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

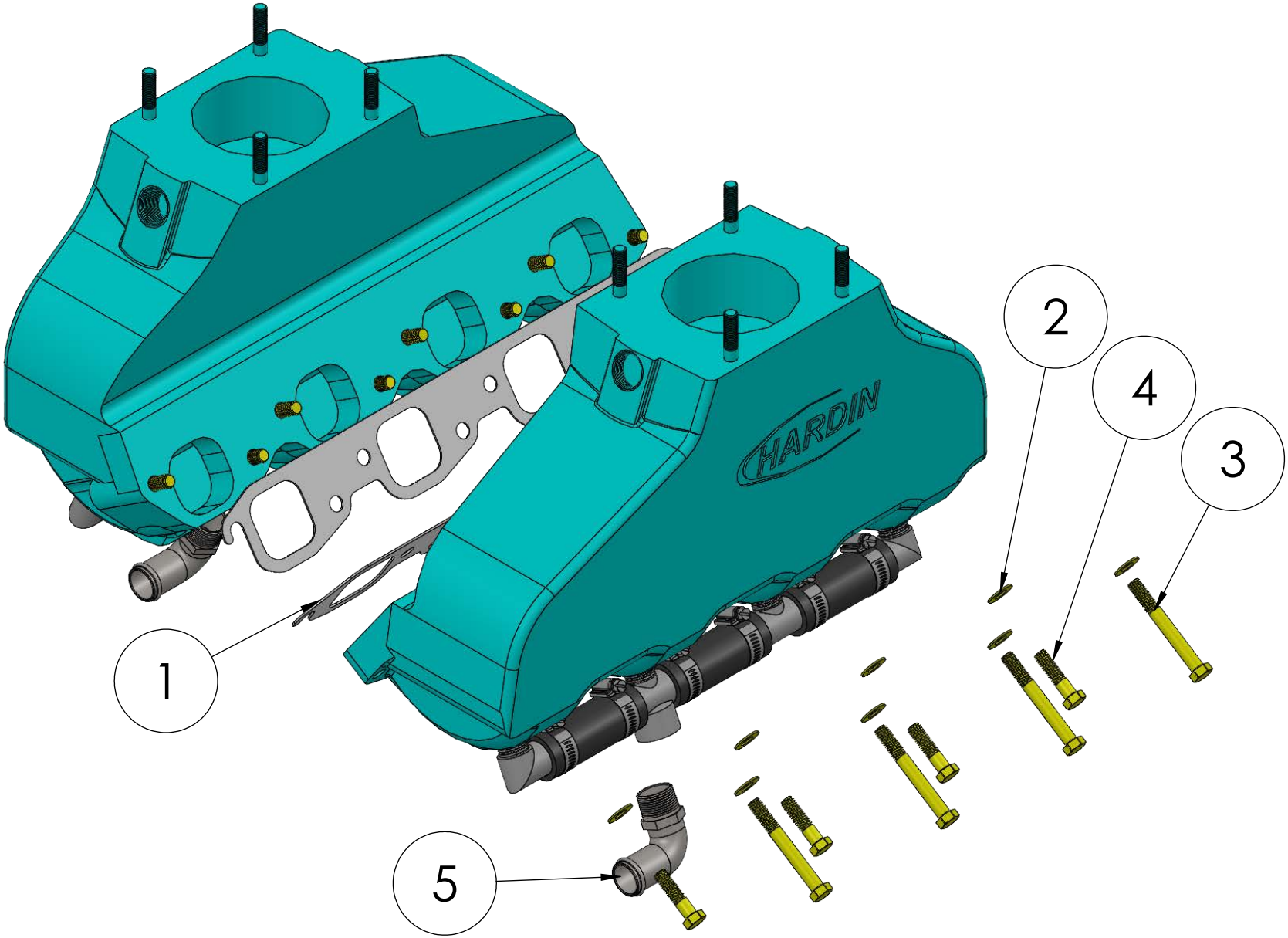
PART NO.
420-901180 GB

TITLE:

GIL BBC MANIFOLD-PARTS BREAKDOWN

www.hardin-marine.com

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	300-1410	GASKET, BBC SQUARE PORT	1
2	90037SA-STZN	WASHER, 3/8 SAE	16
3	90037C300HH5	BOLT, 3/8-16x3.00	8
4	90037C150HH5	BOLT, 3/8-16x1-1/2	8
5	540-222120	FITTING, 3/4NPT x 1' BARB 90 DEG	2



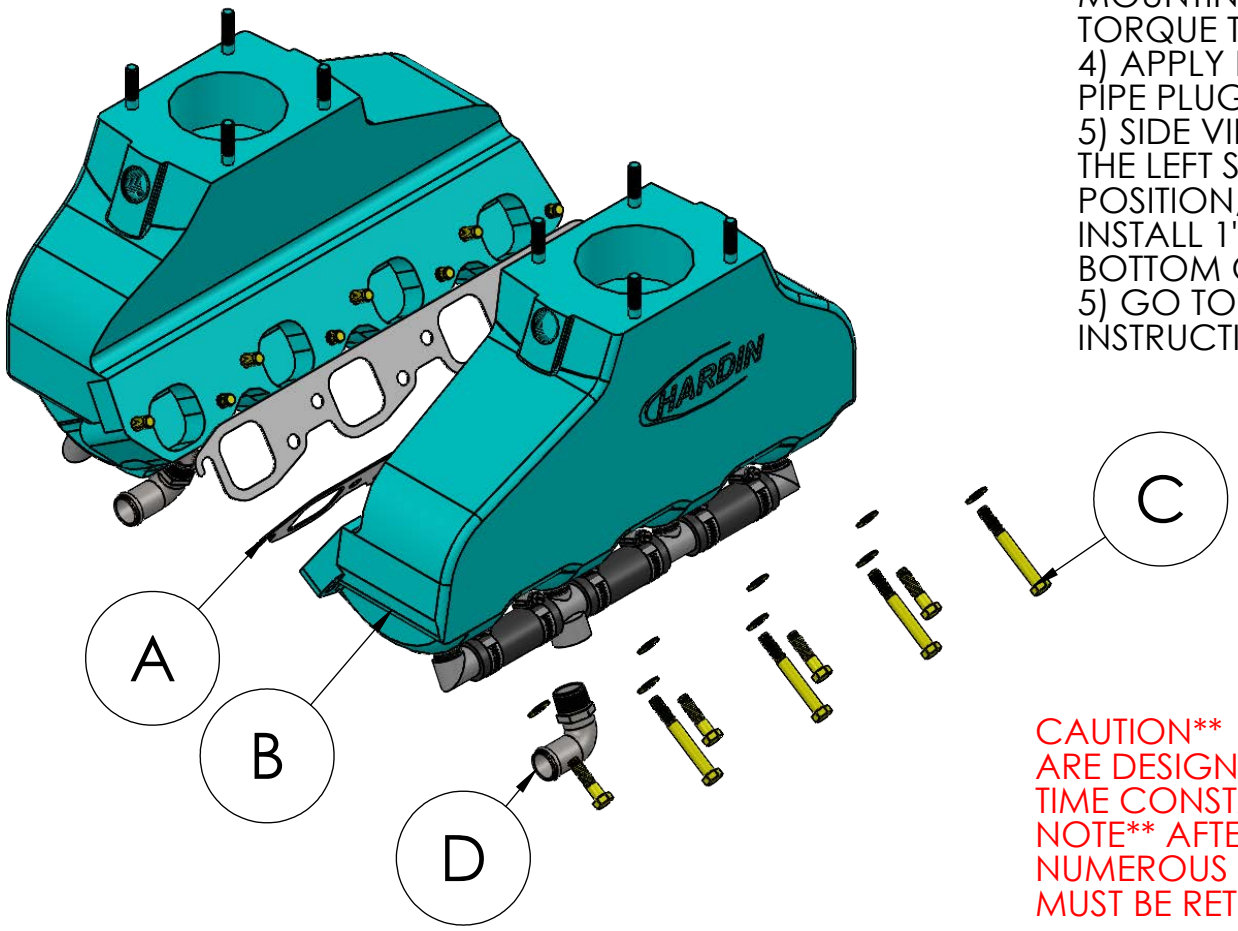
HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

PART NO.
420-901180-GB

TITLE:

GIL BBC MANIFOLD-INSTALLATION

www.hardin-marine.com



INSTALLATION INSTRUCTIONS:

1) MAKE SURE CYLINDER HEAD EXHAUST MOUNTING SURFACE IS FREE OF KNICKS AND ANY OLD GASKET MATERIAL IS REMOVED. SEALANT IS NOT REQUIRED ON THE NEW SUPPLIED GASKETS. FIG. A.
2) THE PORT AND STARBOARD MANIFOLDS ARE THE SAME PART AND CAN BE USED ON EITHER SIDE OF THE ENGINE. FIG. B.
3) INSTALL MANIFOLDS WITH THE SUPPLIED 3/8 BOLTS AND WASHERS. APPLY ANTI-SIEZE TO 3/8 MOUNTING BOLTS, FIG.C . USING 9/16 SOCKET, TORQUE TO 30 FT. LBS..
4) APPLY LIQUID TEFLON SEALANT TO FITTINGS, PIPE PLUG AND DRAIN PLUG.
5) SIDE VIEW BELOW AND ISOMETRIC VIEW TO THE LEFT SHOWS PORT SIDE TYPICAL WATER INLET POSITION, FIG. D. USING 1-1/16 WRENCH, INSTALL 1" 90 DEGREE HOSE BARB FITTING INTO BOTTOM OF THE MANIFOLD.
5) GO TO 620-32512 OR 620-32520 TAILPIPE INSTRUCTIONS TO COMPLETE INSTALLATION.

CAUTION** HARDIN MARINE MANIFOLD SYSTEMS ARE DESIGNED FOR USE ON ENGINES WITH FULL TIME CONSTANT WATER CIRCULATION AT ALL TIMES. NOTE** AFTER APPROXIMATELY 2-5 HOURS USE OR NUMEROUS ENGINE HEAT CYCLES ALL HARDWARE MUST BE RETORQUED AND OR TIGHTENED.

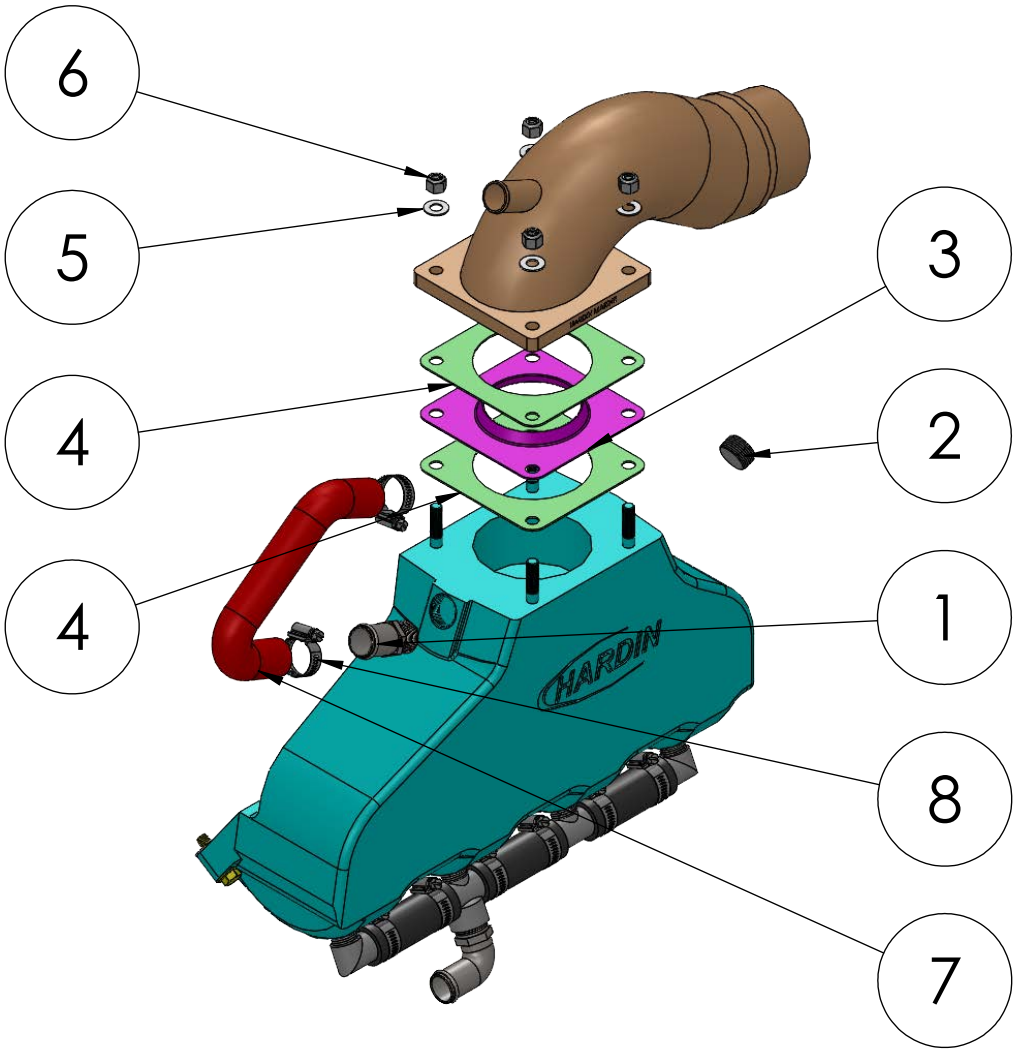
HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

PART NO. 620-32512

TITLE:

STD RISER INSTALL KIT

www.hardin-marine.com



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	540-222110	FITTING, 1" BARB	1
2	540-222999	3/4NPT PIPE PLUG	1
3	420-907060	TURBULATOR	1
4	420-906321	GASKET, RISER	2
5	90037SA-STSS	WASHER, 3/8 SAE	4
6	90037CN-FNSS	NUT, 3/8-16	4
7	420-906500	HOSE, JUMP	1
8	100-720-6316	HOSE CLAMP	2

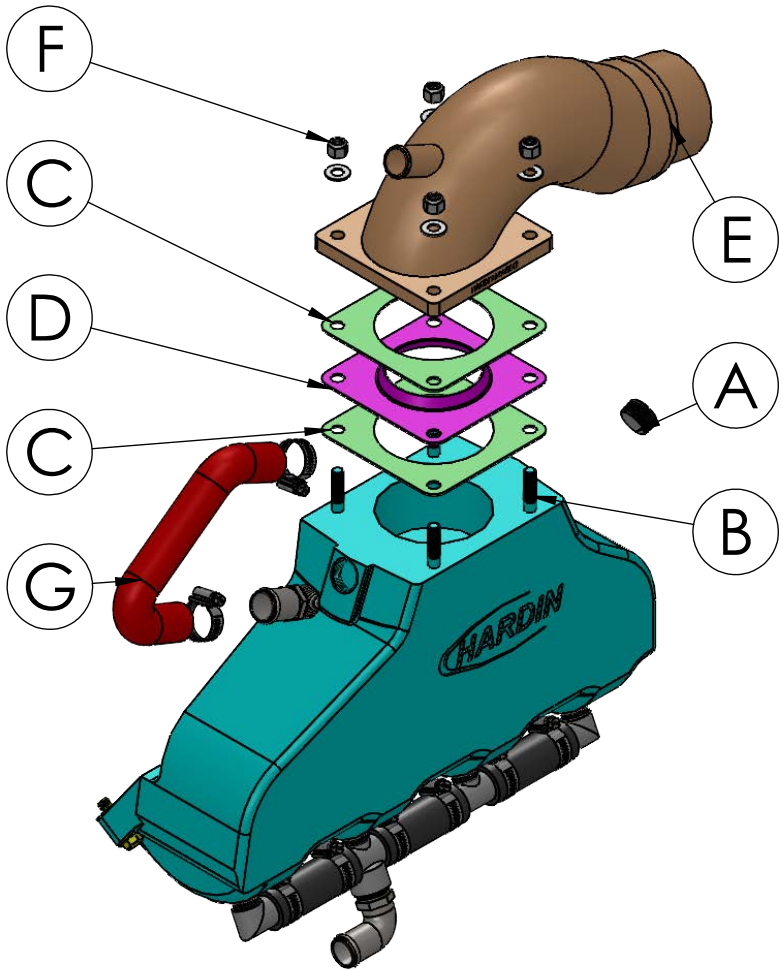
HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

PART NO.
620-32512

TITLE:

STD RISER INSTALL KIT

www.hardin-marine.com



INSTALLATION INSTRUCTIONS:

1) APPLY LIQUID THREAD SEALANT TO THE SUPPLIED 3/4 NPT PIPE PLUGS.
2) USING 9/16 ALLEN KEY, INSTALL 3/4NPT PIPE PLUGS INTO THE REAR OF THE MANIFOLDS, FIG.A.
3) APPLY ANTI-SIEZE TO THE 8 STUDS, FIG. B.
4) SLIDE RISER GASKET,FIG. C & TURBULATORS, FIG. D, OVER STUDS. DO NOT USE ANY SEALANT ON THE GASKETS OR TURBULATORS. AS SHOWN, THE TURBULATOR IS BETWEEN THE 2 GASKETS.
5) INSTALL RISERS, FIG. E.
6) IF YOU ARE INSTALLING 620-32505 SHIFT BRACKET AND 620-32500 OIL FILTER RELOCATION BRACKET, INSTALL THEM NOW. USE THE INSTRUCTIONS THAT CAME WITH THOSE KITS.
7) INSTALL WASHERS AND NUTS, FIG F. USING 9/16 SOCKET, TORGUE TO 30 FT. LBS..
8) INSTALL JUMPER HOSE AND HOSE CLAMPS, FIG.G. IF USING WITH FULL CLOSED COOLING KIT, THE JUMPER HOSE IS NOT USED. SEE FULL CLOSED COOLING KIT INSTRUCTIONS.

CAUTION** HARDIN MARINE MANIFOLD SYSTEMS ARE DESIGNED FOR USE ON ENGINES WITH FULL TIME CONSTANT WATER CIRCULATION AT ALL TIMES. NOTE** AFTER APPROXIMATELY 2-5 HOURS USE OR NUMEROUS ENGINE HEAT CYCLES ALL HARDWARE MUST BE RETORQUED AND OR TIGHTENED.

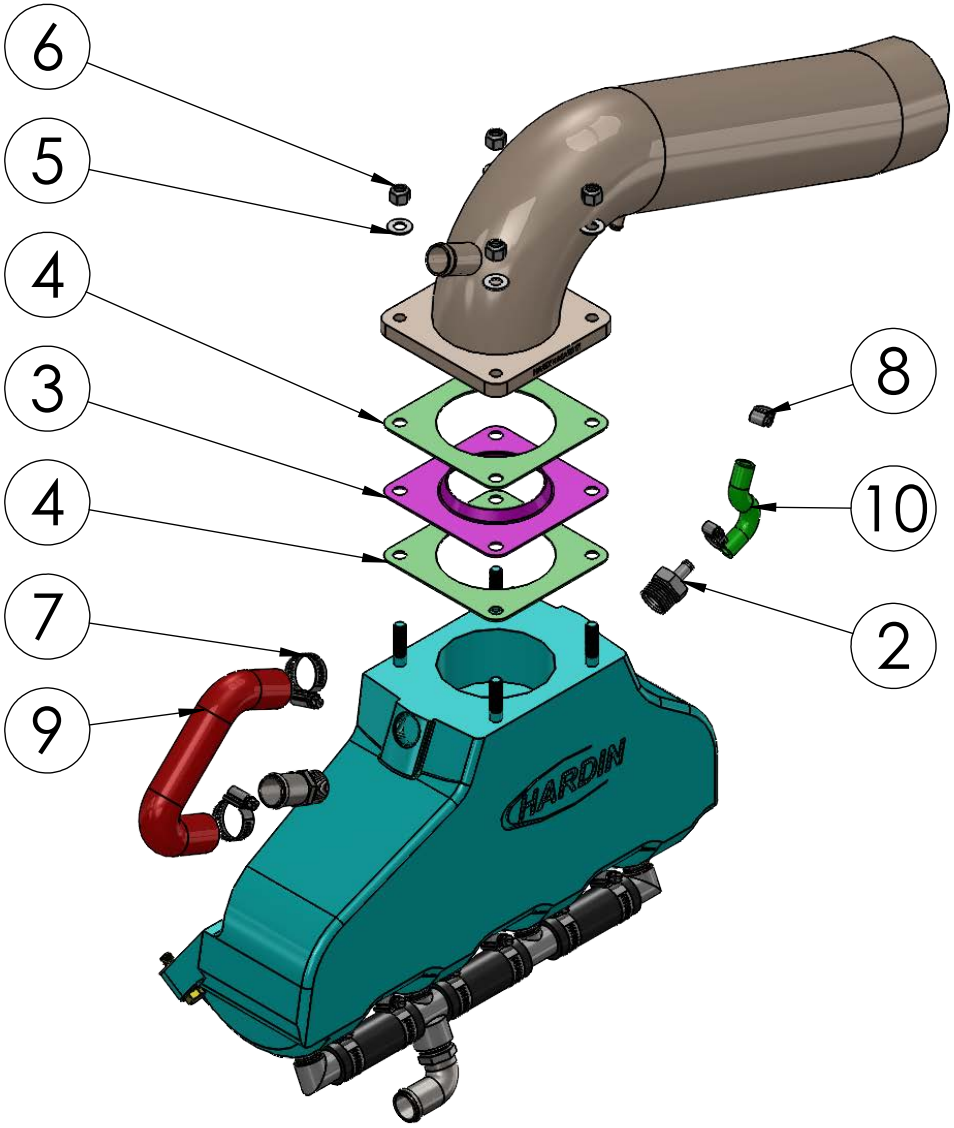
HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

PART NO. 620-32520

TITLE:

HP RISER INSTALL KIT

www.hardin-marine.com



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	540-222110	FITTING, 1" BARB	1
2	420-910331	FITTING, STEAM	1
3	420-907060	TURBULATOR	1
4	420-906321	GASKET, RISER	2
5	90037SA-STSS	WASHER, 3/8 SAE	4
6	90037CN-FNSS	NUT, 3/8-16	4
7	100-720-6316	HOSE CLAMP	2
8	100-720-6306	HOSE CLAMP	2
9	420-906500	HOSE, JUMP	1
10	100350-0383	HOSE, 3/8	1

#10 100350-0383 HOSE IS NOT MOLDED LIKE SHOWN.

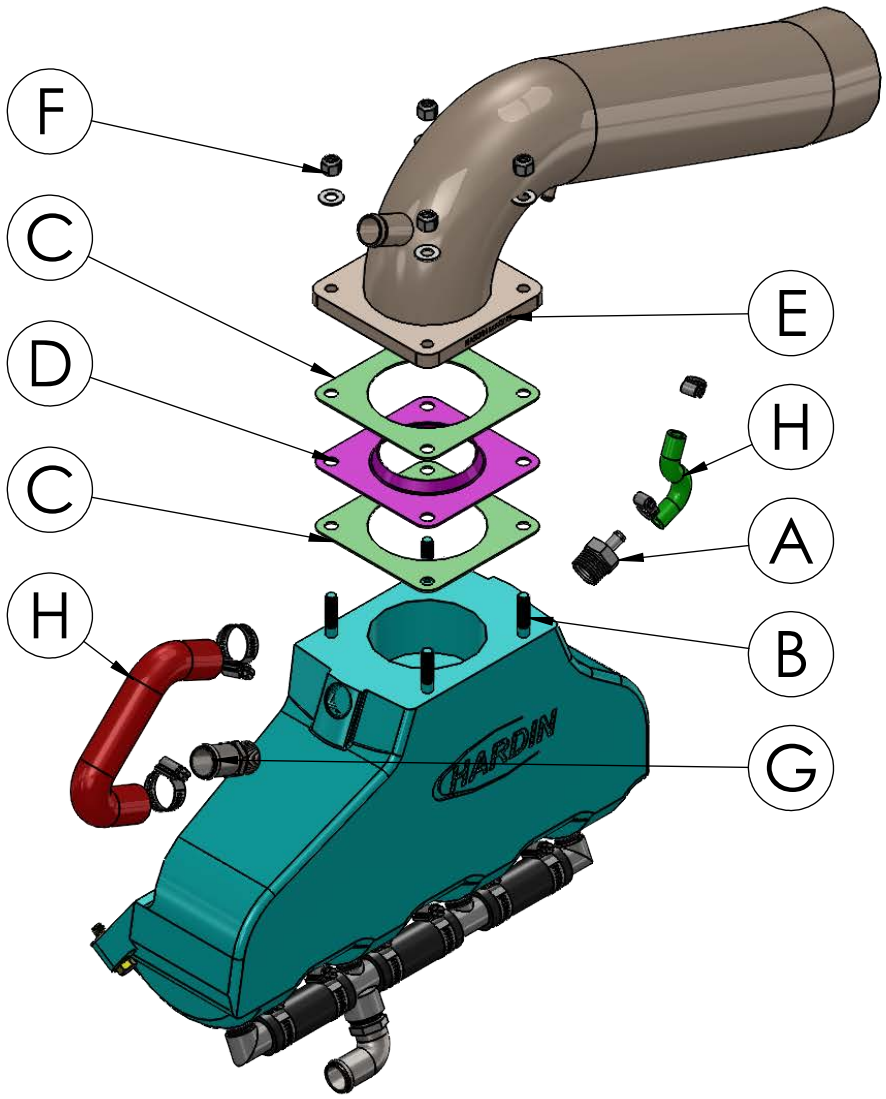
HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

PART NO.
620-32520

TITLE:

HP RISER INSTALL KIT

www.hardin-marine.com



PORT SIDE SHOWN, STARBOARD IS MIRROR IMAGINE.

INSTALLATION INSTRUCTIONS:

1) APPLY LIQUID THREAD SEALANT TO THE SUPPLIED STEAM VENT FITTINGS. USING 1-1/16 WRNCH, INSTALL FITTING INTO THE REAR OF THE MANIFOLDS, FIG.A.
3) APPLY ANTI-SIEZE TO THE 8 STUDS, FIG. B.
4) SLIDE RISER GASKET,FIG. C & TURBULATORS, FIG. D, OVER STUDS. DO NOT USE ANY SEALANT ON THE GASKETS OR TURBULATORS. AS SHOWN, THE TURBULATOR IS BETWEEN THE 2 GASKETS.
5) INSTALL RISERS, FIG. E.
6) IF YOU ARE INSTALLING 620-32505 SHIFT BRACKET AND 620-32500 OIL FILTER RELOCATION BRACKET, INSTALL THEM NOW. USE THE INSTRUCTIONS THAT CAME WITH THOSE KITS.
7) INSTALL WASHERS AND NUTS, FIG F. USING 9/16 SOCKET, TORGUE TO 30 FT. LBS..
8) APPLY LIQUID TEFLON TAPE TO 540-222110 FITTING, FIG G. USING 1-1/16 SOCKET INSTALL FITTING INTO THE FRONT OF THE MANIFOLD.
9) INSTALL JUMPER HOSE AND HOSE CLAMPS, FIG.G. IF USING WITH FULL CLOSED COOLING KIT, THE JUMPER HOSE IS NOT USED. SEE FULL CLOSED COOLING KIT INSTRUCTIONS.
10) CUT STEAM VENT HOSE TO LENGTH, FIG H, AND INSTALL ON TO THE STEAM VENT FITTING AND THE BUNG ON THE UNDERSIDE OF THE RISERS.
11) THE STEAM VENT IS ONLY USED ON LONG RISER AND HP 500 TAILPIPES.

CAUTION** HARDIN MARINE MANIFOLD SYSTEMS ARE DESIGNED FOR USE ON ENGINES WITH FULL TIME CONSTANT WATER CIRCULATION AT ALL TIMES. NOTE** AFTER APPROXIMATELY 2-5 HOURS USE OR NUMEROUS ENGINE HEAT CYCLES ALL HARDWARE MUST BE RETORQUED AND OR TIGHTENED.

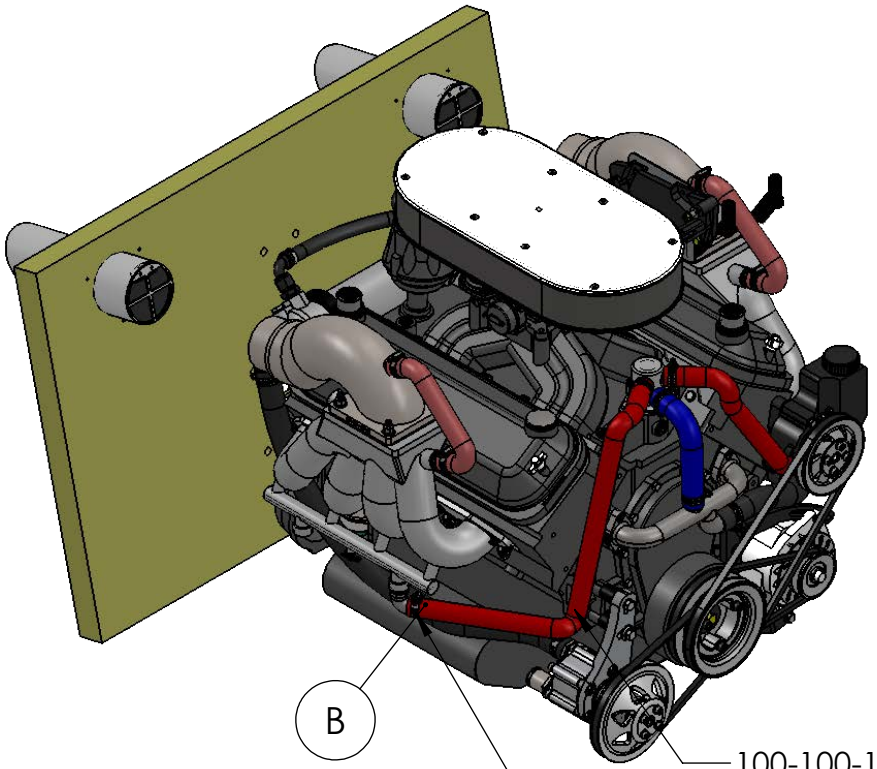
HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

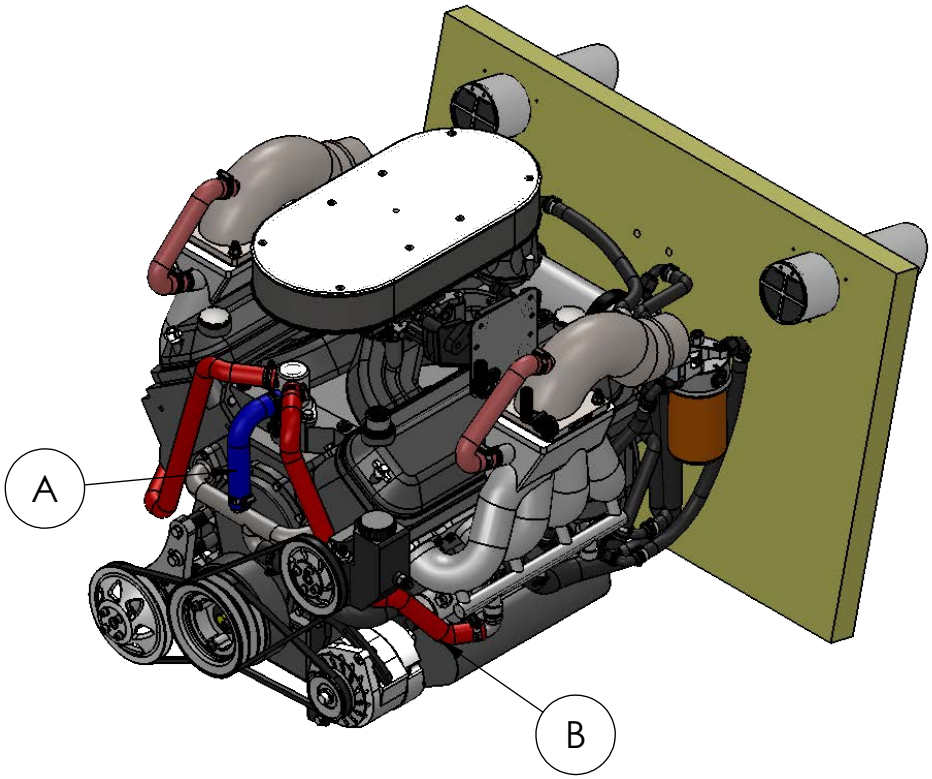
PART NO.

TITLE:

HARDIN EXHAUST WATER HOSE PLUMBING

www.hardin-marine.com





INSTALLATION INSTRUCTIONS:

1) SAME INSTALLATION FOR ALL CYCLONE, GIL AND SEAWARD SYSTEMS.

2) ALL EXHAUST SYSTEMS, REQUIRES FULL TIME CONSTANT WATER CIRCULATION AT ALL TIMES. THIS ENGINE IS SHOWN WITH 620-300100 CROSSOVER KIT. FIG. A SHOWS THE WATER BYPASS HOSE, SHOWN IN BLUE. THE WATER BYPASS HOSE WILL PROVIDED WATER TO THE EXHAUST TILL THE THERMOSTAT OPENS.

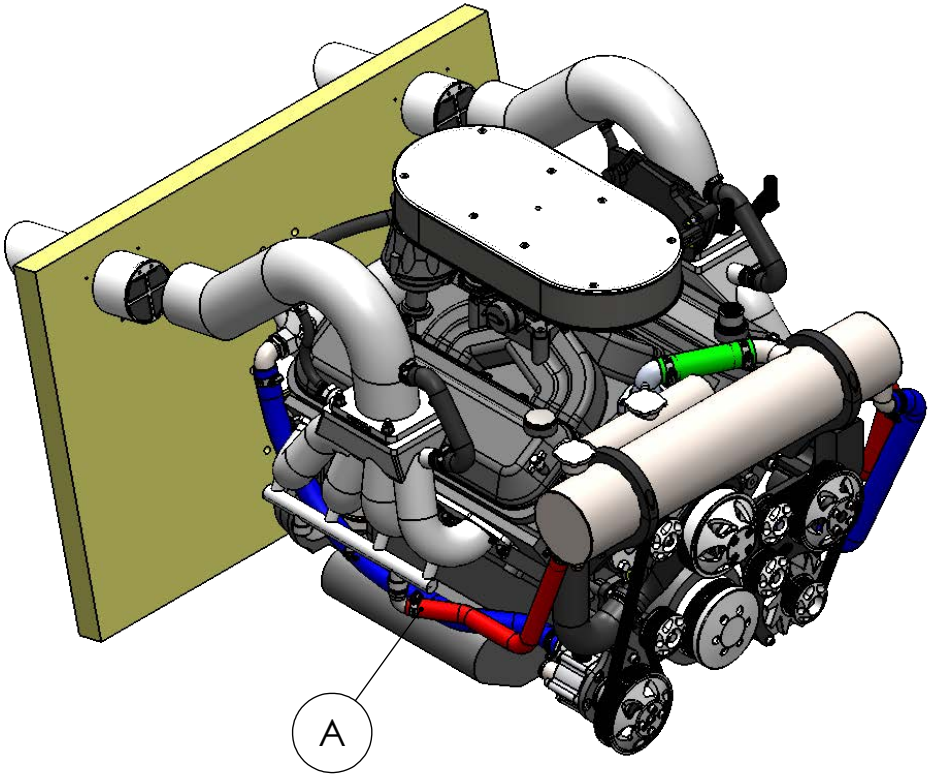
3) THE EXHAUST IS FED BY THE FRESH WATER DISCHARGED FROM THE THERMOSTAT HOUSING. BOTH SIDES ARE SHOWN IN RED, FIG. B. THE HOSE CONNECTS TO THE WATER INLET FITTINGS ON THE BOTTOM OF THE HEADER/MANIFOLD.

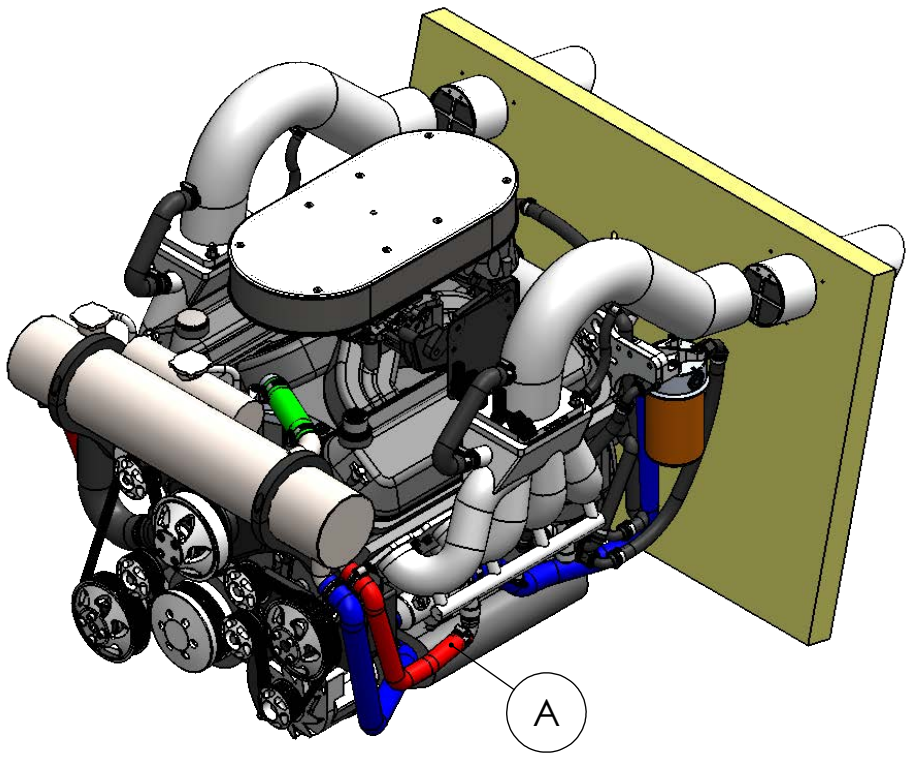
HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

PART NO.

TITLE: HARDIN EXHAUST CLOSED COOLING HALF SYSTEM PLUMBING

www.hardin-marine.com





INSTALLATION INSTRUCTIONS:

1) SAME INSTALLATION FOR ALL CYCLONE, GIL & SEAWARD SYSTEMS.

2) ON HALF SYSTEM CLOSED COOLING SYSTEMS, ONLY THE ENGINE IS COOLED BY ANTIFREEZE. THE EXHAUST IS NOT PART OF THE CLOSED COOLER SYSTEM.

3) THE EXHAUST IS COOLED BY THE FRESH WATER DISCHARGE IN THE HEAT EXCHANGER, BOTH SIDES ARE SHOWN IN RED C, FIG. A. THE HOSE CONNECTS FROM THE HEAT EXCHANGER EXIT ON BOTH SIDES TO THE WATER INLET FITTINGS ON THE BOTTOM OF THE EXHAUST, AS SHOWN.

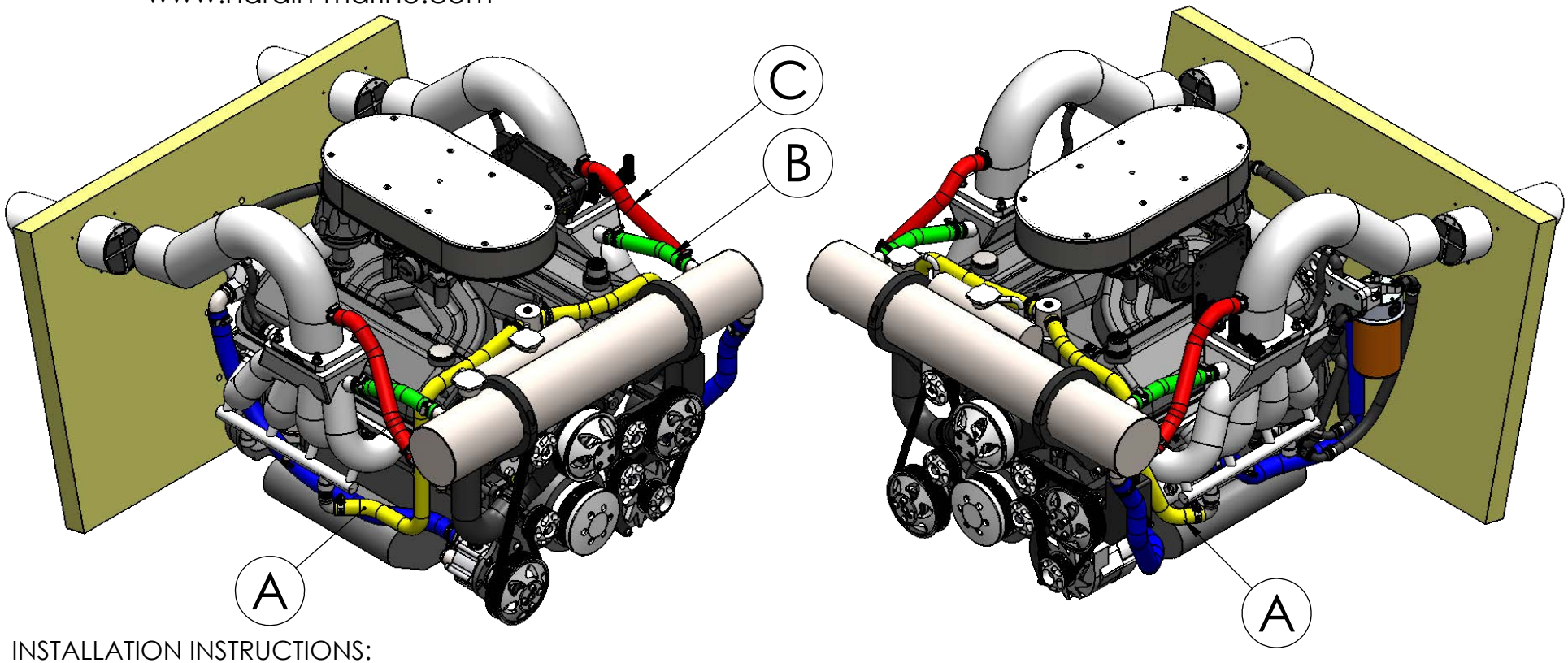
HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

PART NO.

TITLE:

HARDIN EXHAUST CLOSED COOLING FULL SYSTEM PLUMBING

www.hardin-marine.com



INSTALLATION INSTRUCTIONS:

1) SAME INSTALLATION FOR ALL CYCLONE, GIL & SEAWARD SYSTEMS.

2) ON FULL SYSTEM CLOSED COOLING SYSTEMS, BOTH THE ENGINE AND EXHAUST MANIFOLD/HEADER IS COOLED BY ANTIFREEZE. THE EXHAUST RISER IS NOT PART OF THE CLOSED COOLING SYSTEM.

3) THE EXHAUST MANIFOLD/HEADER IS COOLED BY HOSES COMING FROM THE THERMOSTAT HOUSING, BOTH SIDES ARE SHOWN IN YELLOW, FIG. A. THE HOSE CONNECTS TO THE WATER INLET FITTINGS ON THE BOTTOM OF THE EXHAUST, AS SHOWN.

4) THE ANTIFREEZE IN THE MANIFOLD/HEADER IS RETURNED BACK THE HEAT EXCHANGER, BOTH SIDES ARE SHOWN IN GREEN, FIG.B.

5) THE FRESH WATER DISCHARGES FROM BOTH SIDES OF THE HEAT EXCHANGER AND CONNECTS TO THE BOTH SIDES OF THE RISER WATER INLET FITTINGS, BOTH SIDES ARE SHOWN IN RED, FIG. C.

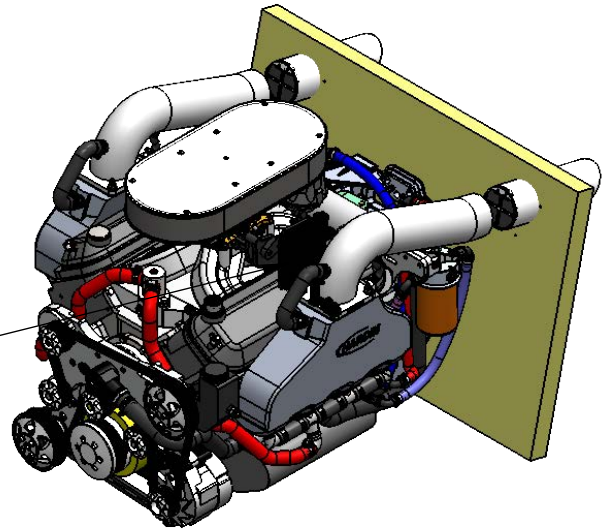
HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

PART NO.
420-901018-SD

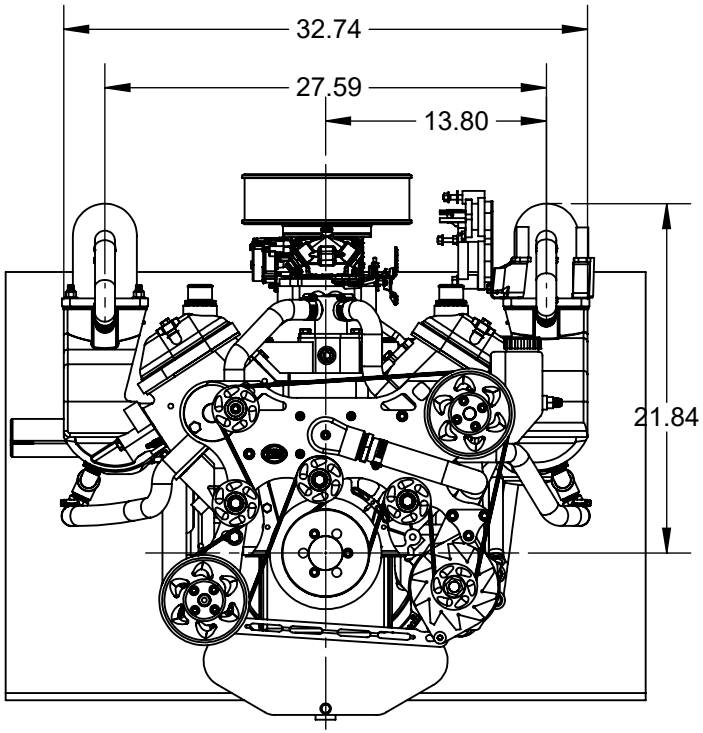
TITLE:

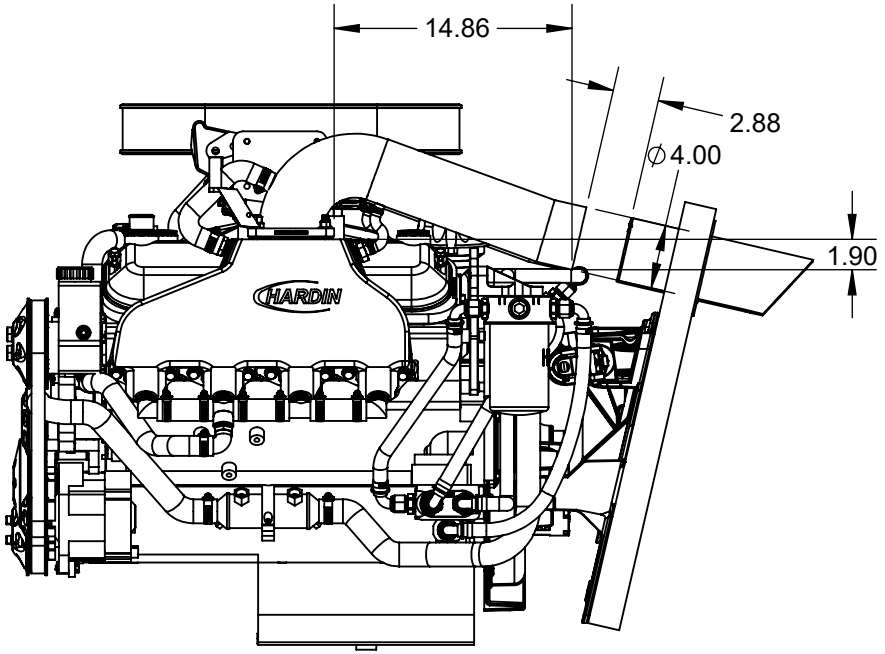
GIL BBC BRAVO WET EXHAUST SYSTEM

www.hardin-marine.com



SHOWN WITH 620-32500 OIL FILTER BRACKET
AND 620-32505 ECU/SHIFT BRACKET.



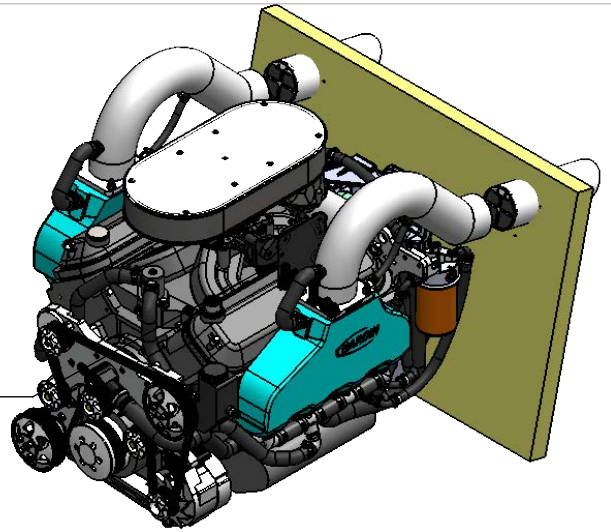


HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

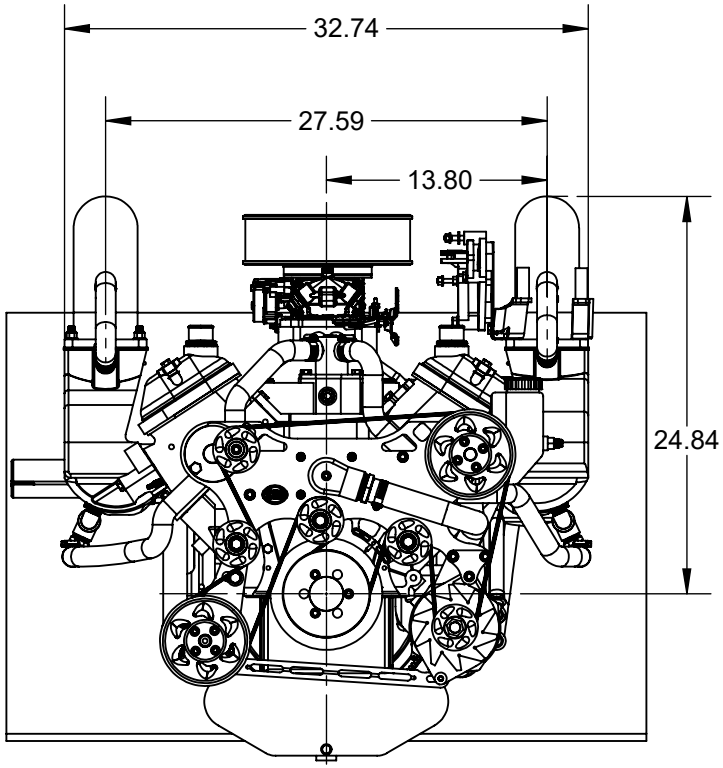
PART NO.
420-901019

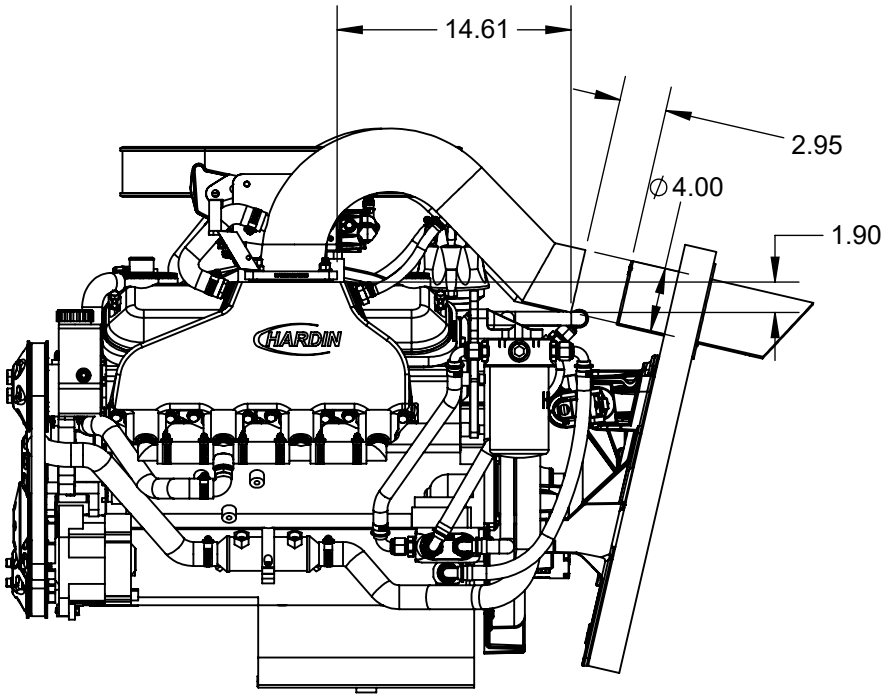
TITLE:
GIL BBC BRAVO HP WET EXHAUST SYSTEM

www.hardin-marine.com



SHOWN WITH 620-32500 OIL FILTER BRACKET
AND 620-32505 ECU/SHIFT BRACKET.



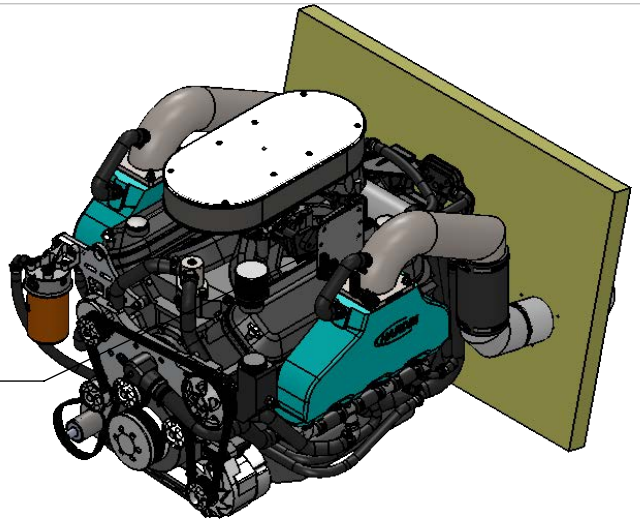


HARDIN MARINE
11 Industry Dr. Palm Coast, FL 32137
386-445-2500 / FAX 386-445-1122

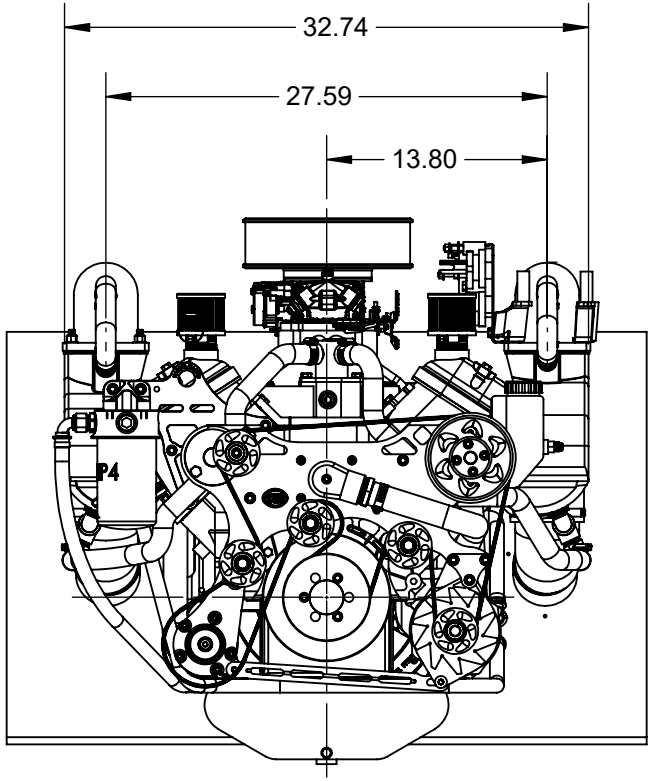
PART NO.
420-901020

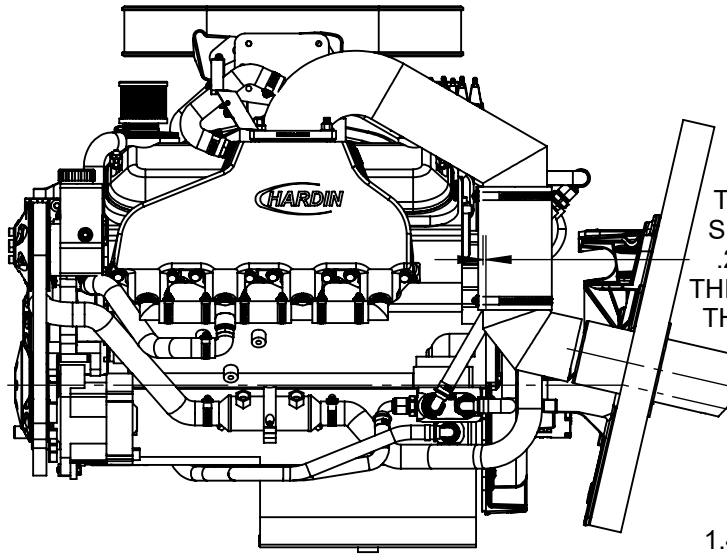
TITLE:
GIL BBC BELOW PLATFORM WET EXHAUST SYSTEM

www.hardin-marine.com



SHOWN WITH 620-32500 OIL FILTER BRACKET
AND 620-32505 ECU/SHIFT BRACKET.





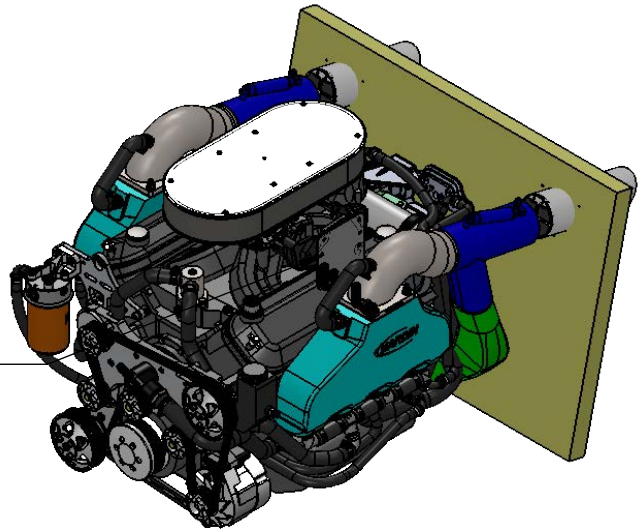
MINIMUM LENGHT IS 8-3/4 WITH 4" OF HOSE AND 12-3/4 WITH 8" OF HOSE. WE SUPPLY KIT WITH 16" OF HOSE AND 4 HOSE CLAMPS. IF YOU NEED IT TO BE LOWER YOU WILL NEED TO BUY MORE 100-200-4004 4" EXHAUST HOSE. MAKE SURE TO HAVE MINIMUM 2-1/2 OF HOSE CLAMPING ON BOTH THE UPPER TAILPIPE AND THE LOWER EXIT. DIMENSIONS ABOVE ARE THE MINIMUM ASSEMBLED HEIGHT.

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

PART NO.
420-901030-POL

TITLE:
GIL BBC MAGNUM CHOICE WET EXHAUST SYSTEM

www.hardin-marine.com



SHOWN WITH 620-32500 OIL FILTER BRACKET
AND 620-32505 ECU/SHIFT BRACKET.