve



ARS #5524
Closure Nut
Assembly



ARS #5520
Standard Shaft
ARS #55202
Shorty Shaft



ARS #55993
Spanner Wrench



ARS #55975
Shock Covers
(Pair)



ARS #55997M1 Revalve Kit Includes:
ARS #5543 M1 Piston (3)
ARS #55435 Piston Set Screw (10)
ARS #5550 A-Shim (8)
ARS #5554 B-Shim (8)

ARS #5561 .001 Pre-Load Shims (10)
ARS #5562 .002 Pre-Load Shims (10)
ARS #5563 .003 Pre-Load Shims (10)
ARS #5565 .005 Pre-Load Shims (10)

ARS #558645 Compression Bleed Plate .063 (2)
ARS #55866 Compression Bleed Plate .095 (2)
ARS #55713 Check Valve Assy for #3 M1



ARS #559975M1X Revalve Kit Includes:
ARS #5543 M1 Piston (3)
ARS #55435 Piston Set Screw (10)
ARS #5550 A-Shim (8)
ARS #5554 B-Shim (8)

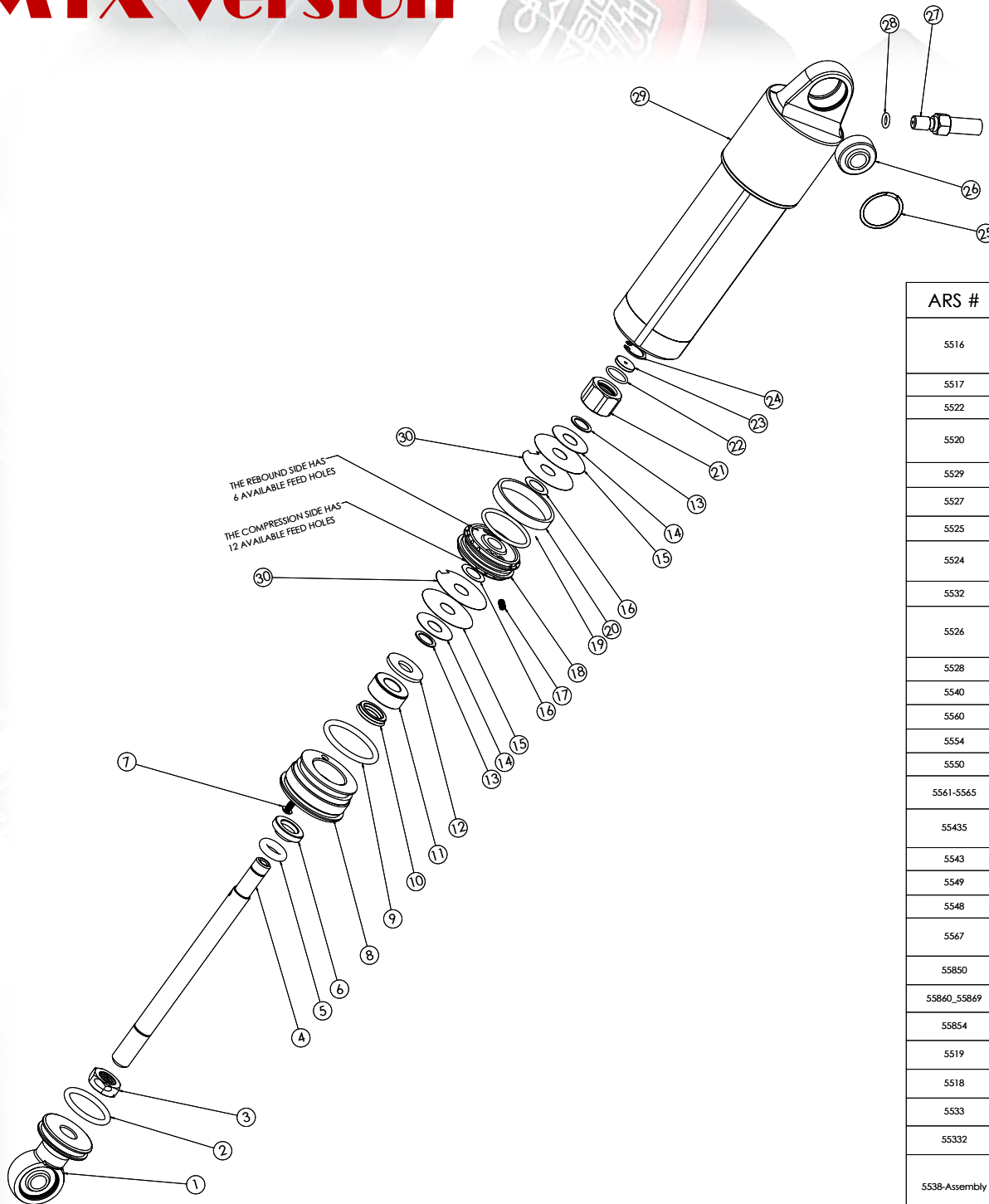
ARS #5561 .001 Pre-Load Shims (10)
ARS #5562 .002 Pre-Load Shims (10)
ARS #5563 .003 Pre-Load Shims (10)
ARS #5565 .005 Pre-Load Shims (10)

ARS #558645 Compression Bleed Plate .063 (2)
ARS #558648 Compression Bleed Plate .081 (2)
ARS #5567 Shaft Nut Bleed Plate Holder (1)



ARS #55999 Rebuild Kit Includes:
ARS #5516 Standard Eye (1)
ARS #5517 O-Ring for Eye (4)
ARS #5520 Standard Shaft (2)
ARS #5525 Bleed Screw (2)
ARS #5526 Seals (2)
ARS #5527 Wiper (1)
ARS #5528 Bushings (2)
ARS #5532 O-Ring for Closure Nut (2)
ARS #55993 Spanner Wrench

5500 Series Quarter Midget M1X Version



ARS #	ITEM	DESCRIPTION
5516	1	Eye with Bearing and Retaining Ring. Options: 5521 - .750 Longer, 55162 - Short Eye for 2.3" Stroke
5517	2	O-Ring, Spring Cup
5522	3	.375"-24 Jam Nut
5520	4	Shaft, Standard Length - 2.8" Stroke Option: 55202 - 2.3" Stroke
5529	5	O-Ring, Movement Indicator
5527	6	Shaft Wiper
5525	7	Seal Screw - Closure Nut
5524	8	Closure Nut - Complete - With Seal, Bushing, Wiper or Seal Screw.
5532	9	O-Ring, Closure Nut to Body
5526	10	Shaft Seal - Standard - Tan Color. Option: 55262 - Soft Durometer - Blue Color
5528	11	Shaft Bushing
5540	12	Piston Stop Washer
5560	13	Spacer, Piston .020" thick
5554	14	"B" Shim(s)
5550	15	"A" Shim(s)
5561-5565	16	.001", .002", .003", .005" Preload Shims
55435	17	4-40 x 3/16" Set Screw to delete feed as necessary.
5543	18	Piston
5549	19	O-Ring, Piston to Glyde Ring
5548	20	Glyde Ring
5567	21	Piston Nut with bleed jet hole. (Bare Nut)
55850	22	O-Ring, Check Valve
55860_55869	23	Bleed Plate .048" to .116"
55854	24	Internal Snap Ring, Check Valve
5519	25	Spiral Retaining Ring
5518	26	Bearing
5533	27	Air Valve, Optional
55332	28	O-Ring, Air Valve
5538-Assembly	29	Body with: Base Valve, Floating Piston and End Cap Installed. Option: 55385 - Body Assembly with Air Valve installed
55501-55504	30	Optional Bleed Shim(s), 1-4 slots. (see Valving Code)

NOTES:

- #14 AND #15 ARE "A" AND "B" SHIMS. REFER TO VALVING CODE FOR THEIR QUANTITY.
- #16 REPRESENTS THE NECESSARY SPACING SHIMS TO GET THE DESIRED SHIM STACK PRELOAD OR OFFSET AS SHOWN ON THE VALVING CODE.

ADVANCED RACING SUSPENSION INC.

**ARS #5500
QM-ASM-2021-M1X
M1X VERSION**

DRAWN BY:
MMETZ
DATE:
12/10/20
SCALE= 4:1



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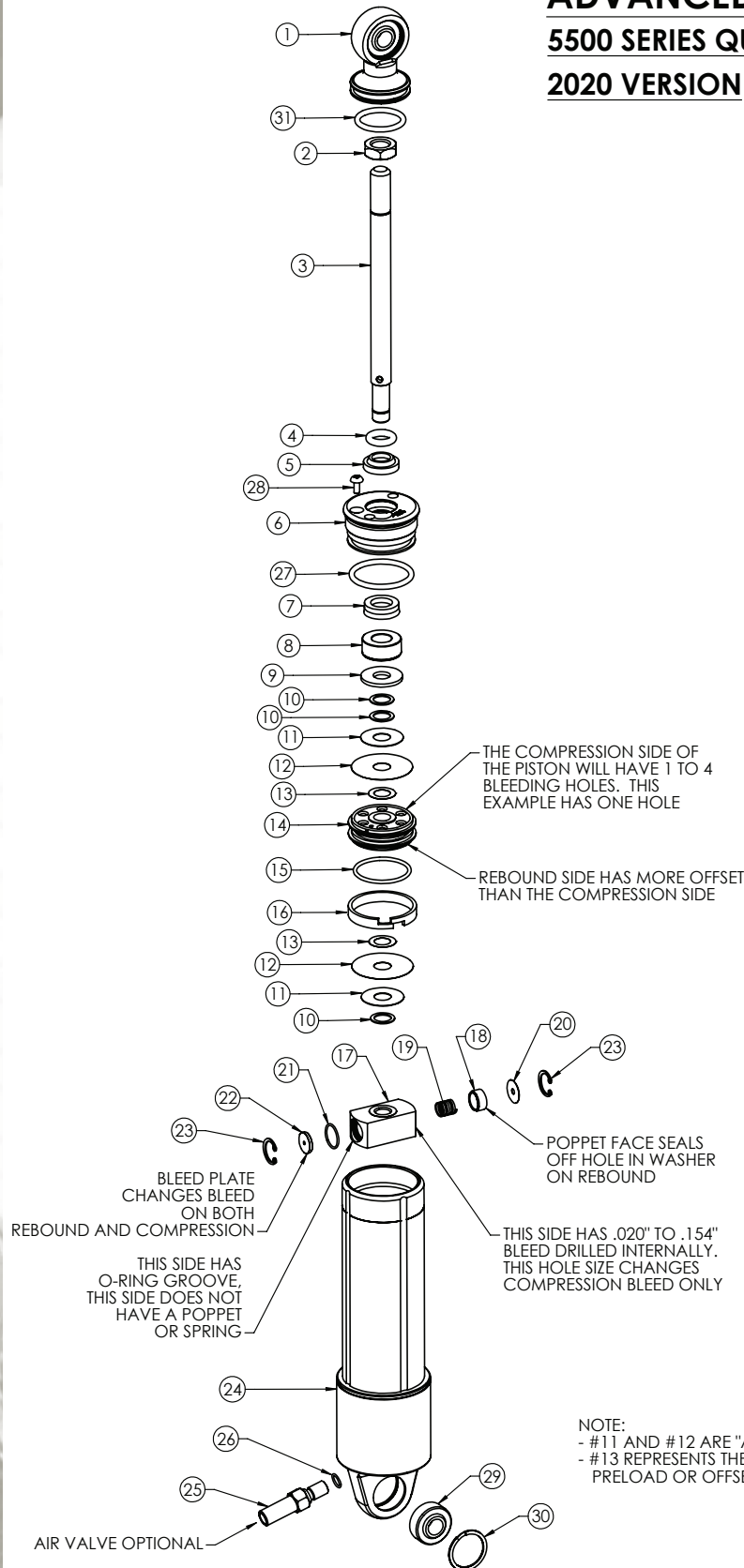
RACING SUSPENSIONS

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ADVANCED RACING SUSPENSIONS

5500 SERIES QUARTER MIDGET

2020 VERSION



ITEM	ARS#	DESCRIPTION
1	5516	Eye with Bearing and Retaining Ring. Options: 5521-.750" Longer, 55162-Short Eye for 2.3" Stroke
2	5522	Jam Nut
3	5520	Shaft, Standard Length-2.8" Stroke Option: 55202-2.3" Stroke
4	5529	O-Ring, Movement Indicator
5	5527	Shaft Wiper
6	5524	Closure nut complete with seal, bushing, wiper, and seal screw
7	5526	Shaft Seal-Standard-Tan Color. Option: 55262-Soft Durometer-Blue Color
8	5528	Shaft Bushing
9	5540	Piston Stop Washer
10	5560	Spacer Piston .020" thick
11	5554	"B" Shim(s)
12	5550	"A" Shim(s)
13	5561-5565	.001", .002", .003", .005" Preload Shims
14	5543	Piston
15	5549	O-Ring, Piston to Glyde Ring
16	5548	Glyde Ring
17	55820-55823	Check Valve Housing .020" to .154" Bleed Compression
18	5584	Poppet
19	55852	Spring
20	55857	Washer
21	55850	O-Ring, Check Valve
22	55860-55869	Bleed Plate .020" to .140"
23	55854	Internal Snap Ring, Check Valve
24	Assembly 5538	Body with: Base Valve, Floating Piston and End Cap Installed. Option: 55385-Body Assembly with Air Valve installed
25	5533	Air Valve, Optional
26	55332	O-Ring, Air Valve
27	5532	O-Ring, Closure Nut to Body
28	5525	Seal Screw, Closure Nut
29	5518	Bearing
30	5519	Spiral Retaining Ring
31	5517	O-Ring, Spring Cup

NOTE:
- #11 AND #12 ARE "A" AND "B" SHIMS. REFER TO VALVING CODE FOR THEIR QUANTITY
- #13 REPRESENTS THE NECESSARY SPACING SHIMS TO GET THE DESIRED SHIM STACK PRELOAD OR OFFSET AS SHOWN ON THE VALVING CODE