

# MANIFOLD & EXHAUST

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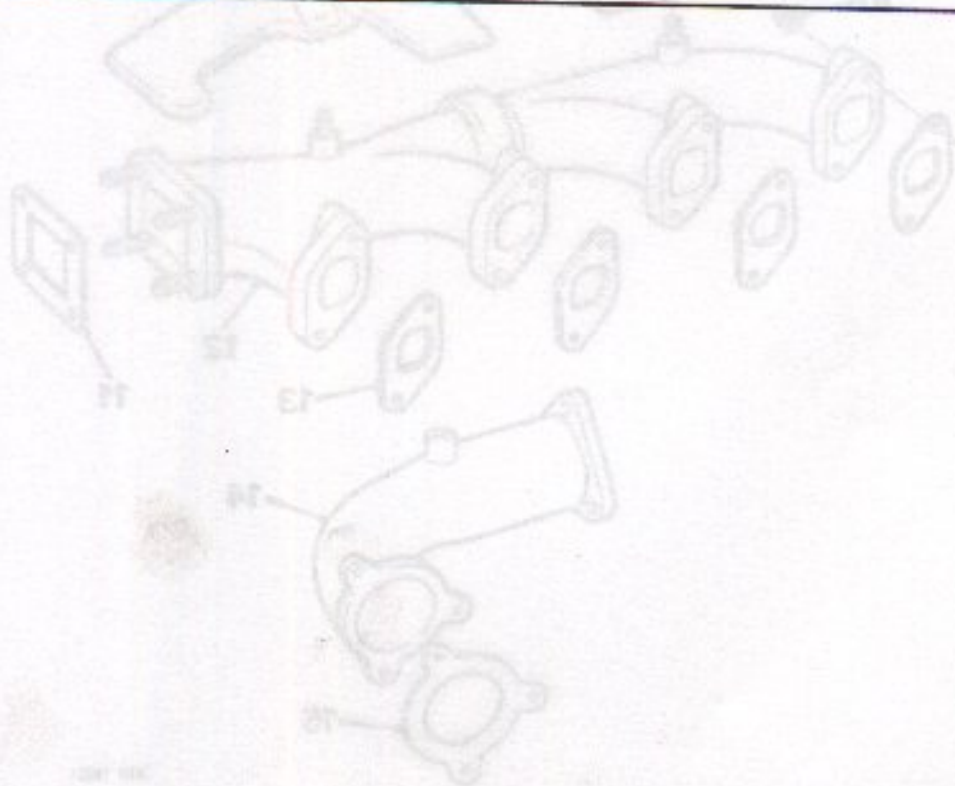
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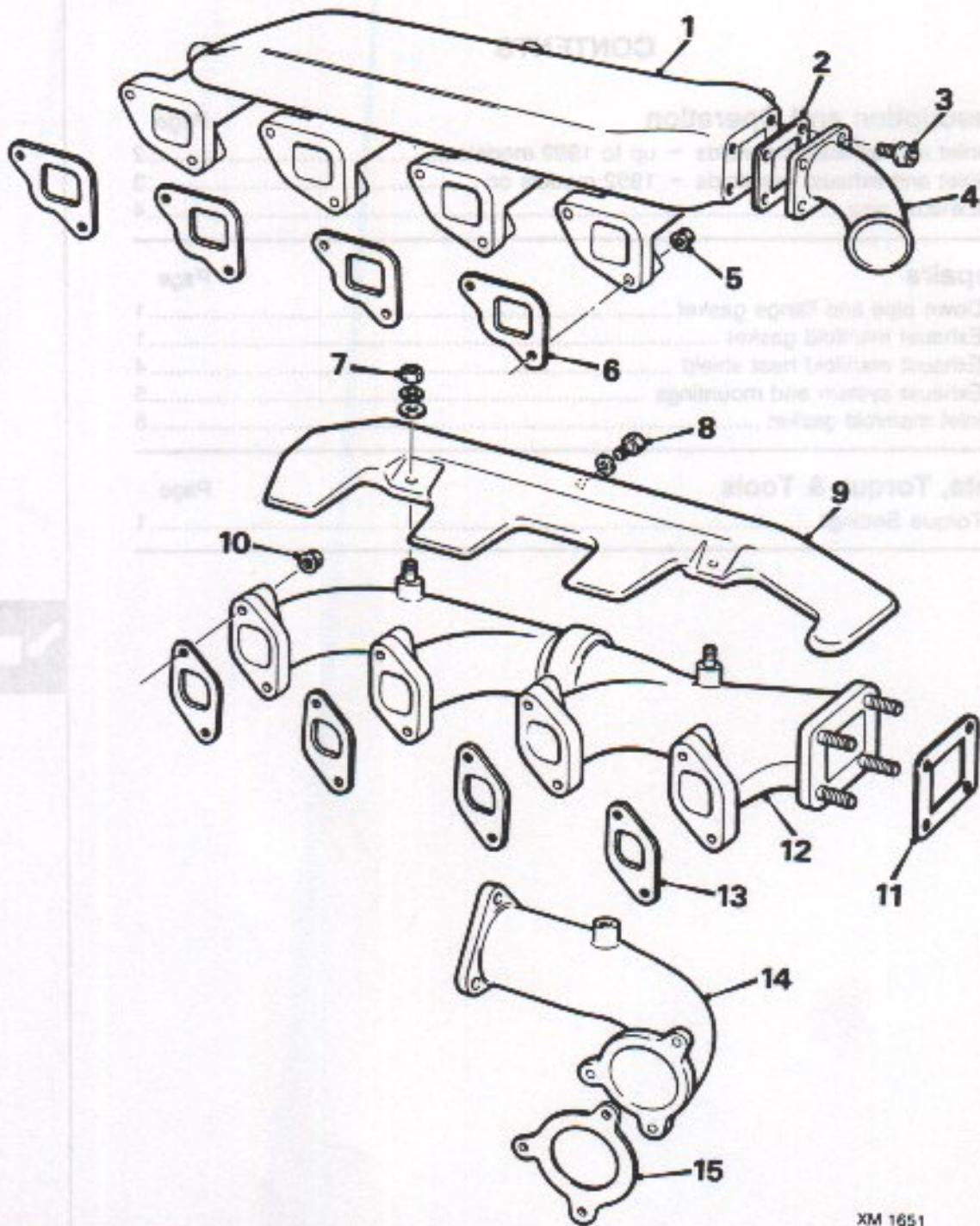


INLET AND EXHAUST MANIFOLDS - UP TO 1992 MODELS

1. Inlet manifold  
2. Gasket - inlet manifold to block  
3. Air pipe  
4. Inlet pipe  
5. Heat shield  
6. Inlet manifold gasket  
7. Heat shield  
8. Heat shield

9. Heat shield  
10. Exhaust manifold gasket  
11. Gasket - exhaust manifold to turbocharger  
12. Exhaust manifold - turbocharger  
13. Exhaust manifold gasket  
14. Turbocharger  
15. Turbocharger inlet gasket

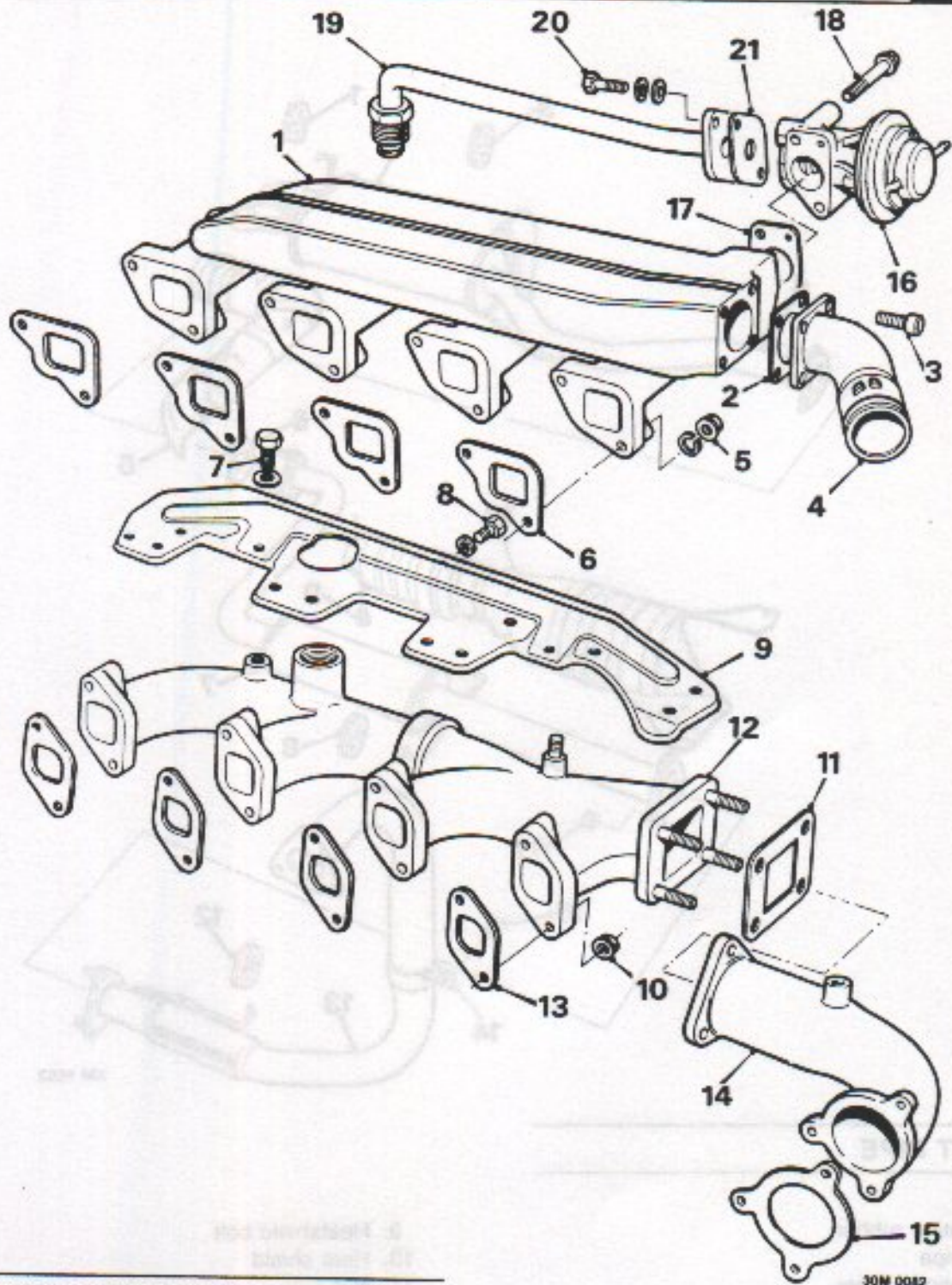
# MANIFOLD & EXHAUST



XM 1651

## INLET AND EXHAUST MANIFOLDS - UP TO 1992 MODELS

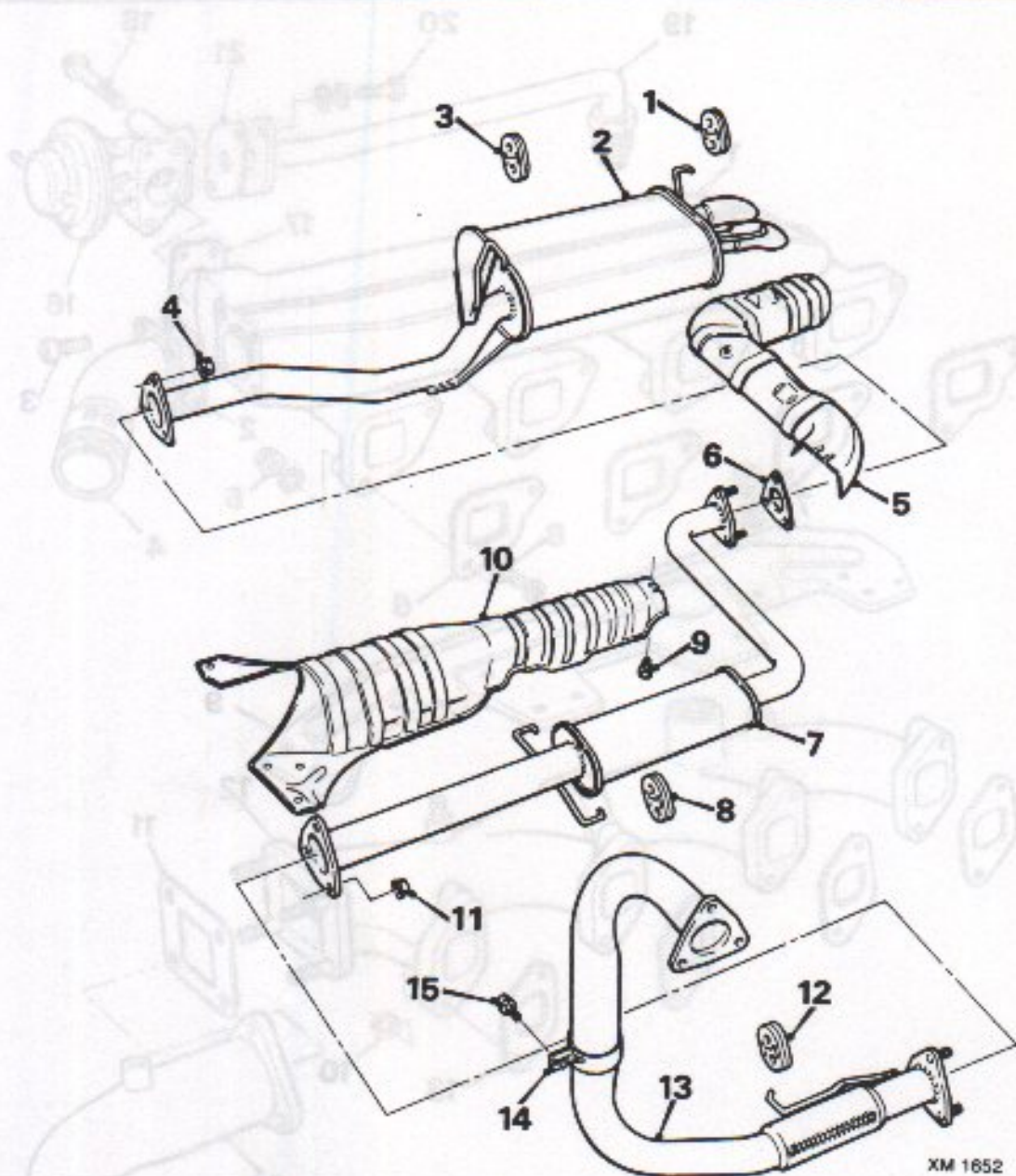
- |                                     |   |
|-------------------------------------|---|
| 1. Inlet manifold                   | 9. Heat shield                                |
| 2. Gasket - inlet manifold to elbow | 10. Exhaust manifold nut                      |
| 3. Allen screw                      | 11. Gasket - exhaust manifold to turbocharger |
| 4. Inlet elbow                      | 12. Exhaust manifold - two piece              |
| 5. Inlet manifold nut               | 13. Exhaust manifold gasket                   |
| 6. Inlet manifold gasket            | 14. Turbocharger elbow                        |
| 7. Heat shield nut                  | 15. Turbocharger elbow gasket                 |
| 8. Heat shield bolt                 |   |



## INLET AND EXHAUST MANIFOLDS - 1992 MODELS ON

- |                                     |   |                        |
|-------------------------------------|---|------------------------|
| 1. Inlet manifold                   | 9. Heat shield                                | 16. E.G.R. valve       |
| 2. Gasket - inlet manifold to elbow | 10. Exhaust manifold nut                      | 17. Gasket             |
| 3. Allen screw                      | 11. Gasket - exhaust manifold to turbocharger | 18. E.G.R. valve bolts |
| 4. Inlet elbow                      | 12. Exhaust manifold - two piece              | 19. E.G.R. pipe        |
| 5. Inlet manifold nut               | 13. Exhaust manifold gasket                   | 20. E.G.R. pipe bolts  |
| 6. Inlet manifold gasket            | 14. Turbocharger elbow                        | 21. Gasket             |
| 7. Heat shield bolt                 | 15. Turbocharger elbow gasket                 |                        |
| 8. Heat shield bolt                 |   |                        |

# MANIFOLD & EXHAUST



XM 1652

## EXHAUST PIPE

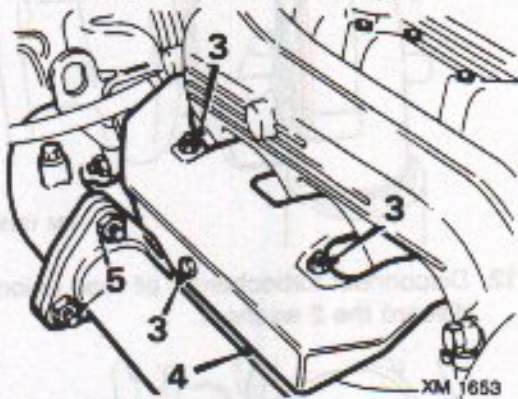
- |                      |                          |
|----------------------|--------------------------|
| 1. Mounting rubber   | 9. Heatshield bolt       |
| 2. Tail pipe         | 10. Heat shield          |
| 3. Mounting rubber   | 11. Nut                  |
| 4. Nut               | 12. Mounting rubber      |
| 5. Heat shield       | 13. Down pipe            |
| 6. Gasket            | 14. Support bracket      |
| 7. Intermediate pipe | 15. Support bracket bolt |
| 8. Mounting rubber   |                          |

## DOWN PIPE AND FLANGE GASKET

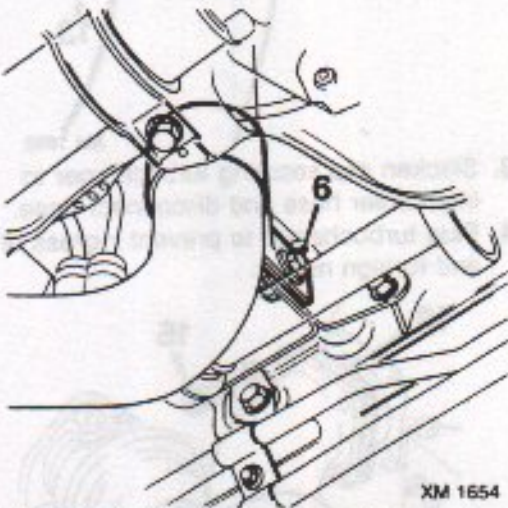
Service Repair No. Down pipe 30.10.09  
Service Repair No. Flange gasket 30.10.26

### Remove

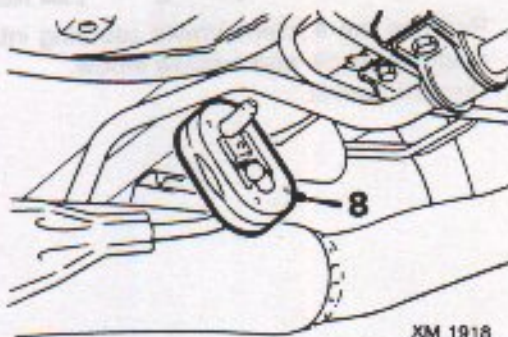
1. Disconnect battery earth lead.
2. Position vehicle on 4 post ramp.



3. Remove bolt and 2 nuts securing exhaust manifold heatshield.
4. Remove heatshield.
5. Remove the 3 nuts securing down pipe to turbocharger elbow.



6. Remove bolt securing exhaust down pipe clip to bracket on cylinder block.
7. Release down pipe flange from turbocharger elbow and discard gasket.



8. Release down pipe from mounting.



9. Remove the 3 nuts connecting down pipe to intermediate pipe.
10. Release down pipe from intermediate pipe.
11. Discard gasket.
12. Remove down pipe and remove bracket from pipe.

### Refit

1. Fit bracket to down pipe.
2. Clean flange mating faces, fit gasket and secure down pipe to intermediate pipe.
3. Position down pipe gasket and secure down pipe flange to turbocharger elbow.
4. Fit down pipe and fit and tighten the 3 flange nuts to 30 Nm.
5. Align down pipe clip to bracket and fit and tighten bolt.
6. Fit exhaust heat shield and tighten securing nuts and bolt to 8 Nm.
7. Connect battery earth lead.
8. Remove vehicle from ramp.

## EXHAUST MANIFOLD GASKET

Service Repair No. 30.15.12

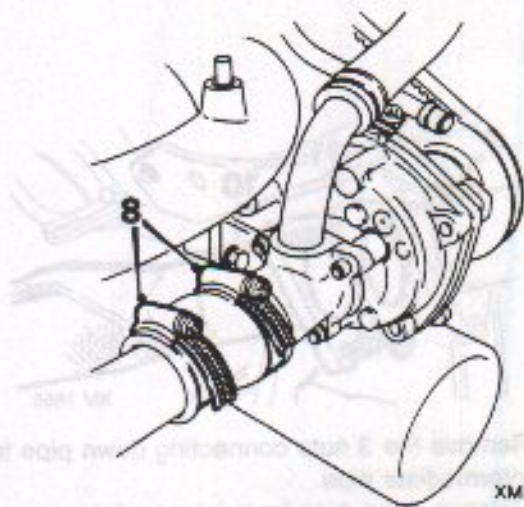
### Remove

1. Disconnect battery earth lead.
2. Drain cooling system, see **COOLING SYSTEM - Adjustments**.
3. Raise front of vehicle.

**WARNING: Support on safety stands.**

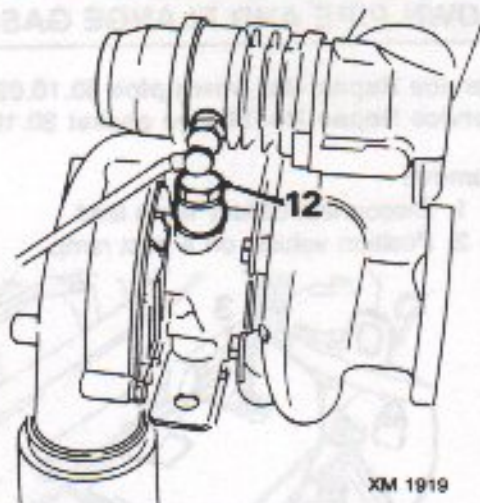
4. Remove down pipe, see **Down Pipe and Flange Gasket**.
5. Remove air cleaner assembly, see **FUEL SYSTEM - Repairs**.
6. Remove the turbocharger elbow, see **FUEL SYSTEM - Repairs - Turbocharger Elbow Gasket**.
7. Position suitable container below coolant pump.

# MANIFOLD & EXHAUST



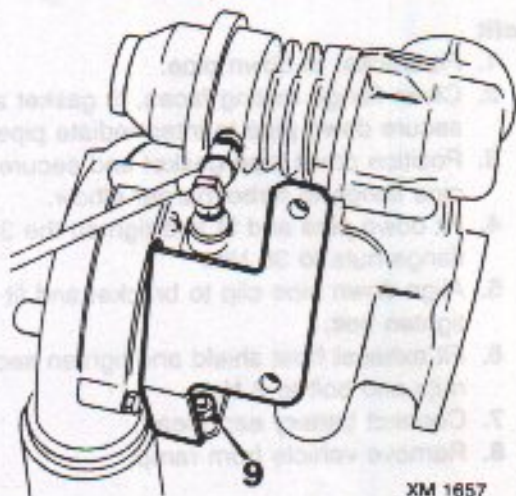
XM 1656

8. Slacken the 2 clips securing hose connecting pipe to coolant pump and release hose from coolant pump.



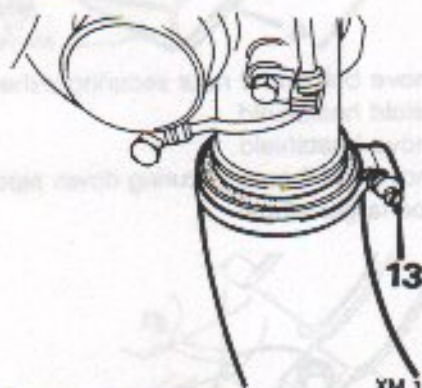
XM 1919

12. Disconnect turbocharger oil feed union and discard the 2 washers.



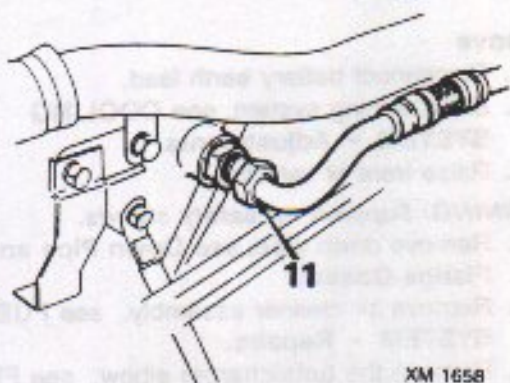
XM 1657

9. Remove nut securing heatshield bracket to turbocharger support bracket and remove bracket.  
10. Position cloth to absorb oil spillage.



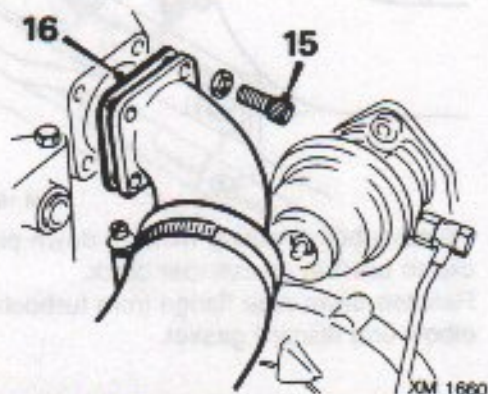
XM 1659

13. Slacken clip securing turbocharger to intercooler hose and disconnect hose.  
14. Plug turbocharger to prevent ingress of dirt and foreign matter.



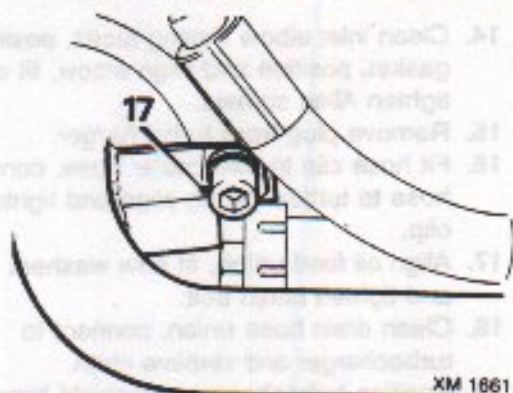
XM 1658

11. Disconnect turbocharger oil return hose union.

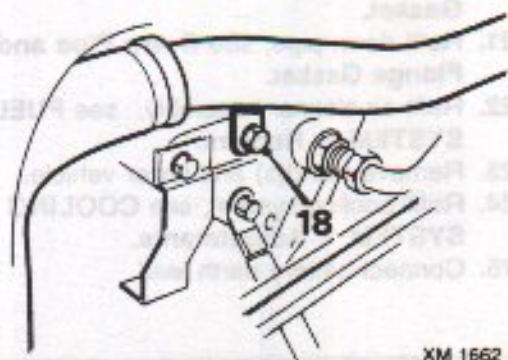


XM 1660

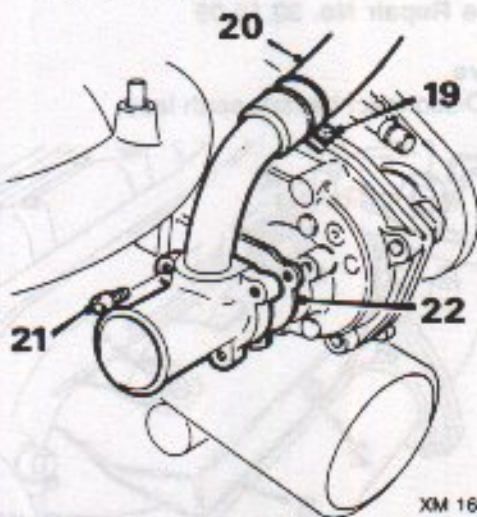
15. Remove the 4 Allen screws securing intake manifold elbow and release elbow.  
16. Discard gasket.



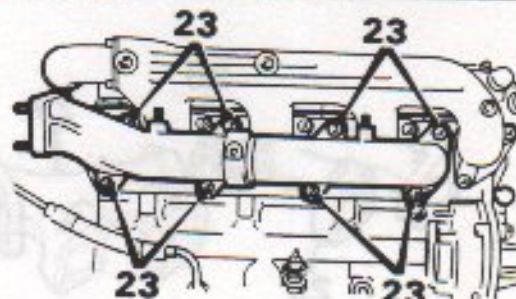
17. Remove Allen screw securing coolant pipe to turbocharger support bracket.



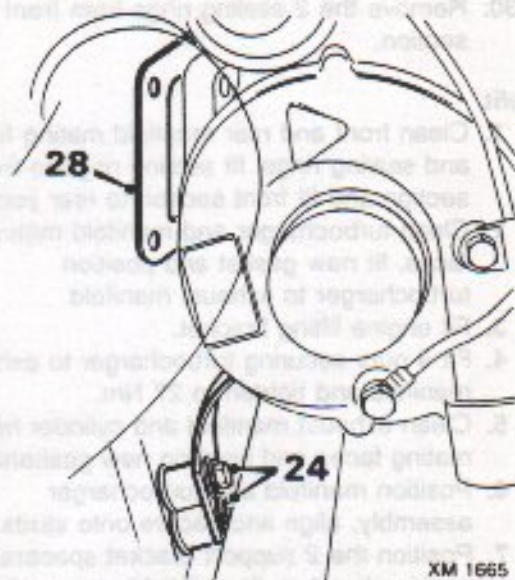
18. Remove bolt securing coolant pipe to engine backplate.



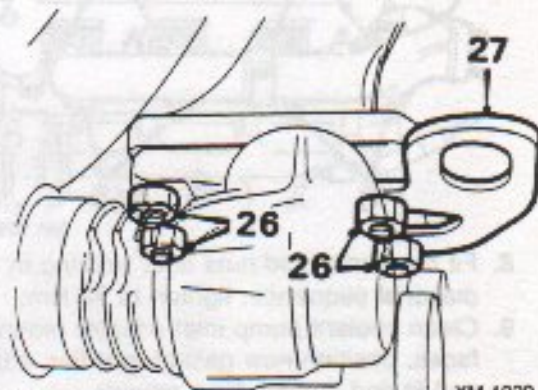
19. Slacken clip securing hose from coolant pump to thermostat housing.  
 20. Disconnect hose from coolant pump and move aside.  
 21. Remove the 3 Allen screws securing water pump inlet adapter and remove adapter.  
 22. Discard gasket.



23. Remove the 8 nuts securing exhaust manifold.

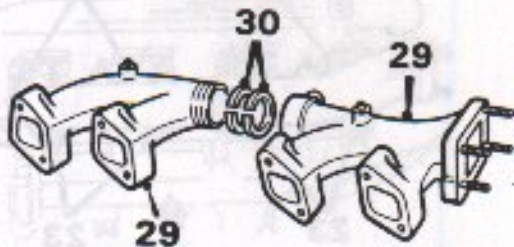


24. Remove the 2 bolts securing turbocharger support bracket to engine backplate and remove the 2 spacers.  
 25. Remove exhaust manifold and turbocharger assembly, remove and discard the 4 gaskets.



26. Remove the 4 nuts securing turbocharger to exhaust manifold.  
 27. Remove engine lifting bracket.  
 28. Remove turbocharger from exhaust manifold, remove and discard gasket.

# MANIFOLD & EXHAUST

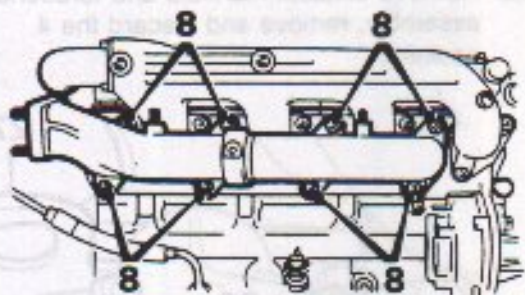


XM 1666

29. Remove front section of exhaust manifold from rear section.
30. Remove the 2 sealing rings from front section.

## Refit

1. Clean front and rear manifold mating faces and sealing rings, fit sealing rings to front section and fit front section to rear section.
2. Clean turbocharger and manifold mating faces, fit new gasket and position turbocharger to exhaust manifold.
3. Fit engine lifting bracket.
4. Fit 4 nuts securing turbocharger to exhaust manifold and tighten to 27 Nm.
5. Clean exhaust manifold and cylinder head mating faces and position new gaskets.
6. Position manifold and turbocharger assembly, align and secure onto studs.
7. Position the 2 support bracket spacers, position bracket, fit and tighten securing bolts.



XM 1667

8. Fit the 8 manifold nuts and, working in a diagonal sequence, tighten to 30 Nm.
9. Clean coolant pump inlet adapter mating faces, position new gasket, position adapter and fit and tighten Allen screws.
10. Connect hose to coolant pump, align and tighten hose clip.
11. Align coolant pipe bracket to turbocharger support bracket and fit Allen screw securing pipe to support bracket but do not tighten.
12. Fit and tighten bolt securing coolant pipe to engine backplate. Tighten Allen screw securing pipe to support bracket.
13. Fit pipe to coolant pump hose, align and tighten hose clips.

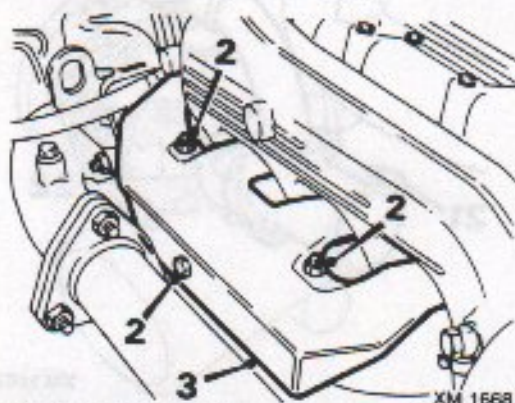
14. Clean inlet elbow mating faces, position new gasket, position and align elbow, fit and tighten Allen screws.
15. Remove plug from turbocharger.
16. Fit hose clip to intercooler hose, connect hose to turbocharger, align and tighten hose clip.
17. Align oil feed union, fit new washers and fit and tighten banjo bolt.
18. Clean drain hose union, connect to turbocharger and remove cloth.
19. Position turbocharger heatshield bracket fit and tighten securing nut.
20. Fit turbocharger elbow, see **FUEL SYSTEM - Repairs - Turbocharger Elbow Gasket**.
21. Refit down pipe, see **Down Pipe and Flange Gasket**.
22. Refit air cleaner assembly, see **FUEL SYSTEM - Repairs**.
23. Remove stand(s) and lower vehicle.
24. Refill cooling system, see **COOLING SYSTEM - Adjustments**.
25. Connect battery earth lead.

## EXHAUST MANIFOLD HEAT SHIELD

Service Repair No. 30.15.09

### Remove

1. Disconnect battery earth lead.



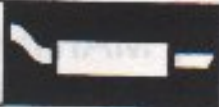
XM 1668

2. Remove bolt and two nuts securing exhaust manifold heat shield.
3. Remove heat shield.

### Refit

1. Position heat shield. Fit the 2 nuts and bolt and tighten to 8 Nm.
2. Connect battery earth lead.





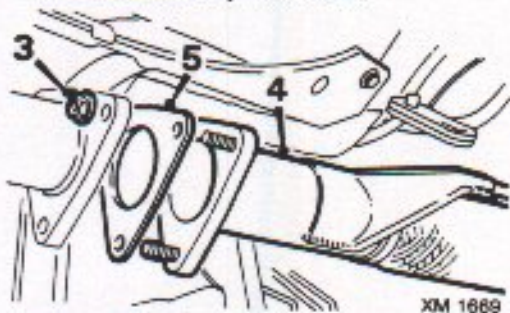
## EXHAUST SYSTEM AND MOUNTINGS

Service Repair No. 30.10.01

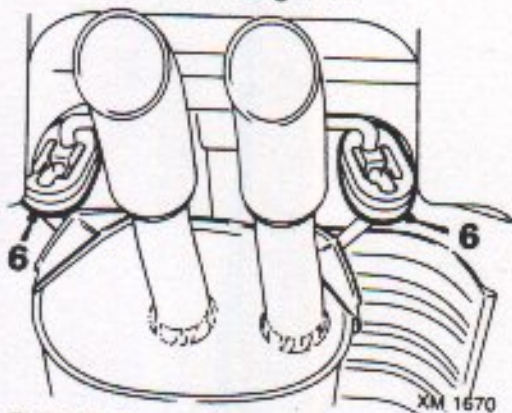
Service Repair No. 30.20.03

### Remove

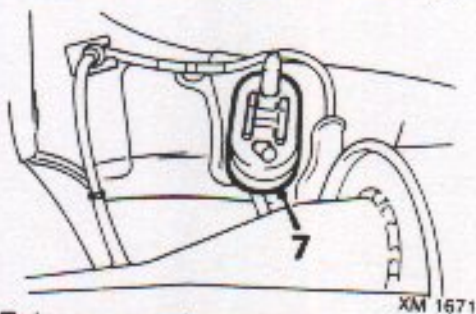
1. Position vehicle on 4 post ramp.
2. Disconnect battery earth lead.



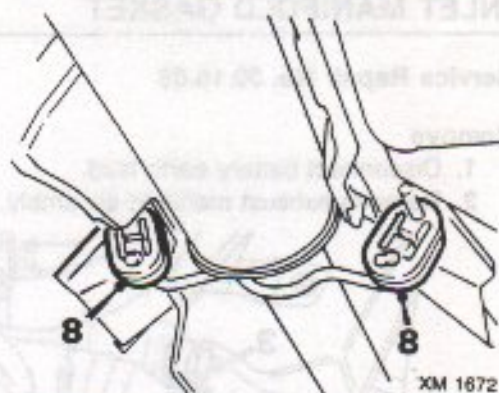
3. Remove 3 nuts securing intermediate pipe to down pipe.
4. Release intermediate pipe from down pipe.
5. Remove and discard gasket.



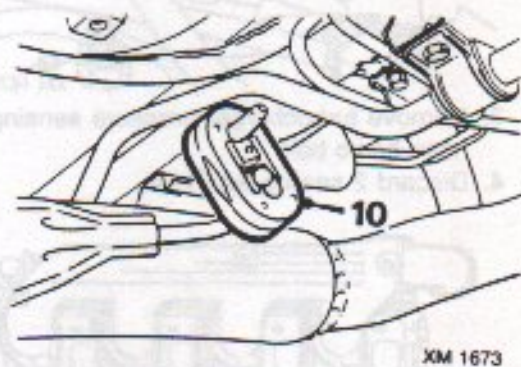
6. Release 2 mountings at rear of tail pipe.



7. Release mounting at front of tail pipe.



8. Release 2 mountings on intermediate pipe.
9. Remove intermediate and tail pipe assembly.



10. Release mounting on down pipe.
11. Remove down pipe.

### Refit

1. Clean intermediate and down pipe flange mating faces, fit down pipe and position intermediate pipe to down pipe.
2. Raise pipe assembly, align, and connect pipe assembly to mountings. Fit flange nuts and tighten to 30 Nm.
3. Clean intermediate and tail pipe flange mating faces, fit tail pipe to intermediate pipe, raise pipe, align, and connect to mountings. Fit flange nuts and tighten to 30 Nm.
4. Lower vehicle to ground.
5. Connect battery earth lead.
6. Remove vehicle from ramp.

## INLET MANIFOLD GASKET

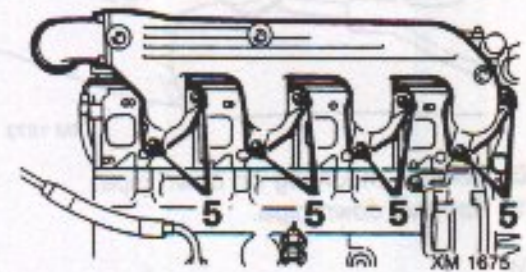
Service Repair No. 30.15.08

### Remove

1. Disconnect battery earth lead.
2. Remove exhaust manifold assembly.



3. Remove turbocharger pressure sensing hose banjo bolt.
4. Discard 2 sealing washers.



5. Remove the 8 nuts securing inlet manifold.
6. Remove manifold.
7. Discard the 4 manifold gaskets.

### Refit

1. Clean manifold mating faces, position new gaskets, position manifold, fit nuts and tighten to 30 Nm.
2. Using new washers, position turbocharger pressure sensing hose, fit and tighten banjo.
3. Fit exhaust manifold assembly.
4. Connect battery earth lead.

## EXHAUST SYSTEM AND MOUNTINGS

Service Repair No. 30.15.08  
Service Repair No. 30.15.08

### Remove

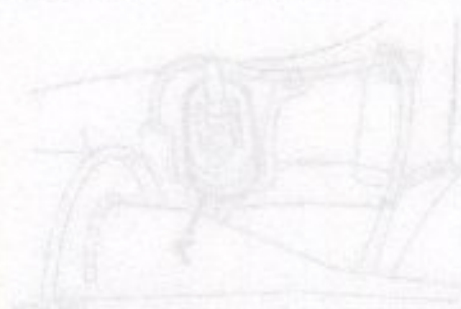
1. Position vehicle on 4 post ramp.
2. Disconnect battery earth lead.



3. Remove 8 nuts securing inlet manifold to down pipe.
4. Release intermediate pipe from down pipe.
5. Remove end flange gasket.



6. Release 2 mountings at rear of the pipe.



7. Release mounting at front of the pipe.



## TORQUE SETTINGS

Down pipe flange nuts .....	30 Nm
Exhaust heat shield securing nuts and bolt .....	8 Nm
Turbocharger to exhaust manifold nuts .....	27 Nm
Exhaust manifold nuts .....	30 Nm
Intermediate pipe to tail pipe nuts .....	30 Nm
Inlet manifold nuts .....	30 Nm