

## LIONEL 6-18860 ENGINE REPAIR

DAMAGE: ALL PLASTIC SHELL MOUNTING POSTS WERE FRACTURED OR COMPLETELY BROKEN

RESULT: THE SHELL COULD NOT BE SECURED TO THE FRAME

REPAIR PLAN: MODIFY THE POSTS TO ALLOW THE SHELL TO BE SECURELY ATTACHED TO THE FRAME

THE SHELL FRONT MOUNTING POSTS ARE PART OF THE FRONT WINDOW RED PLASTIC. THE SHELL REAR MOUNTING POST ARE PART OF THE REVERSE LIGHT BULB CLEAR PLASTIC FIXTURE.

THE MOUNTING SCEWS WERE SIZE 4 "SHEET METAL" TYPE SCREWS. THIS WAS A VERY POOR DESIGN IN MY OPINION. THIS TYPE OF SCREW PUTS TOO MUCH PRESSURE ON THE THREADS IN THE PLASTIC POSTS – THUS, THEY BROKE. (1998 ENGINE)

THE SOLUTION NEEDED TO USE A MACHINE TYPE THREADED SCREW. LOOKING THROUGH MY STASH OF MISCELLANEOUS DOD-DADS ETC., I HAPPENED TO FIND SOME ALUMINUM DOWELS THAT WERE 1" LONG AND THREADED COMPLETELY THROUGH FOR A 4-40 MACHINE SCREW. THE DOWELS WERE JUST THE RIGHT DIAMETER TO MATCH THE PLASTIC POSTS. THIS WAS A VERY LUCKY FIND.

TO MAKE SURE THE DOWELS DID NOT TWIST WHEN INSTALLING THE NEW 4-40 MOUNTING SCREWS (BOTTOM OF ENGINE) I ADDED A SECTION OF 2-56 ALL THREAD WITH LOCKING NUTS THROUGH THE DOWELS.

ALL 4-40 SCREWS WERE INSTALLED WITH BLUE LOCTITE. (REMOVABLE TYPE)

THE SOLUTION IS BEST TOLD WITH PHOTOS.

THE PHOTO CAPTIONS PROVIDE SOME INFO WITHOUT GETTING INTO THE WEEDS.

THE RESULTS WORKED OUT EXACTLY AS I HAD HOPED FOR.

THIS PROJECT TOOK A LOT OF PLANNING... AND A LOT OF TIME - WITH MANY CHANGES ALONG THE WAY.

JP



PHANTOM 6-18860



BROKEN POSTS – FRONT



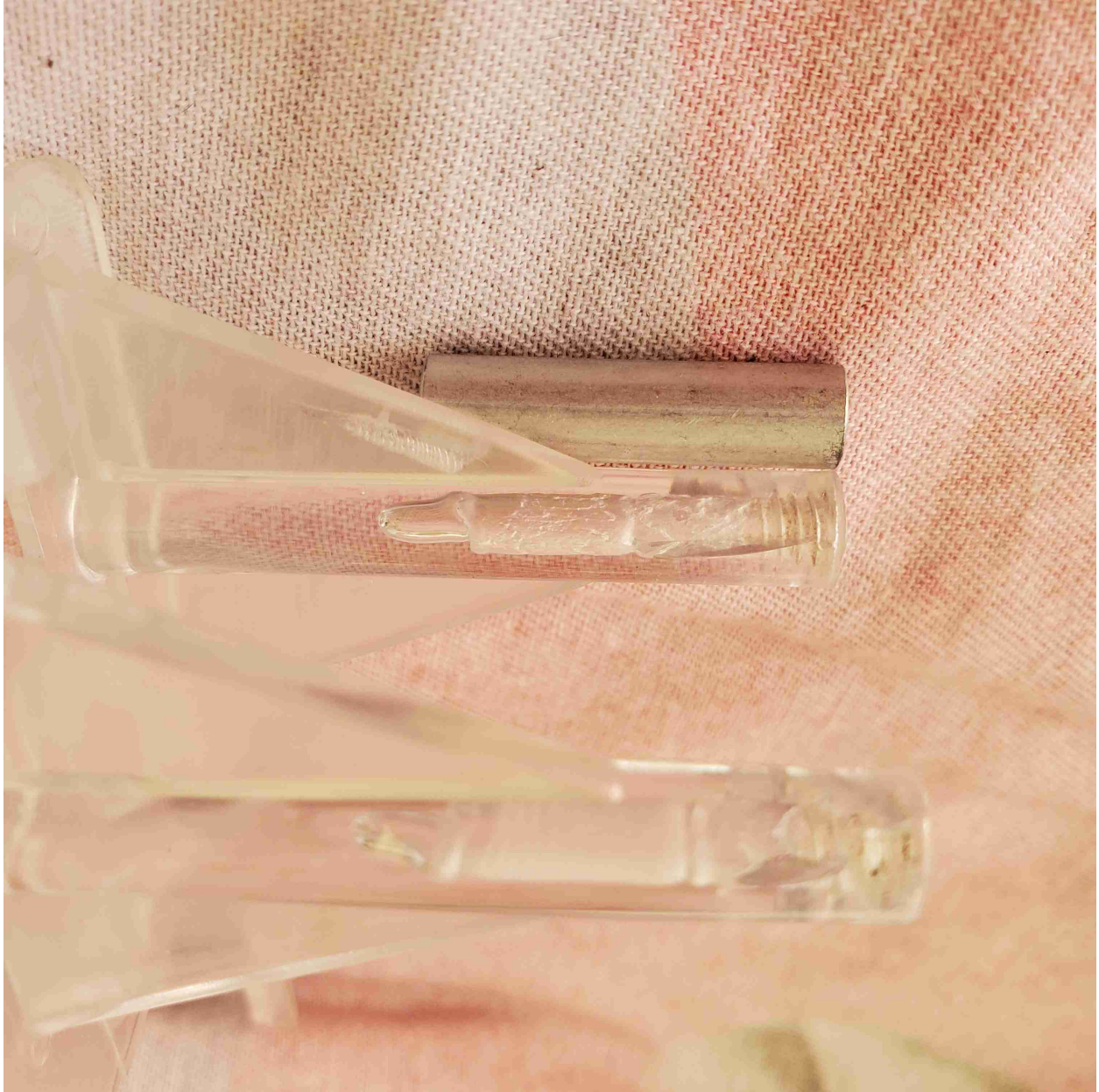
CRACKED POSTS – REAR



DOWELS THREADED FOR 4-40 SCREWS – ALL THE WAY THROUGH



MEASURING FOR FRONT DOWELS    PLASTIC TO BE CUT OFF WITH DREMEL TOOL



MEASURING FOR REAR DOWELS



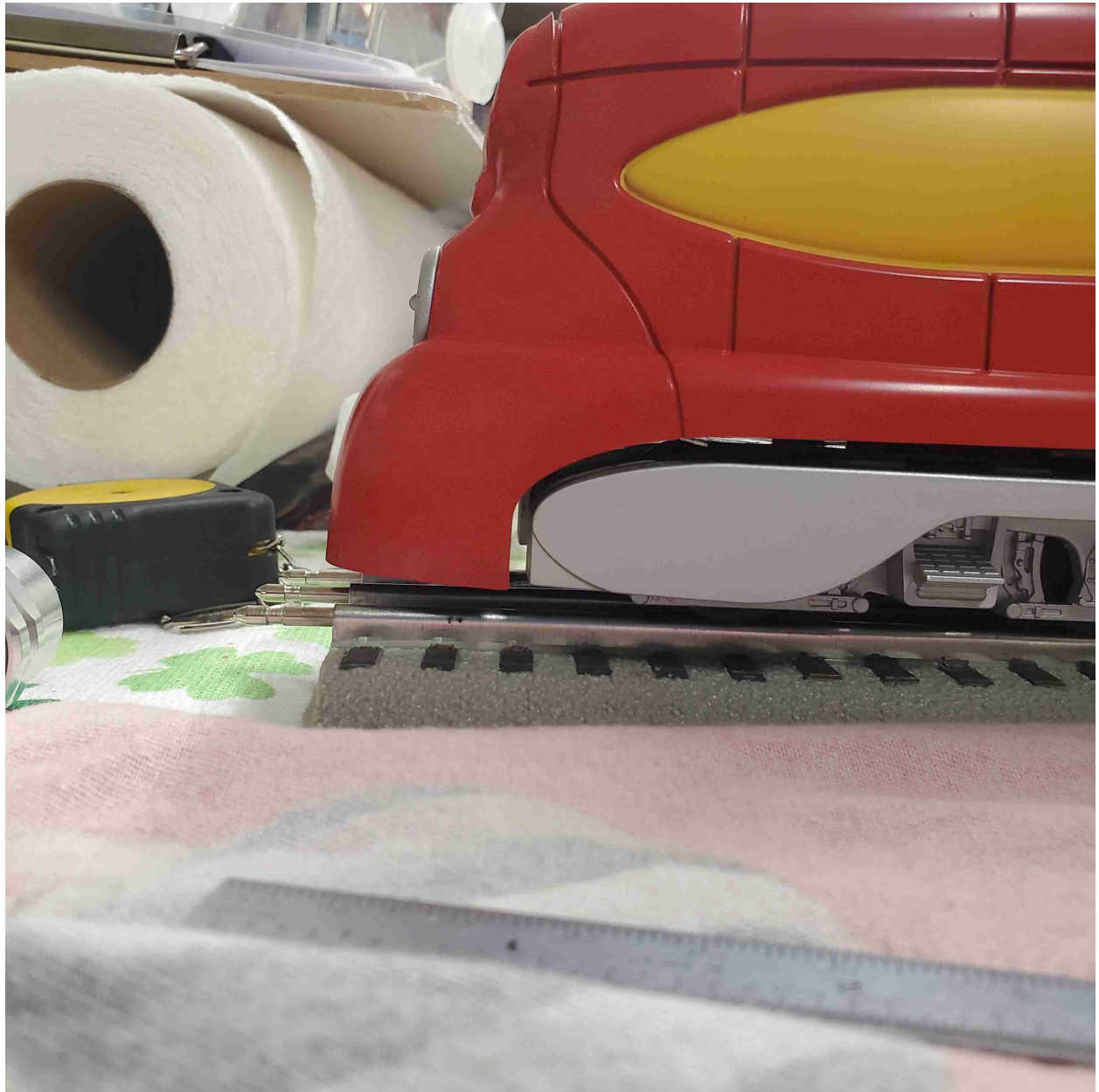
FRONT DOELS INSTALLED FOR FIT



REAR DOWELS INSTALLED FOR FIT (SCREWS WILL BE CUT SHORTER FOR 2-56 TO SLIDE THROUGH)



ANTI-TWIST 2-56 ALL THREAD WITH LOCKING NUTS ALSO MAINTAINS POST SPACING  
(POSTS ARE REALLY PARALLEL – PIC MAKES THEM LOOK SPREAD)



REFERENCE PHANTOM ENGINE – USED TO CALIBRATE HEIGHT ADJUSTMENT OF FRONT POSTS



BEFORE ADDING SHIMS – HEIGHT TOO LOW



WASHERS ARE HEIGHT SHIMS



AFTER ADDING SHIMS – CORRECT HEIGHT