

## IMPORTANT NOTE PRIOR TO INSTALLATION

THANK YOU FOR CHOOSING LIGHTNING MFG. FOR YOUR HIGH PERFORMANCE EXHAUST NEEDS. PRIOR TO INSTALLATION PLEASE READ THE FOLLOWING .

1. LIGHTNING MFG. MAKES HEADERS FOR FRESH AND SALT WATER APPLICATIONS. FRESH WATER HEADERS HAVE A 316L STAINLESS TUBE. ON THE INSIDE ONLY AND ARE NOT RECOMMENDED FOR CONTINUOUS SALT WATER USE.
2. LIGHTNING MFG. MAKES SEVERAL DIFFERENT STYLES OF HEADERS. STANDARD BRAVO HEADERS, SILENT CHOICE HEADERS, JET BOAT HEADERS, EXTRA TALL HEADERS, ETC. MAKE SURE YOU THE PROPER HEADER TO FIT YOUR APPLICATION.
3. IT IS IMPORTANT ON ALL HEADER INSTALLATIONS TO VERIFY ADEQUATE FALL OR DRAINAGE. A MINIMUM OF 8 TO 10 OF FALL SHOULD BE MAINTAINED. AT THIS SLIGHT ANGLE THE EXHAUST PORTS SHOULD NOT BE BELOW WATER LINE AND SHOULD NOT BE EXPOSED TO BACKWASH. EXHAUST PORTS WITH FLAPPERS SHOULD BE USED.
4. HEADERS WILL LEAN THE AIR FUEL RATIO. IT IS SUGGESTED TO INCREASE JET SIZE ABOUT 8 STEPS OR APPROX. 10% AND START YOUR TUNING FROM THERE. EFI ENGINES MUST BE RECALIBRATED.
5. CHECK FOR REVERSION. AS A GUIDE LINE A 454 CU IN ENGINE SHOULD NOT USE A CAM LARGER THAN 245 @ .050 ON THE EXHAUST SIDE. AS THE SIZE OF THE ENGINE INCREASES THE EXHAUST DURATION SHOULD DECREASE. BLEED DOWN STYLE LIFTERS ( RHODES ) WILL DECREASE THE DURATION AS MUCH AS 10 DEG. SUPERCHARGED ENGINES HAVE A WEAKENED REVERSION PULSE DUE TO THE PRESSURIZED INTAKE CHARGE. MANY OPTIONS ARE AVAILABLE FROM LIGHTNING MFG. THAT CAN TOTALLY ELIMINATE WATER REVERSION, THE ONLY TRUE WAY TO CHECK FOR REVERSION IS TO IDLE THE ENGINE WITH THE HEADERS ATTACHED IN THEIR RUNNING CONFIGURATION AND UPON SHUT DOWN REMOVE HEADERS . IF WATER IS VISIBLE IN EXHAUST PORTS , YOU HAVE REVERSION.

FAILURE TO FOLLOW THE INSTRUCTIONS CAN CAUSE SUBSTANTIAL DAMAGE TO ENGINE RECHECK TUNING AND REVERSION IF ANY MODIFICATIONS ARE MADE TO ENGINE

## HEADER INSTALLATION INSTRUCTIONS.

PRE-ASSEMBLE WATER MANIFOLD LINES TO HEADERS WITH BRASS FITTINGS, HOSE, AND HOSE CLAMPS SUPPLIED. NOTE: WATER MANIFOLDS ARE IN RIGHT TO LEFT CONFIGURATIONS, BE SURE THAT THE MANIFOLD IS FACING THE PROPER DIRECTION.

INSTALL THE HEADERS TO THE HEAD, MAKE SURE THAT THE SECOND BOLT FROM THE LEFT IS INSTALLED FIRST. THIS BOLT CANNOT BE PUT IN AFTER THE HEADER IS FLUSH WITH THE HEAD USING A CROWFOOT, TIGHTEN BOLT UNTIL IT IS SNUG. NOW INSTALL THE REMAINING BOLTS

ATTACH WATER FEED LINES ATTACH EXHAUST HOSE. YOUR HEADERS ARE NOW READY FOR SERVICE.

## MAINTENANCE

DRAIN WHEN NOT IN USE