



## *Chevy LS-1 - LS-7 Serpentine Kit*

Installation Instructions

*Kit #20060 (Standard electronic throttle body Kit with Power Steering)*

*Kit #20070 (Standard electronic throttle body Kit without Power Steering)*

*Kit #20065 (Narrow mechanical throttle only kit with Power Steering)*

*Kit #20075 (Narrow mechanical throttle only kit without Power Steering)*



## LS-1/LS-2 Parts List

### Alternator Bracket Parts PN20066

- 1 - 20066-A..... Alternator Front Bracket
- 1 - 20066-B..... Alternator Rear Bracket
- 1 - 20066-C..... Alternator Spacer Bracket
- 1 - S268 .....  $\frac{3}{8}$ " - 16 x  $3\frac{3}{4}$ " SHCS
- 2 - S552 ..... 8mm - 1.25 x 150mm SHCS
- 1 - S551 ..... 8mm - 1.25 x 25mm SHCS
- 1 - S554 ..... 8mm - 1.25 x 80mm SHCS
- 1 - S622 .....  $\frac{3}{8}$ " Lock Nut
- 1 - 453..... Threaded Bushing

### A/C Bracket Parts PN20067

- 1 - 20067-A..... A/C Front Bracket
- 1 - 20067-B..... A/C Rear Bracket
- 1 - S248 .....  $\frac{3}{8}$ " - 16 x 1" SHCS
- 1 - S564 ..... 10mm - 1.50 x 110mm SHCS
- 2 - S551 ..... 8mm - 1.25 x 25mm SHCS
- 1 - S561 ..... 10mm - 1.25 x 30mm SHCS
- 1 - S150 .....  $\frac{5}{16}$ " - 18 x  $1\frac{1}{2}$ " SHCS

### Power Steering Bracket PN20068

- 1 - 20068-A..... Power Steering Idler Bracket
- 1 - 20068-B..... Power Steering Rear Bracket
- 1 - 740-A..... Idler Pulley Body
- 1 - 302-A..... Idler Pulley Cap
- 1 - TP3-1.680..... 1.680" Tube Spacer
- 3 - TP7-1.890..... 1.890" Tube Spacer
- 3 - S022 .....  $\frac{8}{32}$  x  $\frac{3}{8}$ " SHCS
- 4 - S551 ..... 8mm - 1.25 x 25mm SHCS
- 3 - S562 ..... 10mm - 1.50 x 80mm SHCS
- 1 - S274 .....  $\frac{3}{8}$ " - 16 x 4" SHCS
- 1 - S666 .....  $\frac{3}{8}$ " i.d.  $\frac{3}{4}$ " o.d. Washer

### Tensioner Bracket PN20069

- 1 - 20069-A..... Tensioner Bracket
- 1 - 780-A..... Tensioner Cover Adaptor Body
- 1 - 307-A..... Tensioner Cover Body
- 3 - TP3-.520..... .520" Tube Spacers
- 3 - S025 .....  $\frac{8}{32}$  x  $\frac{5}{8}$ " SHCS
- 1 - S324 .....  $\frac{3}{8}$ " - 16 x  $2\frac{1}{4}$ " Hex Head Bolt
- 3 - S559 ..... 8mm - 1.25 x 100mm SHCS

### Pulley Kit PN 6340-208

- 1 - 6341-A..... Crank Pulley
- 1 - 6342-A..... Water Pump Pulley
- 1 - 619..... Power Steering Pulley  
*With Kits # 20065 or # 20085*
- 1 - 221 ..... Alternator Fan
- 1 - 208-A..... Alternator Pulley
- 1 - 307-A..... Alternator Pulley Cap
- 1 - 302-A..... Power Steering Pulley Cap  
*With Kits # 20065 or # 20085*
- 1 - 410-A..... Water Pump Pulley Cap
- 1 - 394-A..... A/C Pulley Cap
- 9 - S022 .....  $\frac{8}{32}$  x  $\frac{3}{8}$ " SHCS
- 3 - S028 .....  $\frac{8}{32}$  x 1" SHCS
- 3 - S124 .....  $\frac{1}{4}$ " - 20 x  $\frac{3}{4}$ " Button Hd Cap Screw
- 3 - S248 .....  $\frac{3}{8}$ " - 16 x 1" SHCS
- 4 - S551 ..... 8mm - 1.25 x 25mm SHCS

### Crank and Hub Adapter

- 1 - 355-A..... For Kits # 20085 or # 20095
- 1 - 358-A..... For Kits # 20065 or # 20075
- 1 - S569 ..... 16mm - 2.0 x 130mm  
Hex Head Bolt
- 1 - S686 .....  $\frac{11}{16}$ " i.d.  $1\frac{3}{4}$ " o.d. Flat Washer

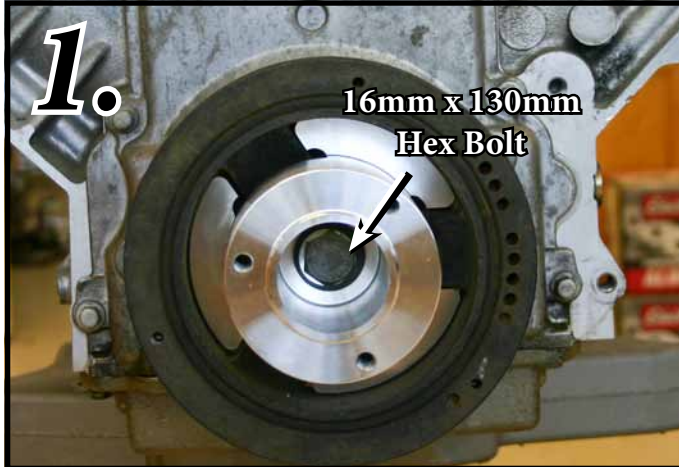
### Accessories

- 1 - P116..... LS1 Alum Waterpump
- 1 - P411 ..... Sanden A/C Compressor
- 1 - P571 ..... 105 Amp Polished Alum Alternator
- 1 - P417 ..... A/C Line Kit
- 1 - P756..... Polished Tensioner
- 1 - P320 ..... Polished Power Steering Pump  
*With Kits # 20065 or # 20085*

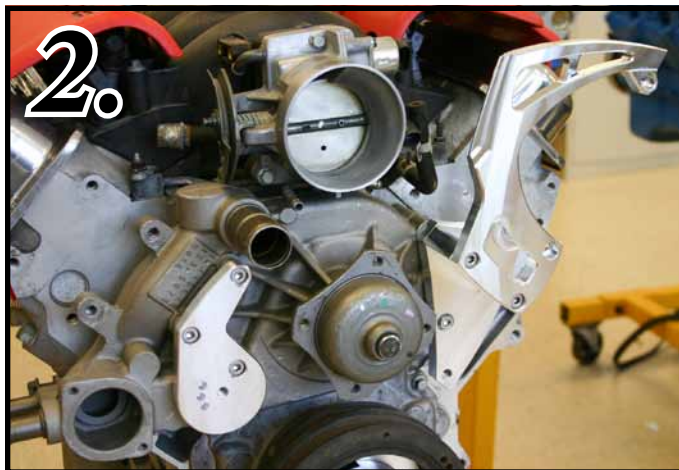
## Preparing to Install

- Disconnect the battery to prevent accidental engagement of starter motor.
- Drain coolant from system
- If your A/C is intact and charged it must be evacuated. This is best done by a professional garage with proper recycling equipment
- Remove the existing alternator, air conditioning compressor and associated brackets.
- Remove all pulleys and water pump.
- Remove all traces of old gasket and sealer with gasket scraper and steel wool pad.
- Clean threads in block by chasing with appropriate thread chasers.

## Installing the Kit

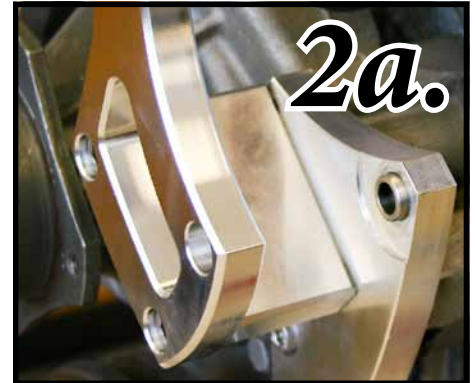


**Photo 1:** Remove 16mm O.E.M. Bolt from Crank, Install March Crank Adapter Hub Apply Loc-Tite to the threads of provided 16mm x 130mm Hex Bolt (S569) and using a 1/16" o.d. washer (S686) secure Adapter Hub and crank pulley, torque to 90 ft lbs.



**Photo 2:** Place the Tensioner Base (20069-A) onto the Water Pump (P116), using three 8mm x 100mm SHCS (S559), and three .520" long Spacers (TP3-.520), between bracket and the pump. Stack the three alternator brackets as shown in

**Photo 2a** using Rear Alternator Support Bracket (20066-B), Alternator Spacer Bracket (20066-C) and Front Alternator Bracket (20066-A). The two longer 8mm x 150 mm SHCS



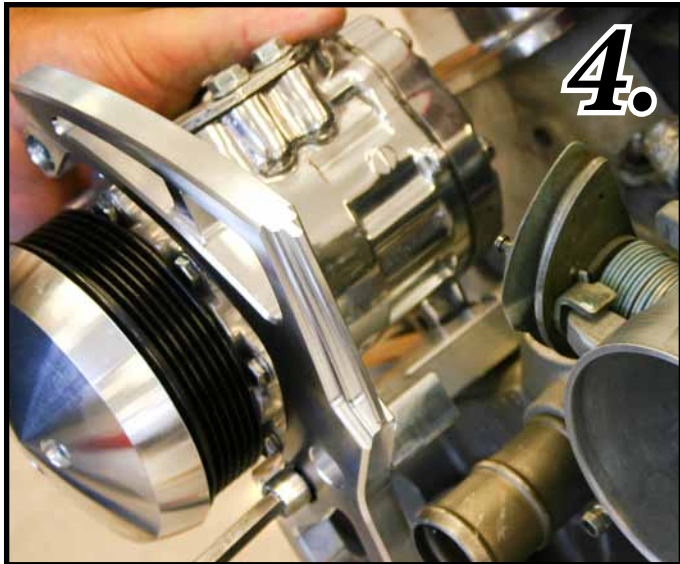
(S552) run through all three brackets and through the water pump. The shorter 8mm x 80mm SHCS (S554) runs through the alternator rear bracket and through the water pump. Apply silicone sealer to both sides of the water pump gaskets and slip over mounting bolts and onto water pump. As unit offer the water pump and bracket assembly onto the engine block **making sure the pump gaskets do not slip**. Now tighten all water pump bracket bolts to secure all brackets and water pump.



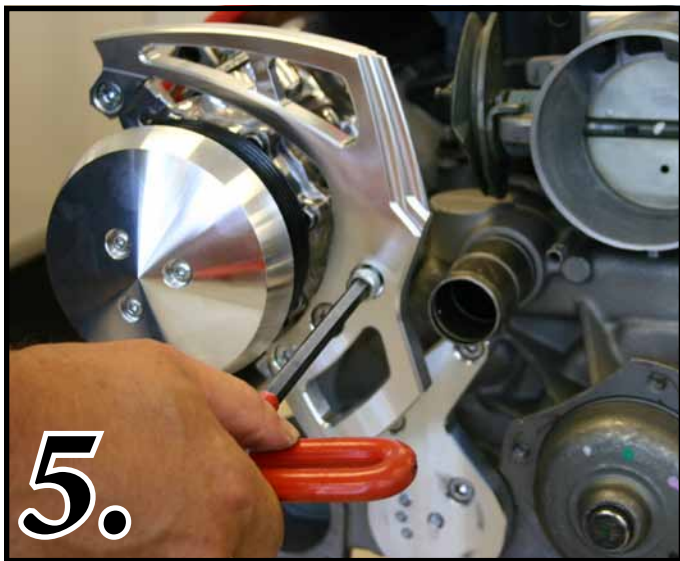
**Photo 3:** Install Rear A/C Bracket (20067-B) to the water pump as shown using one 10mm x 30mm SHCS (S561) bolt in the lower mounting hole. Snug only at this time.

Place the compressor clutch cover (394-A) onto the A/C compressor clutch and align. Thread three (S124) ¼"-20 x ¾" button head cap screws through the cover and into the clutch and tighten. **Caution - Do not over-tighten!**

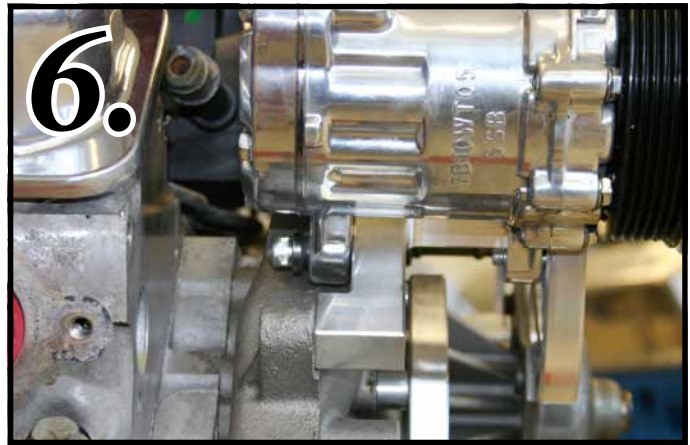
Install the A/C Compressor (P411) unit to the Main A/C bracket (20067-A) using two 8mm x 25 mm SHCS (S551) through the bracket and into the upper and lower compressor mounting ears.



**Photo 4:** Install the Main A/C bracket (20067-A) and Compressor unit to Rear A/C Bracket (20067-B) using one 10mm x 110mm SHCS (S564) into center hole, it runs through the Rear A/C Bracket (20067-B) and into the engine block.



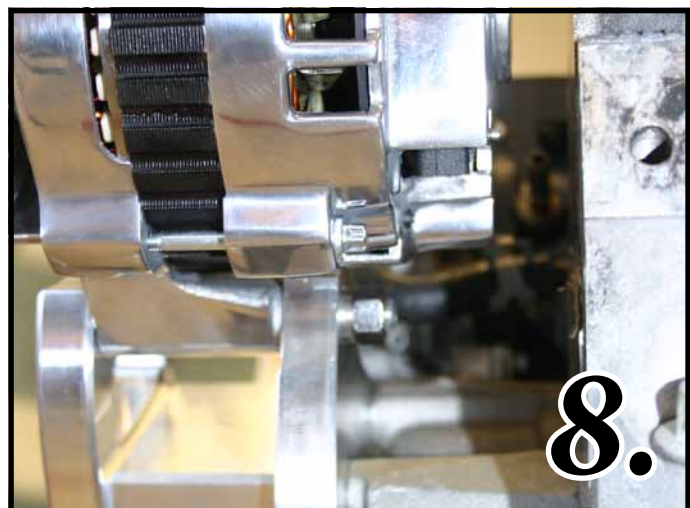
**Photo 5:** Place one ¾ - 16 x 1" SHCS (S248) into upper hole and secure Main A/C bracket to the Rear A/C Bracket.



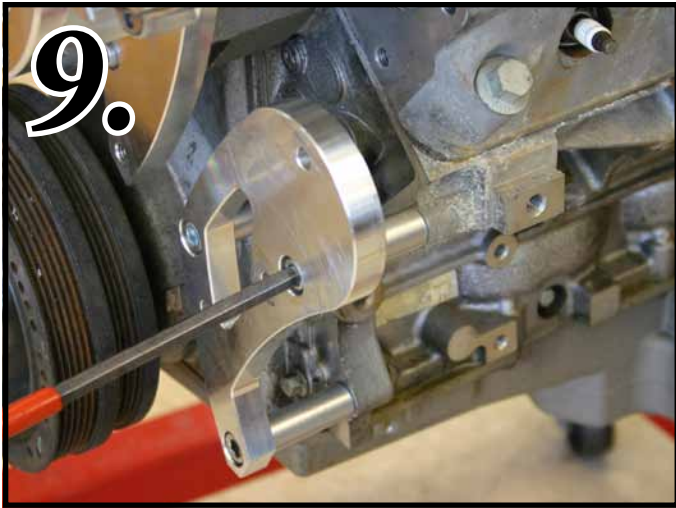
**Photo 6:** Bolt the A/C rear mounting ear to Rear A/C Bracket using one 5/16" x 1½" SHCS (S150)



**Photo 7:** Install threaded bushing (453) in Rear Alternator Support Bracket (20066-B) as shown.



**Photo 8:** Install Alternator (P571) using one ¾-16 x ¾" SHCS (S268) thru front main bracket and rear bushing secure with one ¾" Locknut (S622). Secure the top alternator mount using one 8mm x 25mm SHCS (S551) SHCS.



**Photo 9:** For kits ordered with power steering you will need to install the Power Steering Bracket using three 10mm x 80mm SHCS (S562) and three 1.890 long spacers (TP7-1.890) between the bracket and the block as shown.



**Photo 10:** Once the power steering bracket has been installed to the block there is enough room behind the bracket to secure the Remote Power Steering Pump (P320) to the bracket using two 8mm x 1.25 x 25 mm (S551) socket head caps screws installing from the back. Install Idler Bracket (20068-A) with two 8mmx25 mm SHCS (S551) to the front of the power steering pump.

Place one 3/8" i.d. washer (S666) onto a 3/8"-16 x 4" SHCS (S274) slide the Idler (740) onto the bolt and install it into the Idler Bracket placing one (TP3-1.680) Spacer between the two brackets as shown and screw into Rear Alternator Support Bracket (20066-B).



**Photo 11:** Temporarily mount the OEM style tensioner (P756) to Tensioner Base (20069-A) using one 3/8"-16 x 2 1/4" Hex Head Bolt (S324) , Be sure to align pin on rear of tensioner with hole in tensioner base. This will aid you in removing the tensioner pulley. Remove the pulley bolt using a 15mm wrench and discard the washer.

Remove the (S324) 3/8"-16 x 2 1/4" tensioner body bolt and place the Tensioner Base Cover (780) on the bolt and re-install.

Reinstall the tensioner pulley and place the Tensioner Pulley Cover Retainer in place and reinstall pulley bolt. This will be used to hold the tensioner pulley cap later.



**Photo 9:** Apply Loc-Tite to the threads of the three 3/8"-16 x 1" SHCS (S248) and install Crank Pulley to the March Crank Adapter Hub

Apply Loc-Tite to the threads of the four 8mm x 25mm SHCS (S551) and install water pump pulley



**Photo 13:** Press power steering pulley (619-A) on with an install tool or bolt and washer as shown. When properly installed pulley should be flush with top of shaft as shown.



**Photo 15:** Install Alternator Fan (221) and Alternator Pulley (208-A) and tighten alternator pulley nut (impact to 90 ft, pounds). Check and tighten all bracket bolts and alternator and A/C lower mounting bolts, turn engine over once by hand to check for any belt rubbing and proper belt alignment. Run engine three minutes and check belt tension again.

Install Alternator pulley cover (307-A) with three (S028) SHCS.

Install Power steering pulley cover (302-A) with three (S022) SHCS.

Install Water pump pulley cover (410-A) with six(S022) SHCS.

Install Tensioner Pulley Cover (307-A) with three  $\frac{3}{32}$ " x  $\frac{5}{8}$ " SHCS (S025)

Install IdlerPulley Cover (302-A) with three  $\frac{3}{32}$ " x  $\frac{3}{8}$ " SHCS (S022)

#### **Belt sizes for kits**

**20060.... 76" (With Power Steering)**

**20070.... 67" (Without Power Steering)**

**20065.... 78" (With Power Steering)**

**20075.... 68" (Without Power Steering)**

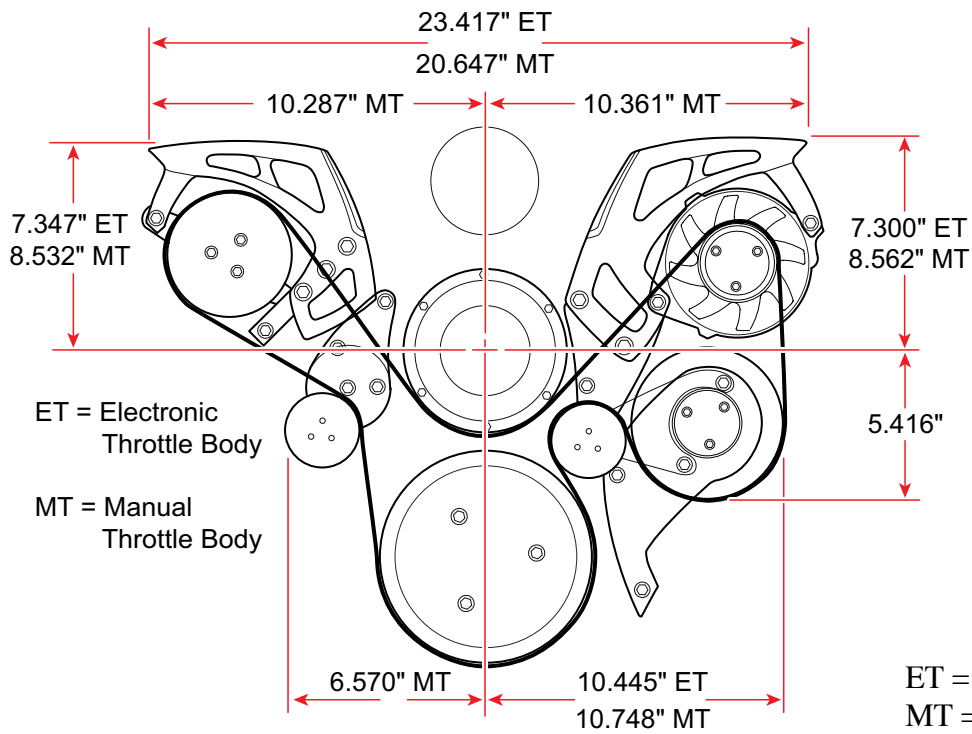


**Photo 14:** Have an assistant pull back on the spring loaded tensioner and rap the belt around the system pulling the belt over the bottom of the water pump last as shown.

## **Final Assembly**

If you are going to be installing your air conditioning hoses and charging the system at this time, remove the cover plate on top of the compressor body. Install the (P417) A/C adapter lines, hoses and connect clutch wire and charge system.

**Important:** If you are NOT installing hoses and charging the system at this time, leave cover plate on compressor. Do not connect the clutch wire or apply power to clutch wire without the hoses connected and the system charged – *Serious damage will occur to compressor.*



ET = Electronic Throttle Body  
 MT = Manual Throttle Body

LIMITED WARRANTY

March Performance warrants to the original retail purchaser that for a period of ninety (90) days from the date of purchase, March Performance will repair or replace, at their option, any Product, which is found to be defective in material or workmanship.

Exclusions from Warranty Coverage

March Performance does not warrant any Product that is damaged from abuse, misuse or misapplication or not used for its intended purposes.

This Limited Warranty does not cover or apply to any damage or loss sustained to the engine or any other parts which may have been caused by the defective Product and does not cover or apply to any personal injury, labor charges or any other incidental costs for damages caused by the defective Product. THIS IS THE ONLY EXPRESS WARRANTY GIVEN WITH RESPECT TO YOUR PRODUCT. ALL OTHER EXPRESS WARRANTIES, GUARANTEES, OR STATEMENTS REGARDING THE PRODUCT, WHETHER WRITTEN OR VERBAL, ARE HEREBY DEEMED NULL AND VOID AND OF NO EFFECT.

Normal wear and tear and damage to the Product not caused by March Performance are also excluded from this Warranty.

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EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY WHETHER OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY, SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY WILL LAST SO THAT THE PRECEDING LIMITATION MAY NOT APPLY TO YOU.

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Your Responsibilities:

- 1. Use and install the Product only for its intended purpose.
2. To avail yourself of this Limited Warranty, return the Product with a copy of the paid receipt, postage paid to: MARCH PERFORMANCE 16160 PERFORMANCE WAY NAPLES, FL 34110
3. When returning the Product, you must follow the directions set forth on the Warranty/Return Form on the reverse side of this Limited Warranty. If you no longer have the Warranty/Return Form, one may be obtained by contacting March Performance during normal business hours at: (888) 729-9070.
4. Shipping and/or transportation costs returning the Product to March Performance and any damage caused during shipping are your responsibility. March Performance will pay for shipping and/or transportation costs incurred in returning the Product to you.

LIMITED WARRANTY WARRANTY/RETURNS FORM

No product mounted is considered for credit unless it is a manufacturer defect.

All products returned for any reason must reference an authorization number (RGA). The RGA number is obtained by calling place of purchase during normal business hours. Any product returned without the RGA# written on the return package next to the return shipping label will be refused.

All returns must ship via UPS and be properly packaged in the original carton. Return freight charges are the responsibility of the customer unless the product was shipped in error.

March product returned after (1) year from date of purchase will not be accepted unless it is found to be a manufacturer defect. The customer must include a written statement describing the alleged product defect. The complete Limited Warranty is set forth on the reverse side.

- 100% credit issued on manufacturer defects
20% return fee on all reshelvable product
70% return fee on all repairable product

NO CREDIT WILL BE ISSUED ON RETURNED PRODUCT BEYOND REPAIR

March Performance thoroughly inspects all returns. It is the sole discretion of March Performance in determining the condition of all returned merchandise.

To receive replacements at no charge the original product must first be received and inspected by March Performance for determination. Immediate replacements may be purchased and later credited upon inspection determination.

Please Complete the Information below, detach and include with returned product.

Form fields for RGA#, CT#, Issued by, Date, Purchaser's Name, Phone, Address, Purchased Directly Through, Invoice#, Product ID, Invoice Date, Reason.

\*\* MOUNTED PRODUCTS ARE NONREFUNDABLE \*\*