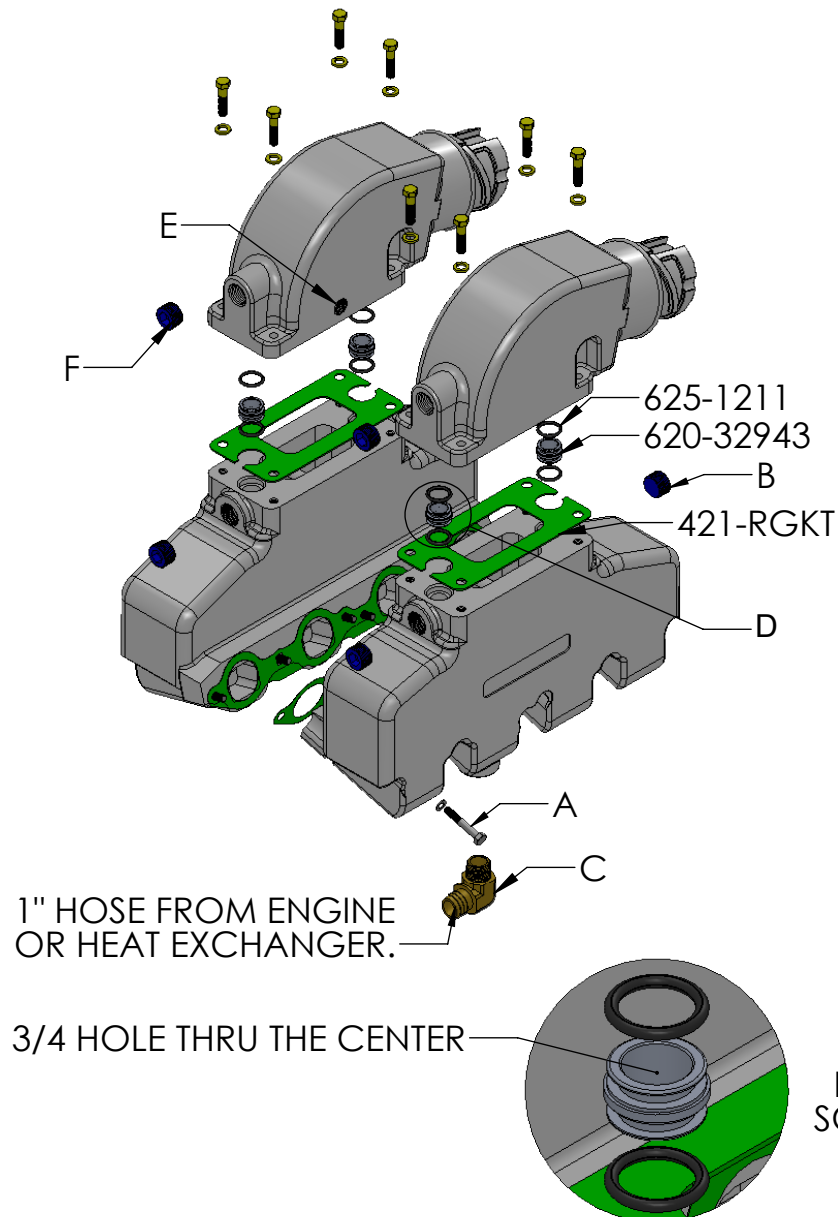


TITLE:
LS MANIFOLD AND RISER INSTALLATION

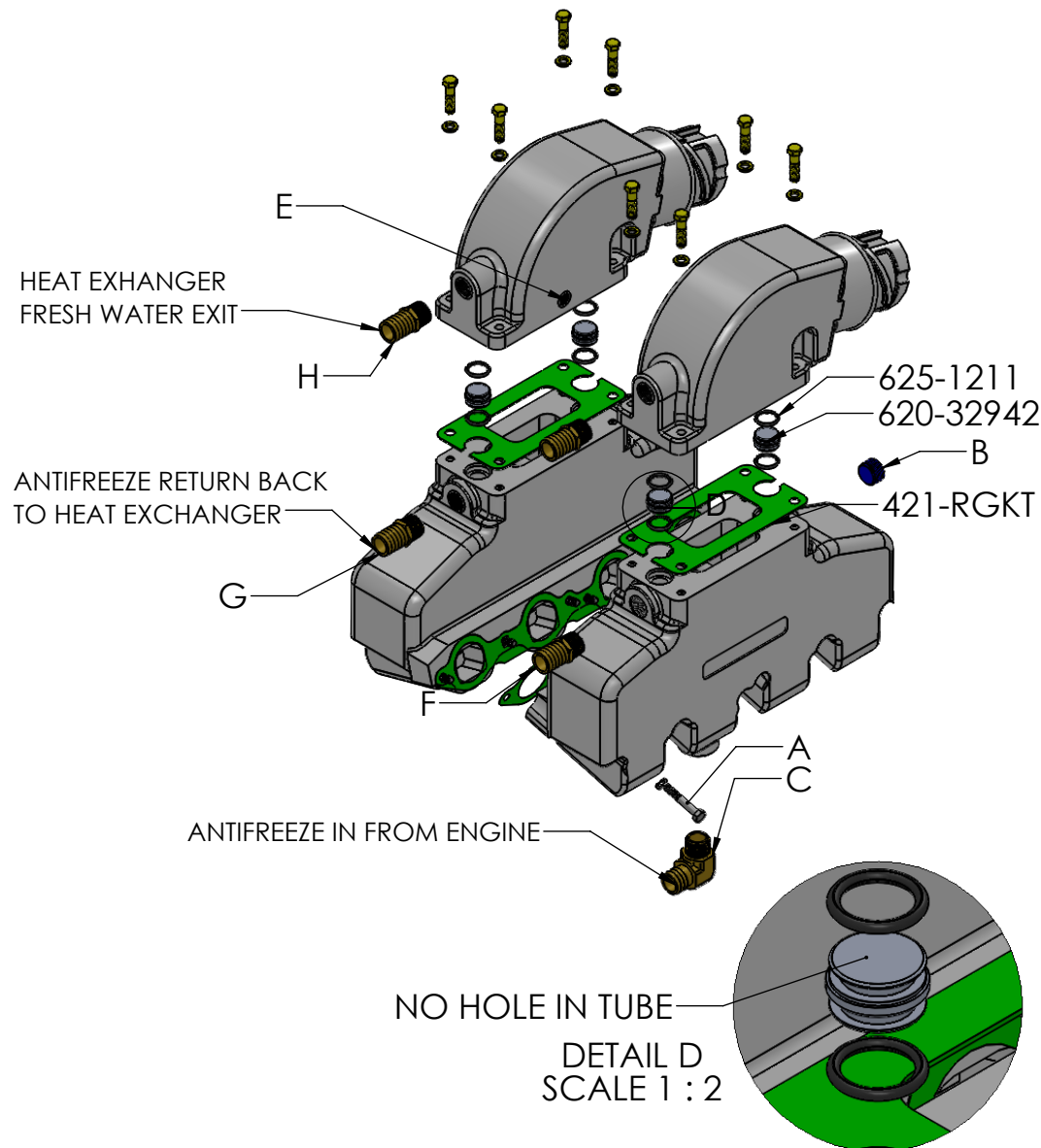


INSTALLATION INSTRUCTIONS FOR CLOSED COOLING HALF SYSTEM AND NON CLOSED COOLING :

- 1) INSTALL MANIFOLDS ON THE ENGINE WITH THE 8MM BOLTS AND WASHERS, FIG. A. APPLY ANTI-SIEZE TO THE THREADS. TORQUE FIRST PASS TO 11 FT. LBS.. THE FINAL PASS IS 18 FT. LBS.. THE MANIFOLD IS THE SAME FOR BOTH SIDES.
- 2) INSTALL 3/4 NPT PIPE PLUG INTO THE REAR OF THE MANIFOLDS, FIG. B.
- 3) INSTALL 1" HOSE BARB 90 DEG. FITTING INTO THE BOTTOM OF MANIFOLDS FIG. C. MAKE SURE TO USE TEFLON SEALANT TO ON THREADS.
- 4) INSTALL 625-1211 ON BOTH OF THE GROOVES IN 620-32943 TUBES, DETAIL D. 620-32943 TUBES HAVE A \varnothing 3/4 HOLE THRU THEM.
- 5) INSTALL TUBES INTO MANIFOLDS. SLIDE 421-RGKT GASKET ON THE MANIFOLDS.
- 6) 1 OF THE RISERS WILL BE THREADED FOR O-2 SENSOR, FIG. E. ON THE STARBOARD SIDE IT WILL BE INBOARD. ON THE PORT SIDE IT WILL BE OUTBOARD. IF YOU ARE NOT USING O-2 SENSOR YOU WILL NEED TO PURCHASE 620-50031 PLUG SEPARATELY.
- 7) INSTALL RISERS TO THE MANIFOLDS WITH THE 3/8 BOLTS AND LOCKING WASHERS. APPLY ANTI-SIEZE TO THE THREADS. TORQUE TO 30 FT. LBS..
- 8) INSTALL 3/4 PIPE PLUGS INTO THE FRONT OF BOTH MANIFOLDS AND RISERS, FIG. F.
- 9) PLUMB WATER FROM THE ENGINE TO THE 1" HOSE BARB IN THE BOTTOM OF THE MANIFOLD. FIG, C.

TITLE:
LS MANIFOLD AND RISER INSTALLATION

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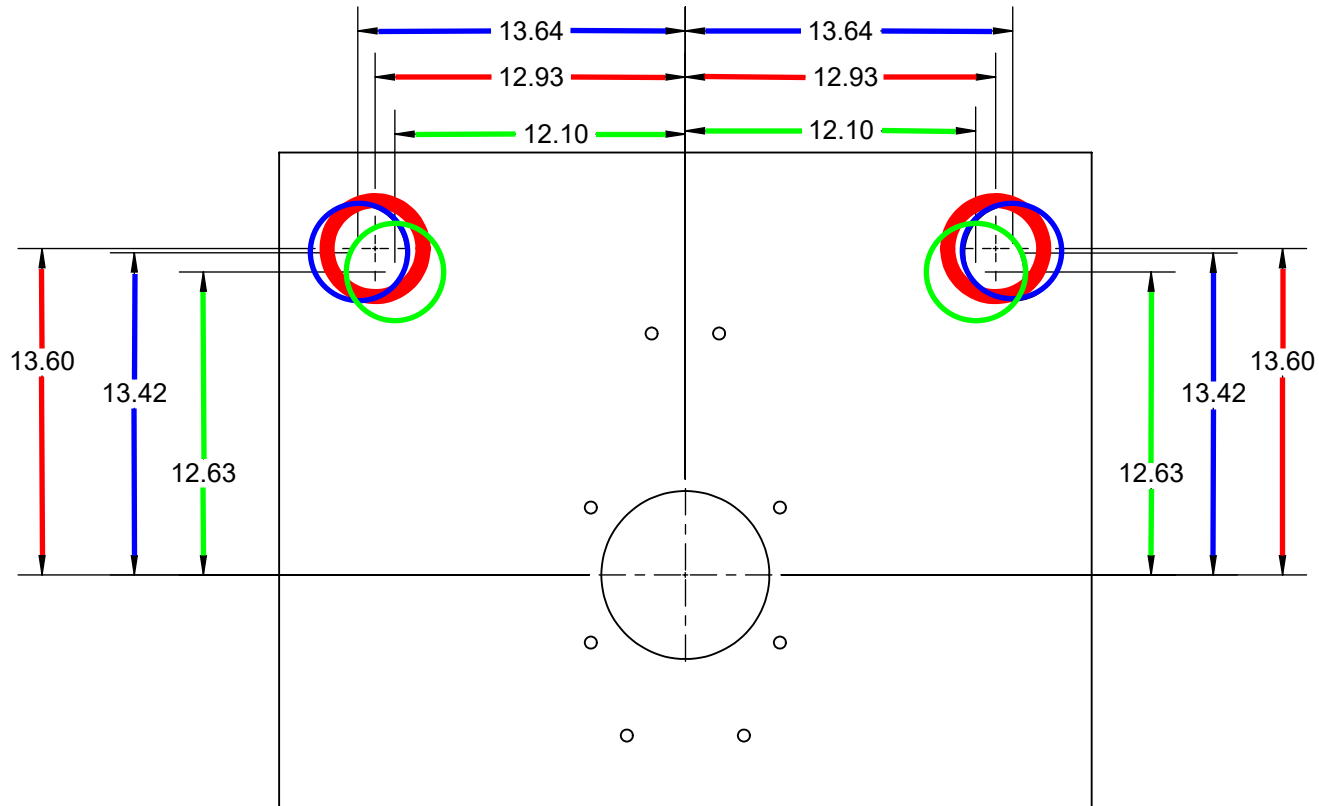


INSTALLATION INSTRUCTIONS FOR CLOSED COOLING FULL SYSTEM:

- 1) INSTALL MANIFOLDS ON THE ENGINE WITH THE 8MM BOLTS AND WASHERS, FIG. A. APPLY ANTI-SIEZE TO THE THREADS. TORQUE FIRST PASS TO 11 FT. LBS.. THE FINAL PASS IS 18 FT. LBS.. THE MANIFOLD IS THE SAME FOR BOTH SIDES.
- 2) INSTALL 3/4 NPT PIPE PLUG INTO THE REAR OF THE MANIFOLDS, FIG. B.
- 3) INSTALL 1" HOSE BARB 90 DEG. FITTING INTO THE BOTTOM OF MANIFOLDS FIG. C. MAKE SURE TO USE TEFLON SEALANT TO ON THREADS.
- 4) INSTALL 625-1211 ON BOTH OF THE GROOVES IN 620-32943 TUBES, DETAIL D. 620-32943 TUBES HAVE A ϕ 3/4 HOLE THRU THEM.
- 5) INSTALL TUBES INTO MANIFOLDS. SLIDE 421-RGKT GASKET ON THE MANIFOLDS.
- 6) 1 OF THE RISERS WILL BE THREADED FOR O-2 SENSOR, FIG. E. ON THE STARBOARD SIDE IT WILL BE INBOARD. ON THE PORT SIDE IT WILL BE OUTBOARD. IF YOU ARE NOT USING O-2 SENSOR YOU WILL NEED TO PURCHASE 620-50031 PLUG SEPARATELY.
- 7) INSTALL RISERS TO THE MANIFOLDS WITH THE 3/8 BOLTS AND LOCKING WASHERS. APPLY ANTI-SIEZE TO THE THREADS. TORQUE TO 30 FT. LBS..
- 8) INSTALL 1" HOSE BARB STRAIGHT FITTINGS INTO THE FRONT OF BOTH MANIFOLDS AND RISERS, FIG. F. MAKE SURE TO USE TEFLON SEALANT TO ON THREADS.
- 9) CONNECT ANTIFREEZE HOSE FROM THE ENGINE TO THE 1" HOSE BARB IN THE BOTTOM OF THE MANIFOLD. FIG. C.
- 10) CONNECT 1" HOSE FROM THE MANIFOLD BACK TO THE HEAT EXCHANGE, FIG. G.
- 11) CONNECT 1" HOSE FROM FRESH WATER DISCHARGE FROM THE HEAT EXCHANGER TO THE 1" HOSE BARB IN THE RISER, FIG. H.

TITLE:
LS MANIFOLD & RISER TIP LOCATION.

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RED CIRCLE IS LS ALUMINUM MANIFOLD EXIT.

BLUE CIRCLE IS BBC/BRAVO EXIT.

GREEN CIRCLE IS SBC/ALPHA EXIT.

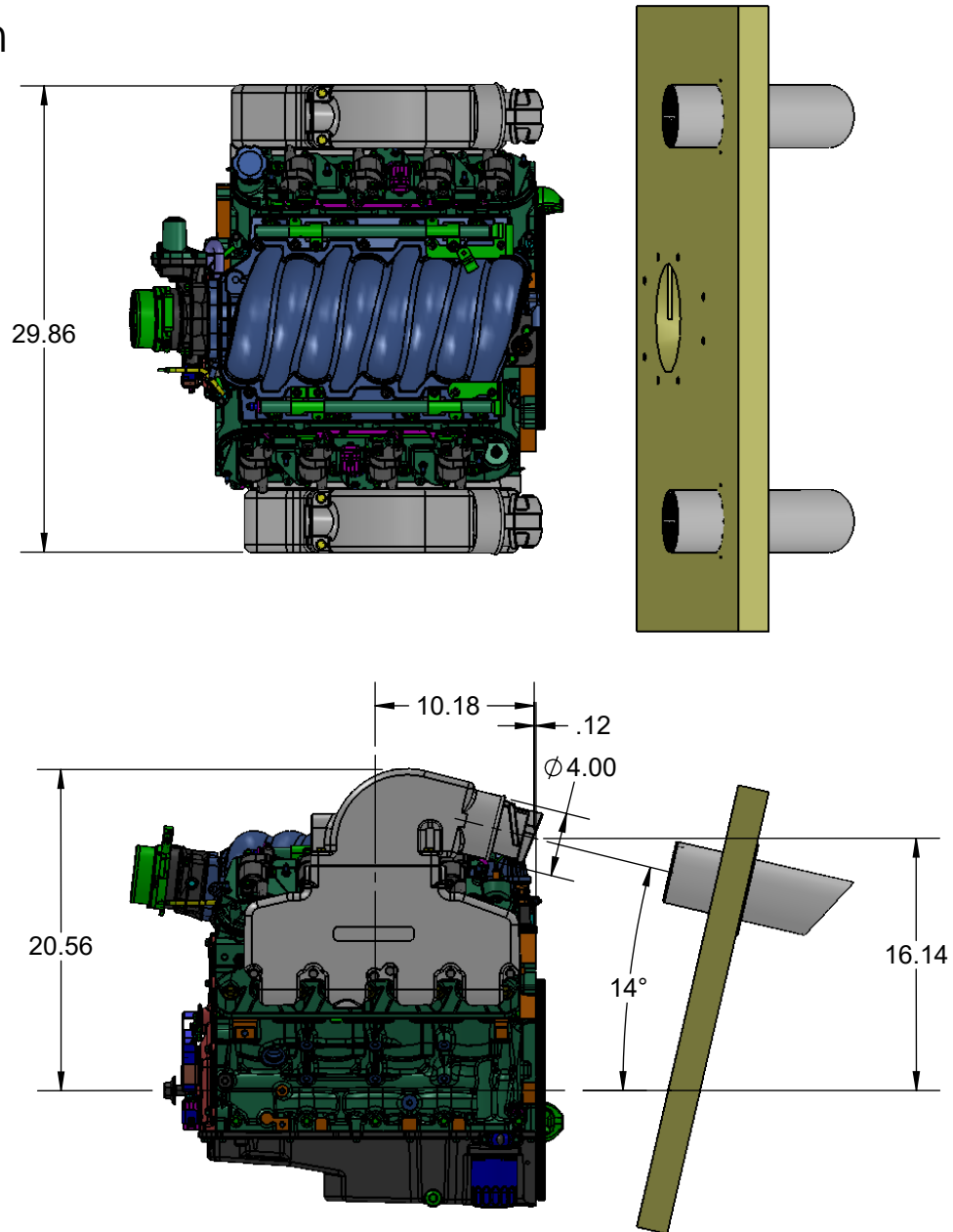
HARDIN MARINE 11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

PART NO.
620-32940

TITLE:

LS MANIFOLD AND RISER

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