**1 Anslutningsladd MS**

Litöntäjohto / Connecting cable / Anschlusskabel

**2 Intagskabel MK**

Elementtikaapeli / Inlet cable / Einbaukabel

**3 Batteriladdare BL**

Akkulaturi / Battery Charger / Batterielader

**4 Bluetooth relä**

Bluetooth rele / Bluetooth relay / Bluetooth Relais

**5 Skarvkabel**

Jatkokaapeli / Extension cable / Verlängerungskabel

**6 Grenuttag**

Haaroituspistorasia / Multiple socket / Verteilerstück

**7 Motorvärmare**

Vastusosa / Engine heater / Motorvor-wärmer

**8 Kupévägguttag**

Sisätalapistorasias / Cab wall socket / Heizlüfter-Steckdose

**9 Kupévärmare**

Sisätalilämmitin / Cab heater / Heizlüfter

**10 App för Calix timer**

Calix-timer applikaatio / Application for Calix timer / App für Calix Timer

**11 Strålningskydd**

Lämpöeriste / Heat Shield / Hitzeschutz

**12 Pump**

Pumppu / Pump / Pumpe

# MONTERINGSANVISNING ASENNUSOHJEET ASSEMBLY INSTRUCTIONS EINBAUHINWEISE

## TYP M5T 194A

EFFEKT: 550W / 230V ~



**Calix AB**  
PO-Box 5026  
SE-630 05 Eskilstuna  
Sweden

**Phone:**  
+46 (0)16-10 80 00

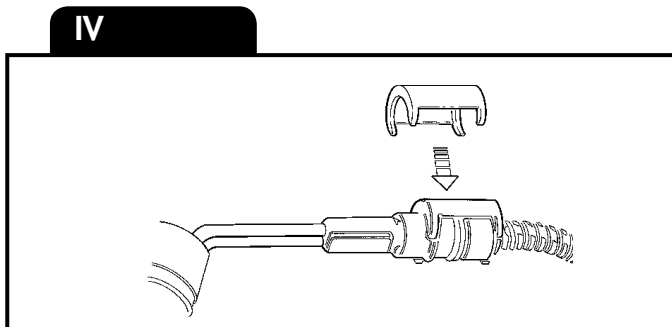
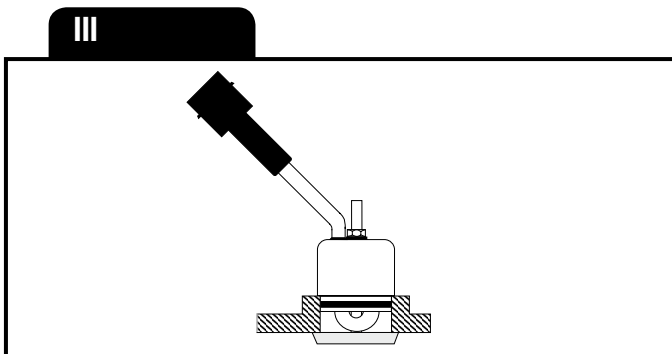
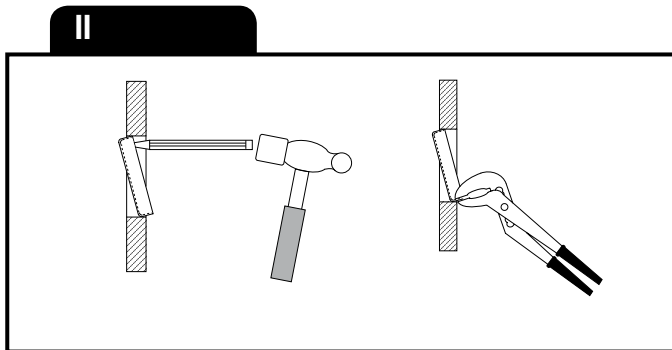
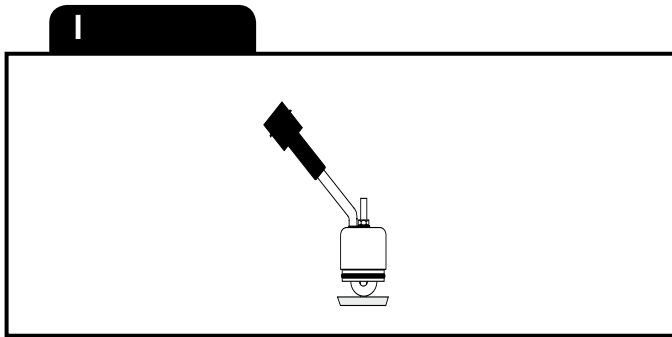
**Support:**  
+46 (0)16-10 80 90

**Fax:**  
+46 (0)16-10 80 60

**E-mail:**  
info@calix.se

**E-mail:**  
teknik@calix.se

**Internet:**  
www.calix.se



## SVENSKA

A. Läs igenom monteringsanvisningen noggrant och i sin helhet. Kontrollera att samtliga ingående detaljer enligt punkt A finns. Översiktspbilder, ej detaljåtergivna.

B. Montering av värmaren

1. Tappa ur kylvätskan.
2. Demontera tätningsbrickan som täcker det hål som utvisas på bild. Detta kan utföras genom att man med en dorn el. dyl. slår på brickans kant. Brickan vrider sig då och kan borttagas med en polygriptång.
3. Kabeln med intaget dras in i motorrummet till motorvärmaren. Skjut ihop snabbkopplingen mellan motorvärmare och kabel helt i botten så att O-ringen tätar ordentligt och inget mellanrum kvarstår. OBS! Anbringa några droppar olja på O-ringen. Detta underlättar sammankopplingen. Det är mycket viktigt att kopplingen utföres på detta sätt.
4. Anbringa några droppar motorolja på O-ringen och stick in värmaren i hålet. Se till att inte O-ringen skadas. Om det är nödvändigt måste hålets ytterkant gradas så att inte O-ringen skjivas sönder. Drag därefter till centrummuttern bild C. (OBS! Åtdragningsmoment 3,5 Nm).
5. Fyll på kylvätska och lufta ur kylsystemet. Se instruktionsboken. Kör motorn och kontrollera att inget läckage förekommer.

C Montering av apparatintag

1. Se separat bifogad monteringsinstruktion.

D. Provkörning

1. Kontrollera att det finns tillräckligt med kylvätska.
2. Försäkra Dig om att all luft avlägsnats från kylsystemet eftersom motståndselementen brinner av omedelbart om det hamnar i luft.
3. Kontrollera tätningar även med varm motor.
4. Kontrollera värmaren genom att koppla den till ett jordat uttag. Ett svagt sjudande hörs när vattnet kokar på värmeelementets yta.

E. Viktigt

1. Använd alltid frostsnyddsvätska i kylsystemet.
2. Motorvärmaren får endast anslutas till jordat uttag. Det måste alltid tillses att den invändiga jordförbindelsen är genomgående från motorvärmarens hölje, karosseriet, och ända fram till det jordade uttaget.
3. Använd endast Calix MS kabel för anslutning till elnätet.
4. Undersök sladden regelbundet med avseende på skador eller åldring. Skadad sladd måste omedelbart bytas.
5. Inga delar av installationen får beröra sådana motordelar som uppvärms eller är i rörelse. Avståndet till avgassystemet ska vara minst 50 mm. (Gäller även turboaggregat.) Använd annars Calix Strålningsskydd.
6. Då skarvning sker med hjälp av snabbkopplingsdon skall metallslangarna med kopplingsledningarna fixeras med de medföljande klämmorna så tätt intill snabbkopplingsdonet som möjligt.

Observera

Motorvärmarsystemet skall vara fackmannamässigt installerat. Vid osäkerhet angående installationen, kontakta er Calix återförsäljare. Den senaste versionen av denna manual finns att hämta på vår hemsida. För våra produkter lämnar vi garanti som omfattar fabriktions- och materialfel. Se vår hemsida för mer information, [www.calix.se](http://www.calix.se).

F. Varning

- Avbrott kan ske i värmelementet om
- värmaren ansluts till intermittent (pulserande) spänning
  - kylvätskan är smutsig
  - kylvätskan finns i otillräcklig mängd
  - det finns luft i systemet
  - det finns issörja i kylsystemet
  - kylarcement användes.
- Garanti är ej i kraft i dessa fall.

DEUTSCH

A. Einbauhinweise sorgfältig durchlesen. Sämtliche Details inclusive Zubehör laut

Pkt A kontrollieren. Nur zur Übersicht - keine Wiedergabe von Einzelheiten.

B. Einbau des Heizelementes

1. Kühlwasser ablassen.
2. Verschluss der Bohrung im Motorblock herausnehmen, Bild. Dazu mit schmalen Werkzeug (Dorn) seitlich auf den Verschluss schlagen, bis dieser sich schräg stellt. Danach mit Zange herausnehmen, Bild B.
3. Einbaukabel (mit Anbaustecker) von außen in den Motorraum ziehen. Steckverbindung von Heizung und Kabel bis zum Anschlag ineinander schieben. O-Ring muß völlig dichtschließen. Zu beachten: Etwas Öl auf den O-Ring geben. Die Zusammenkupplung wird dann erleichtert. Verbindung muß unbedingt auf diese Weise hergestellt werden.
4. Etwas Öl auf den O-Ring geben und Heizer durch das Loch schieben. Darauf achten, daß der O-Ring nicht beschädigt wird. Falls nötig, Außenkante des Lochs abschleifen, damit der O-Ring nicht durchgewetzt wird. Danach Hauptmutter anziehen, Bild C. (Achtung! Drehmoment 3,5 Nm).
5. Wasser einfüllen und Kühlsystem lüften. Hinweise der Kfz-Betriebsanleitung beachten. Motor laufen lassen und Einbaustelle auf Dichtigkeit prüfen.

C. Einbau des steckers

1. Siehe mitgelieferte montageanleitung.

D. Probelauf

1. Kühlwasserniveau kontrollieren.
2. Kühlsystem sorgfältig entlüften, da Heizpatrone sonst durchbrennen kann.
3. Dichtheit, auch bei warmen Motor überprüfen.
4. Nur eine geerdete Steckdose verwenden. Steckverbindungen überprüfen. Funktion des Gerätes kontrollieren - beim Heizvorgang kann ein leichtes Siedegeräusch vernommen werden.

E. Wichtig

1. Immer ausreichend Frostschutzmittel beimischen.
2. Motorheizer nur an eine geerdete Steckdose anschliessen. Der Mantel der Motorheizung, die Karosserie und der Schutzleiter der Steckdose müssen unbedingt leitend miteinander verbunden sein.
3. Nur Calix MS Kabel für Anschluss ans Netz verwenden.
4. Das Kabel regelmäßig auf Beschädigungen oder Alterungserscheinungen kontrollieren. Ein beschädigtes Kabel muß sofort ausgetauscht werden.
5. Installationsteile dürfen Motorenteile, die erwärmt werden oder in bewegung sind, nicht berühren. Der Abstand zum Auspuffsystem soll mindestens 50 mm (auch bei Turbo-Aggregat) betragen - sonst den Calix Strahlungsschutz verwenden.
6. Einbaukabel und eventuelle Verbindungskabel müssen dicht neben den Verbindungsstecker mit den mitgelieferten Klammer befestigt werden.

Achtung

Der Motorwärmere muss professionell montiert werden. Im Falle einer Unsicherheit bei der Montage kontaktieren Sie Ihren Calix Händler. Die neueste Version dieses Handbuchs steht auf unserer Website zum Download zur Verfügung. Wir übernehmen für unsere Produkte eine Garantie, welche Herstellungs- und Materialfehler umfasst. Für weitere Informationen besuchen Sie unsere Internetseite [www.calix.se](http://www.calix.se)

F. Warnung

- Abbrennen des Heizelementes (des Widerstandsdrahtes) kann erfolgen bei
- Heizer an stossartige (pulsierende) Spannung angeschlossen wird
  - unsauberer Kühlflüssigkeit
  - ungenügender Kühlwassermenge
  - nicht entlüftetem Kühlwassersystem
  - Verwendung von Kühlerzement
- In diesen Fällen kann keine Garantieleistung erfolgen.

**ENGLISH**

A. Read the assembly instructions carefully. Check that all parts and fittings illustrated under "A" are included. Survey view only, without detailed reproduction.

**B. Installation of the heater**

1. Drain the coolant.
2. Remove the frost plug which covers the hole as shown in the figure. This can be done by knocking the edge of the plug with a drift or similar. The plug then turns and can be removed with polygrip pliers, figure B.
3. Pull the cable with socket for the engine heater into the engine compartment. Press the plug-in connection between the engine heater and cable fully together so that the O-ring seals properly and there is no gap. Apply a few drops of oil on the O-ring. The connection can then be made easier. It is very important that connection is made this way.
4. Apply a few drops of engine oil on the O-ring and insert the heater in the hole. Take care not to damage the O-ring. If necessary burr must be removed from the outer edge of the hole so that the O-ring is not torn. Then tighten the centrenut, figure C. (Note! Tighten torque 3,5 Nm).
5. Fill up with coolant and vent the cooling system, see the instruction book. Run the engine and check that there is no leakage.

**C. Fitting of lead-in**

1. See separate mounting instruction.

**D. Test-running**

1. Check that the cooling system is full of coolant.
2. Make sure that all air has been removed from the cooling system as the heater element will immediately burn out if surrounded by air.
3. Check that all seals are tight even with the engine warm.
4. Check the heater by connecting it to an earthed point. A low sizzling noise will be heard when the water on the surface of the heater element boils.

**E. Important**

1. Always use anti-freeze in the cooling system.
2. The engine heater must only be connected to an earthed point. There must always be a continuous internal earth connection running from the engine heater casing through the body and right up to the earthed point.
3. Use only Calix MS kabel for connection to the mains network.
4. Inspect the cable periodically for damage or ageing. A damaged cable must be replaced without delay.
5. No parts of the installation must be allowed to come into contact with moving or hot parts of the engine. The distance to all parts of the exhaust system must be at least 50 mm (2"). (Also applicable for the turbo unit if any.) Otherwise Calix Heat Shield must be used.

**Note**

The engine heater system must be professionally installed.

In the case of uncertainty regarding the installation, contact your Calix dealer. The latest version of this manual is available for download on our website. Our products come with a warranty covering manufacturing and material defects. For further information, please visit our website at [www.calix.se](http://www.calix.se).

**F. Warning**

The heater element can be burnt out if:

- the heater is connected to intermittent (pulsating) voltage
- the coolant is dirty
- there is insufficient coolant

- there is air in the system
- there is sludge in the cooling system
- radiator cement is added to the coolant

In such cases the warranty is not valid.

**SUOMI**

A. Tutustu asennusohjeeseen huolellisesti ja tarkista, että kaikki kohdassa A, mainitut osat ovat mukana. Yleiskuvia, ei yksityiskohtaisia.

**B. Lämmittimen asennus**

1. Poistakaa jäähdyttäjäneste.
2. Poistakaa kuvassa osoitettua reikää peittävä tiivistelevy esim. lyömällä vasaralla ja jollakin teräasella levyn reunaa. Levy vääntyy tällöin ja voi- daan helposti poistaa pihdeillä.
3. Lämmittimen kaapeli pistokkeineen vedetään etupuskurista moottori-tilaan ja moottorilämmittimeen. Työnnä pikallitöntä, joka on moottori-lämmittimeen ja kaapelin välillä, kokonaan yhteen niin että O-rengas tiivistää kunnolla. HUOM. Tiputa muutama pisara öljyä O-renkaan päälle. Tämä helpottaa kytkentää. On erittäin tärkeää että kytkentää tapahtuu tällä tavalla.
4. Tiputa muutama pisara öljyä O-renkaan päälle ja vie lämmitin reikään. Katso ettei O-rengas vaurioiudu, tasoita reuna tarvittaessa. Kiinnitä lämmitin kiertämällä mutteria, kuva C. (HUOM! Kiristys momentti 3,5 Nm).
5. Täytä jäähdytysjärjestelmä ja suorita ilmaus käyttöohjekirjan mukaisesti. Käynnistä moottori ja tarkista mahdolliset vuodot..

**C. Pistokytkimen asennus**

1. Katso asennusohjeet.

**D. Koeajo**

1. Tarkista jäähdytysnesteen määrä.
2. Varmistaudu siitä, että ilma poistuu jäähdytysjärjestelmästä. Vastus palaa nimittäin hetkessä poikki, jos se joutuu ilman kanssa kosketuksiin.
3. Tarkista, ettei vuotoja tapahdu moottorin ollessa lämmin.
4. Kokeile lämmitintä yhdistämällä verkkovohto maadoitetun pistorasiaan. Kuuluu pientä sirinää veden kiehuessa lämmittimen pinnassa.

**E. Tärkeää**

1. Käytä aina riittävää määrää pakkasnestettä.
2. Moottorilämmittimen saa liittää ainoastaan maadoitettuun pistorasiaan ja on varmistettava että maadoituskosketus on hyvä moottorilämmit-timestä ja auton korista maadoitettuun pistorasiaan.
3. Käytä ainoastaan Calix MS johtoa verkkovirran liittämiseksi.
4. Tutki kaapeli säännöllisesti vaurioiden sekä vanhenemisen suhteen. Vaurio-itunutkaapeli pitää vaihtaa välittömästi.
5. Mikään lämmittimen osista ei saa koskettaa moottorin lämpeneviä tai liikkuvia osia. Etäisyys pakosarjaan vähintään 50 mm (koskee myös turbolaitetta). Muissa tapauksissa on käytettävä lämmöneristettä.
6. Panssarikaapelit voidaan pidentää jatkokaapeleilla pikaliittimien avulla. Tällöin on pakauksessa olevat kaapelikiinnikkeet kiinnitettävä liitos-kohdon molemmin puolin maadoitettujen lähelle pikaliittimiä.

**Huomaa**

Moottorinlämmitinjärjestelmän on oltava ammattimaisesti asennettu.

Jos olet epävarma asennuksesta, ota yhteys Calix-jälleenmyyjään.

Tämän käyttöohjeen uusin versio on ladattavissa kotisivuiltamme.

Annamme tuotteillemme takuun, joka kattaa valmistus- ja materiaalivirheet. Lisätietoja on annettu kotisivuiltamme osoitteessa [www.calix.fi](http://www.calix.fi).

**F. Varoitus**

Vastuselementti palaa poikki jos

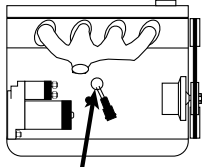
- lämmitin liitetään sähköjärjestelmään, jonka jännite on jaksottaista.
- jäähdytysneste on likaista

- jäähdytysnestettä ei ole tarpeeksi
- jäähdytysjärjestelmässä on ilmaa tai jääsuhjoa
- jäähdyttäjän tiivistysainetta käytetään.

Näissä tapauksissa takuu ei ole voimassa.

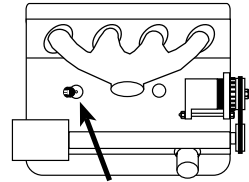
Rekommenderad inkopplingstid för motorvärmare Recommended connection period for engine pre-heater Empfohlene Einschaltdauer für Motorvorwärmer					
C°	-20 C°	-10 C°	-5 C°	0 C°	+10 C°
Hours	3	2	1,5	1	1

## CHRYSLER



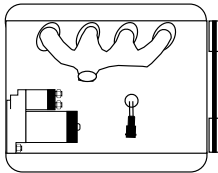
### CHRYSLER

Voyager 2.4i 16v



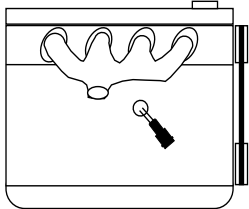
### CHRYSLER

Sebring 2.0 DOHC 16v



### CHRYSLER

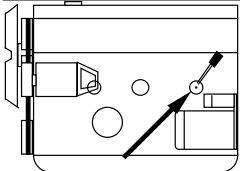
Neon 1.6 2002-  
PT Cruiser 1.6 2002-



### CHRYSLER

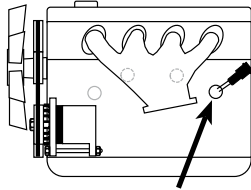
Sebring 2.0 2001-

## DAIHATSU



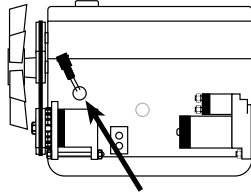
### DAIHATSU

Charmant 1600 LC • LE...ø35



### DAIHATSU

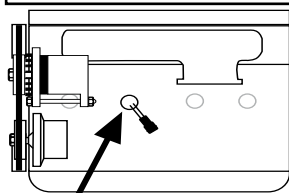
Rocky 2.8 • Wildcat 2.8



### DAIHATSU

Charmant 1300 : LC • LD • LE

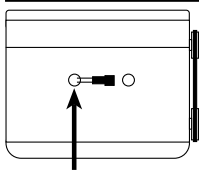
## DODGE



### DODGE

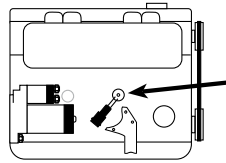
Durango 4.7 V8  
RAM 4.7 V8

## FORD



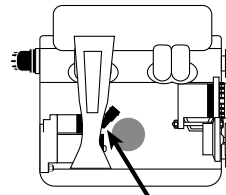
### FORD

Escort 1.6i 1992-1994 : "ZETEC"  
Escort : 1.8i • 1.8 XR3i : "ZETEC"  
Fiesta : 1.8i • 1.8 XR2i : "ZETEC"  
Orion : 1.6i 1992-1994 : "ZETEC"  
Orion 1.8i : "ZETEC"



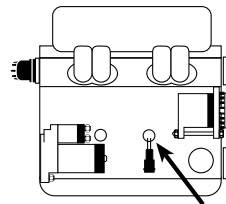
### FORD

Focus 1.8i 16V : "ZETEC"  
Focus 2.0i 16V : "ZETEC"  
Maverick 2.0 : 2004- "ZETEC"  
Transit Connect 1.8 : "ZETEC(EYPA)"



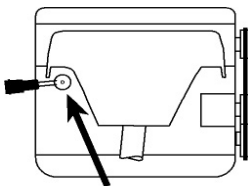
### FORD

Probe 2.2i



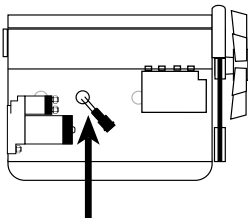
### FORD

Cougar 2.0i 16V : "ZETEC"



### FORD

Fiesta 1.4 1997- "ZETEC-S"  
Focus 1.6 16V (74kw) 2005- "HWDA"



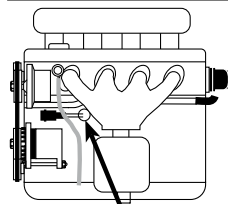
### FORD

Ranger 2.5 D12v

### FORD

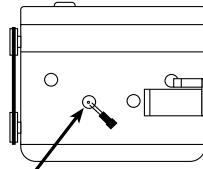
Ranger 2.5 TD

## HYUNDAI



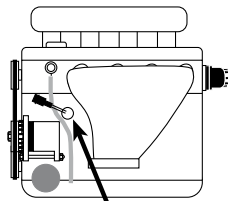
### HYUNDAI

Coupe 2.0i 16V  
Elantra 2.0i 16v



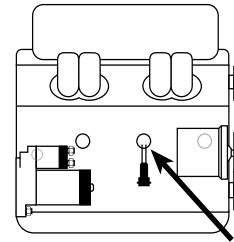
### HYUNDAI

Elantra 1995: 1.5i • 1.6i • 1.6i 16V • 1.8i 16V  
Lantra 1995: 1.5i • 1.6i • 1.6i 16V • 1.8i 16V  
Pony : 1.3 • 1.5i  
Scoupe 1.5i 8V  
Sonata : 2.0i 16V • 2.4i  
MITSUBISHI  
Spacestar 1.3i "G4G13"



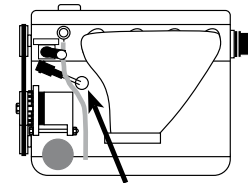
### HYUNDAI

Accent 1.3i 12v  
Accent 1.4 2006- "G4EE"  
Accent 1.6  
Coupe 1.6 2002- "G4ED"  
Elantra 1.6 2001- "G4ED"  
Matrix 1.6 2007- "G4ED"  
Scoupe 1.5i 12V: "Alfa"



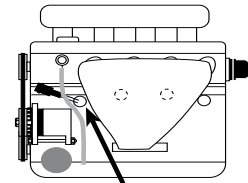
### HYUNDAI

Coupe GK 2.0 2002- "G4GC"  
Elantra 1996 : 1.5i • 1.6i  
Elantra 1996 : 1.6i 16V • 1.8i 16V  
Elantra XD 2.0 2001- "G4GC"  
i30 2.0 2008- "G4GC"  
Lantra 1996 : 1.5i • 1.6i  
Lantra 1996 : 1.6i 16V • 1.8i 16V  
Matrix 2001-1.6i 16V • 1.8i 16V



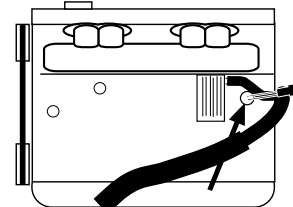
### HYUNDAI

Gets 1.3 2003- "G4EA"  
Gets 1.4 2005- "G4EE"  
Gets 1.6 2003- "G4ED"  
Tucson 2.0 4WD 2005- "G4GC"



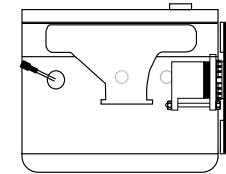
### HYUNDAI

Accent 1.6 2006-



### HYUNDAI

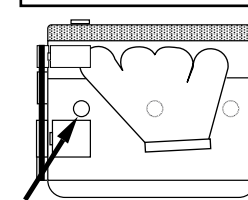
Getz 1.5 CRDi 2006- "D4FA"  
Matrix 1.5 CRDi 2005- "D4FA"



### HYUNDAI

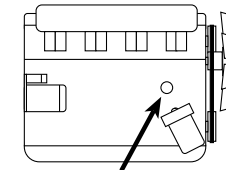
Sonata 2.5i V6 24V : 1999- "G6BV"  
Sonata 2.7 V6 : 2001- "G6BA"  
Santa Fe 2.7 V6 2001- "G6BA"  
Santa Fe 2.7 V6 2006- "G6EA"  
Trajet 2.7 V6 "G6BA"  
Coupe 2.7 V6  
XG 30 2.5 : 1999- "G6BV"

## ISUZU



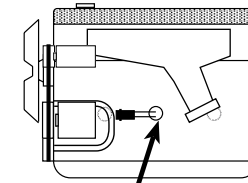
### ISUZU

KB 28 • KB 48



### ISUZU

Campo TF16 2.3  
Trooper UBS16 2.3  
Trooper UBS17 2.6



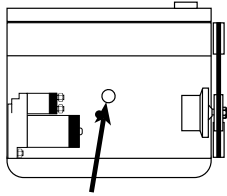
### ISUZU

Trooper UBS16 2.3 Aircond.

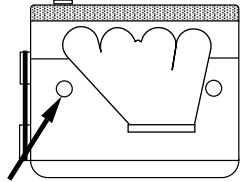
= Motortyp

⊕ = Moottorityyppi

= Engine model

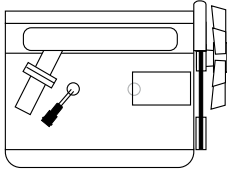


**ISUZU**  
WFR 12 • WFS 12  
Midi D 4FD1  
Midi D 4x4 4FD1

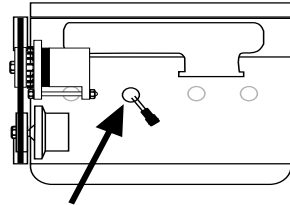


**ISUZU**  
Gemini 1.5

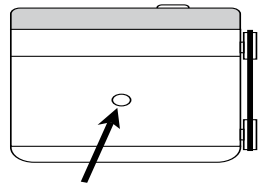
**JEEP**



**JEEP**  
Cherokee Sport M5 2.4  
Cherokee 2.4 2002-

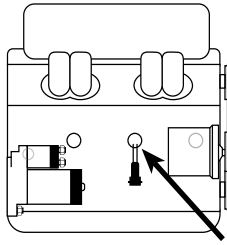


**JEEP**  
Grand Cherokee 4.7 V8

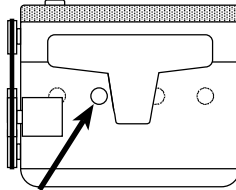


**JEEP**  
Cherokee 3.7 V6 2002-

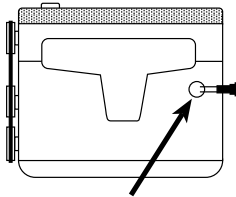
**KIA**



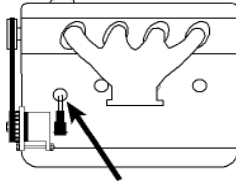
**KIA**  
Cerato 1.6 G4ED  
Cerato 2.0 EX 2005 G4GC  
Carens 2.0 EX 2005--> K5A  
Carens 2.0 DOHC 2005--> G4GC  
Elantra XD2.0 2001--> G4GC  
Rio 1.6 CVVT 2005--> G4ED



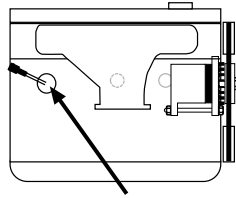
**KIA**  
Clarus 1.8i 16v  
Clarus 2.0i 16v  
Leo 1.8i  
Sephia 1.8i  
Sportage 2.0i -2004 FE



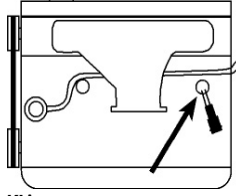
**KIA**  
Leo 1.5i  
Pride 1.3i



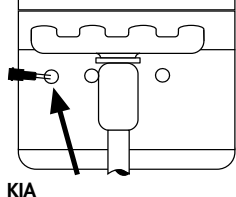
**KIA**  
Rio 1.4 EX 2005- G4EE  
Rio 1.4 Hybrid 2007- G4EE



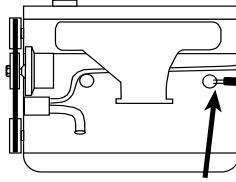
**KIA**  
Carnival 2.7 V6 2006- G6EA  
Magentis 2.5 V6



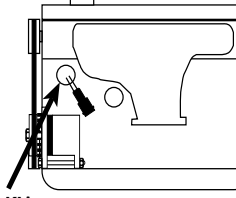
**KIA**  
Sephia 1.5 1994- B5  
Sephia 1.6 1997- B6



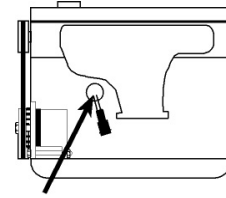
**KIA**  
Magentis 2.7 V6 2006- G6EA



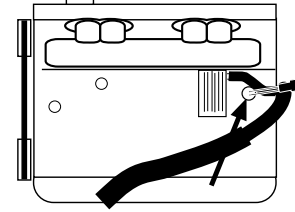
**KIA**  
Rio 1.5 LS



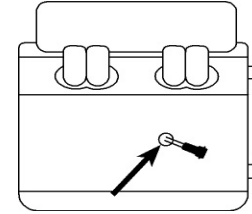
**KIA**  
Sorento 2.4 2003- G4JS



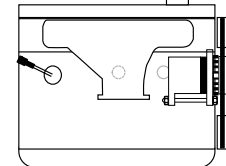
**KIA**  
Ceed 2.0 2007- G4GC  
Sportage 2.0i 2005- G4GC



**KIA**  
Cerato 1.5 CRDi 2005- D4FA  
Rio 1.5 CRDi 2005- D4FA

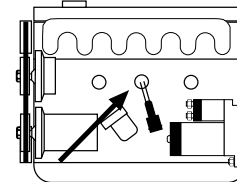


**KIA**  
Sportage 2.0 CRDi 2005-

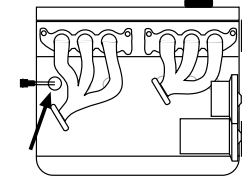


**KIA**  
Carnival 2.7 V6 2006- G6EA

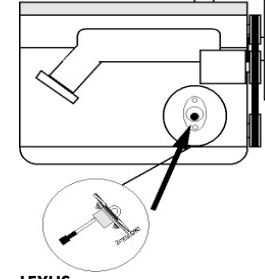
**LEXUS**



**LEXUS**  
GS 300 -1998  
GS 300 1998 (Feb)- 2JZ-GE  
IS 300 2JZ-GE

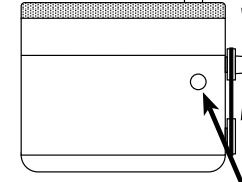


**LEXUS**  
IS 200 1G-FE

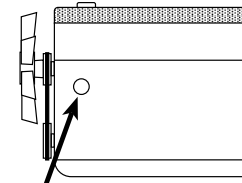


**LEXUS**  
LS400 V8 32V -1998 1UZ

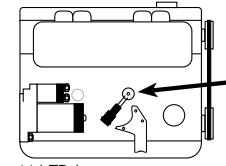
**MAZDA**



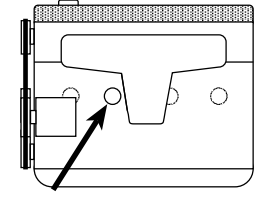
**MAZDA**  
323 1980  
1300



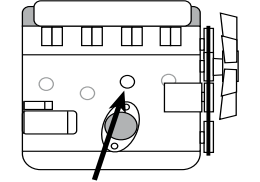
**MAZDA**  
626 1982  
929 1987 : 1.8 • 2.0 • 2.0i  
1600 • 1800



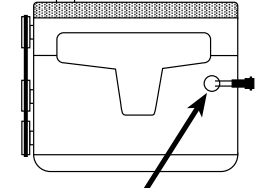
**MAZDA**  
Tribute 2.0 2001- :YF



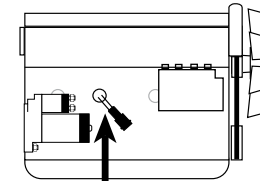
**MAZDA**  
323 -1987 1.3 B3  
626 1983-1987 1.6 • 1.8 • 2.0  
626 2.2i 12V  
929 1988- 2.2 • 2.2i  
B2000 • B2200  
MX-5 1.8 BP



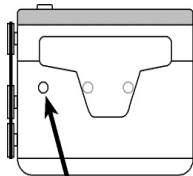
**MAZDA**  
B2600i 1990



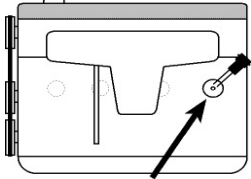
**MAZDA**  
323 1996-1998 1.3 • 1.3 16V B3  
323 1.6i kombi 1990--> 2WD • 4WD  
323 1.6i m. servo



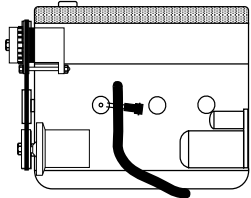
**MAZDA**  
B2500 TD  
MPV 2.5 TD



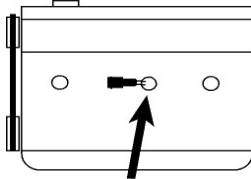
**MAZDA**  
323 2.0 2001- ⓄFS



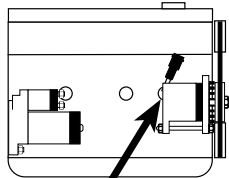
**MAZDA**  
323F 1.5 1999- ⓄZL  
323 STW 4x4 1994-1999 ⓄB6  
323 AUTOMATIC 1988-



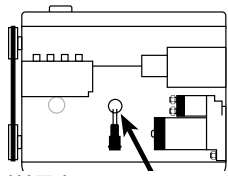
**MAZDA**  
3 2.0 TD 2006- ⓄRF  
5 2.0 DE 2006- ⓄRF-T  
6 2.0 TD 2006- ⓄRF



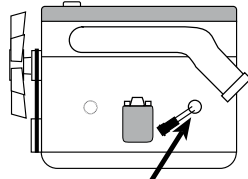
**MAZDA**  
Premacy 2.0 TD 2003- ⓄRF



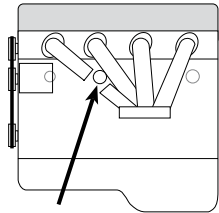
**MAZDA**  
626 1.8i 16V • 2.0i 16V 1992  
323F 1.8i 1998- ⓄDOHC  
323F 2.0 : 2001- ⓄFS



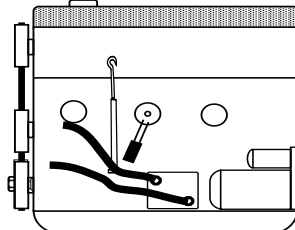
**MAZDA**  
626 2.0 diesel Complex  
323F 2.0D 16v



**MAZDA**  
929 3.0i V6

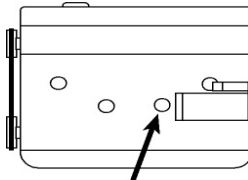


**MAZDA**  
MX-3 1.6i 16V  
MX-5 1.6i 16V "Miata"

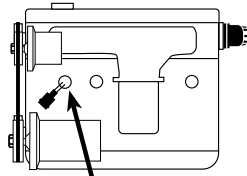


**MAZDA**  
6 2.2 MZR-CD 2008- ⓄR2-T  
CX-7 2.2 MZR-CD 2009- ⓄR2-T

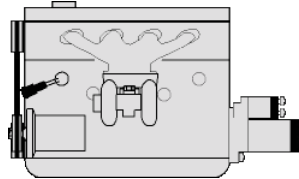
### Ⓞ MITSUBISHI



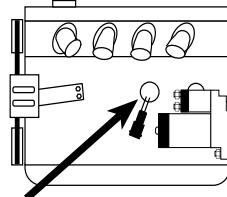
**MAZDA**  
Spacewagon 2.0 TD 1992-1993 Ⓞ4D68



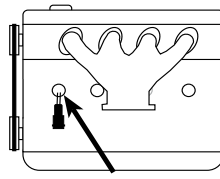
**MITSUBISHI**  
Lancer 1.6i Ⓞ4G18



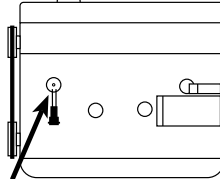
**MITSUBISHI**  
Colt 1.5 CZT 2005-



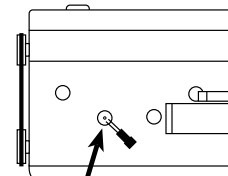
**MITSUBISHI**  
Galant 2.4 GDI Ⓞ4G64  
Space Wagon 2.4 GDI Ⓞ4G64  
Space Runner 2.4 GDI Ⓞ4G64



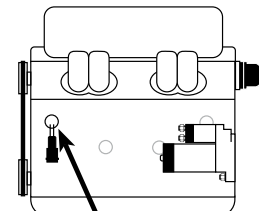
**MITSUBISHI**  
Space Star 1.6 16v Ⓞ4G18



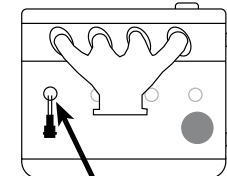
**MITSUBISHI**  
L300 2.4 : 2WD • 4WD Ⓞ4G64  
Cosmos Ⓞ4G64



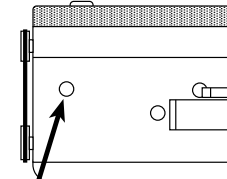
**MITSUBISHI**  
Colt : 1300 • 1.3i • 1500 • 1.5i  
Colt 1.6i 16V Ⓞ4G61  
Colt 1.8 GTi 16V Ⓞ4G67  
Colt 1800 diesel  
Cordia : 1400 • 1600  
Eclipse 2.0i 16V  
Galant 1.8 Ⓞ4G37  
Galant 1981-1992 : 2.0i • 2.0i 16V Ⓞ4G63 \*  
Galant 2.4i ⓄG64B  
Galant : 2.0 turbo • 2.0 GTi-16V Ⓞ4G63 \*  
Galant : 1.8 turbodiesel • 2000 turbodiesel  
Galant 2.0D : -1993 Ⓞ4D68  
L400 2.0 : 1996- Ⓞ4G63  
L400 2.4 4WD : 1996- Ⓞ4G64  
Lancer : 1.3 • 1.5 • 1500 • 1.5i 12V  
Lancer 1.8 diesel  
Pajero 1.8 diesel  
Space Wagon 1.8 turbodiesel  
Starion  
Tredia : 1400 • 1600 • 1600 turbo  
Tredia : 1800 • 1800 4WD • 1800 turbo  
L200 2.0 : 2WD • 4WD  
L300 2.0 2WD Ⓞ4G63  
PROTON  
315 1.5i 12v Ⓞ4G15  
425 1.5i 12v Ⓞ4G15  
\* = Motornr PM2941  
\* = Moottori n:osta PM2941  
\* = Motornr PM2941  
\* = Engine nr PM2941



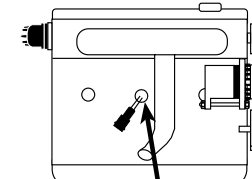
**MITSUBISHI**  
Galant 2.0i 16V 1993 Ⓞ4G63 \*  
Pajero 2.4 : 1991-1994 Ⓞ4G64  
HYUNDAI  
H 100 2.4i  
Starex 2.4i  
\* = Motornr PM2941  
\* = Moottori n:osta PM2941  
\* = Motornr PM2941  
\* = Engine nr PM2941



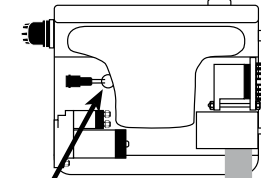
**MITSUBISHI**  
Colt 1.6i 1994 Ⓞ4G92  
Colt 1.8GTi 16V Ⓞ4G93  
Galant 1.8 Ⓞ4G93  
Lancer : 1.6i • 1.8i Ⓞ4G92 • Ⓞ4G93  
Lancer 1800 GTi 16V Ⓞ4G93  
Space Runner 1.8i Ⓞ4G93  
Space Wagon 1.8i Ⓞ4G93  
PROTON  
418 1.8i 16V Ⓞ4G93



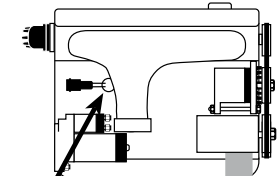
**MITSUBISHI**  
Colt : 1400turbo • 1600turbo  
Lancer : 1800 4WD ⓄG37B  
Lancer 1800 GTi 16V Ⓞ4G67  
Space Wagon 1800 Ⓞ4G37  
Space Wagon 2.0i 1992 Ⓞ4G63 \*  
\* = Motornr PM2941  
\* = Moottori n:osta PM2941  
\* = Motornr PM2941  
\* = Engine nr PM2941



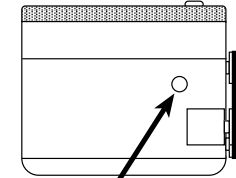
**MITSUBISHI**  
Galant 2.5i V6 Ⓞ6A13



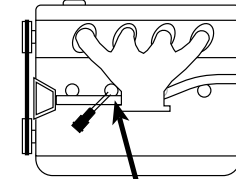
**MITSUBISHI**  
Galant 2.0i V6 24V Ⓞ6A12



**MITSUBISHI**  
Galant 2.5 V6 24V Ⓞ6G73

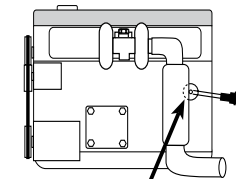


**MITSUBISHI**  
Celeste 1600  
Colt : 1200 • 1400  
Galant 1600  
Lancer : F1200 • 1200  
Lancer : F1400 • 1400 • 1600  
Sapporo 1600  
SpaceWagon 1.6 : -1991 Ⓞ4G32



**MITSUBISHI**  
Carisma 1.6i Ⓞ4G92  
Carisma 1.8i Ⓞ4G93  
Carisma 1.8 GDI Ⓞ4G93  
Colt 1.6i 1995 Ⓞ4G92  
Pajero 1.8 Ⓞ4G93  
Space Star 1.8 GDI Ⓞ4G93

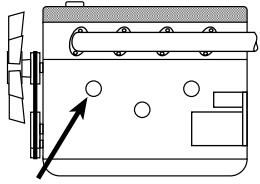
### Ⓞ NISSAN



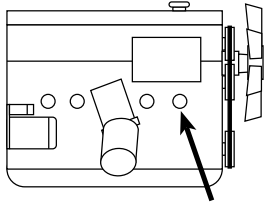
**NISSAN**  
Patrol 3.0Di (Y61) ⓄZD30E

= Motortyp  
Ⓞ = Moottorityyppi  
= Engine model

**M5T 194A**

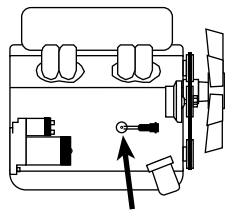


**NISSAN**  
Kingcab diesel ③SD23 • ③SD25  
Kingcab 2.5D (D22) -2001 ③SD25  
Patrol : diesel • turbodiesel ③SD33  
Pick-up diesel ③SD22 • ③SD23  
Urvan diesel ③SD23

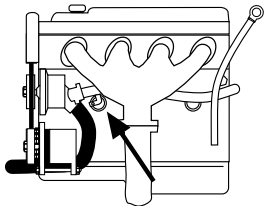


**NISSAN**  
Patrol 2.8

**OPEL**

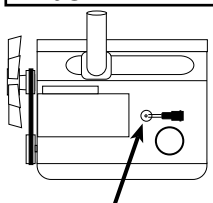


**OPEL**  
Campo 2.3i ③4ZD1



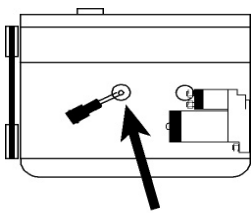
**OPEL**  
Combo 1.7 D ③X17D

**PEL-JOB**



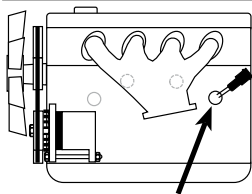
**PEL-JOB**  
EB 706 : EB 706P ③Mitsubishi S4S

**PERKINS**

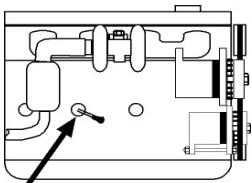


**PERKINS**  
403-11 ③403-11  
WEIDEMAN  
1130CX30 ③403C/D-11  
1140CX30 ③403C/D-11  
1150CX30 ③403C/D-11  
1230CX30 ③403C/D-11

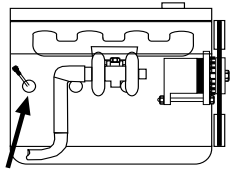
**TOYOTA**



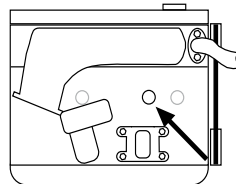
**TOYOTA**  
Hiace 1800  
Hiace 2000 1984- ③3Y  
Hiace 2200 ③4Y  
Hilux 4WD YN56 -1988 : ③2Y  
Hilux 2WD: YN85 • YN90 1989- ③2Y  
Hilux 4WD YN110 1989- ③4Y  
Model F ③2Y • ③3Y • ③4Y



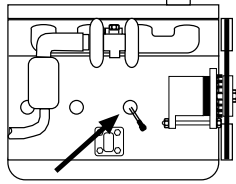
**TOYOTA**  
Hilux D-4D 2.5 ③2 KD



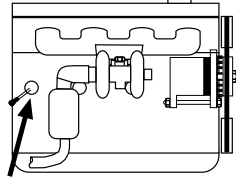
**TOYOTA**  
Dyna 3.0 D-4D 2007- ③1KD-FTV  
Hilux 2.5 D-4D 2010- ③2KD-FTV  
Hilux 3.0 D-4D 2009- ③1KD-FTV  
Landcruiser 90 ③1KD-FTV  
Landcruiser 120 3.0 D-4D 2003- ③1KD-FTV



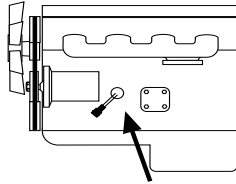
**TOYOTA**  
Hiace RCH 13 ③3RZ-GE



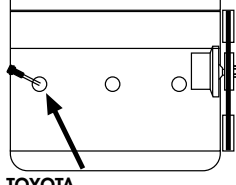
**TOYOTA**  
Hiace 2.5 Diesel KLH 12 ③2KD-FTV  
Hiace 2.5 D-4D 2007- ③2KD-FTV  
Hilux D-Cab 2.5 DieselKDN165 ③2KD-FTV  
Hilux S-Cab 2.5 DieselKDN150 ③2KD-FTV  
Hilux X-Cab 2.5 DieselKDN170 ③2KD-FTV



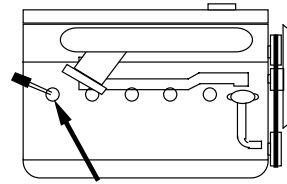
**TOYOTA**  
Hiace Picup 2.5 Diesel KDY 250 ③3RZ-GE  
Landcruiser HZJ105 4.2 D ③1HZ



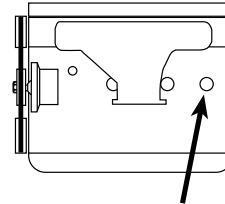
**TOYOTA**  
Landcruiser 100 V8 ③2UZ-FE



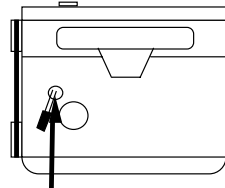
**TOYOTA**  
Rav 4 2.0 16v ③3S-FE



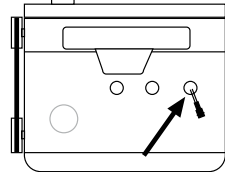
**TOYOTA**  
Landcruiser HZJ80 diesel 1990- ③1HZ  
Landcruiser HDJ80 TD ③1HD-T  
Landcruiser HJZ75



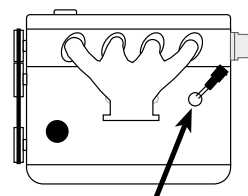
**TOYOTA**  
Paseo 1.5i 16V ③5E-FE



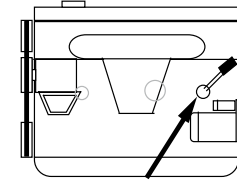
**TOYOTA**  
Celica 1.6i 1991  
Corolla GT Twin-Cam • FX GT 16V  
MR 2 1990 c



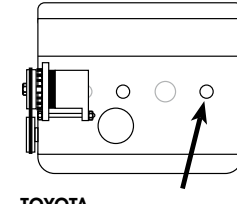
**TOYOTA**  
Corolla 1.3 12V 1985 ③2E  
Starlet 1.0 12V 1985



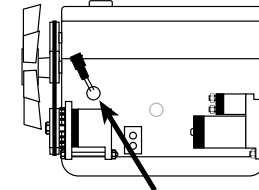
**TOYOTA**  
Corolla 1.3 12V 1993 ③4E-FE  
Corolla 1.3i 16V ③4E-FE  
Starlet 1.3i 16V ③4E-FE



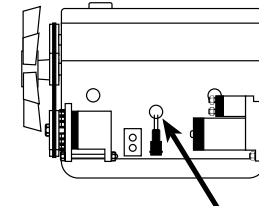
**TOYOTA**  
Corolla 1.6i 16V 1988 ③4A-GE  
Corolla 1.6i 16V ③4A-FE  
Corolla 1.4i : 1995-1999 ③4E-FE



**TOYOTA**  
Avenis 1.8i 16V ③7A-FE  
Celica 1.8i 16V ③7A-FE  
Celica 1600 GT 16V : 1985- ③4A-GE  
Carina E 1.8i 16V ③7A-FE



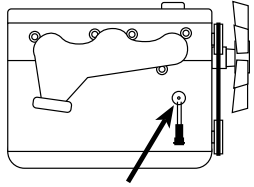
**TOYOTA**  
Carina 1983 : 1600 • 1800  
Celica 1600  
Corolla : 30 • 50 • 70  
Corolla : 1100 • 1200 • 1300  
Corolla farmari 1984 @ SF  
Corolla 1600 1983  
Corolla Liftback 1800  
Lite-Ace ③4-K  
Starlet : 1.0 • 1.3 @ S  
Starlet 1000-1300 1982



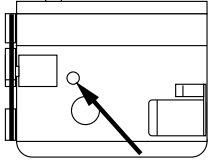
**TOYOTA**  
Lite-Ace 1990 ③5-K

= Motortyp  
③ = Moottorityyppi  
= Engine model

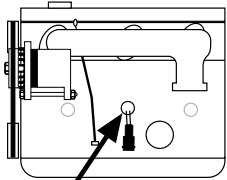
## M5T 194A



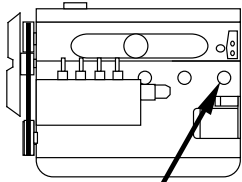
**TOYOTA**  
4-Runner 3.0i V6 3VZ-E



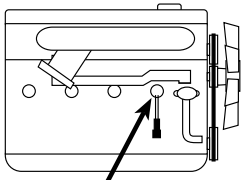
**TOYOTA**  
Tercel : 2WD • 4WD ...ø35



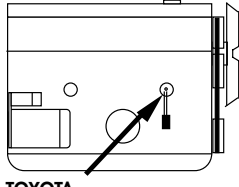
**TOYOTA**  
Camry 2.5i V6 24V 2VZ-FE



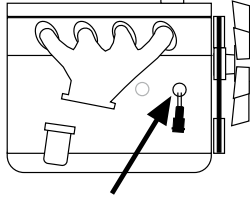
**TOYOTA**  
Dyna 200 BU76 diesel 1989-  
Dyna 300 BU88 diesel 1989-



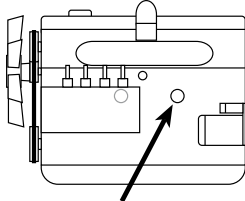
**TOYOTA**  
Landcruiser BZJ75 diesel 1990- ø1PZ



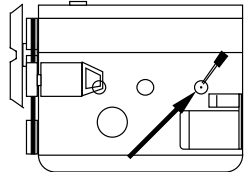
**TOYOTA**  
Dyna diesel BU85 1985-1988  
Landcruiser BJ 40 diesel



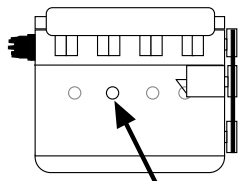
**TOYOTA**  
Hiace 1990 2.0 • 2.4 1RZ • 2RZ



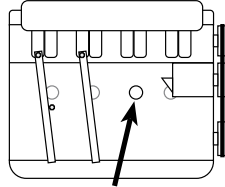
**TOYOTA**  
Landcruiser diesel BJ42 • BJ45 • BJ75



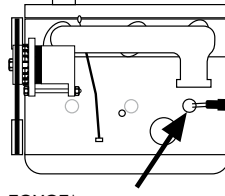
**TOYOTA**  
Carina II 1.6 1984 ... ø35  
Corolla 1984-1985 : 1300 • 1600 :  
etuveto... ø35 @ SF  
Corolla 1600 1984 ... ø35



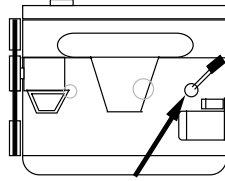
**TOYOTA**  
Camry 2.2i 16V 5S-FE



**TOYOTA**  
Avensis 2.0 16V 3S-FE  
Camry : 1.8 • 2.0i  
Camry 2.0i 16V Twin Cam 1987  
Carina II 1.8  
Carina II 2.0 16V 1988  
Carina E 2.0i  
Celica 2.0i -16V 1986  
Celica GT-4 turbo 3S-GTE  
MR 2 1990 3S-GE  
Picnic 2.0i 16V 3S-FE

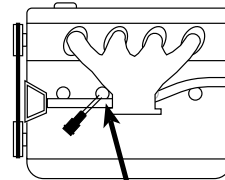


**TOYOTA**  
Camry 3.0i V6 : 3VZ-FE  
Landcruiser 90 VZJ : 5VZ-FE



**TOYOTA**  
Carina II 1.6 16V 1988  
Carina E 1.6i  
Carina E 1.8i 16V 7A-FE  
Corolla 1.6i 16V 1988 4A-FE

## VOLVO



**VOLVO**  
S 40 • V40 1.8i B4184 SM

- = Motortyp
- ⊗ = Moottorityyppi
- = Engine model