

GROUP 12

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PART 12-1 EXHAUST SYSTEM

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1 DESCRIPTION

A dual exhaust system (Fig. 1) is used on all Thunderbird Models. The production installed exhaust system consists of: a welded, one-piece resonator inlet and crossover pipe assembly; a one-piece assembly on each side of the car that consists of a resonator inlet pipe, resonator, muffler inlet pipe, muffler and muffler outlet pipe.

The service replacement exhaust

system consists of: a welded one-piece resonator inlet and crossover pipe assembly (the same as used in production); a one-piece resonator inlet pipe and resonator assembly for each side of the car; a one-piece muffler inlet pipe, muffler and muffler outlet pipe assembly for each side of the car; and a sleeve and two clamps to connect the resonator and pipe assembly to the muffler and pipe

assembly on each side of the car.

Hinged-type, rubber-bushed hanger brackets and bracket clamps secure the exhaust system to the car underbody. The flanged ends of the resonator inlet and crossover pipe and exhaust manifolds are sealed by means of gaskets and secured with studs and nuts. A retaining clamp secures each resonator inlet pipe to the crossover inlet pipe assembly.

2 IN-CAR ADJUSTMENTS AND REPAIRS

The exhaust system must be free of leaks, excessive noise, binds, grounding and excessive vibration.

Exhaust system vibration, grounding, or binds are usually caused by: loose, broken or improperly aligned clamps or brackets; and improper installation of the crossover inlet pipe flanges on the exhaust manifolds. Any of the aforementioned conditions may cause changes to the clearances of the exhaust system components (Fig. 2). If any of these conditions exist, the clearance of the exhaust system components must be checked, adjusted and neutralized (strain relieved) or replaced to make certain the specified clearances are maintained.

EXHAUST SYSTEM ALIGNMENT

The exhaust system components

and clearance specifications are shown in Figs. 1 and 2. Perform the following procedure to adjust and neutralize the exhaust system:

1. Raise the car. Loosen the upper clamp brackets at the muffler outlet pipe hanger assemblies. Loosen the clamps at the hanger assemblies located at the underbody side member "kick-ups."

2. If the car is equipped with a service replacement one-piece muffler inlet pipe, muffler and muffler outlet pipe assembly(ies), loosen the clamps securing the sleeve(s) to the muffler inlet pipes.

3. Loosen the clamps securing the resonator inlet pipes to the crossover inlet pipe assembly.

4. Loosen the retaining nuts securing the crossover inlet pipe flanges to the exhaust manifolds.

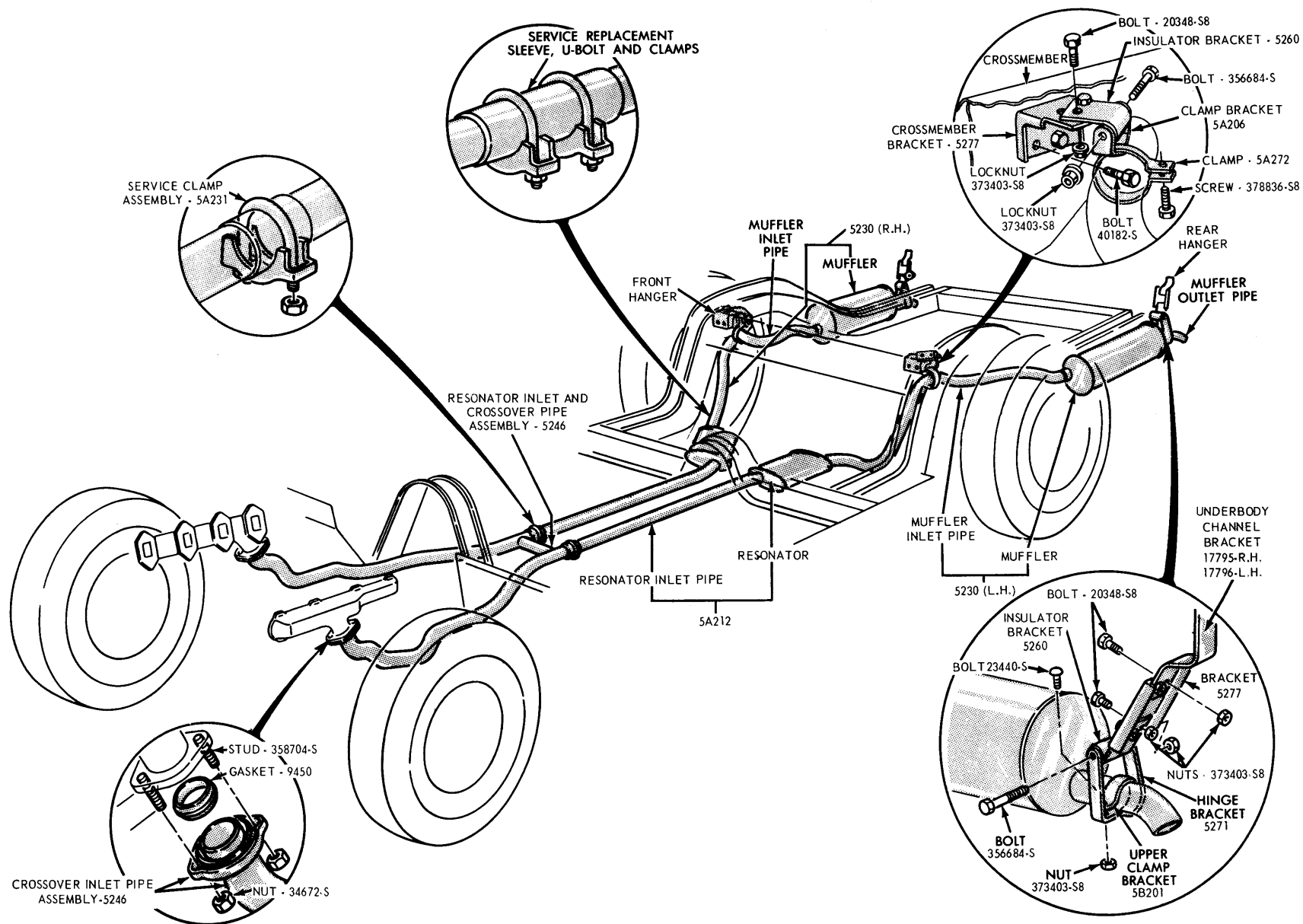
5. Inspect the clamps, brackets, and exhaust manifold studs and nuts, and replace any worn or damaged parts.

6. Torque the crossover inlet pipe flange to exhaust manifold retaining nuts to specification.

If the car is equipped with a service replacement one-piece muffler assembly, adjust the connecting sleeve to position it equally on the front and rear muffler inlet pipes.

7. Adjust the exhaust system components to conform to the clearance specifications shown in Fig. 2. Properly position the respective clamps and brackets. Working from the front of the exhaust system toward the rear, progressively tighten the retaining clamps and brackets.

8. Lower the car. Check the exhaust system for leaks, grounding or excessive vibration.



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FIG. 1—Thunderbird Exhaust System

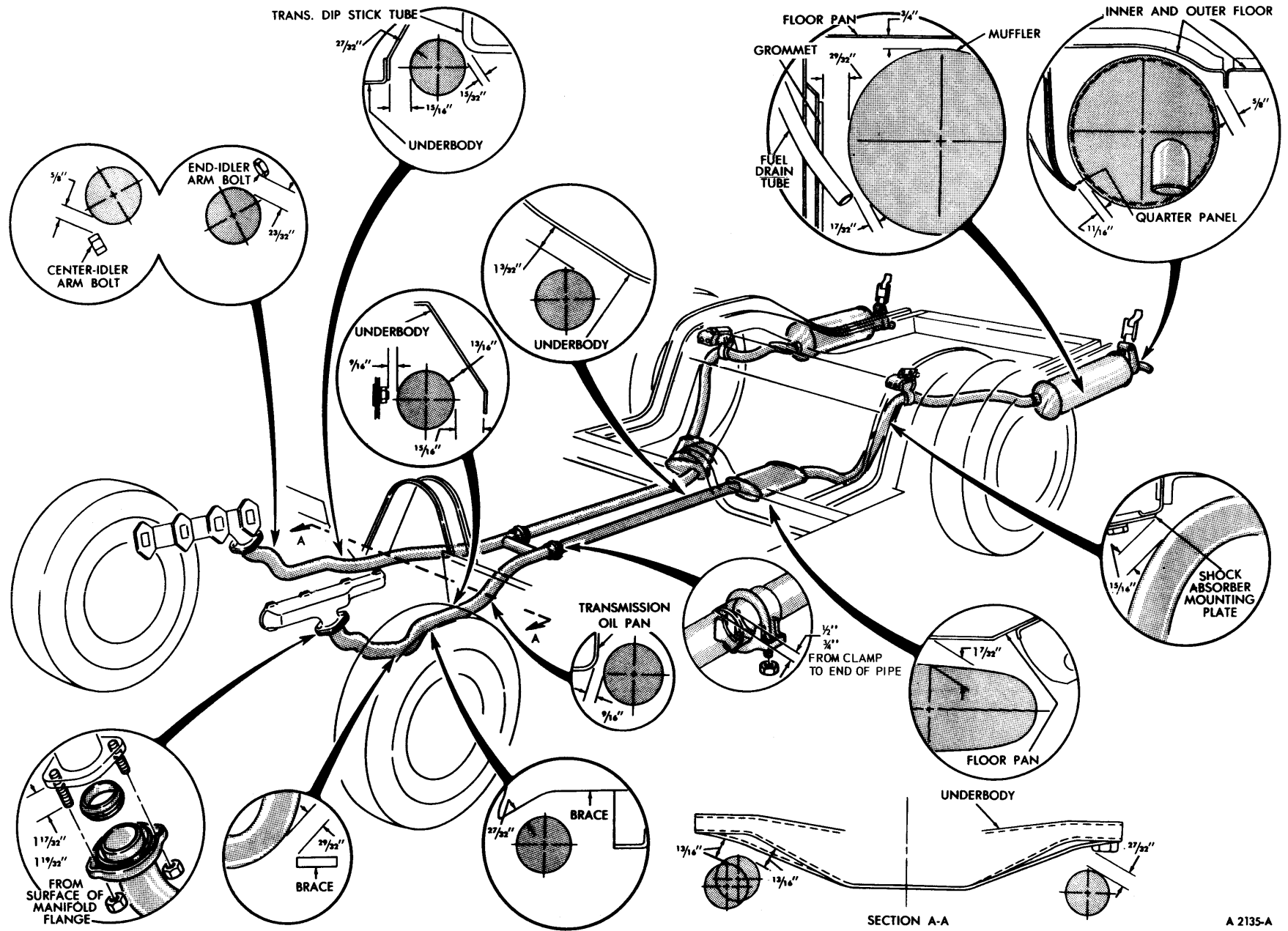


FIG. 2 - Thunderbird Exhaust System Clearance Dimensions

3 REMOVAL AND INSTALLATION

The replacement procedures given apply to all Thunderbird Models and to both right and left assemblies of the dual exhaust system. Refer to Figs. 1 and 2 for views of the exhaust system components and their clearance specifications.

RESONATOR INLET AND CROSS-OVER PIPE ASSEMBLY

REMOVAL

1. Raise the car. Loosen the clamps securing the resonator inlet pipes to the crossover inlet pipe assembly. Slide the clamps rearward on the resonator inlet pipes.

2. Remove the retaining nuts securing the crossover inlet pipes to the exhaust manifolds.

3. Loosen the clamp retaining screws at the right and left muffler inlet pipe hanger assemblies. Loosen the upper clamp bracket retaining nuts at the right and left muffler outlet pipe hanger assemblies.

4. Disconnect the resonator inlet pipes from the crossover inlet pipe assembly, and remove the crossover inlet pipe from the exhaust manifolds. Discard the mounting gaskets.

INSTALLATION

1. Clean the mounting surfaces of the exhaust manifolds and the ends of the resonator inlet pipes.

2. Raise the resonator inlet and crossover pipe assembly into position and connect it to the resonator inlet pipes. Install new right and left exhaust manifold to inlet pipe mounting gaskets; then install the inlet pipe flanges and retaining nuts on the exhaust manifolds. Torque the retaining nuts to specification.

3. Align the exhaust system to conform to the clearance specifications. Torque the right and left resonator inlet pipe to crossover inlet pipe assembly retaining clamps to specification.

4. Torque the right and left front hanger clamp retaining screws to specification. Torque the right and left muffler outlet pipe hanger upper clamp bracket retaining nuts to specification.

5. Lower the car and check the exhaust system for leaks.

RESONATOR INLET PIPE AND RESONATOR ASSEMBLY

REMOVAL

1. Loosen the resonator inlet and crossover assembly to right and left resonator inlet pipe clamps. Slide the clamps forward onto the crossover inlet pipe assembly. Loosen the front hanger clamp and the rear hanger upper bracket clamp.

2. To install an initial service replacement resonator inlet pipe and resonator assembly on a production exhaust system, cut the muffler inlet pipe at a point $2\frac{3}{4}$ inches from the rear of the resonator (Fig. 1).

On all inlet pipe and resonator assembly replacements required after the initial service replacement on a production exhaust system, loosen the muffler inlet pipe intermediate sleeve clamps.

3. Remove the resonator and pipe assembly. Replace all worn or damaged clamps and brackets.

INSTALLATION

1. Remove any slag or burrs from the cut end of the muffler inlet pipe. Install two clamps on the intermediate sleeve. Position the sleeve and clamps on the resonator outlet.

2. Connect the resonator and pipe assembly to the crossover inlet pipe assembly. Connect the intermediate sleeve to the muffler inlet pipe.

3. Align the exhaust system to conform to the clearance specifications. Torque the crossover inlet pipe assembly to resonator inlet pipe clamp nuts, the intermediate sleeve clamp nuts, the front hanger clamp retaining screw and the rear hanger clamp bracket retaining nut to specifications.

4. Lower the car and check the system for leaks.

MUFFLER INLET PIPE, MUFFLER AND MUFFLER OUTLET PIPE

REMOVAL

1. To install an initial service replacement muffler inlet pipe, muffler and muffler outlet pipe assembly on a

production exhaust system, cut the muffler inlet pipe at a point $2\frac{3}{4}$ inches from the rear of the resonator (Fig. 1).

On muffler inlet pipe, muffler and muffler outlet pipe assembly replacements required after an initial service replacement, loosen the clamp at the muffler inlet end of the intermediate sleeve and slide it forward.

2. Loosen the clamp at the front hanger. Remove the bolt securing the clamp bracket to the insulator bracket. Loosen the upper clamp bracket at the rear hanger. Remove the retaining bolts securing the rear hanger bracket to the underbody channel bracket. Remove the muffler, pipes, front clamp bracket and rear hanger bracket as an assembly.

3. Remove the front clamp bracket from the muffler inlet pipe. Remove the rear hanger assembly from the muffler outlet pipe. Replace all worn or damaged clamps and brackets.

INSTALLATION

1. On an initial service replacement, remove any slag or burrs from the cut end of the resonator outlet. Place two clamps on the intermediate sleeve, and install the sleeve on the resonator outlet.

2. Install the front hanger clamp and clamp bracket on the muffler inlet pipe, and connect the new muffler and pipe assembly to the sleeve. Loosely install the clamp bracket to insulator bracket retaining bolt.

3. Install the rear hanger assembly on the muffler outlet pipe. Install the rear hanger assembly on the underbody channel bracket and torque the retaining bolts to specification.

4. Align the exhaust system to conform to the clearance specifications (Fig. 2). Torque the intermediate sleeve clamp nut(s), front hanger clamp screw, front hanger insulator bracket to clamp bracket retaining bolt and hanger upper bracket retaining nuts to specifications.

5. Lower the car and check the system for leaks.

PART 12-2 SPECIFICATIONS

TORQUE LIMITS	Ft-lbs
Muffler Inlet Pipe to Engine Manifold	25-35
Resonator Inlet and Resonator Inlet and Crossover Pipe Assembly Clamps	13-20
Front Hanger Clamp	13-20
Front Hanger Clamp Bracket to Insulator Bracket	13-20
Front Hanger Insulator Bracket to Crossmember Bracket	13-20
Front Hanger Crossmember Bracket to Crossmember	13-20
Muffler Inlet Pipe Sleeve Clamps	13-20
Rear Hanger Upper Clamp Bracket to Hinge Bracket	13-20
Rear Hanger Hinge Bracket to Insulator Bracket	13-20
Rear Hanger Insulator Bracket to Underbody Flange Bracket	13-20
Rear Hanger Flange Bracket to Underbody Channel Bracket	13-20