



To: Star Mazda Championship Teams and Drivers

From: Gary Rodrigues / Star Mazda Race Cars

Date: December 9, 2008

Re: 2009 mechanical updates / parts / prices / availability

Pursuant to our memo of two weeks ago that provided an overview of the mechanical updates that will be available for the 2009 Star Mazda race car, attached you will find a list of specific parts, prices and anticipated dates of availability. We hope it is apparent to all that we have done our very best to deliver these improvements with maximum value for minimum cost.

First preference in delivery of parts will be given to teams that are entered in the series for 2009. Update parts will also be eligible, as in previous years, for the team parts program for entered teams. In the matter of orders placed for new-style wings during the 2008 season, teams will retain their place in line for actual delivery of the new wings.

You will see on the attached Excel spread sheet that parts are grouped in the same manner as our initial memo on this subject:

1. Aerodynamic package: Note that the carbon fiber wings are stronger, of much higher quality and, in the event of damage on track, are more likely to be repaired rather than replaced. The new design permits reduced drag, reduces chassis pitch sensitivity and increases cooling. The front wing has been raised about an inch to reduce damage from curbing and to increase cooling to the engine, thereby helping to prolong engine life and reliability. In addition, the rear wing has been reduced from four elements to three, thereby lowering cost. Availability of spares will be improved. Parts in this section are considered optional, but must be used "all or none." Mixing generations of aero parts will not be allowed.
2. Damper package: This change was mandated by Ohlins discontinuing their single tube damper. The new TTX36 is more affordable (about 25% less expensive) and the more robust design will lower maintenance costs. The new shock offers low-speed compression and rebound adjustments, as well as external adjustments that provide a large tuning window and minimal 'cross-talk', making it easier and less time-consuming for the driver and engineer to hit the car's 'sweet spot.' The new dampers will be considered optional, but must be used in complete car sets if used.

3. Suspension Rockers: With the switch to radial tires and a different damper package, these parts will improve the overall performance and reduce the time and cost of engineering setup at the track. These are also optional and may be used with original or new-spec dampers.
4. Front Toe Adjusters: The front toe-links have been modified to accept an adjuster which will make adjusting the racecar alignment easier and more precise. These are optional.
5. Pushrod Ride Height Adjusters: Similar to the front toe-link adjusters, these will also provide the race teams with a better adjustment mechanism. Whether the adjustments are made on pit lane or the setup pad, this will allow quicker tuning and more repeatable adjustments. These are optional.
6. Rear Upper Camber Block: This allows an increase in the camber adjustment window, reduces rear bump steer and reduces setup time at the track. These are optional.
7. Battery Box: This part is still being engineered and is not reflected on the spread sheet. It will be optional.
8. Engine Upgrades: Updates to the engine are optional "running changes" due to manufacturing changes by Mazda. Dyno testing has shown little if any outright performance change but increases in service life, fuel economy and overall engine reliability. Re-designed and stronger clutch mechanisms will increase reliability and service life. ECU mapping will be specific to the number of fuel injectors used in the configuration. The motor must have the ECU map compatible with the intake used.

New changes to the engine mapping will make 'hot re-starts' easier and more dependable, allowing the driver to get going again after an on-track spin or incident without needing a push or tow truck. Increasing the rev limit by 300 rpm, from 8,300 to 8,600, will reduce cycling the intake valve and make the 'short' stack of gears more widely applicable to the circuits run by our series, thereby reducing gearbox changes.

This is obviously not the financial environment in which to make wholesale and gratuitous changes – nor have we. In every case we have worked long and hard to make the updates optional, interchangeable and as efficient and cost-effective as possible. This will allow each car owner to phase into the updates at the rate he or she chooses.

It is our intention to have all these parts available to teams before the IMSA/Star Mazda Championship test at Sebring January 26 – 28. Technical experts from the Star Mazda Championship, as well as engineers from Ohlins, Quartermaster and other technical partners involved in the upgrade program will be on hand to bring teams, engineers and drivers up to speed as quickly as possible.

Teams are urged to attend this test; or if that is not possible, you should consider sending a qualified technical representative who can understand and report this information back to the relevant members of your team.

STAR RACE CARS
2009 New Item List

GROUP 1 AERODYNAMIC PACKAGE

Item ID	Item Description	Price	Available
110-603	FRONT WING MAIN PLANE	1,518.06	Mid January
110-604	FRONT FLAP L/H	393.60	Mid January
110-605	FRONT FLAP R/H	393.60	Mid January
110-606	FRONT WING END PLATE	23.94	Mid January
110-608	INNER FLAP END PLATE	7.36	Mid January
110-610	FRONT FLAP BRACKET L/H	5.40	Mid January
110-611	FRONT FLAP BRACKET R/H	5.40	Mid January
110-612	FRONT FLAP GURNEY LH	84.15	Mid January
110-615	REAR LOWER MAIN PLANE	1,718.40	Mid January
110-616	REAR WING UPPER FORWARD ELEMENT	652.80	Mid January
110-617	REAR WING FLAP	432.00	Mid January
110-618	REAR WING END PLATE LH	355.20	Mid January
110-619	REAR WING END PLATE RH	355.20	Mid January
110-620	REAR WING HARDWARE KIT	51.06	Mid January
110-621	FRONT GURNEY FLAP RH	84.15	Mid January
110-622	FRONT WING DOWN PLATE LH	92.09	Mid January
110-623	FRONT WING DOWN PLATE RH	92.09	Mid January
110-624	REAR WING DOWN PLATE LH	96.03	Mid January
110-625	REAR WING DOWN PLATE RH	96.03	Mid January
110-626	REAR WING GURNEY	9.50	Mid January

GROUP 2 / DAMPER PACKAGE

000-577	FRONT DAMPER	937.29	Late January
020-543	REAR DAMPER	937.29	Late January

GROUP 3 / SUSPENSION ROCKERS

000-578	FRONT ROCKER	129.98	Late December
020-544	REAR ROCKER	129.98	Late December
120-518	BEARING - FRONT ROCKER	10.99	Late December
120-519	BEARING - REAR ROCKER	10.99	Late December
000-582	SPACER -ROCKER BEARING FRONT	7.89	Late December
020-545	SPACER -ROCKER BEARING REAR	7.89	Late December
020-546	STUD -REAR ROCKER	23.88	Late December
020-547	PIVOT PIN -REAR ROCKER	86.73	Late December

GROUP 4 / FRONT TOE ADJUSTERS

010-528	TOE LINK	58.20	Late December
010-529	TURNBUCKLE - TOE LINK	31.04	Late December

GROUP 5 / PUSHROD RIDE HEIGHT ADJUSTERS

000-579	SHORT TURNBUCKLE	50.94	Late December
000-580	LONG TURNBUCKLE	53.89	Late December
000-581	PUSHROD	96.01	Late December

GROUP 6 / REAR UPPER CAMBER BLOCK

020-530	CAMBER BLOCK LH	92.54	Late December
020-531	CAMBER BLOCK RH	92.54	Late December

GROUP 8 / ENGINE UPGRADES

050-524S	2009 NEW ENGINE	15332.55	Late December
050-610	2009 ACCESSORY KIT	324.43	Currently
050-606	ENGINE EXCHANGE PROGRAM	11198.16	Late December
999-513S	PFM BASIC MOTOR REBUILD	2665.72 + PARTS	Currently
	2009 MANIFOLD KIT	3,347.68	Late December

GROUP 8 / CLUTCH UPGRADES

060-669	2 DISC COVER WITH "AAA" SPRING (WHITE)	\$448.00	Late December
060-694	CLUTCH PAC 5.5 2DISC - GEAR DRIVE & PREMIUM FRICTION	\$604.00	Late December
060-504	RING GEAR - 145T LW	\$419.00	Late December

NOTE: GROUP 7 / BATTERY BOX - THIS IS STILL BEING ENGINEERED FOR OPTIONAL RETROFIT TO ALL CARS. ANNOUNCEMENT OF AVAILABILITY IS FORTHCOMING.