ADVANCED DIAGNOSTICS

Saab

(Version 2.9)

CONTENTS

Applications are continually updated as vehicles are constantly added.

To ensure you have the very latest information,

the applications list is available via Info Quest - an online portal

containing vehicle technical data for key & remote programming

for all manufacturers.

To view the latest vehicle applications please visit

Info Quest at

http://iq.advanced-diagnostics.co.uk/

Saab Software	
ADS144	Saab

DIAGNOSTIC SOCKETS/PORTS

B

SAAB

9-3

900

9-5

9000

9-5 PROX

9-3 SPORT

GENERAL OPERATION

INTRODUCTION

Saab has two types of immobiliser systems fitted, which can be differentiated by the type of ignition key used. One type uses a key with a blade and the other uses a smart key without a blade.

TWICE unit control of immobiliser (Blade Type Ignition Key):

The car is fitted as standard with a system which prevents the car being started without the correct key. For this, a transponder is incorporated in the key with a unique code for that transponder. On the ignition switch is a receiver that receives the identification code from the transponder and passes this to TWICE. TWICE has been programmed to recognize the car's transponders and if the key in the ignition switch is correct, the car can be started. The TWICE, MIU and engine control modules should be programmed to recognize each other. When changing one component in the immobilizer chain, the control modules must be co-programmed.

TWICE stands for Theft Warning Integrated Central Electronics. The TWICE control module is located under the left-hand front seat, screwed to the floor and connected to the wiring harness with a 70-pin connector.

TWICE controls the following functions, and TWICE checks the circuits for the rear lights and brake lights.
- Lamp check   - Seat belt warning
- Heated rear seat   - Electrically adjustable passenger seat
- Central locking system   - Immobilizer
- Anti-theft alarm

Rear lights TWICE acts as a filament monitor for the rear lights. On a break in a circuit, SID can read an error message on the bus sent out by the TWICE. The message activates an information text on the display or an audible warning. TWICE checks whether voltage is present at the rear light inputs; this information is available on the bus. The information is used by DICE.

Brake lights TWICE acts as a filament monitor for the brake lights. On a break in a circuit, SID can read an error message on the bus sent out by TWICE. The message activates an information text on the display or an audible warning. TWICE checks whether voltage is present at the brake light inputs; this information is available on the bus. The information is used by SID.

Seat belt warning The seat-belt warning lamp lights up when the ignition is turned ON unless the belt tongue is in the seat-belt buckle. The lamp goes out when the belt is buckled. On certain markets there is also an audible warning which is activated if any passenger has not fastened their seat belt when the ignition is ON. The audible warning is active for 6 seconds when the ignition is turned ON or until all seat belts are fastened. The passenger seat is fitted with a sensor which detects when the seat is occupied. The resistance of the sensor varies according to the load on the seat.

Heated rear seat The car can be factory-fitted with heated rear seats, two heating pads are then mounted in the outer two seats. TWICE controls the connection time for the heating as a function of the outdoor temperature.

Electrically adjustable passenger seat
TWICE controls a relay which is connected in series to the electrically adjustable passenger seat. When the relay is activated, the seat can be operated.
Operation is possible with the ignition ON or OFF with any of the front doors open. With the door open and the ignition OFF, the function is turned off after 20 minutes. Operation is possible for up to 30 seconds after the driver or passenger door has been closed and also after turning off the ignition. Operation is not possible with the ignition in the ST position.

Central locking system
The car is fitted with a central locking system as standard, in which TWICE controls the central locking system motors. The central locking system can be operated with a remote control unit, a key in the driver or passenger door or with a switch in the centre console.
There are three buttons on the car key: lock, unlock and unlock boot lid/tailgate. The central locking system has three positions: UNLOCKED, LOCKED and THEFT PREVENTION LOCKED. The latter means that the car CANNOT be unlocked from inside the passenger compartment. The theft security locking function is market dependent.

SAAB TWICE MODULE AND KEY

TWICE MODULE LOCATION

GENERAL OPERATION

Column Integration Module (CIM) (Smart Type Ignition Key)

For this, a transponder is incorporated in the key with a unique code for that transponder. Inserting the key closes a contact which in turn sends a signal (via a cable) to wake up the CIM. On the ignition switch is a receiver that then receives the identification code from the transponder and passes this to the CIM. The CIM also checks other modules including the instrument cluster, body control module and passenger door control module for correct ID's. If the key is confirmed as OK and the correct IDs are received from other modules checked by the CIM, then the CIM will send a signal to cancel the fuel shut-off and allow the vehicle to start.

If either the CIM or one of the other modules is removed, it must be 'Divorced' from the vehicle. The existing keys can be re-programmed to a new CIM unit but not a USED CIM from another vehicle. When fitting a new CIM, it must be programmed to the vehicle and all keys re-programmed into it. If any of the other modules are fitted, they do not require programming to the vehicle. The ID numbers of these control units are automatically learnt. After they are 'learnt', the control unit is locked to that vehicle by being programmed with the vehicles pin code. If this has not happened then the message 'ECU not programmed' will be displayed on the Saab Information Display

Anti-theft alarm

The car can be factory-fitted with an anti-theft alarm, of which there are two variants:

Variant 1 consists of; door switches, bonnet switch, luggage compartment switch and glass breakage sensor.

Variant 2; as above plus a tilt sensor, which trips the alarm if an attempt is made to steal the wheels.

The anti-theft alarm has a piezoelectric siren. The siren has an integral battery to ensure that an alarm can be given even if the power from the car's ordinary battery (car battery) is interrupted. The siren is located at the front of the left wheel housing. The behaviour of the alarm when tripped is market-dependent and programmable.

P-bus and I-bus

All Saab 9-3 from M01 are equipped with the Trionic T7 engine management system. The bus system is therefore almost identical to the one fitted on the 9-5.

The bus system on diesel cars with EDC15 and diesel pump is unchanged from M98 1/2 and on cars with PSG 16 from M01 1/2. The two diesel engine systems EDC/diesel pump and PSG 16 are not connected to the bus. However. these systems require considerably faster communication to avoid any noticeable delays, e.g. when EDC or PSG requests a certain amount of fuel for injection. Therefore, they are connected through a separate buss called the P-bus (Powertrain Bus). The P-bus has a data transfer rate ten times higher than that of the I-bus. The P-bus is also connected to the MIU (Main Instrument Unit). The MIU ensures that the information that is available on one bus is also available on the other.

Keys Programmed

The current key number can be displayed on the SID (SAAB information display) if the boot release button on the remote is pressed with the ignition on.

SPECIAL FUNCTIONS

D

TWICE MODULE PROGRAMMING PROCEDURE

A working key is required to program keys on SAABS. If no working key is available then a TWICE module with programmed keys is required.

Alternatively a second hand TWICE module with a programmed transponder can be used.

When the TWICE module is replaced, the procedure of functions that are required needs to be performed in the following order.

```
              START
                │
                ▼
            PERFORM
          SPARE PART
         PROGRAMMING
                │
                ▼
            PERFORM
            PROGRAM
          IMMOBILISER
                │
                ▼
            PERFORM
              KEY
         PROGRAMMING
                │
                ▼
             FINISH
```

SPECIAL FUNCTIONS

D
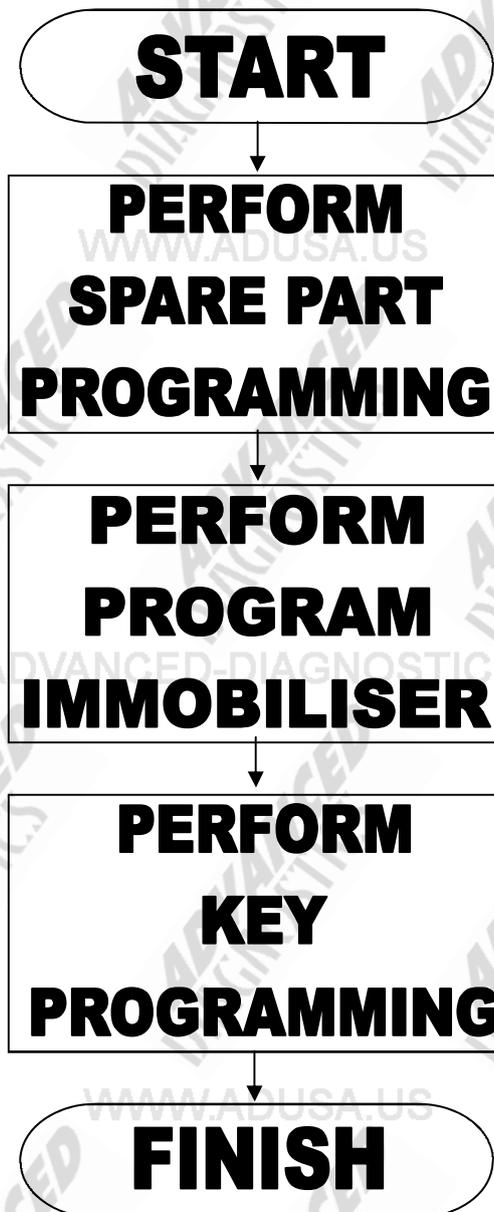
NON CAN VEHICLES

TWICE MODULE PROG

VEHICLE SELECTION

+ RENAULT

+ ROVER

+ SAAB

+ SAMSUNG

+ SEAT

A WORKING KEY IS REQUIRED TO PROGRAM KEYS ON SAABS.

IF NO WORKING KEY IS AVAILABLE. THEN A TWICE MODULE WITH PROGRAMMED KEYS IS REQUIRED. SECOND HAND MODULES CAN BE USED WITH A PROGRAMMED TRANSPONDER.

POWER SEAT

WITHOUT

WITH

VEHICLE SELECTION

+ 9-3

+ 9-3 SPORT (CAN)

+ 9-5

+ 9-5 SPORT (CAN)

SELECT THE COUNTRY AND OPTIONS ON THE VEHICLE

BODY STYLE

3D

5D

CABRIOLET

SWITCH IGNITION ON

PRESS ENTER KEY

MARKET OPTIONS

EU

LA

US CA

ME AU PA

JP

ENGINE TYPE

PETROL

DIESEL

ECU IDENTIFICATION

SAAB REF: 5262761SA

SYS: TWICE

DIAG ID: 010

PRESS ENTER KEY

ALARM OPTIONS

WITHOUT ALARM

GLASS BREAK SENSOR

GLASS TILT SENSOR

ARE YOU SURE

YES=ENTER   NO = BACK

DIAGNOSTIC MENU

ECU IDENTIFICATION

FAULT CODES

LIVE DATA

ACTUATORS

SPECIAL FUNCTIONS

WHEEL POSITION

LHD

RHD

PLEASE WAIT

DIAGNOSTIC MENU

KEY PROGRAMMING

SPARE PART PROG

PROGRAM IMMOBILISER

REAR HEATED SEAT

WITHOUT

WITH

PROCEDURE COMPLETE

PRESS ENTER KEY

SPECIAL FUNCTIONS

D

NON CAN VEHICLES

DIAGNOSTIC MENU

KEY PROGRAMMING

SPARE PART PROG

PROGRAM IMMOBILISER

PROGRAM IMMOBILISER

PROCEDURE COMPLETE

PRESS ENTER KEY

Finished

PIN CODES ARE REQUIRED TO
PROGRAM KEYS AND TWICE
MODULES.
THESE CAN BE OBTAINED FROM
THE AD WEBSITE.

ENTER PIN CODE

_ _ _ _

1	2	3	4	5
6	7	8	9	0

SECURITY CODE

2 A B 7

✘   ✔

PROGRAM IMMOBILISER

PLEASE WAIT 2 MIN

PLEASE WAIT

TRYING TO COMMUNICATE

SPECIAL FUNCTIONS

D

NON CAN VEHICLES

KEY PROGRAMMING

USE THIS PROCEDURE TO ADD KEYS WHEN AN EXISTING KEY IS ALREADY PROGRAMMED AND IN WORKING ORDER.

DIAGNOSTIC MENU

KEY PROGRAMMING

SPARE PART PROG

PROGRAM IMMOBILISER

Erase all DTC's in the fault memory of the TWICE module after programming.

Finished

VEHICLE SELECTION

+ RENAULT

+ ROVER

+ SAAB

+ SAMSUNG

+ SEAT

SWITCH IGNITION ON

PRESS ENTER KEY

VEHICLE SELECTION

+ 9-3

+ 9-3 SPORT (CAN)

+ 9-5

+ 9-5 SPORT (CAN)

PROGRAMMING KEYS

1. WATCH FASTEN SEAT BELT LAMP.

2. PRESS UNLOCK MORE THAN 8 TIMES.

3. REPLACE & REPEAT WITH NEXT KEY.

PRESS ENTER KEY

SWITCH IGNITION ON

PRESS ENTER KEY

Press the remote unlock button more than 8 times until the FASTEN SEATBELT LAMP (see picture below) flashes briefly. Repeat for all remotes.

The FASTEN SEATBELT LAMP warning light flashes once when the remote is programmed.

ECU IDENTIFICATION

SAAB REF: 5262761SA

SYS: TWICE

DIAG ID: 010

PRESS ENTER KEY

DIAGNOSTIC MENU

ECU IDENTIFICATION

FAULT CODES

LIVE DATA

ACTUATORS

SPECIAL FUNCTIONS

PROCEDURE COMPLETE

PRESS ENTER KEY

SPECIAL FUNCTIONS

D

CAN VEHICLES

KEY PROGRAMMING

VEHICLE SELECTION

+ RENAULT

+ ROVER

+ SAAB

+ SAMSUNG

+ SEAT

VEHICLE SELECTION

+ 9-3

+ 9-3 SPORT (CAN)

+ 9-5

+ 9-5 SPORT (CAN)

SWITCH IGNITION ON

PRESS ENTER KEY

SWITCH THE IGNITION TO THE LOCK POSITION.

ECU IDENTIFICATION

IGNITION TO LOCK

PRESS ENTER KEY

ECU IDENTIFICATION

SAAB DIAG: 0309

VIN: YS3FH56P181136351

ID 1: ea86

ID B: 81c0

PRESS ENTER KEY

DIAGNOSTIC MENU

ECU IDENTIFICATION

FAULT CODES

ACTUATORS

SPECIAL FUNCTIONS

ACTUATORS

FORCE UNLOCK ON

FORCE UNLOCK OFF

FORCE UNLOCK EXIT

DIAGNOSTIC MENU

ECU IDENTIFICATION

FAULT CODES

ACTUATORS

SPECIAL FUNCTIONS

DIAGNOSTIC MENU

KEY PROGRAMMING

DIAGNOSTIC MENU

INSERT PROGRAMMED

KEY

IGNITION TO LOCK

PRESS ENTER KEY

PIN CODES ARE REQUIRED TO PROGRAM KEYS.

THESE CAN BE OBTAINED FROM THE AD WEBSITE.

VIN SECURITY CODE

_ _ _ _

1	2	3	4	5
6	7	8	9	0

SECURITY CODE

A K R 1

�’ ✗ ✓

REMOVE KEY FROM IGNITION

INSERT NEXT KEY

BACK' TO EXIT

ENTER' TO PROGRAM

NEXT KEY

PRESS BACK TO EXIT.

IF MORE KEYS REQUIRE PROGRAMMING PRESS NEXT.

A MAX OF 5 KEYS CAN BE PROGRAMMED.

PROCEDURE COMPLETE

PRESS ENTER KEY

SPECIAL FUNCTIONS

D

CAN VEHICLES

> **IMPORTANT**
>
> TO FULLY COMPLETE THE PROCEDURE, PLEASE PERFORM THE FOLLOWING STEPS.

ADVANCED-DIAGNOSTICS.CO.UK

DIAGNOSTIC MENU
KEY PROGRAMMING

WWW.ADUSA.US

DIAGNOSTIC MENU
ECU IDENTIFICATION
FAULT CODES
ACTUATORS
SPECIAL FUNCTIONS

ACTUATORS
FORCE UNLOCK ON
FORCE UNLOCK OFF
FORCE UNLOCK EXIT

ADVANCED-DIAGNOSTICS.CO.UK

Finished

WWW.ADUSA.US

GENERAL

9-3 SPORT & 9-5 SPORT VEHICLES

1. In certain circumstances e.g. the vehicle battery failing, the ignition key can be locked in the ignition lock. The **FORCE UNLOCK** function allows the ignition key to be removed. Once this is done then the normal procedure for programming keys can be followed.
2. A max of 5 keys can be programmed.
3. The Saab Information Display has an LED that indicates the alarm and immobilisation status. If the key is approved when the key is inserted, then the LED will make 4 double flashes in 3 seconds.
    Additionally, when the key is removed the LED will make 4 double flashes in 3 seconds to indicate the vehicle is immobilised.

FAULT CODES

B2961 - Key In Ignition Circuit Malfunction
B2965 - Key in Ignition Circuit Open (IPC)
B3031 - Key Decoder in Assembly Mode
B3033 - Security System Indicates Tamper
B3055 - Key Not Present
B3108 - Transmitter Synchronization Failure
B3109 - 3 consecutive low battery signals from the same programmed transmitter

PRECAUTIONS

IMPORTANT : PLEASE ENSURE ALL PRECAUTIONS ARE OBSERVED AS INDICATED AT THE FRONT OF THE OPERATING MANUAL.

IN PARTICULAR : For vehicles fitted with STOP/START technology, the battery leads must not be shorted together when the battery is disconnected as this can lead to damage to the car and potential personal injury.

REMOTE PROGRAMMING

F

SAAB 9-5 (2001 to 2006)

Synchronisation

1.   Press UNLOCK button at least 4 times.

SAAB 9-7X (2005 to 2006)

Procedure

1.   Close ALL doors, insert ignition key into ignition lock.
2.   Press and hold door lock switch (On drivers door).
3.   Switch ignition ON and OFF 2 times.
4.   Release the door lock switch. Doors will lock and unlock when car is in programming mode.
5.   Press and hold both the LOCK and UNLOCK buttons.
6.   Wait for 15 seconds and the doors will lock and unlock when remote control is programmed.
7.   Repeat for all additional remotes.

AD900Pro
Transponder Cloning

The most advanced key transponder cloning tool in the market - that reads, writes, copies, a wide range of automotive transponders world-wide. Complimenting the AD100Pro / MVPPro.

AD600
Code Wizard Pro
PINCODE Generator

AD600 is a software program that supports various vehicle manufacturers and provides the ability to generate immobiliser PINCODES, mechanical key codes including dealer tool security codes.

AD35
Remote Control Tester

AD35 is an innovative remote control tester developed to assist with the diagnosis of all types of (IR) Infra Red & (RF) Radio Frequency remote controls for all makes & models.