



M O T O R S P O R T S

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INSTALLATION INSTRUCTIONS FOR DODSON MOTORSPORT EVOX SST SUMP

Thank you for purchasing your Dodson Motorsport Sump Kit from Kozmic Motorsports. We take great pride in offering only the highest quality products and services for the Getrag DCT470 (SST) transmission. We have tested the Dodson Motorsport Sump in our record setting 200mph Mitsubishi Evolution X MR, and believe this to be the best temperature control solution available for this transmission. These instructions were prepared by Kozmic Motorsports to aide customers in the installation of the Dodson Motorsport Sump Kit. These instructions are specific to kits shipped from Kozmic Motorsports with a hose kit built to our specifications. If your kit was sourced other than from Kozmic Motorsports your installation will be similar but may vary. For technical support, contact sales@kozmicmotorsports.com, or call 281-890-4772.

Warning and disclaimer

AN fittings should have their threads lubricated prior to assembly. These instructions are intended as a guide. The installer will need to verify fitment and routing prior to cutting any hoses. The installer bears all responsibility for correct plumbing installation, hose routing, fitment, and leak free installation.

Kit Contents

One Dodson Motorsport Heated Sump

One pre-assembled -8 hose with straight AN fitting on one end.

One pre-assembled -8 hose with 45degree AN swivel fitting on end.

Two straight -10AN push lock hose fittings.

Two -10AN to -8AN Male adapter unions.

General: Read these instructions thoroughly prior to beginning the installation. Review all photo's, illustrations, and technical information. Ensure that you are familiar with the installation instructions prior to beginning.

Tool Requirements:

Basic hand tools.

T30 Torx socket

Small torque wrench (50-100 inch pound)

Hose Cutter or equivalent

Material Requirements

Engine Coolant

Diaqueen SSTF Fluid (Mitsubishi Part Number C0002610)

O-ring lubricant or equivalent

Pan Installation

1. Drain transmission fluid into a suitable container.
2. Disconnect electrical connector from transmission.

3. Remove transmission pan.
4. Verify O-ring on the Dodson Sump is properly seated in its groove all the way around the pan.
5. Lubricate the O-ring on the electrical connector with O-ring lubricant.
6. Apply light coat of O-ring lubricant to the Dodson Sump to the inner surface of the electrical connector port.
7. Install the Dodson Sump to the transmission.
8. Torque the pan bolts: $10 \pm 1 \text{ N}\cdot\text{m}$ ($89 \pm 8 \text{ in-lb.}$) following the sequence in the illustration.
9. Reconnect the electrical connector to the transmission
10. Re-fill transmission.

Plumbing Installation

1. Gain access to the heater inlet and outlet on the transmission side of the engine by removing the intake, turbo inlet tube, and any other component that may interfere with installation.
2. Drain the engine coolant system into a suitable container.
3. Disconnect the heater return hose from the transmission side of the engine.
4. Using the photo as a guide, mark the heater return hose for cutting.
5. Install the two hoses included with the sump kit to the sump. The 45deg hose goes to 45deg fitting on sump.
6. Using the photo as a guide, route the hoses to the vicinity of the heater return hose.
7. Verify your markings are in the correct place by lining them up with the pre-assembled hoses that are included in the kit.
8. After verifying your cut mark is in the correct location, cut the heater return hose so that it will be the correct length to mate to the longer of the two hoses included in the kit. (The hose with the 45 degree swivel fittings on each end)
9. Temporarily install the removed section of heater return hose to the fitting on the engine.
10. Orient the removed piece of hose so that it lines up with the shorter of the two pre-assembled hose and trim it to fit. (The hose with the straight fitting on each end)
11. Permanently install the pre-assembled hoses to the modified OEM hoses. It will be easier to tighten the AN fittings if you do so while the engine side of the return hose is dis-connected, and secure the completed hose assembly to the engine last. **WARNING: ALUMINUM FITTINGS CAN BE DAMAGED EASILY BY OVER TORQUE!** Use the “Torque Specifications for Aluminum Fittings” guide in the photo and illustration section at the end of these instructions.
12. Properly service the engine cooling system.
13. Operate the engine and leak check all connections and hoses. For best results operate the engine until the cooling fans cycle to ensure there is no leakage at normal operating pressure.
14. After leak check is completed satisfactorily, secure hose to hoist point with zip tie as shown.

NOTE: PHOTOS AND ILLUSTRATIONS ARE ON FOLLOWING PAGES

Photos and illustrations

Torque Specifications for Aluminum Fittings

One of the most frequently asked questions is how tight should the connection between the fitting and the adapter be?

The correct answer is to follow the specification guidelines listed below. This will give the proper tightness to allow for a good seal, but prevents damage to the fitting by over torque.

Torque Specification Guidelines		
Nut Size	Minimum Torque ¹	Maximum Torque ¹
-02	50	80
-03	70	105
-04	100	140
-05	130	180
-06	150	195
-08	270	350
-10	360	430
-12	460	550
-16	700	840
-20	850	1020
-24	900	1080
-32	1800	2000

¹Torque values are shown in inch pounds for aluminum fittings.

There may be times when the correct torque wrench may not be available. In these cases you can follow one of the alternate tightening methods listed at right. Please note that these methods are for aluminum performance fittings and adapters. See Bulletin JA14A for steel fittings.

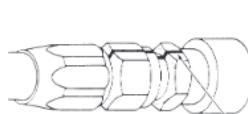
Remember, overtightening will result in possible damage to the fitting, resulting in possible leaks.

Alternate Tightening Method One

Flats Method

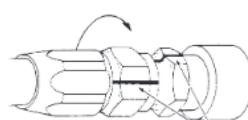
Here are the steps for an excellent method of tightening. Anyone can tell if the joint was tightened and how much.

1. Tighten the nut by hand until it bottoms the seats.
2. Using a marker, draw a line lengthwise on the nut and extend it onto the adapter.
3. Using a wrench, rotate the nut to tighten. Turn the nut the amount shown on the chart.



Mark a line on the nut and adapter before torquing.

Size	Number of Hex Flats Rotations
-04	1½ to 1¾
-06	1 to 1½
-08	1¼ to 1¾
-10	1¼ to 1¾
-12	1 to 1½
-16	¾ to 1
-20	½ to ¾
-24	½ to ¾



Misalignment of the mark shows the amount which the nut was tightened.

Alternate Tightening Method Two

The second alternate method of tightening is very simple and easy to remember. Bring the nut to hand tight and then rotate a quarter of a turn. This applies to all sizes. Mark the fitting as indicated in the flat method to confirm the quarter turn.

Figure 1: Torque Specifications: Aeroquip Catalog

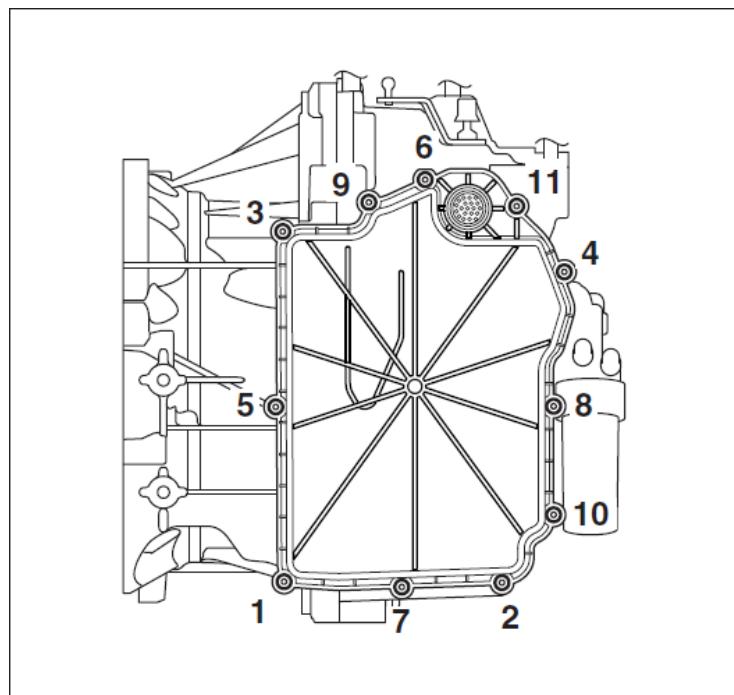


Figure 2: Pan Torque Sequence from Mitsubishi Motors Evolution X Service Manual

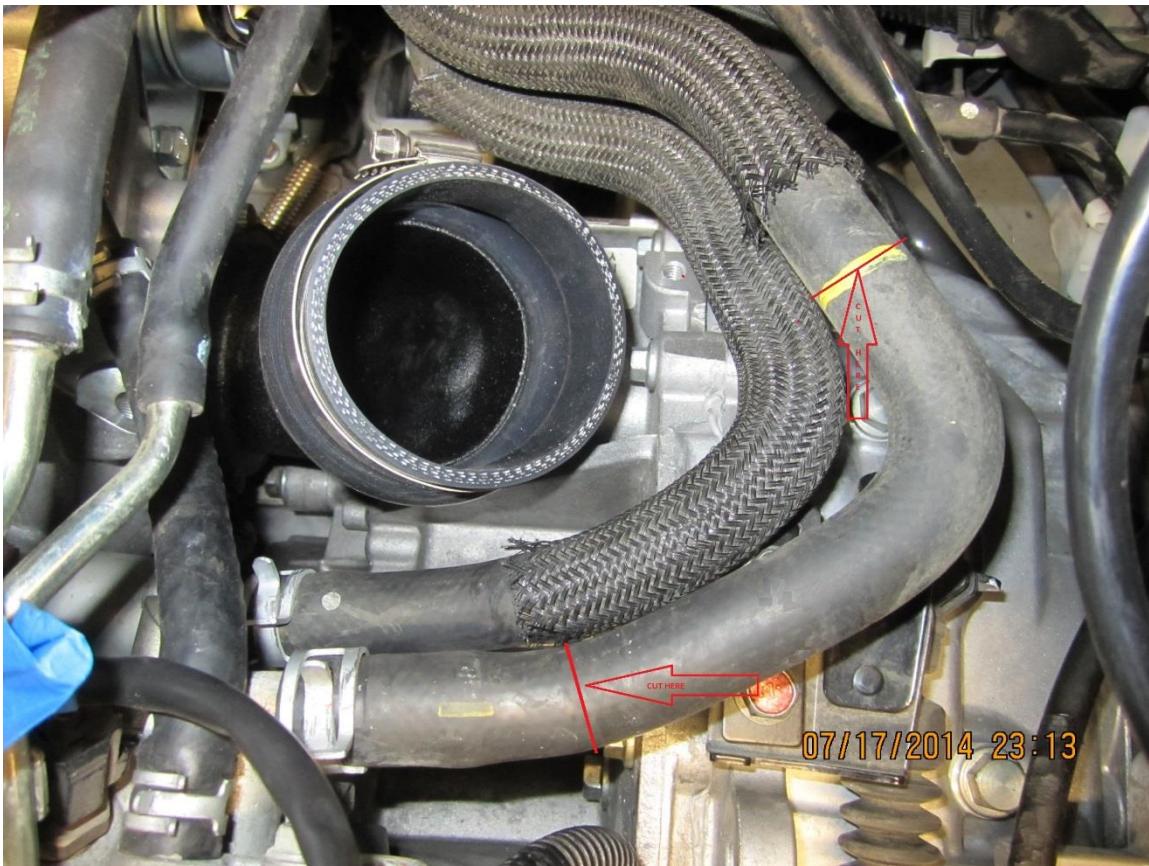


Figure 3: Coolant Return Hose Cutting Locations

Hose Routing Photos on following page

