SUBARU

NUMBER 10-68-96R

APPLICABILITY

'87-94 Loyale
'93 Impreza
'90-93 Legacy Zexel systems
'90-93 Legacy Calsonic systems (including Turbo)
'92 SVX

DATE 08-15-98

SUBJECT Air Conditioning Retrofit Procedures R-12 to R-134a

SUBARU has developed R-12 to R-134a A/C retro fitting procedures for the above vehicles.

PART LISTS:

'87-94 Loyale: Kit Part # SOA864A100

PARTS INCLUDED	PART NUMBERS	TOOLS
Receiver/drier	SOA864A200	Refer to SUBARU
Suction hose	SOA864A310	service manual
Discharge hose	SOA864A300	
Discharge hose extension	73044GA321 (required for '90 thru '94 systems)	
O-rings (set of 2)	SOA864A320	
Retrofit label	SOA635054	
Pag Oil	SOA864A330	

'93 Impreza: Kit Part # G3110FS010

PARTS INCLUDED	PART NUMBERS	TOOLS
Receiver/drier	73411FA100	Refer to SUBARU
O-rings (set of 4)	73039AA010	service manual
Adapter valve, low pressure	73058AA100	
Adapter valve, high pressure	73058AA110	
PAG oil	K0010FS100	
R-134a Retrofit label	SOA635054	

'90-91 Legacy Zexel systems: Kit Part # G3110AS000

PARTS INCLUDED	PART NUMBERS	TOOLS
Receiver/drier	73031AA210	Refer to SUBARU
Suction hose	73054AA620	service manual
Discharge hose	73054AA600	
O-rings (set of 2)	73039AA200	
R-134a Retrofit label	SOA635054	
PAG oil	73019AA110	

'92 Legacy Zexel systems: Kit Part # G3110AS010

PARTS INCLUDED	PART NUMBERS	TOOLS
Receiver/drier	73031AA210	Refer to SUBARU
Suction hose	73054AA620	service manual
Discharge hose	73054AA630	
O-rings (set of 2)	73039AA200	
R-134a Retrofit label	SOA635054	
PAG oil	73019AA110	

‘93 Legacy Zexel systems: Kit Part # G3110AS020

PARTS INCLUDED	PART NUMBERS	TOOLS
Receiver/drier	73031AA210	Refer to SUBARU
Suction hose	73054AA400	service manual
Discharge hose	73054AA640	
O-rings (set of 2)	73039AA200	
R-134a Retrofit label	SOA635054	
PAG oil	K0010FS100	

‘90-91 Legacy Calsonic systems (Non-Turbo) : Kit Part # G3110AS100

PARTS INCLUDED	PART NUMBERS	TOOLS
Receiver/drier	73411FA100	Refer to SUBARU
O-rings (set of 4)	73039AA010	service manual
Pressure relief valve	73035AA100	
Suction hose	73054AA141	
Discharge hose	73054AA081	
Adapter valve, suction hose	73058AA100	
Adapter valve, discharge hose	73058AA110	
PAG retrofit oil	73019AA100	
R-134a Retrofit label	SOA635054	

‘91 Legacy Turbo Calsonic systems: Kit Part # G3110AS110

PARTS INCLUDED	PART NUMBERS	TOOLS
Receiver/drier	73411FA100	Refer to SUBARU
O-rings (set of 4)	73039AA010	service manual
Pressure relief valve	73035AA100	
Suction hose	73054AA311	
Adapter valve, suction hose	73058AA100	
Discharge hose	73054AA081	
Adapter valve, discharge hose	73058AA110	
PAG retrofit oil	73019AA100	
R-134a Retrofit label	SOA635054	

‘92-93 Legacy Calsonic systems (including Turbo): Kit Part # G3110AS120

PARTS INCLUDED	PART NUMBERS	TOOLS
Receiver/drier	73411FA100	Refer to SUBARU
O-rings (set of 4)	73039AA010	service manual
Pressure relief valve	73035AA100	
Adapter valve, low pressure	73058AA100	
Adapter valve, high pressure	73058AA110	
PAG oil	73019AA100	
R-134a Retrofit label	SOA635054	

‘92 SVX: Kit Part # G3110PS000

PARTS INCLUDED	PART NUMBERS	TOOLS
Receiver/drier	73031PA100	Refer to SUBARU
Suction hose	73050PA200	service manual
Discharge hose	73050PA060	
O-rings (set of 2)	73039AA200	
R-134a Retrofit label	SOA635054	
PAG oil	73019AA110	

INSTRUCTIONS FOR ‘87-94 LOYALE

NOTES:
1. Always lubricate all o-rings with PAG oil before installation.
2. Always tighten fittings to proper torque specifications.
3. Observe all safety recommendations.
4. System to be serviced by qualified personnel.

1. Repair any problems or leaks before beginning retrofit procedure.
2. If the R-12 vehicle air conditioning system is operational run it at idle with the A/C blower on high speed for (5) minutes to optimize the amount of oil in the compressor.
3. Recover all R-12 refrigerant from the vehicles A/C system utilizing a UL approved R-12 recovery device.
4. Remove and discard discharge hose, retain all hardware.
5. Remove and discard suction hose, retain all hardware.
6. Remove compressor from the vehicle.

CAUTION: hoses or block fittings on hose assemblies should be capped or protected from foreign matter entering the system.

7. Remove the compressor oil plug and then drain as much mineral oil as possible from the compressor body. Drain mineral oil from the cylinder head, suction and discharge ports while turning the shaft with a socket wrench on the clutch armature retaining nut.
8. Replace the compressor oil plug o-ring with a replacement o-ring, part number: SOA864A320. Reinstall compressor oil plug to the compressor and reinstall the compressor.
9. Install new discharge hose, part number: SOA864A300, using all applicable O.E. hardware. Lubricate the discharge hose o-rings before installation.

NOTE: ‘90 thru ‘94 Loyale systems require that an A/C discharge hose extension, part number: 73044GA321, be attached to the discharge hose to complete the assembly. This hose extension is a standard part in Loyale A/C systems manufactured before ‘90, and is included in this kit.

10. Install new suction hose, part number: SOA864A310, using all applicable O.E. hardware. Lubricate the suction hose o-rings before installation.
11. Remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.
12. Remove and discard the receiver/drier o-rings and replace with new o-rings, part # SOA864A320.
13. Install the new receiver/drier, part number: SOA864A200.
14. Paint the receiver/drier sight glass with touch-up paint. The sight glass can not be utilized in testing R-134a performance.

15. Add 150cc of PAG oil lubricant, P/N: SOA864A330 to the system as follows:

    a. Follow charging station equipment manufacturer's procedures.

    b. If there is no provision for lubricant addition, use the following procedure:

    - Prepare the vacuum pump to pull negative pressure at the low pressure adapter fitting.
    - Connect the end of the high pressure charge hose to the high pressure adapter fitting.
    - Place the other end into a graduated marked container that contains the specified type of PAG lubricant.
    - Pull a negative pressure (vacuum) on the low side of the A/C system, which will draw the lubricant into the high side.
    - Discontinue the negative pressure (vacuum) when 150cc of PAG oil lubricant, P/N: SOA864330 has been drawn into the system.

16. Evacuate the A/C system for 45 minutes using R-134a equipment.

    a. After 10 minutes close the manifold gauge valves & perform a VACUUM LEAK TEST

    b. After 5 minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, pressurize the system and perform an electronic leak test of the system.

    c. If no leak is indicated resume evacuation (remaining 35 minutes).

17. Charge the system with 21 oz. of R-134a refrigerant. Leak check the system using R-134a refrigerant equipment.

18. Remove the old R-12 A/C ID tag and discard.

19. Fill out the R-134a retrofit label, part number: SOA635054, by lifting white backing tape and writing in oil type 1000 PAG, the oil amount 150cc, and the R-134a charge amount 21 oz. Locate the label in a highly visible location such as the fire wall or hood. Pull white backing off the label and cover the label with the clear portion of label. Fill out the bottom portion of R-134a A/C ID tag and place next to the top portion.

20. Conduct a performance test. Reference service manual for R-134a performance characteristics.

INSTRUCTIONS FOR '93 IMPREZA

NOTES:
1. Always lubricate all o-rings before installation.
2. Always tighten fittings to proper torque specifications.
3. Observe all safety recommendations.
4. System to be serviced by qualified personnel.

1. Repair any problems or leaks before beginning retrofit procedure.

2. Disconnect negative battery cable.

3. Recover all R-12 refrigerant from the vehicles A/C system utilizing a UL approved R-12 recovery device.

4. Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.

5. On the attachment block surface that contacts the receiver/drier, remove the GUIDE PIN and make sure that the block surface is flat after removal.

6. Use touch-up paint to paint the sight glass on replacement receiver/drier; part # 73411FA100. The sight glass can not be utilized in testing R-134a performance.

7. Remove and discard the receiver/drier o-rings and replace with new o-rings, part number: 73039AA010. Lubricate o-rings with the specified PAG oil lubricant.

8. Install the replacement RECEIVER/DRIER, P/N: 73411FA100, to the vehicle, torque to the proper specification, and connect the pressure switch electrical connection.

9. Install an adapter valve - low pressure, P/N: 73058AA100 to the low pressure suction hose. Torque the adapter to proper specification per the torque chart.

10. Install an adapter valve - high pressure, P/N: 73058AA110 to the high pressure discharge hose. Torque the adapter to proper specification per the torque chart.

11. Add 180cc of PAG oil lubricant, P/N: K0010FS100 to the system as follows:

    a. Follow charging station equipment manufacturer's procedures.

    b. If there is no provision for lubricant addition, use the following procedure.

    - Prepare the vacuum pump to pull negative pressure at the low pressure adapter fitting.
    - Connect one end of the high pressure charge hose to the high pressure adapter fitting.
    - Place the other end into a graduated, marked container that contains the specified type of PAG lubricant.
    - Pull a negative pressure (vacuum) on the low side of the A/C system, which will draw the lubricant into the high side.
    - Discontinue the negative pressure (vacuum) when 180cc of PAG oil lubricant, P/N: K0010FS100 has been drawn into the system.

12. Vacuum the A/C system for a minimum of 30 minutes.

    a. After 10 minutes close the manifold gauge valves & perform a "VACUUM LEAK TEST".

    b. After 5 minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, pressurize and perform an electronic leak test of the system.

    c. If no leak is indicated resume evacuation (remaining 20 minutes).

13. Charge system with 21 oz./ 0.6 kg. R-134a refrigerant and operate the system for 10 minutes at idle. Install the R-134a service caps (the cap is an important part of the service valve seal), and perform leak test.

14. Remove and discard the existing refrigerant R-12 system label from upper radiator core support. Paint upper radiator core support if damaged during removal of label.

15. Fill out the retrofit label, part number: S0A635054, by lifting white backing tape and writing in oil type PAG 100, the oil amount 180cc, and the R-134a charge amount 21 oz./ 0.6 kg. Locate the label in a highly visible location such as the fire wall or hood. Pull white backing off the label and cover the label with the clear portion of label.

16. Conduct a performance test. Reference service manual for performance characteristics.

INSTRUCTIONS FOR '90-93 LEGACY ZEXEL SYSTEMS

NOTES:
1. Always lubricate all o-rings with PAG oil before installation.
2. Always tighten fittings to proper torque specifications.
3. Observe all safety recommendations.
4. System to be serviced by qualified personnel.

1. Repair any problems or leaks before beginning retrofit procedure.
2. Disconnect negative battery cable.
3. Recover all R-12 refrigerant from the vehicles A/C system utilizing a UL approved R-12 recovery device.
4. Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.
5. Use touch-up paint to paint the sight glass on replacement receiver/drier; part # 73031AA210. The sight glass can not be utilized in testing R-134a performance.
6. Remove and discard the receiver/drier o-rings and replace with new o-rings, part number: 73039AA200.
7. Install the replacement receiver/drier, part number: 73031AA210, to the vehicle and connect the pressure switch electrical connection.
8. Remove and discard the suction refrigerant hose, retain all hardware, and add 200cc PAG retrofit 100 oil, part number: 73019AA110, to the compressor.
9. Install new suction hose, part number: 73054AA620 (73054AA400 for '93 Model), using all applicable O.E. hardware. Lubricate the suction hose o-rings before installation.
10. Remove the discharge refrigerant hose and retain all hardware.
11. Install new discharge hose, part # 73054AA600 (73054AA630 for '92 Model); (73054AA640 for '93 Model) using all applicable O.E. hardware. Lubricate the discharge hose o-rings before installation.
12. Evacuate the A/C system for 30 minutes using R-134a equipment.
    a. After 10 minutes close the manifold gauge valves & perform a "VACUUM LEAK TEST".
    b. After 5 minutes re-check the low pressure gauge reading. If the vacuum level as changed more than 1 in HG, pressurize and perform an electronic leak test of the system.
    c. If no leak is indicated resume evacuation (remaining 20 minutes).
13. Charge system with 1.87 lb./30 oz/850 gm R-134a refrigerant and operate the system for 10 minutes at idle. Install the R-134a service caps (the caps are an important part of the service valve seal), and perform a leak test.
14. Remove and discard the existing refrigerant R-12 system label from upper radiator core support. Paint upper radiator core support if damaged during removal of label.
15. Fill out the R-134a retrofit label, part number: S0A635054, by lifting white backing tape and writing in oil type PAGR 100, the oil amount 200cc, and the R-134a charge amount 1.87 lb./30 oz/850 gm. Locate the label in a highly visible location such as the fire wall or hood. Pull the backing off the label and cover the label with the clear portion of the label.
16. Conduct a performance test. Reference service manual for R-134a performance characteristics.

INSTRUCTIONS FOR '90-91 LEGACY CALSONIC SYSTEMS (INCLUDING TURBO)

NOTES:
1. Always lubricate all o-rings with PAG oil before installation.
2. Always tighten fittings to proper torque specifications.
3. Observe all safety recommendations.
4. System to be serviced by qualified personnel.

1. Repair any problems or leaks before beginning retrofit procedure.
2. Disconnect negative battery cable.
3. Recover all R-12 refrigerant from the vehicles A/C system utilizing a UL approved R-12 recovery device.
4. Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.
5. On the attachment block surface that contacts the receiver/drier, remove the GUIDE PIN and make sure that the block surface is flat after removal.
6. Use touch-up paint to paint the sight glass on replacement receiver/drier; part # 73411FA100. The sight glass can not be utilized in testing R-134a performance.
7. Remove and discard the receiver/drier o-rings and replace with new o-rings, part number: 73039AA010. Lubricate o-rings with the specified PAG oil lubricant.
8. Install the replacement receiver/drier, P/N: 73411FA100, to the vehicle, torque to the proper specification, and connect the pressure switch electrical connection.
9. Remove the compressor from the vehicle.

CAUTION: hoses or block fittings on hose assemblies should be capped or protected from foreign matter entering the system.

10. Remove and discard the compressor pressure relief valve and then drain as much mineral oil as possible from the compressor body. Drain mineral oil from the cylinder head, suction and discharge ports while turning the shaft with a socket wrench on the clutch armature nut.
11. Install the replacement compressor relief valve, part number: 73035AA100. Lubricate o-rings with the specified PAG oil lubricant and reinstall the compressor.
12. Remove and discard the suction refrigerant hose, retain all hardware, and add 236cc of PAG oil lubricant, P/N: 73019AA100, to the compressor.
13. Install new suction hose, part number: 73054AA141 (73054AA311 for Turbo), using all applicable O.E. hardware. Lubricate the suction hose o-rings before installation.
14. Install an adapter valve - suction hose, P/N: 73058AA100 to the low pressure suction hose. Torque the adapter to proper specification.
15. Remove the discharge refrigerant hose and retain all hardware.
16. Install new discharge hose, part number: 73054AA081, using all applicable O.E. hardware. Lubricate the discharge hose o-rings before installation.
17. Install an adapter valve - discharge hose, P/N: 73058AA110 to the high pressure discharge hose. Torque the adapter to proper specification.

18. Vacuum the A/C system for a minimum of 30 minutes.
    - After 10 minutes close the manifold gauge valves & perform a “VACUUM LEAK TEST”.
    - After 5 minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, perform an electronic leak test of the system.
    - If no leak is indicated resume evacuation (remaining 20 minutes).
19. Charge system with 23 oz./ 0.65 kg. R-134a refrigerant and operate the system for 10 minutes at idle. Install the R-134a service caps (the cap is an important part of the service valve seal), and perform leak test.
20. Remove and discard the existing refrigerant R-12 system label from upper radiator core support. Paint upper radiator core support if damaged during removal of label.
21 Fill out the retrofit label, part number: S0A635054, by lifting white backing tape and writing in oil type PAGR 100, the oil amount 236cc, and the R-134a charge amount 23 oz./ 0.65 kg. Locate the label in a highly visible location such as the fire wall or hood. Pull white backing off the label and cover the label with the clear portion of label.
22 Conduct a performance test. Reference service manual for R-134a performance characteristics.

INSTRUCTIONS FOR '92-93 LEGACY CALSONIC SYSTEMS (INCLUDING TURBO)

NOTES:
1. Always lubricate all o-rings with PAG oil before installation.
2. Always tighten fittings to proper torque specifications.
3. Observe all safety recommendations.
4. System to be serviced by qualified personnel.

1. Repair any problems or leaks before beginning retrofit procedure.
2. Disconnect negative battery cable.
3. Recover all R-12 refrigerant from the vehicles A/C system utilizing a UL approved R-12 recovery device.
4. Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.
5. On the attachment block surface that contacts the receiver/drier, remove the GUIDE PIN and make sure that the block surface is flat after removal, reference torque chart.
6. Use touch-up paint to paint the sight glass on replacement receiver/drier; part # 73411FA100. The sight glass can not be utilized in testing R-134a performance.
7. Remove and discard the receiver/drier o-rings and replace with new o-rings, part number: 73039AA010. Lubricate o-rings with the specified PAG oil lubricant.
8. Install the replacement receiver/drier, P/N: 73411FA100, to the vehicle, torque to the proper specification, and connect the pressure switch electrical connection.
9. Remove the compressor from the vehicle.

CAUTION: hoses or block fittings on hose assemblies should be capped or protected from foreign matter entering the system.

10. Remove and discard the compressor pressure relief valve and then drain as much mineral oil as possible from the compressor body. Drain mineral oil from the cylinder head, suction and discharge ports while turning the shaft with a socket wrench on the clutch armature retaining nut.
11. Install the replacement compressor relief valve, part number: 73035AA100. Lubricate o-rings with the specified PAG oil lubricant and reinstall the compressor.
12. Install an adapter valve - low pressure, P/N: 73058AA100 to the low pressure suction hose. Torque the adapter to proper specification.
13. Install an adapter valve - high pressure, P/N: 73058AA110 to the high pressure discharge hose. Torque the adapter to proper specification.
14. Add 236cc of PAG oil lubricant, P/N: 73019AA100 to the system as follows:
    a. Follow charging system equipment manufacturer's procedures.

b. If there is no provision for lubricant addition, use the following procedure.

- Prepare the vacuum pump to pull negative pressure at the low pressure adapter fitting.
- Connect one end of the high pressure charge hose to the high pressure adapter fitting.
- Place the other end into a graduated, marked container that contains the specified type of PAG lubricant.
- Pull a negative pressure (vacuum) on the low side of the A/C system, which will draw the lubricant into the high side.
- Discontinue the negative pressure (vacuum) when 236cc of PAG oil lubricant, P/N: 73019AA100 has been drawn into the system.

15. Vacuum the A/C system for a minimum of 30 minutes.

    a. After 10 minutes close the manifold gauge valves & perform a "VACUUM LEAK TEST".

    b. After 5 minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, perform an electronic leak test of the system.

    c. If no leak is indicated resume evacuation (remaining 20 minutes).

16. Charge system with 23 oz./ 0.65 kg. R-134a refrigerant and operate the system for 10 minutes at idle. Install the R-134a service caps (the cap is an important part of the service valve seal), and perform leak test.

17. Remove and discard the existing refrigerant R-12 system label from upper radiator core support. Paint upper radiator core support if damaged during removal of label.

18. Fill out the retrofit label, part number: S0A635054, by lifting white backing tape and writing in oil type PAGR 100, the oil amount 236cc, and the R-134a charge amount 23 oz./ 0.65 kg. Locate the label in a highly visible location such as the fire wall or hood. Pull white backing off the label and cover the label with the clear portion of label.

19. Conduct a performance test. Reference service manual for R-134a performance characteristics.

INSTRUCTIONS FOR '92 SVX

NOTES:
1. Always lubricate all o-rings with PAG oil before installation.
2. Always tighten fittings to proper torque specifications.
3. Observe all safety recommendations.
4. System to be serviced by qualified personnel.

1. Repair any problems or leaks before beginning retrofit procedure.

2. Disconnect negative battery cable.

3. Recover all R-12 refrigerant from the vehicles A/C system utilizing a UL approved R-12 recovery device.

4. Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.

5. Use touch-up paint to paint the sight glass on replacement receiver/drier; part # 73031PA100. The sight glass can not be utilized in testing R-134a performance.

6. Remove and discard the receiver/drier o-rings and replace with new o-rings, part number: 73039AA200.

7. Install the replacement receiver/drier, part number: 73031PA100, to the vehicle and connect the pressure switch electrical connection.
8. Remove and discard the suction refrigerant hose, retain all hardware, and add 200cc PAG retrofit 100 oil, part number: 73019AA110, to the compressor.
9. Install new suction hose, part number: 73050PA200, using all applicable O.E. hardware. Lubricate the suction hose o-rings before installation.
10. Remove the discharge refrigerant hose and retain all hardware.
11. Install new discharge hose, part number: 73050PA060, using all applicable O.E. hardware. Lubricate the discharge hose o-rings before installation.
12. Evacuate the A/C system for 30 minutes using R-134a equipment.
    a. After 10 minutes close the manifold gauge valves & perform a “VACUUM LEAK TEST”.
    b. After 5 minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, perform an electronic leak test of the system.
    c. If no leak is indicated resume evacuation (remaining 20 minutes).
13. Charge system with 1.87 lb./30 oz/850 gm R-134a refrigerant and operate the system for 10 minutes at idle. Install the R-134a service caps (the caps are an important part of the service valve seal), and perform a leak test.
14. Remove and discard the existing refrigerant R-12 system label from upper radiator core support. Paint upper radiator core support if damaged during removal of label.
15. Fill out the R-134a retrofit label, part number: S0A635054, by lifting white backing tape and writing in oil type PAG 100, the oil amount 200cc, and the R-134a charge amount 1.87 lb./30 oz/850 gm. Locate the label in a highly visible location such as the fire wall or hood. Pull the backing off the label and cover the label with the clear portion of the label.
16. Conduct a performance test. Reference service manual for R-134a performance characteristics.

Notes: