PRELUDE

1993 Service Manual
First Edition

Global

PRELUDE

INTRODUCTION

How to Use This Manual

This supplement contains information for the 1993 Prelude. Refer to following shop manual for service procedures and data not included in this supplement.

Prelude Maintenance, Repair and Construction (Code No. 62SS000)

The first page of each section is marked with a black tab that lines up with one of the thumb index tabs on this page. You can quickly find the first page of each section without looking through a full table of contents. The symbols printed at the top corner of each page can *also be* used as a quick reference system.

Special Information

⚠ WARNING Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.

CAUTION: Indicates a possibility of personal injury or equipment damage if instructions are not followed.

NOTE: Gives helpful information.

CAUTION: Detailed descriptions of *standard workshop* procedures, safety principles and service operations are not included. Please note that this manual contains warnings and cautions against some specific service methods which could cause PERSONAL INJURY, damage a vehicle or make it unsafe. Please understand that these warnings cannot cover all conceivable ways in which service, whether or not recommended by HONDA might be done, or of the possible hazardous consequences of every conceivable way, nor could HONDA investigate all such ways. Anyone using service procedures or tools, whether or not recommended by HONDA, *must satisfy himself thoroughly* that neither personal safety nor vehicle safety will be jeopardized.

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HONDA MOTOR CO., LTD.
Service Publication Office

marked sections are not included in this manual.
As sections with * include SRS components, special precautions are required, when servicing.

Outline of Model Changes

ITEM	DESCRIPTION	93 MODEL	REFERENCE SECTION
Engine	Added • H22A2 engine	○	5, 6, 7, 8, 9, 10
PGM-FI	Added • H22A2 engine	○	11
Manual Transmission	Added • M2F5 manual transmission for H22A2 engine	○	13
Electrical	Added • H22A2 engine • Inter lock system (KQ model) • Power door lock actuator (KQ model) • SRS type I Changed • Power supply circuit • Dash lights brightness control unit (European model) • Integrated control unit (KY model)	○	23

General Information

Chassis and Engine Numbers

European Model

Vehicle Identification Number

JHMBB11700C000001

Manufacturer, Make and Type of Vehicle
JHM: HONDA MOTOR CO., LTD. HONDA Passenger car

Body Type
BB1: Prelude 2.2 ℓ VTEC
BB2: Prelude 2.3 ℓ
BB3: Prelude 2.0 ℓ

Body and Transmission Type
1: 2-door 5-speed Manual
2: 2-door 4-speed Automatic

Vehicle Grade
4: 2.0i
5: 2.3i
6: 2.3i with driver's and passenger's SRS airbag system
7: 2.2i-VT
8: 2.2i-VT with driver's and passenger's SRS airbag system

Fixed Code

Auxiliary Number

Factory Code
C: Saitama Factory in Japan

Model Year
0: 1993 (BB1)
1: 1993 (BB2, BB3)

Serial Number

Engine Number

F20A4-9200001

Engine Type
F20A4: 2.0 ℓ SOHC Sequential Multiport Fuel-injected engine
H22A2: 2.2 ℓ DOHC VTEC Sequential Multiport Fuel-injected engine
H23A2: 2.3 ℓ DOHC Sequential Multiport Fuel-injected engine

Serial Number
F20A4: 9200001 ~
H22A2: 1000001 ~
H23A2: 2000001 ~

Transmission Number

M2F5-1000001

Transmission Type
M2F5: Manual with H22A2 engine
M2J4: Manual with F20A4 engine
M2K4: Manual with H23A2 engine
MP1A: Automatic

Serial Number
M2F5: 1000001 ~
Except M2F5: 2000001 ~

Except European Model

Vehicle Identification Number

JHMBA81400C100001

Manufacturer, Make and Type of Vehicle
JHM: HONDA MOTOR CO., LTD. HONDA, Passenger Car

Body Type
BA8: Prelude 2.2 ℓ
BB2: Prelude 2.3 ℓ

Body and Transmission Type
1: 2-door 5-speed Manual
2: 2-door 4-speed Automatic

Vehicle Grade
4: CX (KQ), Si (KT/KY)
5: Si (KQ) and Si-SPECIAL (KQ)

Fixed Code

Auxiliary Number

Factory Code
C: Saitama Factory in Japan

Model Year
1: 1993

Serial Number

Engine Number

F22A1-9290001

Engine Type
F22A1: 2.2 ℓ SOHC Sequential Multi-port Fuel-injected engine (KQ)
F22A2: 2.2 ℓ SOHC Sequential Multi-port Fuel-injected engine (KT/KY)
H23A1: 2.3 ℓ DOHC Sequential Multi-port Fuel-injected engine (KQ)

Serial Number
F22A1: 9290001 ~
F22A2: 9200001 ~
H23A1: 2800001 ~

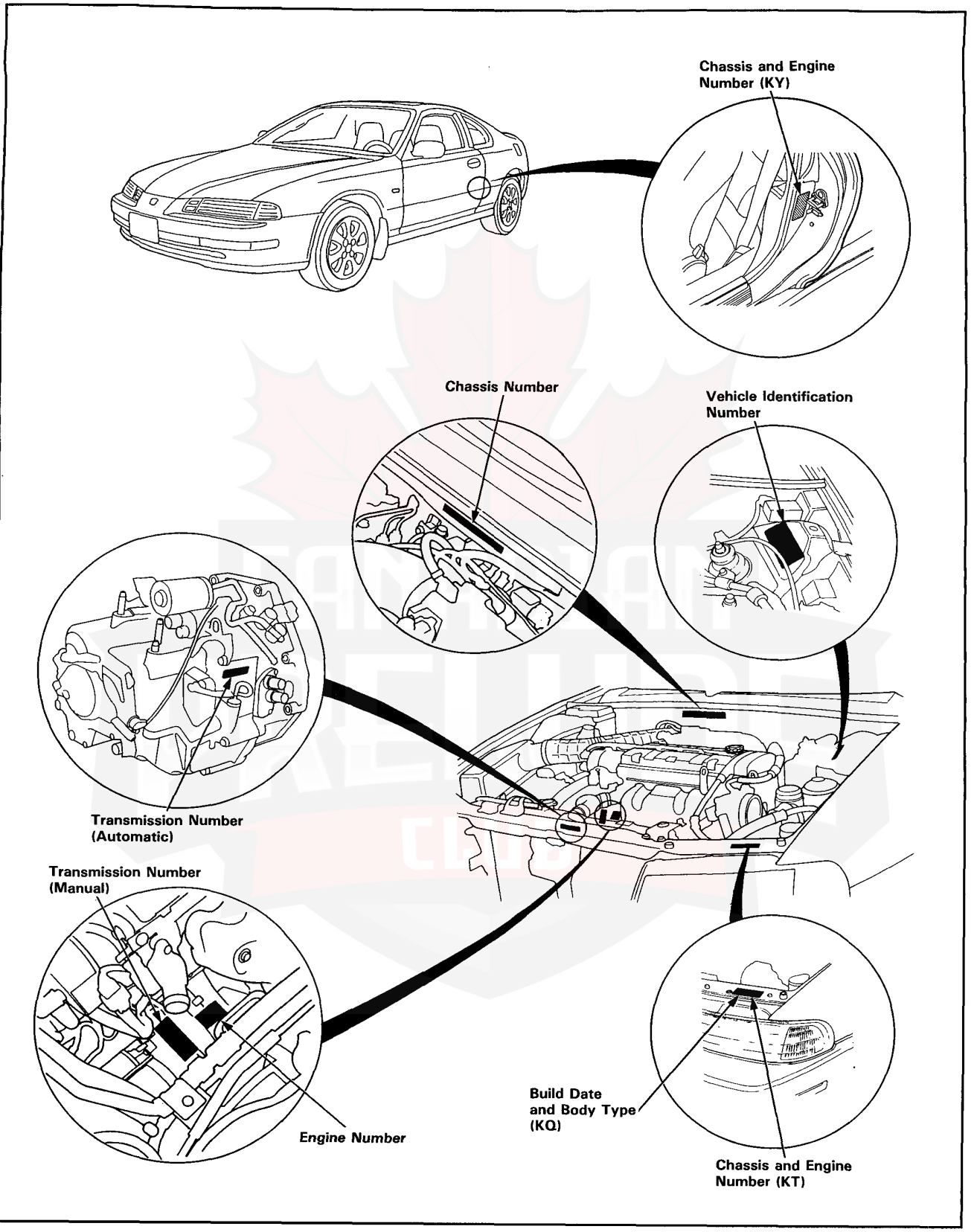
Transmission Number

M2C4-2000001

Transmission Type
M2C4: Manual with F22A2 engine (KT/KY)
M2J4: Manual with F22A1 engine (KQ)
M2K4: Manual with H23A1 engine (KQ)
MP1A: Automatic

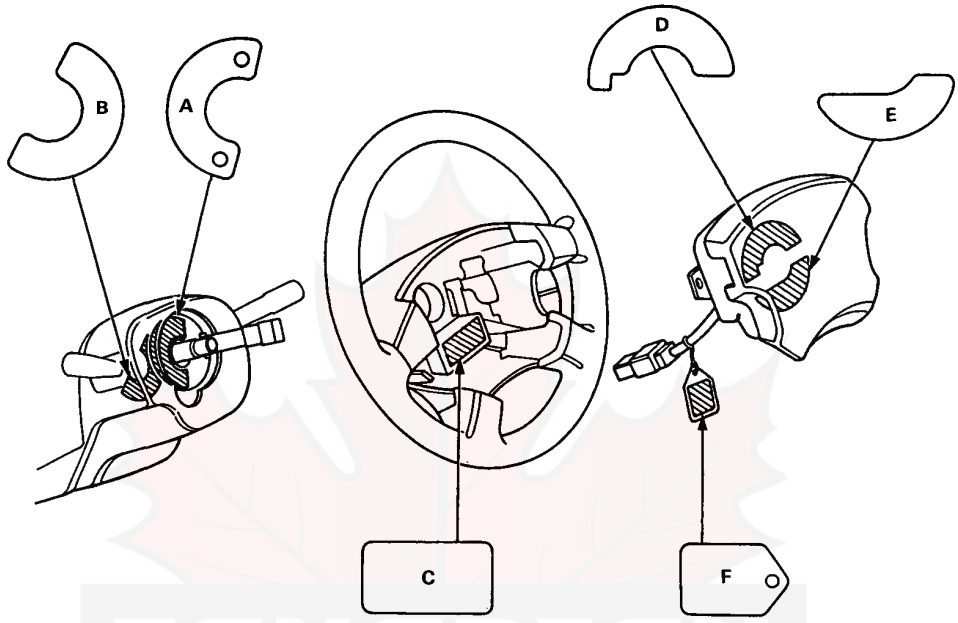
Serial Number

Identification Number Locations



Warning/Caution Label Locations

SRS Airbag System Type 1:



(see page 1-7)

A: CABLE REEL CAUTION A

CAUTION SRS
REFER TO THE SHOP MANUAL
ATTENTION
SE REPORTER AU MANUEL D'ATELIER
WAARSCHUWING
LEES HET WERKPLAATS HANDBOEK
ACHTUNG
LEES HET WERKPLAATSHANDBOEK.

B: CABLE REEL CAUTION B

SRS

● CAUTION	REFER TO THE SHOP MANUAL.
● ACHTUNG	WERKSTATT HANDBUCH LESEN.
● ATTENTION	SE REPORTER AU MANUEL D'ATELIER.
● WAARSCHUWING	LEES HET WERKPLAATS HANDBOEK.

C: STEERING WHEEL WARNING

WARNING SRS
- REFER TO THE SHOP MANUAL
- SE REPORTER AU MANUEL D'ATELIER.
- WERKSTATT HANDBUCH LESEN.
- LEES HET WERKPLAATSHANDBOEK.

D: DRIVER MODULE DANGER

- DANGER SRS
  EXPLOSIVE/FLAMMABLE
  POISON
  REFER TO SHOP MANUAL.
- DANGER
  EXPLOSIF ET INFLAMMABLE
  POISON
  SE REPORTER AU MANUEL D'ATELIER.
- GEFAHR
  EXPLOSIV/ENTZUNDBAR
  GIFT
  WERKSTATTHANDBUCH LESEN.
- GEVAAR
  EXPLOSIEGEVAAR/BRANDBAAR
  GIFTIG
  LEES HET WERKPLAATSHANDBOEK.

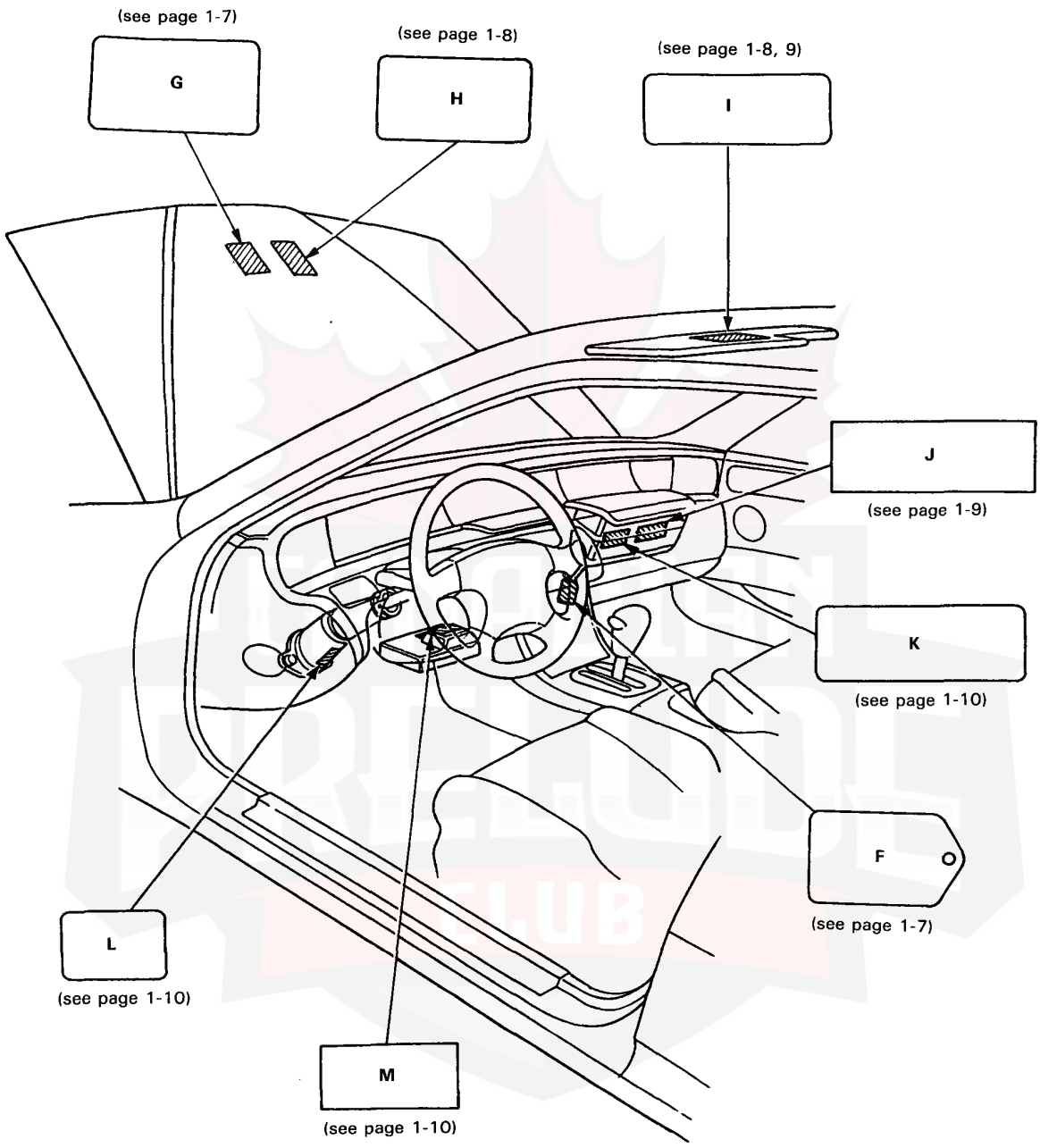
E: DRIVER MODULE WARNING

WARNING SRS
- REFER TO THE SHOP MANUAL.
- SE REPORTER AU MANUEL D'ATELIER.
- WERKSTATTHANDBUCH LESEN.
- LEES HET WERKPLAATSHANDBOEK.

(cont'd)

Warning/Caution Label Locations

(cont'd)



F: BAM INFLATOR LABEL

Air Bag Gas Generator UT11600
Morton International, Inc.
Automotive Safety Products.
Herstellungsjahr: 1992
Einführer: Honda Deutschland
Gmbh/offenbach
BAM PT1-0388

Der Gasgenerator dart nur für Insassen-Rückhaltesysteme mit Luftsack In Kraftfahrzeuge montiert werden.
Die Montage und Demontage des Gasgenerators darf nur von dafür geschultem Personal vorgenommen werden.

CAUTION
Contains
Flammable
solids
US DOT-E-8214

The gas generator should only be installed in vehicles equipped with the airbag system.
The gas generator is to be installed and/or disassembled only by trained personnel.

ATTENTION
Content
De
solides
Flammable
US DOT-E-8214

Le générateur de gaz ne peut être installé que sur des véhicules équipés d'un systéme airbag. Le montage et le démontage du générateur de gaz ne peut être effactué que par un personnel quallfie.

G: SRS WARNING (ENGINE HOOD)
(KS model)

WARNING SRS
THIS VEHICLE IS EQUIPPED WITH AN AIRBAG SYSTEM AS A SUPPLEMENTAL RESTRAINT SYSTEM. (SRS)
ALL S.R.S. ELECTRICAL WIRING AND CONNECTORS ARE COLORED YELLOW.
DO NOT USE ELECTRICAL TEST EQUIPMENT ON THESE CIRCUITS.
TAMPERING WITH OR DISCONNECTING THE S.R.S. WIRING COULD RESULT IN ACCIDENTAL FIRING OF THE INFLATOR OR MAKE THE SYSTEM INOPERATIVE, WHICH MAY RESULT IN SERIOUS INJURY.

VARNING SRS
DETTA FORDON HAR EN LUFTKUDDE FÖR FÖRARSÄTET SOM ETT KOMPLETTERANDE SKYDDSSYSTEM (SRS). SAMTLIGA ELLEDNINGAR OCH KONTAKTER I SRS-SYSTEMET ÄR GULFÄRGADE. ANVÄND INTE ELEKTRISK PROVUTRUSTNING FÖR DESSA KRETSAR. OM DU ÄNDRAR ELLER LOSSAR EN SRS-LEDNING KAN DET RESULTERA I EN OAVSIKTLIG UTLÖSNING AV TRYCKPUMPEN ELLER GÖRA ATT SYSTEMET SLUTAR FUNGERA. DÅ KAN EN ALLVARLIG OLYCKA UPPSTÅ.

VAROITUS SRS
TÄSSÄ AUTOSSA ON YLIMÄÄRÄISENÄ TUKIJÄRJESTELMÄNÄ AJAJAN ILMATYYNY. (SRS)
KAIKKI SRS-SÄHKÖJOHDOT JA -LIITTIMET OVAT KELTAISET.
ÄLÄ KÄYTÄ SÄHKÖKOELAITTEITA NÄISSÄ VIRTAPIIREISAÄ. SRS-JOHTOJEN TUKKEAMINEN TAI IRROTTAMINEN SAATTAA SYTYTTÄÄ VAHINGOSSA PUMPUN TAI TEHDÄ JÄRJESTELMÄN KÄYTTÖKELVOTTOMAKSI.
TÄSTÄ-TAAS SAATTAA AIHEUTUA VAKAVIA VAURIOITA.

(cont'd)

Warning/Caution Label Locations

(cont'd)

H: SRS WARNING (ENGINE HOOD)
(Except KS models)

WARNING: SRS
THIS VEHICLE IS EQUIPPED WITH AN AIRBAG SYSTEM AS A SUPPLEMENTAL RESTRAINT SYSTEM. (SRS)
ALL S.R.S. ELECTRICAL WIRING AND CONNECTORS ARE COLORED YELLOW.
DO NOT USE ELECTRICAL TEST EQUIPMENT ON THESE CIRCUITS.
TAMPERING WITH OR DISCONNECTING THE S.R.S. WIRING COULD RESULT IN ACCIDENTAL FIRING OF THE INFLATOR OR MAKE THE SYSTEM INOPERATIVE WHICH MAY RESULT IN SERIOUS INJURY.

ATTENTION SRS
CE VEHICULE EST EQUIPE D'UN COUSSIN D'AIR DU COTE CONDUCTEUR QUI CONSTITUE UN SYSTEME DE RETEUNUE COMPLEMENTAIRE (S.R.S.).
TOUS LES FILS ET CONNECTEURS ELECTRIQUES DU SYSTEME DE RETENUE COMPLEMENTAIRE (S.R.S.) SONT DE COULEUR JAUNE. N'UTILISEZ PAS UN EQUIPMENT D'ESSAIS ELECTRIQUES SUR CES CIRCUITS. NE TOUCHEZ PAS ET NE DEBRANCHEZ PAS LES FILS DU SYSTEME S.R.S. CAR CECI POURRAIT DE TRADUIRE PAR LE DECLENCHEMENT ACCIDENTEL DU GONFLEUR OU RENDRE LE SYSTEME INOPERANT ET VOUS EXPOSER AINSI A DE GRAVES BLESSURES.

WARNING SRS
DIESES FAHRZEUG IST MIT EINEM FAHRERAIRBAG (SRS) ALS ZUSÄTZLICHEM RÜCKHALTESYSTEM AUSGERÜSTET.
ALLE ELEKTRISCHEN KABEL, SOWIE DIE ZUGEHÖRIGEN STECKVERBINDER DES S.R.S.-SYSTEMS SIND IN GELBER FARBE AUSGEFÜHRT.
KEINE ELEKTRISCHEN PRÜFGERÄTE AN DIE S.R.S.-VERKABELUNG ANSCHLIEBEN.
VERÄNDERN ODER UNTERBRECHEN DER S.R.S.-VERKABELUNG KANN UNKONTROLLIERTES ZÜNDEN DES GASGENERATORS AUSLÖSEN. ODER DAS SYSTEM AUBER FUNKTION SETZEN WAS ZU ERNSTHAFTEN VERLETZUNGEN FÜHREN KANN.

WAARSCHUWING SRS
DIT VOERTUIG IS UITGERUST MET EEN LUCHTKUSSEN AAN DE BESTUURDERSKANT ALS EXTRA BESCHERMING (S.R.S.).
ALLE ELEKTRISCHE LEIDINGEN EN AANSLUITINGEN VAN DE S.R.S. ZIJN GEEL GEKLEURD. GEBRUIK GEEN ELEKTRISCHE TESTAPPARATUUR VOOR DEZE CIRCUITS. KNOEIEN MET OF LOSKOPPELEN VAN DE S.R.S. LEIDINGEN KAN LEIDEN TOT BRAND IN DE VULINRICHTING OF TOT UITSCHAKELEN VAN HET SYSTEEM DIT KAN TOT ERNSTIGE ONGELUKKEN LEIDEN.

I: DRIVER INFORMATION (SUNVISOR)
(Except KS, KE models)

SRS ALWAYS WEAR YOUR SEAT BELT
- THIS CAR IS EQUIPPED WITH A DRIVER AIRBAG AND FRONT SEAT PASSENGER AIRBAG AS A SUPPLEMENTAL RESTRAINT SYSTEM (S.R.S.).
- IT IS DESIGNED TO SUPPLEMENT THE SEAT BELT.
- IF YOUR SRS INDICATOR LIGHTS WHILE DRIVING SEE YOUR AUTHORIZED HONDA DEALER.

SRS ATTACHEZ TOUJOURS VOTRE CEITURE
- CE VEHICULE EST EQUIPE D'UN COUSSIN D'AIR POUR LE PASSAGER AVANT, QUI CONSTITUENT UN SYSTEME DE RETENUE COMPLEMENTAIRE (S.R.S.)
- CE COSSIN D'AIR COMPLETE LA CEITURE DE CECURITE.
- SI LE TEMOIN SRS S'ALLUME PENDANT LA CONDUITE, ADRESSEZ-VOUS A VOTRE CONSSIONNAIRE HONDA OFFICIEL.

SRS SICHERHEITSGURTE BEI JEDER FAHRT ANLEGEN
- DIESES FAHRZEUG BESITZT JE EINEN AIRBAG FÜR FAHRER UND BEIFAHRER ALS ZUSÄTZLICHES RÜCKHAL TESYSTEM (S.R.S.).
- DAS RÜCKHALTESYSTEM IST EINE ERGÄNZUNG ZUM SICHERHEITSGURT.
- SOLLTE WAHREND DER FAHRT DIE SRS-KONTROLLEUCHTE AUFLEUCHTEN SUCHEN SIE BITTE UMGEHEND EINEN HONDA-HÄNDLER SUF.

SRS DRAAG ALTIJD UW VEILIGHEIDSGORDEL
- DIT VOERTUNG IS UITGERUST MET AIRBAG (SRS) AAN BESTUURDERSZIJDE EN PASSAGIERSZIJDE VOOR EXTRA VEILIGHEID.
- ONTWORPEN ALS EXTRA BESCHERMING NAAST DE VEILIGHEIDSGORDELS.
- ALS HE SRS-WAARSCHUWINGSLAMPJE GAAT BRANDEN ONDER HETRIJDEN, NEEM DAN KONTAKT OP MET EEN HONDA DEALER.

(KE model)

SRS ALWAYS WEAR YOUR SEAT BELT
- THIS CAR IS EQUIPPED WITH A DRIVER AIRBAG AND FRONT SEAT PASSENGER AIRBAG AS A SUPPLEMENTAL RESTRAINT SYSTEM (S,R,S,).
- IT IS DESIGNED TO SUPPLEMENT THE SEAT BELT.
- IF YOUR SRS INDICATOR LIGHTS WHILE DRIVING SEE YOUR AUTHORIZED HONDA DEALER.

(KS model)

SRS ALWAYS WEAR YOUR SEAT BELT
- THIS ÇAR IS EQUIPPED WITH A DRIVER AIRBAG AND FRONT SEAT PASSENGER AIRBAG AS A SUPPLEMENTAL RESTRAINT SYSTEM (S.R.S.).
- IT IS DESIGNED TO SUPPLEMENT THE SEAT BELT.
- IF YOUR SRS INDICATOR LIGHTS WHILE DRIVING SEE YOUR AUTHORIZED HONDA DEALER.

SRS ANVÄND ALLTID BILBÄLTET
- DETTA FORDON ÄR FÖRSETT MED EN LUFTKUODDE FÖR FÖRARSÄTET OCH EN LUFTKUDDE FÖR PASSAGERSÄTET FRAM SOM ETT KOMPLEMENTERANDE SKYDDSSYSTEM (S.R.S.).
- DET ÄR ÄMNAT ATT KOMPLEMENTERA BILBÄLTET.
- OM SRS-INDIKATORN TÄNDS UNDER KÖRNING SKALL DU KONTAKTA EN AUKTORISERAD HONDAÄTERFÖRSÄLJARE.

SRS KÄYTÄ AINA TURVAVÖITÄ
- TÄMÄ AUTO ON VARUSTETTU AJAJAN ILMATYYNYLLÄ JA ETUMATKUSTAJAM ILMATYYNYLLÄ. JOTKA TOIMIVAT YLMÄÄRÄISENÄ TUKIJÄRJESTELMÄNÄ (S.R.S.).
- SE ON SUUNNITELTU TÄYDENTÄMÄÄN TURVAVYÖTÄ.
- JOS SRS-MERKKIVALO SYTTYY AJON AIKANA. OTTAKAA YHTEYS VALTUUTETTUUN HONDAMYYJÄÄN.

J: BAM INFLATOR LABEL

Air Bag Gas Generator UT11873
Morton International, Inc.
Automotive Safety Products.
Herstellungs: (jahr)
Einführer: Honda Deutschland GmbH 6050 offenbach
BAM PT1-0437

Der Gasgenerator dart nur für Insassen-Rückhaltesysteme mit Luftsack In Kraftfahrzeuge montiert werden.
Die Montage und Demontage des Gasgenerators darf nur von dafür geschultem Personal vorgenommen werden.

CAUTION Contains Flammable solids	The gas generator should only be installed in vehicles equipped with the airbag system. The gas generator is to be installed and/or disassembled only by trained personnel.
ATTENTION Content De solides Flammable	Le générateur de gaz ne peut être installé que sur des véhicules équipés d'un systéme airbag. Le montage et le démontage du générateur de gaz ne peut être effactué que par un personnel quallfie.

(cont'd)

Warning/Caution Label Locations

(cont'd)

K: FRONT SEAT PASSENGER AIRBAG MODULE DANGER

SRS

- DANGER
  EXPLOSIVE/FLAMMABLE
  POISON
- WARNING
  REFER TO SHOP MANUAL.
- DANGER
  EXPLOSIF ET INFLAMMABLE
  POISON
- ATTENTION
  SE REPORTER AU MANUEL D'ATELIER.
- GEFAHR
  EXPLOSIV/ENTZUNDBAR
  GIFT
- WARNUNG
  WERKSTATTHANDBUCH LESEN.
- GEVAAR
  EXPLOSIEGEVAAR/BRANDBAAR
  GIFTIG
- WAARSCHUWING
  LEES HET WERKPLAATSHANDBOEK.

L: STEERING COLUMN CAUTION

CAUTION SRS
TO AVOID DAMAGING THE SRS CABLE OR REEL, WHICH COULD MAKE THE SYSTEM INOPERATIVE, REMOVE THE STEERING WHEEL BEFORE REMOVING THE STEERING SHAFT CONNECTOR BOLT.

M: SRS UNIT CAUTION

CAUTION SRS
- NO SERVICEABLE PARTS INSIDE.
- DO NOT DISASSEMBLE OR TAMPER.
- DO NOT DROP.
- STORE IN A CLEAN DRY AREA.

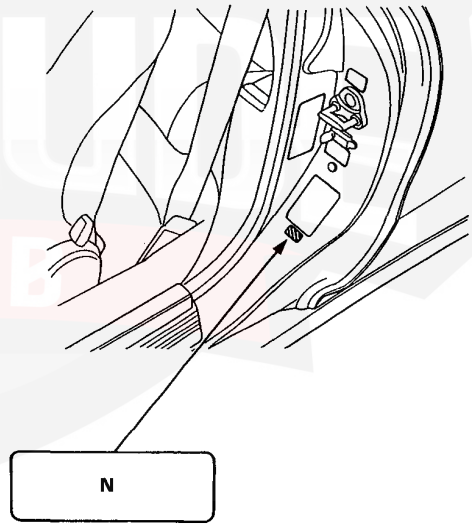
注意
- 分解しないでください。
- 乾燥したクリーンな場所に保管してください。
- 落としたり、濡らしたりしないでください。

ATTENTION
- AUCUN POINT D'INTERVENTION A L'INTERIEUR.
- NE PAS DEMONTER OU TOUCHER.
- NE PAS FAIRE TOMBER.
- RANGER DANS UN ENDROIT PROPRE ET SEC.

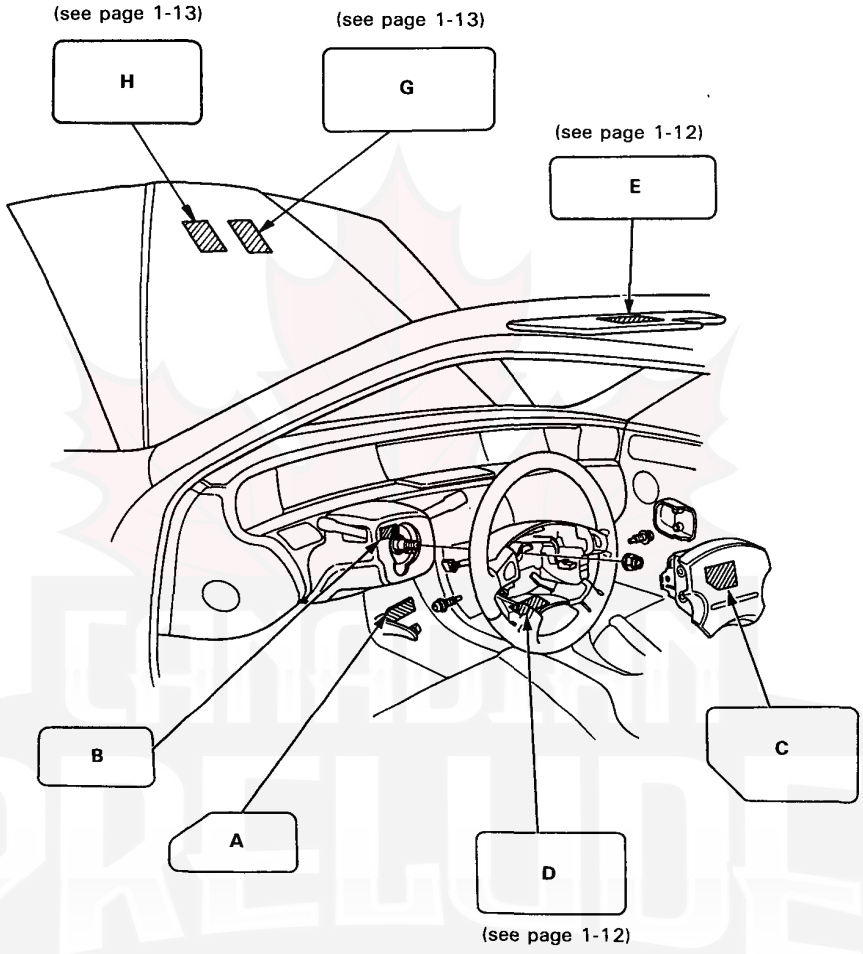
WAARSCHUWING
- BINNENIN BEVINDEN ZICH GEEN OHDERDELEN DIE AAN ONDERHOUD ONDERHEVIG ZIJH.
- DEMONTEER NIETS EN KNCEI NIET AAN DE S.R.S.
- LAAT DE S.R.S. NIET VALLEN.

ACHTUNG
- WARTUNGSFREIES BAUTEIL: NICHT ÖFFNEN, ZERLEGEN, ODER VERÄNDERN!
- NICHT WERFEN!
- TROCKEN UND GESCHÜTZT LAGERN!

N: LABEL AIRBAG



SRS Airbag System Type 2:



A: MAINTENANCE LID CAUTION

CAUTION: SRS
BEFORE MAINTENANCE, SWITCH OFF THE IGNITION.
ATTENTION
AVANT TOUT ENTRETIEN, COUPER LE CONTACT.
ACHTUNG
VOR WARTUNG ZÜNDUNG AUSSCHALTEN.
LET OP
ZET HET KONTAKTSLOT AF ALVORENS MET HET ONDERHOUD TE BEGINNEN.

B: SLIP RING CAUTION

SRS
- CAUTION REFER TO THE SHOP MANUAL.
- ACHTUNG WERKSTATT HANDBUCH LESEN.
- ATTENTION SE REPORTER AU MANUEL D'ATELIER.
- WAARSCHUWING LEES HET WERKPLAATS HANDBOEK.

C: MONITOR CAUTION

CAUTION SRS
REFER TO THE SHOP MANUAL
ATTENTION
SE REPORTER AU MANUEL D'ATELIER
WAARSCHUWING
LEES HET WERKPLAATS HANDBOEK
ACHTUNG
- WERKSTATT HANDBUCH LESEN
- DER GASGENERATOR IN DIESEM GEHÄUSE DARF NUR FÜR INSASSEN-RÜCKHALTESYSTEME MIT LUFTSACK IN KRAFTFAHRZEUGE MONTIERT WERDEN. DIE MONTAGE UND DEMONTAGE DES GASGENERATORS DARF NUR VON DAFÜR GESCHULTEM PERRSONAL VORGENCHMEN VERDEN.

(cont'd)

Warning/Caution Label Locations

(cont'd)

D: COVER CAUTION

CAUTION: SRS
ACHTUNG
- REFER TO THE SHOP MANUAL
- SE REPORTER AU MANUEL D'ATELIER.
- WERKSTATT HANDBUCH LESEN.
- LEES HET WERKPLAATSHANDBOEK.

E: DRIVER INFORMATION (SUNVISOR)
(Except KE, KQ, KS models)

ALWAYS WEAR YOUR SEAT BELT SRS
- THIS CAR IS EQUIPPED WITH A DRIVER AIRBAG AS A SUPPLEMENTAL RESTRAINT SYSTEM (S.R.S.).
- IT IS DESIGNED TO SUPPLEMENT THE SEAT BELT.
- IF YOUR SRS INDICATOR LIGHTS WHILE DRIVING, SEE YOUR AUTHORIZED HONDA DEALER.

ATTACHEZ TOUJOURS VOTRE CEINTURE SRS
- CE VEHICULE EST EQUIPE D'UN COUSSIN D'AIR POUR LE CONDUCTEUR QUI CONSTITUE UN SYSTEME DE RETENUE COMPLEMENTAIRE (S.R.S.).
- CE COUSSIN D'AIR COMPLETE LA FONCTION DE LA CEINTURE DE SECURITE.
- SI LE TEMOIN SRS S'ALLUME PENDANT LA CONDUITE, ADRESSEZ-VOUS A VOTRE CONCESSIONNAIRE HONDA OFFICIEL.

SICHERHEITSGURTE
BEI JEDER FAHRT ANLEGEN SRS
- DIESES FAHRZEUG BESITZT EINEN FAHRER-AIRBAG ALS ZUSÄTZLICHES RÜCKHALTESYSTEM (S.R.S.).
- ES IST EINE ERGÄNZUNG ZUM SICHERHEITGURT.
- WENN DUE SRS-KONTROLLEUCHTE WAHREND DER FAHRT AUFLEUCHTET, UMGEHEND FINEN HONDA HÄNDLER AUFSUCHEN.

DRAAG ALTIJD UW VEILIGHEIDSGORDEL SRS
- DIT VOERTUIG IS UITGERUST MET EEN LUCHTKUSSEN AAN DE BESTUURDERSKANT ALTS EXTRA BESCHERMING (S.R.S.).
- DIT IS ONTWORPEN ALS EXTRA BESCHERMING BIJ DE VEILIGHEIDSGORDEL.
- ALS HEL SRS-WAARSCHUWINGSLAMPJE GAAT BRANDEN ONDER HET RIJDEN. NEEM DAN KONTAKT OP MET EEN HONDA DEALER.

(KE, KQ models)

SRS ALWAYS WEAR YOUR SEAT BELT
- THIS CAR IS EQUIPPED WITH A DRIVER AIRBAG AS A SUPPLEMENTAL RESTRAINT SYSTEM (S.R.S.).
- IT IS DESIGNED TO SUPPLEMENT THE SEAT BELT.
- IF YOUR SRS INDICATOR LIGHTS WHILE DRIVING SEE YOUR AUTHORIZED HONDA DEALER.

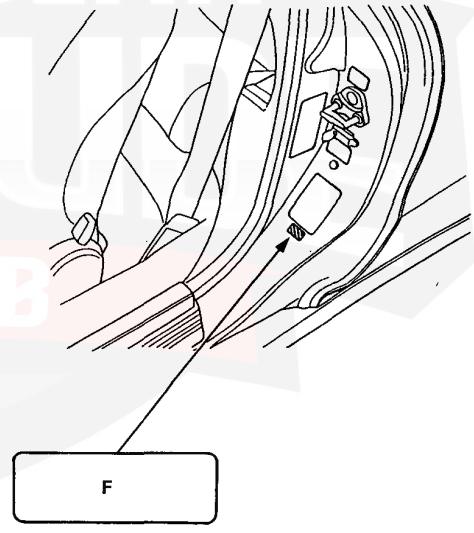
(KS model)

SRS ALWAYS WEAR YOUR SEAT BELT
- THIS CAR IS EQUIPPED WITH A DRIVER AIRBAG AS A SUPPLEMENTAL RESTRAINT SYSTEM (S.R.S.).
- IT IS DESIGNED TO SUPPLEMENT THE SEAT BELT.
- IF YOUR SRS INDICATOR LIGHTS WHILE DRIVING SEE YOUR AUTHORIZED HONDA DEALER.

SRS ANVÄND ALLTID BILBÄLTET
- DETTA FORDON HAR EN LUFTKUODDE FÖR FÖRARSÄTET SOM ETT KOMPLEMENTERANDE SKYDDSSYSTEM (S.R.S.).
- DET ÄR ÄMNAT ATT KOMPLEMENTERA BILBÄLTET.
- OM SRS-INDIKATORN TÄNDS UNDER KÖRNING SKALL DU KONTAKTA EN AUKTORISERAD HONDAÄTERFÖRSÄLJARE.

SRS KÄYTÄ AINA TURVAVÖITÄ
- TÄMÄ AUTO ON VARUSTETTU AJAJAN ILMATYYNYLLÄ JOKA ON YLMÄÄRÄINEN TUKIJÄRJESTELMÄ (S.R.S.).
- SE ON SUUNNITELTU TÄYDENTÄMÄÄN TURVAVYÖTÄ.
- JOS SRS-MERKKIVALO SYTTYY AJON AIKANA. OTTAKAA YHTEYS VALTUUTETTUUN HONDAMYYJÄÄN.

F: LABEL AIRBAG



G: SRS WARNING (ENGINE HOOD)
(Except KG, KS models)

WARNING: SRS
THIS VEHICLE IS EQUIPPED WITH A DRIVER AIRBAG AS A SUPPLEMENTAL RESTRAINT SYSTEM (SRS).
ALL S.R.S. ELECTRICAL WIRING AND CONNECTORS ARE COLORED YELLOW. DO NOT USE ELECTRICAL TEST EQUIPMENT ON THESE CIRCUITS. TAMPERING WITH OR DISCONNECTING THE S.R.S. WIRING COULD RESULT IN ACCIDENTAL FIRING OF THE INFLATOR OR MAKE THE SYSTEM INOPERATIVE, WHICH MAY RESULT IN SERIOUS INJURY.

ATTENTION SRS
CE VEHICULE EST EQUIPE D'UN COUSSIN D'AIR DU COTE CONDUCTEUR QUI CONSTITUE UN SYSTEME DE RETENUE COMPLEMENTAIRE (S.R.S.)
TOUS LES FILS ET CONNECTEURS ELECTRIQUES DU SYSTEME DE RETENUE COMPLEMENTAIRE (S.R.S.) SONT DE COULEUR JAUNE. N'UTILISEZ PAS UN EQUIPEMENT D'ESSAIS ELECTRIQUES SUR CES CIRCUITS. NE TOUCHEZ PAS ET NE DEBRANCHEZ PAS LES FILS DU SYSTEME S.R.S. CAR CECI POURRAIT DE TRADUIRE PAR LE DECLENCHEMENT ACCIDENTEL DU GONFLEUR OU RENDRE LE SYSTEME INOPERANT ET VOUS EXPOSER AINSI A DE GRAVES BLESSURES.

WARNUNG SRS
DIESES FAHRZEUG IST MIT EINEM FAHRER-AIRBAG (SRS) ALS ZUSÄTZLICHEM RÜCKHALTESYSTEM AUSGERÜSTET.
ALLE ELEKTRISCHEN KABEL, SOWIE DIE ZUGEHÖRIGEN STECKVERBINDER DES S.R.S. -SYSTEMS SIND IN GELBER FARBE AUSGEFÜHRT.
KEINE ELEKTRISCHEN PRÜGERÄTE AN DIE S.R.S. -VERKABELUNG ANSCHLIEBEN. VERÄNDERN ODER UNTERBRECHEN DER S.R.S -VERKABELUNG KANN UNKONTROLLIERTES ZÜNDEN DES GASGENERATORS AUSLÖSEN. ODER DAS SYSTEM AUBER FUNKTION SETZEN. WAS ZU ERNSTHAFTEN VERLETZUNGEN FÜHREN KANN.

WAARSCHUWING SRS
DIT VOERTUIG IS UITGERUST MET EEN LUCHTKUSSEN AAN DE BESTUURDERSKANT ALS EXTRA BESCHERMING (S.R.S.).
ALLE ELEKTRISCHE LEIDINGEN EN AANSLUITIGEN VAN DE S.R.S. ZIJN GEEL GEKLEURD. GEBRUIK GEEN ELEKTRISCHE TESTAPPARATUUR VOOR DEZE CIRCUITS. KNOEIEN MET OF LOSKOPPELEN VAN DE S.R.S. LEIDINGEN KAN LEIDEN TOT BRAND IN DE VULINRICHTING OF TOT UITSCHAKELEN VAN HET SYSTEEM DIT KAN TOT ERNSTIGE ONGELUKKEN LEIDEN.

H: SRS WARNING (ENGINE HOOD)
(KQ model)

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)
THIS VEHICLE IS EQUIPPED WITH DRIVER AND FRONT SEAT PASSENGER AIRBAGS AND FRONT SEAT BELT TENSIONER SYSTEMS.
ALL SRS ELECTRICAL WIRING AND CONNECTORS ARE COLORED YELLOW.
TAMPERING WITH, DISCONNECTING OR USING ELECTRICAL TEST EQUIPMENT ON THE SRS WIRING CAN MAKE THE SYSTEM INOPERATIVE OR CAUSE ACCIDENTAL FIRING OF THE INFLATOR.

⚠ WARNING
THE AIRBAG INFLATOR IS EXPLOSIVE AND, IF ACCIDENTALLY DEPLOYED, CAN SERIOUSLY HURT YOU. FOLLOW SERVICE MANUAL INSTRUCTIONS CAREFULLY.

(KS model)

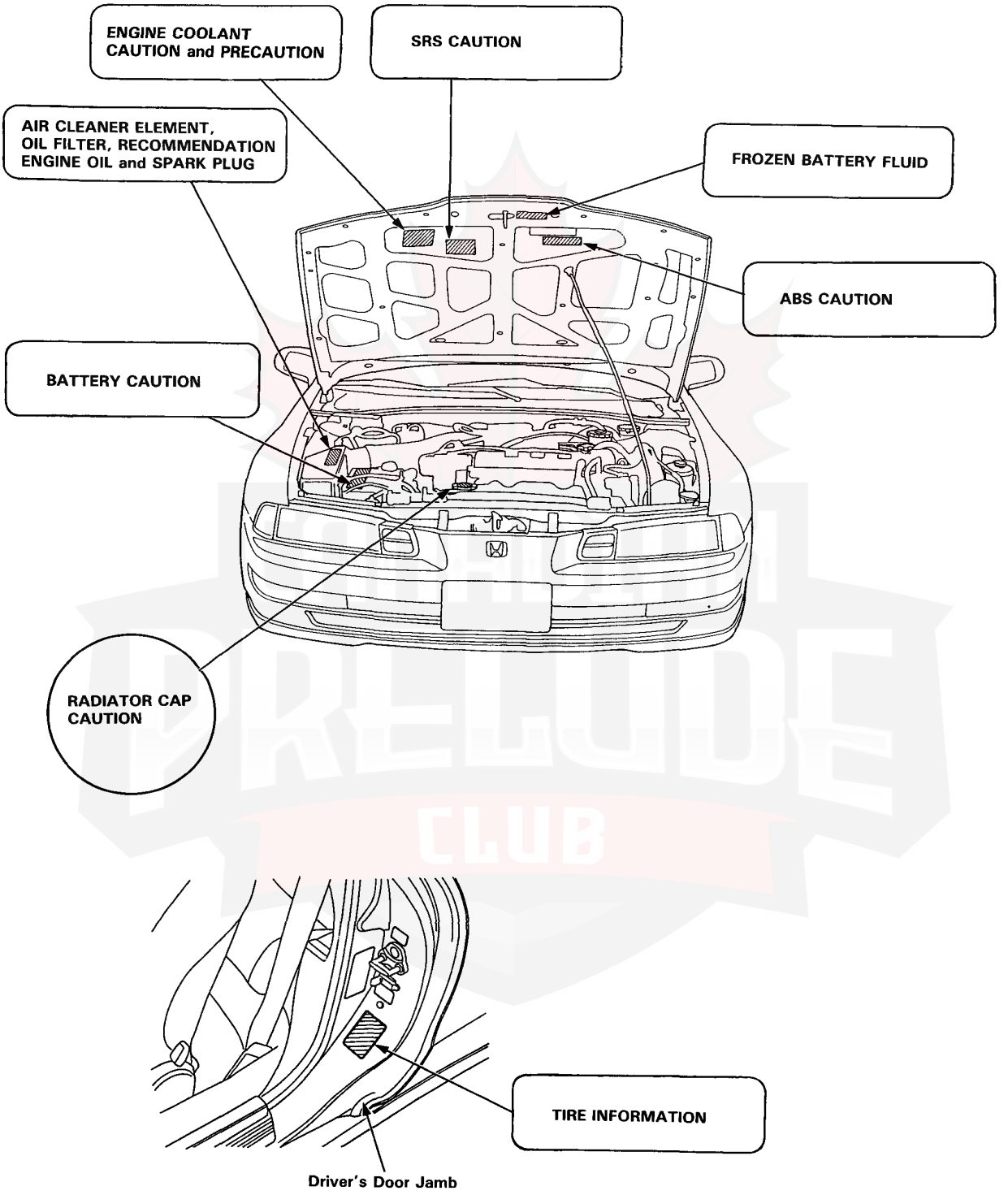
WARNING SRS
THIS VEHICLE IS EQUIPPED WITH A AIRBAG SYSTEM AS A SUPPLEMENTAL RESTRAINT SYSTEM. (SRS)
ALL S.R.S. ELECTRICAL WIRING AND CONNECTORS ARE COLORED YELLOW.
DO NOT USE ELECTRICAL TEST EQUIPMENT ON THESE CIRCUITS.
TAMPERING WITH OR DISCONNECTING THE S.R.S. WIRING COULD RESULT IN ACCIDENTAL FIRING OF THE INFLATOR OR MAKE THE SYSTEM INOPERATIVE, WHICH MAY RESULT IN SERIOUS INJURY.

VARNING SRS
DETTA FORDON HAR EN LUFTKUDDE FÖR FÖRARSÄTET SOM ETT KOMPLETTERANDE SKYDDSSYSTEM (SRS). SAMTLIGA ELLEDNINGAR OCH KONTAKTER I SRS-SYSTEMET ÄR GULFÄRGADE. ANVÄND INTE ELEKTRISK PROVUTRUSTNING FÖR DESSA KRETSAR. OM DU ÄNDRAR ELLER LOSSAR EN SRS-LEDNING KAN DET RESULTERA I EN OAVSIKTLIG UTLÖSNING AV TRYCKPUMPEN ELLER GÖRA ATT SYSTEMET SLUTAR FUNGERA. DÅ KAN EN ALLVARLIG OLYCKA UPPSTÅ.

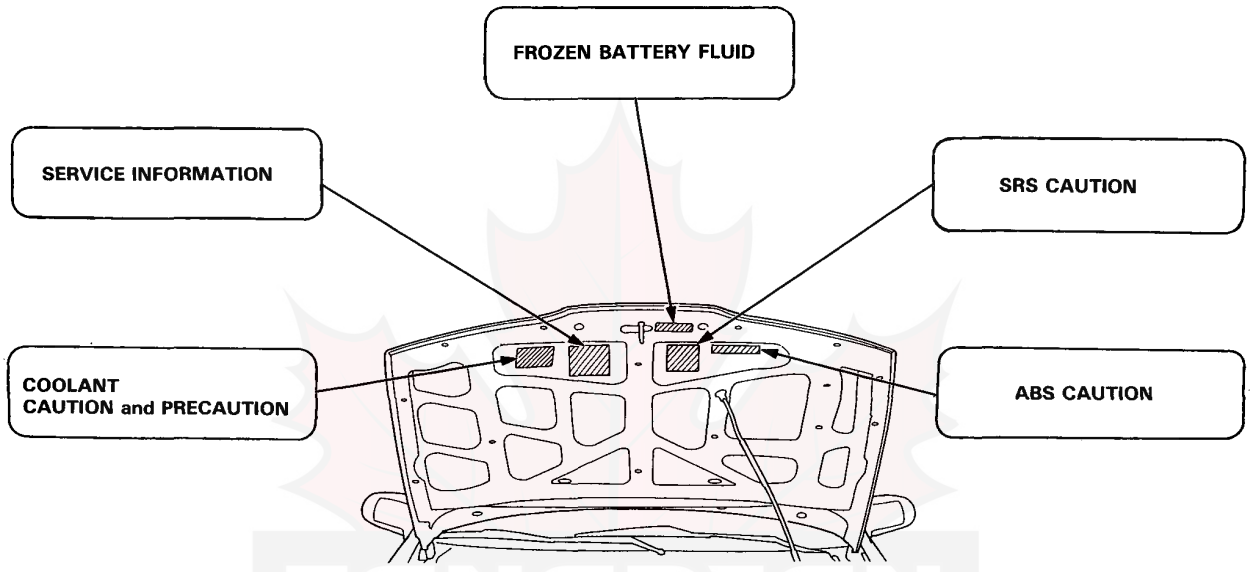
VAROITUS SRS
TÄSSÄ AUTOSSA ON YLIMÄÄRÄISENÄ TUKIJÄRJESTELMÄNÄ AJAJAN ILMATYYNY. (SRS)
KAIKKI SRS-SÄHKÖJOHDOT JA -LIITTIMET OVAT KELTAISET.
ÄLÄ KÄYTÄ SÄHKÖKOELAITTEITA NÄISSÄ VIRTAPIIREISAÄ. SRS-JOHTOJEN TUKKEAMINEN TAI IRROTTAMINEN SAATTAA SYTYTTÄÄ VAHINGOSSA PUMPUN TAI TEHDÄ JÄRJESTELMÄN KÄYTTÖKELVOTTOMAKSI.
TÄSTÄ-TAAS SAATTAA AIHEUTUA VAKAVIA VAURIOITA.

Warning/Caution Label Locations

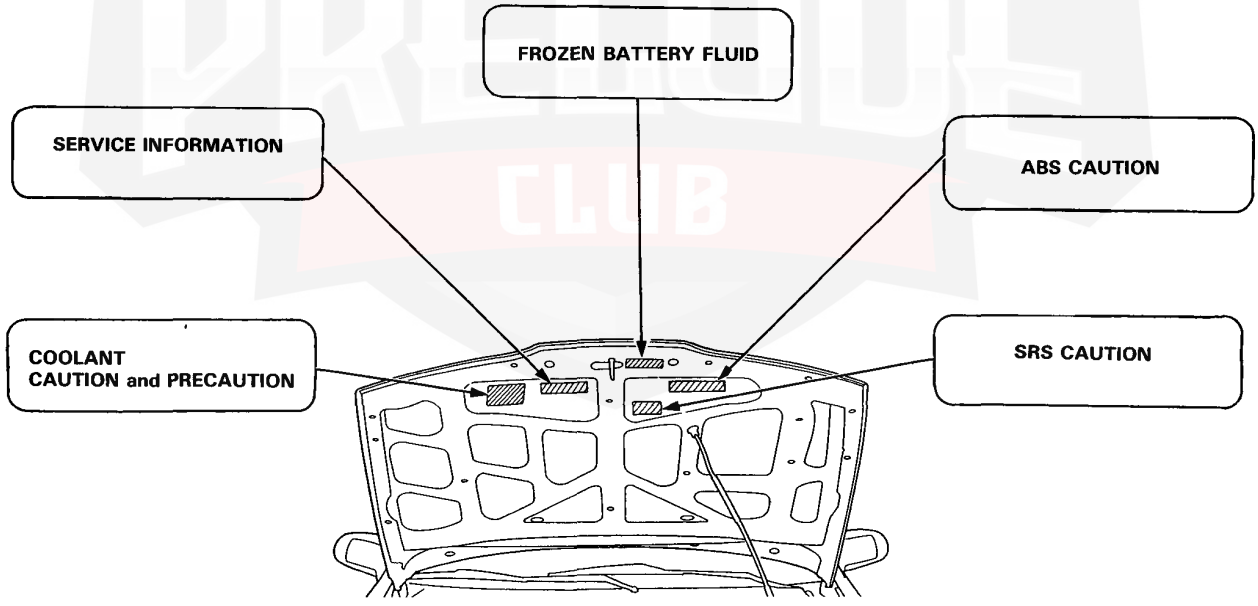
(cont'd)



KS model:



KQ model:



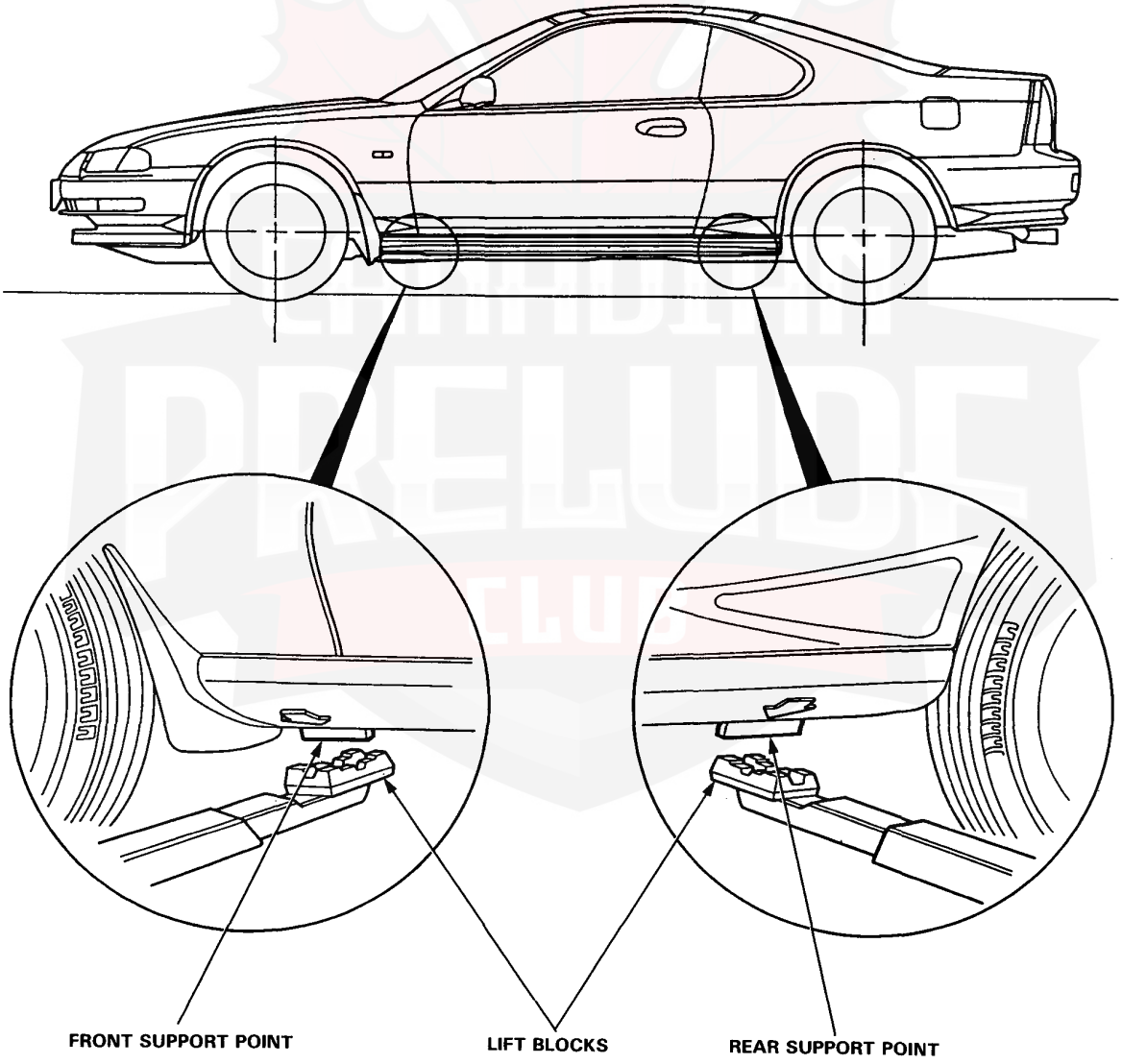
Lift and Support Points

Lift

⚠ WARNING When heavy rear components such as suspension, fuel tank, spare tyre and trunk lid are to be removed, place additional weight in the trunk before hoisting. When substantial weight is removed from the rear of the car, the center of gravity may change and can cause the car to tip forward on the hoist.

NOTE: Since each tyre/wheel assembly weighs approximately 14 kg (30 lbs), placing the front wheels in the trunk can assist with weight distribution.

1. Place the lift blocks as shown.
2. Raise the hoist until the tyres are slightly off the ground and rock the car to be sure it is firmly supported.
3. Raise the hoist to full height and inspect lift points for solid support.



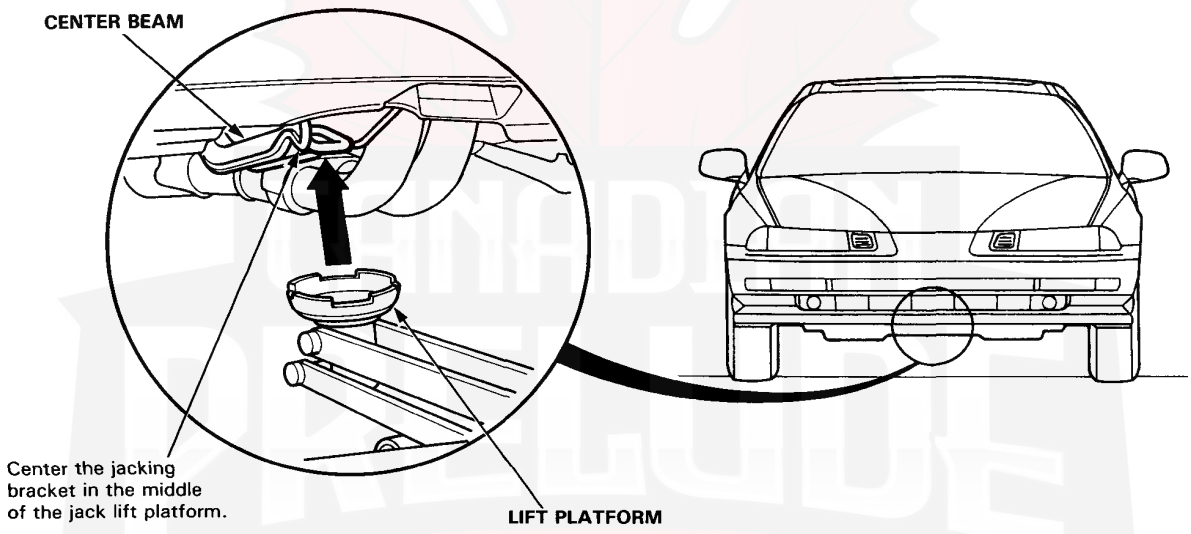
Floor Jack

1. Set the parking brake and block the wheels that are not being lifted.
2. When lifting the rear of the car, put the gearshift lever in reverse (Automatic transmission in [P] position).
3. Raise the car high enough to insert the safety stands.
4. Adjust and place the safety stands as shown on page 1-18 so the car will be approximately level, then lower the car onto them.

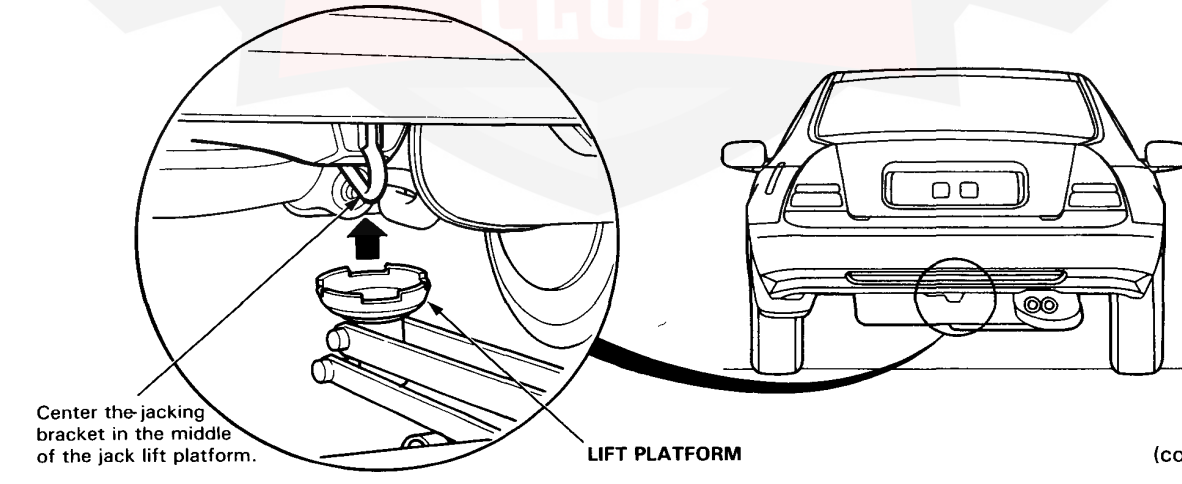
⚠ WARNING

- **Always use safety stands when working on or under any vehicle that is supported only by a jack.**
- **Never attempt to use a bumper jack for lifting or supporting the car.**

Front



Rear



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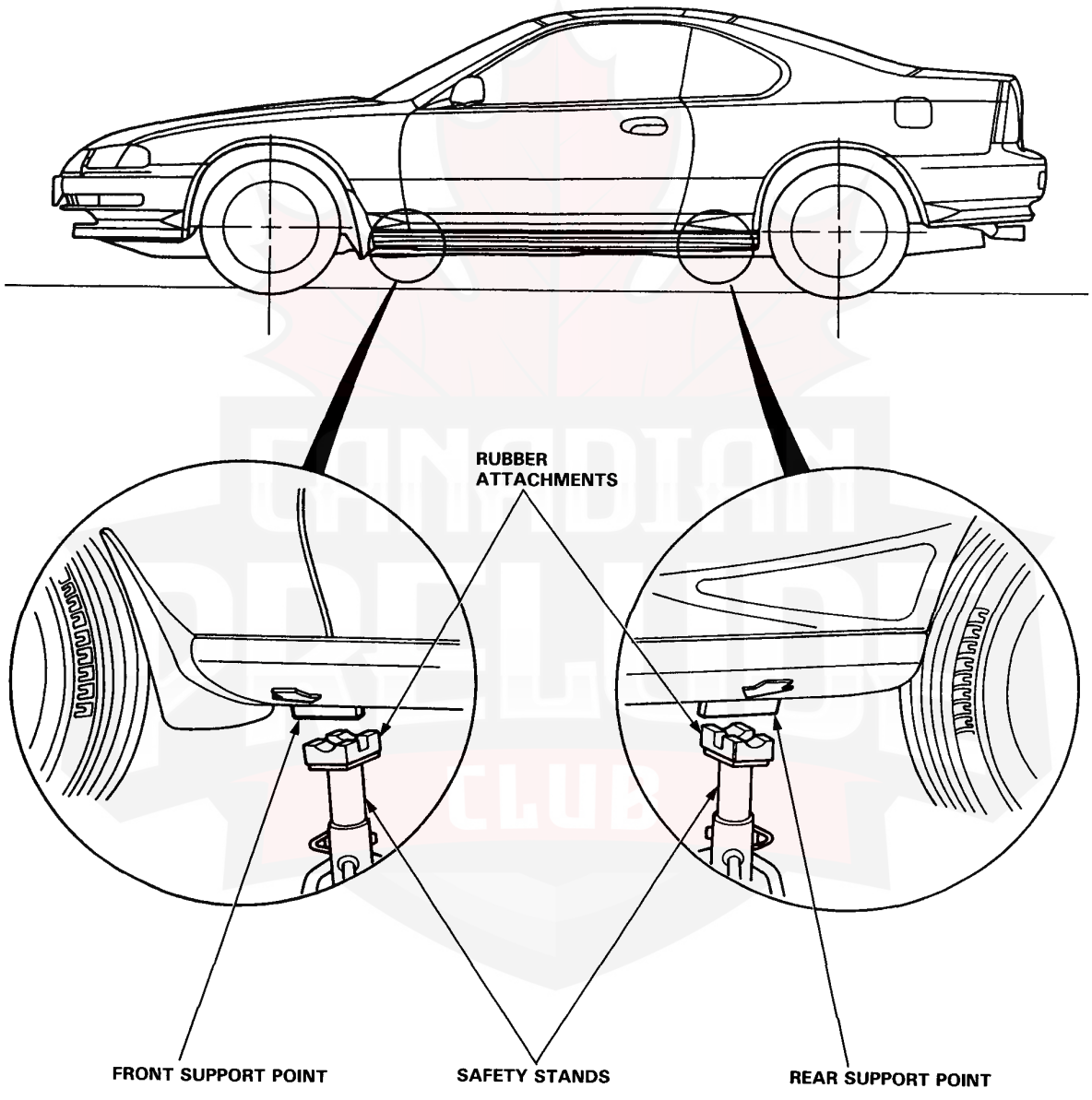
Lift and Support Points

Safety Stands



Towing

If the car needs to be towed, call a professional towing service. Never tow the car behind another car with just a rope or chain. It is very dangerous.

Emergency Towing
There are three popular methods of towing a car:

Flat-bed Equipment — The operator loads the car on the back of a truck. This is the best way of transporting the car.

Wheel Lift Equipment — The tow truck uses two pivoting arms that go under the tires (front or rear) and lifts them off the ground. The other two wheels remain on the ground.

Sling-type Equipment — The two truck uses metal cables with hooks on the ends. These hooks go around parts of the frame or suspension and the cables lift that end of the car off the ground. The car's suspension and body can be seriously damaged if this method of towing is attempted.

If the car cannot be transported by flat-bed, it should be towed with the front wheels off the ground. If due to damage, the car must be towed with the front wheels on the ground, do the following:

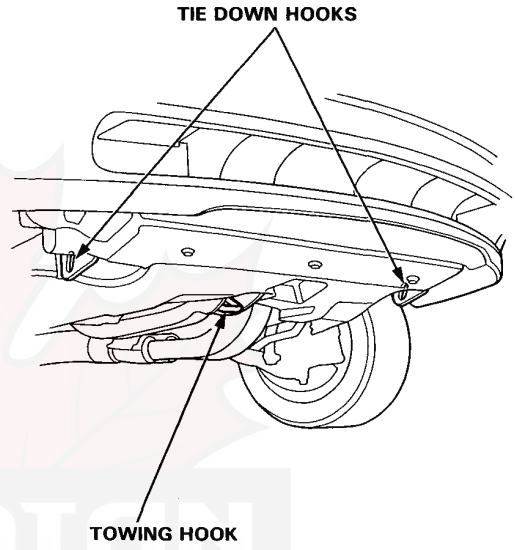
5-speed Manual Transmission
- Release the parking brake.
- Shift the transmission to Neutral.

Automatic Transmission
- Release the parking brake.
- Start the engine.
- Shift to [D4] position, then [N] position.
- Turn off the engine.

NOTICE: Improper towing preparation will damage the transmission. Follow the above procedure exactly. If you cannot shift the transmission or start the engine (automatic transmission), your car must be transported on a flat-bed.

- It is best to tow the car no farther than 50 miles (80km), and keep the speed below 35 mph (55 km/h).

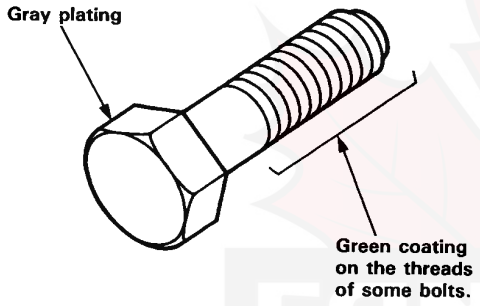
NOTICE: Trying to lift or tow the car by the bumpers will cause serious damage. The bumpers are not designed to support the car's weight.



Handling of Special Nuts and Bolts

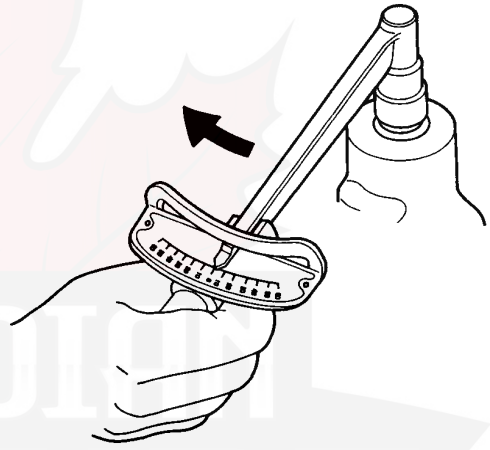
Because the front sub frame sections on this car are constructed with aluminum alloys, use only the special "Dacro" type nuts and bolts recommended by Honda.

NOTE:
- Dacro finish can be identified by gray plating.
- Some Dacro finish bolts have a green coating on the thread section of the bolt for easier application. This type of bolt is called a "Torquer" bolt.
- Use of other types of nuts and bolts may cause electrolysis and corrosion, which in turn could cause the bolt to loosen.



Gray plating: "Dacro" type
Gray plating + Green coating on the threads: "Torquer" type

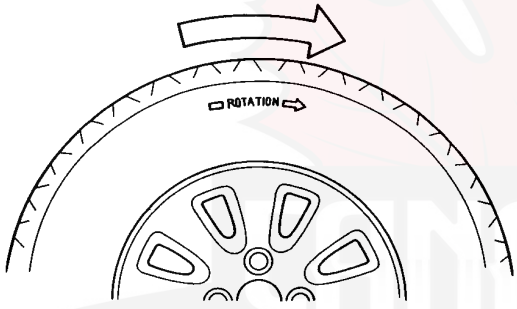
1. When replacing nuts and bolts, use only the same type.
2. Tighten the nuts and bolts with a torque wrench to the specifications provided in this manual.
3. Clean all thread ridges with a non wire type bristle brush. Foreign matter in the threads may cause the bolt to loosen.
4. Sections on this car requiring the use of Dacro nuts and bolts will be indicated by a (☆) in this manual.



Handling of Tyres

Tyre Rotational Direction
The ''Dunlop Performa 8000 (tyre size: 205/55R15 87V)'' is designed to turn only in one direction. This direction is indicated on the side wall of the tire with the arrow mark.

- When installing the wheels, do not interchange the right and left tyres. Install the wheels with the arrow mark pointing in the direction of rotation.
- When replacing the tyres, install the tires with the arrow mark pointing in the direction of the wheel rotation.



Special Tools

Individual tool lists are located at the front of each section.

Specifications

Standards and Service Limits

Cylinder Head/Valve Train (F20A4, F22A1, F22A2 engines) — Sections 6

	MEASUREMENT			STANDARD (NEW)	SERVICE LIMIT
Compression	250 min^{-1} (rpm) and wide open throttle kPa (kg/cm^2, psi)	Nominal Minimum Maximum variation		1,250 (12.5, 178) 950 (9.5, 135) 200 (2.0, 28)	
Cylinder head	Warpage Height			— 99.95-100.05 (3.935-3.939)	0.05 (0.002) —
Camshaft	End play Camshaft-to-holder oil clearance Runout Cam lobe Height	 F20A4, F22A2 engines F22A1 engine	 IN EX IN EX	0.05-0.15 (0.002-0.006) 0.050-0.089 (0.002-0.004) 0.03 (0.001) max. 38.741 (1.5252) 38.972 (1.5343) 38.526 (1.5167) 38.778 (1.5266)	0.50 (0.02) 0.15 (0.006) 0.04 (0.002) — — — —
Valve	Valve clearance Valve stem O.D. Stem-to-guide clearance		IN EX IN EX IN EX	0.23-0.28 (0.009-0.011) 0.27-0.32 (0.011-0.013) 5.485-5.495 (0.2159-0.2163) 5.450-5.460 (0.2146-0.2150) 0.020-0.045 (0.0008-0.0018) 0.055-0.080 (0.0021-0.0031)	— — 5.455 (0.2148) 5.420 (0.2134) 0.08 (0.003) 0.12 (0.005)
Valve seat	Width Stem installed height		IN EX IN EX	1.25-1.55 (0.049-0.061) 1.25-1.55 (0.049-0.061) 48.245-48.715 (1.8994-1.9179) 50.315-50.785 (1.9809-1.9994)	2.0 (0.079) 2.0 (0.079) — —
Valve spring	Free length	F20A4, F22A2 engines F22A1 engine 	IN EX IN EX 	53.16 (2.0929)*1 53.15 (2.0925)*2 55.80 (2.1968)*1 55.78 (2.1960)*2 54.81 (2.1578) *1 54.82 (2.1582) *2 56.26 (2.2150) *1 56.28 (2.2157) *2	— — — — — — — —
Valve guide	I.D. Installed height		IN EX IN EX	5.515-5.530 (0.2171-0.2177) 5.515-5.530 (0.2171-0.2177) 23.75-24.25 (0.915-0.955) 15.05-15.55 (0.593-0.612)	5.53 (0.218) 5.53 (0.218) — —
Rocker arm	Arm-to-shaft clearance		IN EX	0.017-0.050 (0.0007-0.0020) 0.018-0.054 (0.0007-0.0021)	0.08 (0.003) 0.08 (0.003)

*1: CHUO HATSUJO manufactured valve spring
*2: NIHON HATSUJO manufactured valve spring

Cylinder Head/Valve Train (H23A1, H23A2 engine) — Sections 6

Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 min^{-1} (rpm) and wide open throttle kPa (kg/cm^2, psi)	Nominal Minimum Maximum variation	1,250 (12.5, 178) 950 (9.5, 135) 200 (2.0, 28)	
Cylinder head	Warpage Height		— 131.95-132.05 (5.195-5.199)	0.05 (0.002) —
Camshaft	End play *Camshaft-to-holder oil clearance* Total runout Cam lobe height	 IN EX	0.05-0.15 (0.002-0.006) 0.050-0.089 (0.0020-0.0035)*1 0.100-0.139 (0.0039-0.0055)*2 0.03 (0.001) max. 33.661 (1.3252) 33.725 (1.3278)	0.5 (0.02) 0.15 (0.006)*1 0.20 (0.008)*2 0.04 (0.002) — —
Valve	Valve clearance Valve stem O.D. Stem-to-guide clearance	IN EX IN EX IN EX	0.07-0.11 (0.003-0.004)*3 0.15-0.19 (0.006-0.007)*3 6.580-6.590 (0.2591-0.2594) 6.550-6.560 (0.2579-0.2583) 0.02-0.05 (0.001-0.002) 0.05-0.08 (0.002-0.003)	— — 6.55 (0.258) 6.52 (0.257) 0.08 (0.003) 0.11 (0.004)
Valve seat	Width Stem installed height	IN EX IN EX	1.25-1.55 (0.049-0.061) 1.25-1.55 (0.049-0.061) 39.365-39.835 (1.5498-1.5683) 39.195-39.635 (1.5431-1.5604)	2.0 (0.08) 2.0 (0.08) 40.085 (1.5781) 39.885 (1.5703)
Valve spring	Free length	IN EX	47.14 (1.856) 47.14 (1.856)	
Valve guide	I.D. Installed height	IN EX IN EX	6.61-6.63 (0.260-0.261) 6.61-6.63 (0.260-0.261) 13.25-13.75 (0.522-0.541) 13.75-14.25 (0.541-0.561)	6.70 (0.264) 6.70 (0.264) — —

*1: Exhaust No. 5 journal
*2: Except exhaust No. 5 journal
*3: Measuring point between camshaft and rocker arm

(cont'd)

Standards and Service Limits

Cylinder Head/Valve Train (H22A2 engine) — Sections 6

	MEASUREMENT			STANDARD (NEW)	SERVICE LIMIT
Compression	250 min^{-1} (rpm) and wide open throttle	Nominal		1,300 (13.0, 185)	
	kPa (kg/cm^2, psi)	Minimum		950 (9.5, 135)	
		Maximum variation		200 (2.0, 28)	
Cylinder head	Warpage			—	0.05 (0.002)
	Height			141.95-142.05 (5.589-5.593)	—
Camshaft	End play			0.05-0.15 (0.002-0.006)	0.5 (0.02)
	Camshaft-to-holder oil clearance			0.050-0.089 (0.0020-0.0035)	0.15 (0.006)
	Total runout			0.03 (0.001) max.	0.04 (0.002)
	Cam lobe height	IN	Primary	34.041 (1.3402)	—
			Mid	36.856 (1.4510)	—
			Secondary	34.971 (1.3768)	—
		EX	Primary	33.745 (1.3285)	—
			Mid	36.323 (1.4300)	—
			Secondary	34.683 (1.3655)	—
Valve	Valve clearance		IN	0.15-0.19 (0.006-0.007)*3	—
			EX	0.17-0.21 (0.007-0.008)*3	—
	Valve stem O.D.		IN	5.475-5.485 (0.2156-0.2159)	5.445 (0.2144)
			EX	5.475-5.485 (0.2156-0.2159)	5.445 (0.2144)
	Stem-to-guide clearance		IN	0.025-0.055 (0.0010-0.0022)	0.08 (0.003)
			EX	0.050-0.080 (0.0020-0.0031)	0.11 (0.004)
Valve seat	Width		IN	1.25-1.55 (0.049-0.061)	2.0 (0.079)
			EX	1.25-1.55 (0.049-0.061)	2.0 (0.079)
	Stem installed height		IN	37.465-37.935 (1.4750-1.4935)	38.185 (1.5033)
			EX	37.165-37.635 (1.4632-1.4817)	37.885 (1.4915)
Valve spring	Free length	IN	Outer	45.16 (1.778) *1	—
				45.76 (1.802) *2	—
			Inner	41.78 (1.645) *1	—
				41.75 (1.644) *2	—
		EX	Outer	46.72 (1.839) *1	—
				46.74 (1.840) *2	—
			Inner	39.32 (1.548) *1	—
				39.28 (1.546) *2	—
Valve guide	I.D.		IN	5.510-5.530 (0.2169-0.2177)	5.55 (0.219)
			EX	5.535-5.555 (0.2179-0.2187)	5.60 (0.220)
	Installed height		IN	12.55-13.05 (0.494-0.514)	13.30 (0.524)
			EX	12.55-13.05 (0.494-0.514)	13.30 (0.524)
Rocker arm	Arm-to-shaft clearance		IN	0.025-0.052 (0.0010-0.0020)	0.08 (0.003)
			EX	0.025-0.052 (0.0010-0.0020)	0.08 (0.003)

*1: CHUO HATSUJO manufactured valve spring
*2: NIHON HATSUJO manufactured valve spring
*3: Measuring point between camshaft and rocker arm

Engine Block — Section 7

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface	0.07 (0.003) max.	0.10 (0.004)
	Bore diameter F20A4, F22A1, F22A2 engines A	85.010-85.020 (3.3468-3.3472)	85.07 (3.349)
	B	85.000-85.010 (3.3465-3.3468)	
	H23A1, H23A2, H22A2 engines A	87.010-87.020 (3.4256-3.4260)	87.07 (3.428)
	B	87.000-87.010 (3.4252-3.4256)	
	Bore taper	—	0.05 (0.002)
	Reboring limit F20A4, F22A1, F22A2 engines	—	0.50 (0.020)
	H23A1, H23A2, H22A2 engines	—	0.25 (0.010)
Piston	Skirt O.D.*1 F20A4, F22A1, F22A2 engines		
	No Letter (A)	84.980-84.990 (3.3457-3.3461)	84.970 (3.3453)
	Letter B	84.970-84.980 (3.3453-3.3457)	84.960 (3.3449)
	H23A1, H23A2, H22A2 engines		
	No Letter (A)	86.990-87.003 (3.4248-3.4253)	87.980 (3.4638)
	Letter B	86.980-86.993 (3.4244-3.4249)	87.970 (3.4634)
	Clearance in cylinder F20A4, F22A1, F22A2 engines	0.020-0.040 (0.0008-0.0016)	0.05 (0.002)
	H23A1, H23A2, H22A2 engines	0.007-0.030 (0.0003-0.0012)	0.04 (0.002)
	Groove width (for ring)		
	F20A4, F22A1, F22A2 engines		
	Top	1.220-1.230 (0.0480-0.0484)	1.25 (0.049)
	Second	1.220-1.230 (0.0480-0.0484)	1.25 (0.049)
	Oil	2.805-2.820 (0.1104-0.1110)	2.85 (0.112)
	H23A1, H23A2, H22A2 engines		
	Top	1.230-1.245 (0.0484-0.0490)	1.265 (0.0498)
	Second	1.230-1.245 (0.0484-0.0490)	1.265 (0.0498)
	Oil	2.805-2.820 (0.1104-0.1110)	2.85 (0.112)
Piston ring	Ring-to-groove clearance Top	0.035-0.060 (0.0014-0.0024)	0.13 (0.005)
	Second	0.030-0.055 (0.0012-0.0022)	0.13 (0.005)
	Ring end gap F20A4, F22A1, F22A2 engines		
	Top	0.20-0.35 (0.008-0.014)	0.60 (0.024)
	Second	0.40-0.55 (0.016-0.022)	0.70 (0.028)
	Oil	0.20-0.70 (0.008-0.028)	0.80 (0.031)
	H23A1, H23A2, H22A2 engines		
	Top	0.25-0.35 (0.010-0.014)	0.60 (0.024)
	Second	0.60-0.75 (0.024-0.030)	0.90 (0.035)
	Oil	0.20-0.50 (0.008-0.020) *2	0.60 (0.024) *2
		0.20-0.70 (0.008-0.028) *3	0.80 (0.031) *3
Piston Pin	O.D.	21.994-22.000 (0.8659-0.8661)	—
	Pin-to-piston clearance F20A4, F22A1, F22A2 engines	0.012-0.024 (0.0005-0.0009)	—
	H23A1, H23A2, H22A2 engines	0.012-0.026 (0.0005-0.0010)	—
Connecting rod	Pin-to-rod interference	0.013-0.032 (0.0005-0.0013)	—
	Small end bore diameter	21.968-21.981 (0.8649-0.8654)	—
	Large end bore diameter		
	Norminal Except F20A4 engine	51.0 (2.01)	—
	F20A4 engine	48.0 (1.89)	—
	End play installed on crankshaft	0.15-0.30 (0.006-0.012)	0.40 (0.016)
	Small end bore-to-large end bore parallelism	0.12 (0.005)/100 max.	0.15 (0.006)/100
Crankshaft	Main journal diameter No. 1 and 2 journals	49.976-50.000 (1.9676-1.9685)	—
	No. 3 journal	49.972-49.996 (1.9674-1.9683)	—
	No. 4 journal	49.984-50.008 (1.9679-1.9688)	—
	No. 5 journal	49.988-50.012 (1.9680-1.9690)	—
	Rod journal diameter Except F20A4 engine	47.976-49.000 (1.8888-1.8898)	—
	F20A4 engine	44.976-45.000 (1.7707-1.7717)	—
	Taper	0.005 (0.0002) max.	0.006 (0.0002)
	Out-of-round	0.005 (0.0002) max.	0.006 (0.0002)
	End play	0.10-0.35 (0.004-0.014)	0.45 (0.018)
	Total runout	0.03 (0.001) max.	0.04 (0.002)
Bearings	Main bearing-to-journal oil clearance		
	No. 1 and 2 journals	0.021-0.045 (0.0008-0.0018)	0.050 (0.0020)
	No. 3 journal	0.025-0.049 (0.0010-0.0019)	0.055 (0.0022)
	No. 4 journal	0.013-0.037 (0.0005-0.0015)	0.050 (0.0020)
	No. 5 journal	0.009-0.033 (0.0004-0.0013)	0.040 (0.0016)
	Rod bearing-to-journal oil clearance		
	F20A4 engine	0.015-0.043 (0.0006-0.0017)	0.050 (0.0020)
	F22A1, F22A2 engines	0.021-0.049 (0.0008-0.0020)	0.055 (0.0022)
	H23A1, H23A2, H22A2 engines	0.027-0.055 (0.0011-0.0022)	0.060 (0.0024)

*1: Measured at 21.0 mm (0.83 in) on F20A4, F22A1, F22A2 engines and 15.0 mm (0.59 in) on H23A1, H23A2, H22A2 engines both from bottom of skirt.
*2: TEIKOKU PISTON RING manufactured piston ring.
*3: RIKEN manufactured piston ring.

Standards and Service Limits

Engine Block — Section 7 (cont'd)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Balancer shaft	Journal diameter	No. 1 journal (front)	42.722-42.734 (1.6820-1.6824)	42.71 (1.689)
		No. 1 journal (rear)	20.938-20.950 (0.8243-0.8248)	20.92 (0.824)
		No. 2 journals	38.712-38.724 (1.5241-1.5246)	38.70 (1.524)
		No. 3 journals	34.722-34.734 (1.3670-1.3675)	34.71 (1.367)
	Journal taper		0.005 (0.0002)	—
	End play	Front	0.10-0.35 (0.004-0.014)	—
		Rear	0.06-0.18 (0.002-0.007)	—
	Total runout		0.02 (0.001)	0.03 (0.001)
	Oil clearance	No. 1 journal (rear)	0.050-0.075 (0.0020-0.0030)	0.09 (0.004)
		No. 1 (front) and No. 3 journal	0.066-0.118 (0.0026-0.0046)	0.12 (0.005)
		No. 2 journals	0.076-0.128 (0.0030-0.0050)	0.13 (0.005)
Balancer shaft bearing	I.D.	No. 1 journal (front)	42.800-42.820 (1.6850-1.6958)	42.83 (1.686)
		No. 1 journal (rear)	21.000-21.013 (0.8268-0.8273)	21.02 (0.828)
		No. 2 journals	38.800-38.820 (1.5276-1.5283)	38.83 (1.529)
		No. 3 journals	34.800-34.820 (1.3701-1.3709)	34.83 (1.371)

Engine Lubrication — Section 8

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity ℓ (US qt, Imp qt)	F20A4, F22A1, F22A2 engines	4.9 (5.2, 4.3) for engine overhaul 3.8 (4.0, 3.3) for oil change, including filter	
		H23A1, H23A2 engines	5.4 (5.7, 4.8) for engine overhaul 4.0 (4.2, 3.5) for oil change, including filter	
		H22A2 engine	5.9 (6.2, 5.2) for engine overhaul 4.8 (5.1, 4.2) for oil change, including filter	
Oil pump	Displacement ℓ (US qt, Imp qt)/min at pump 1,000 min^{-1} (rpm)		F20A4, F22A1, F22A2 engines: 7.4 (7.8, 6.5) min. H22A2, H23A1, H23A2 engines: 7.1 (7.5, 6.2) min.	— —
	Inner-to-outer rotor radial clearance		0.02-0.16 (0.001-0.006)	0.20 (0.008)
	Pump body-to-outer rotor radial clearance		0.10-0.19 (0.004-0.007)	0.21 (0.008)
	Pump body-to-rotor axial clearance		0.02-0.07 (0.001-0.003)	0.12 (0.005)
Relief valve	Pressure setting at oil termperature 80°C (176°F) kPa (kg/cm^2, psi)	at idle	70 (0.7, 10) min.	
		at 3,000 min^{-1} (rpm)	350 (3.5, 50) min.	

Cooling — Section 10

	MEASUREMENT		STANDARD (NEW)
Radiator	Engine coolant capacity including engine, heater, cooling line and reservoir ℓ (US qt, Imp qt)	F20A4, F22A1, F22A2 engines	M/T: 7.1 (7.5, 6.2) for overhaul 3.5 (3.7, 3.1) for coolant change A/T: 7.0 (7.4, 6.2) for overhaul 3.4 (3.6, 3.0) for coolant change
		H23A1, H23A2 engines	M/T: 7.4 (7.8, 6.5) for overhaul 3.8 (4.0, 3.3) for coolant change A/T: 7.3 (7.7, 6.4) for overhaul 3.7 (3.9, 3.3) for coolant change
		H22A2 engine	M/T: 7.8 (8.2, 6.9) for overhaul 4.2 (4.4, 3.7) for coolant change
	Reservoir capacity		0.6 (0.6, 0.5)
Radiator cap	Opening pressure kPa (kg/cm^2, psi)		95-125 (0.95-1.25, 13.5-17.8)
Thermostat	Start to open	°C (°F)	76-80 (169-177)
	Fully open	°C (°F)	90 (194)
	Valve lift at fully open		8.0 (0.31) min.
Water pump	Displacement ℓ (US qt, Imp qt)/min at engines pump 2,000 min^{-1} (rpm)	F20A4, F22A1, F22A2	44 (46, 40) min.
		H23A1, H23A2 engines	42 (44, 37) min.
		H22A2 engine	38.5 (40.7, 35.6) min.
Radiator fan	Thermoswitch "ON" temperature	Except H22A2 engines	90-96 (194-205)
		H22A2 engine	92-98 (198-208)
	Thermoswitch "OFF" temperature °C (°F)		Subtruct 1-7 (4-13) from actual "ON" temperature

Fuel and Emissions — Section 11

Unit of length: min (in)

	MEASUREMENT		STANDARD (NEW)
Fuel pump	Relief valve opening pressure kPa (kg/cm², psi)		450-600 (4.5-6.0, 64.0-85.3)
Pressure regurator	Pressure with regurator vacuum hose disconnected kPa (kg/cm², psi)		F22A1, H23A1, H23A2 engines: 255-305 (2.55-3.05, 36-43) F20A4, H22A2, H22A2 engines: 245-285 (2.45-2.85, 35-41)
Fuel tank	Capacity ℓ (US gal, Imp gal)		60 (15.9, 13.2)
Engine	Fast idle min⁻¹ (rpm)		1,400 ±200
	Idle speed min⁻¹(rpm) (with headlights and cooling fan off)	F20A4, F22A2 engines	M/T: 770 ±50 A/T: 770 ±50 (N or P position)
		F22A1, H23A1 engines	M/T: 700 ±50 A/T: 700 ±50 (N or P position)
		H23A2 engine	M/T: 780 ±50 A/T: 780 ±50 (N or P position)
		H22A2 engine	M/T: 790 ± 50
	Idle CO %		With CATA: 0.1% max. Without CATA: 2.0% max.

Clutch — Section 12

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Clutch pedal	Pedal height	to floor	LHD: 190 (7.48) RHD: 206 (8.11)	
	Stroke		135-145 (5.31-5.71)	—
	Pedal play		9-15 (0.35-0.59)	—
	Disengagement height	to floor	LHD: 94 (3.70) min. RHD: 109 (4.29) min.	
Flywheel	Clutch surface runout		0.05 (0.002) max.	0.15 (0.006)
Clutch disc	Rivet head depth		1.3 (0.05) min.	0.2 (0.01)
	Surface runout		0.6 (0.02) max.	1.0 (0.04)
	Thickness		8.4-9.1 (0.33-0.36)	6.0 (0.24)
Pressure plate	Warpage		0.03 (0.001) max.	0.15 (0.06)

Manual Transmission — Section 13

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity ℓ (US qt, Imp qt)		1.9 (2.0, 1.7) for oil change 2.0 (2.1, 1.8) for overhaul	
Mainshaft	End play		0.10-0.16 (0.0039-0.0063)	Adjust with a shim.
	Diameter of ball bearing contact area		27.977-27.990 (1.1015-1.1020)	27.94 (1.100)
	Diameter of third gear contact area		37.984-38.000 (1.4954-1.4961)	37.93 (1.493)
	Diameter of ball bearing contact area		27.987-28.000 (1.1018-1.1024)	27.94 (1.100)
	Runout		0.02 (0.0008) max.	0.05 (0.002)
Mainshaft third and fourth gears	I.D.		43.009-43.025 (1.6933-1.6939)	43.080 (1.6961)
	End play		0.06-0.21 (0.0024-0.0083)	0.30 (0.012)
	Thickness	3rd gear M2J4,M2C4,M2K4	32.42-32.47 (1.276-1.278)	32.3 (1.27)
		M2F5	34.92-34.97 (1.375-1.377)	34.8 (1.37)
		4th gear M2J4,M2C4,M2K4	30.92-30.97 (1.217-1.219)	30.8 (1.21)
		M2F5	31.42-31.47 (1.237-1.239)	31.3 (1.23)
Mainshaft fifth gear	I.D.		43.009-43.025 (1.6933-1.6939)	43.080 (1.6961)
	End play		0.06-0.21 (0.0024-0.0083)	0.30 (0.012)
	Thickness		30.92-30.97 (1.217-1.219)	30.8 (1.213)
Countershaft	End play		0.05-0.40 (0.0019-0.0157)	0.50 (0.02)
	Diameter of needle bearing contact area		38.000-38.015 (1.4961-1.4967)	37.95 (1.494)
	Diameter of ball bearing and needle bearing contact area		24.987-25.000 (0.9837-0.9845)	24.94 (0.982)
	Diameter of low gear contact area		39.984-40.000 (1.5742-1.5748)	39.93 (1.572)
	Runout		0.02 (0.0008) max.	0.05 (0.002)
Countershaft low gear	I.D.		46.009-46.025 (1.8114-1.8120)	46.08 (1.814)
	End play		0.04-0.10 (0.002-0.004)	Adjust with a washer.
Countershaft second gear	I.D.		47.009-47.025 (1.8507-1.8514)	47.08 (1.854)
	End play		0.04-0.10 (0.002-0.004)	Adjust with a collar.
	Thickness		28.92-28.97 (1.139-1.141)	28.8 (1.13)

Standards and Service Limits

Manual Transmission — Section 13 (cont'd)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Spacer collar (Countershaft second gear)	I.D. O.D. Length A B	36.48-36.49 (1.4362-1.4366) 41.989-42.000 (1.6531-1.6535) 29.02-29.04 (1.1425-1.1433) 29.07-29.09 (1.144-1.145)	36.50 (1.437) 41.94 (1.652) — —
Spacer collar (Mainshaft fourth and fifth gear)	I.D. O.D. Length A B	31.002-31.012 (1.2205-1.2209) 37.989-38.000 (1.4956-1.4961) 56.45-56.55 (2.222-2.226) 26.03-26.08 (1.0248-1.0268)	31.06 (1.223) 37.94 (1.494) — —
Reverse idler gear	I.D. Gear-to-reverse gear shaft clearance	20.016-20.043 (0.7880-0.7891) 0.036-0.084 (0.0014-0.0033)	20.09 (0.7909) 0.160 (0.0006)
Syncro ring	Ring-to-gear clearance (ring pushed against gear)	0.85-1.10 (0.034-0.0433)	0.40 (0.016)
Dual cone synchro	Clearance (ring pushed against gear) Outer synchro ring-to-synchro cone Synchro cone-to-gear Outer synchro ring-to-gear	 0.5-1.0 (0.02-0.04) 0.5-1.0 (0.02-0.04) 0.95-1.68 (0.037-0.066)	 0.3 (0.01) 0.3 (0.01) 0.6 (0.024)
Shift fork	Finger thickness M2J4,M2C4,M2K4 M2F5 Fork-to-syncro sleeve clearance	6.2-6.4 (0.244-0.252) 7.4-7.6 (0.291-0.299) 0.35-0.65 (0.014-0.026)	— — 1.0 (0.039)
Reverse shift fork	Pawl groove width Fork-to-reverse idle gear clearance Groove width at A at B Fork-to-fifth/ reverse shift shaft clearance at A at B	13.0-13.3 (0.51-0.52) 0.5-1.1 (0.02-0.43) 7.05-7.25 (0.278-0.2854) 7.4-7.7 (0.29-0.30) 0.05-0.35 (0.002-0.014) 0.4-0.8 (0.02-0.03)	— 1.8 (0.07) — — 0.5 (0.02) 1.0 (0.04)
Shift arm	I.D. Shift arm-to-shaft clearance Shift fork diameter at contact area Shift-arm-to-shift fork shaft clearance	15.973-16.000 (0.6289-0.6299) 0.005-0.059 (0.0002-0.0023) 12.9-13.0 (0.508-0.512) 0.2-0.5 (0.01-0.02)	— — — 0.6 (0.2)
Select lever	Pin size of contact area Select lever-to-shift peice clearance Shaft outer diameter Shift arm cover clearance	7.9-8.0 (0.311-0.315) 0.05-0.25 (0.002-0.010) 15.41-15.68 (0.607-0.617) 0.032-0.102 (0.003-0.0040)	— 0.5 (0.020) — —
Shift arm lever	O.D. Transmission housing clearance	15.941-15.968 (0.6276-0.6287) 0.027-0.139 (0.0011-0.0055)	— —
Interlock	Bore diameter Shift arm lever clearance	16.00-16.05 (0.630-0.632) 0.032-0.109 (0.0013-0.0043)	— —

Automatic Transmission — Section 14

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission fluid	Capacity ℓ (US qt, Imp qt)	6.0 (6.4, 5.2) for overhaul 2.4 (2.6, 2.1) for fluid change	
Hydraulic pressure (F20A, F22A engine) kPa (kg/cm², psi)	Line pressure at 2,000 min⁻¹ (rpm) (N or P position)	800 (8.0, 114) throttle fully-closed | 850 (8.5, 121) throttle more than 3/16 open	750 (7.5, 107) throttle more than 3/16 open
	4th clutch pressure at 2,000 min⁻¹ (rpm) (D4 position)	530 (5.3, 75) throttle fully-closed | 850 (8.5, 121) throttle more than 3/16 open	480 (4.8, 68) throttle fully-closed | 750 (7.5, 107) throttle more than 3/16 open
	3rd and 2nd clutch pressure at 2,000 min⁻¹ (rpm) (D4 position)	500 (5.0, 71) throttle fully-closed | 850 (8.5, 121) throttle more than 3/16 open	450 (4.5, 64) throttle fully-closed | 750 (7.5, 107) throttle more than 3/16 open
	2nd clutch pressure at 2,000 min⁻¹ (rpm) (2 position)	800-850 (8.0-8.5, 114-121)	750 (7.5, 107)
	1st and 1st-hold clutch pressure at 2,000 min⁻¹ (rpm) (1 position)	800-850 (8.0-8.5, 114-121)	750 (7.5, 107)
	Throttle B pressure — Throttle fully closed	0 (0, 0)	—
	Throttle B pressure — Throttle fully open	800-850 (8.0-8.5, 114-121)	750 (7.5, 107)
Hydraulic pressure (H23A engine) kPa (kg/cm², psi)	Line pressure at 2,000 min⁻¹ (rpm) (N or P position)	850 (8.5, 121) throttle fully-closed | 900 (9.0, 128) throttle more than 3/16 open	800 (8.0, 114) throttle more than 3/16 open
	4rd clutch pressure at 2,000 min⁻¹ (rpm) (D4 position)	530 (5.3, 75) throttle fully-closed | 900 (9.0, 128) throttle more than 3/16 open	480 (4.8, 68) throttle fully-closed | 800 (8.0, 114) throttle more than 3/16 open
	3rd and 2nd clutch pressure at 2,000 min⁻¹ (rpm) (D4 position)	500 (5.0, 71) throttle fully-closed | 900 (9.0, 128) throttle more than 3/16 open	450 (4.5, 64) throttle fully-closed | 800 (8.0, 114) throttle more than 3/16 open
	2nd clutch pressrue at 2,000 min⁻¹ (rpm) (2 position)	850-900 (8.5-9.0, 121-128)	800 (8.0, 114)
	1st and 1st-hold clutch pressure at 2,000 min⁻¹ (rpm) (1 position)	850-900 (8.5-9.0, 121-128)	800 (8.0, 114)
	Throttle B pressure — Throttle fully closed	0 (0, 0)	—
	Throttle B pressure — Throttle fully open	850-900 (8.5-9.0, 121-128)	800 (8.0, 114)
Stall speed min⁻¹ (rpm) (Check with car on level ground)	F20A, F22A engine	2,350-2,650	—
	H23A engine	2,600-2,900	—

Standards and Service Limits

Automatic Transmission — Section 14 (Cont'd)

Unit of Length: mm (in)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch	Clutch initial clearance 1st-hold	0.80-1.00 (0.031-0.039)	—
	1st, 2nd	0.65-0.85 (0.026-0.033)	—
	3rd, 4th	0.4-0.6 (0.016-0.024)	—
	Clutch return spring free length 1st, 2nd, 3rd, 4th	33.5 (1.32)	31.5 (1.24)
	Clutch disc thickness	1.88-2.00 (0.074-0.079)	Until grooves worn out.
	Clutch plate thickness		
	1st, 1st-hold	1.95-2.05 (0.077-0.081)	Discoloration
	2nd, F20A, F22A engines	2.55-2.65 (0.089-0.093)	↕
	H23A engine	1.95-2.05 (0.077-0.081)	
	3rd, 4th	2.25-2.35 (0.089-0.093)	Discoloration
	Clutch end plate thickness Mark 1	2.05-2.10 (0.081-0.083)	Discoloration
	Mark 2	2.15-2.20 (0.085-0.087)	↕
	Mark 3	2.25-2.30 (0.089-0.091)	
	Mark 4	2.35-2.40 (0.093-0.094)	
	Mark 5	2.45-2.50 (0.096-0.098)	
	Mark 6	2.55-2.60 (0.100-0.102)	
	Mark 7	2.65-2.70 (0.104-0.106)	
	Mark 8	2.75-2.80 (0.108-0.110)	
	Mark 9	2.85-2.90 (0.112-0.114)	Discoloration
Valve body	Stator shaft needle bearing contact I.D.		
	Torque converter side	27.000-27.021 (1.0630-1.0638)	Wear of damage
	Oil pump side	29.000-29.013 (1.1417-1.1422)	—
	Oil pump gear side clearance	0.03-0.05 (0.001-0.002)	0.07 (0.003)
	Oil pump gear-to-body clearance Drive	0.210-0.265 (0.0083-0.0104)	—
	Driven	0.070-0.125 (0.0028-0.0049)	—
	Oil pump driven gear I.D.	14.016-14.034 (0.5518-0.5525)	Wear or damage
	Oil pump shaft O.D.	13.980-13.990 (0.5504-0.5508)	Wear or damage
Shifting device, parking brake and throttle control system	Reverse shift fork finger thickness	5.90-6.00 (0.232-0.236)	5.40 (0.213)
	Parking brake ratchet pawl	—	Wear or other defect
	Parking brake gear	—	
	Throttle cam stopper height	17.0-17.1 (0.669-0,673)	—
Servo body	Shift fork shaft bore I.D.	14.000-14.010 (0.5512-0.5516)	—
	Shift fork shaft valve bore I.D.	37.000-37.039 (1.4567-1.4582)	37.045 (1.4585)
Regulator valve body	Sealing ring contact I.D.	35.000-35.025 (1.3780-1.3789)	35.05 (1.3799)
Accumulator body	Sealing ring contact I.D.	32.000-32.013 (1.2598-1.2604)	32.050 (1.2618)
Stator shaft	Sealing ring contact I.D.	29.000-29.013 (1.1417-1.1422)	29.050 (1.1437)
Transmission	Diameter of needle bearing contact area		
	On mainshaft of stator shaft	22.984-23.000 (0.9049-0.9055)	Wear or damage
	On mainshaft of 3rd gear collar	45.984-46.000 (1.8104-1.8110)	↕
	On mainshaft of 4th gear collar	31.984-32.000 (1.2592-1.2598)	
	On countershaft of 1st gear collar	40.984-41.000 (1.6135-1.6142)	
	On countershaft of 4th gear	31.975-31.991 (1.2589-1.2595)	
	On countershaft of parking gear	39.984-40.000 (1.5742-1.5748)	
	On countershaft of reverse gear	35.979-36.000 (1.4165-1.4173)	
	On secondary shaft of 1st gear	31.975-31.991 (1.2589-1.2595)	
	On secondary shaft of 2nd gear	31.975-31.991 (1.2589-1.2595)	
	On reverse idler gear shaft	13.990-14.000 (0.5508-0.5512)	
	Inside diameter		
	Mainshaft 3rd gear	52.000-52.019 (2.0472-2.0480)	
	Mainshaft 4th gear	38.005-38.021 (1.4963-1.4969)	
	Countershaft 1st gear	47.000-47.016 (1.8504-1.8510)	
	Countershaft 4th gear	38.000-38.016 (1.4961-1.4967)	
	Countershaft reverse gear	42.000-42.016 (1.6535-1.6542)	
	Countershaft idler gear	48.000-48.016 (1.8898-1.8904)	
	Secondary shaft 1st gear	37.000-37.016 (1.4567-1.4573)	
	Secondary shaft 2nd gear	37.000-37.016 (1.4567-1.4573)	
	Reverse idler gear shaft holder	14.416-1.434 (0.5676-0.5683)	Wear or damage

Automatic Transmission — Section 14

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	Mainshaft 3rd gear collar length	19.50-19.55 (0.768-0.770)	—
	Mainshaft 4th gear collar length	47.50-47.55 (1.870-1.872)	Wear or damage
	Countershaft 1st gear collar length	27.50-27.55 (1.083-1.085)	Wear or damage
	Thrust washer thickness		
	Countershaft 1st gear	1.45-1.50 (0.057-0.059)	Wear or damage
	Countershaft idler gear	3.45-3.55 (0.136-0.140)	Wear or damage
	Countershaft parking gear length	25.030-25.048 (0.9854-0.9861)	Wear or damage
	Secondary shaft 1st gear distance collar length	4.95-5.00 (0.195-0.197)	Wear or damage
	Secondary shaft 2nd gear spline washer thickness 35 × 53 mm	4.02-4.05 (0.158-0.159)	—
		4.07-4.10 (0.160-0.161)	—
		4.12-4.15 (0.162-0.163)	—
		4.17-4.20 (0.164-0.165)	—
		4.22-4.25 (0.166-0.167)	—
		4.27-4.30 (0.168-0.169)	—
		4.32-4.35 (0.170-0.171)	—
		4.37-4.40 (0.172-0.173)	—
		4.42-4.45 (0.174-0.175)	—

	MEASUREMENT	STANDARD (NEW)			
		Wire Dia.	O.D.	Free Length	No. of Coils
Spring	Regulator valve spring A				
	F20A, F22A engines	1.8 (0.071)	14.7 (0.579)	86.5 (3.406)	16.5
	H23A engine	1.8 (0.071)	14.7 (0.579)	88.6 (3.488)	16.5
	Regulator valve spring B	1.8 (0.071)	9.6 (0.378)	44.0 (1.732)	12.7
	Stator reaction spring	4.5 (0.177)	35.4 (1.394)	30.3 (1.193)	1.92
	Torque converter check valve spring	1.1 (0.043)	8.4 (0.331)	36.4 (1.433)	12.0
	Relief valve spring	1.0 (0.039)	8.4 (0.331)	39.1 (1.539)	15.1
	Cooler relief valve spring	1.1 (0.043)	8.4 (0.331)	46.8 (1.843)	17.0
	2nd orifice control valve spring	0.6 (0.024)	6.6 (0.260)	58.3 (2.295)	15.8
	Orifice control valve spring	0.8 (0.031)	6.6 (0.260)	52.5 (2.067)	33.0
	4th exhaust valve spring	0.9 (0.035)	7.1 (0.280)	60.8 (2.394)	28.9
	Throttle valve B adjusting spring	0.8 (0.031)	6.2 (0.244)	30.0 (1.181)	8.0
	Throttle valve B spring	1.4 (0.055)	8.5 (0.335)	41.5 (1.634)	10.5
		1.4 (0.055)	8.5 (0.335)	41.5 (1.634)	11.2
		1.4 (0.055)	8.5 (0.335)	41.6 (1.638)	12.4
	1-2 shift valve spring	1.0 (0.039)	8.6 (0.339)	41.3 (1.626)	16.9
	2-3/3-4 shift valve spring	0.9 (0.035)	7.6 (0.299)	57.0 (2.244)	26.8
	1st-hold accumulator spring	4.0 (0.157)	25.0 (0.984)	64.7 (2.547)	7.3
	1st accumulator spring	1.8 (0.071)	16.3 (0.642)	115.4 (4.543)	18.6
	4th accumulator spring	2.9 (0.114)	22.0 (0.866)	90.1 (3.547)	10.9
	2nd accumulator spring	3.5 (0.138)	22.0 (0.866)	77.1 (3.035)	10.0
	3rd accumulator spring	2.8 (0.110)	17.5 (0.689)	94.2 (3.709)	16.1
	Lock-up shift valve spring	0.9 (0.035)	7.6 (0.229)	73.7 (2.902)	32.0
	Lock-up timing valve spring	0.8 (0.031)	6.6 (0.260)	51.1 (2.012)	14.7
	Servo control valve spring	1.0 (0.039)	8.1 (0.319)	52.6 (2.071)	22.4
	CPC valve spring	1.4 (0.055)	9.4 (0.370)	33.0 (1.299)	10.5
	Modulator valve spring	1.4 (0.055)	9.4 (0.370)	33.0 (1.299)	10.5
	Lock-up control valve spring	0.7 (0.028)	6.6 (0.260)	38.0 (1.496)	14.1
	3rd kick-down spring	1.1 (0.043)	7.6 (0.299)	48.3 (1.902)	23.3
	3-2 kick-down spring	1.2 (0.047)	7.1 (0.280)	46.9 (1.846)	20.6

Differential (Manual transmission) — Section 15

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Final driven gear	Backlash	0.085-0.142 (0.0033-0.0056)	0.20 (0.008)
Differential carrier	Pinion shaft contact area I.D. Carrier-to-pinion clearance Driveshaft contact area I.D. Carrier-to-driveshaft clearance R L	18.000-18.018 (0.7087-0.7094) 0.013-0.047 (0.0005-0.0019) 28.005-28.025 (1.1026-1.1033) 0.025-0.066 (0.0010-0.0026) 0.055-0.091 (0.0022-0.0036)	— 0.10 (0.004) — 0.12 (0.005) 0.15 (0.006)
Differential	Backlash I.D. Pinion gear-to-pinion shaft clearance	0.05-0.15 (0.002-0.006) 18.042-18.066 (0.7103-0.7113) 0.055-0.095 (0.0022-0.0037)	Adjust with a shim — 0.15 (0.006)
Tapered roller bearing preload	Starting torque N·m (kg-cm, lb-in)	1.4-2.6 (14-26, 12-23)	Adjust with a shim

Differential (Automatic transmission) — Section 15

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Final driven gear	Backlash	0.085-0.142 (0.0033-0.0056)	0.20 (0.008)
Differential carrier	Pinion shaft contact area I.D. Carrier-to-pinion clearance Driveshaft contact area I.D. Carrier-to-driveshaft clearanace	18.000-18.018 (0.7087-0.7094) 0.017-0.047 (0.0007-0.0019) 28.005-28.025 (1.1026-1.1033) 0.025-0.066 (0.0010-0.0026)	— 0.10 (0.004) — 0.12 (0.005)
Differential	Backlash I.D. Pinion gear-to-pinion shaft clearance	0.05-0.15 (0.002-0.006) 18.042-18.066 (0.7103-0.7113) 0.059-0.095 (0.0023-0.0037)	Adjust with a shim — 0.12 (0.005)
Tapered roller bearing preload	Starting torque N·m (kg-cm, lb-in) New bearing Reused bearing	2.8-4.0 (28-40, 24-35) 2.5-3.7 (25-37, 22-32)	Adjust with a shim

Steering — Section 17

	MEASUREMENT	STANDARD (NEW)
Steering wheel	Play at steering wheel circumference Starting load at steering wheel circumference N (kg, lbs) Engine running When the hydraulic system to the speed sensor is cut off	0-10 (0-0.39) 30 (3.0, 6.6) 50 (5.0, 11.0)
Gearbox	Angle of rack-guide-screw loosened from locked position	20 $^{+5^\circ}_{0}$
Pump	*Pump pressure with valve closed (oil temp./speed: 40°C (105°F) min./idle. Do not run for more than 5 seconds).* kPa (kg/cm², psi)	 7,000-8,000 (70-80, 995-1,138)
Power steering fluid	Recommended fluid Fluid capacity System ℓ (US qt, Imp qt) Reservoir	Honda power steering fluid-V 1.7 (1.80, 1.50) 0.5 (0.53, 0.44)
Power steering belt	Deflection with 100 N (10 kg, 22 lbs) between pulleys	13.5-16.5 (0.53-0.65) with used belt 9.5-11.5 (0.37-0.45) with new belt*
	Belt tension N (kg, lbs) Measured with belt tension gauge	350-500 (35-50, 77-110) with used belt 700-900 (70-90, 154-198) with new belt

* When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

Standards and Service Limits

specs

Unit of Length: mm (in)

Suspension — Section 18

	MEASUREMENT		STANDARD (NEW)
Wheel alignment (2WS)	Camber	Front	0° 00′ ±1°
		Rear	−0° 45′ ±1°
	Caster	Front	2° 40′ ±1°
	Total toe	Front	0 ± 2.0 (0 ±0.08)
		Rear	IN 2.0 ±2.0 (0.08 ±0.08)
	Front wheel turning angle	Inward wheel	36° 20′ ±2°
		Outward wheel	29° 40′
Wheel alignment (4WS)	Camber	Front	0° 00′ ±1°
		Rear	−0° 45′ ±30′
	Caster	Front	2° 40′ ±1°
	Total toe	Front	0 ± 2.0 (0 ±0.08)
		Rear	IN 2.0 ±2.0 (0.08 ±0.08)
	Wheel turning angle	Inward wheel Front	36° 20′ ±2°
		Rear	6° 00′ ±1°
		Outward wheel Front	29° 40′
		Rear	6° 20′
Wheel	Rim runout (Aluminum wheel)	Axial	0-0.7 (0-0.03)
		Radial	0-0.7 (0-0.03)
	Rim runout (Steel wheel)	Axial	0-1.0 (0-0.04)
		Radial	0-1.0 (0-0.04)
Wheel bearing	End play	Front	0-0.05 (0-0.002)
		Rear	0-0.05 (0-0.002)

Brakes — Section 19

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Parking brake lever	Play in stroke 200 N (20 kg, 44 lbs) lever force		To be locked when pulled 6-10 notches	—
Foot brake pedal	Pedal height (with floor mat removed)	M/T	LHD: 165 (6.50) RHD: 180 (7.09)	— —
		A/T	186 (7.32)	—
	Free play		1-5 (0.04-0.20)	—
Master cylinder	Piston-to-pushrod clearance		0-0.04 (0-0.0016)	—
Disc brake	Disc thickness	Front	23.0 (0.09)	21.0 (0.83)
		Rear	10.0 (0.39)	8.0 (0.31)
	Disc runout	Front	—	0.10 (0.004)
		Rear	—	0.10 (0.004)
	Disc parallelism	Front and rear	—	0.015 (0.0006)
	Pad thickness	Front	12.5 (0.49)	1.6 (0.06)
			11.0 (0.43)*	1.6 (0.06)*
		Rear	9.0 (0.35)	1.6 (0.06)

Characteristics	Vacuum (mmHg)	Pedal Pressure kg (lbs)	Line Pressure kPa (kg/cm², psi)
Without ABS	0	20 (44)	1,030 (10.3, 146) min.
	300	20 (44)	5,690 (56.9, 809) min.
	500	20 (44)	8,030 (8.03, 1,142) min.
With ABS	0	20 (44)	790 (7.9, 112) min.
	300	20 (44)	6,320 (63.2, 899) min.
	500	20 (44)	7,880 (78.8, 1,121) min.

* Cars with H23A2 and H22A2 engines

Standards and Service Limits

Air Conditioner — Section 22

	MEASUREMENT		STANDARD (NEW)
Air conditioner system	Lubricant capacity ml (fl oz)	Condenser Evaporator Line or hose Receiver	10 (1/3) 30 (1) 10 (1/3) 10 (1/3)
Compressor	Lubricant capacity ml (fl oz) Stator coil resistance at 20°C (68°F) Ω Pulley-to-pressure plate clearance		120-140 (4—4-2/3) 3.05-3.35 0.35-0.65 (0.014-0.026)
Compressor belt*1	Deflection with 100 N (10 kg, 22 lbs) between the pulleys		10.0-12.0 (0.39-0.47) with used belt 4.5-7.0 (0.18-0.28) with new belt
	Belt tension N (kg, lbs) Measured with belt tension gauge		450-650 (45-65, 99-143) with used belt 950-1.150 (9.5-115, 209-254) with new belt

*1: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

Electrical — Section 23

	MEASUREMENT	STANDARD (NEW)	
Ignition coil	Rated voltage V Primary winding resistance Ω at 25 °C (77°F) Secondary winding resistance kΩ at 25 °C (77°F)	12 0.6-0.8 12.9-19.2*2, 14.4-21.6*3	
Spark Plug	Type Gap	See Section 23 1.0-1.1 (0.039-0.043)	
Ignition timing	At idling ° BTDC	15° ± 2° (Red)	
Alternator belt*1	Deflection with 100 N (10 kg, 22 lbs) between pulleys	Except H22A2 engine: 10.0-12.0 (0.39-0.47) with used belt H22A2 engine: 10.5-12.5 (0.42-0.51) with used belt Except H22A2 engine: 8.5-11.0 (0.33-0.43) with new belt H22A2 engine: 8.0-10.0 (0.32-0.40) with new belt	
	Belt tension N (kg, lbs) Measured with belt tension gauge	300-450 (30-45, 66-99) with used belt Except H22A2 engine: 500-700 (50-70, 110-154) with new belt H22A2 engine: 550-750 (55-75, 121-165) with new belt	
	MEASUREMENT	**STANDARD (NEW)**	**SERVICE LIMIT**
Alternator (NIPPONDENSO)	Output 13.5 V at hot A Coil resistance (rotor) Ω Slip ring O.D. Brush length Brush spring tension g (oz)	80/85*4, 90/98*5, 95/102*6 2.1-2.5 14.4 (0.57) 10.5 (0.41) 300-360 (10.6-12.7)	— — 12.8 (0.50) 5.5 (0.22) —
Starter motor (MITSUBA 1.4 kW)	Type Mica depth Commutator runout Commutator O.D. Brush length Brush spring tension (new) N (kg, lb)	Spur gear reduction, Permanent magnet 0.4-0.5 (0.016-0.020) 0-0.02 (0-0.001) 28.0-28.1 (1.102-1.106) 15.8-16.2 (0.62-0.64) 16.0-18.0 (1.60-1.80, 3.53-3.93)	0.15 (0.006) 0.05 (0.002) 27.5 (1.083) 10.0 (0.39) —
Starter motor (MITSUBA 1.6 kW)	Type Mica depth Commutator runout Commutator O.D. Brush length Brush spring tension (new) N (kg, lb)	Spur gear reduction, Permanent magnet 0.4-0.5 (0.016-0.020) 0-0.02 (0-0.001) 28.0-28.1 (1.102-1.106) 15.8-16.2 (0.62-0.64) 16.0-18.0 (1.60-1.80, 3.53-3.93)	0.15 (0.006) 0.05 (0.002) 27.5 (1.083) 10.0 (0.39) —

*1: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.
*2: F20A4, F22A2, H23H2, H22A2 engines
*3: F22A1, H23A1 engines
*4: F20A4, F22A1, F22A2 engines
*5: H23A1, H23A2 engines
*6: H22A2 engine

Design Specifications

	ITEM	METRIC	ENGLISH	NOTES
DIMENSIONS	Overall Length	4,440 mm	174.8 in	
	Overall Width	1,765 mm	69.5 in	
	Overall Height	1,290 mm	50.8 in	
	Wheelbase	2,550 mm	100.4 in	
	Track F/R	1,525/1,515 mm	60.0/59.6 in	
	Ground Clearance	145 mm	5.7 in	
	Seating Capacity	Four		
WEIGHT	See page 3-18 to 3-20			
ENGINE	Type F20A4, F22A1, F22A2 engines	Water-cooled, 4-stroke SOHC gasoline engine		
	H23A1, H23A2 engines	Water-cooled, 4 stroke DOHC gasoline engine		
	H22A2 engine	Water-cooled, 4-stroke DOHC VTEC gasoline engine		
	Cylinder Arrangement	Inline 4-cylinder, transverse		
	Bore and Stroke F20A4 engine	85.0 × 88.0 mm	3.35 × 3.41 in	
	F22A1, F22A2 engines	85.0 × 95.0 mm	3.35 × 3.74 in	
	H23A1, H23A2 engines	87.0 × 95.0 mm	3.43 × 3.74 in	
	H22A2 engine	87.0 × 90.7 mm	3.43 × 3.57 in	
	Displacement F20A4 engine	1,997 cm^3	122 cu-in	
	F22A1, F22A2 engines	2,156 cm^3	132 cu-in	
	H23A1, H23A2 engines	2,259 cm^3	138 cu-in	
	H22A2 engine	2,157 cm^3	132 cu-in	
	Compression Ratio F20A4 engine	9.5 : 1		
	F22A1, F22A2 engines	8.8 : 1, 8.9 : 1 (KY model)		
	H23A1, H23A2 engines	9.8 : 1		
	H22A2 engine	10.0 : 1		
	Valve Train F20A4, F22A1, F22A2 engines	Belt driven, SOHC 4 valve per cylinder		
	H23A1, H23A2 engines	Belt driven, DOHC 4 valve per cylinder		
	H22A2 engine	Belt driven, DOHC VTEC 4 valve per cylinder		
	Lubrication System	Forced and wet sump, trochoid pump		
	Recomended Gasoline F20A4, H23A1, H23A2, H22A2 engines	Premium UNLEADED grade gasoline with 95 Research Octane Number (RON) or higher		F22A2 engine*1: UNLEADED grade gasoline with 91 RON or higher may also be used
	F22A1 engine	UNLEADED grade gasoline with 91 Research Octane Number (RON) or higher		
	F22A2 engine*1	LEADED grade gasoline with 91 Research Octane Number (RON) or higher		
STARTER	Makes/Type	MITSUBA/Spur gear reduction, permanent magent		
	Normal Output	1.4 kW, 1.6 kW		
	Nominal Voltage	12 V		
	Hour Rating	30 seconds		
	Direction of Rotation	Clockwise as viewed from gear end		
	Weight	3.7 kg	8.2 lbs	
CLUTCH	Clutch Type M/T	Single plate dry, diaphragm spring		
	A/T	Torque converter		
	Clutch Facing Area M/T	203 cm^2	31 sq-in	

(cont'd)

Design Specifications

(cont'd)

	ITEM		METRIC		ENGLISH		NOTES
TRANSMISSION	Transmission Type	M/T A/T	Synchronized 5-speed forward, 1 reverse Electronically controlled 4-speed automatic, 1 reverse				
	Primary Reduction		Direct 1: 1				
	Manual	Engine type	F20A4, F22A1	F22A2	H23A1, H23A2	H22A2	
	Gear Ratio	1st	3.307	3.307	3.307	3.307	
		2nd	1.809	1.809	1.809	1.950	
		3rd	1.269	1.230	1.269	1.360	
		4th	0.966	0.933	0.966	1.071	
		5th	0.787	0.757	0.757	0.870	
		Reverse	3.000	3.000	3.000	3.000	
	Final Reduction	Gear type	Single helical gear				
		Gear ratio	4.266			4.062	
	Automatic	Engine type	F20A4, F22A1 H23A1, H23A2		F22A2		
	Gear Ratio	1st	2.705		2.705		
		2nd	1.366		1.482		
		3rd	1.028		1.028		
		4th	0.750		0.731		
		5th	—		—		
		Reverse	2.047		2.047		
	Final Reduction	Gear type	Single helical gear				
		Gear ratio	4.285				
AIR CONDITIONER	Cooling Capacity		3,730 Kcal/h		14,682 BTU/h		
	Conditions:						
	Compressor Speed		1,800 min^{-1} (rpm)				
	Outside Air Temperature		27°C		81°F		
	Outside Air Humidity		50%				
	Condenser Air Temperature		35°C		95°F		
	Condenser Air Velocity		2.5 m/sec		8.2 ft/sec		
	Blower Capacity		460 m^3/h		16,247 cu-ft/h		
	Compressor	Type/Makes	Scroll type/SANDEN				
		No. of Cylinder	—				
		Capacity	85.7 cm^3/rev		5.23 cu-in/rev		
		Max. Speed	10,000 min^{-1} (rpm)				
		Lubricant Capacity	130 ml		4.40 fl oz, 4.58 Imp. oz		
	Condenser	Type	Corrugated fin type				
	Evaporator	Type	Corrugated fin type				
	Blower	Type	Sirocco fan				
		Motor Input	220 W/12 V				
		Speed Control	4-speed				
		Max. Capacity	460 m^3/h		16,247 cu-ft/h		
	Temp. Control		Air-mix type				
	Comp. Clutch	Type	Dry, single plate, poly-V-belt drive				
		Power Consumption	42 W max./12 V				
	Refrigerant	Type	R-12				
		Quantity	800 $^{+0}_{-50}$ g		26.5 $^{+0}_{-1.80}$ oz		
STEERING SYSTEM	Type		Power assisted, rack and pinion				
	Overall Ratio		2WS: 15.86, 4WS: 15.1				
	Turns, Lock-to-Lock		2WS: 2.91, 4WS: 2.77				
	Steering Wheel Diameter		380 mm		15.0 in		

	ITEM	METRIC	ENGLISH	NOTES
SUSPENSION	Type, Front	Independent double wishbone, coil spring with stabilizer		
	Type, Rear	Independent double wishbone, coil spring with stabilizer		
	Shock Absorber, Front and Rear	Telescopic, hydraulic nitrogen gas-filled		
WHEEL ALIGMENT	Camber Front	0° 00′		
	Rear	−0° 45′		
	Caster	2° 40′		
	Total Toe Front	0 mm	0 in	
	Rear	In 2.0 mm	In 0.08 in	
BRAKE SYSTEM	Type, Front	Power-assisted self-adjusting ventilated disc		
	Rear	Power-assisted self-adjusting solid disc		
	Pad and Lining Surface Area:	58.0 cm^2 × 2	8.99 sq-in × 2	
		49.4 cm^2 × 2	7.66 sq-in × 2	
	Rear	27.0 cm^2 × 2	4.19 sq-in × 2	
	Parking Brake Kind and Type	Mechanical actuating, rear two wheel brakes		
TIRE	Size	See tyre information label on the driver's door jamb.		
ELECTRICAL	Battery	12V-52AH/5HR, 12V-55AH/5HR*2 12V-38AH/5HR*3		
	Starter	12V-1.4kW, 12V-1.6kW		
	Alternator	12-95A*8, 12V-90A, 80A*1		
	Fuses In Under-dash Fuse Box	7.5A, 10A, 15A, 20A, 30A		
	In Under-hood Fuse/Relay Box	7.5A, 10A, 15A, 20A, 30A, 40A 50A, 60A, 100A		
	Headlights Inside	12V-55W, 12V-65W*4		
	Outside	12V-60/55W, 12V-55W*4		
	Front Turn Signal Lights	12V-21W		
	Front Position Lights	12V-5W		
	Side Turn Signal Lights	12V-5W		
	Rear Turn Signal Lights	12V-45CP		
	Brake/Taillights	12V-43/3CP		
	Back-up Lights	12C-32CP		
	Rear Fog Lights	12V-21W		
	License Plate Lights	12V-5W, 12V-8W*6		
	High Mount Brake Light*7	12V-21CP		
	Interior Lights	12V-8W		
	Boot Lights	12V-3.4W		
	Gauge Lights	12V-3.0W, 1.4W, 1.7W		
	Indicator Lights	12V-1.12W, 1.4W, 3.0W, 3.2W		
	Illumination and Pilot Lights	12V-1.4W, 1.12W. 0.84W 12V-0.91W, 0.56W, LED		
	Heater Illumination Lights	12V-1.4W		

*1: Except cars with H23A1, H23A2 and H22A2 engines *2: KS model and cars with H22A2 engine
*3: Cars with F22A1 and F22A2 engines. *4: KY model *5: Except KQ, KT and KY models
*6: KT and KY models *7: KQ and KY models *8: H22A2 engine

Design Specifications
European Models

	ITEM	METRIC	ENGLISH	NOTES
WEIGHT	Curb Weight			
	2.0 ℓ M/T	1,220 kg	2,690 lbs	KF, KG*1, KS
		1,195 kg	2,634 lbs	KG*2
		1,225 kg	2,701 lbs	KE
	2.0 ℓ A/T	1,245 kg	2,745 lbs	KF
		1,220 kg	2,689 lbs	KG*2
		1,250 kg	2,756 lbs	KE
	2.0 ℓ M/T with ABS	1,235 kg	2,723 lbs	KF, KG*1, KS
		1,210 kg	2,668 lbs	KF*2
		1,240 kg	2,734 lbs	KE
	2.0 ℓ A/T with ABS	1,260 kg	2,778 lbs	KF, KG*1, KS
		1,235 kg	2,723 lbs	KG*2
		1,265 kg	2,789 lbs	KE
	2.3 ℓ M/T with ABS	1,250 kg	2,756 lbs	KF, KG*1, KS
		1,225 kg	2,701 lbs	KG*2
		1,260 kg	2,778 lbs	KE
	2.3 ℓ A/T with ABS	1,275 kg	2,811 lbs	KF
		1,250 kg	2,756 lbs	KG*2
		1,285 kg	2,833 lbs	KE
	2.3 ℓ M/T with ABS, 4WS	1,270 kg	2,800 lbs	KF, KG*1, KS
		1,245 kg	2,745 lbs	KG*2
		1,280 kg	2,822 lbs	KE
	2.3 ℓ A/T with ABS, 4WS	1,295 kg	2,855 lbs	KF, KG*1, KS
		1,270 kg	2,800 lbs	KG*2
		1,305 kg	2,877 lbs	KE
	2.2 ℓ M/T	1,305 kg	2,877 lbs	KG
		1,315 kg	2,899 lbs	KE

KG*1: KG type except Netherlands, KG*2: KG type for Netherlands (half tank of gasoline).

European Models

	ITEM	METRIC	ENGLISH	NOTES
WEIGHT(cont'd)	Weight Distributions (Front/Rear)			
	2.0 ℓ M/T	760/460 kg — 760/465 kg	1,675/1,014 lbs — 1,675/1,025 lbs	KF, KG*1, KS KG*2 KE
	2.0 ℓ A/T	785/460 kg — 785/465 kg	1,731/1,014 lbs — 1,731/1,025 lbs	KF KG*2 KE
	2.0 ℓ M/T with ABS	773/462 kg — 773/467 kg	1,704/1,019 lbs — 1,704/1,030 lbs	KF, KG*1, KS KG*2 KE
	2.0 ℓ A/T with ABS	798/462 kg — 798/467 kg	1,759/1,018 lbs — 1,759/1,030 lbs	KF, KG*1, KS KG*2 KE
	2.3 ℓM/T with ABS	785/465 kg — 785/475 kg	1,731/1,025 lbs — 1,731/1,047 lbs	KF, KG*1, KS KG*2 KE
	2.3 ℓ A/T with ABS	810/465 kg — 810/475 kg	1,786/1,025 lbs — 1,786/1,047 lbs	KF KG*2 KE
	2.3 ℓ M/T with ABS, 4WS	785/485 kg — 785/495 kg	1,731/1,069 lbs — 1,731/1,091 lbs	KF, KG*1, KS KG*2 KE
	2.3 ℓ A/T with ABS, 4WS	810/485 kg — 810/495 kg	1,786/1,069 lbs — 1,786/1,091 lbs	KF, KG*1, KS KG*2 KE
	2.2 ℓ M/T	808/497 kg 808/507 kg	1,781/1,096 lbs 1,781/1,118 lbs	KG KE
	Max. Permissible Weight (MPW)	1,720 kg	3,792 lbs	

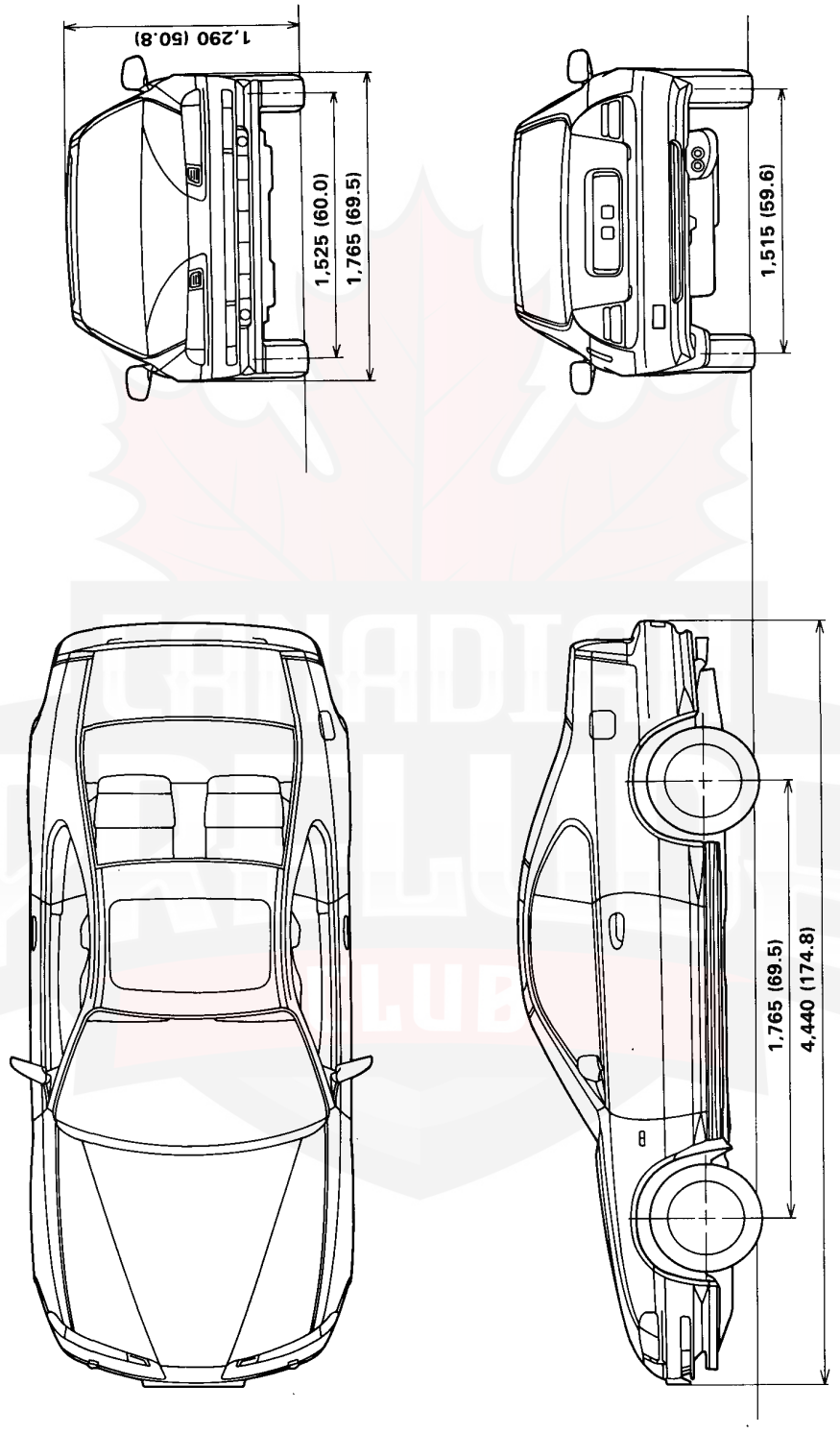
KG*1: KG type except Netherlands, KG*2: KG type for Netherlands (half tank of gasoline).

Design Specifications
Except European Models

	ITEM	METRIC	ENGLISH	NOTES
WEIGHT	Curb Weight			
	2.2 ℓ M/T	1,230 kg	2,712 lbs	KQ
		1,260 kg	2,778 lbs	KY
	2.2 ℓ A/T	1,250 kg	2,756 lbs	KQ
		1,285 kg	2,833 lbs	KY
	2.3 ℓ M/T	1,265 kg	2,789 lbs	KQ
	2.3 ℓ A/T	1,290 kg	2,844 lbs	KQ
	2.3 ℓ M/T with ABS, SRS	1,280 kg	2,822 lbs	KQ
	2.3 ℓ A/T with ABS, SRS	1,305 kg	2,877 lbs	KQ
	Weight Distributions (Front/Rear)			
	2.2 ℓ M/T	755/475 kg	1,664/1,047 lbs	KQ
		775/485 kg	1,709/1,069 lbs	KY
	2.2 ℓ A/T	780/470 kg	1,720/1,036 lbs	KQ
		800/485 kg	1,764/1,069 lbs	KY
	2.3 ℓ M/T	765/500 kg	1,687/1,102 lbs	KQ
	2.3 ℓ A/T	790/500 kg	1,742/1,102 lbs	KQ
	2.3 ℓ M/T with ABS, SRS	780/500 kg	1,720/1,102 lbs	KQ
	2.3 ℓ A/T with ABS, SRS	805/500 kg	1,775/1,102 lbs	KQ
	Max. Loaded Vehicle Weight (ADR)	1,653 kg	3,644 lbs	KQ
	Max. Vehicle Weight (MVW)	1,720 kg	3,792 lbs	KY

Body Specifications

Unit: mm (in)



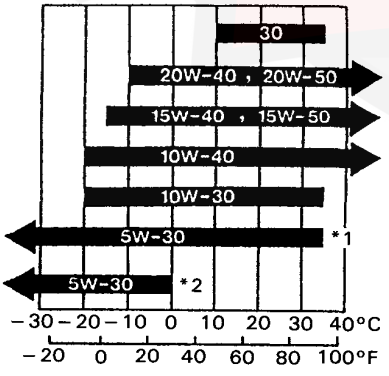
Maintenance

Lubrication Points

For the details of lubrication points and types of lubricants to be applied, refer to the Illustrated Index and various work procedures (such as Assembly/Reassembly, Replacement, Overhaul, Installation, etc.) contained in each section.

No.	LUBRICATION POINTS	LUBRICANT
1	Engine	Always use a fuel-efficient oil is that says "API Servie SF or SG." SAE Viscosity: See chart below.
2	Transmission — Manual Automatic	API Service Grade: SF or SG SAE Viscosity: 10 W-30 or 10 W-40 Honda Premium Formula Automatic Transmission Fluid or an equivalent DEXRON® II Automatic transmission fluid
3	Brake Line	Brake fluid DOT3 or DOT4
4	Clutch Line	Brake fluid DOT3 or DOT4
5	Power steering gearbox	Steering grease P/N 08733—B070E
6	Shift lever pivots (Manual transmission)	Grease with molybdenum disulfide
7 8 9 10 11 12 13 14 15 16 17 18 19 20	Release fork (Manual transmission) Steering boots Steering ball joints Select lever (Automatic transmission) Pedal linkage Intermediate shaft Brake master cylinder pushrod Trunk hinges and latches Door hinges upper/lower and latches Door opening detents Fuel filler lid Engine hood hinges and engine hood latch Clutch master cylinder pushrod Throttle cable end	Multi-purpose grease
21 22	Caliper — Piston seal, Dust seal, Caliper pin, Piston Shift and select cable ends	Silicone grease
23	Power steering system	Honda power steering fluid-V
24	Air conditioner compressor oil	SUNISO 5GS

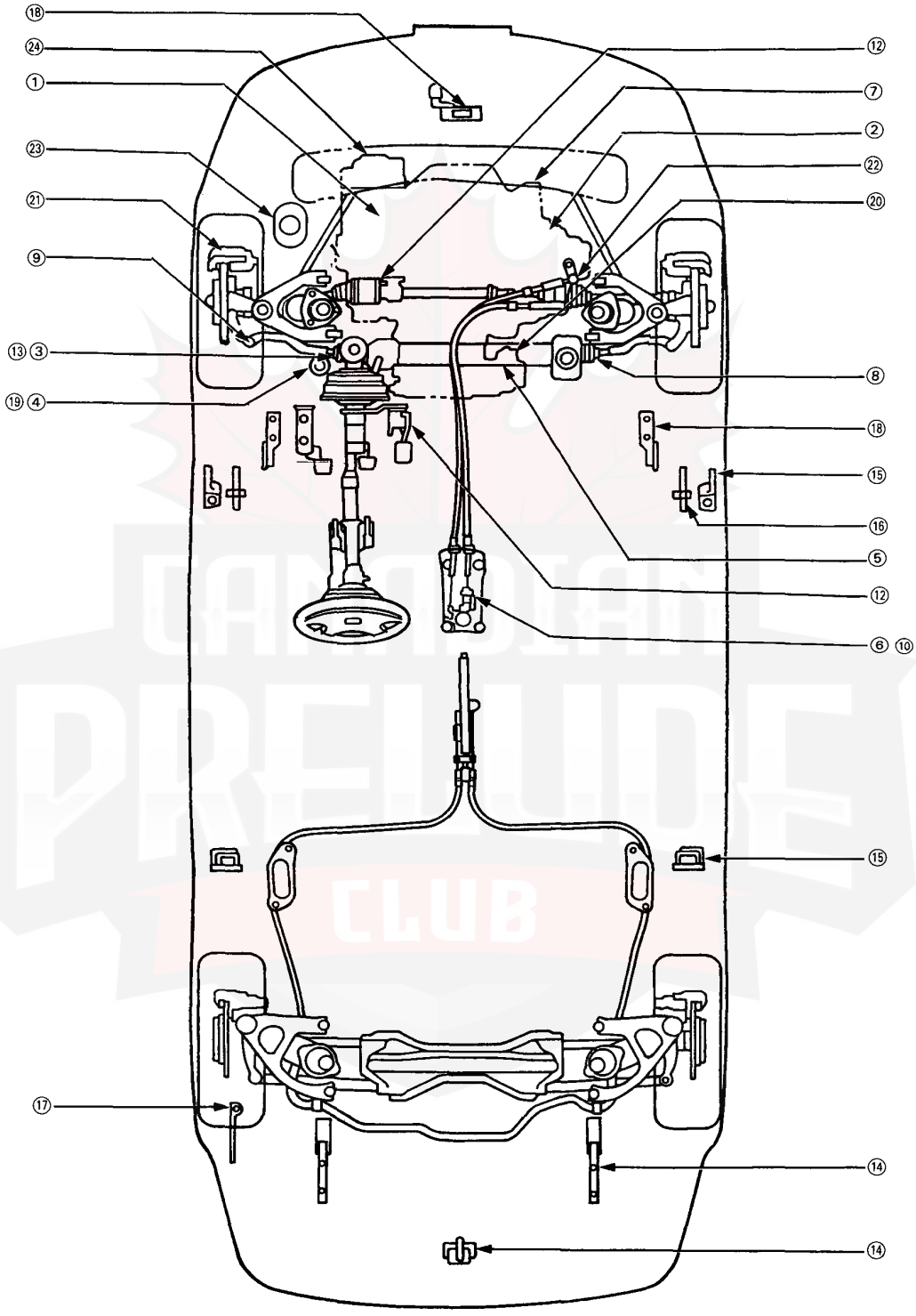
Select the oil for the car according to this chart:



Ambient temperature

CAUTION: Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

*1: Except cars with H22A2 engine.
*2: Cars with H22A2 engine.



R—Replace I—Inspect After inspection, clean, adjust, repair or replace if necessary.

Service at the interval listed x 1,000 km (or miles) or after that number of months, whichever comes first.		x 1,000 km	10	20	30	40	50	60	70	80	90	100
		x 1,000 miles	6	12	18	24	30	36	42	48	54	60
Maintenance Item		months	6	12	18	24	30	36	42	48	54	60
Emission Related												
☐ Air cleaner element	For European and KQ types					R				R		
	Except for European and KQ types			R		R		R		R		R
Idle speed and idle CO	Except for Switzerland and KS models			I		I		I		I		I
	For Switzerland and KS models											I
E.G.R. System	For cars using unleaded gasoline											I
Evaporative emission control system												I
Ignition timing	Except for Switzerland and KS models					I				I		
	For Switzerland and KS models											I
Positive crankcase ventilation valve	Except for Switzerland and KS models					I				I		
	For Switzerland and KS models											I
Valve clearance				I		I		I		I		I
Fuel filter						R				R		
Tank, fuel line and connections						I				I		
Spark plugs	For cars using platinumtip spark plug											R*1
	For cars using unleaded gasoline					R*2				R*2		
	For cars using leaded gasoline			R		R		R		R		R
Distributor Ignition cap and rotor	Except for Switzerland and KS models					I				I		
	For Switzerland and KS models											I
Ignition wiring	Except for Switzerland and KS models					I				I		
	For Switzerland and KS models											I
◙ Engine oil and oil filter		R	R	R	R	R	R	R	R	R	R	R
Alternator drive belt						I				I		
Power steering pump belt						I				I		
Cooling system hoses and connections						I				I		
• Engine coolant										R*3		
☐ Transmission oil						R				R		
Engine (Non-Emission Related)												
Timing belt and timing balancer belt												R
Water pump												I
Exhaust pipe and muffler				I		I		I		I		I
Catalytic converter heat shield (For cars with catalytic converter)												I

•: Day to day care (engine oil, ATF and coolant level) should be done practically according to the owner's manual by the customer.
☐: Under severe driving conditions, service these items more often.
*1: Replace every 6 years or 100,000 km (60,000 miles), whichever comes first.
*2: For KS type, replace every 2 years or 40,000 km (24,000 miles), whichever comes first after 30,000 km (18,000 miles).
*3: Thereafter, replace every 2 years or 40,000 km (24,000 miles), whichever comes first.

R—Replace I—Inspect After inspection, clean, adjust, repair or replace if necessary.

Service at the interval listed x 1,000 km (or miles) or after that number of months, whichever comes first.		x 1,000 km	10	20	30	40	50	60	70	80	90	100
		x 1,000 miles	6	12	18	24	30	36	42	48	54	60
Maintenance Item		months	6	12	18	24	30	36	42	48	54	60
Brakes (Non Emission Related)												
Front brake pads			I	I	I	I	I	I	I	I	I	I
☐ Front brake discs and calipers				I		I		I		I		I
☐ Rear brake discs, calipers and pads						I				I		
Brake hoses and lines (Including Anti-lock brake system *4)				I		I		I		I		I
Parking brake				I		I				I		
Brake fluid (Including Anti-lock brake system *4)						R				R		
Anti-lock brake system high pressure hose *4										R		
Anti-lock brake system operation *4				I		I				I		
Steering, suspension, miscellaneous (Non-Emission Related)												
Front wheel alignment				I		I		I		I		I
Front and rear wheel alignment *5				I		I		I		I		I
Steering operation, tie rod ends, steering gear box and boots (Including rear actuator for 4WS model)	Except for 4WS model			I		I				I		
	For 4WD model			I		I		I		I		I
Suspension mounting bolts				I		I		I		I		I
☐ Power steering system				I		I		I		I		I
Supplemental Restraint System			Inspect system, replace slip ring (Except for model equipped with passenger's airbag) 10 years after first registration									

☐: Under severe driving conditions, service these items more often.
*4: For cars with Anti-lock brake system.
*5: For cars with four wheel steering.

Severe Driving Conditions
Items with a ☐ in the chart will need service more often, if you drive in some severe conditions:

The conditions are:
A. Repeated short distance driving.
B. Dusty conditions.
C. Severe cold weather.
D. Areas with road salt or other corrosive materials.
E. Rough or muddy roads.
F. Towing a trailer.

The sevices are:
– Replace engine oil and oil filter every 5,000 km (3,000 miles) or 3 months under condition A, B or F.
– Clean the air cleaner element every 20,000 km (12,000 miles) or 12 months and replace every 40,000 km (24,000 miles) or 24 months for European and KQ types under condition B or E.
Clean the air cleaner element every 10,000 km (6,000 miles) or 6 months and replace every 20,000 km (12,000 miles) or 12 months for other than European and KQ types under condition B or E.
– Replace transmission oil every 20,000 km (12,000 miles) or 12 months under condition F.
– Inspect front brake discs and calipers, every 10,000 km (6,000 miles) or 6 months under condition A, B, D, E or F.
– Inspect rear brake discs, calipers and pads every 20,000 km (12,000 miles) or 12 months under condition A, B, D, E or F.
– Inspect the power steering system every 10,000 km (6,000 miles) or 6 months under condition B, C, or E.

CAUTION: Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily bases, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

Engine

Construction and Function

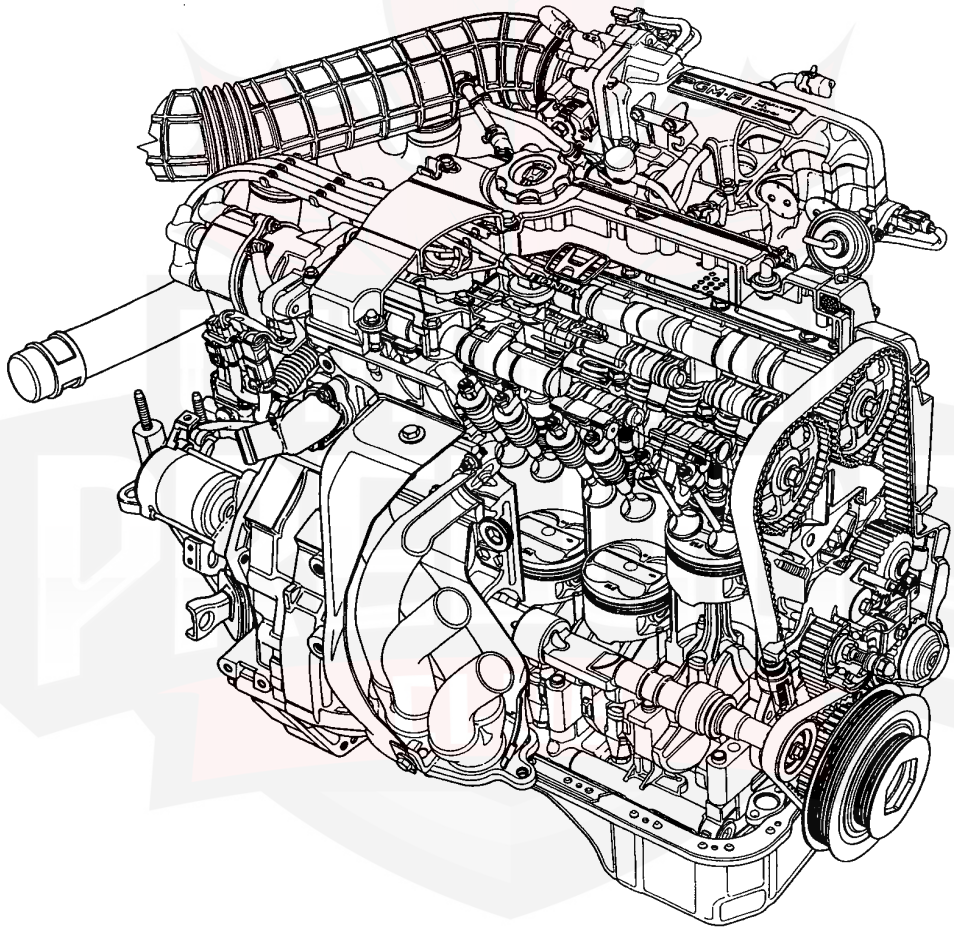
Outline of Model Change

- The H22A2 engine has been added.

Outline

Description

The new H22A2 engine is an in-line 4-cylinder DOHC design displacing 2,157 cm^3 (132 cu-in). It is water cooled and equipped with a center plug type pent-roof combustion chamber. It is specified to use premium unleaded fuel and uses a PGM-FI system. This engine incorporates a mechanism called Honda Variable Valve Timing and Valve Lift Electronic Control (VTEC) System.
This system allows the timing and lift of the intake and exhaust valves to be changed simultaneously. The engine also includes a electronically-controlled intake manifold system that varies the volume of the intake chamber.



Major Specifications

Type	Water cooled 4-stroke, In-line 4-cylinder gasoline engine
Displacement	2,157 cm^3 (132 cu-in)
Bore x Stroke	87.0 x 90.7 mm (3.43 x 3.57 in)
Compression Ratio	10.0 : 1
Cam, Valve Mechanism	Dual over-head camshaft, VTEC
Valve Train	Belt Driven
Fuel Supply System	PGM-FI

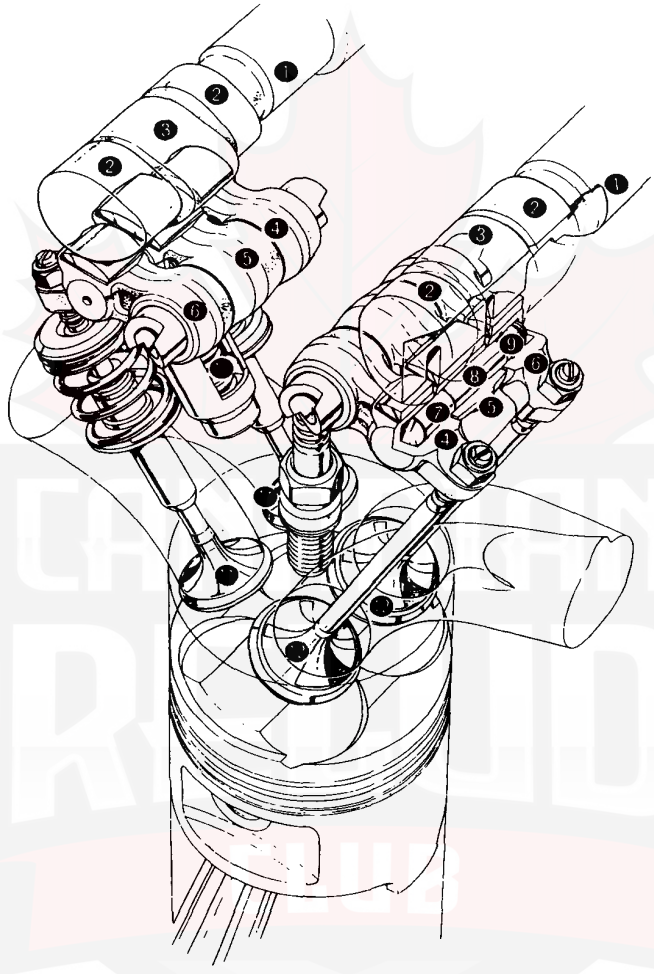
Main Features:

- The cylinder head is made of aluminum alloy, a center plug type, pentroof-shaped combustion chamber is used, and the 4-valve system uses 2 intake valves and 2 exhaust valves.
- The camshafts and the valve train are driven with the timing belt, and the two balancer shafts are driven by the timing balancer belt. Belt tension is automatically adjusted.
- The cylinder block is made of aluminum alloy using fiber reinforced metal (FRM) sleeves.
- The crankshaft is made by forging, the mainshaft is supported at five points and has eight balancer weights.
- The balancer shafts employ a gear-type reverse mechanism to reduce secondary engine vibration.
- The intake manifold is made of aluminum alloy, and the heat riser is used for heating the air/fuel mixture.
- The exhaust manifold is made of stainless steel.
- The electronic fuel injection system is of a sequential multiport fuel injection type and injects fuel into all four cylinders, the throttle body is of a one-barrel side-draft type.
- The ignition system is a fully-transistorized, contactless type. The spark advance is electronic.
- The air cleaner is equipped with a resonator.
- The radiator is of a corrugated type, and the cooling fan is electrically powered.

VTEC

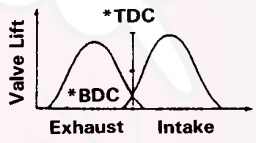
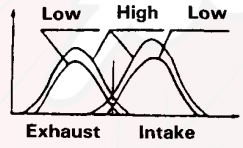
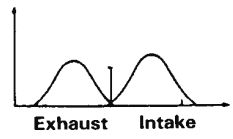
Outline

The engine is equipped with multiple cam lobes per cylinder, providing one valve timing and valve lift profile at low speed and a different profile at high speed. Switch-over from one profile to the other is controlled electronically, and is selected by monitoring current engine speed and load.



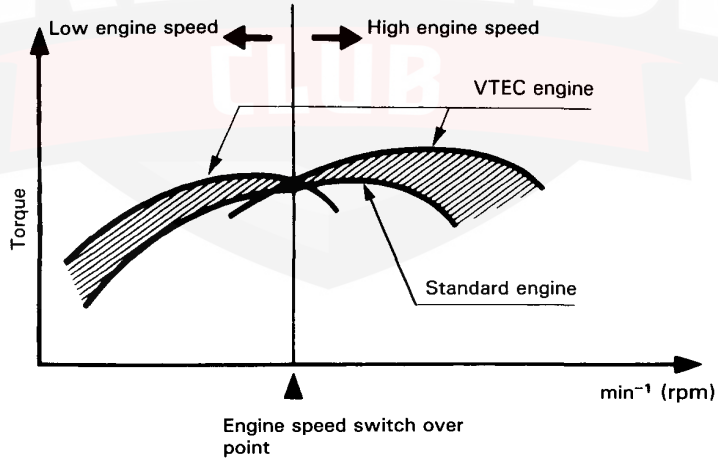
1. CAMSHAFT
2. CAM LOBES FOR LOW ENGINE SPEED
3. CAM LOBES FOR HIGH ENGINE SPEED
4. PRIMARY ROCKER ARM
5. MID ROCKER ARM
6. SECONDARY ROCKER ARM
7. HYDRAULIC PISTON (A)
8. HYDRAULIC PISTON (B)
9. STOPPER PISTON
10. LOST MOTION ASSEMBLY
11. EXHAUST VALVE
12. INTAKE VALVE

In general, it would be ideal if the high engine speed performance of a racing engine and the low engine speed performance of a standard passenger car engine could be combined in a single engine. This would result in a maximum performance engine with a wide power band. Two of the major differences between racing engines and standard engines are the timing of the intake/exhaust valves and the degree of valve lift. Racing engines have longer intake/exhaust timing and a higher valve lift than standard engines. The Honda VTEC (Variable Valve Timing and Valve Lift Electronic Control) System takes this into account. When valve actuation is set for low engine speed timing and lift, low engine speed torque is better than in a standard engine. When valve actuation is then switched for high engine speed timing and lift, output improves to the level given by a racing engine. Until now, few variable valve timing systems have been commercialized. In those that have, only the time that both valves are open (intake/exhaust overlap) could be changed. Honda's system is the first in the world in which both the valve timing and the degree of valve lift can be changed as needed, making it the most advanced valve train mechanism available.

	Racing Engine	VTEC Engine	Standard Engine
Valve Timing (exhaust/intake) Valve Lift			
Max. Power	O	O	
Low engine speed Torque		O	O
Idling Stability		O	O

*TDC = Top Dead Center *BDC = Bottom Dead Center
O = Optimum Characteristic

The engine is equipped with two valve timing and valve lift settings which change according to driving conditions.

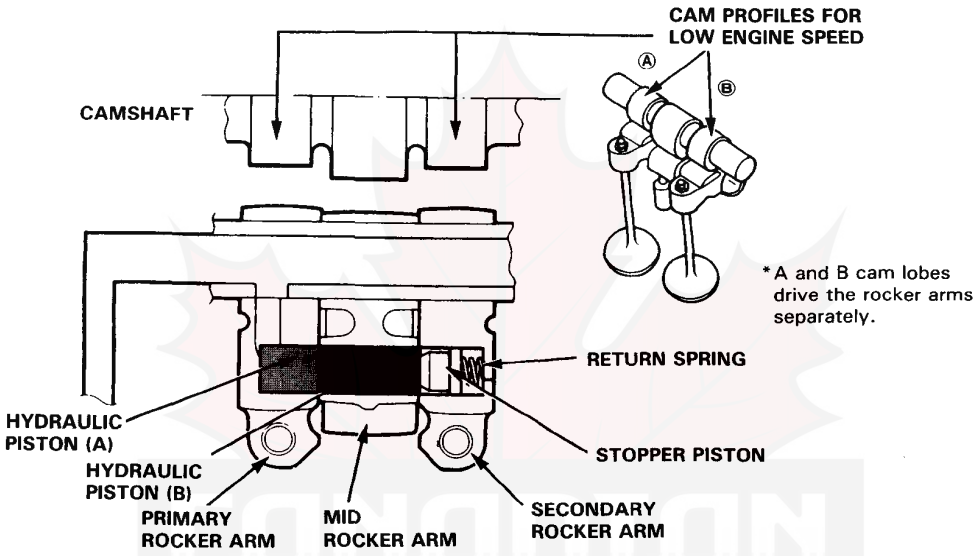


VTEC

Mechanism

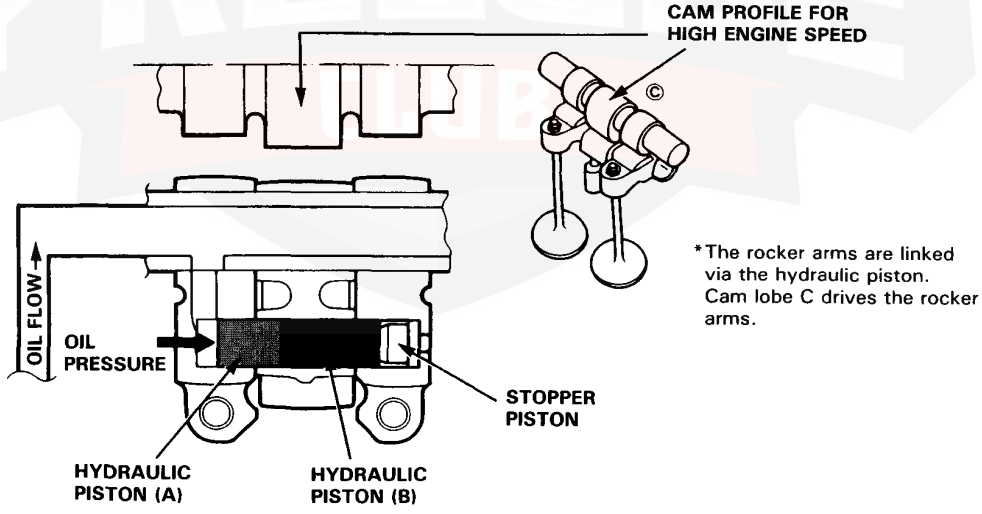
At Low engine speed:
As shown, the primary and secondary rocker arms are not connected to the mid rocker arm but are driven separately by cam lobes A and B at different timing and lift. Although the mid rocker arm is following the center cam lobe with the lost-motion assembly, it has no effect on the opening and closing of the valves in the low engine speed range.

At Low engine speed:



At High engine speed:
When driving at high engine speed, piston (A) moves in the direction shown by the arrow in the figure below. As a result, the primary, secondary, and mid rocker arms are linked by 2 hydraulic pistons (like a skewer) and the 3 rocker arms move as a single unit. In this state, all the rocker arms are driven by cam lobe C, opening and closing the valves at the valve timing and valve lift set for high operation.

At High engine speed:

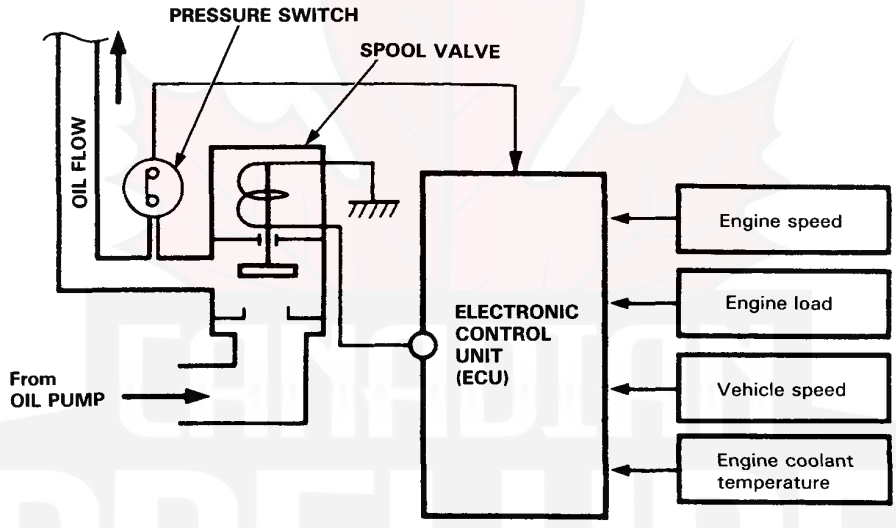


Control System

The control system for this mechanism, as shown below, constantly monitors the changes in engine status such as load, engine speed and vehicle speed. This information is transmitted to the Electronic Control Unit (ECU).

Valve Timing Change Conditions
Engine Speed: 4,900 min^{-1} (rpm) or higher
Vehicle Speed: 30 km/h (19 mph) or faster
Engine Coolant Temperature: 60°C (140°F) or higher

Control System:

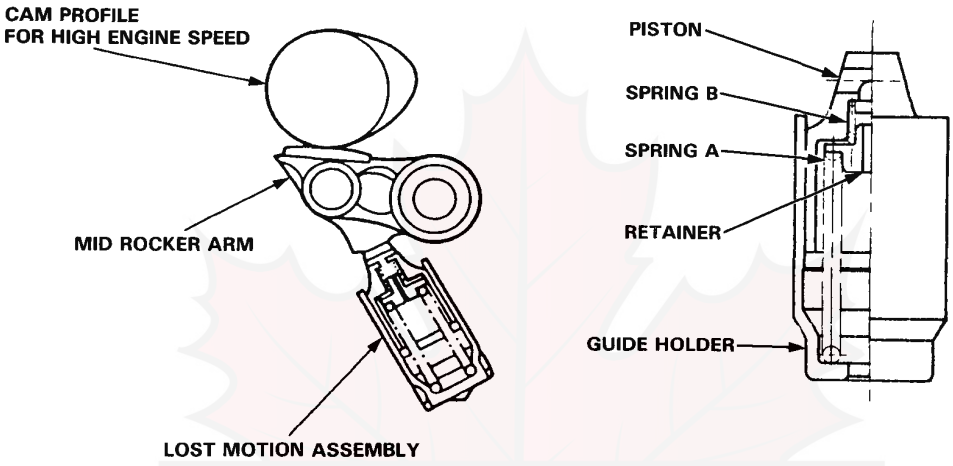


(cont'd)

Control System (cont'd)

Lost Motion Mechanism

The mid rocker arm is always driven by the high-speed cam lobe, even at low speeds. At low speeds, the lost motion mechanism keeps the mid rocker arm in contact with the high-speed cam lobe. At high speeds, the lost motion mechanism acts as part of the valve spring load.

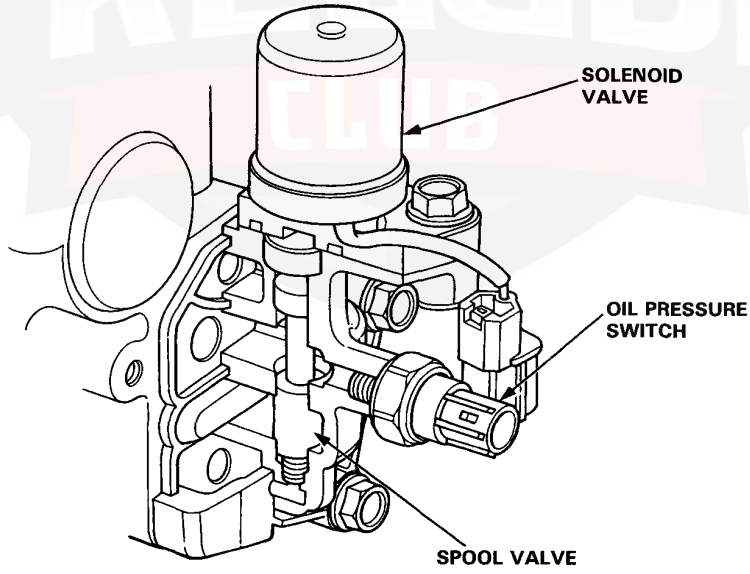


Hydraulic Pressure Control Mechanism

Spool valve/Oil pressure switch

The spool valve, in response to a signal from the ECU, closes the oil passage to the rocker arm at low speed. This cuts oil pressure to the hydraulic pistons in the rocker arms so the arms operate independently. At high speed, the ECU opens the spool valve. The increased oil pressure causes the hydraulic pistons to lock the primary, secondary, and mid rocker arms together.

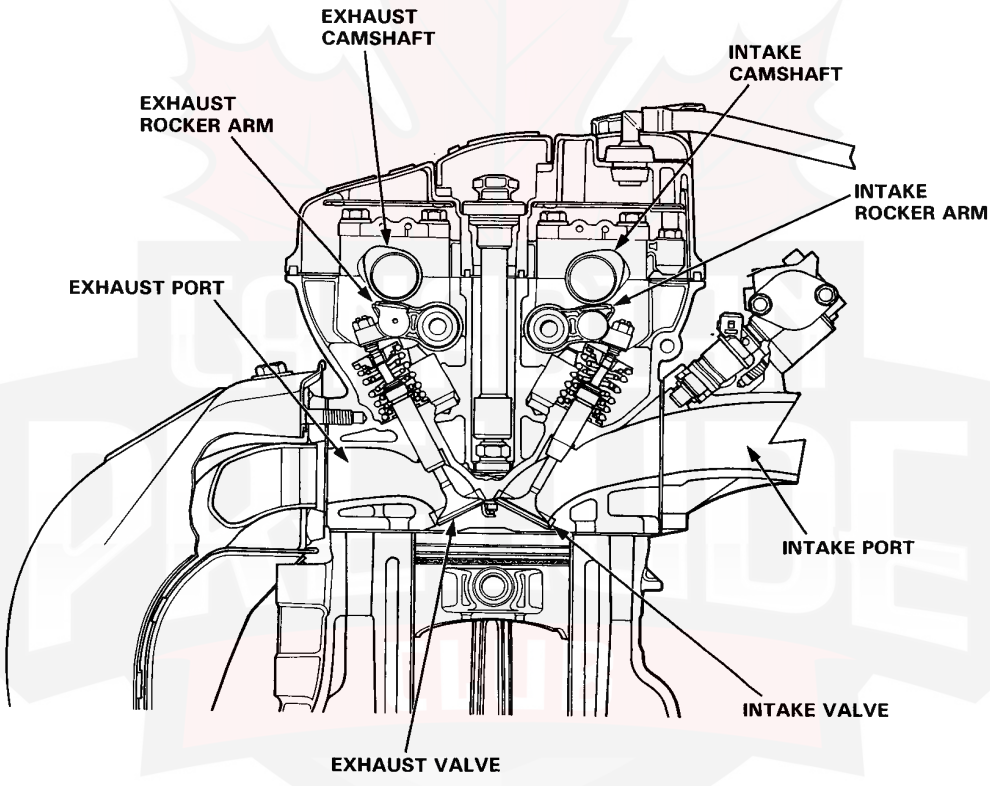
The oil pressure switch serves as a sensor to determine if the switch-over has taken place in response to the ECU signal.



Cylinder Head

Outline

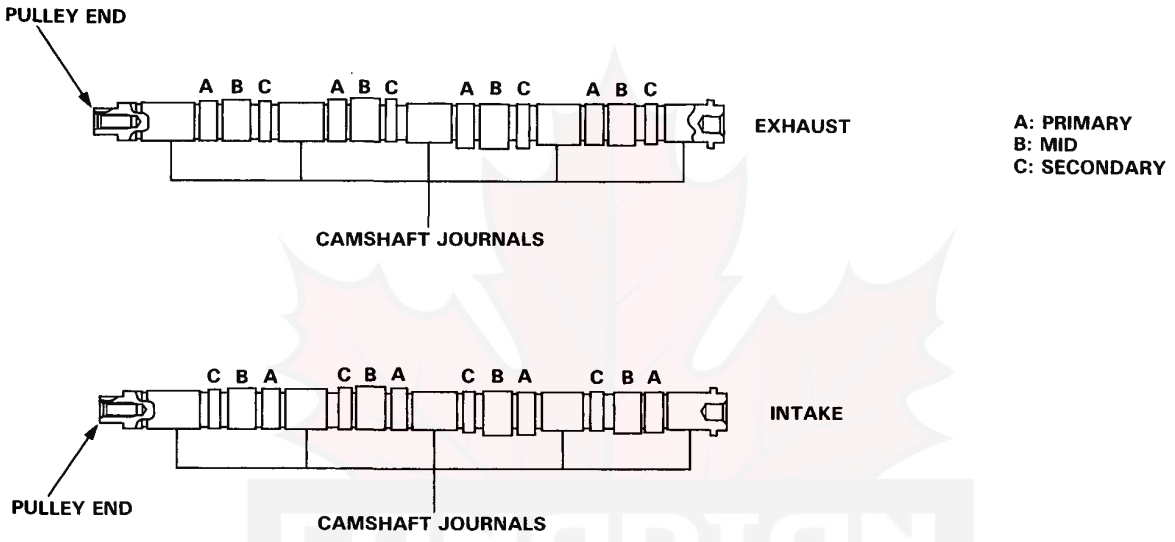
The one-piece cylinder head is made of aluminum alloy to reduce the weight while increasing efficiency.
The combustion chamber is a compact pent roof shape, center plug type. The cylinder head uses a DOHC 4-valve system with 2 intake valves and 2 exhaust valves arranged for cross flow. Combustion is stable due to the optimization of the ignition timing, compression ratio and valve timing.

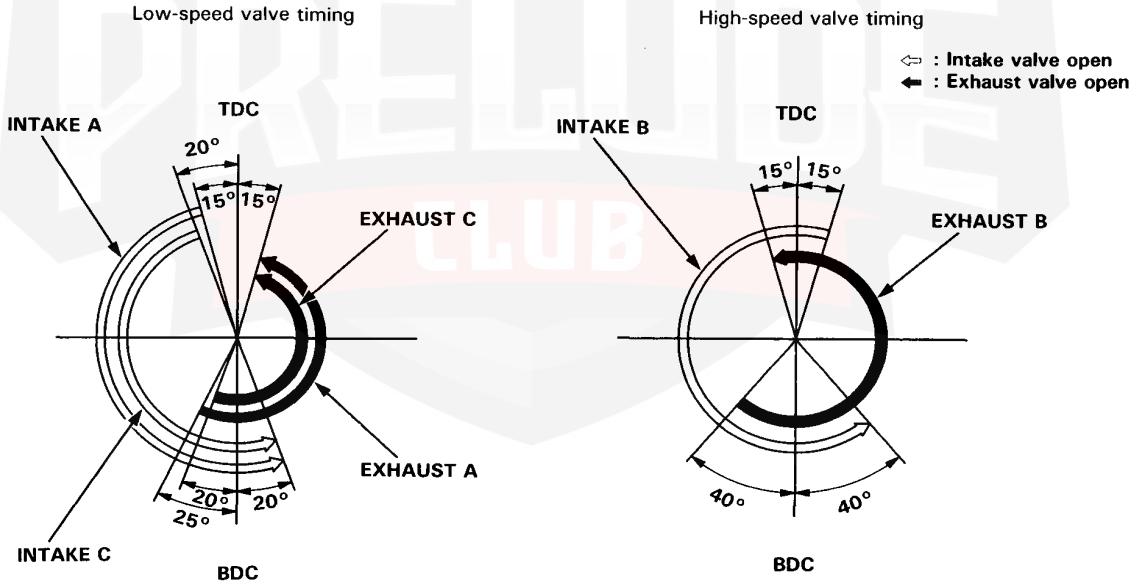


Cylinder Head

Camshafts

The camshaft is a cast piece. By improving dimensional accuracy, it became possible to achieve minimum space between cams, thus allowing a more compact cylinder head. Each camshaft is supported on five bearing journals with forced lubrication. On the left end of each camshaft is a driven pulley. The exhaust and intake cycles require a total of 24 cam lobes to open and close the valves.





TDC: Top dead center
BDC: Bottom dead center

Valves and Valve Springs

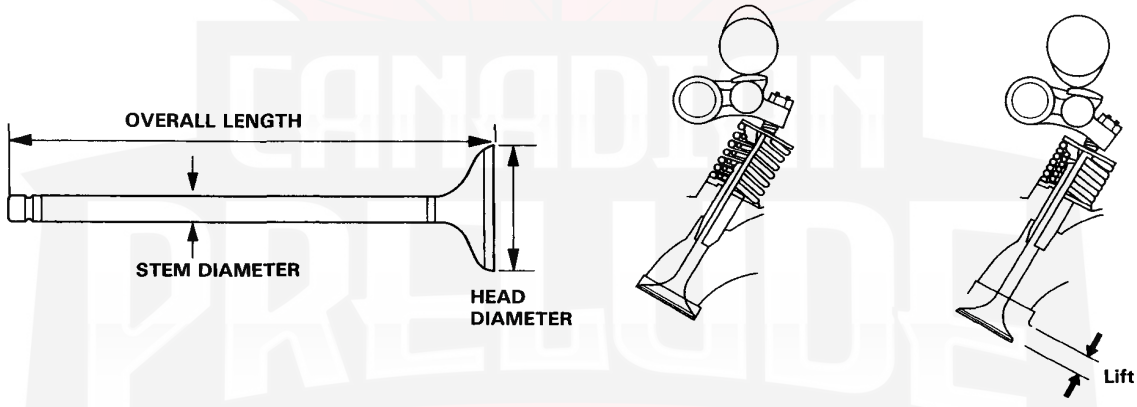
The valves are opened and closed by rocker arms driven by the camshaft.
Light weight and large diameter valves made of a high strength metal with small diameter stems are used. The air resistance is decreased by the slender stems and the intake efficiency is increased by inlet ports that match with large diameter valves.

Valve specifications

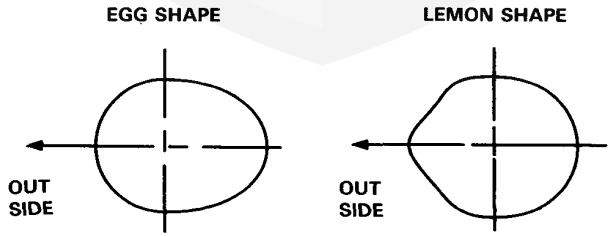
Unit: mm (in)

ITEM \ VALVE	INTAKE	EXHAUST
HEAD DIAMETER	35.0 (1.38)	30.0 (1.18)
STEM DIAMETER	5.5 (0.22)	5.5 (0.22)
OVERALL LENGTH	106.75 (4.203)	106.95 (4.211)
VALVE LIFT	Secondary: 8.0 (0.31) Mid: 11.5 (0.45)* Primary: 6.5 (0.26)	Secondary: 7.5 (0.30) Mid: 10.5 (0.41)* Primary: 6.0 (0.24)

*Indicates high-speed valves



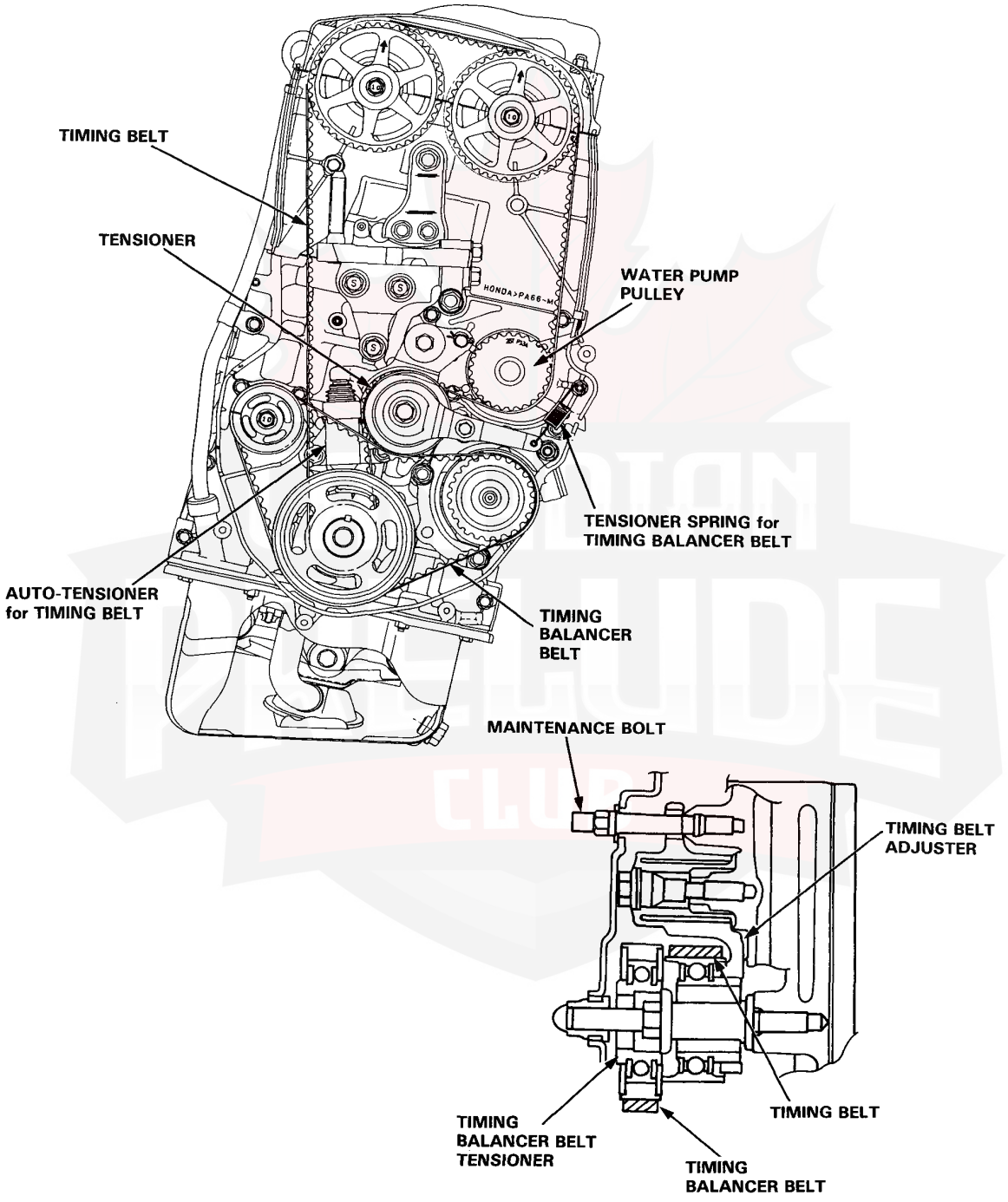
The valve spring wire uses a modified cross-section to valve lift in a limited space.



Belt Tensioner

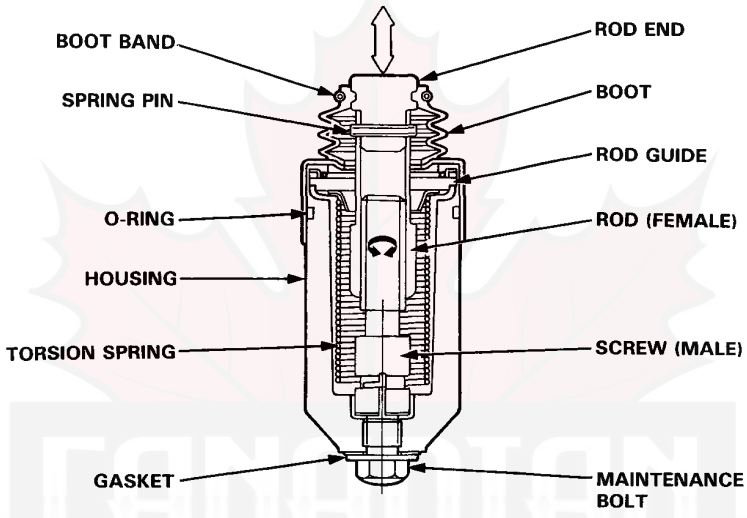
Outline

The tensioners for the balancer shaft drive belt and the timing belt are arranged in parallel on a single axis for a more compact configuration. This tensioner allows easy belt maintenance.

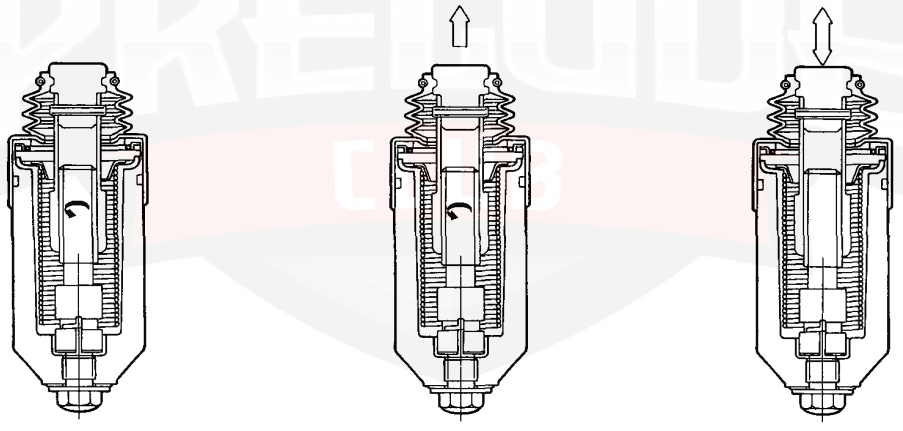


Auto-tensioner

The auto-tensioner uses a torsion spring to regulate the timing belt tension. The main components are the torsion spring, a male screw and a female rod. The assembly is filled with oil and sealed. The spring turns the male screw, which pushes the female rod out against the belt. The design is such that the rod cannot be pushed back into the housing by belt tension. To pull the female rod back into the assembly, the male screw must be turned with a screwdriver.



Mechanism:



① The male screw is rotated by the torsion spring.

② The female rod is pushed out as the rod rotates.

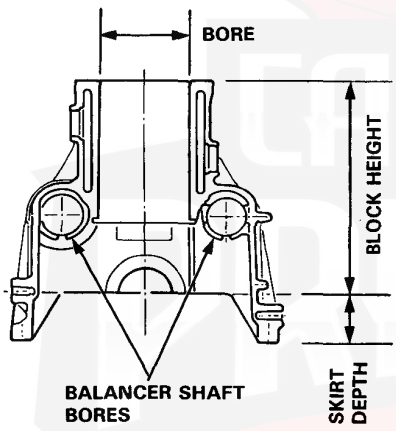
③ The rod stops when the force of the torsion spring and the timing belt equalize.

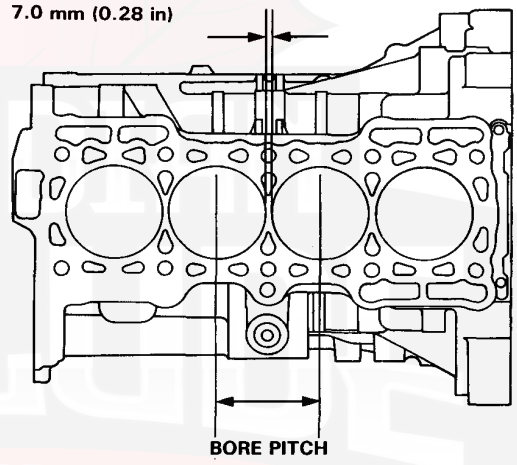
Cylinder Block

The cylinder block is a closed deck design made of aluminum alloy . The cylinder sleeves are made of FRM, a composite material of aluminum, alumina fiber and carbon fiber. The bores in the cylinder block for the balancer shafts and the deep skirt design improve the rigidity of the block.

Cylinder specifications

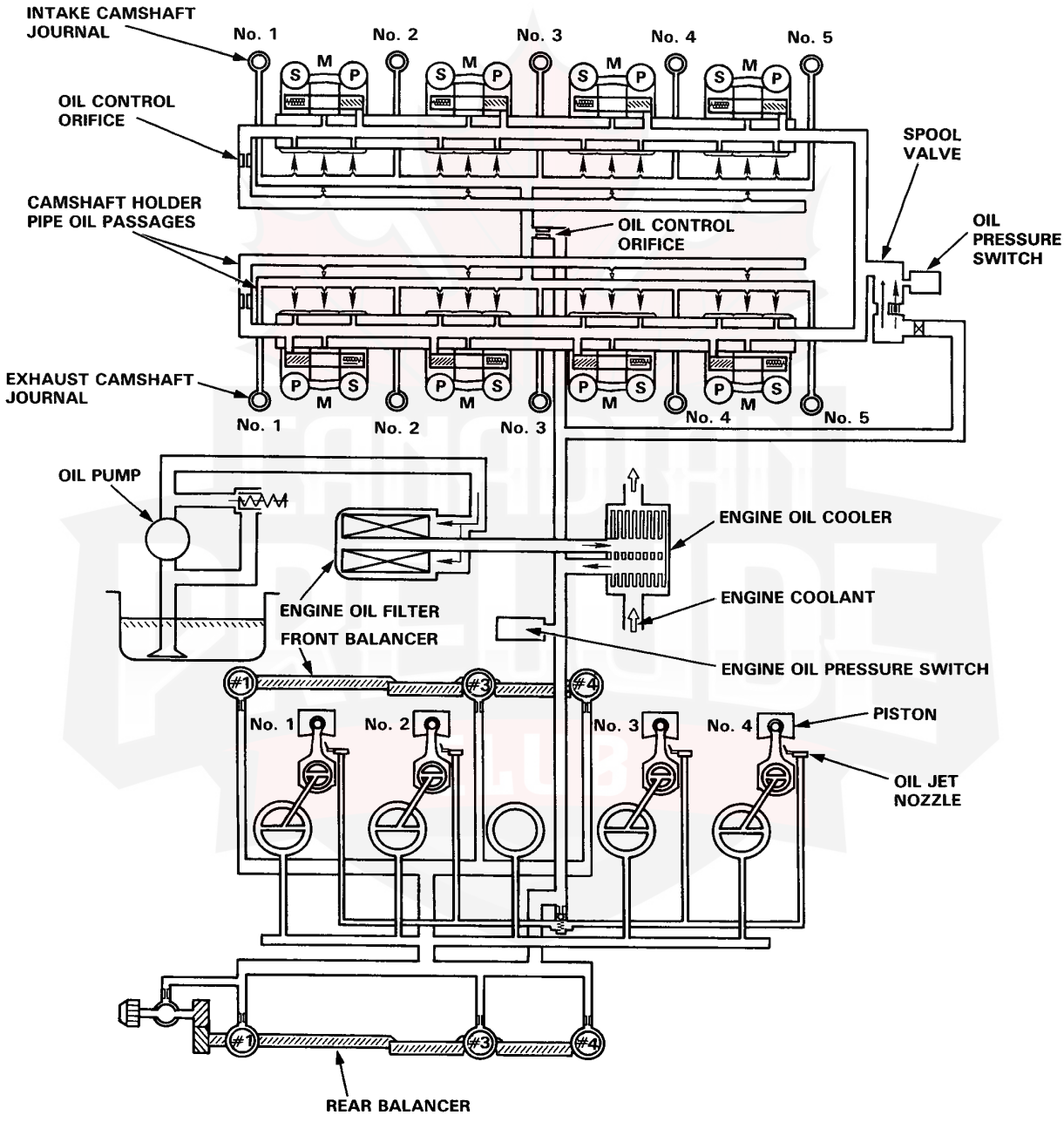
Bore x Stroke	87.0 x 90.7 mm (3.43 x 3.57 in)
Bore Pitch	94.0 mm (3.70 in)
Block Height	219.52 mm (8.643 in)
Skirt Depth	50.0 mm (1.97 in)
Displacement	2,157 cm³ (132 cu-in)





Oil Flow

Lubrication of the crankshaft and connecting rod bearings is done by oil pumped through the main bearing caps and into passages in the crankshaft. The pistons and cylinder walls are lubricated by oil spray nozzles mounted on the cylinder block.



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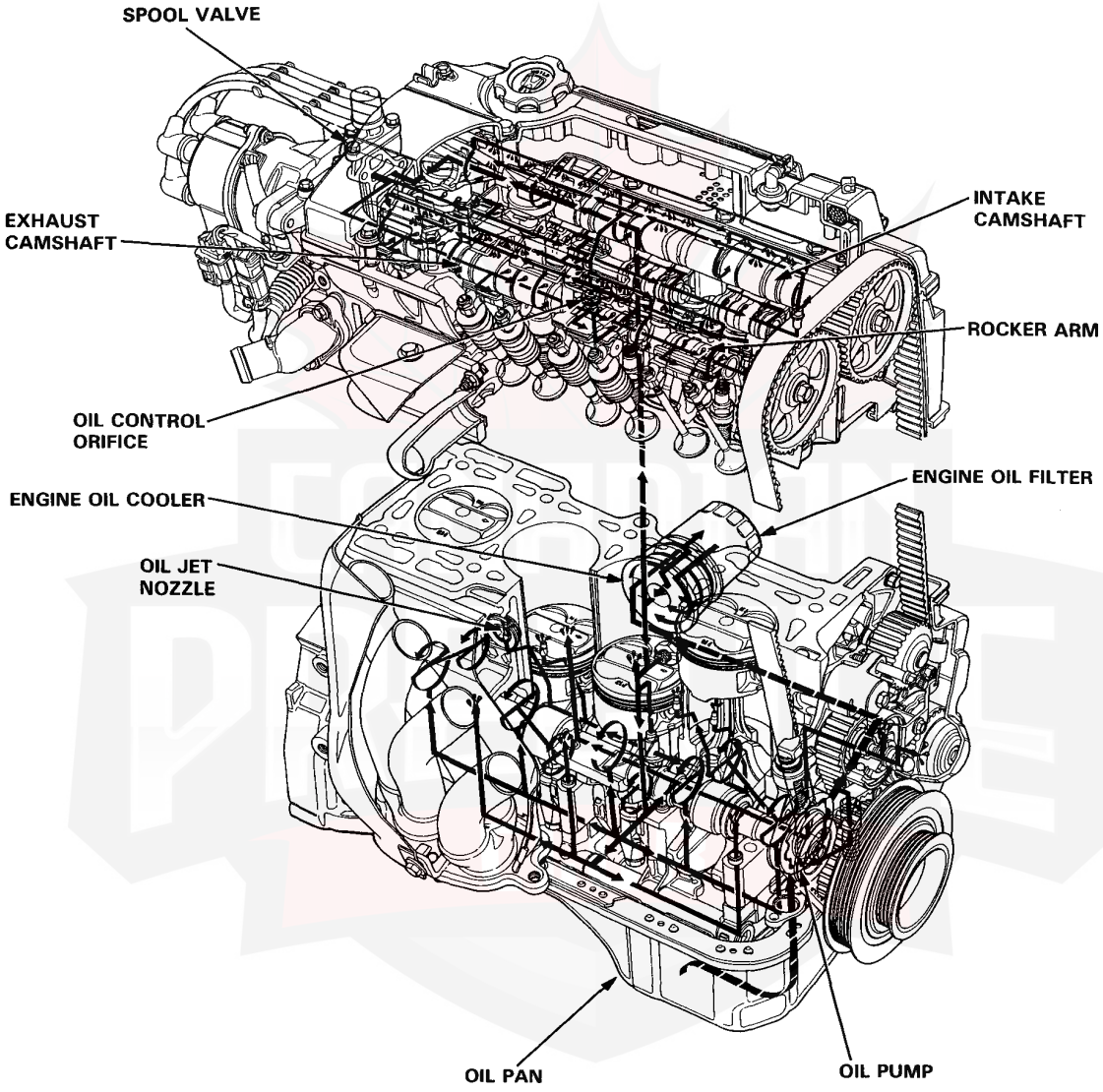
Oil Flow

(cont'd)

Oil pumped to the cylinder head serves two purposes; to lubricate the components and to operate the VTEC. Oil is pumped into the camshaft holder to lubricate the journals, and it sprays from orifices in the holder to lubricate the rocker arms and valves. Oil is also supplied to the spool valve. At high engine speed, this valve opens and oil is pumped at high pressure through the rocker arm shafts to operate the VTEC.



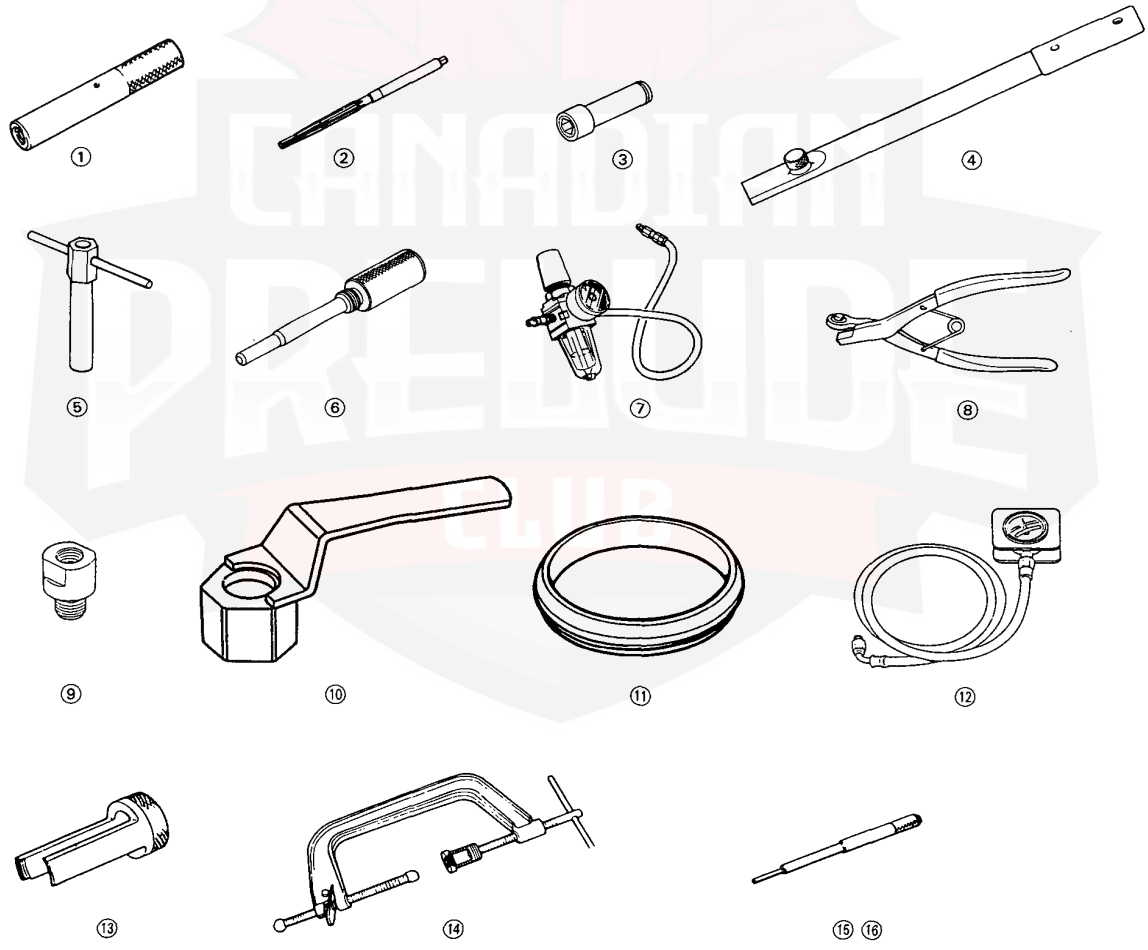
Cylinder Head/Valve Train

Outline of Model Change

- The H22A2 engine has been added.

Special Tools

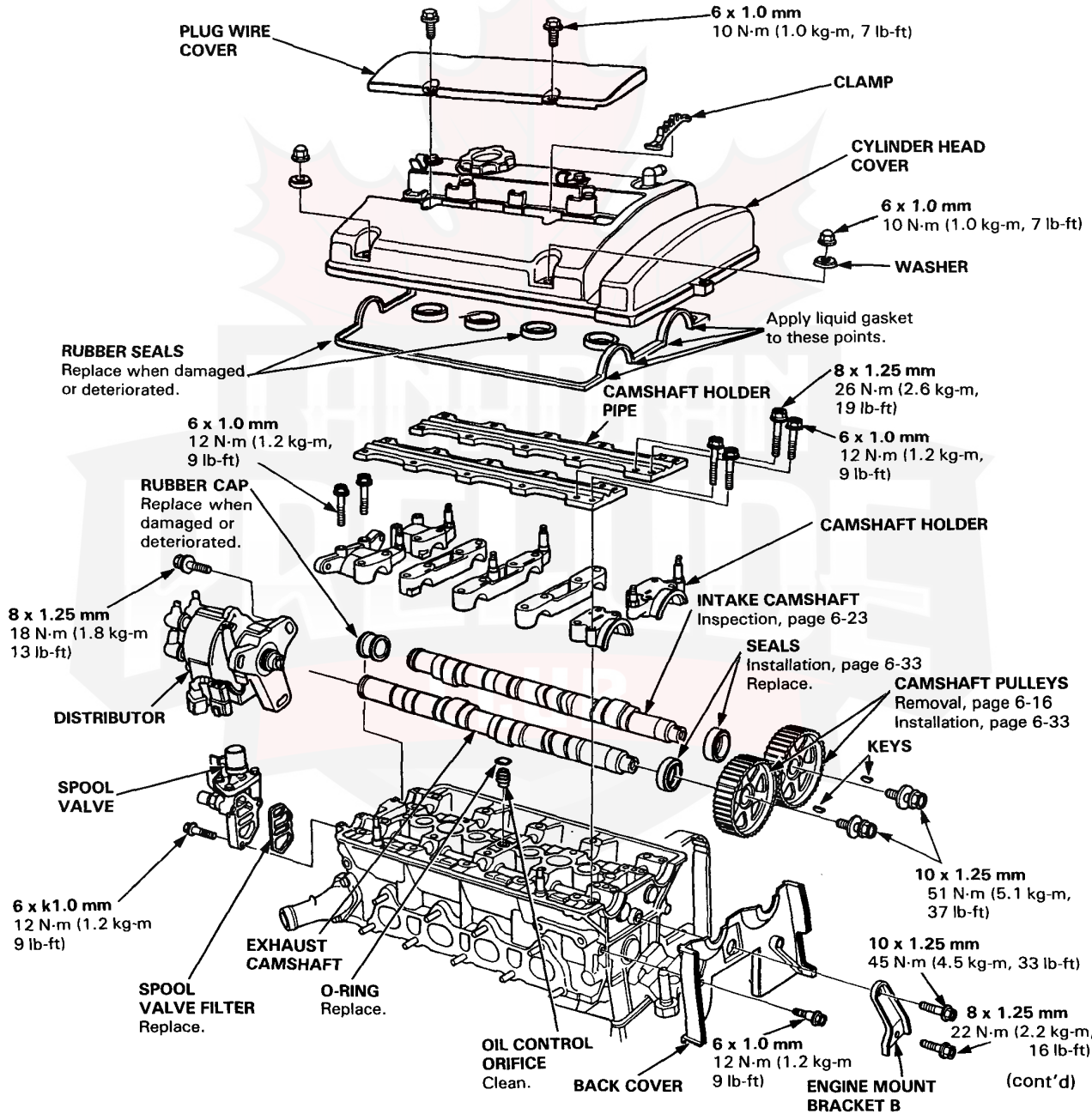
Ref. No.	Tool Number	Description	Qty	Page Reference
①	07HAD—PJ70200	Stem Seal Driver	1	6-29
②	07HAH—PJ70100	Valve Guide Reamer, 5.5 mm	1	6-28
③	07JAA—0010200	Soket Wrench, 19 mm	1	6-39, 42
④	07JAB—0010200	Handle	1	6-39, 42
⑤	07LAA—PR30100	Tappet Adjuster Wrench	1	6-43
⑥	07LAG—PT20100	Balancer Shaft Lock Pin	1	6-41
⑦	07LAJ—PR30100	Valve Inspection Set	1	6-12
⑧	07LAJ—PR30201	Air Stopper	1	6-11, 12
⑨	07LAK—PR30100	Low Pressure Gauge Attachment	1	6-8, 9
⑩	07MAB—PY30100	Pulley Holder Attachment, HEX 50 mm	1	6-39, 42
⑪	07NAG—P130100	Timing Belt Slider	1	6-34
⑫	07NAJ—P070100	Low Pressure Gauge	1	6-8, 9
⑬	07757—PJ10100	Valve Spring Compressor Attachment	1	6-25
⑭	07757—0010000	Valve Spring Compressor	1	6-25
⑮	07742—0010100	Valve Guide Remover, 5.5 mm	1	6-28
⑯	07942—8920000	Valve Guide Driver, 5.5 mm	1	6-28



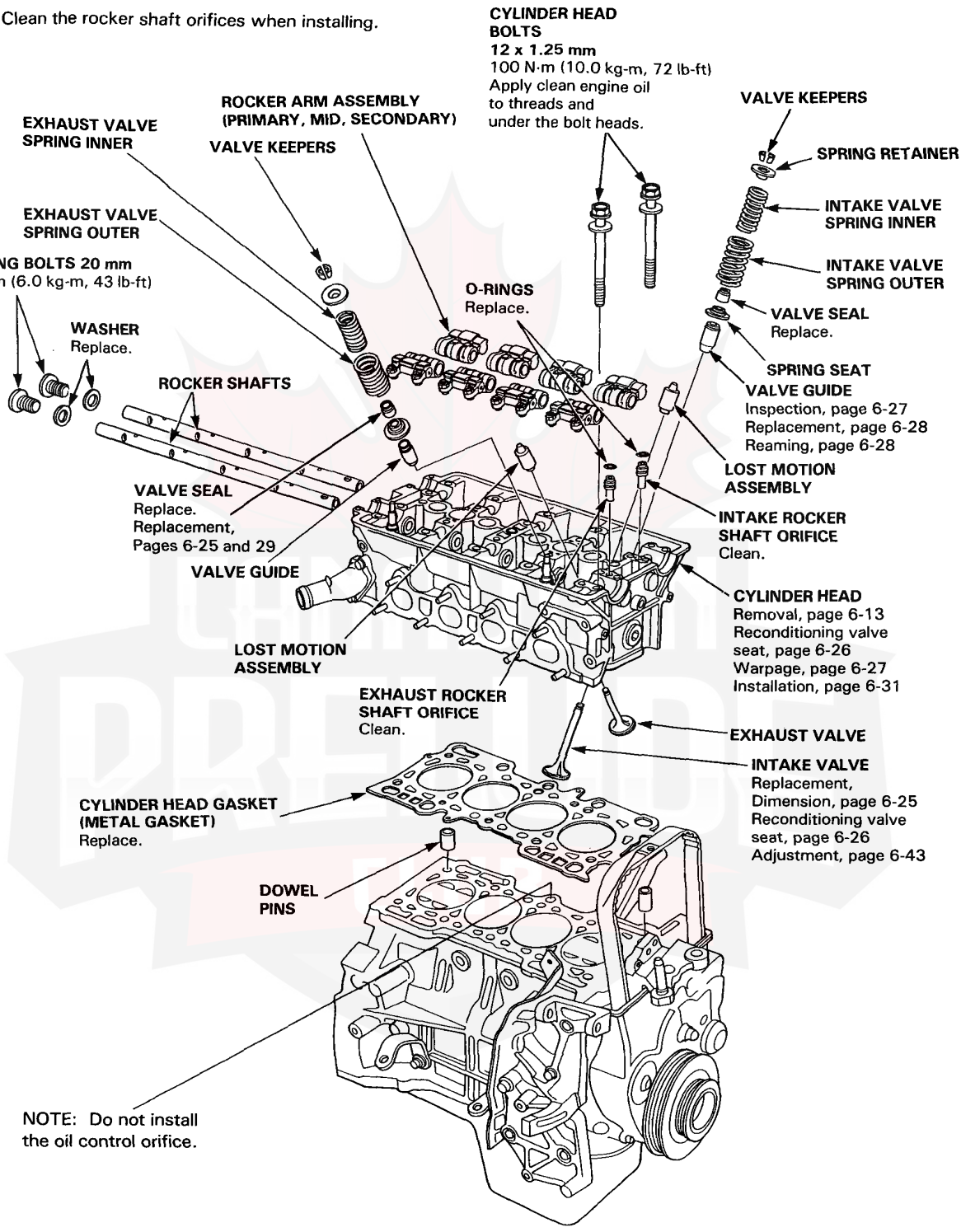
CAUTION: To avoid damaging the cylinder head, wait until the engine coolant temperature drops below 38°C (100°F) before removing it.

NOTE:
- *Use new O-rings and gaskets when reassembling.*
- Use liquid gasket, Part No. 0Y740—99986.
- Clean the oil control orifice before installing.

Prior to reassembling, clean all the parts in solvent, dry them, and apply lubricant to any contact parts.



NOTE: Clean the rocker shaft orifices when installing.



Troubleshooting Flowchart — Spool Valve

Check Engine Light indicates code 21: A problem in the Spool Valve circuit.

— Check Engine Light has been reported on.
— With service check connector jumped, CODE 21 is indicated.

Do the electronic control unit (ECU) Reset Procedure.

Start the engine.

Warm up engine to normal operating temperature (radiator fan comes on).

Do the Road Test.*

*Road Test:
Accelerate in 2nd gear to an engine speed over 6000 min⁻¹(rpm).
Hold that engine speed for at least two seconds.
Repeat this test at least three times.

Is Light on and does it indicate CODE 21?

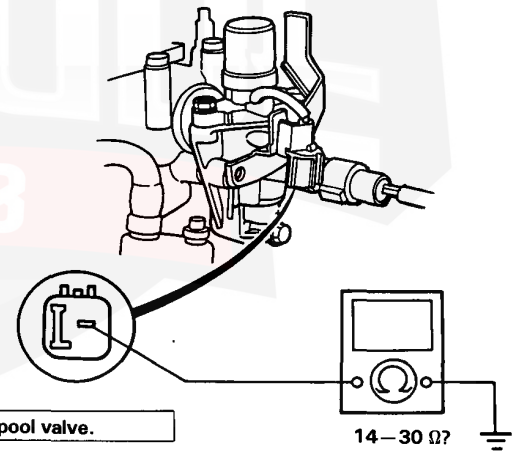
NO → **Intermittent failure, system is OK at this time. Check for poor connections or loose wires at spool valve and ECU.**

YES

Turn the ignition switch OFF.

Disconnect the 1P connector from the spool valve.

Check for continuity between 1P connector terminal and body ground.



Is there 14—30Ω?

NO → **Replace the spool valve.**

YES

(To page 6-6)

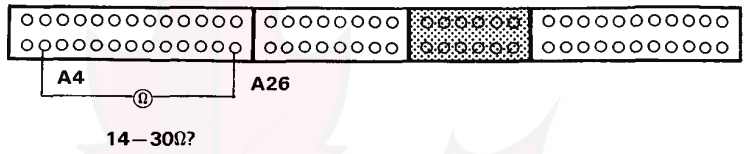
(cont'd)

Troubleshooting Flowchart—Spool Valve (cont'd)

(From page 6-5)

Reconnect 1P connector to spool valve. Connect the ECU test harness to the main harness only.

Measure the resistance between A4 terminal and A26 terminal.



14—30Ω?

Is there 14—30 Ω?

NO → **Check for open or short in wire between ECU and spool valve.**

YES

Substitute a known-good ECU and recheck. If symptom/indication goes away replace the original ECU.

Troubleshooting Flowchart — Oil Pressure Switch

Check Engine Light indicates code 22: A problem in the Oil Pressure Switch circuit.

- **Check Engine Light has been reported on.**
- **With service check connector jumped, CODE 22 is indicated.**

Do the electronic control unit (ECU) Reset Procedure.

Start the engine.

Warm up engine to normal operating temperature (radiator fan comes on).

Do the Road Test.*

*Road Test:
Accelerate in 2nd gear to an engine speed over 6000 min^{-1}(rpm).
Hold that engine speed for at least two seconds.
Repeat this test at least three times.

Is Light on and does it indicate CODE 22? — NO → **Intermittent failure, system is OK at this time. Check for poor connections or loose wires at Oil pressure switch and ECU.**

YES

Turn the ignition switch OFF.

Disconnect the 2P connector from the Oil pressure switch.

Check for continuity between the 2 terminals on the Oil pressure switch.

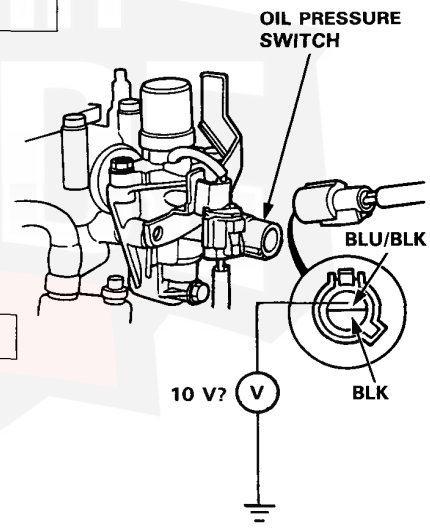
Is there continuity? — NO → **Replace the Oil pressure switch.**

YES

Turn the ignition switch ON.

Measure the voltage between the BLU/BLK wire and body ground.

(To page 6-8)



(cont'd)

Troubleshooting Flowchart — Oil Pressure Switch (cont'd)

(From page 6-7)

Is there approx. 10 V?
- NO → **Inspect for an open or short to ground in the BLU/BLK wire between the 2P connector and D6 terminal of the ECU. If wire is OK, substitute a known-good ECU and retest.**
- YES ↓

Measure the voltage across the BLU/BLK and BLK wires in 2P connector.

Is there approx. 10 V?
- NO → **Repair open circuit in BLK wire between the 2P connector and body ground.**
- YES ↓

Turn the ignition switch OFF.

Remove the sealing bolt and connect the low pressure gauge.

Connect a tachometer.

Start the engine and warm it up to normal operating temperature.

Check oil pressure at engine speed of 1,000, 3,000 and 5,000 min⁻¹(rpm).

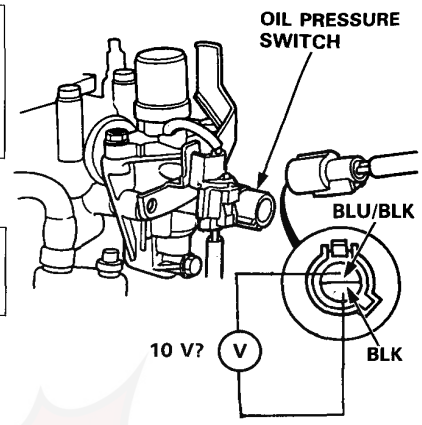
NOTE: Keep measuring time as short as possible because engine is running with no load (less than one minute).

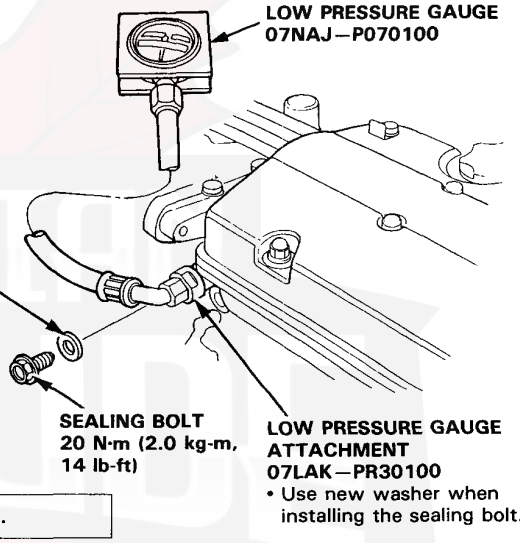
Is pressure below 50 kPa (0.5 kg/cm², 7 psi)?
- NO → **Inspect the spool valve.**
- YES ↓

Disconnect the 1P connector from the spool valve.

Attach the battery positive terminal to the GRN/WHT terminal.

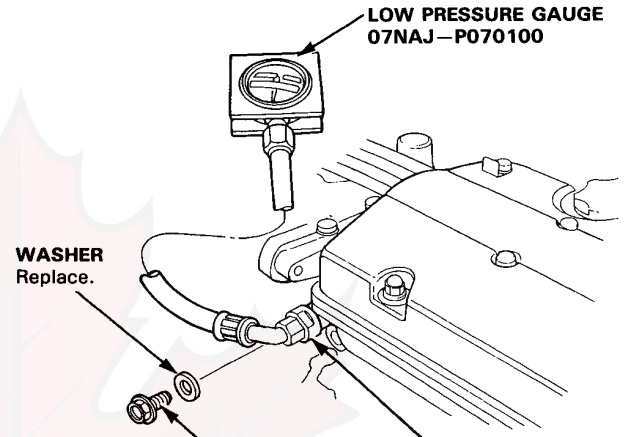
(To page 6-9)





(From page 6-8)

Start the engine and check oil pressure at 5,000 min⁻¹(rpm).



NOTE: Keep measuring time as short as possible because engine is running with no load (less than one minute).

Is pressure above 400 kPa (4 kg/cm², 57 psi)?

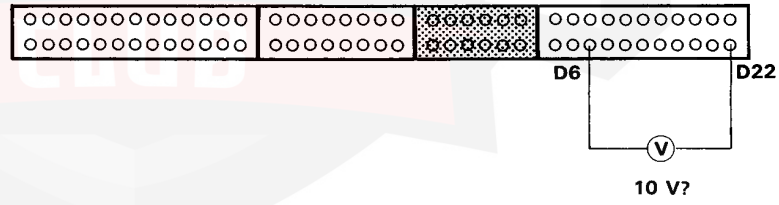
NO → **Inspect the spool valve.**

YES

Turn the ignition switch OFF.

Reconnect the 2P connector to the oil pressure switch.

Install the test harness.



Start the engine and run above 5,000 min⁻¹(rpm). Measure the voltage between D6 (+) and D22 (−) terminal of the ECU.

Is there approx. 10 V above 5,000 min⁻¹(rpm)?

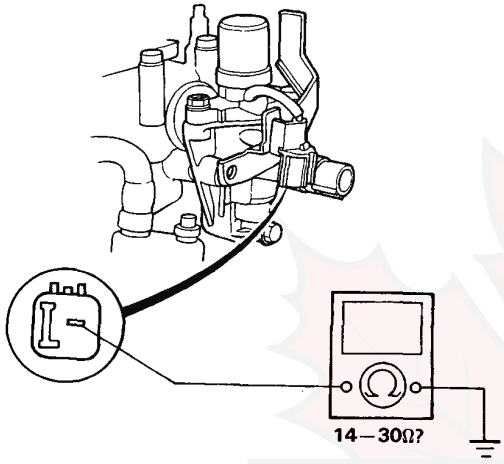
NO → **Replace the Oil pressure switch.**

YES

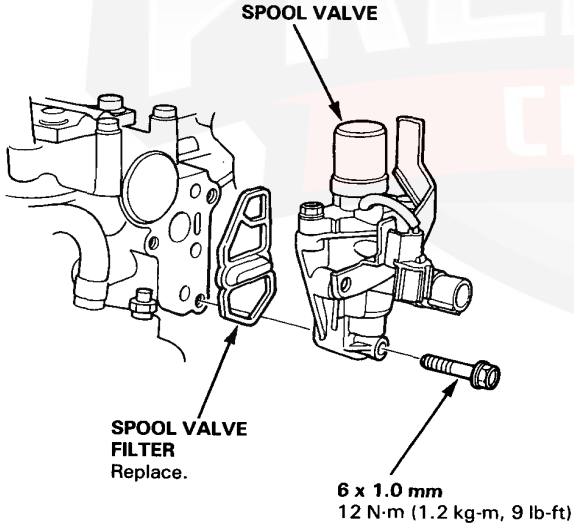
Substitute a known-good ECU and recheck. If symptom/indication goes away replace the original ECU.

Spool Valve Inspection

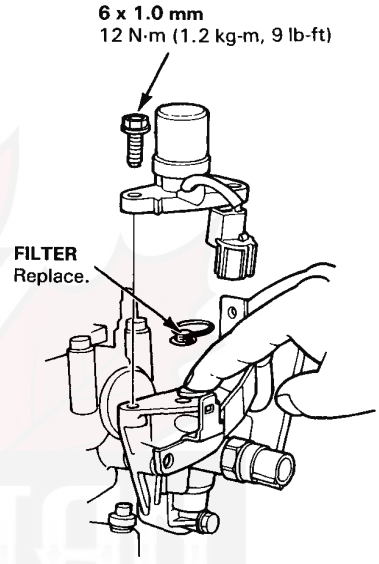
1. Disconnect the 1P connector and oil pressure switch connector from the spool valve.
2. Measure resistance between the terminal and body ground.
   Resistance: approx. 14—30 ohms



3. If the resistance is within specifications, remove the spool valve from the cylinder head, and check the spool valve filter for clogging.
   - If there is clogging, replace the engine oil filter and the engine oil.



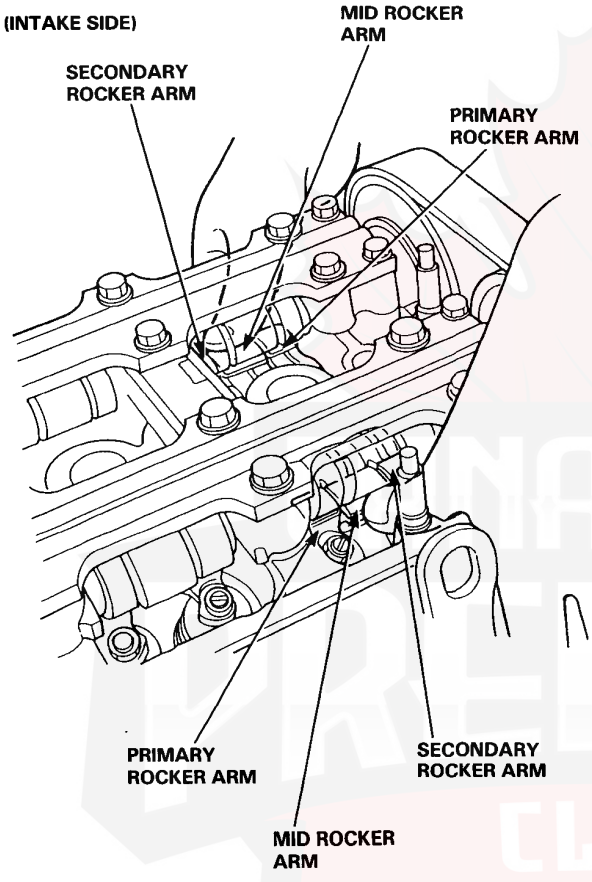
4. If the filter is not clogged, push the spool valve with your finger and check its movement.
   - If spool valve is normal, check the engine oil pressure.



Rocker Arms

Manual Inspection

1. Remove the cylinder head cover.
2. Push the mid rocker arm on the No. 1 cylinder manually.
3. Check that the mid rocker arm moves independently of the primary and secondary intake rocker arms.

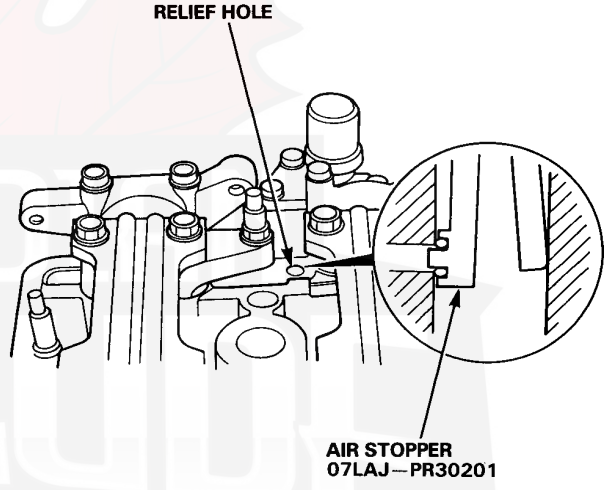


4. Check the mid rocker arm of each cylinder at TDC.
   - If the mid rocker arm does not move, remove the mid, primary and secondary rocker arms as an assembly and check that the pistons in the mid and primary rocker arms move smoothly.
   - If any rocker arm needs replacing, replace the primary, mid, and secondary rocker arms as an assembly.

Inspection Using Special Tools

CAUTION:
- **Before using the special tool (Valve Inspection Tool), make sure that the air pressure gauge on the air compressor indicates over 250 kPa (2.5 kg/cm^2, 36 psi).**
- **Inspect the valve clearance before rocker arm inspection.**
- **Cover the timing belt with a shop towel to protect the belt from oil soaking.**
- **Check the mid rocker arm of each piston at TDC.**

1. Remove the cylinder head cover.
2. Plug the relief hole with the special tool.



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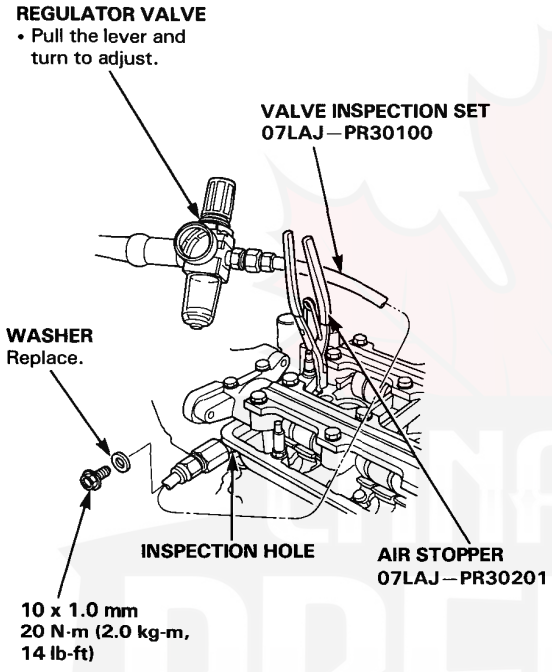
Inspection Using Special Tools (cont'd)

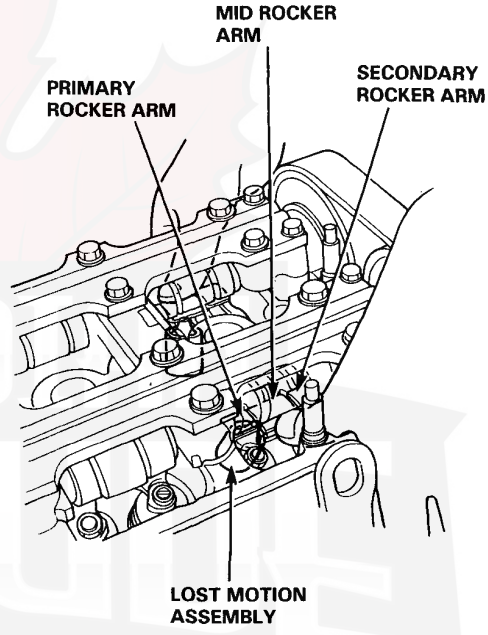
3. Remove the bolt and washer from the inspection hole and connect the special tool.



4. Loosen the regulator valve on the valve inspection set and apply the specified air pressure to the rocker arm pistons.

   Specified Air Pressure:
   250 kPa (2.5 kg/cm², 36 psi)
   — 500 kPa (5.0 kg/cm², 71 psi)

5. Make sure that the intake primary and secondary rocker arms are mechanically connected by the pistons and that the mid rocker arms do not move when pushed manually.



   - If any mid rocker arm independently of the primary and secondary rocker arms, replace the rocker arms, as a set.

6. Remove the tools.

7. Check for smooth operation of the lost motion assembly. It is compressed slightly when the mid rocker arm is lightly pushed and compressed deeply when the mid rocker arm is strongly pushed.
   - Replace the lost motion assembly if it does not move smoothly.

8. After inspection, check that the check engine light does not come on.

Removal

Engine removal is not required for this procedure.

⚠ WARNING

- **Make sure jacks and safety stands are placed properly and hoist brackets are attached to correct positions on the engine.**
- **Make sure the car will not roll off stands and fall while you are working under it.**

CAUTION:

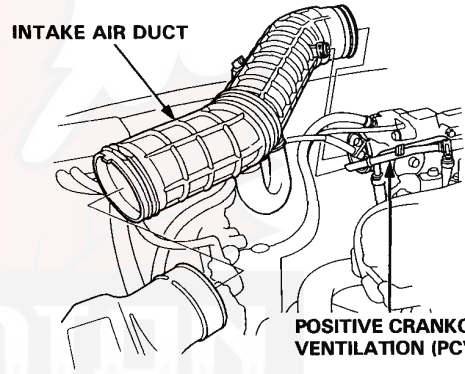
- **Use fender covers to avoid damaging painted surfaces.**
- **Unplug the wiring connectors carefully while holding the connector portion to avoid damage.**
- **Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact other wiring or hoses or interfere with other parts.**
- **To avoid damaging the cylinder head, wait until the coolant temperature drops below 38°C (100°F) engine before loosening the retaining bolts.**

NOTE:

- Inspect the timing belt before removing the cylinder head.
- Turn the crankshaft pulley so that the No. 1 piston is at top dead center (page 6-34).
- Mark all emission hoses before disconnecting them.

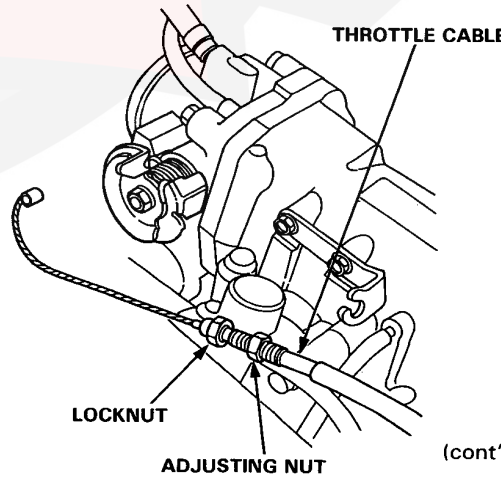
1. Disconnect the negative terminal from the battery.
2. Drain the engine coolant.
   - Remove the radiator cap to speed draining
3. Relieve the fuel pressure.

   ⚠ WARNING **Do not smoke while working on fuel system, keep open flame or spark away from work area. Drain fuel only into an approved container.**
4. Remove the intake air duct.



5. Remove the fuel feed hose and charcoal canister hose from the intake manifold.
6. Remove the throttle cable from the throttle body.

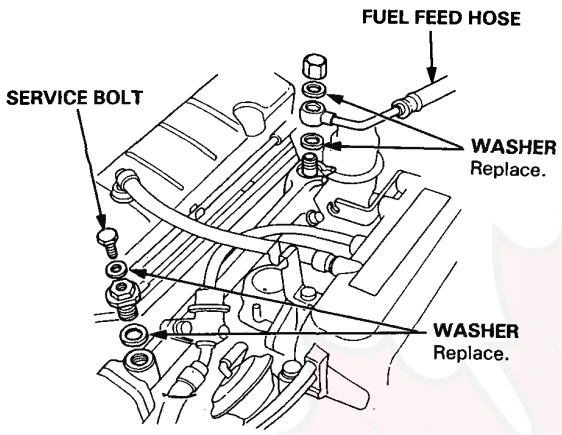
   NOTE:
   - Take care not to bend the cable when removing it. Always replace any kinked cable with a new one.
   - Adjust the throttle cable when installing.

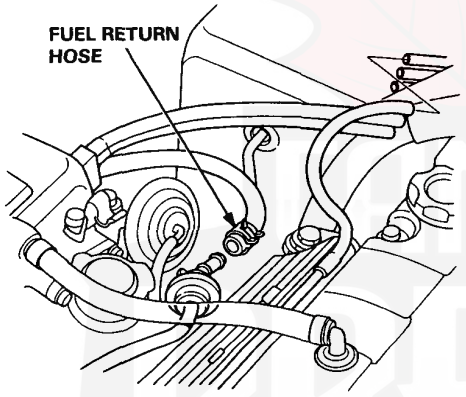


(cont'd)

Removal (cont'd)

7. Remove the fuel feed hose, the fuel return hose and the brake booster vacuum hose.

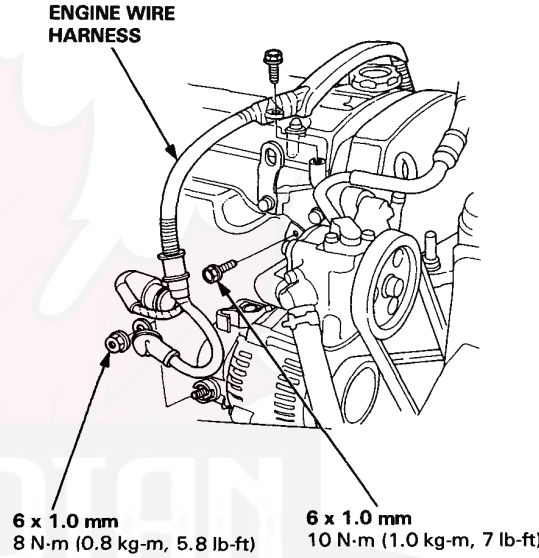




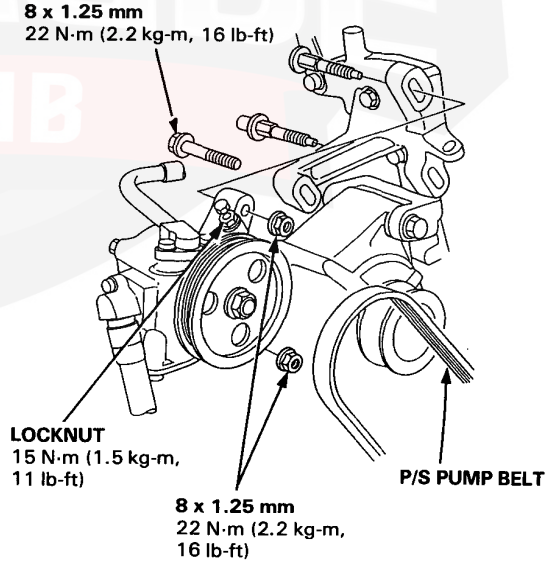
8. Remove the following engine wire harness connectors and clamps from the cylinder head and the intake manifold:
- Four fuel injector connectors
- TA sensor connector
- EACV connector
- Throttle sensor connector
- Exhaust gas recirculation (EGR) valve lift sensor connector
- Ground cable terminals
- Thermoswitch connector (for cooling fan)
- Oxygen sensor connector
- TW sensor connector (for emissions)
- Temperature unit connector
- Ignition coil connector
- CRANK/TDC/CYLINDER sensor connector
- Speed sensor connector
- Spool valve connector
- Oil pressuer switch connector
- Intake air bypass solenoid valve connector
- Thermoswitch connector

9. Remove the engine ground cable from the cylinder head cover.

10. Disconnect the alternator terminal and connector, then remove the engine wire harness from the cylinder head cover.



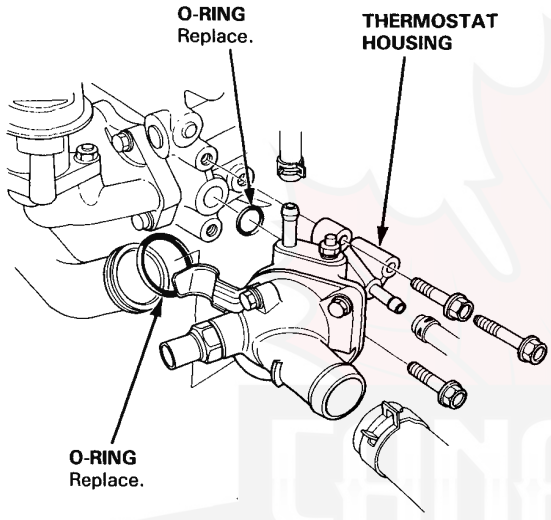
11. Remove the power steering (P/S) pump belt and pump.
- Do not disconnect the P/S hoses.



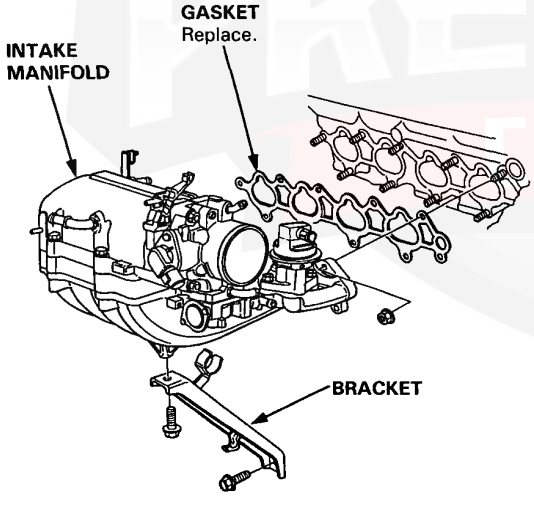
12. Remove the emission vacuum hoses and water bypass hoses from the intake manifold assembly.

13. Remove the radiator upper hose and heater hose from the cylinder head.

14. Remove the water bypass hose and the thermostat housing.

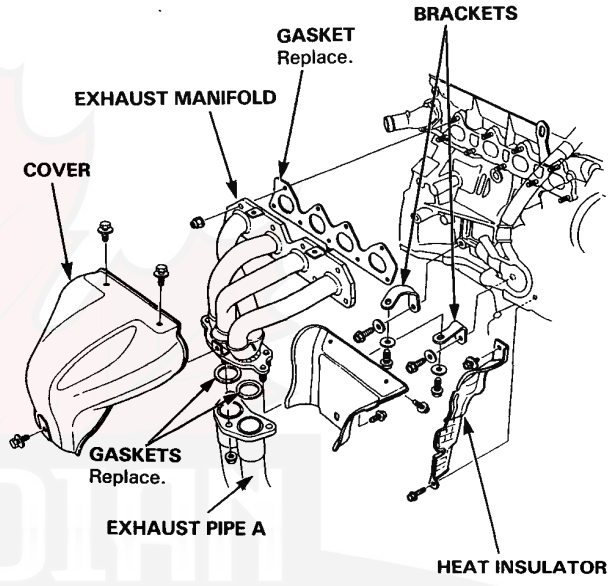


15. Remove the bracket and intake manifold.



16. Remove the self-locking nuts and disconnect the exhaust manifold and exhaust pipe A.

17. Remove the heat insulator, brackets and exhaust manifold.



(cont'd)

Removal (cont'd)

18. Remove the cylinder head cover.

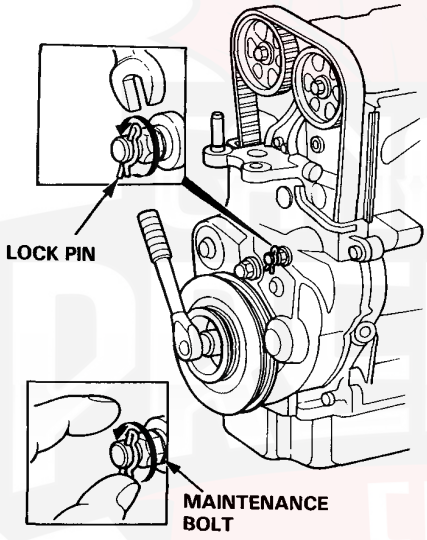
19. Remove the middle cover.

20. Using a wrench to loosen the maintenance bolt. If it cannot be loosened by a open-wrench, can be used after pulling out the lock pin.

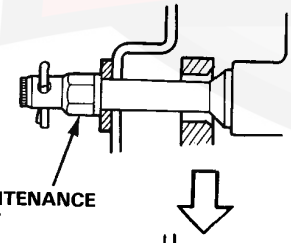
    NOTE: Use of a tool should be limited to initial loosening only.

21. Loosen the maintenance bolt by hand until it stops. The auto-tensioner bracket is now fixed.

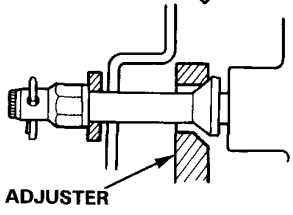
    NOTE:
    - Never use a tool to loosen the maintenance bolt after initial loosening.
    - If the auto-tensioner has been extended and the timing belt cannot be installed, remove the auto-tensioner, compress it and reinstall it (page 6-40).



Auto-tensioner functional:

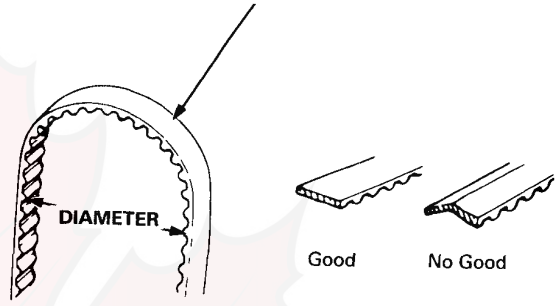


Auto-tensioner fixed in place:

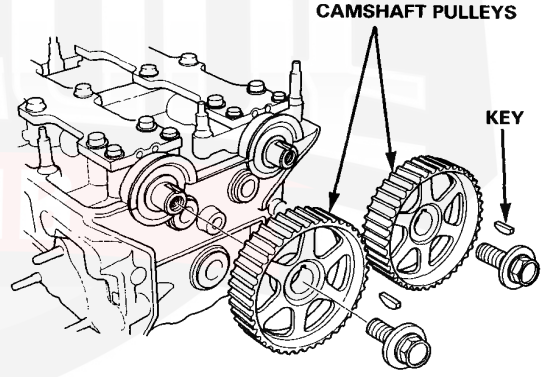


22. Remove the timing belt from the camshaft pulleys.

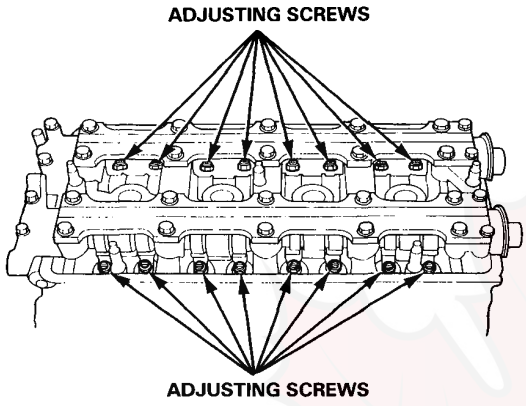
CAUTION: Do not crimp or bend the timing belt more than 90° or less than 25 mm (1 in) in diameter.



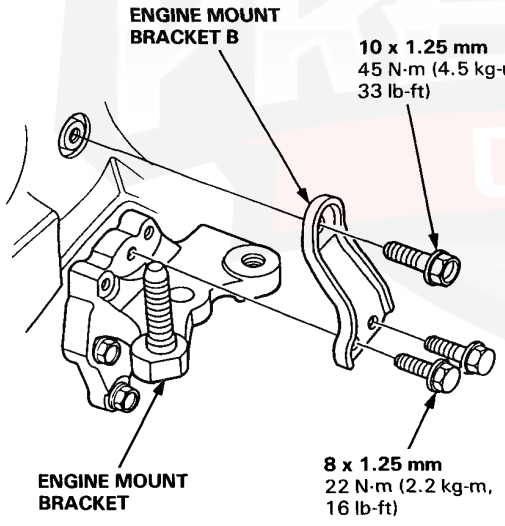
23. Remove the camshaft pulleys.



24. Loosen the rocker arm adjusting screws, then remove the camshaft holders and camshafts.



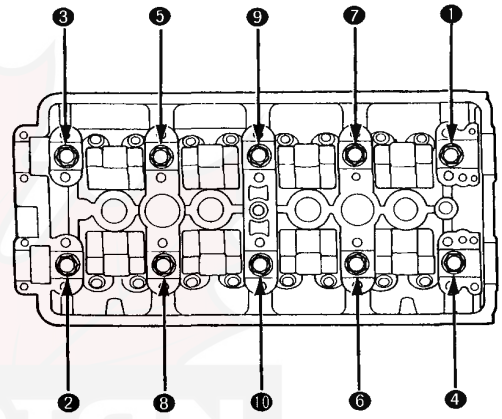
25. Remove the side engine mount bracket B and timing belt back cover.



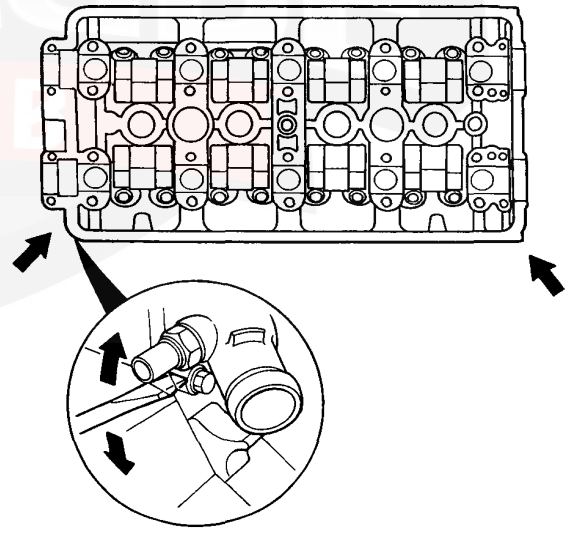
26. Remove the cylinder head bolts, then remove the cylinder head.

CAUTION: To prevent warpage, unscrew the bolts in sequence 1/3 turn at a time; repeat the sequence until all bolts are loosened.

CYLINDER HEAD BOLT LOOSENING SEQUENCE



NOTE: Separate the cylinder head from the block with a flat tip screwdriver as shown.

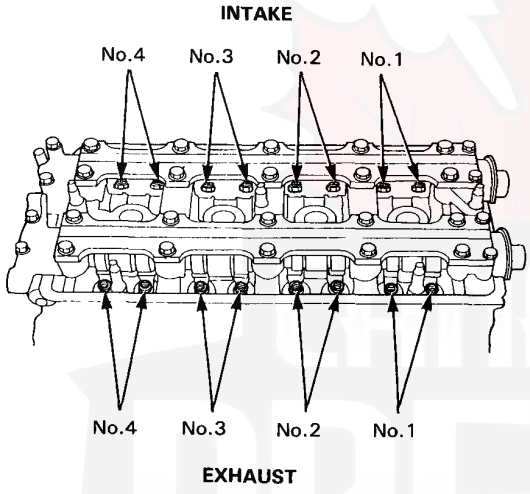


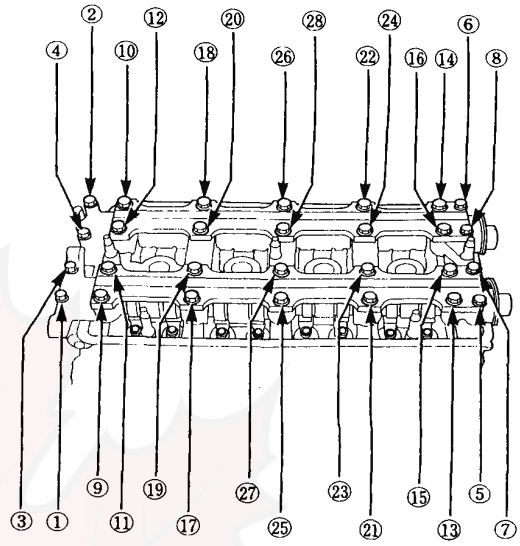
Rocker Arms and Shafts

Removal

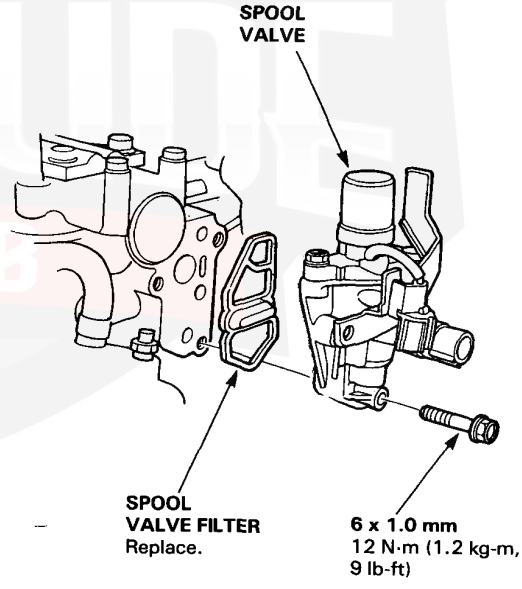
1. Loosen the adjusting screws, then remove the bolts and the rocker arm assembly.

NOTE:
- Unscrew the camshaft holder bolts two turns at a time, in a crisscross pattern, to prevent damaging the valves or rocker arm assembly.
- When removing the rocker arm assembly, do not remove the camshaft holder bolts. The bolts will keep the camshaft holders, the springs and the rocker arms on the shafts.

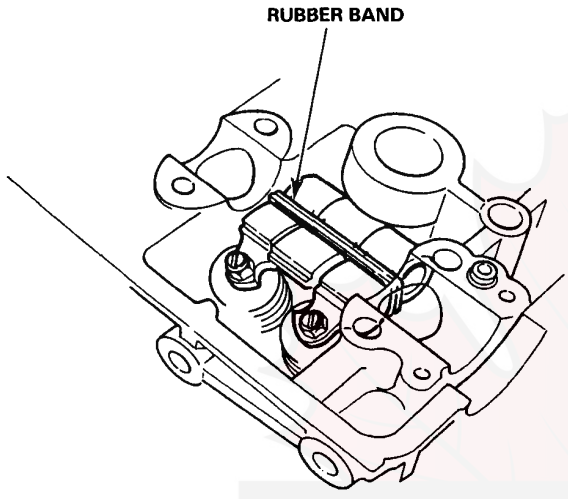




2. Remove the spool valve and filter.

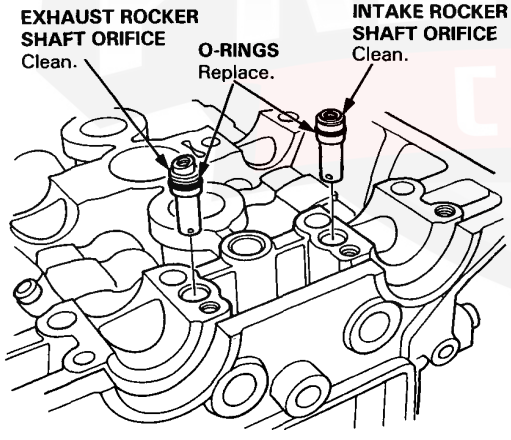


3. Hold the rocker arms together with a rubber band to prevent them from separating.

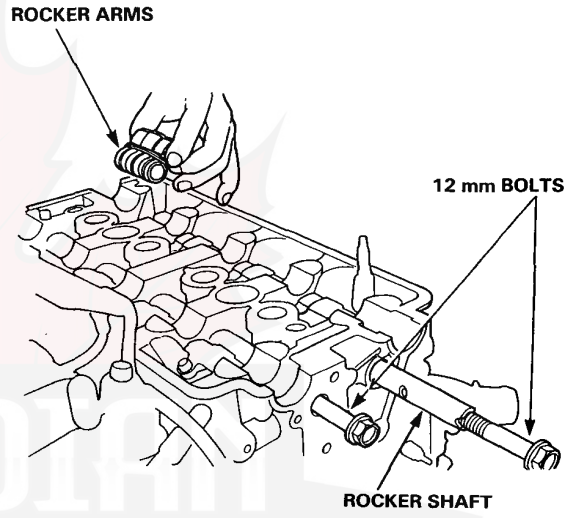


4. Remove the intake and exhaust rocker shaft orifice.

NOTE: The shapes of the rocker shaft orifices of the intake and exhaust are different. Identify the parts as they are removed to ensure reinstallation in the original locations.



5. Screw 12 mm bolts into the rocker arm shafts. Remove each rocker arm while slowly pulling out the intake and exhaust rocker arm shafts.



Rocker Arms and Shafts

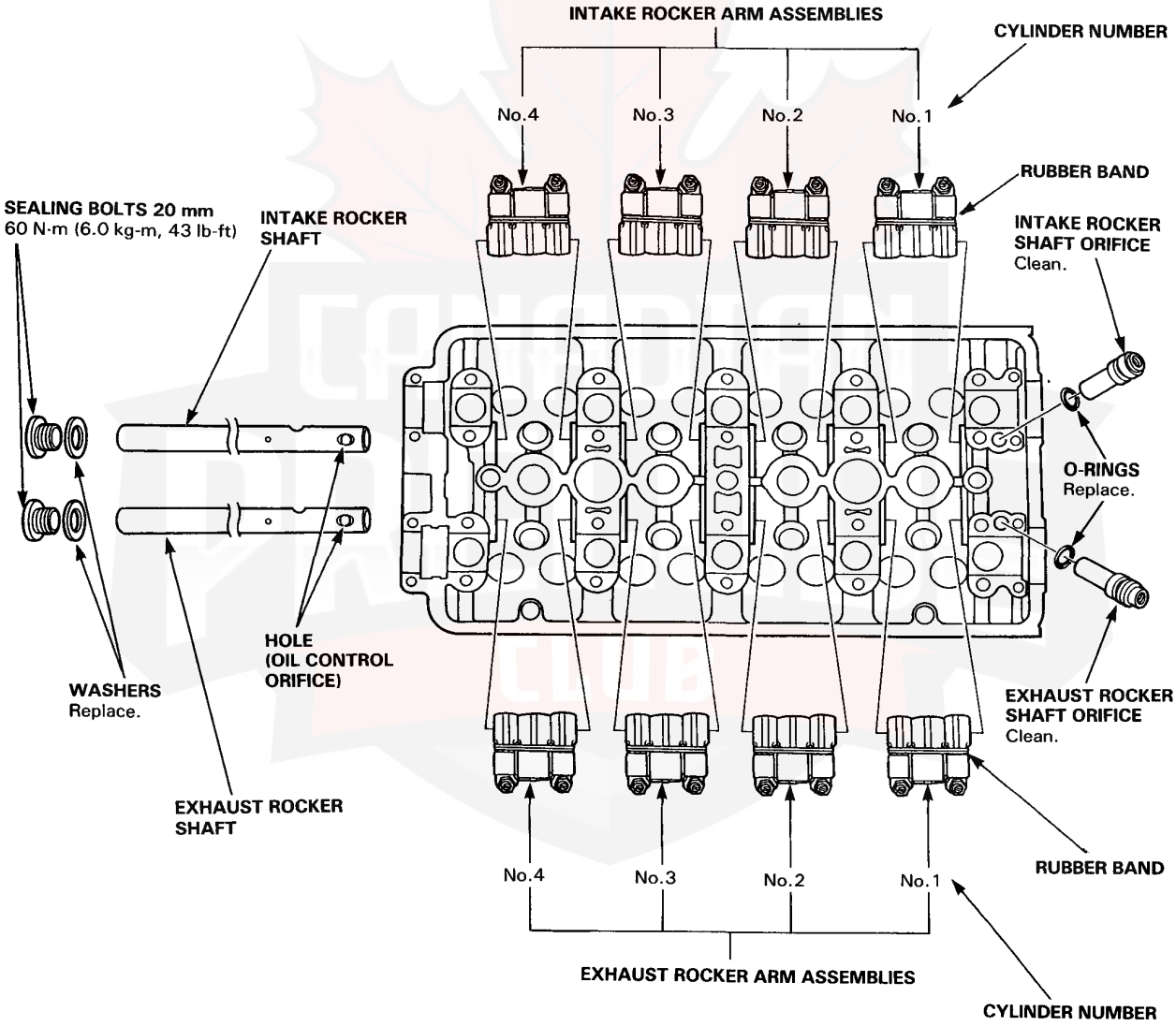
Locations

CAUTION: After installing the rocker shaft orifice, try to turn the rocker shaft to make sure that the orifice has been inserted in the hole of rocker shaft correctly. If the orifice is in place, it should not turn.

NOTE:

- Identify parts as they are removed to ensure reinstallation in original locations.
- Inspect rocker shafts and rocker arms (pages 6-21 and 22).
- Rocker arms must be installed in the same position if reused.
- Clean the intake and exhaust rocker shaft orifices before installing.

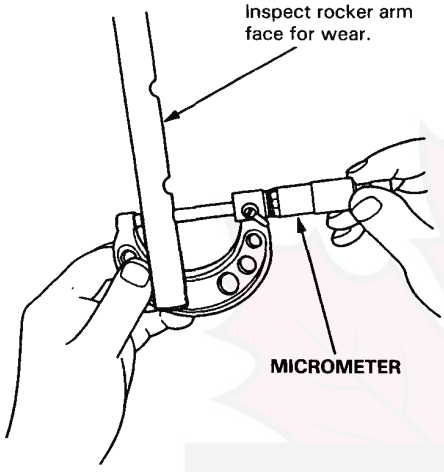
Prior to reinstalling, clean all the parts in solvent, dry them and apply lubricant to any contact surfaces.



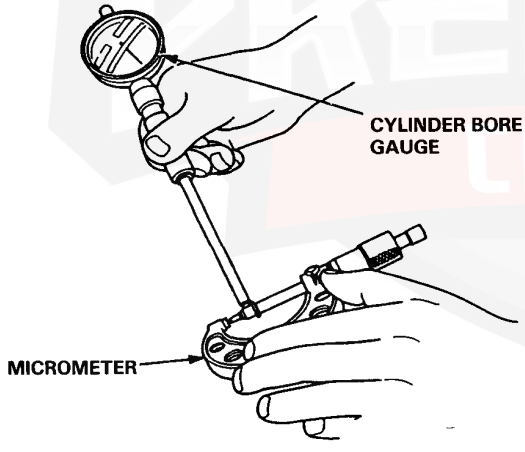
Clearance

Measure both the intake rocker shaft and exhaust rocker shaft.

1. Measure diameter of shaft at first rocker location.

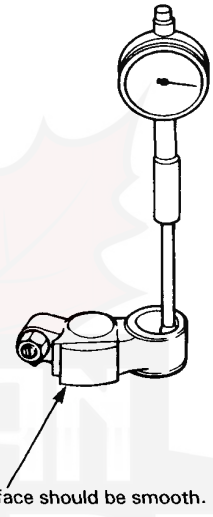


2. Zero gauge to shaft diameter.



3. Measure inside diameter of rocker arm and check for out-of-round condition.

Rocker Arm-to-Shaft Clearance:
Intake and Exhaust
Standard (New): 0.025—0.052 mm (0.0010—0.0020 in)
Service Limit: 0.08 mm (0.003 in)



Repeat for all rockers.
— If over limit, replace rocker shaft and all over-tolerance rocker arms.

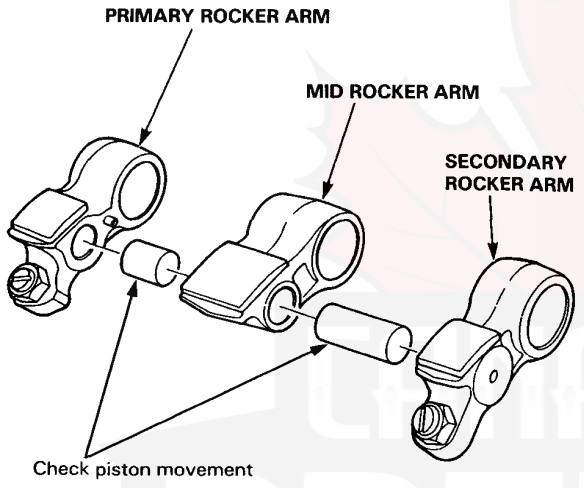
NOTE: If any rocker arm needs replacement, replace all three rocker arms in that set (primary, mid, and secondary).

Rocker Arms

Inspection

NOTE: When reassembling the primary rocker arm, carefully apply air pressure to the oil passage of the rocker arm.

1. Inspect the rocker arm piston. Push it manually.
   — If it does not move smoothly, replace the rocker arm assembly.

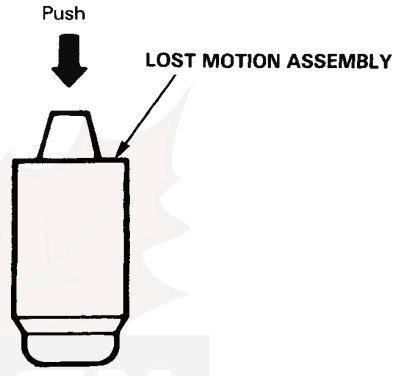


NOTE:
- Apply oil to the pistons when reassembling.
- Bundle the rocker arms with a rubber band to prevent them from separating.

Lost Motion Assemblies

Inspection

1. Remove the lost motion assembly from the cylinder head and inspect it. Pushing it gently with the finger will cause it to sink slightly. Increasing the force on it will cause it to sink deeper.
   — If the lost motion assembly does not move smoothly, replace it.



Inspection

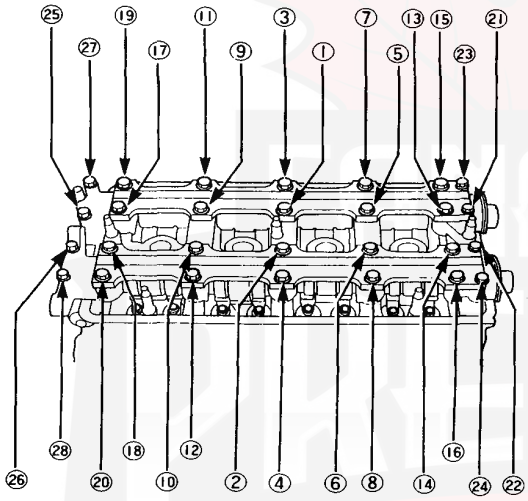
NOTE: Do not rotate camshaft during inspection.

1. Remove the rocker arms and rocker shafts.

   NOTE: Rocker arms must be installed in the same position if reused.

2. Put the camshafts, camshaft holders and holder pipes on the cylinder head, then tighten the bolts to the specified torque.

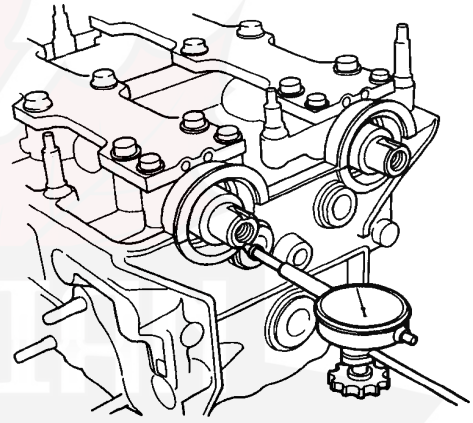
   Specified torque:
   ①—⑳: 8 x 1.25 mm
   26 N·m (2.6 kg-m, 19 lb-ft)
   ㉑—㉘: 6 x 1.0 mm
   12 N·m (1.2 kg-m, 9 lb-ft)



3. Seat camshafts by pushing them toward distributor end of cylinder head.

4. Zero dial indicator against end of camshaft, then push camshaft back and forth and read the end play.

   Camshaft End Play:
   Standard (New): 0.05—0.15 mm (0.002—0.006 in)
   Service Limit: 0.5 mm (0.02 in)



5. Remove the camshaft holders and holder pipes bolts from the cylinder head.

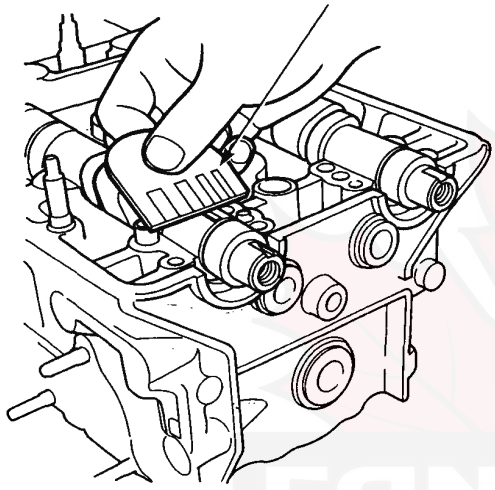
   - Lift camshaft out of cylinder head, wipe clean, then inspect lift ramps. Replace camshaft if lobes are pitted, scored, or excessively worn.
   - Clean the camshaft holder surfaces in the cylinder head, then set camshaft back in place.
   - Insert plastigage strip across each journal.
   - Install the camshaft holders and holder pipes and torque bolts to the values and in the sequence shown in left column.

(cont'd)

Inspection (cont'd)

6. Measure widest portion of plastigage on each journal.

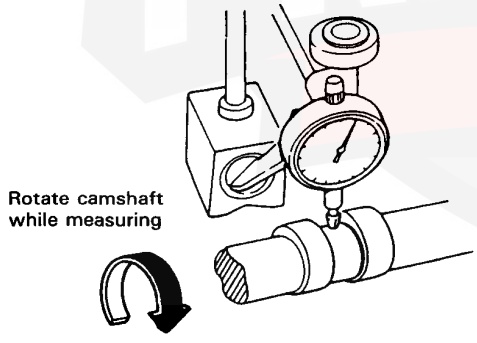
Camshaft-to-Holder Oil Clearance:
Standard (New): 0.050—0.089 mm (0.0020—0.0035 in)
Service Limit: 0.15 mm (0.006 in)



7. If camshaft-to-holder oil clearance is out of tolerance:

- And the camshaft has already been replaced, you must replace the cylinder head.
- If camshaft has not been replaced, first check total runout with the camshaft supported on V-blocks.

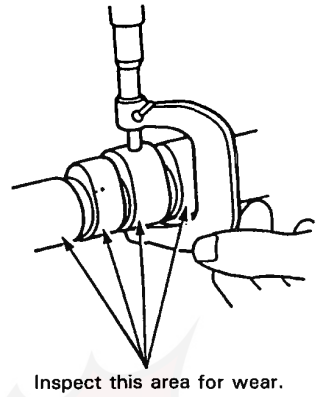
Camshaft Total Runout:
Standard (New): 0.03 mm (0.001 in) max.
Service Limit: 0.06 mm (0.002 in)



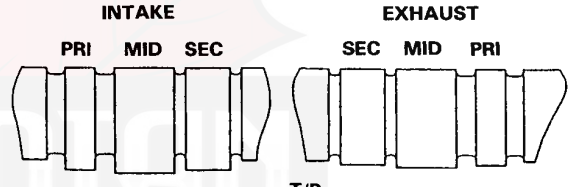
— If the total runout of the camshaft is within tolerance, replace the cylinder head.

— If the total runout is out of tolerance, replace the camshaft and recheck. If the beaning clearance is still out of tolerance, replace the cylinder head.

Measure cam lobe height.



Inspect this area for wear.



PRI: PRIMARY MID: MID SEC: SECONDARY
T/B: TIMING BELT

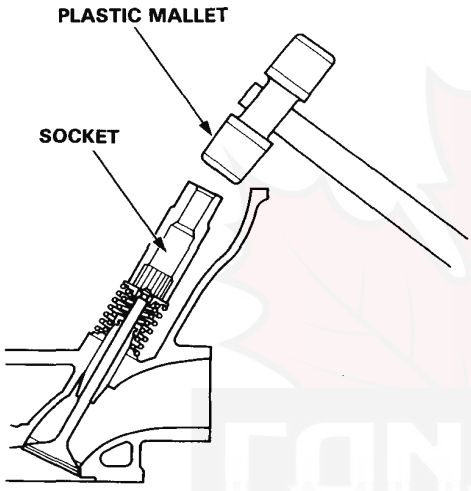
Cam Lobe Height Standard (New):

	INTAKE	EXHAUST
PRIMARY	34.041 mm (1.3402 in)	33.745 mm (1.3285 in)
MID	36.856 mm (1.4510 in)	36.323 mm (1.4300 in)
SECONDARY	34.971 mm (1.3768 in)	34.683 mm (1.3655 in)

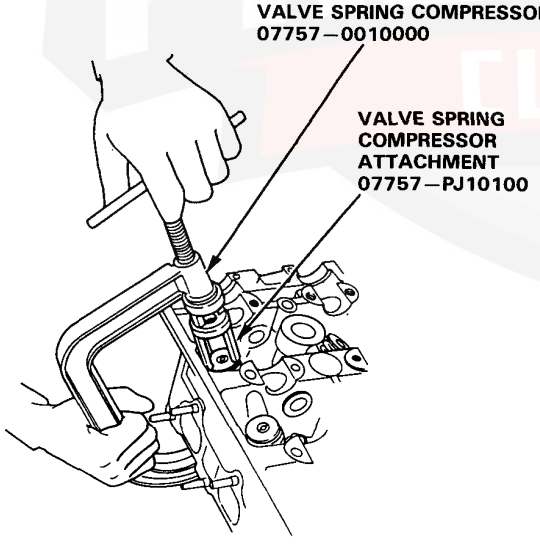
Removal

NOTE: Identify valves and valve springs as they are removed so that each item can be reinstalled in its original position.

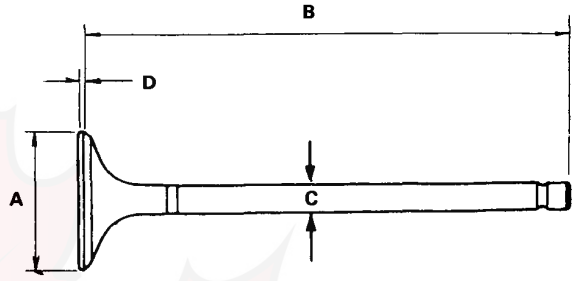
1. Using an appropriately-sized socket and plastic mallet, lightly tap the valve retainer to loosen the valve keepers before installing the valve spring compressor.



2. Install spring compressor. Compress spring and remove valve keeper.



Valve Dimensions:



Intake Valve

A Standard (New):	34.90–35.10 mm (1.374–1.382 in)
B Standard (New):	105.40–105.70 mm (4.150–4.161 in)
C Standard (New):	5.475–5.483 mm (0.2156–0.2159 in)
C Service Limit:	5.445 (0.2144 in)
D Standard (New):	1.05–1.35 mm (0.041–0.053 in)
D Service Limit:	0.85 mm (0.034 in)

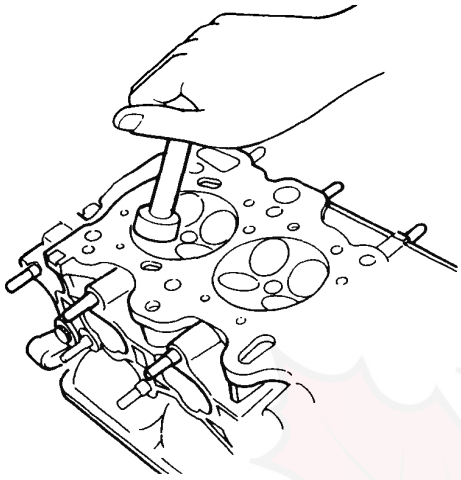
Exhaust Valve

A Standard (New):	29.90–30.10 mm (1.177–1.185 in)
B Standard (New):	105.00–105.30 mm (4.134–4.146 in)
C Standard (New):	5.475–5.485 mm (0.2156–0.2159 in)
C Service Limit:	5.445 (0.2144 in)
D Standard (New):	1.65–1.95 mm (0.065–0.078 in)
D Service Limit:	1.45 mm (0.057 in)

Valve Seats

Reconditioning

1. Renew the valve seats in the cylinder head using a valve seat cutter.



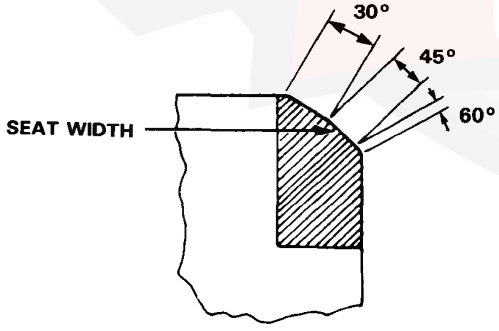
NOTE: If guides are worn (page 6-27), replace them (page 6-28) before cutting the valve seats.

2. Carefully cut a 45° seat, removing only enough material to ensure a smooth and concentric seat.

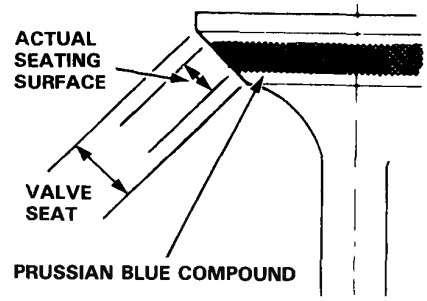
3. Bevel the upper edge of the seat with the 30° cutter and the lower edge of the seat with the 60° cutter. Check width of seat and adjust accordingly.

4. Make one more very light pass with the 45° cutter to remove any possible burrs caused by the other cutters.

Valve Seat Width (Intake and exhaust):
Standard (New): 1.25—1.55 mm (0.049—0.061 in)
Service Limit: 2.00 mm (0.079 in)



5. After resurfacing the seat, inspect for even valve seating: Apply Prussian Blue compound to the valve face, and insert valve in original location in the head, then lift it and snap it closed against the seat several times.



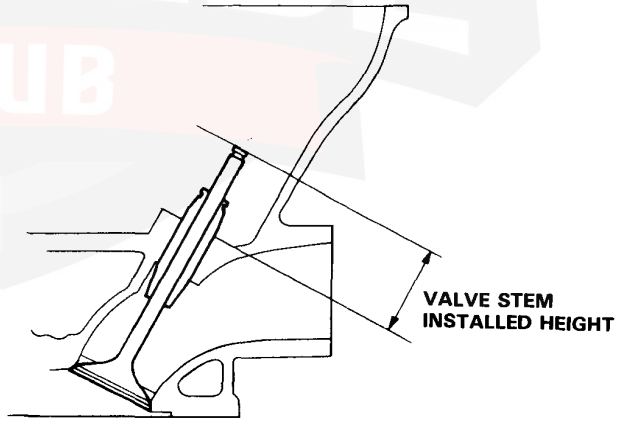
6. The actual valve seating surface, as shown by the blue compound, should be centered on the seat.
   - If it is too high (closer to the valve stem), you must make a second cut with the 60° cutter to move it down, then one more cut with the 45° cutter to restore seat width.
   - If it is too low (close to the valve edge), you must make a second cut with the 30° cutter to move it up, then one more cut with the 45° cutter to restore seat width.

NOTE: The final cut should always be made with the 45° cutter.

7. Insert intake and exhaust valves in the head and measure valve stem installed height.

Intake Valve Stem Installed Height:
Standard (New): 37.465—37.935 mm (1.4750—1.4935 in)
Service Limit: 38.185 mm (1.5033 in)

Exhaust Valve Stem Installed Height:
Standard (New): 37.165—37.635 mm (1.4632—1.4817 in)
Service Limit: 37.885 mm (1.4915 in)



8. If valve stem installed height is over the service limit, replace valve and recheck. If still over the service limit, replace cylinder head; the valve seat in the head is too deep.

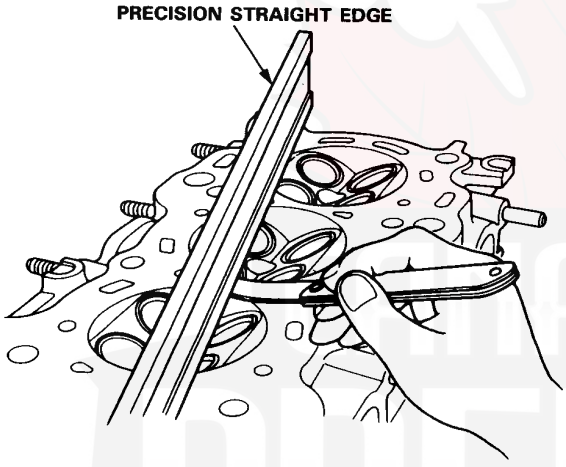
Cylinder Head

Warpage

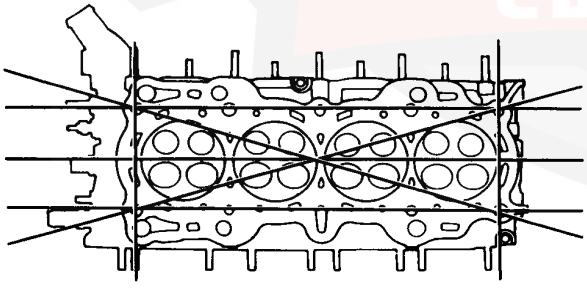
NOTE: If camshaft-to-holder oil clearances (page 6-23) are not within specification, the head cannot be resurfaced.

If camshaft-to-holder oil clearances are within specifications, check the head for warpage.

- If warpage is less than 0.05 mm (0.002 in) cylinder head resurfacing is not required.
- If warpage is between 0.05 mm (0.002 in) and 0.2 mm (0.008 in), resurface cylinder head.
- Maximum resurface limit is 0.2 mm (0.008 in) based on a height of 132.0 mm (5.20 in).



Measure along edges, and 3 ways across center.



Cylinder Head Height:
Standard (New): 141.95—142.05 mm (5.589—5.593 in)

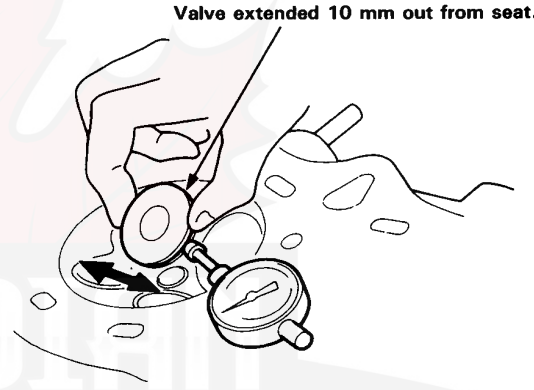
Valve Guides

Valve Movement

Measure the guide-to-stem clearance with a dial indicator while rocking the stem in the direction of normal thrust (wobble method).

Intake Valve Stem-to-Guide Clearance:
Standard (New): 0.05—0.11 mm (0.002—0.004 in)
Service Limit: 0.16 mm (0.006 in)

Exhaust Valve Stem-to-Guide Clearance:
Standard (New): 0.10—0.16 mm (0.004—0.006 in)
Service Limit: 0.22 mm (0.009 in)



- If measurement exceeds the service limit, recheck using a new valve.
- If measurement is now within the service limit, reassemble using a new valve.
- If measurement still exceeds limit, recheck using alternate method below, then replace valve and guide, if necessary.

NOTE: An alternate method of checking guide to stem clearance is to subtract the O.D. of the valve stem, measured with a micrometer, from the I.D. of the valve guide, measured with an inside micrometer or ball gauge.
Take the measurements in three places along the valve stem and three places inside the valve guide. The difference between the largest guide measurement and the smallest stem measurement should not exceed the service limit.

Intake Valve Stem-to-Guide Clearance:
Standard (New): 0.025—0.055 mm (0.0010—0.0022 in)
Service Limit: 0.08 mm (0.003 in)

Exhaust Valve Stem-to-Guide Clearance:
Standard (New): 0.050—0.080 mm (0.0020—0.0031 in)
Service Limit: 0.11 mm (0.004 in)

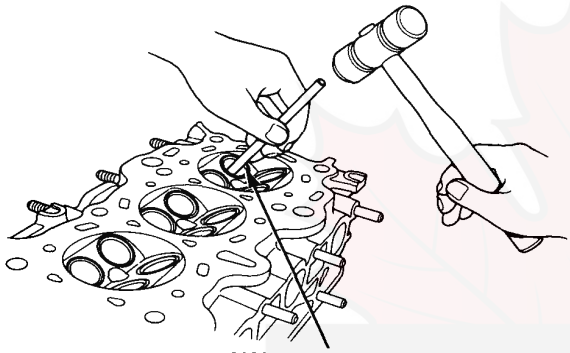
Valve Guides

Replacement

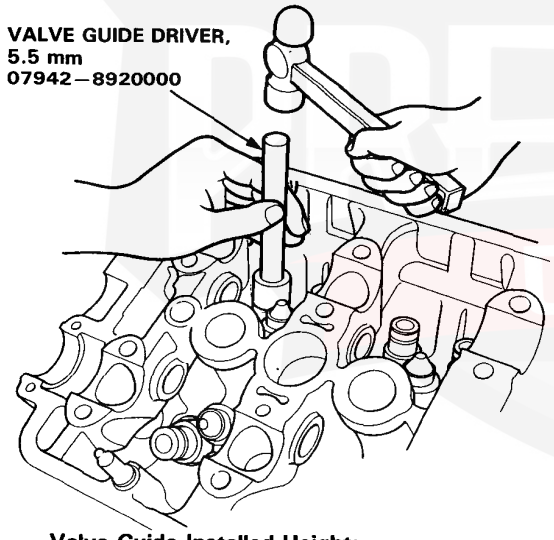
NOTE:
- For best results, heat cylinder head to 150°C (300°F) before removing or installing guides.
- It may be necessary to use an air hammer to guides, remove some valve guides.

CAUTION: To avoid burns, use heavy gloves when handling heated cylinder head.

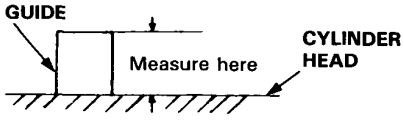
1. Drive the valve guide out from the bottom of the cylinder head.



2. Drive in a new valve guide to the specified depth.



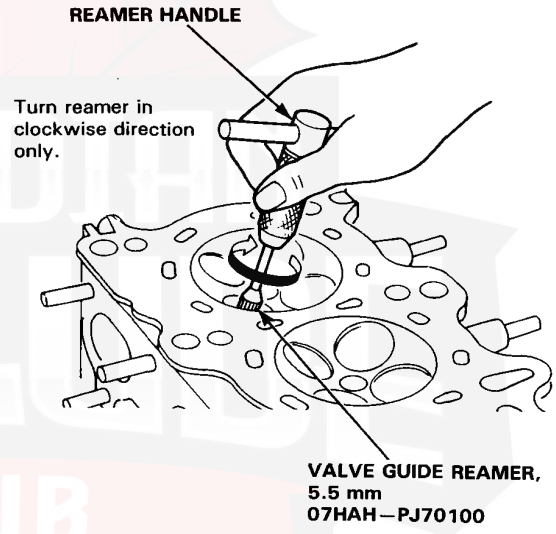
Valve Guide Installed Height:
Standard (New):
Intake: 12.55—13.05 mm (0.494—0.514 in)
Exhaust: 12.55—13.05 mm (0.494—0.514 in)



Reaming

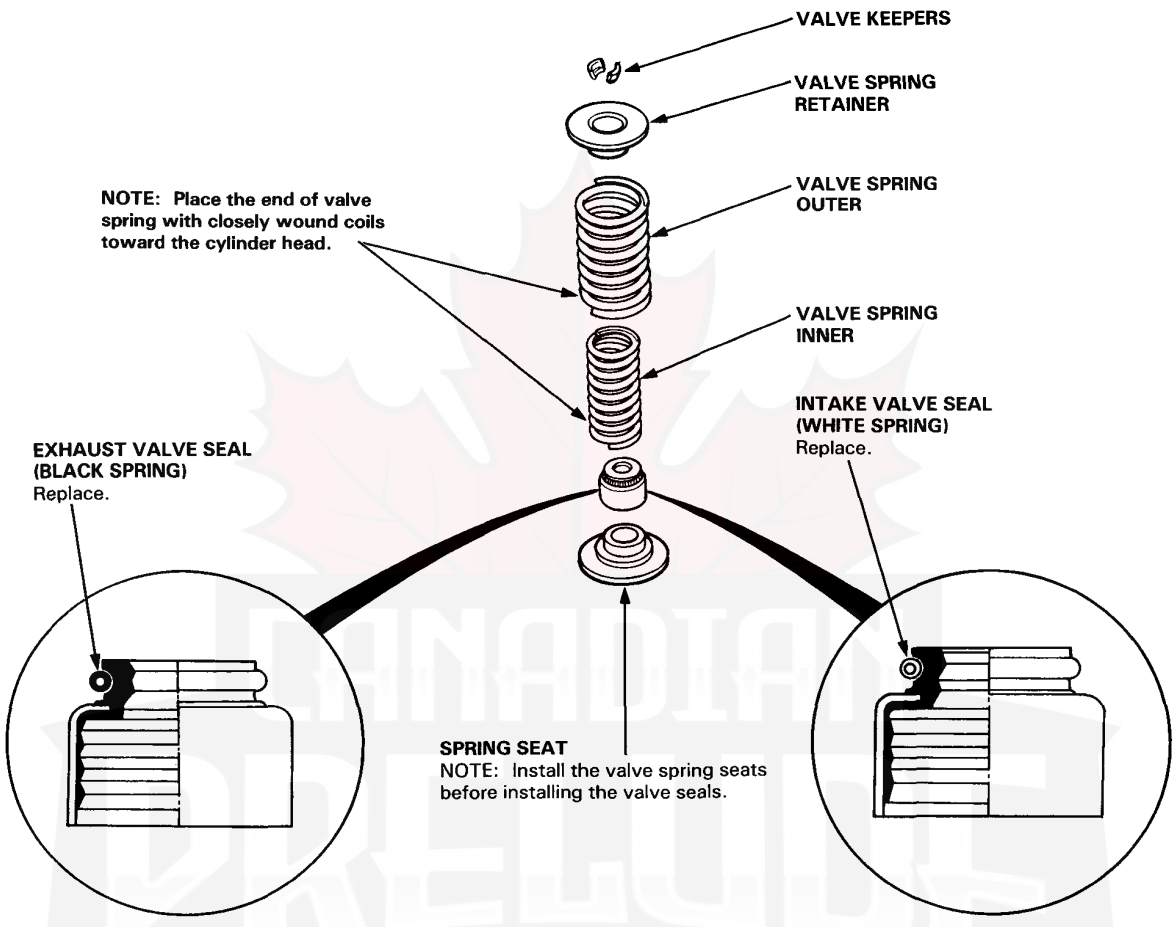
NOTE: For new valve guides only.

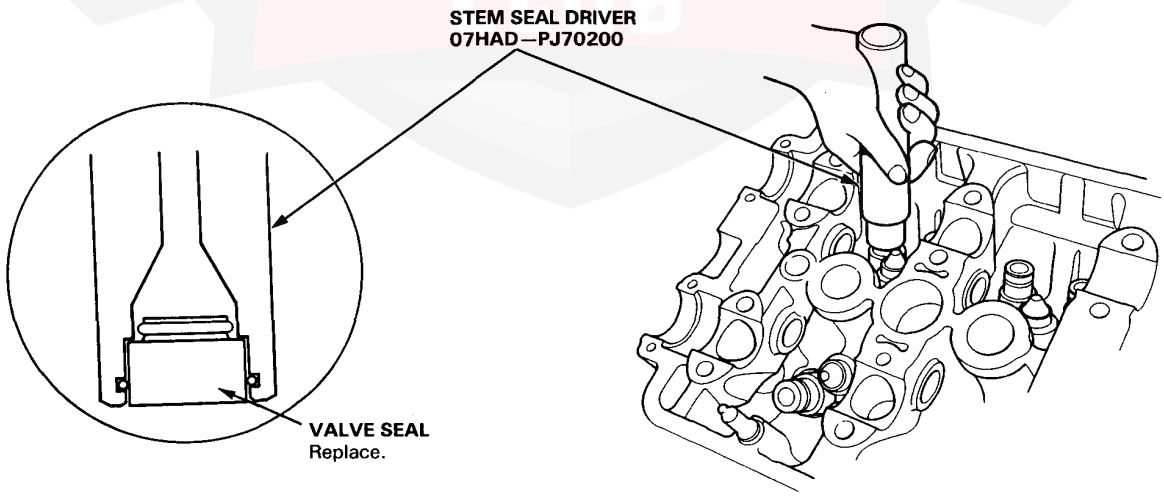
1. Coat both reamer and valve guide with cutting oil.
2. Rotate the reamer clockwise the full length of the valve guide bore.
3. Continue to rotate the reamer clockwise while removing it from the bore.
4. Thoroughly wash the guide in detergent and water to remove any cutting residue.
5. Check clearance with a valve (page 6-27).
   - Verify that the valve slides in the intake and exhaust valve guides without exerting pressure.



Installation Sequence

NOTE: Exhaust and intake valve seals are NOT interchangeable.



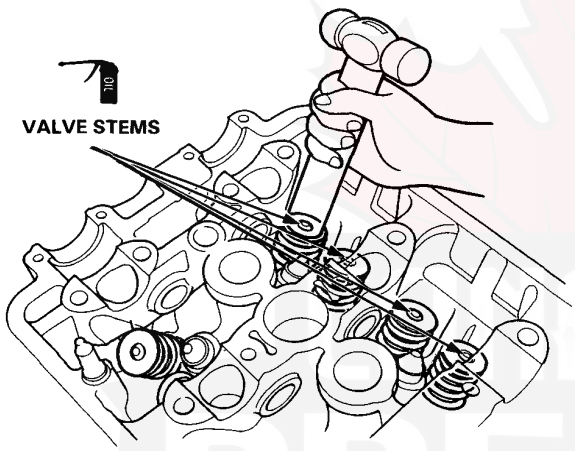


Valves, Valve Springs and Valve Seals

Valve Installation

- When installing valves in cylinder head, coat valve stems with oil before inserting into valve guides, and make sure valves move up and down smoothly.
- When valves and springs are in place, lightly tap the end of each valve stem two or three times to ensure proper seating of valve and valve keepers (use hammer grip bottom).

NOTE: Tap the valve stem only along its axis so you do not bend the stem.

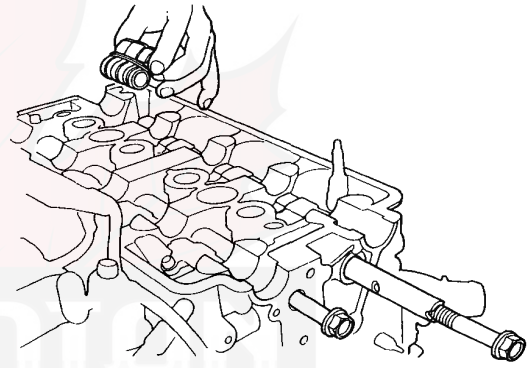


Rocker Arms

Installation

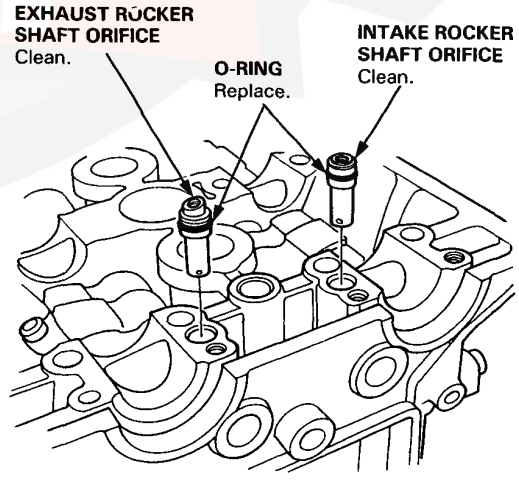
1. Install the rocker arms in the reverse order of removal:
   - Valve adjusting locknuts should be loosened and adjusting screw backed off before installation.
   - The component parts must be reinstalled in the original locations.
2. Install the lost motion assembly.
3. Install the rocker arms while passing the rocker arm shaft through the cylinder head.

   NOTE: Removed the rubber band after installing the rocker arms.



4. Install the rocker shaft orifices. If the holes in the rocker arm shaft and cylinder head are not in line with each other, threads a 12 mm bolt into the rocker arm shaft and rotate the shaft.

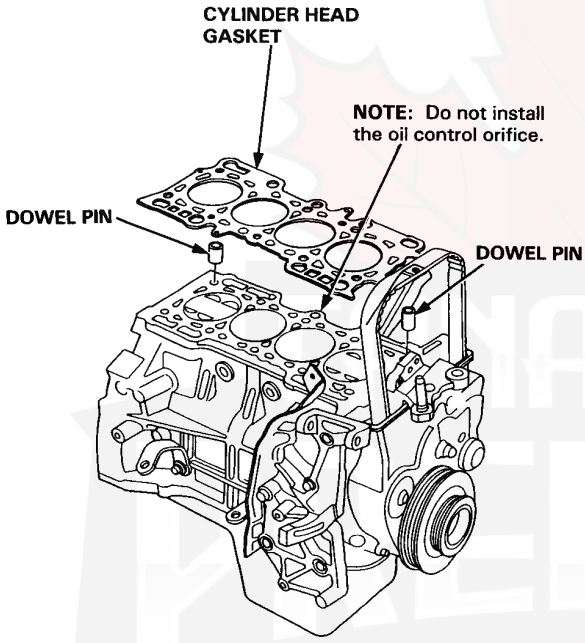
   NOTE:
   - The shapes of the rocker shaft orifices for the intake and exhaust are different. The orifices must be *installed in the original locations.*
   - Clean and install the rocker shaft orifices with new O-rings.



Installation

1. Install the cylinder head in the reverse order of removal:
   - Always use new head and manifold gaskets.
   - The cylinder head gasket is a metal gasket. Take care not to bend it.
   - Rotate the crankshaft, set the No. 1 piston at top dead center (TDC) (page 6-34).

2. Install the cylinder head gasket and dowel pins on the cylinder head.

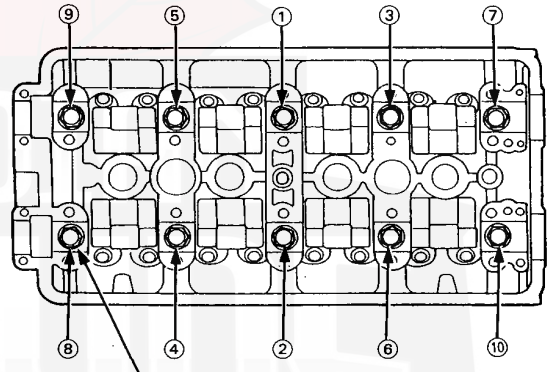


3. Tighten the cylinder head bolts sequentially in three steps.

1st step torque: 40 N·m (4.0 kg-m, 29 lb-ft)
2nd step torque: 70 N·m (7.0 kg-m, 51 lb-ft)
3rd step torque: 100 N·m (10.0 kg-m, 72 lb-ft)

NOTE:
- We recommend using a beam-type torque wrench. When using a preset-type torque wrench, be sure to tighten slowly and not to overtighten.
- If a bolt makes any noise while you are torquing it, loosen the bolt and retighten it from the 1st step.

CYLINDER HEAD BOLTS TORQUE SEQUENCE

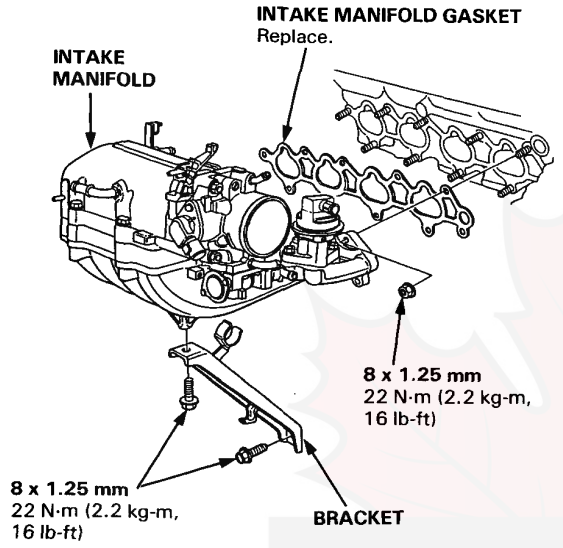


CYLINDER HEAD BOLTS
12 x 1.25 mm
100 N·m (10.0 kg-m, 72 lb-ft)
Apply clean engine oil to bolt threads and under bolt heads.

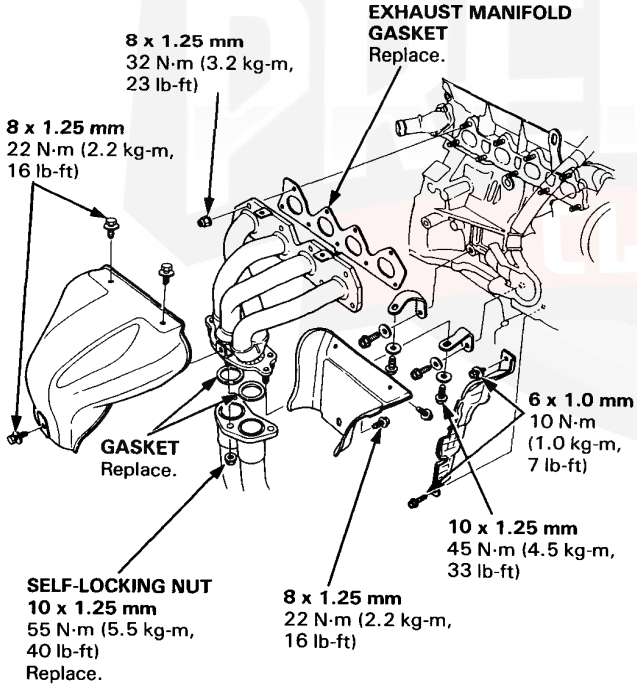
(cont'd)

Installation (cont'd)

4. Install the intake manifold and tighten the nuts in a crisscross pattern in 2 or 3 steps, beginning with the inner nuts.



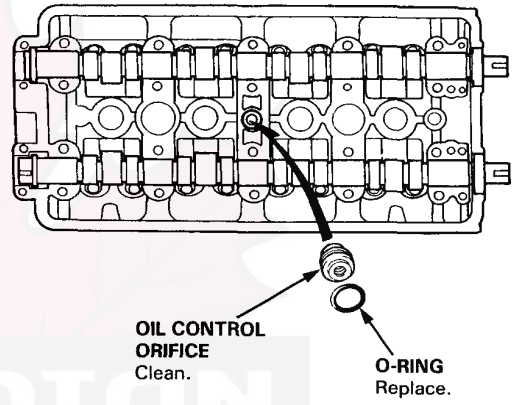
5. Install the exhaust manifold and brackets. Tighten the nuts in a crisscross pattern in 2 or 3 steps, beginning with the inner nuts.



6. Install the camshafts and camshaft oil seals.

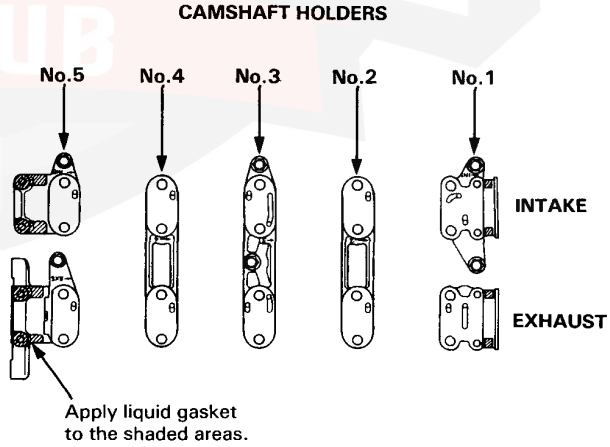
NOTE:
- Install the camshafts with keyway facing up.
- Install the oil seal with the spring side facing in.
- The oil seal housing surface should be dry.

7. Clean and install the oil control orifice with new O-ring in the oil passage of the No. 3 camshaft holder.

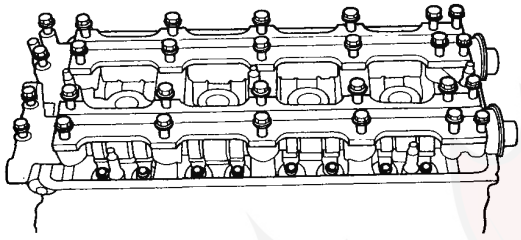


8. Apply liquid gasket to the head mating surface of the No. 1 and No. 5 camshaft holders on both the intake and exhaust side. Confirm that the camshaft keyway are face up, then place the holders, together with the No. 2, No. 3 and No. 4 camshaft holders, on the cylinder head.

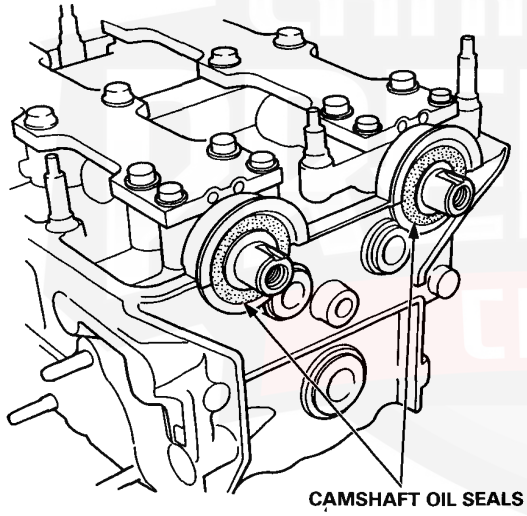
NOTE: The arrows marked on the camshaft holders should point to the timing belt.



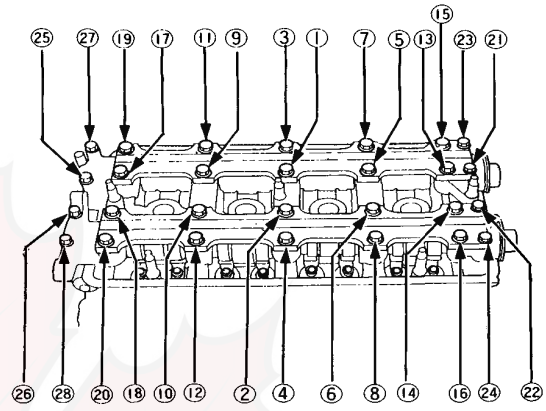
9. Temporarily tighten the bolts of the camshaft holders and the camshaft holder pipes.



10. Push the camshaft oil seal securely against the base of the camshaft holder.



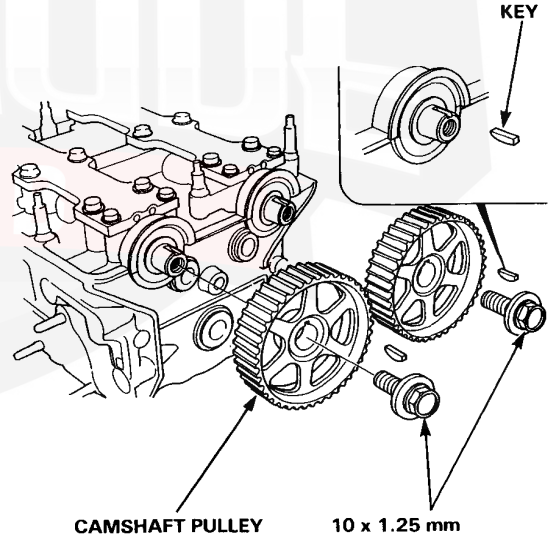
11. Tighten the bolts in the sequence shown below.



①—⑳ : 8 x 1.25 mm
26 N·m (2.6 kg-m, 19 lb-ft)
㉑—㉘ : 6 x 1.0 mm
12 N·m (1.2 kg-m, 9 lb-ft)

12. Install the back cover of the timing belt.

13. Install the camshaft pulleys.

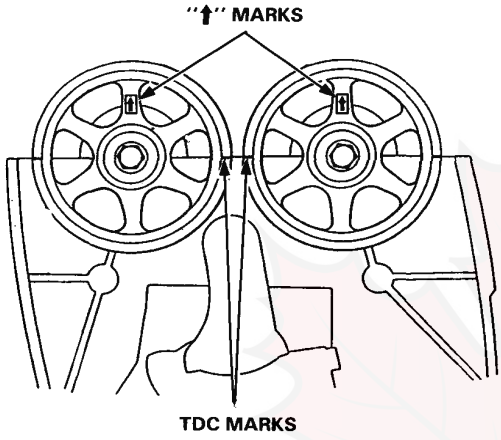


(cont'd)

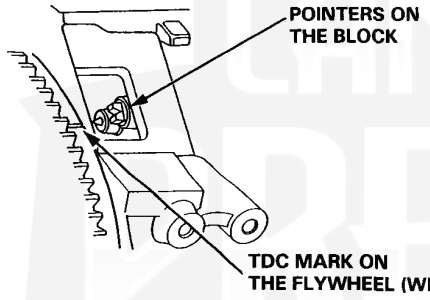
Installation (cont'd)

14. Install the timing belt in the reverse order of removal. Adjust the valve clearances (page 6-43)
    — Before installing the timing belt, position the crankshaft and camshaft pulleys as shown

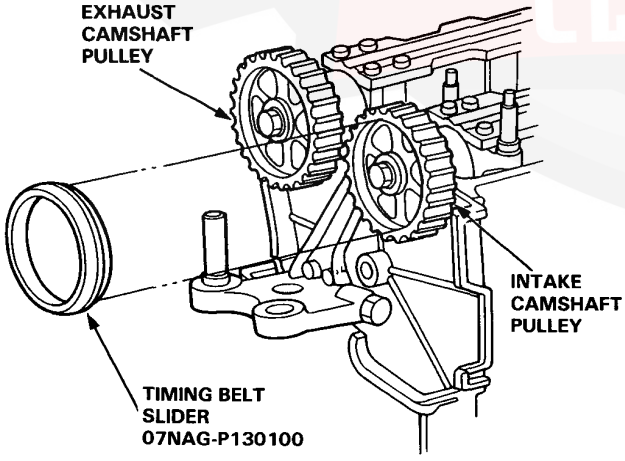
CAMSHAFT TDC POSITION:



CRANKSHAFT TDC POSITION:

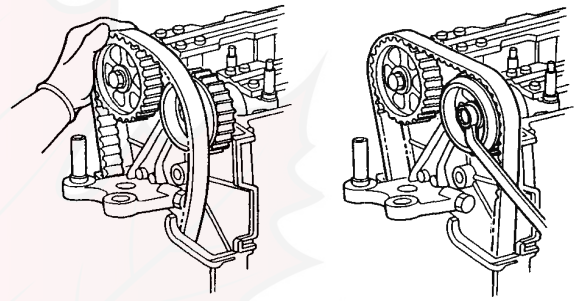


15. Install the special tool on the intake camshaft pulley.



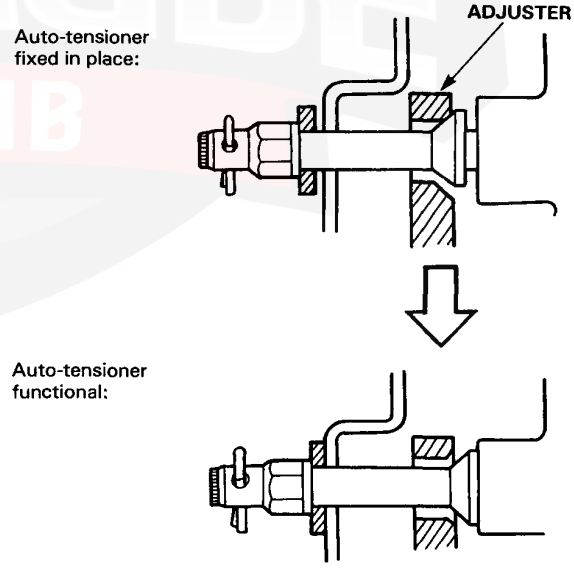
16. Install the timing belt.

NOTE:
- If the auto-tensioner has been extended and the timing belt cannot be installed, remove the auto-tensioner, compress it and reinstall it (page 6-40).
- Take care not to damage the timing belt when installing it.



17. Tighten the maintenance bolt to make the auto-tensioner functional.

NOTE: Turn the maintenance bolt by hand until it stops.

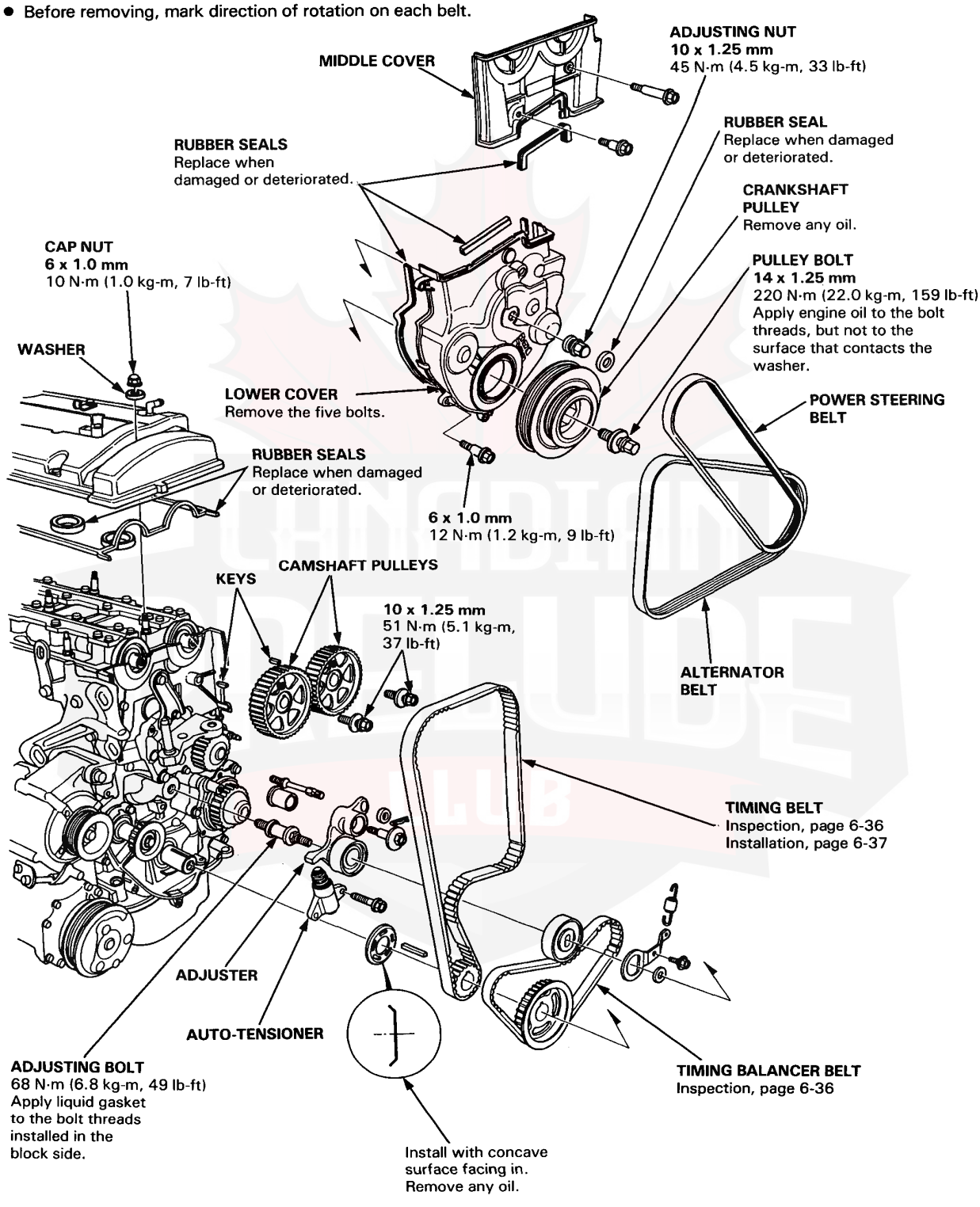


Timing Belt and Timing Balancer Belt

Illustrated Index

NOTE:

- Refer to page 6-34 for positioning crankshaft and pulley before installing timing belt.
- Before removing, mark direction of rotation on each belt.

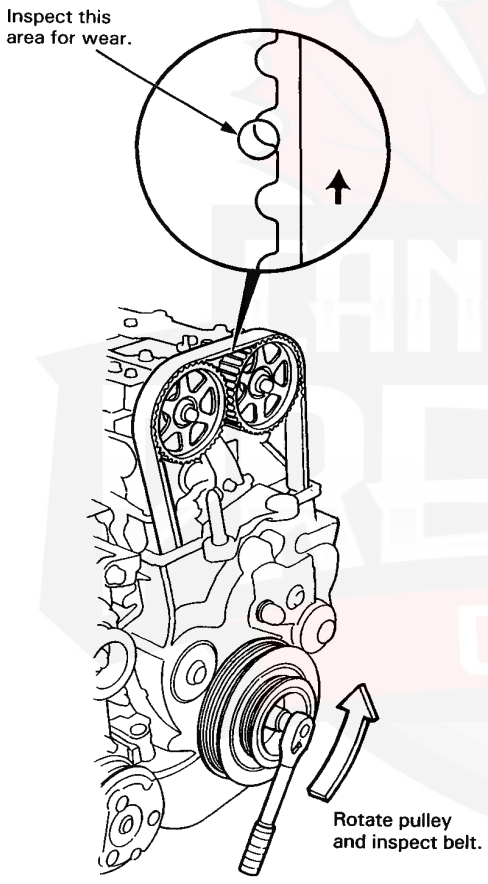


Timing Belt

Inspection

1. Disconnect the alternator terminal and the connector, then remove the engine wire harness from the cylinder head cover.
2. Remove the cylinder head cover.
3. Remove the middle cover.
4. Inspect the timing belt for cracks and oil or coolant soaking.

   NOTE:
   - Replace the belt if oil or coolant soaked.
   - Remove any oil or solvent that gets on the belt.



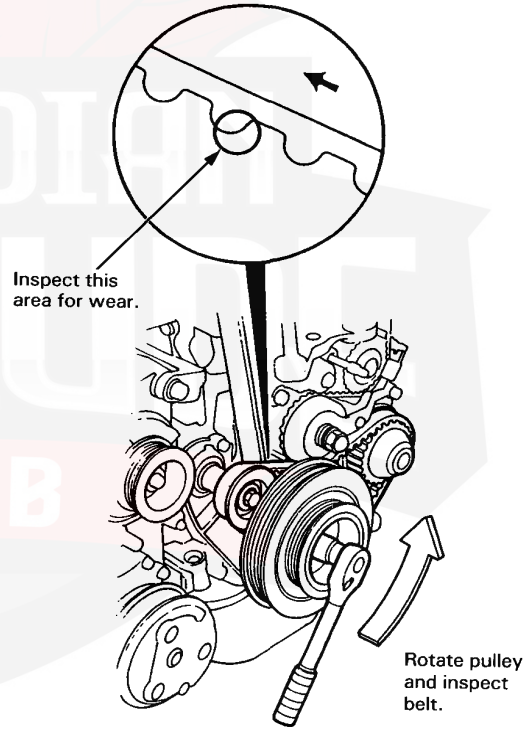
5. After inspecting, retorque the crankshaft pulley bolt to 220 N·m (22.0 kg-m, 159 lb-ft).

Timing Balancer Belt

Inspection

1. Disconnect the alternator terminal and the connector, then remove the engine wire harness from the cylinder head cover.
2. Remove the cylinder head cover.
3. Remove the middle cover.
4. Remove the crankshaft pulley.
5. Remove the lower cover.
6. Install the crankshaft pulley.
7. Inspect the timing belt for cracks and oil or coolant soaking.

   NOTE:
   - Replace the belt if oil or coolant soaked.
   - Remove any oil or solvent that gets on the belt.



8. After inspecting, retorque the crankshaft pulley bolt to 220 N·m (22.0 kg-m, 159 lb-ft).

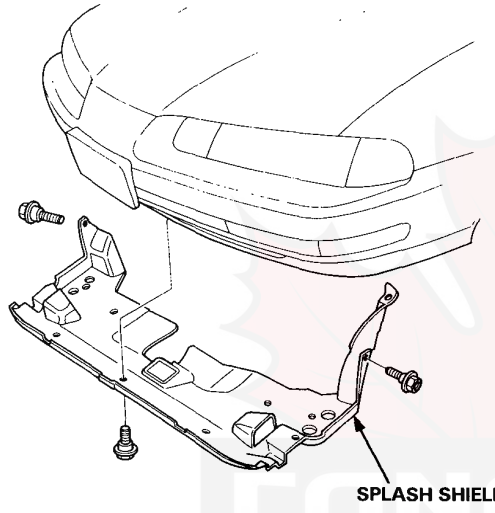
   NOTE: Refer to page 6-41 for timing balancer belt tension adjustment.

Replacement

CAUTION: Inspect the water pump when replacing the timing belt.

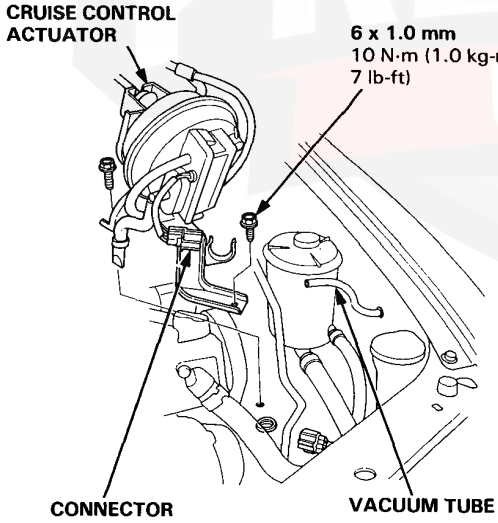
NOTE: Turn the crankshaft so that the No. 1 piston is at TDC (page 6-34).

1. Remove the splash shield.



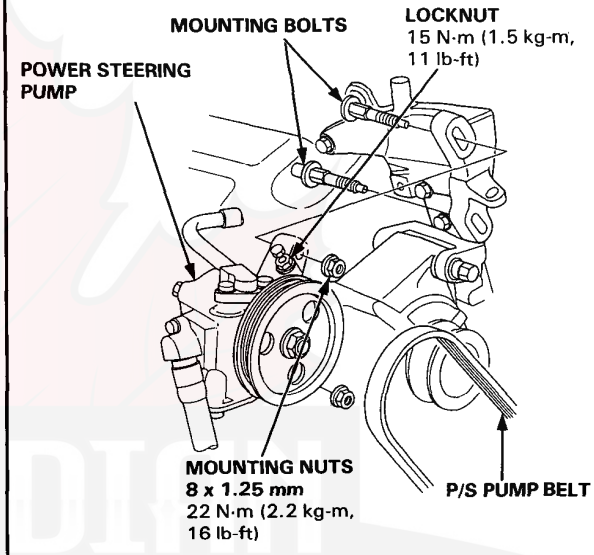
2. Disconnect the connector, then remove the cruise control actuator.

NOTE:
- Do not disconnect the control cable.
- Take care not to bend the cable when removing the actuator. Always replace a kinked cable with a new one.



3. Remove the mounting bolts, nuts and belt from the power steering (P/S) pump.

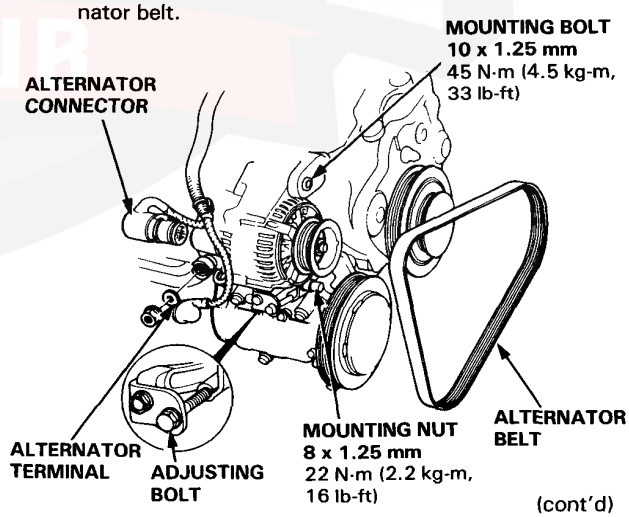
NOTE:
- Do not disconnect the P/S pipe and hose.
- After installing, adjust the tension of the P/S pump belt.



4. Disconnect the alternator terminal and the connector, then remove the engine wire harness from the body side.

5. Loosen the alternator mounting bolt, nut and the adjusting nut, then remove the alternator belt.

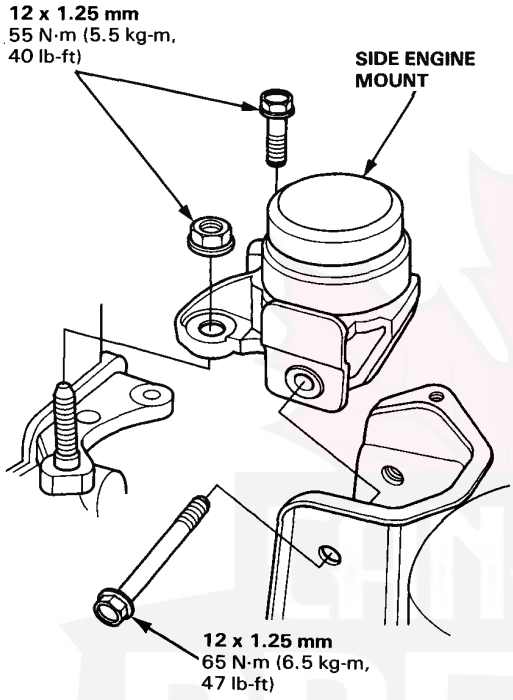
NOTE: After installing, adjust the tension of the alternator belt.



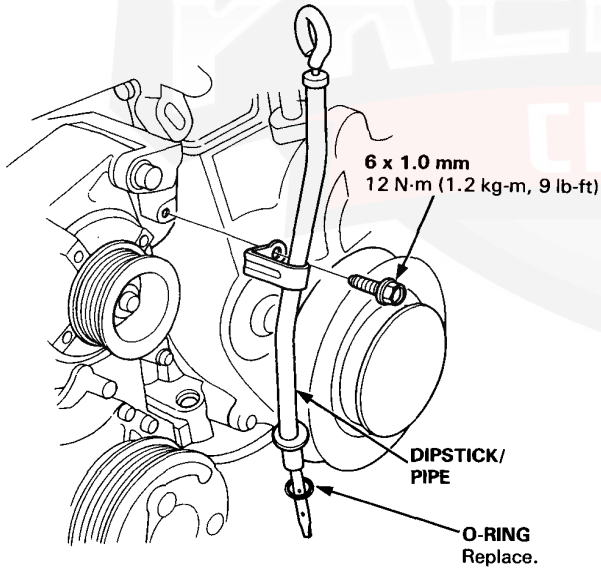
(cont'd)

Replacement (cont'd)

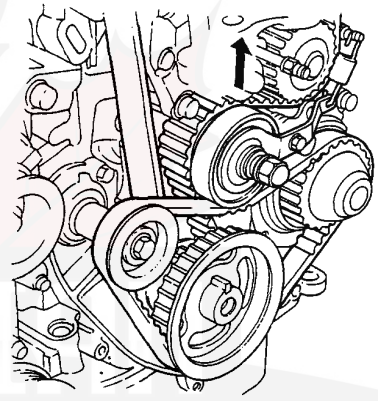
6. Remove the cylinder head cover.
7. Remove the middle cover.
8. Remove the side engine mount.



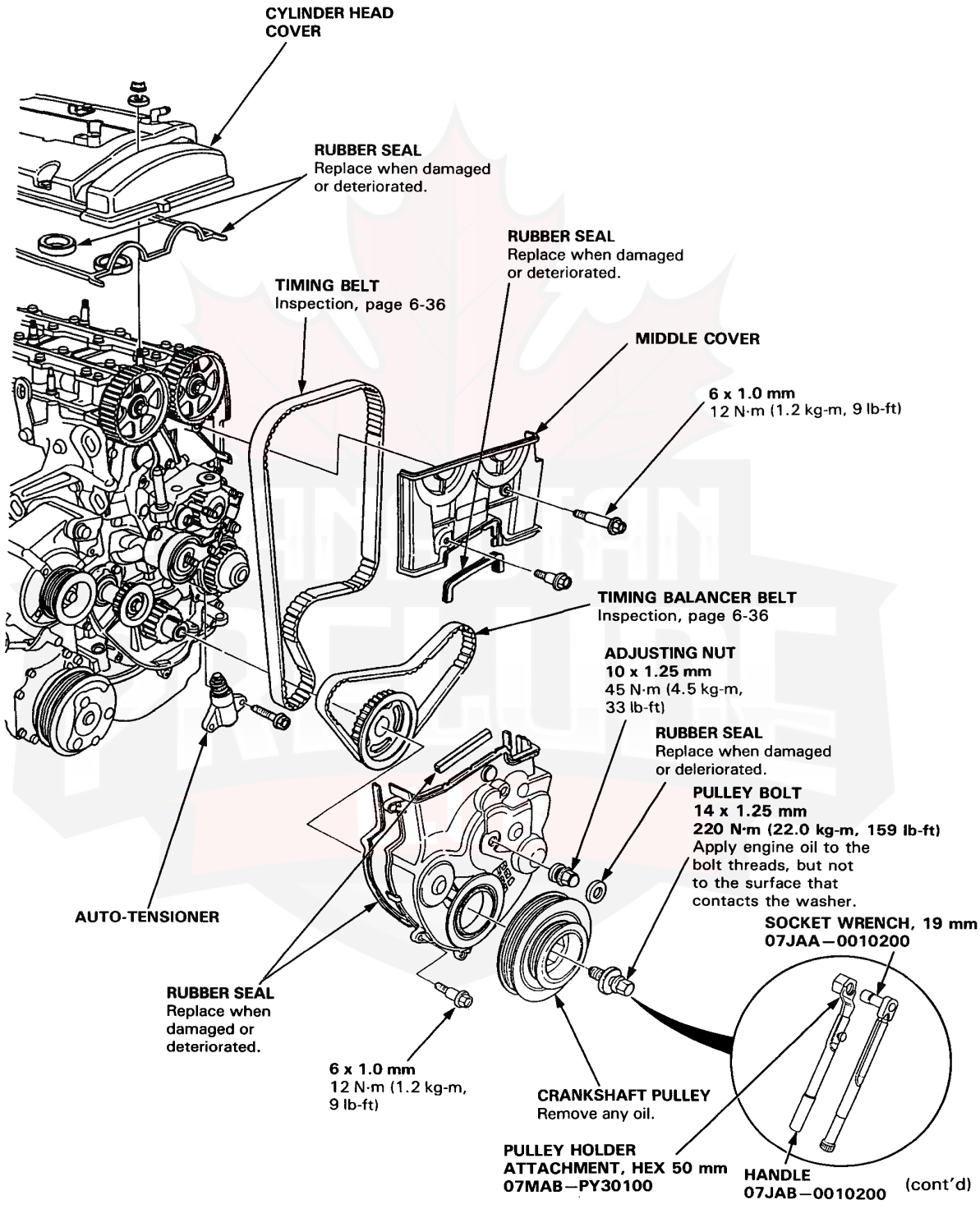
9. Remove the dipstick and pipe.



10. Remove the crankshaft bolt and the pulley. Remove the two rear bolts from the center beam to allow the engine to drop down and give clearance to remove the lower cover.
11. Remove the adjuster rubber seal. Do not loosen the adjusting nut.
12. Remove the lower cover.
13. Loosen the adjusting nut. Push on the pulley to remove tension from the timing balancer belt, then tighten the adjusting nut.



14. Remove the timing balancer belt.
15. Remove the timing belt.
16. Remove the auto-tensioner.



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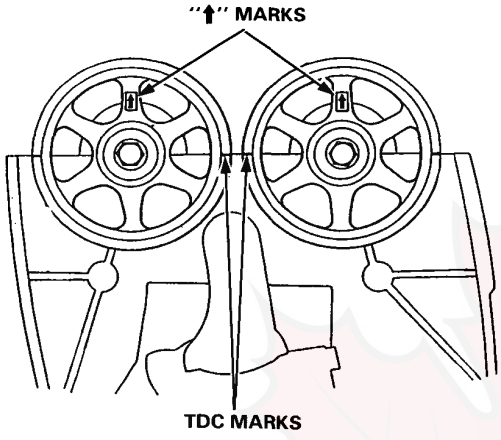
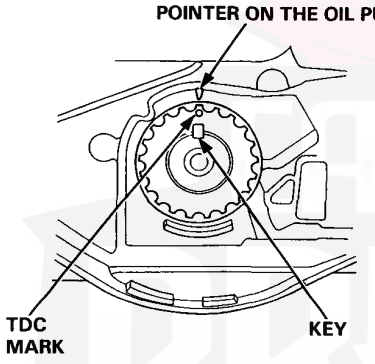
Timing Belt and Timing Balancer Belt

Replacement (cont'd)

17. Install the timing belt in the reverse order of removal.
    — Before installing the timing belt, position the crankshaft and camshaft pulleys as shown





18. Hold the auto-tensioner with the maintenance bolt pointing up. Loosen and remove the maintenance bolt.

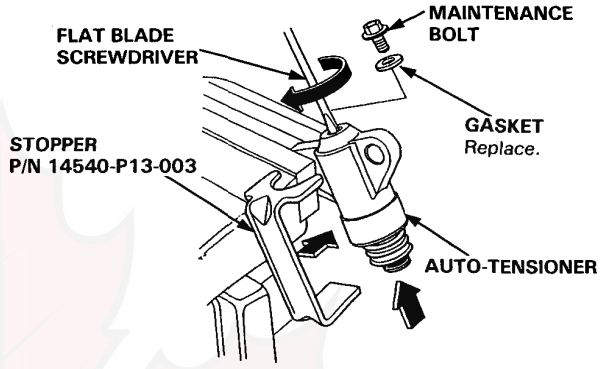
    NOTE: Handle the auto-tensioner carefully so the oil inside does not spill or leak. Replenish the auto-tensioner with oil if any spills or leaks. The total capacity is 8 ml (1/4 fl oz, 0.28 Imp oz).

19. Clamp the boss of the auto-tensioner in a vise. Use pieces of wood or a cloth to protect the boss.

    NOTE: Do not grip the housing of the auto-tensioner.

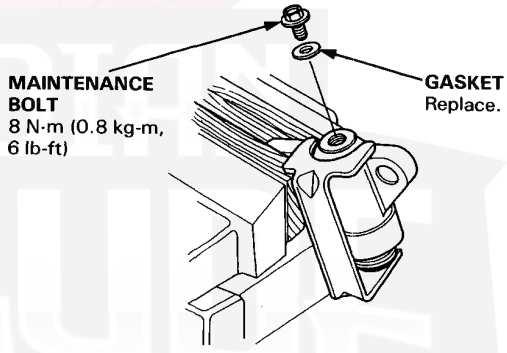
20. Insert a flat blade screwdriver into the maintenance hole. Place the stopper (P/N 14540-P13-003) on the auto-tensioner while turning the screwdriver clockwise to compress the bottom.

    NOTE: Take care not to damage the threads or the gasket contact surface with the screwdriver.



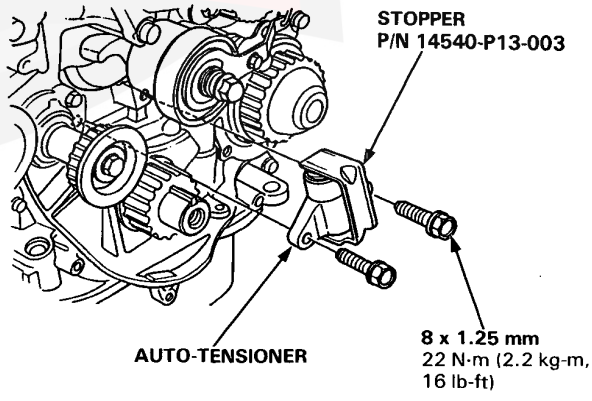
21. Remove the screwdriver and reinstall the maintenance bolt.

    NOTE: Be sure to use a new gasket.

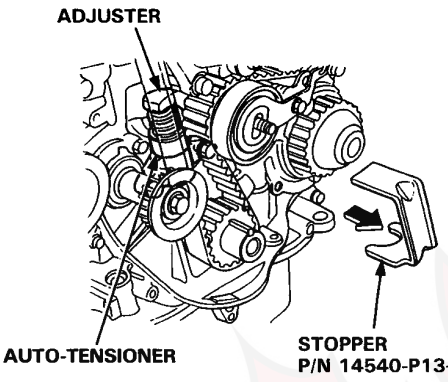


22. Make sure no oil is leaking around the maintenance bolt. Install the auto-tensioner on the engine.

    NOTE: Make sure the stopper stays in place.



23. Remove the stopper.



24. Make sure the crankshaft is positioned with the No. 1 piston at TDC.

25. Align the groove on the front balancer shaft pulley with the pointer on the oil pump housing as shown.

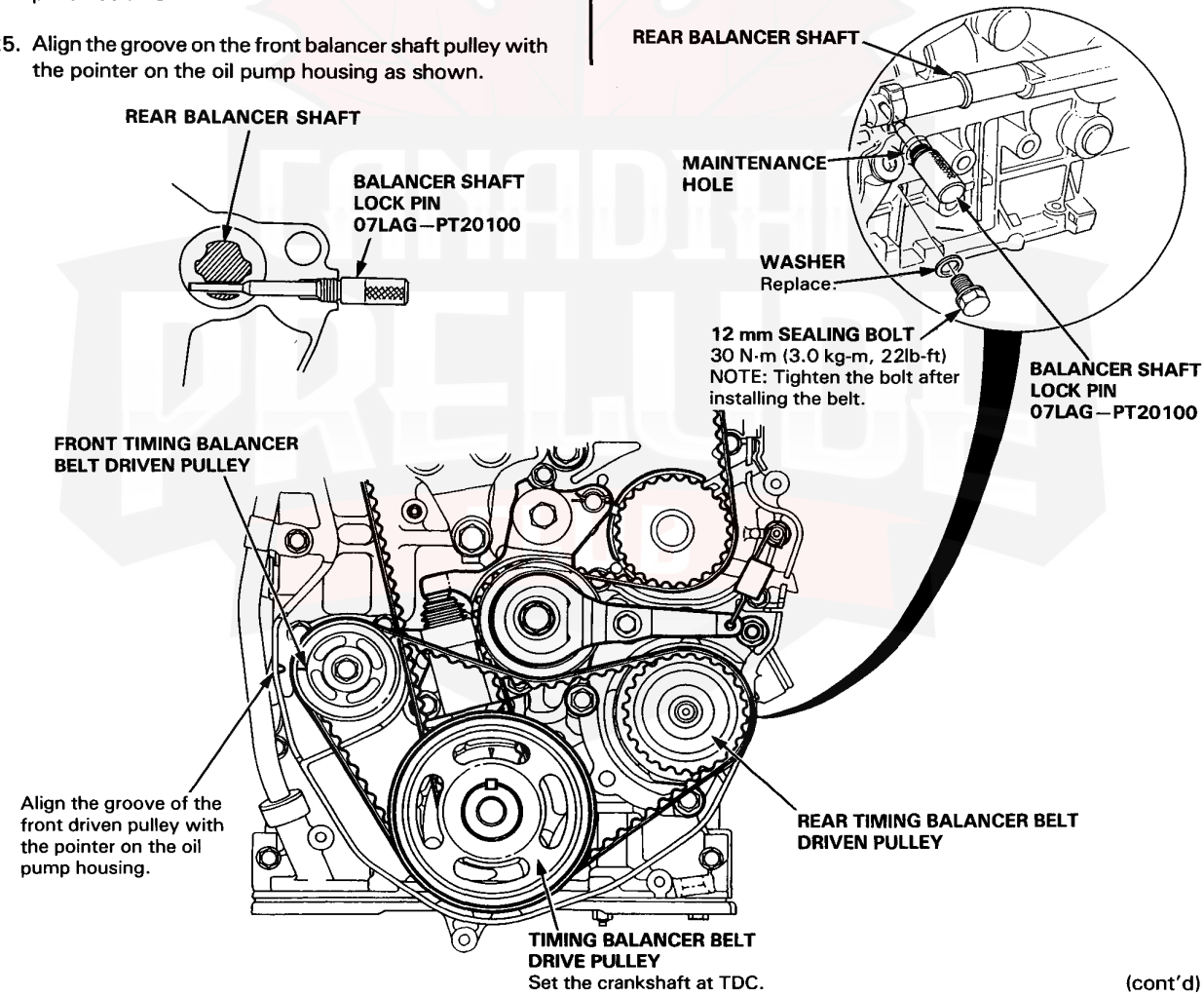
26. Align the rear balancer shaft pulley by inserting the special tool through the maintenance hole.

27. Loosen the adjusting nut and verify that the timing balancer belt adjuster moves freely.

28. Install the timing balancer belt. Remove the special tool from the rear balancer shaft.

29. Turn the crankshaft pulley about one turn, then tighten the adjusting nut to the specified torque.

    NOTE: Both belt adjusters are spring-loaded to properly tension the belts. Do not apply any extra pressure to the pulleys or tensioners while performing the adjustment.



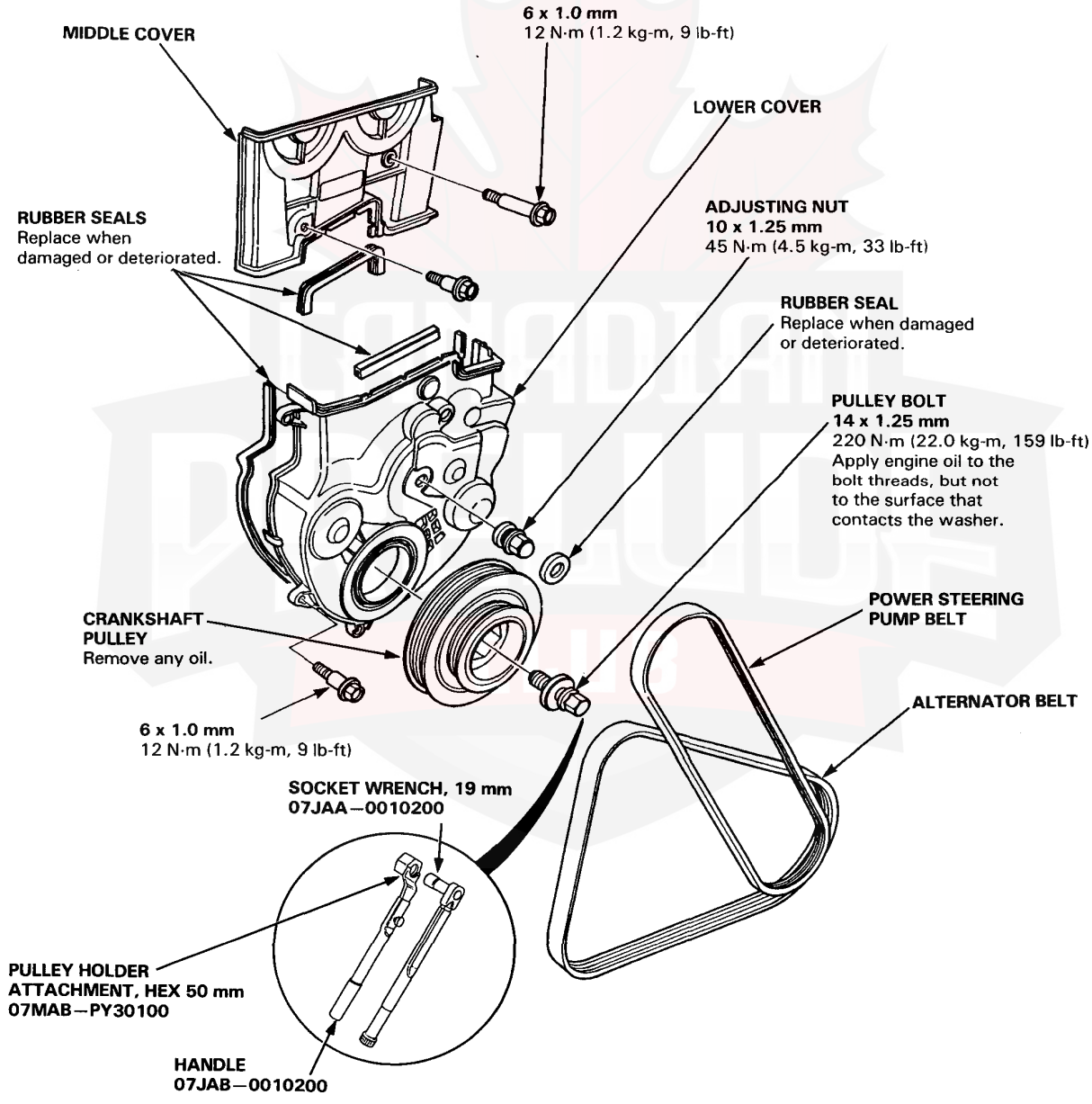
(cont'd)

Timing Belt and Timing Balancer Belt

Replacement (cont'd)

30. Install the lower cover.
31. Install a rubber seal around the adjusting nut. Do not loosen the nut.
32. Install the middle cover.
33. Install the crankshaft pulley.
34. Coat the threads and seating face of the pulley bolt with engine oil. Install and tighten to the specified torque.

    Specified torque: 220 N·m (22.0 kg-m, 159 lb-ft)

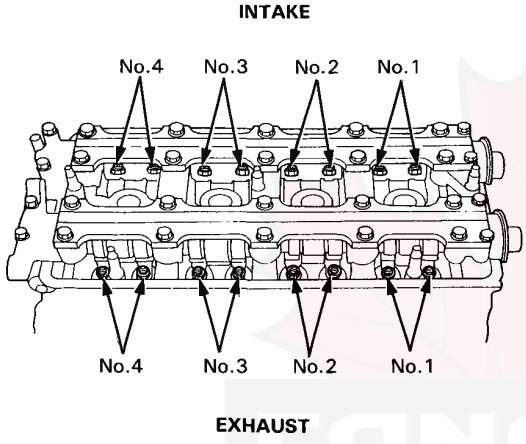


Valve Clearance

Adjustment

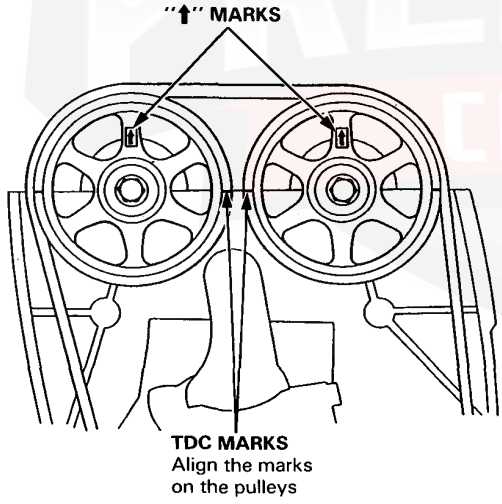
NOTE:
- Valves should be adjusted cold when the cylinder head temperature is less than 38°C (100°F).
- After adjusting, retorque the crankshaft pulley bolt to 220 N·m (22.0 kg-m, 159 lb-ft).

1. Remove the cylinder head cover.



2. Set No.1 piston at TDC. "↑" marks on the pulleys should be at top, and TDC grooves on the pulleys should align with cylinder heads surface.

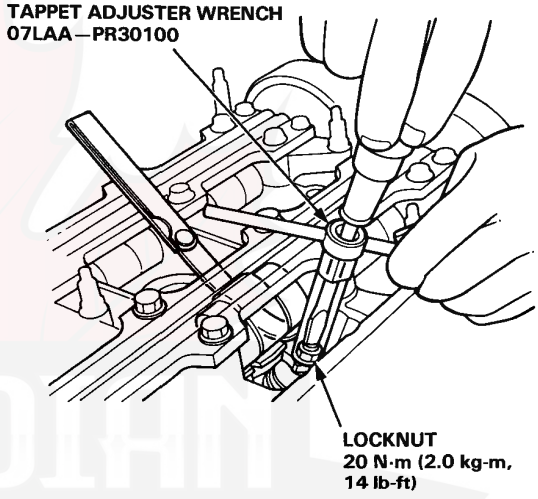
Number 1 piston at TDC:



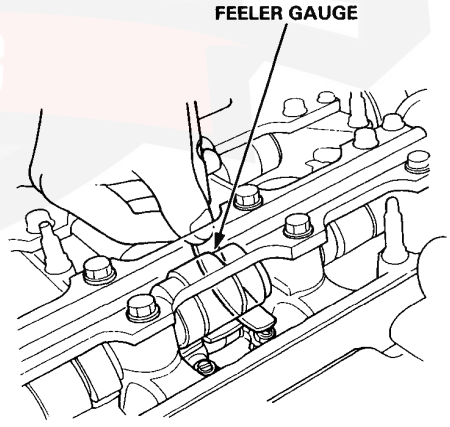
3. Adjust valves on No.1 cylinder.

Valve Clearance:
Intake: 0.15—0.19 mm (0.006—0.007 in)
Exhaust: 0.17—0.21 mm (0.007—0.008 in)

4. Loosen locknut and turn adjusting screw until feeler gauge slides back and forth with slight amount of drag.



5. Tighten the locknut and check clearance again. Repeat adjustment if necessary.

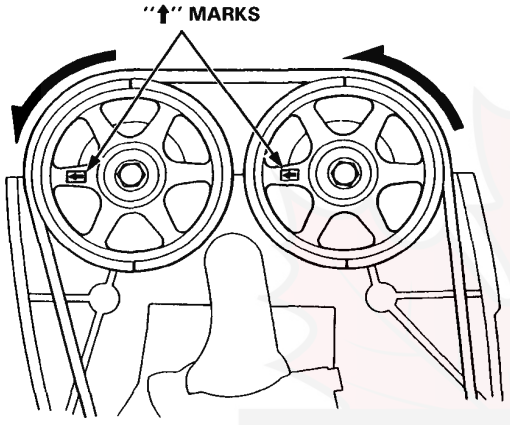


(cont'd)

Adjustment (cont'd)

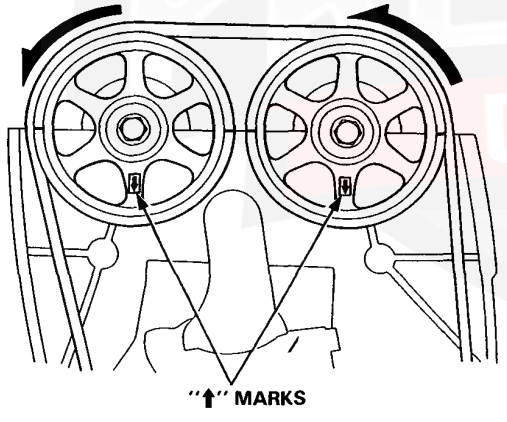
6. Rotate crankshaft 180° counterclockwise (camshaft pulleys turns 90°). The "⬆" marks should be at exhaust side. Adjust valves on No.3 cylinder.

Number 3 piston at TDC:



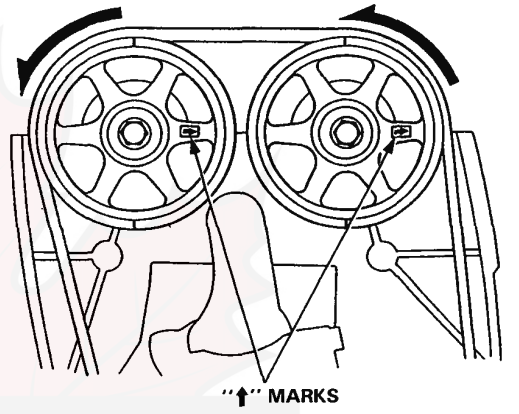
7. Rotate crankshaft 180° counterclockwise to bring No. 4 piston to TDC. The TDC grooves are once again aligned. Adjust valves on No. 4 cylinder.

Number 4 piston at TDC:



8. Rotate crankshaft 180° counterclockwise to bring No. 2 piston to TDC. The "⬆" marks should be at intake side. Adjust valves on No. 2 cylinder.

Number 2 piston at TDC:



Engine Block

Outline of Model Change

- The H22A2 engine has been added.
- The crankshaft has been changed.
- The engine block of H22A2 engine is similar H23A engine. Refer to H23A engine service procedures.

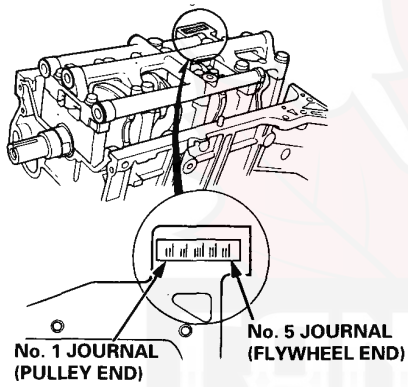
Main Bearings

Selection

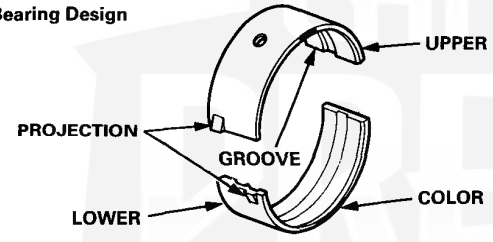
CAUTION: If the codes are indecipherable because of an accumulation of dirt and dust, do not scrub them with a wire brush or scraper. Clean them only with solvent or detergent.

Crankshaft Bore Code Location (Numbers, Letters or Bars)

Numbers or Letters or Bars have been stamped on the end of the block as a code for the size of each of the 5 main journal bores.
Use them, and the numbers stamped on the crankshaft (codes for main journal size), to choose the correct bearings.



Bearing Design



Bearing Identification

Color code is on the edge of the bearing.

	1 or A or I	2 or B or II	3 or C or III	4 or D or IIII
1 or I	Pink	Pink/ Yellow	Yellow	Yellow/ Green
2 or II	Pink/ Yellow	Yellow	Yellow/ Green	Green
3 or III	Yellow	Yellow/ Green	Green	Green/ Brown
4 or IIII	Yellow/ Green	Green	Green/ Brown	Brown
5 or IIIII	Green	Green/ Brown	Brown	Brown/ Black
6 or IIIIII	Green/ Brown	Brown	Brown/ Black	Black

Larger crank bore → (1 or A or I … 4 or D or IIII)

Smaller bearing (Thicker) →

Smaller main journal ↓ (1 or I … 6 or IIIIII)

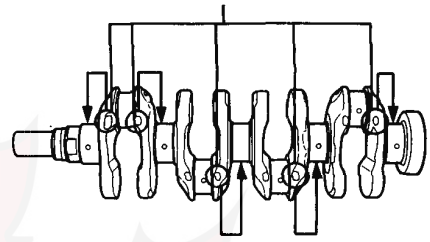
Smaller bearing (Thicker) ↓

NOTE: When using bearing halves of different colors, it does not matter which color is used in the top or bottom.

Main Journal Code Locations (Numbers or Bars)

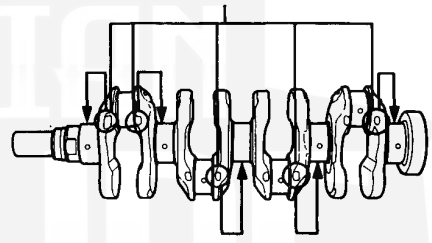
F20A, H22A2 engines:

Main Journal Code Locations (Numbers or Bars)

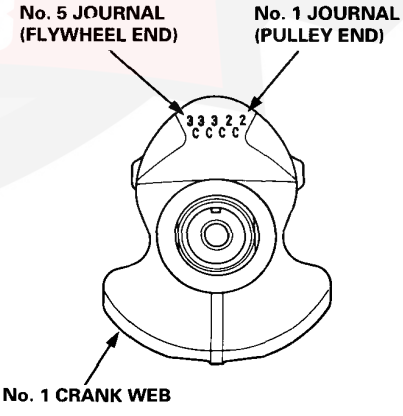


H23A, F22A engines:
The Main Journal Codes are stamped in one of the following locations.

Main Journal Code Locations (Numbers or Bars)



Main Journal Code Locations (Numbers or Bars)



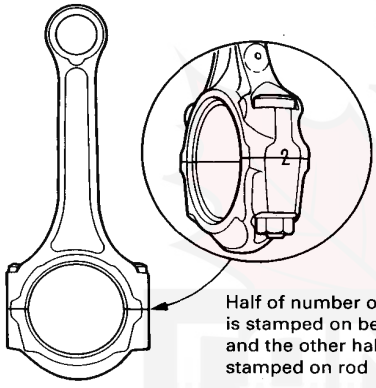
Connecting Rod Bearings

Selection

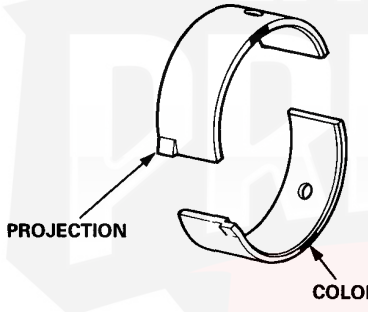
CAUTION: If the codes are indecipherable because of an accumulation of dirt and dust, do not scrub them with a wire brush or scraper. Clean them only with solvent or detergent.

Connecting Rod Journal Code Locations (Numbers or Bars)

Numbers or Bars have been stamped on the side of each connecting rod as a code for the size of the big end. Use it, and the letters or bars stamped on the crank (codes for rod journal size), to choose the correct bearings.



Bearing Design



Bearing Identification
Color code is on the edge of the bearing.

Larger big end bore

1 or I	2 or II	3 or III	4 or IIII

Smaller bearing (Thicker)

A or I	Red	Pink	Yellow	Green
B or II	Pink	Yellow	Green	Brown
C or III	Yellow	Green	Brown	Black
D or IIII	Green	Brown	Black	Blue

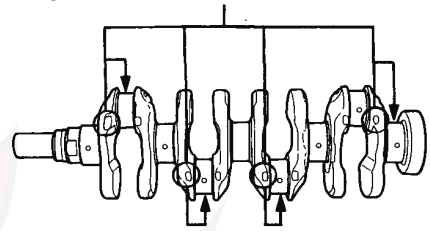
Smaller rod journal

Smaller bearing (Thicker)

Connecting Rod Journal Code Locations (Letters or Bars)

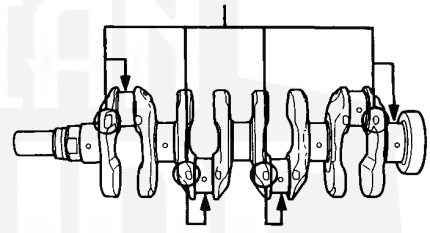
F20A, H22A2 engines:

Connecting Rod Journal Code Locations (Letters or Bars)

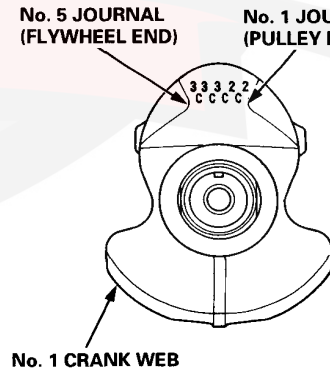


H23A, F22A engines:
The Connecting Rod Journal Codes are stamped in one of the following locations.

Connecting Rod Journal Code Locations (Letters or Bars)



Connecting Rod Journal Code Locations (Letters or Bars)

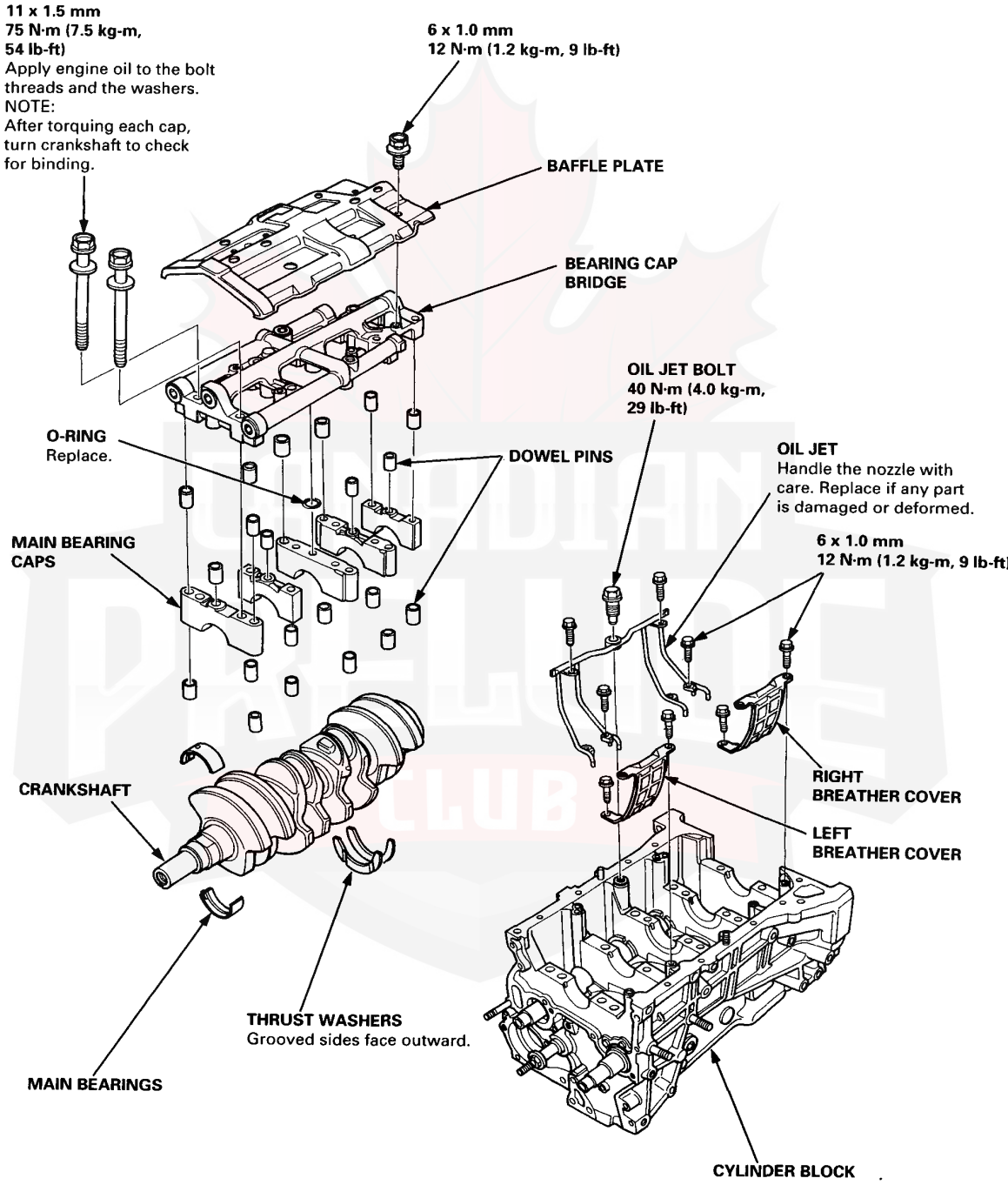


Engine Lubrication

Outline of Model Change

- The H22A2 engine has been added. Compare to H23A engine main differences are:
  - Recommended engine oil.
  - Oil jet

NOTE:
- Use new O-rings when reassembling.
- Apply oil to O-rings before installation.
- Use liquid gasket, Part No. 0Y740 – 99986

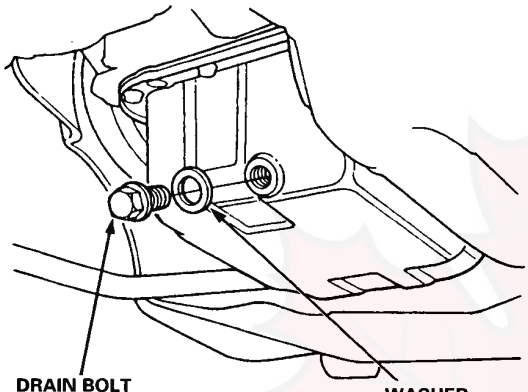


Engine Oil

Replacement

CAUTION: Remove the drain bolt carefully while the engine is hot oil may cause scalding.

1. Warm up the engine.
2. Drain the engine oil.

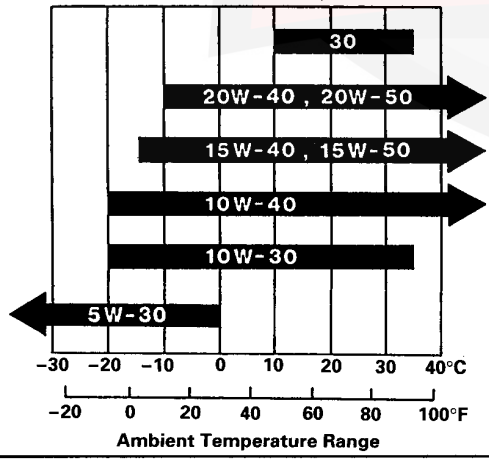


3. Reinstall the drain plug with a new washer, and refill with the recommended oil.

CAUTION: Do not overtighten the drain bolt.

Requirement	API Service Grade: SF or SG
Change	Every 10,000 km (6,000 miles) or 6 months.
Capacity	4.8 ℓ (5.1 US qt, 4.2 Imp qt) change, including filter. 5.9 ℓ (6.2 US qt, 5.2 Imp qt) after engine overhaul.

Engine Oil SAE Viscosity for Outside Temperature Ranges.



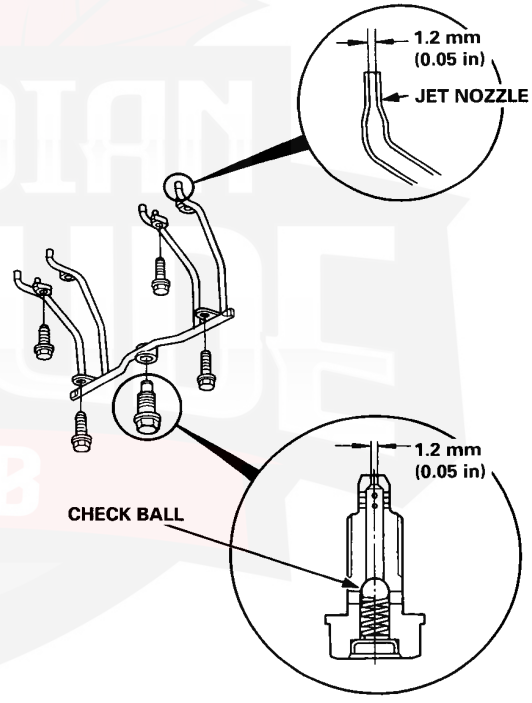
Oil Jet

Inspection

1. Remove the oil jet (page 8-2) and inspect it as follows.

   - Make sure that a 1.1 mm (0.04 in) diameter drill will go through the nozzle hole (1.2 mm (0.05 in) diameter).
   - Insert the other end of the same 1.1 mm (0.04 in) drill into the oil intake (1.2 mm (0.05 in) diameter). Make sure the check ball moves smoothly and has a stroke of approximately 4.0 mm (0.16 in).
   - Check the oil jet operation with an air nozzle. It should take at least 200 kPa (2.0 kg/cm², 28 psi) to unseat the check ball.

   NOTE: Replace the oil jet assembly if the nozzle is damaged or bent.



2. Mounting torque is critical. Be very precise when installing.

   Torque: 40 N·m (4.0 kg-m, 29 lb-ft)

Intake Manifold/Exhaust System

Outline of Model Change

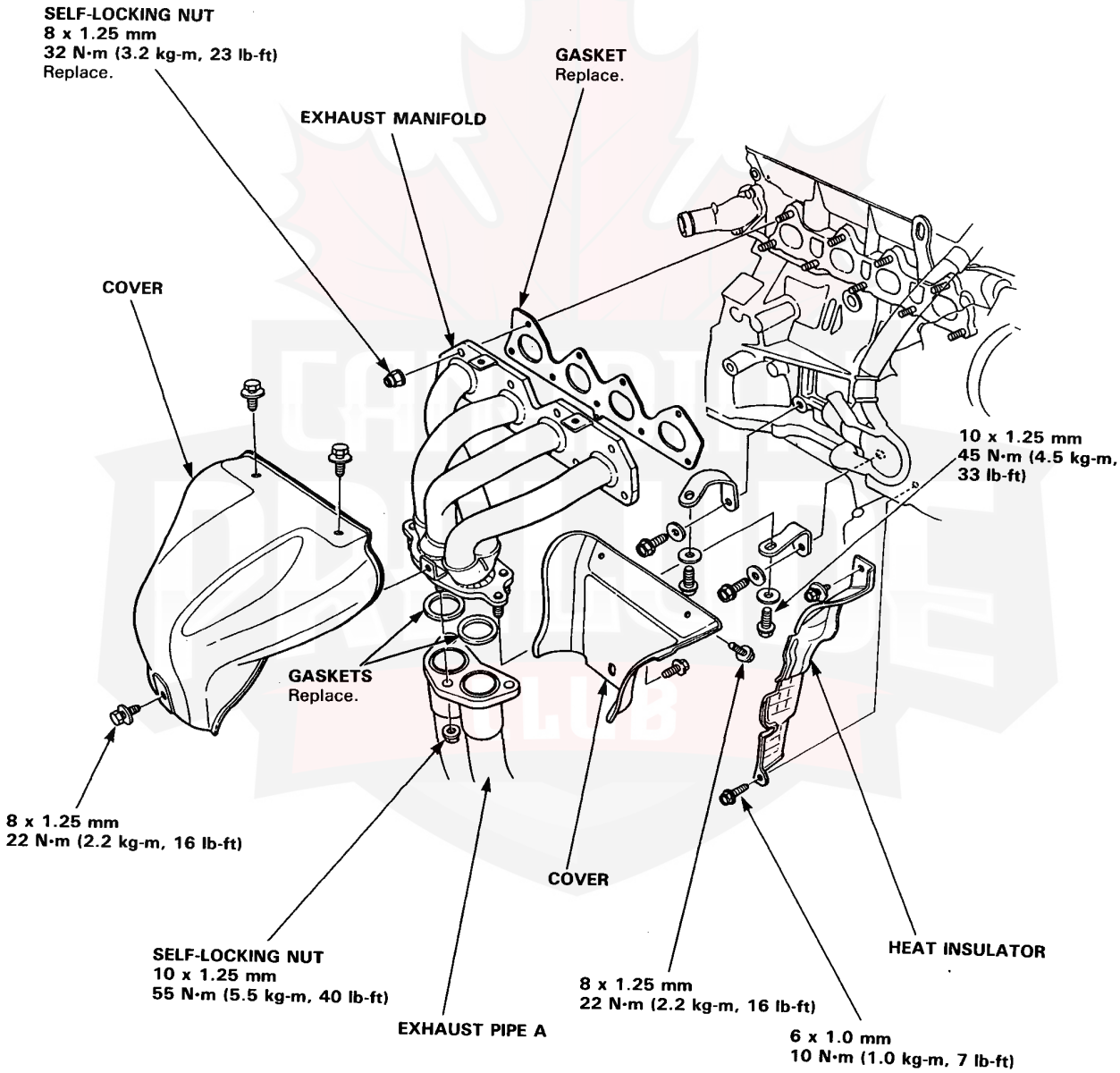
- The H22A2 engine has been added. Compare to H23A engine main difference is exhaust manifold.

Exhaust Manifold

Replacement

NOTE: Use new gaskets and self-locking nuts when reassembling.

CAUTION:
- **Check for folds or scratches on the surface of the gasket.**
- **Replace with a new gasket if damaged.**



Cooling

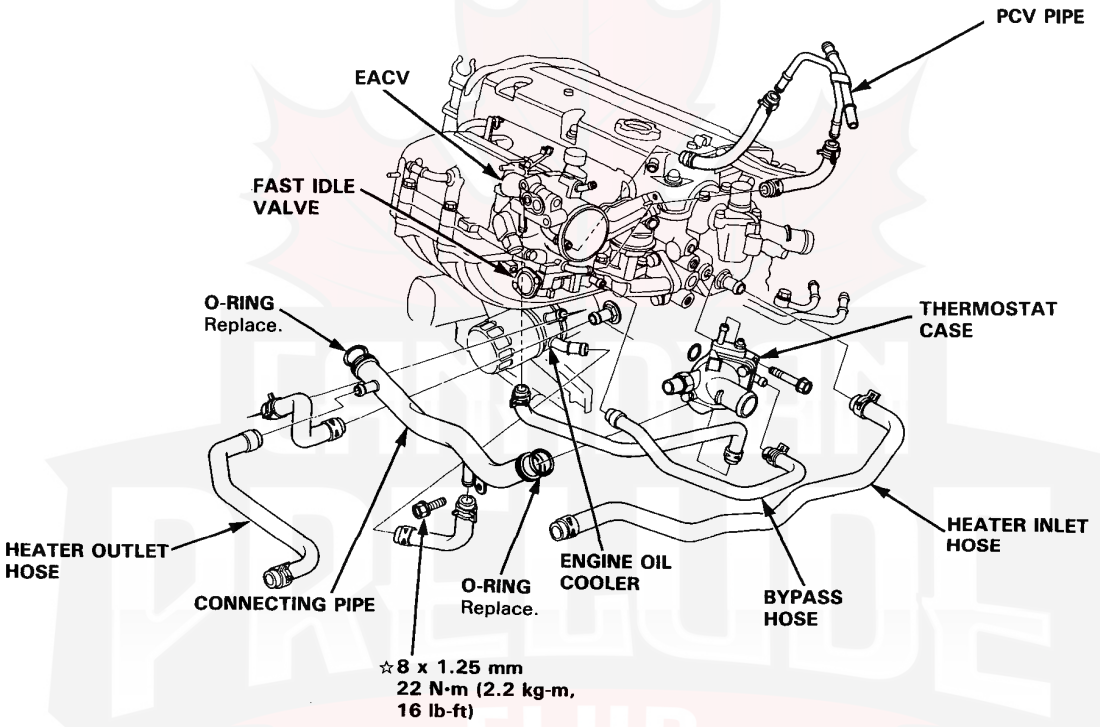
Ouline of Model Change

- The H22A2 engine has been added.

Radiator

Illustrated Index

Engine Coolant Hose Connections:

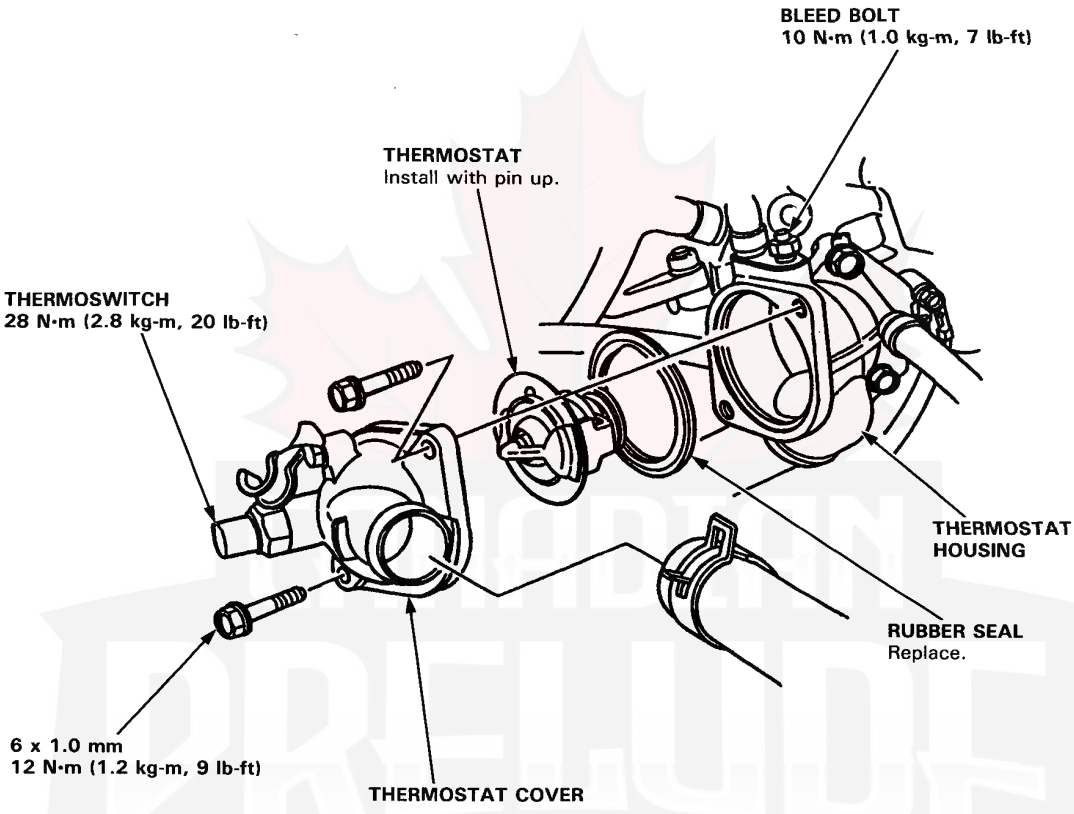


☆: CORROSION RESISTANT BOLT

Thermostat

Replacement

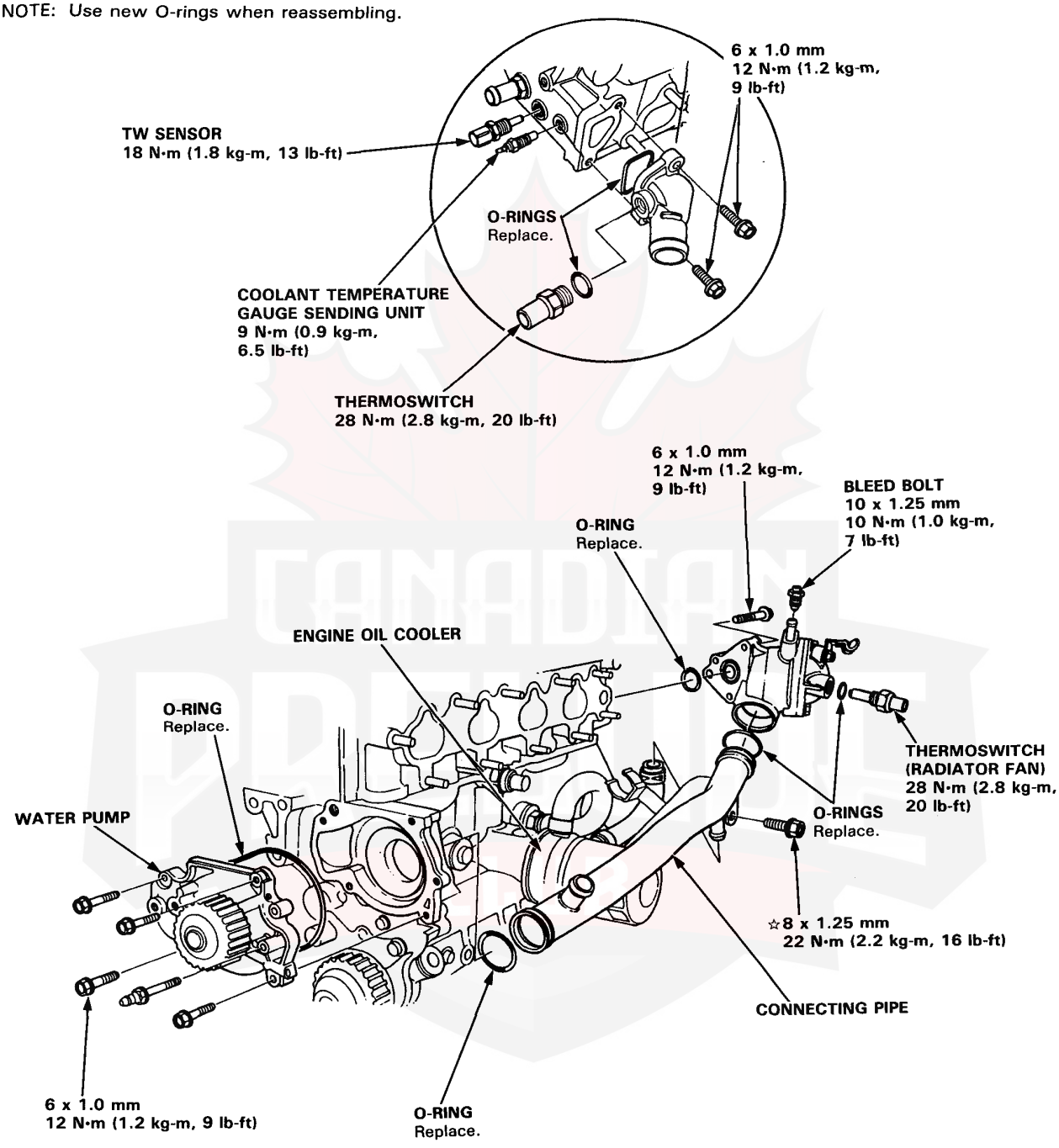
NOTE: Use new O-rings when reassembling.



Water Pump

Illustrated Index

NOTE: Use new O-rings when reassembling.



☆: CORROSION RESISTANT BOLT

Fuel and Emissions (Fuel-injected Engine)

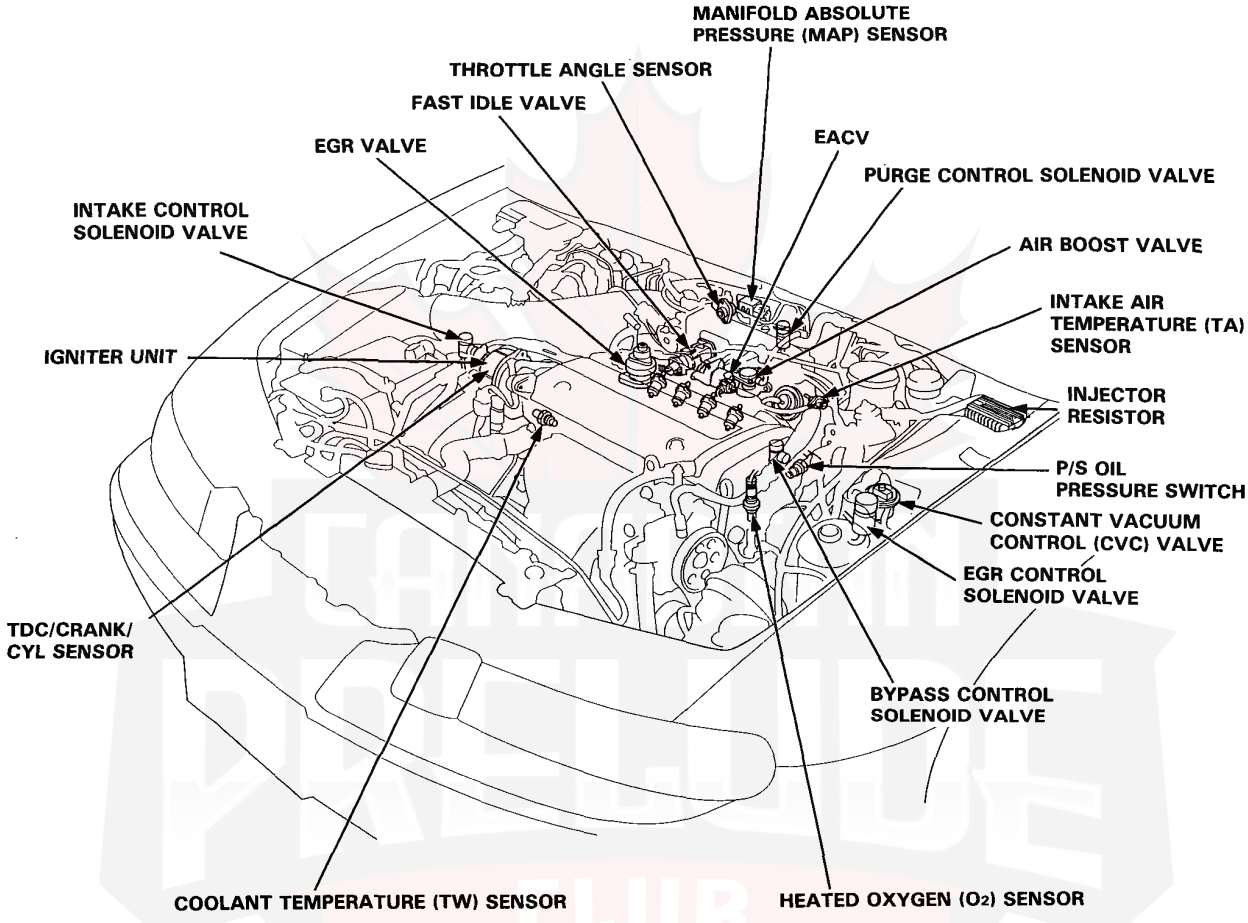
Outline of Model Changes

H22A2 engine has been added.

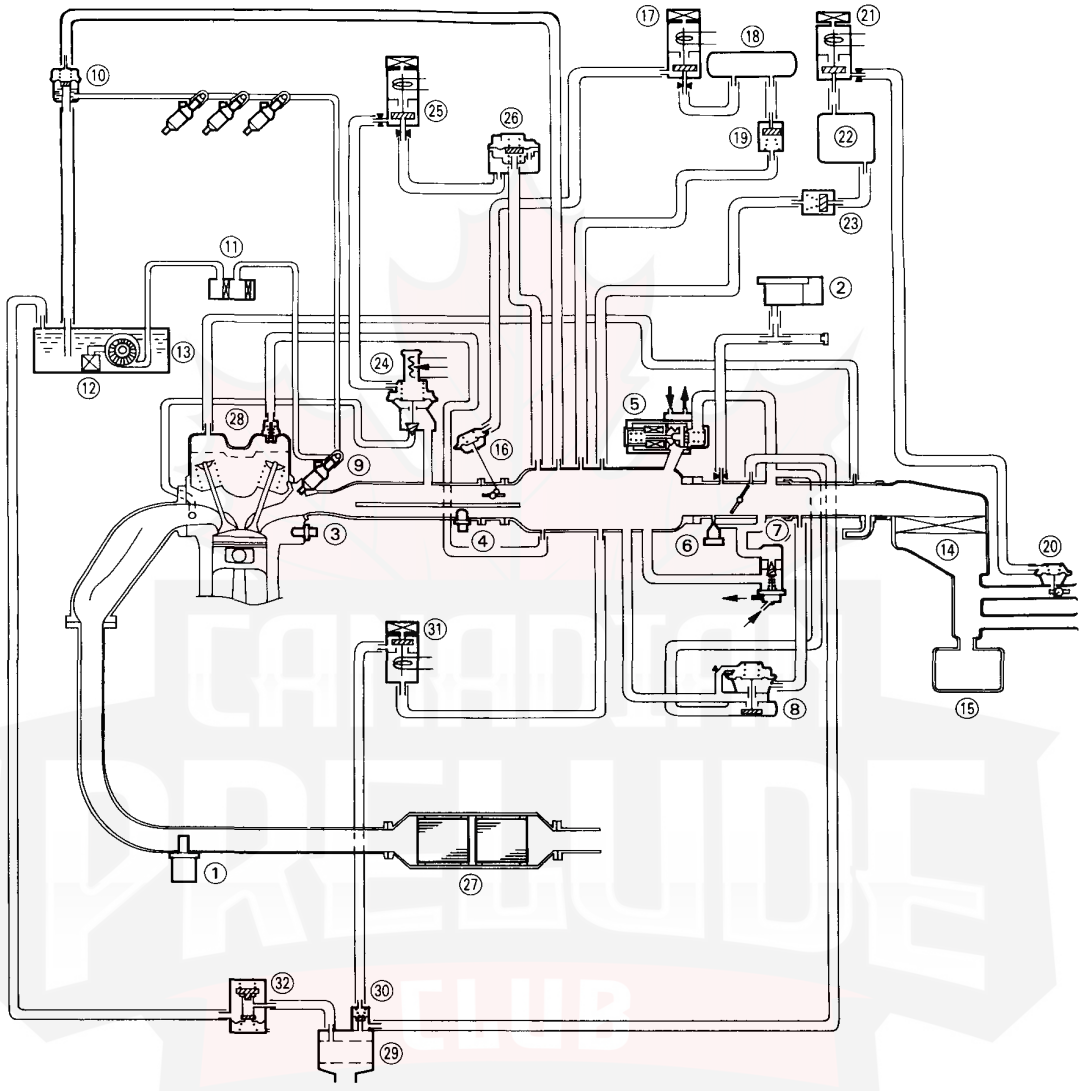
Component Locations

Index

H22A2 engine:



H22A2 engine:

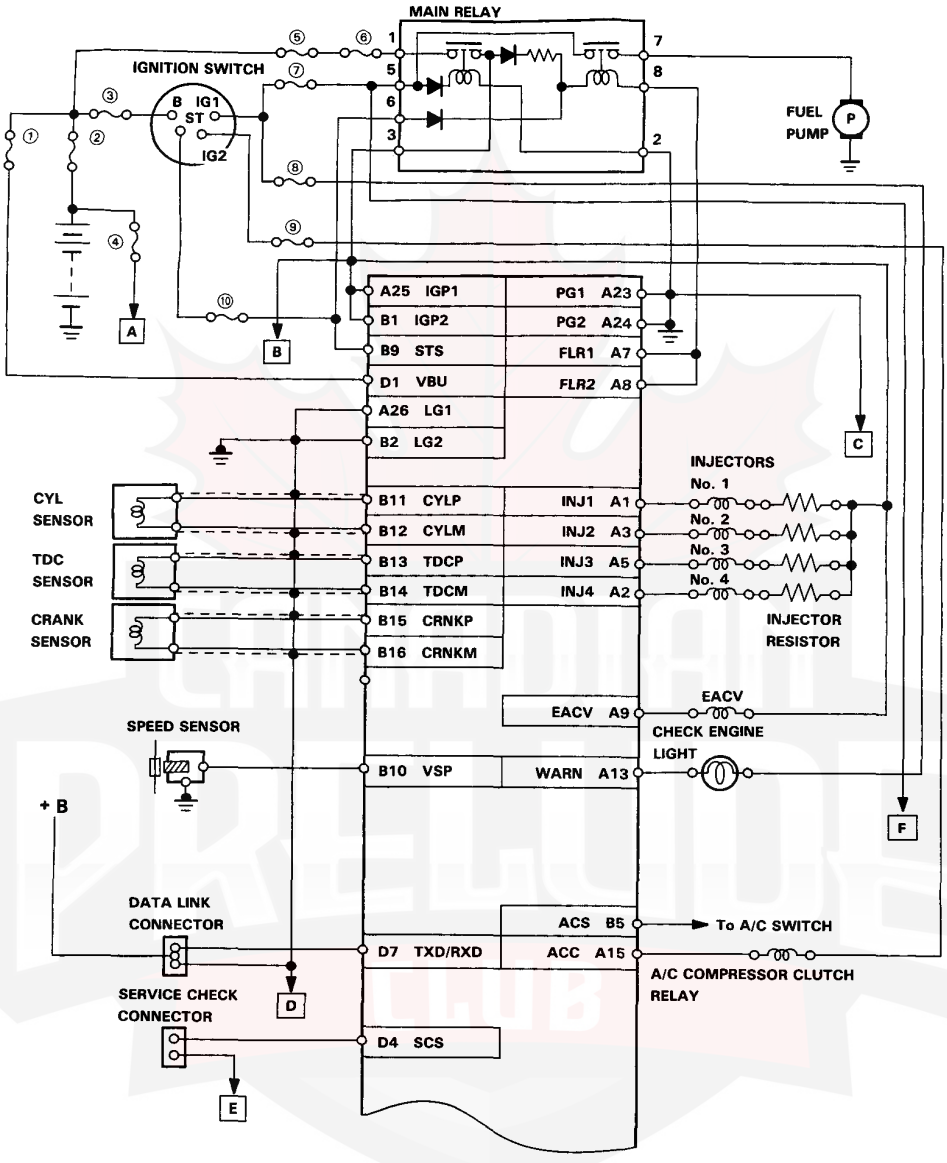


① OXYGEN (O_2) SENSOR
② MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
③ COOLANT TEMPERATURE SENSOR
④ INTAKE AIR TEMPERATURE SENSOR
⑤ ELECTRONIC AIR CONTROL VALVE (EACV)
⑥ IDLE ADJUSTING SCREW
⑦ FAST IDLE VALVE
⑧ AIR BOOST VALVE
⑨ FUEL INJECTOR
⑩ PRESSURE REGULATOR
⑪ FUEL FILTER
⑫ FUEL PUMP
⑬ FUEL TANK
⑭ AIR CLEANER
⑮ RESONATOR
⑯ BYPASS CONTROL DIAPHRAGM
⑰ BYPASS CONTROL SOLENOID VALVE
⑱ VACUUM TANK
⑲ CHECK VALVE
⑳ INTAKE CONTROL DIAPHRAGM
㉑ INTAKE CONTROL SOLENOID VALVE
㉒ VACUUM TANK
㉓ CHECK VALVE
㉔ EGR VALVE
㉕ EGR CONTROL SOLENOID VALVE
㉖ CONSTANT VACUUM CONTROL (CVC) VALVE
㉗ CATALYTIC CONVERTER
㉘ PCV VALVE
㉙ CHARCOAL CANISTER
㉚ PURGE CONTROL DIAPHRAGM VALVE
㉛ PURGE CONTROL SOLENOID VALVE
㉜ TWO-WAY VALVE

System Description

Electrical Connections

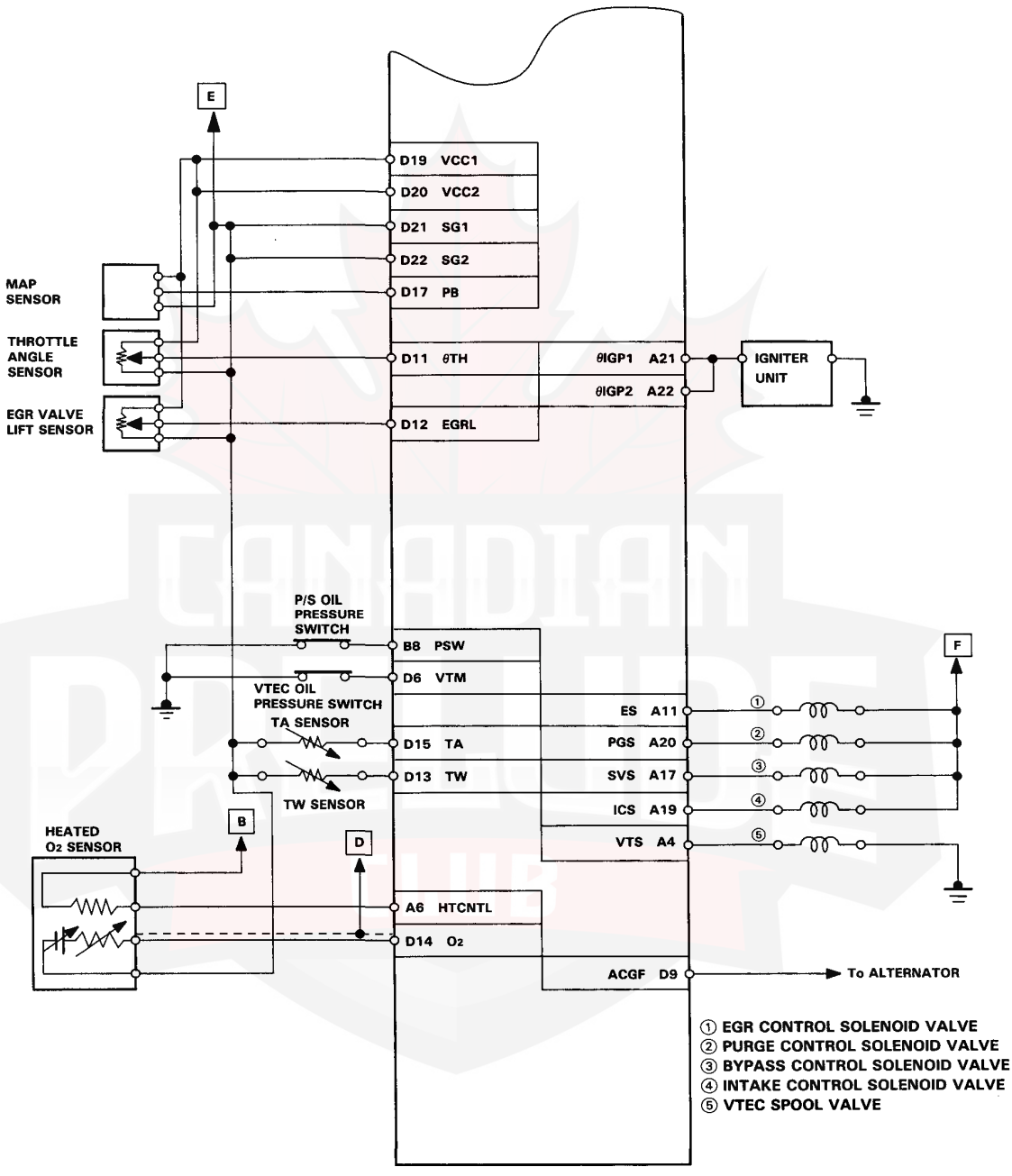
H22A2 engine:

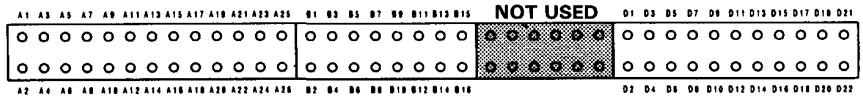


FUSES

① CLOCK RADIO (10 A)*
② BATTERY (100 A)*
③ IG SW (50 A)*
④ STOP HORN (15 A)*
⑤ FUSE BOX (40 A)*
⑥ No. 4 BACK UP (10 A)
⑦ No. 19 ECU (15 A) (without SRS)
No. 23 ECU (15 A) (with SRS)
⑧ No. 13 METER (10 A)
⑨ No. 11 REAR DEFROSTER RELAY (10 A)
⑩ No. 2 STARTER SIGNAL (7.5 A)

*: in the UNDER-HOOD FUSE/RELAY BOX





TERMINAL LOCATIONS

Troubleshooting

Troubleshooting Guide

NOTE: Across each row in the chart, the systems that could be sources of a symptom are ranked in the order they should be inspected starting with ①. Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the top of that column. If inspection shows the system is OK, try the next most likely system ②, etc.

PAGE / SYSTEM / SYMPTOM		PGM-FI									
		ECU	OXYGEN SENSOR	MANIFOLD ABSOLUTE PRESSURE SENSOR	TDC/CRANK/CYL SENSOR	COOLANT TEMPERATURE SENSOR	THROTTLE ANGLE SENSOR	INTAKE AIR TEMPERATURE SENSOR	IMA SENSOR (F22A2 engine)	ATMOSPHERIC PRESSURE SENSOR	IGNITION OUTPUT SIGNAL
		–	–	–	–	–	–	–	–	–	–
CHECK ENGINE LIGHT TURNS ON		or									
CHECK ENGINE LIGHT BLINKS		or	or	or	or	6	7	10	11	13	15
ENGINE WON'T START		③			③						③
DIFFICULT TO START ENGINE WHEN COLD		(BU)		③	②	①					
IRREGULAR IDLING	WHEN COLD FAST IDLE OUT OF SPEC	(BU)				③					
	ROUGH IDLE	(BU)		③							
	WHEN WARM RPM TOO HIGH	(BU)									
	WHEN WARM RPM TOO LOW	(BU)									
FREQUENT STALLING	WHILE WARMING UP	(BU)				③					
	AFTER WARMING UP	(BU)									
POOR PERFORMANCE	MISFIRE OR ROUGH RUNNING	(BU)		②	③						
	FAILS EMISSION TEST	(BU)	③	②							
	LOSS OF POWER	(BU)		③			②				

* If codes other than those listed above are indicated, count the number of blinks again. If the indicator is in fact blinking these codes, substitute a known-good ECU and recheck. If the indication goes away, replace the original ECU.

(BU) If the Check Engine light is on while the engine is running, jump the service check connector. If no code is displayed (Check Engine light stays on steady), the back-up system may be in operation.
Substitute a known-good ECU and recheck. If the indication goes away, replace the original ECU.

PGM-FI							IDLE CONTROL		FUEL SUPPLY			EMISSION CONTROL	
VEHICLE SPEED SENSOR	ELECTRIC LOAD DETECTOR (F22A1, H23A1 engine)	VTEC SPOOL VALVE (H22A2 engine)	VTEC OIL PRESSURE SWITCH (H22A2 engine)	KNOCK SENSOR (H23A1 engine)	A/T FI SIGNAL A	A/T FI SIGNAL B	ELEC-TRONIC AIR CONTROL VALVE	OTHER IDLE CONTROLS	FUEL INJECTOR	OTHER FUEL SUPPLY	AIR INTAKE	EGR CONTROL SYSTEM	OTHER EMISSION CONTROLS
–	–	6-5	6-7	–	–	–	–	–	–	–	–	–	–
17	20	21	22	23	30	31	14					12	
									②	①			
			②				①	②					
							①		②			③	
							①	②					
	③						①		②				
							①	②		③			
							③			①		②	
									①			③	
													①
		③	③						③	①	③		

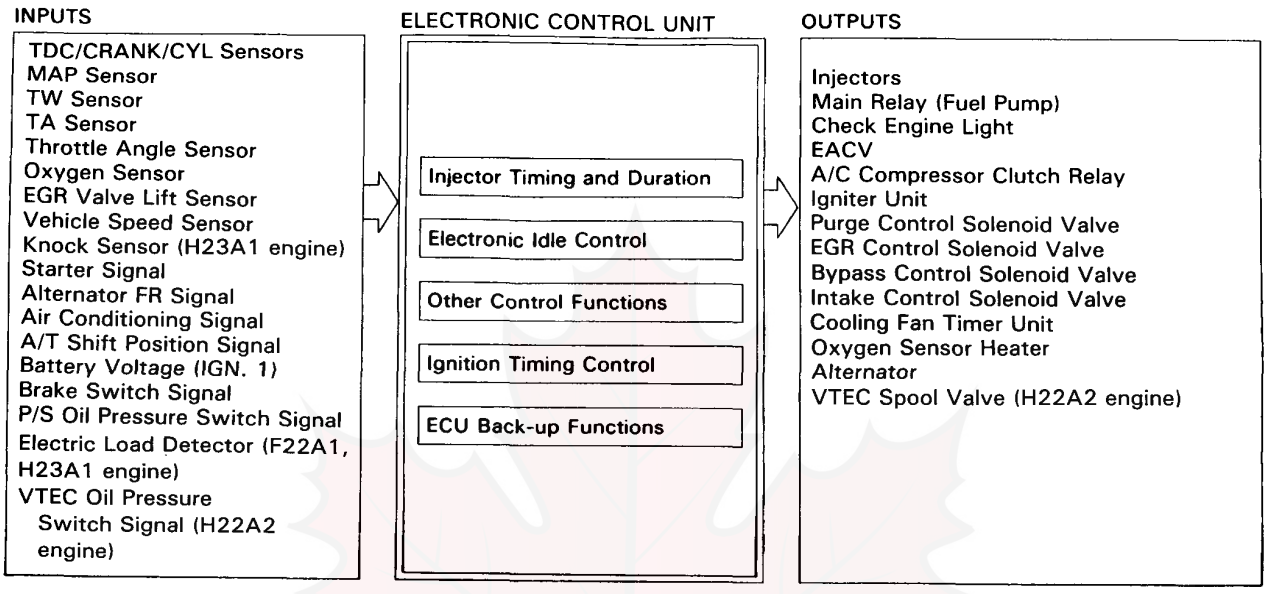
Self-diagnostic Procedures

SELF-DIAGNOSIS INDICATOR BLINKS	SYSTEM INDICATED	PAGE
0	ECU	—
1	OXYGEN SENSOR	—
3	MANIFOLD ABSOLUTE PRESSURE (MAP SENSOR)	—
5		—
4	CRANK ANGLE (CRANK SENSOR)	—
6	COOLANT TEMPERATURE (TW SENSOR)	—
7	THROTTLE ANGLE	—
8	TDC POSITION (TDC SENSOR)	—
9	No. 1 CYLINDER POSITION (CYL SENSOR)	—
10	INTAKE AIR TEMPERATURE (TA SENSOR)	—
11	IMA SENSOR (F22A2 engine)	—
12	EXHAUST GAS RECIRCULATION SYSTEM (EGR)	—
13	ATMOSPHERIC PRESSURE (PA SENSOR)	—
14	ELECTRONIC AIR CONTROL (EACV)	—
15	IGNITION OUTPUT SIGNAL	—
17	VEHICLE SPEED SENSOR	—
20	ELECTRIC LOAD DETECTOR (ELD) (F22A1, H23A1 engine)	—
21	VARIABLE VALVE TIMING & VALVE LIFT ELECTRONIC CONTROL (VTEC) SPOOL VALVE (H22A2 engine)	6-5
22	VARIABLE VALVE TIMING & VALVE LIFT ELECTRONIC CONTROL (VTEC) PRESSURE SWITCH (H22A2 engine)	6-7
23	KNOCK SENSOR (H23A1 engine)	—
30	A/T FI SIGNAL A	—
31	A/T FI SIGNAL B	—
41	OXYGEN SENSOR HEATER	—
43	FUEL SUPPLY SYSTEM	—

- If codes other than those listed above are indicated, verify the code. If the code indicated is not listed above, replace the ECU.
- The Check Engine light may come on, indicating a system problem when, in fact, there is a poor or intermittent electrical connection. First, check the electrical connections, clean or repair connections if necessary.
- The Check Engine light and [S] light may light simultaneously when the self-diagnosis indicator blinks 6, 7 and 17. Check the PGM-FI system according to the PGM-FI control system troubleshooting, then recheck the [S] light.
- The Check Engine light does not come on when there is a malfunction in the A/T FI signal or Electric Load Detector circuits. However, it will indicate the codes when the Service Check Connector is jumped.

PGM-FI Control System

System Description



Injector Timing and Duration

The ECU contains memories for the basic discharge durations at various engine speeds and manifold pressures. The basic discharge duration, after being read out from the memory, is further modified by signals sent from various sensors to obtain the final discharge duration.

Electronic Air Control

Electronic Air Control Valve (EACV)

When the engine is cold, the A/C compressor is on, the transmission is in gear (A/T only) or the alternator is charging, the ECU controls current to the EACV to maintain correct idle speed.

Ignition Timing Control

- The ECU contains memories for basic ignition timing at various engine speeds and manifold pressures. Ignition timing is also adjusted for coolant temperature.
- A Knock Control System (H23A1 engine) is also used. When detonation is detected by the knock sensors, the ignition timing is retarded.

Other Control Functions

1. Starting Control
   When the engine is started, the ECU provides a rich mixture.
2. Fuel Pump Control
   - When the ignition switch is initially turned on, the ECU supplies ground to the main relay that supplies current to the fuel pump for two seconds to pressurize the fuel system.
   - When the engine is running, the ECU supplies ground to the main relay that supplies current to the fuel pump.
   - When the engine is not running and the ignition is on, the ECU cuts ground to the main relay which cuts current to the fuel pump.
3. Fuel Cut-off Control
   - During deceleration with the throttle valve closed, current to the injectors is cut off to improve fuel economy at speeds over 1,100 min^{-1} (rpm).
   - Fuel cut-off action also takes place when engine speed exceeds, F20A4: 6,600 min^{-1} (rpm), F22A1/A2: 6,600 min^{-1} (rpm), H23A1/A2: 6,800 min^{-1} (rpm), H22A2: 7,700 min^{-1} (rpm), regardless of the position of the throttle valve, to protect the engine from over-revving.

4. A/C Compressor Clutch Relay
When the ECU receives a demand for cooling from the air conditioning system (compressor control unit), it delays the compressor from being energized, and enriches the mixture to assure smooth transition to the A/C mode.

5. Purge Control Solenoid Valve (Except F22A2 engine)
When the coolant temperature is below 75°C (167°F), the ECU supplies a ground to the purge control solenoid valve which cuts vacuum to the purge control valve.

6. Bypass Control Solenoid Valve (H23A1/A2, H22A2 engine)
When the engine speed is below 4,800 min^{-1} (rpm) (H22A2 engine: 4,600 min^{-1} (rpm)), the Bypass Control Solenoid Valve is activated by a signal from the ECU, intake air flows through the long intake path, then high torque is delivered. At speeds higher than 4,800 (4,600) min^{-1} (rpm), the solenoid valve is deactivated by the ECU, and intake air flows through the short intake path in order to reduce the resistance in airflow.

7. Intake Control Solenoid Valve (Except F22A1 engine)
When the engine speed is below 4,000 min^{-1} (rpm), the ECU supplies a ground to the intake control solenoid valve. This opens the solenoid valve sending intake manifold vacuum to the intake control diaphragm.

8. EGR Control Solenoid Valve (Except F22A2 engine)
When the EGR is required for control of oxides of nitrogen (NOx) emissions, the ECU supplies ground to the EGR Control Solenoid Valve which supplies regulated vacuum to the EGR valve.

9. Alternator Control (F22A1, H23A1 engine)
The system controls the voltage generated at the alternator in accordance with the electric load and drive mode, and reduces the engine load to improve the fuel economy.

ECU Back-up Functions

1. Fail-safe Function
When an abnormality occurs in a signal from a sensor, the ECU ignores that signal and assumes a pre-programmed value that allows the engine to continue to run.

2. Back-up Function
When an abnormality occurs in the ECU itself, the injectors are controlled by a back-up circuit independent of the system in order to permit minimal driving.

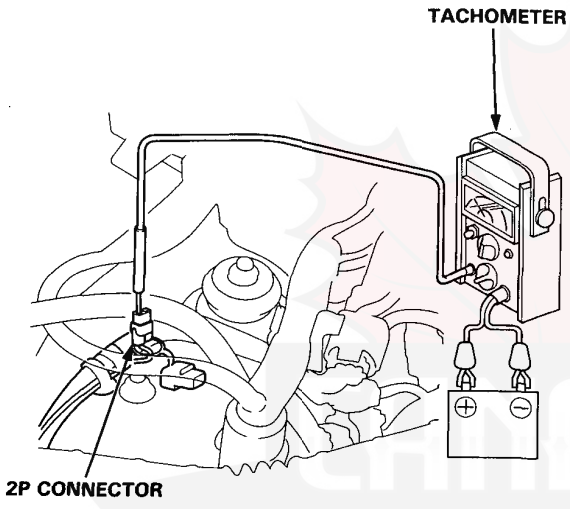
3. Self-diagnosis Function (Check Engine light)
When an abnormality occurs in a signal from a sensor, the ECU lights the Check Engine light and stores the failure code in erasable memory. When the ignition is initially turned on, the ECU supplies ground for the Check Engine light for two seconds.

Idle Speed Setting

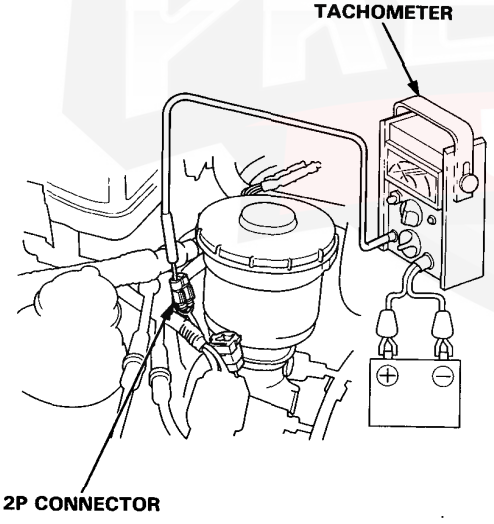
Inspection/Adjustment

1. Start the engine and warm it up to normal operating temperature (the cooling fan comes on).
2. Turn the ignition switch OFF.
3. Connect a tachometer.

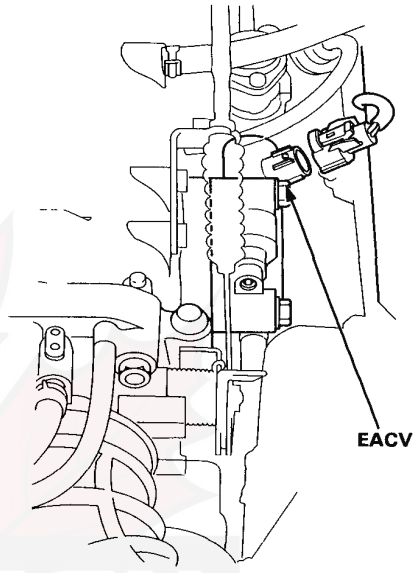
LHD:



RHD:



4. Disconnect the 2P connector from the EACV.



5. Start the engine with the accelerator pedal slightly depressed. Stabilize the engine speed at 1000, then slowly release the pedal until the engine idles.
6. Check idling in no-load conditions: headlights, blower fan, rear defogger, cooling fan, and air conditioner are not operating.

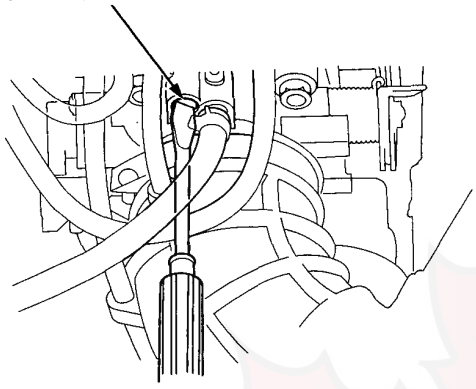
   NOTE: (KS) Remove No. 12 (7.5 A) fuse in the under-dash fuse box, then check that the headlights and side marker lights are off.

Idle speed should be:

M/T	550 ± 50 min^{-1} (rpm)
A/T	550 ± 50 min^{-1} (rpm) (in [N] or [P])

Adjust the idle speed, if necessary, by turning the idle adjusting screw.

IDLE ADJUSTING SCREW



7. Turn the ignition switch OFF.

8. Reconnect the 2P connector on the EACV, then remove CLOCK RADIO (10 A) fuse in the under-hood fuse/relay box for 10 seconds to reset the ECU.

9. Restart and idle the engine with no-load conditions for one minute, then check the idle speed.

   NOTE: (KS) Remove No. 12 (7.5 A) fuse in the under-dash fuse box, then check that the headlights and side marker lights are off.

   Idle speed should be:

   (F20A4, F22A2 engine)

M/T	770 ± 50 min^{-1} (rpm)
A/T	770 ± 50 min^{-1} (rpm) (in [N] or [P])

   (H23A2 engine)

M/T	780 ± 50 min^{-1} (rpm)
A/T	780 ± 50 min^{-1} (rpm) (in [N] or [P])

   (F22A1, H23A1 engine)

M/T	700 ± 50 min^{-1} (rpm)
A/T	700 ± 50 min^{-1} (rpm) (in [N] or [P])

   (H22A2 engine)

M/T	790 ± 50 min^{-1} (rpm)

10. Idle the engine for one minute with headlights (Hi) and rear defogger ON and check the idle speed.

    Idle speed should be:

    (F20A4, F22A1, F22A2 engine)

M/T	770 ± 50 min^{-1} (rpm)
A/T	770 ± 50 min^{-1} (rpm) (in [N] or [P])

    (H23A1, H23A2 engine)

M/T	780 ± 50 min^{-1} (rpm)
A/T	780 ± 50 min^{-1} (rpm) (in [N] or [P])

    (H22A2 engine)

M/T	790 ± 50 min^{-1} (rpm)

11. Turn the headlights and rear defogger off.
    Idle the engine for one minute with heater fan switch at HI and air conditioner on, then check the idle speed.

    Idle speed should be:

    (F20A4, F22A1, F22A2 engine)

M/T	770 ± 50 min^{-1} (rpm)
A/T	770 ± 50 min^{-1} (rpm) (in [N] or [P])

    (H23A1, H23A2 engine)

M/T	780 ± 50 min^{-1} (rpm)
A/T	780 ± 50 min^{-1} (rpm) (in [N] or [P])

    (H22A2 engine)

M/T	790 ± 50 min^{-1} (rpm)

    NOTE: If the idle speed is not within specification, see System Troubleshooting Guide.

Fuel Pressure

Inspection

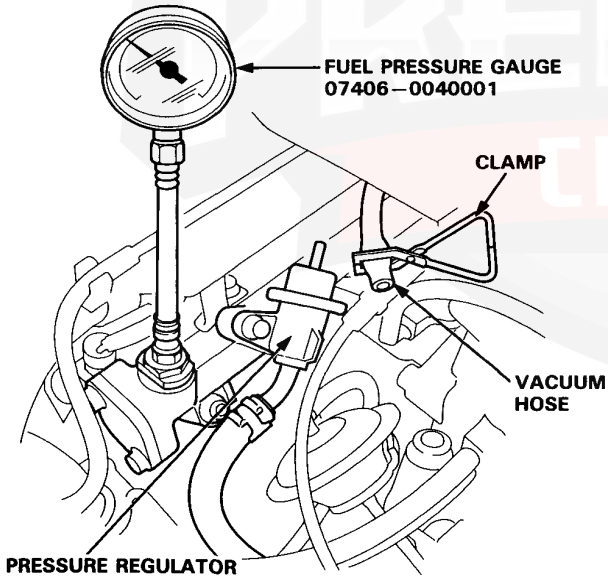
⚠ WARNING

- **Do not smoke while working on the fuel system. Keep open flames or sparks away from your work area.**
- **Be sure to relieve fuel pressure while the engine is off.**

1. Relieve fuel pressure.
2. Remove the service bolt on the fuel pipe while holding the banjo bolt with another wrench. Attach the fuel pressure gauge.
3. Start the engine. *Measure the fuel pressure with the engine idling and vacuum hose of the pressure regulator disconnected from the Pressure regulator.

   Pressure should be:
   (F22A1, H23A1, H23A2 engine)
   255—305 kPa (2.55—3.05 kg/cm², 36—43 psi)
   (F20A4, F22A2, H22A2 engine)
   245—285 kPa (2.45—2.85 kg/cm², 35—41 psi)
4. Reconnect vacuum hose to the Pressure regulator.

   Pressure should be:
   (F22A1, H23A1, H23A2 engine)
   195—245 kPa (1.95—2.45 kg/cm², 28—35 psi)
   (F20A4, F22A2, H22A2 engine)
   185—225 kPa (1.85—2.25 kg/cm², 26—32 psi)



*: If the engine will not start, turn the ignition switch on, wait for two seconds, turn it off then back on again and read the fuel pressure.

- If the fuel pressure is not as specified, first check the fuel pump. If the pump is OK, check the following:

— *If the pressure is higher than specified, inspect for:*
  - Pinched or clogged fuel return hose or piping.
  - Faulty pressure regulator (page 11-15).

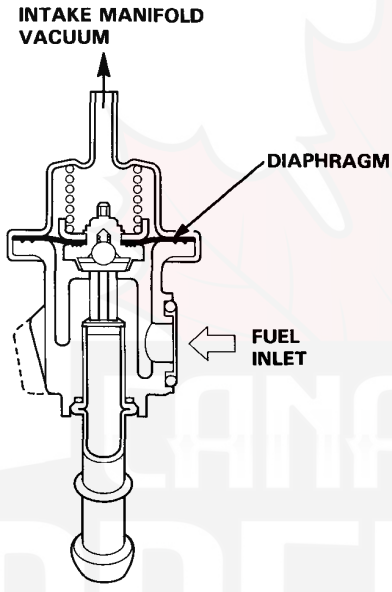
— If the pressure is lower than specified, inspect for:
  - Clogged fuel filter.
  - Faulty pressure regulator (page 11-15).
  - Leakage in the fuel line.

Pressure Regulator

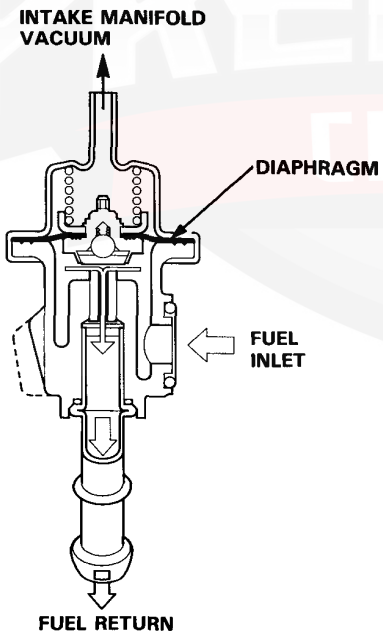
Description

The fuel pressure regulator maintains a constant fuel pressure to the injectors. When the difference between the fuel pressure and manifold pressure exceeds [F22A1, H23A1, H23A2 engine: 300 kPa (3.0 kg/cm², 43 psi). F20A4, F22A2, H22A2 engine: 255 kPa (2.55 kg/cm², 36 psi)], the diaphragm is pushed upward, and the excess fuel is fed back into the fuel tank through the return line.

CLOSED:



OPEN:

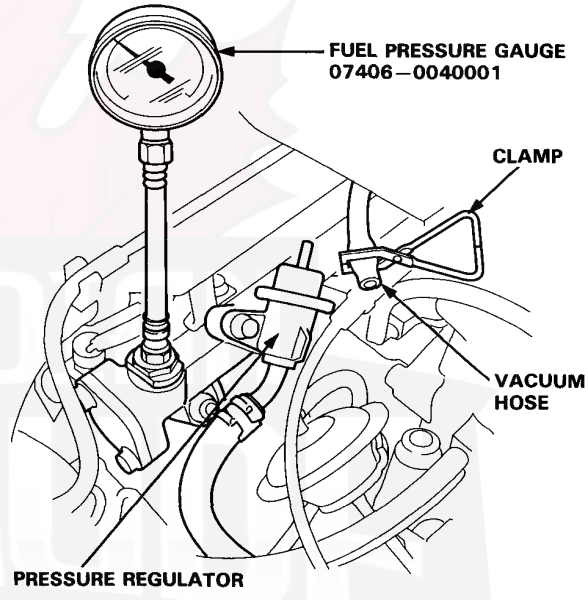


Testing

⚠ WARNING Do not smoke during the test. Keep open flames away from your work area.

1. Attach a pressure gauge to the service port of the fuel pipe (page 11-14).

   Pressure should be:
   (F22A1, H23A1, H23A2 engine)
   255—305 kPa (2.55—3.05 kg/cm², 36—43 psi)
   (F20A4, F22A2, H22A2 engine)
   245—285 kPa (2.45—2.85 kg/cm², 35—41 psi)



2. Reconnect the vacuum hose to the fuel pressure regulator.

3. Check that the fuel pressure rises when the vacuum hose from the regulator is disconnected again.

   If the fuel pressure did not rise, replace the pressure regulator.

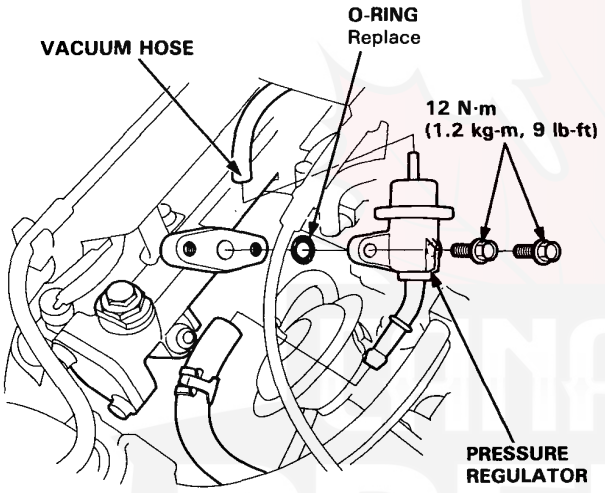
(cont'd)

Pressure Regulator (cont'd)

Replacement

⚠WARNING Do not smoke while working on fuel system. Keep open flame away from your work area.

1. Place a shop towel under pressure regulator, then relieve fuel pressure.
2. Disconnect the vacuum hose and fuel return hose.
3. Remove the two 6 mm mounting bolts.



NOTE:
- Replace the O-ring.
- When assembling the regulator, apply clean engine oil to the O-ring and assemble it into its proper position, taking care not to damage the O-ring.

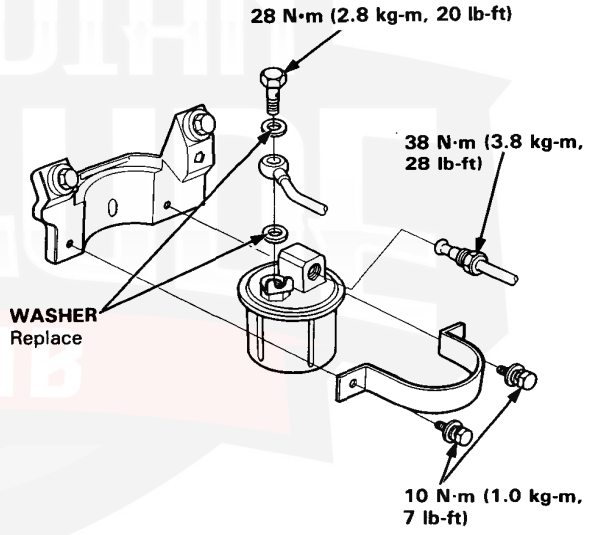
Fuel Filter

Replacement

⚠WARNING Do not smoke while working on fuel system. Keep open flame away from your work area.

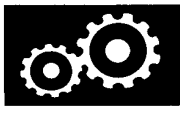
The filter should be replaced every 2 years or 40,000 km (24,000 miles), whichever comes first or whenever the fuel pressure drops below the specified value [F22A1, H23A1, H23A2 engine: 255—305 kPa (2.55—3.05 kg/cm², 36—43 psi). F20A4, F22A2, H22A2 engine: 245—285 kPa (2.45—2.85 kg/cm², 35—41 psi) with the pressure regulator vacuum hose disconnected] after making sure that the fuel pump and the pressure regulator are OK.

1. Place a shop towel under and around the fuel pipe.
2. Relieve fuel pressure.
3. Remove the 12 mm banjo bolt and the fuel feed pipe from the filter.
4. Remove the fuel filter clamp and fuel filter.
5. When assembling, use new washers, as shown.



NOTE: Clean the flared joint of high pressure hoses thoroughly before reconnecting them.

Manual Transmission



Outline of Model Changes

The M2F5 type transmission has been adopted. Compare to M2J4, M2C4, M2K4 type transmission main differences are:

- 3RD/4TH SYNCHRO HUB
- 3RD/4TH SYNCHRO SLEEVE
- 3RD GEAR
- 4TH GEAR
- 3RD/4TH SHIFT FORK

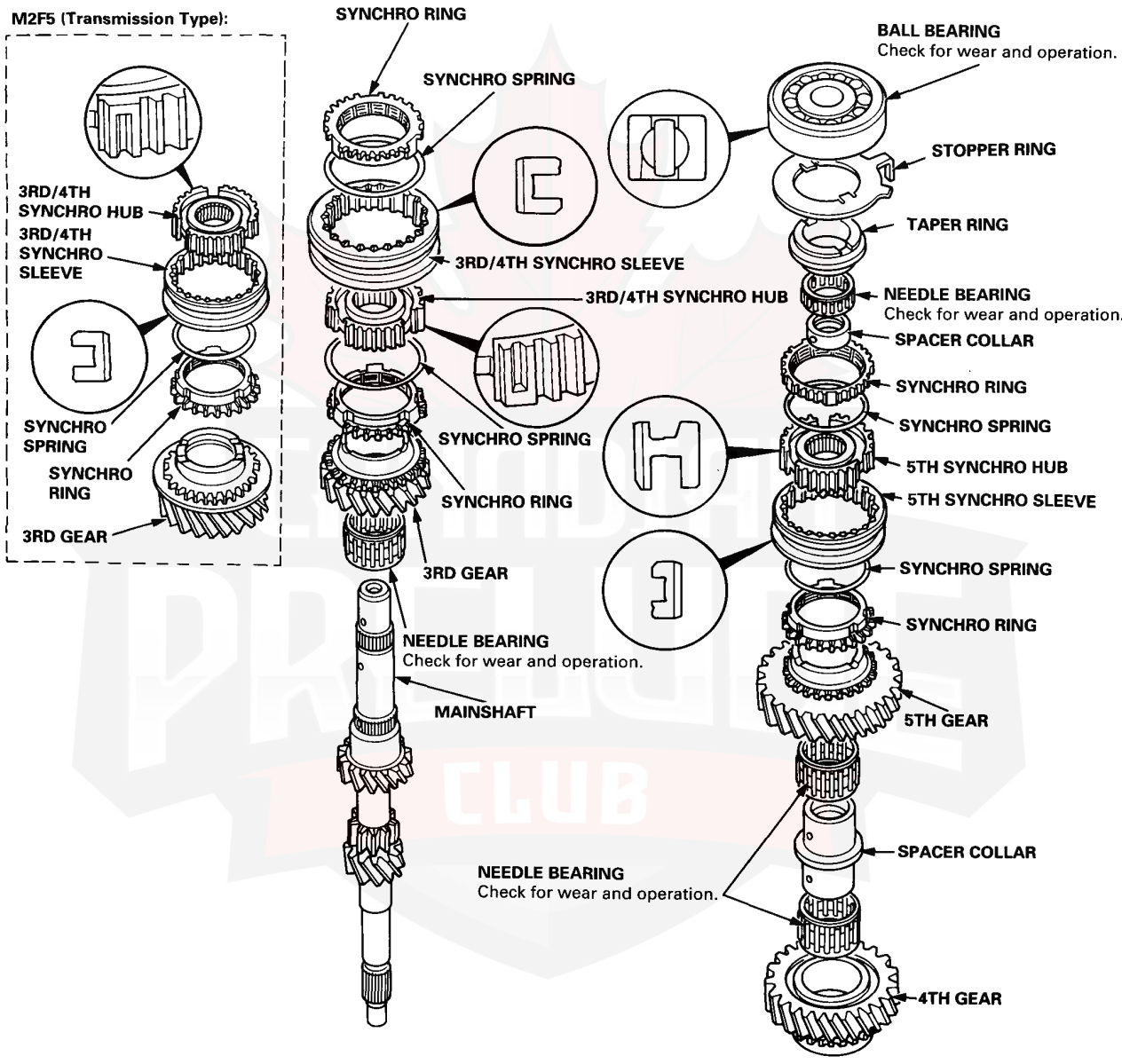
Special Tools

Ref. No.	Tool Number	Description	Qty	Page Reference
①	07746 – 0010300	Outer Driver, 42 x 47 mm	1	13-5
②	07746 – 0030100	Inner Handle C	1	13-5
③	07746 – 0030400	Inner Driver, 35 mm	1	13-5
④	07749 – 0010000	Outer Handle A	1	13-5

Mainshaft

Index

Before assembling, clean all parts in solvent, dry them with compressed air, then coat them with clean oil.



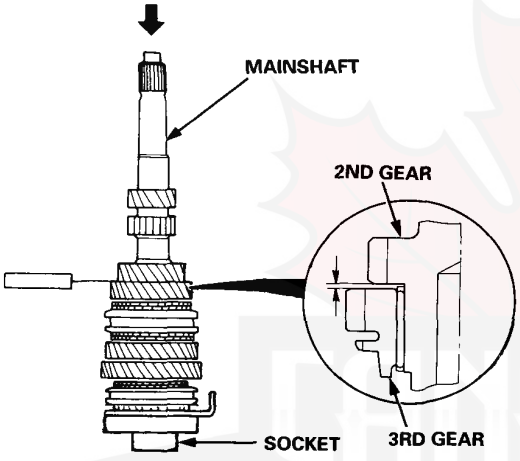
Mainshaft

Clearance Inspection

NOTE: If replacement is required, always replace the synchro sleeve and hub as a set.

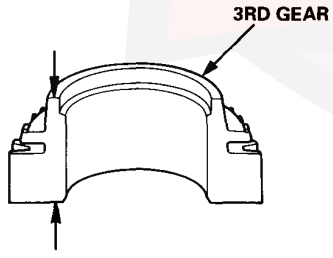
1. Support the bearing inner race with a socket and push down on the mainshaft.
2. Measure the clearance between 2nd and 3rd gears.

Standard: 0.06 — 0.21 mm (0.002 — 0.008 in)
Service Limit: 0.3 mm (0.012 in)



3. If the clearance exceeds the service limit, measure the thickness of 3rd gear.

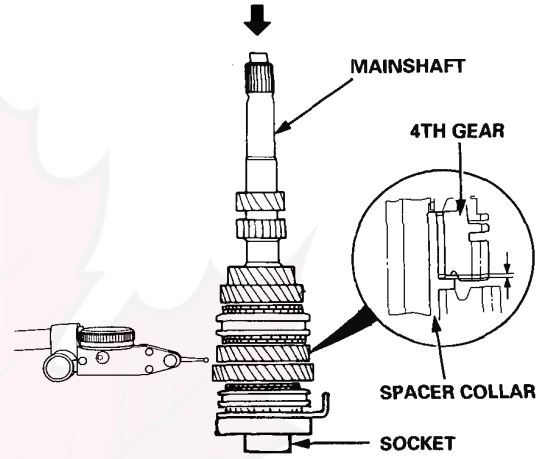
Transmission Type	M2J4, M2C4, M2K4	M2F5
Standard	32.42 — 32.47 mm (1.276 —1.278 in)	34.92 — 34.97 mm (1.375 — 1.377 in)
Service Limit	32.3 mm (1.27 in)	34.8 mm (1.37 in)



If the thickness of 3rd gear is less than the service limit, replace 3rd gear with a new one.
If the thickness of 3rd gear is within the service limit, replace the 3rd/4th synchro hub with a new one.

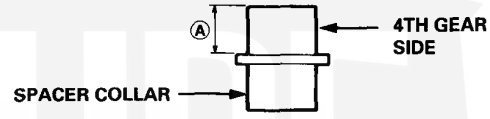
4. Measure the clearance between 4th gear and the spacer collar.

Standard: 0.06 — 0.21 mm (0.002 — 0.008 in)
Service Limit: 0.3 mm (0.012 in)



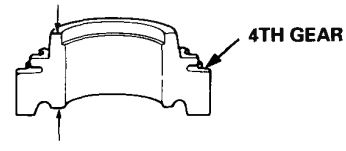
5. If the clearance exceeds the service limit, measure distance Ⓐ on the spacer collar.

Standard: 26.03 — 26.08 mm (1.025 — 1.027 in)
Service Limit: 26.01 mm (1.024 in)



6. If distance Ⓐ is less than the service limit, replace the spacer collar with a new one.
If distance Ⓐ is within the service limit, measure the thickness of 4th gear.

Transmission Type	M2J4, M2C4, M2K4	M2F5
Standard	30.92 — 30.97 mm (1.217 —1.219 in)	31.42 — 31.47 mm (1.237 — 1.239 in)
Service Limit	30.8 mm (1.21 in)	31.3 mm (1.23 in)



If the thickness of 4th gear is less than the service limit, replace 4th gear with a new one.
If the thickness of 4th gear is within the service limit, replace the 3rd/4th synchro hub with a new one.

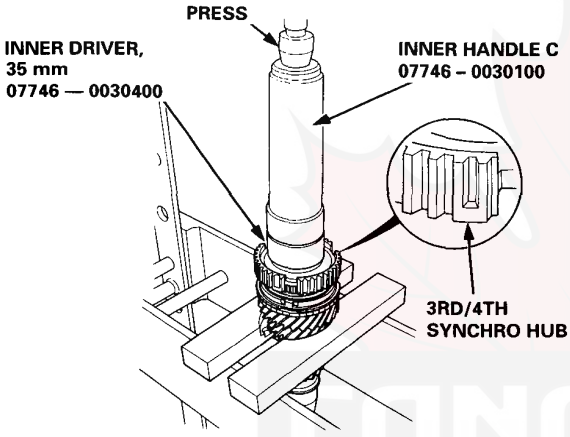
Reassembly

NOTE: Refer to page 13-3 for reassembly sequence.

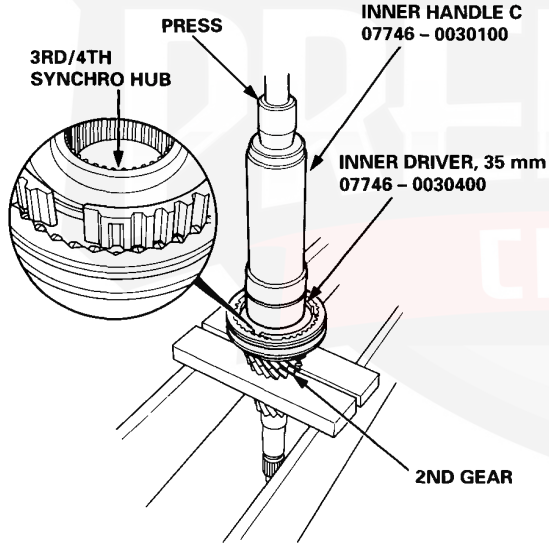
1. Support 2nd gear on steel blocks as shown, then install the 3rd/4th synchro hub using the special tools and a press as shown.

   NOTE: After installing, inspect the operation of the 3rd/ 4th synchro hub set.

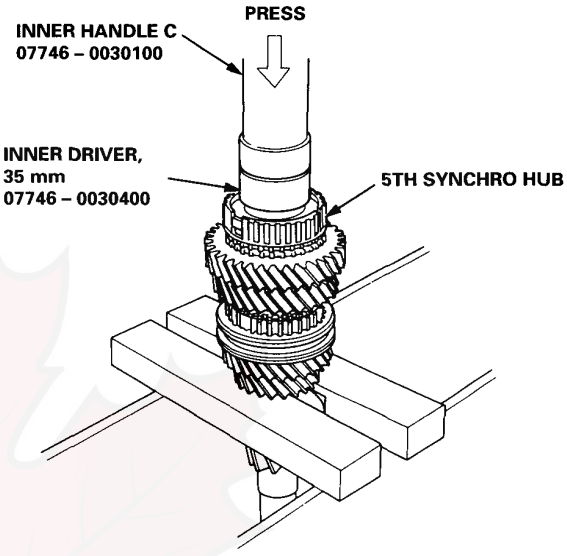
M2J4, M2C4, M2K4 (Transmission Type):



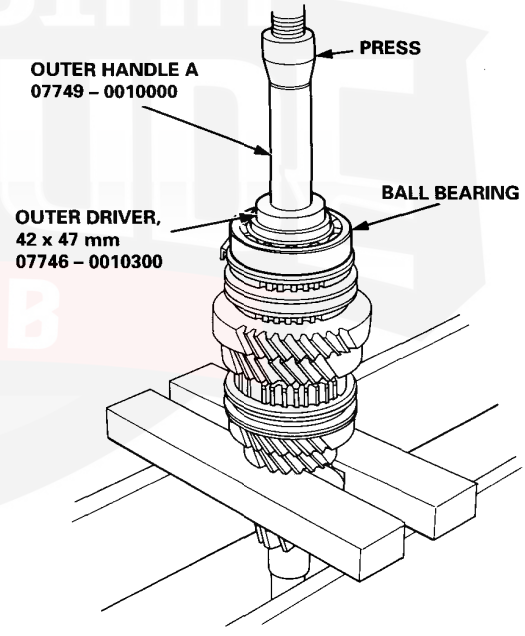
M2F5 (Transmission Type):



2. Install the 5th synchro hub using the special tools and a press as shown.



3. Install the ball bearing using the special tools and a press as shown.



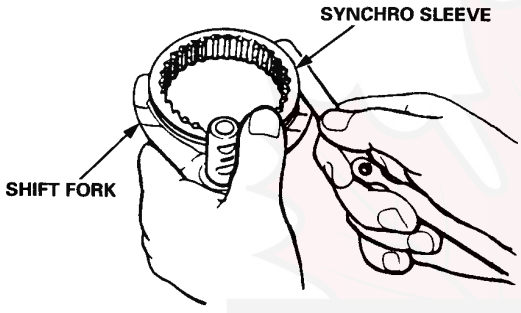
Shift Fork Assembly

Clearance Inspection

NOTE: The synchro sleeve and synchro hub should be replaced as a set.

1. Measure the clearance between each shift fork and its matching synchro sleeve.

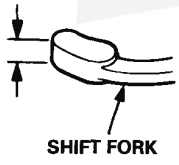
   Standard: 0.35 — 0.65 mm (0.014 — 0.026 in)
   Service Limit: 1.00 mm (0.039 in)



2. If the clearance exceeds the service limit, measure the thickness of the shift fork fingers.

Standard:

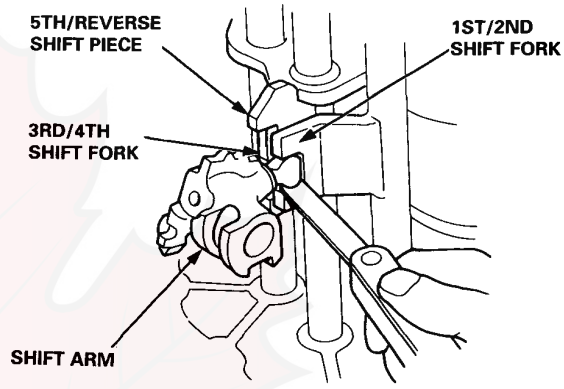
3rd/4th shift fork (M2F5 type transmission)	7.4 — 7.6 mm (0.291 — 0.299 in)
1st/2nd shift fork 3rd/4th shift fork (except M2F5 type transmission) 5th shift fork	6.2 — 6.4 mm (0.244 — 0.252 in)



If the thickness of the shift fork finger is less than the standard, replace the shift fork with a new one.
If the thickness of the shift fork finger is within the standard, replace the synchro sleeve with a new one.

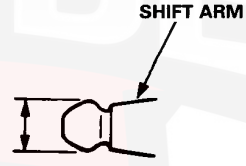
3. Measure the clearance between the shift fork and the shift arm.

   Standard: 0.2 — 0.5 mm (0.008-0.019 in)
   Service Limit: 0.6 mm (0.024 in)



4. If the clearance exceeds the service limit, measure the width of the shift arm.

   Standard: 12.9 — 13.0 mm (0.508 — 0.512 in)



If the width of the shift fork finger is less than the standard, replace the shift arm with a new one.
If the width of the shift fork finger is within the standard, replace the shift fork or shift piece with a new ones.

Read this before you do any electrical work on the car.

Some models of the Prelude include a driver's side airbag, located in the steering wheel hub, as part of a supplemental restraint system (SRS). In addition, the 2.3i 4WS and VTEC models have a front passenger's airbag, located in the dashboard above the glove box. There are two types of SRS: Type I (SRS unit is not part of the airbag assembly), which is used for models with front passenger's airbag, and type II (SRS unit is part of the airbag assembly), which is used for models without front passenger's airbag, Information necessary to safely service the SRS is included in this shop manual Items marked with an asterisk (*) on the contents page include, or are located near, SRS components. Servicing, disassembling or replacing these items will require special precautions and tools, and should therefore be done only by an authorized HONDA dealer.

⚠ WARNING

- **To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all service work must be performed by an authorized HONDA dealer.**
- **Improper service, including incorrect removal and installation of the SRS, and replacing with wrong parts, could lead to personal injury caused by unintentional activation of the airbag.**
- **All SRS electrical wiring harnesses are covered with yellow outer insulation. Related components are located in the steering column, the dashboard, and behind the dashboard lower cover. Do not use electrical test equipment on these circuits.**
- **Service work nearby and in the areas listed below may affect the SRS and must therefore be performed by an authorized HONDA dealer.**

SRS Type I:
- Steering wheel
- Behind the instrument panel
- Under-dash fuse box
- Center console
- Car stereo units and other accessories
- A/C heater

SRS Type II:
- Steering wheel (Be careful that the steering wheel receives no strong shocks as the SRS unit (sensors), inflator, etc. are located in it.)
- Behind the instrument panel
- Under-dash fuse box.

Electrical

Index to Circuits and Systems

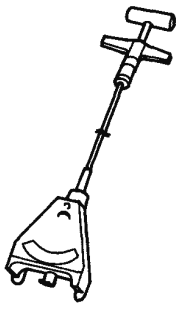
***Read SRS precautions on page 23-91, then install the short connector (s) on the airbag (s) before working in these areas.**

Outline of Changes

- **Wire Harness and Ground Locations:** Some models have been equipped with SRS Type I. The location of the SRS main harness in these models is shown.
- **Power/Ground Distribution:** Newly added SRS Type I and some changes in the grounds of the right side wire harness have been reflected.
- **Starting System:** A new starter (H22A2 engine) has been added. Service instructions are the same as in Shop Manual ''92 Prelude'' (62SS000). For quick reference, a table showing all engine/starter combinations has been added.
- **Ignition system:** Ignition timing, idle speed and spark plug inspection (platinum tip plugs) for the H22 A2 engine have been added.
- **Charging System:** A new alternator (H22A2 engine) has been added. Service instructions are the same as in Shop Manual ''92 Prelude'' (62SS000). For quick reference, a table showing all engine/alternator combinations has been added.
- **Interlock System:** This system has been added to the KQ model.
- **Integrated Control Unit:** The key-in reminder system has been added to the KY model.
- **Dash Lights Brightness Control Unit:** A cancel switch for the fuel and coolant temperature gauges has been added to the European models.
- **Horns:** The circuit diagram and switch test for models with SRS Type I have been added.
- **Power Door Locks:** A driver's door lock actuator has been added to the KQ model.
- **Cruise Control:** The circuit diagram and SET/RESUME switch test for models with SRS Type I have been added.
- **SRS:** SRS Type I has been added to some models.

Special Tools

Ref. No.	Tool Number	Description	Qty	Page Reference
①	07JGG—0010100	Belt Tension Gauge	1	23-54, 55
②	07HAZ—SG00500	Deployment Tool	1	23-118
③	07MAZ—SS10100	SRS disposal Bracket	1	23-150
④	07MAZ—SL00500	Test Harness A	1	23-100
⑤	07MAZ—SP00500	Test Harness B	1	23-102
⑥	07LAZ—SL40300	Test Harness C	1	23-73, 82, 103
⑦	07LAZ—SL40400	Test Harness D	1	23-105



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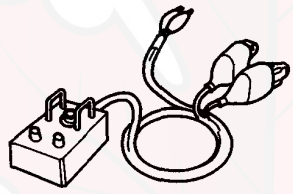

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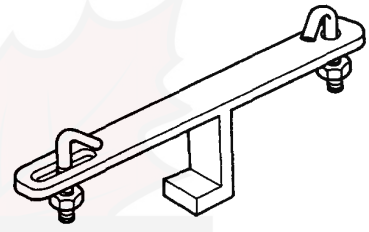

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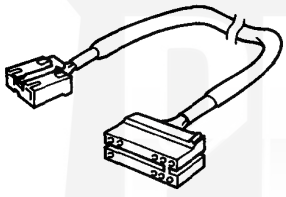

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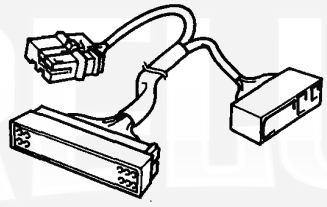

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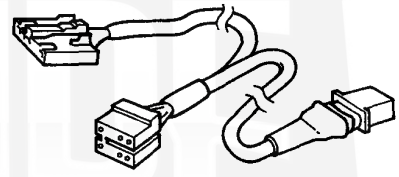

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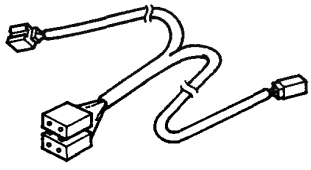


⑦

How to Use This Section

Schematic Symbols

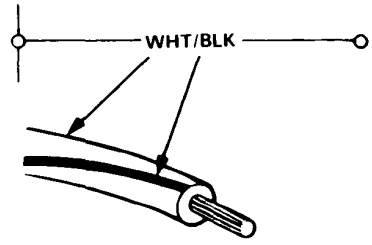
BATTERY	GROUND Ground terminal / Component ground	FUSE	COIL, SOLENOID	CIGARETTE LIGHTER	
RESISTOR	VARIABLE RESISTOR	THERMISTOR	IGNITION SWITCH	BULB	HEATER
MOTOR	PUMP	CIRCUIT BREAKER	HORN	DIODE	SPEAKER, BUZZER
ANTENNA Mast / Window		TRANSISTOR (Tr)			
RELAY (In normal position) Normally open relay / Normally closed relay		CONDENSER			
SWITCH (In normal position) Normally open switch / Normally closed switch		LUMINOUS DIODE (LED)			
CONNECTION Input / Output	CONNECTOR	REED SWITCH			

Wire Color Codes

The following abbreviations are used to identify wire colors in the circuit schematics:

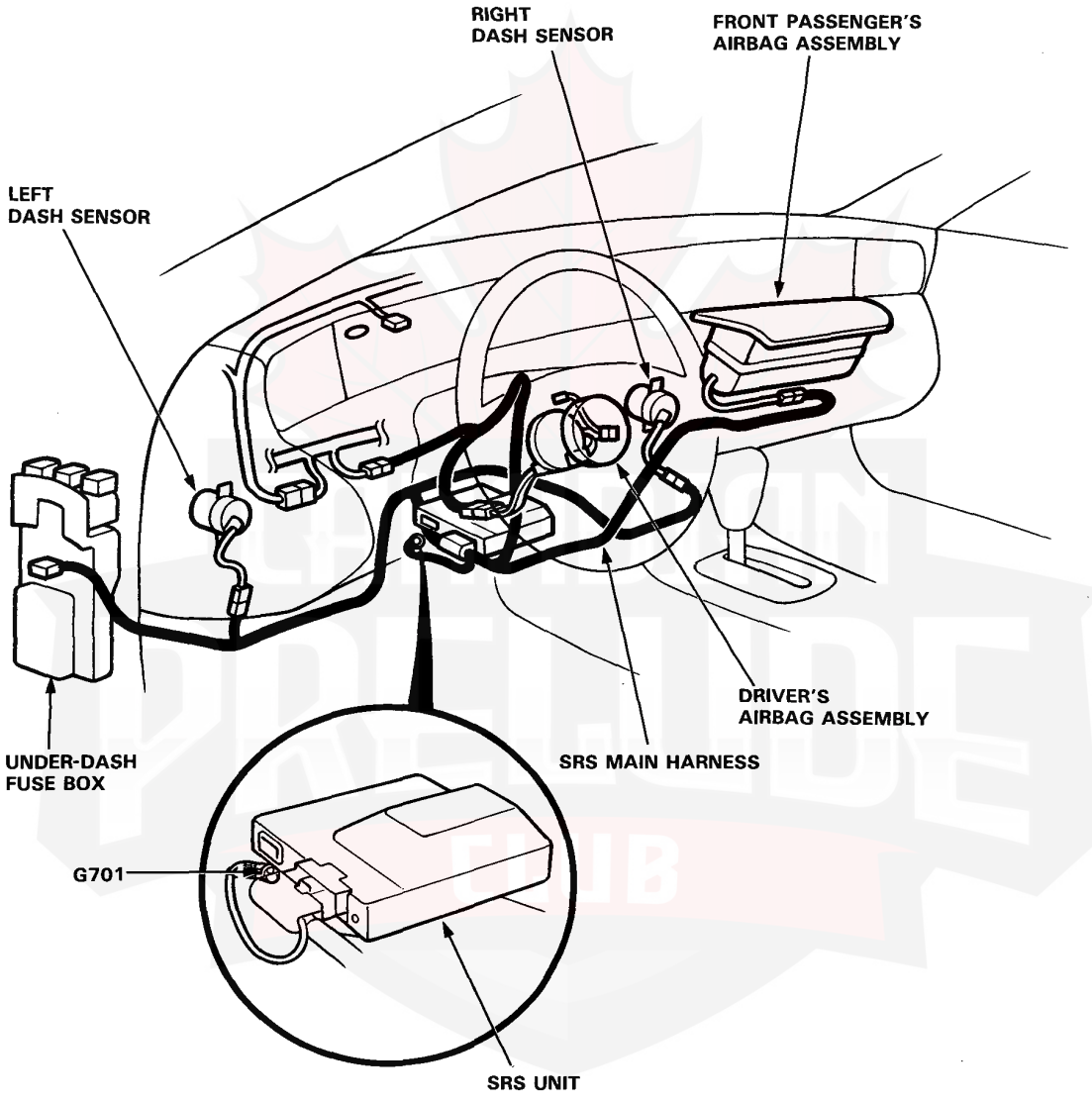
WHT	White
YEL	Yellow
BLK	Black
BLU	Blue
GRN	Green
RED	Red
ORN	Orange
PNK	Pink
BRN	Brown
GRY	Gray
PUR	Purple
LT BLU	Light Blue
LT GRN	Light Green

The wire insulation has one color or one color with another color stripe. The second color is the stripe.

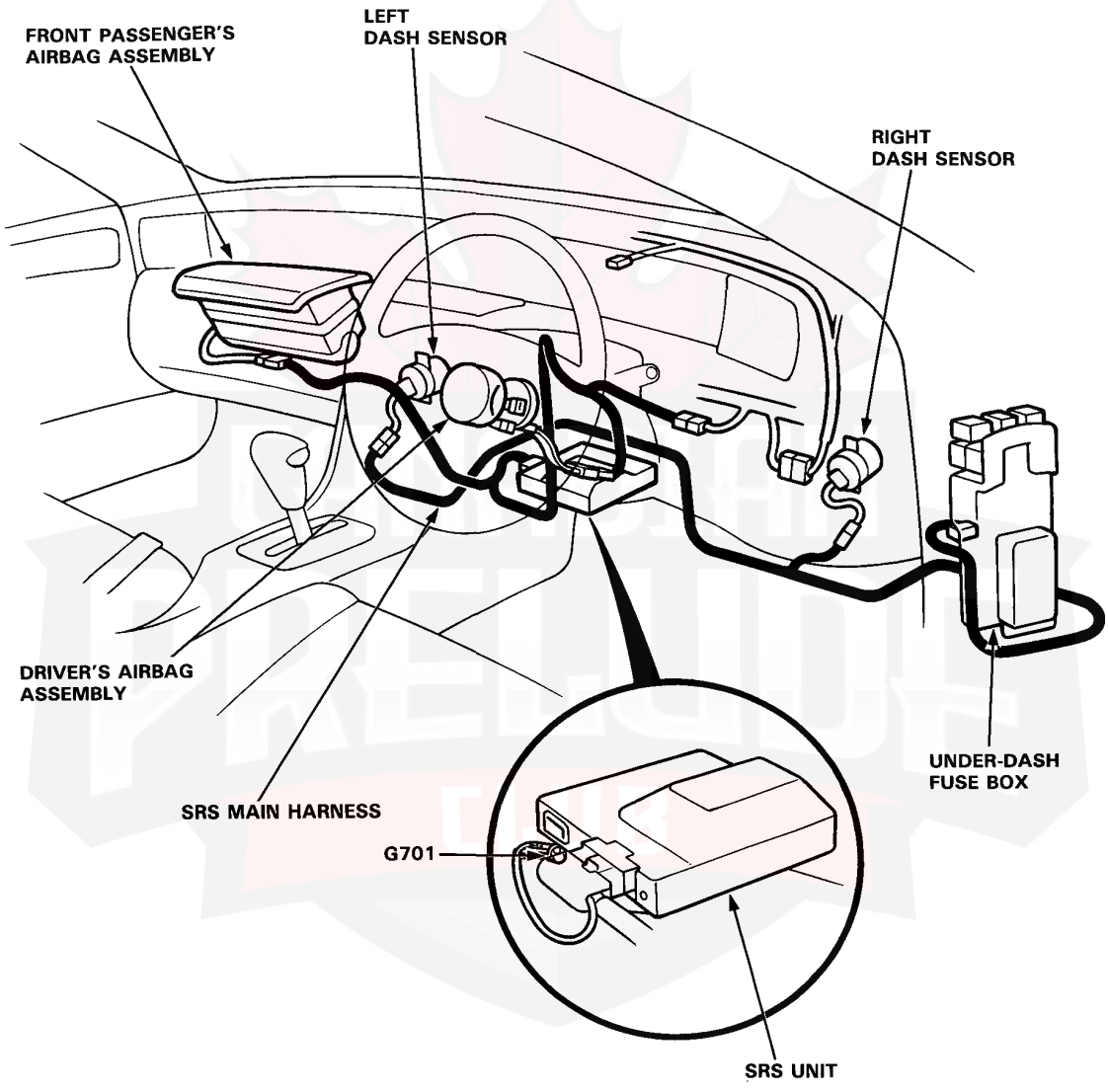


Wire Harness and Ground Location
(LHD)

SRS TYPE I:

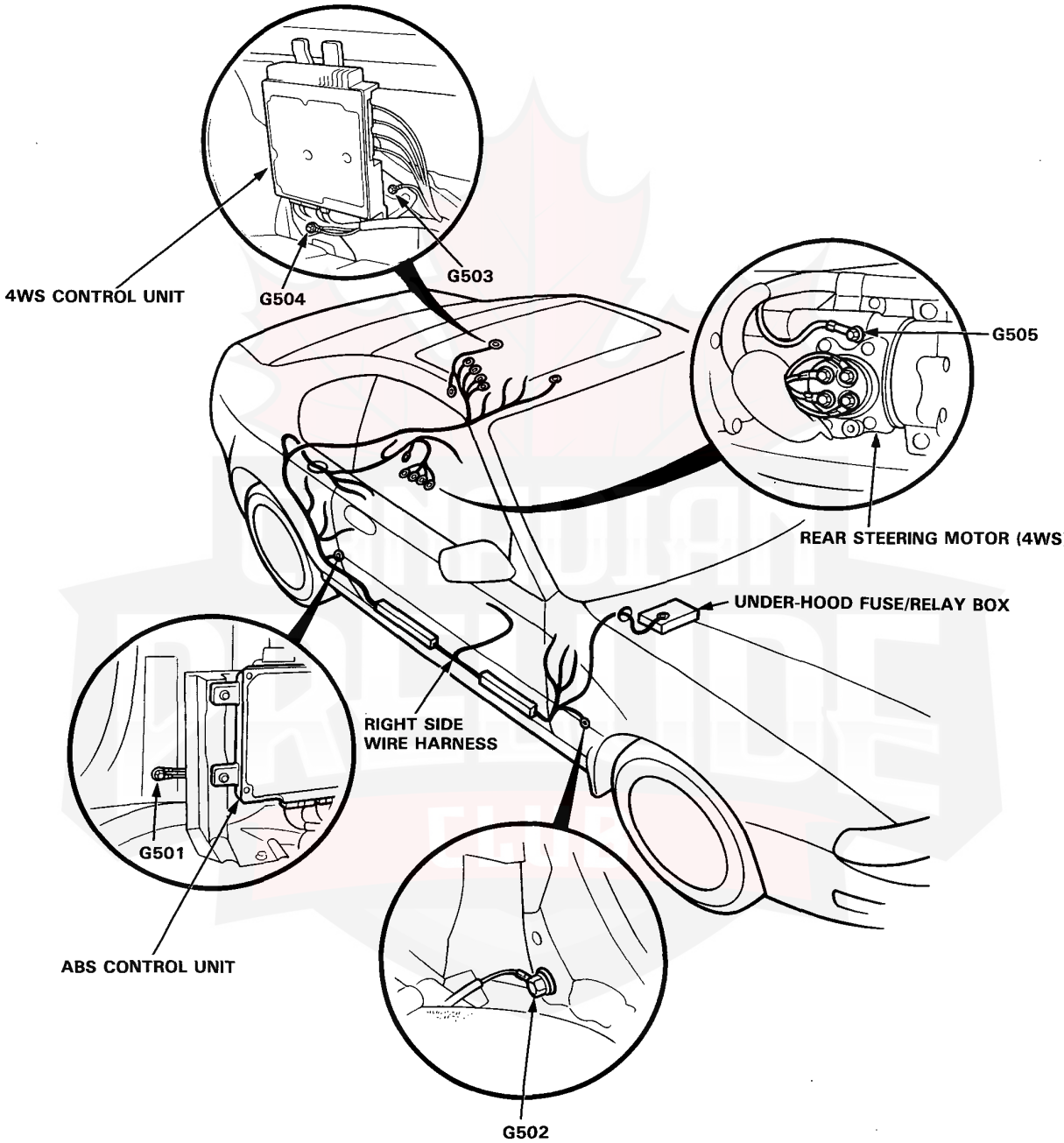


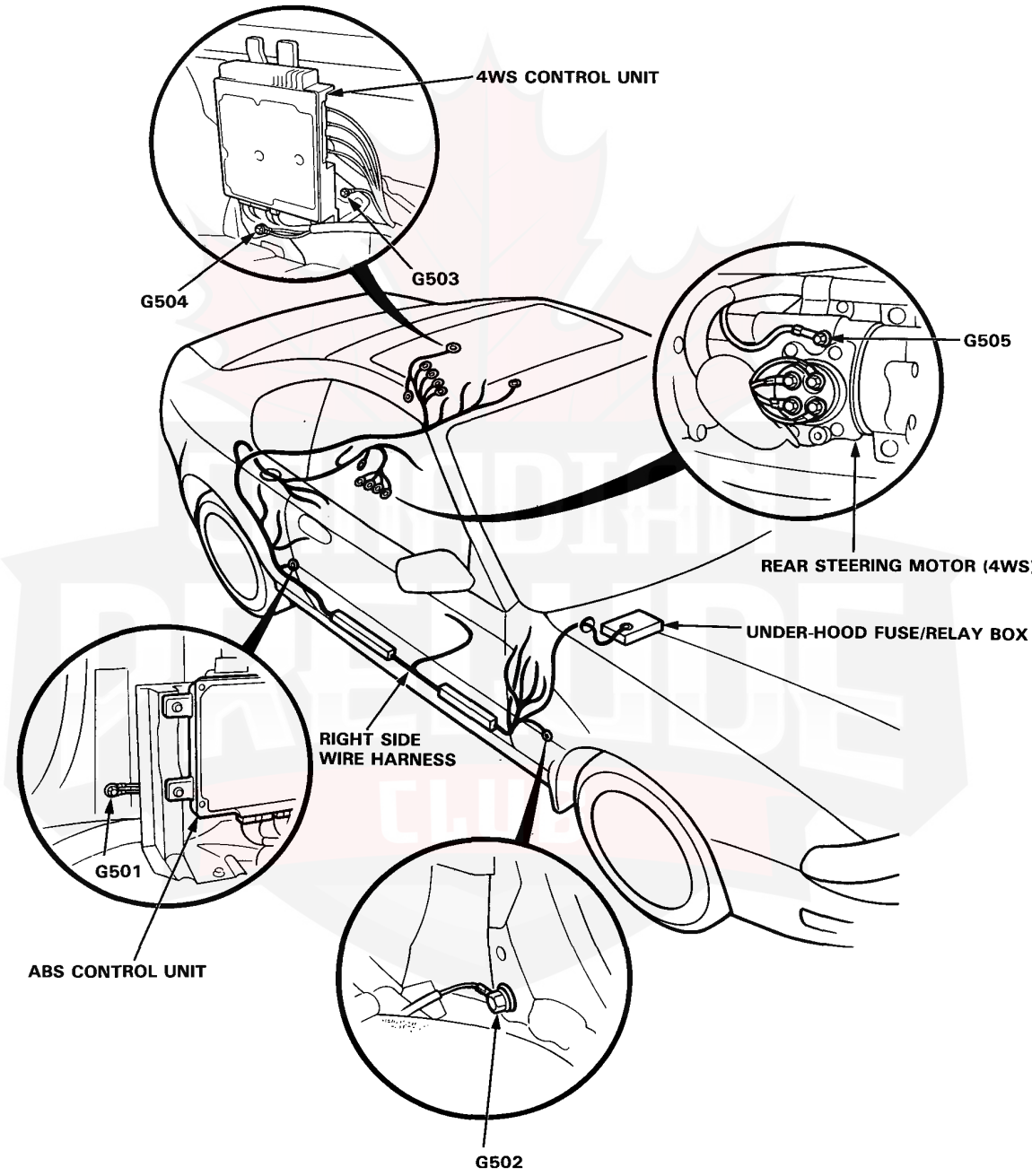
SRS TYPE I:



Wire Harness and Ground Locations

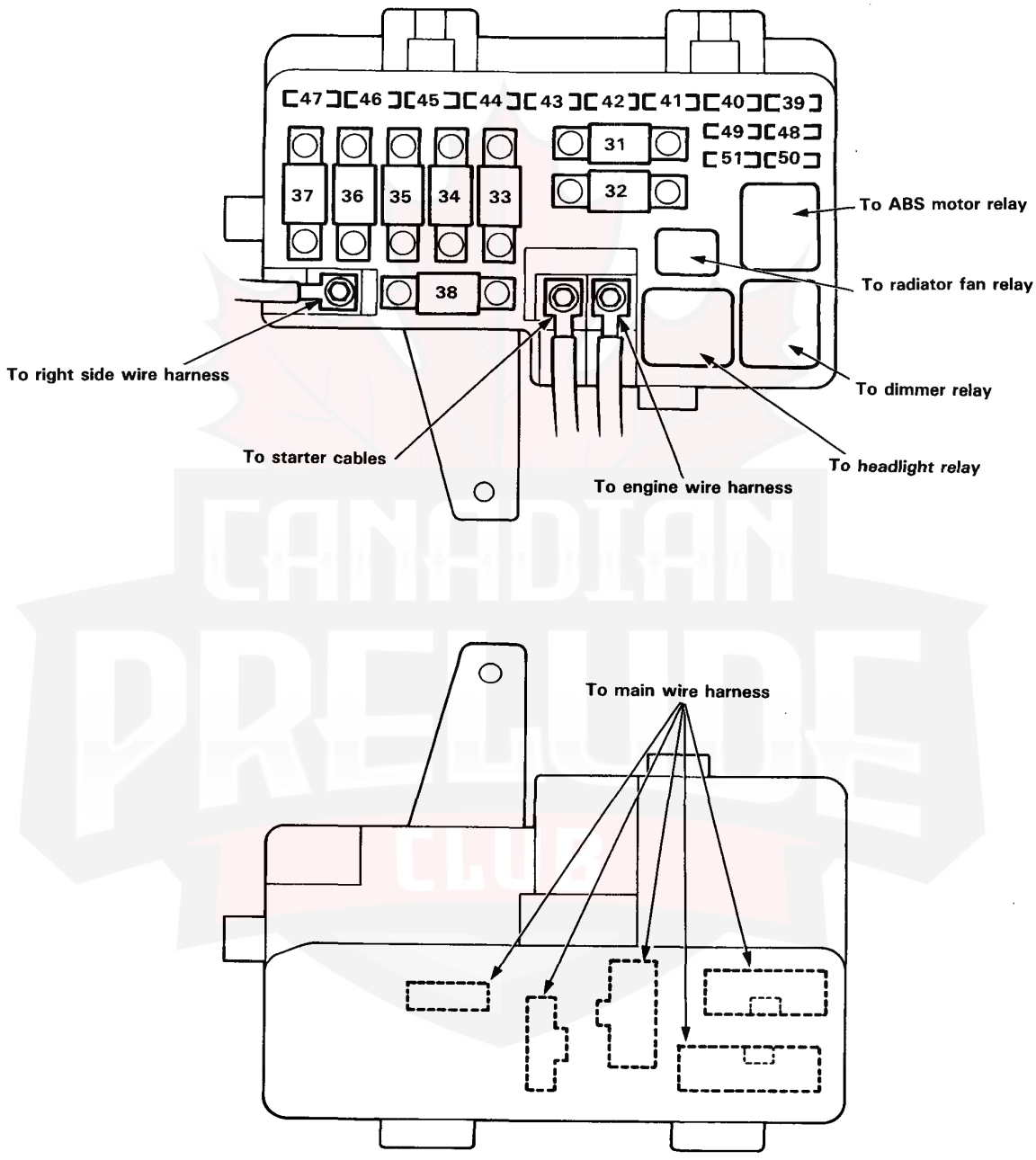
Floor (LHD)





Fuses

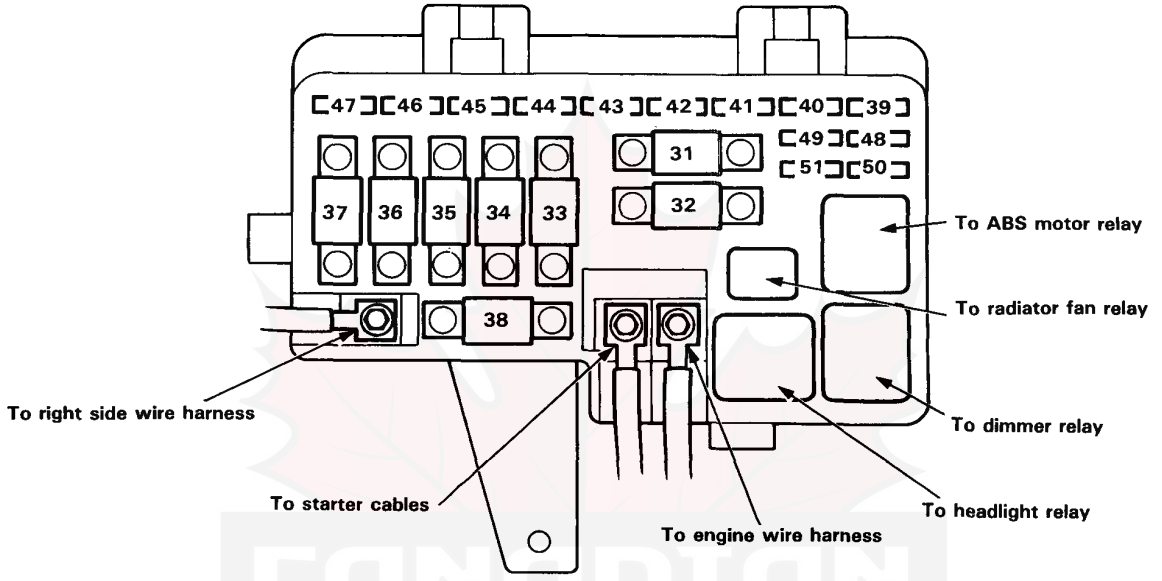
Under-hood Fuse/Relay Box (LHD)

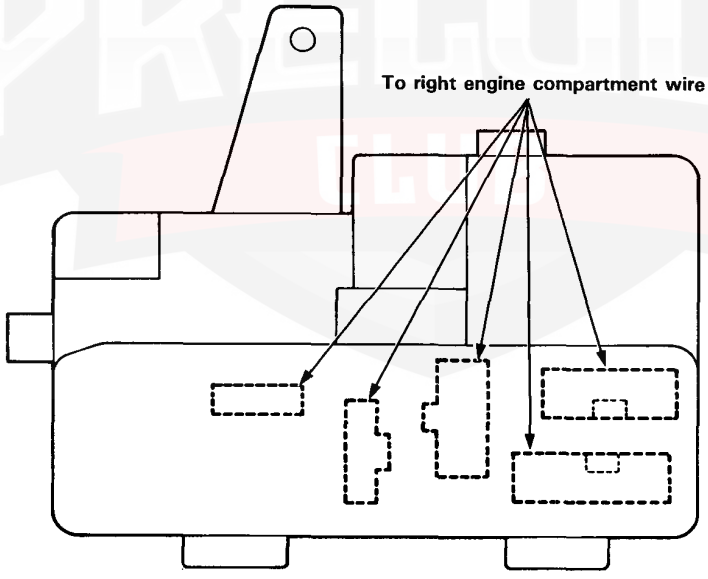


Fuse Number	Amps	Wire Color	Description
31	50 A	——	ABS motor relay
32	100 A	——	Battery
33	50 A	WHT	Ignition switch (BAT)
34	40 A	BLK/GRN	Rear window defogger relay
35	40 A	WHT	Blower motor relay
36	50 A	WHT/RED	Seat heaters (KS model), PGM-FI main relay, Headlight washer control unit (KS and KG models)
37	40 A	WHT/BLU	Sunroof system, Power window system, Voltage regulator
38	60 A	WHT	4WS control unit
39	15 A	WHT/YEL	Turn signal/hazard relay, Hazard lights
40	15 A	WHT	ABS control unit (B2)
41	15 A	WHT/YEL	Horns, Horn relay (With SRS), Brake lights, Brake light signal
42	20 A	RED/GRN	Parking lights, Dash lights
43	10 A	WHT/YEL	Clock (+B), Stereo sound system, 4WS control unit, PGM-FI ECU, A/T control unit
44	15 A	WHT	Power door lock control unit
45	15 A	WHT/GRN	Condenser fan motor, Fan timer unit
46	15 A	WHT/BLU	Ceiling light, Cigarette lighter, Trunk light, Ignition key light, Integrated control unit, Courtesy lights (KY model) Data link connector
47	15 A	BLU/BLK	Radiator fan motor (Via relay)
48	7.5 A	WHT/BLK	ABS control unit
49	20 A	WHT/GRN	ABS control unit (B1), (B3)
50	20 A	RED/GRN	Right headlight
51	20 A	RED/YEL	Left headlight, High beam indicator light

Fuses

Under-hood Fuse/Relay Box (RHD)

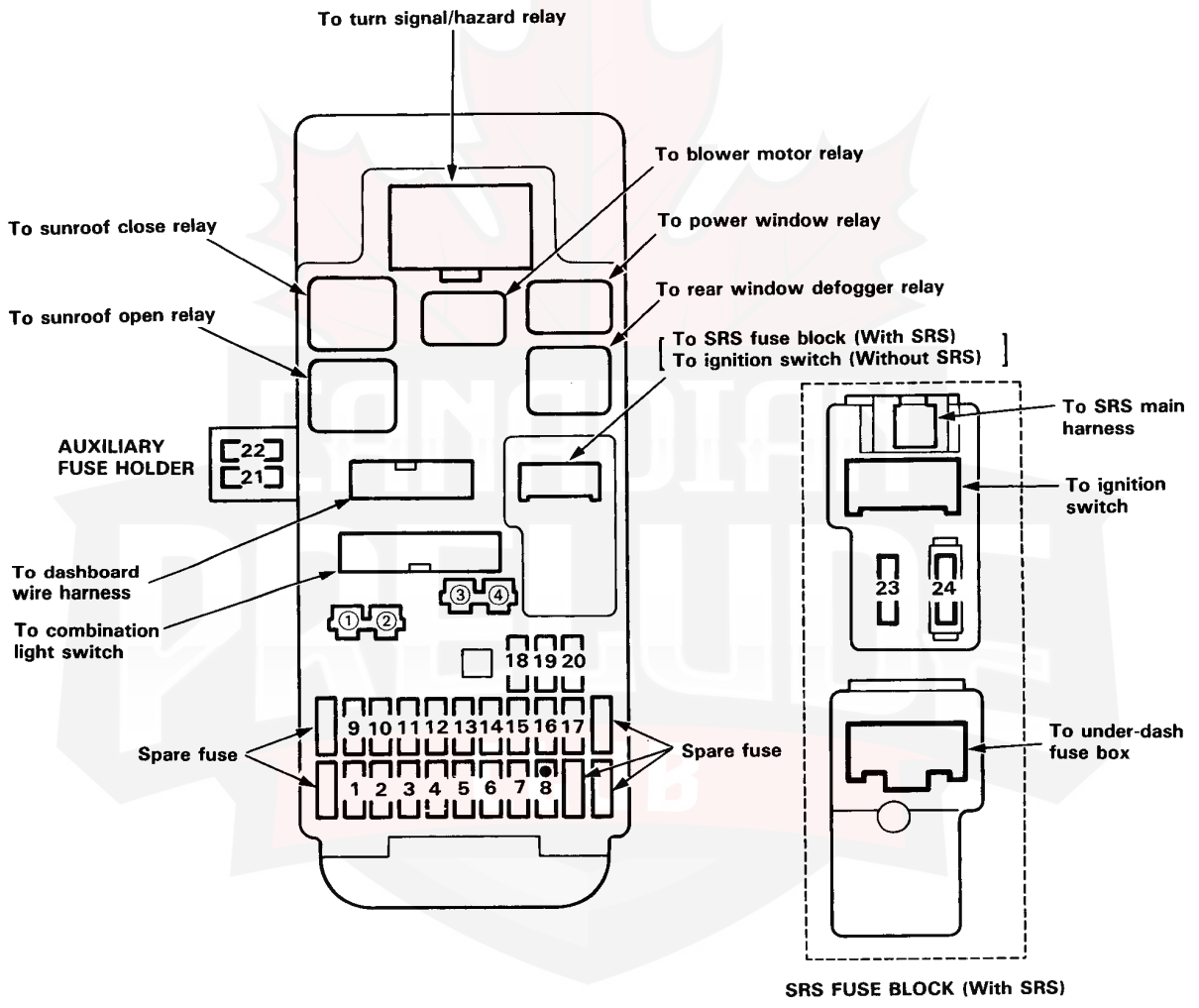




Fuse Number	Amps	Wire Color	Description
31	50 A	——	ABS motor relay
32	100 A	——	Battery
33	50 A	WHT	Ignition switch (BAT)
34	40 A	BLK/GRN	Rear window defogger
35	40 A	BLU/WHT	Blower motor relay
36	50 A	WHT/RED	PGM-FI main relay, Integrated control unit (DIM-DIP)
37	40 A	WHT/BLU	Sunroof system, Power window system
38	60 A	WHT	4WS control unit
39	15 A	WHT/YEL	Turn signal/hazard relay, Hazard lights
40	15 A	WHT	ABS control unit (B2)
41	15 A	WHT/YEL	Horns, Horn relay (With SRS), Brake lights, Brake light signal
42	20 A	RED/GRN	Parking lights, Dash lights
43	10 A	WHT/YEL	Clock (+B), Stereo sound system, 4WS control unit, PGM-FI ECU, A/T control unit
44	15 A	WHT	Power door lock control unit
45	15 A	WHT/GRN	Condenser fan motor, Fan timer unit
46	15 A	WHT/BLU	Ceiling light, Cigarette lighter relay, Trunk light, Ignition key light, Integrated control unit, Data link connector, Key interlock solenoid (A/T)
47	15 A	BLU/BLK	Radiator fan motor (Via relay)
48	7.5 A	WHT/BLK	ABS control unit
49	20 A	WHT/GRN	ABS control unit (B1), (B3)
50	20 A	RED/GRN	Right headlight
51	20 A	RED/YEL	Left headlight, High beam indicator light

Fuses

Under-dash Fuse Box (LHD)



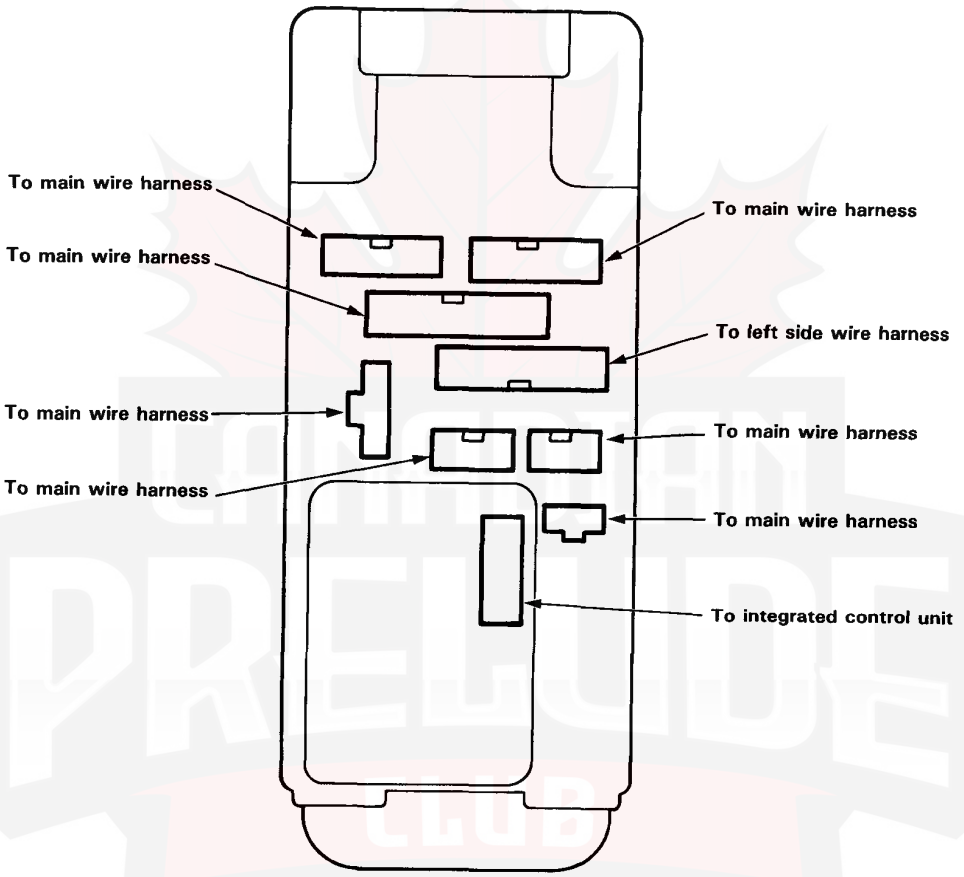
①: Option (+B)
②: Option (IG2)
③: Option (DASH LIGHTS)
④: Option (ACC)
●: Not used

Fuse Number	Amps	Wire Color	Description
1	30 A	WHT/BLK	Headlight washer control unit (KS and KG models)
2	7.5 A	BLU/RED	PGM-FI ECU, PGM-FI main relay, Sub gauge (brake check circuit: KY model)
3	15 A	BLU/RED	Front fog lights (option)
4	10 A	YEL/BLU	PGM-FI main relay
5	10 A	WHT/GRN	Voltage regulator (s)
6	15 A	WHT/BLK	Seat heater system (KS model)
7	30 A	Internal connection	Sunroof open relay, Sunroof close relay
8	——	——	Not used
9	15 A	Internal connection	Option ② connector, Blower motor relay
		BLK/YEL	Heater control panel, Power mirror system, ABS control unit, 4WS control unit, Fan timer unit, Mode control motor, Reirculation control motor
10	7.5 A	RED/YEL	Left taillight (KG and KF models)
11	10 A	Internal connection	Rear window defogger relay
		YEL/BLK	Seat heater main relay, A/C compressor clutch relay, PGM-FI ECU
12	7.5 A	YEL/RED	Integrated control unit (Daytime running lights) (KS model)
13	10 A	YEL	Gauge and indicator lights, Clock, Back-up lights, Speed alarm unit (KY model)
14	7.5 A	BLK/RED	Cruise control system
15	20 A	WHT/BLK	Driver's power window system
16	20 A	BLU/BLK	Passenger's power window system
17	30 A	GRN/BLK	Windshield wiper system
18	10 A	Internal connection	Option ④ connector
		YEL/RED	Stereo radio/cassette player, Cigarette lighter
*19	15 A	BLK/YEL	A/T control unit, Speed sensor, Fan timer unit, PGM-FI main relay, voltage regulator (IG1)
20	15 A	RED/BLK	Right taillight, Dash lights (KG and KF models)
*21	10 A	YEL/GRN	Headlight washer unit (KS and KG models), Headlight adjuster (KG model), Rear wiper system
*22	10 A	YEL/RED	4WS control unit
*23	15 A	BLK/YEL	A/T control unit, Speed sensor, Fan timer unit, PGM-FI main relay, voltage regulator (IG1)
		RED	SRS unit (Type I)
*24	10 A	RED	SRS unit (Type II)
		PNK	SRS unit (Type I)

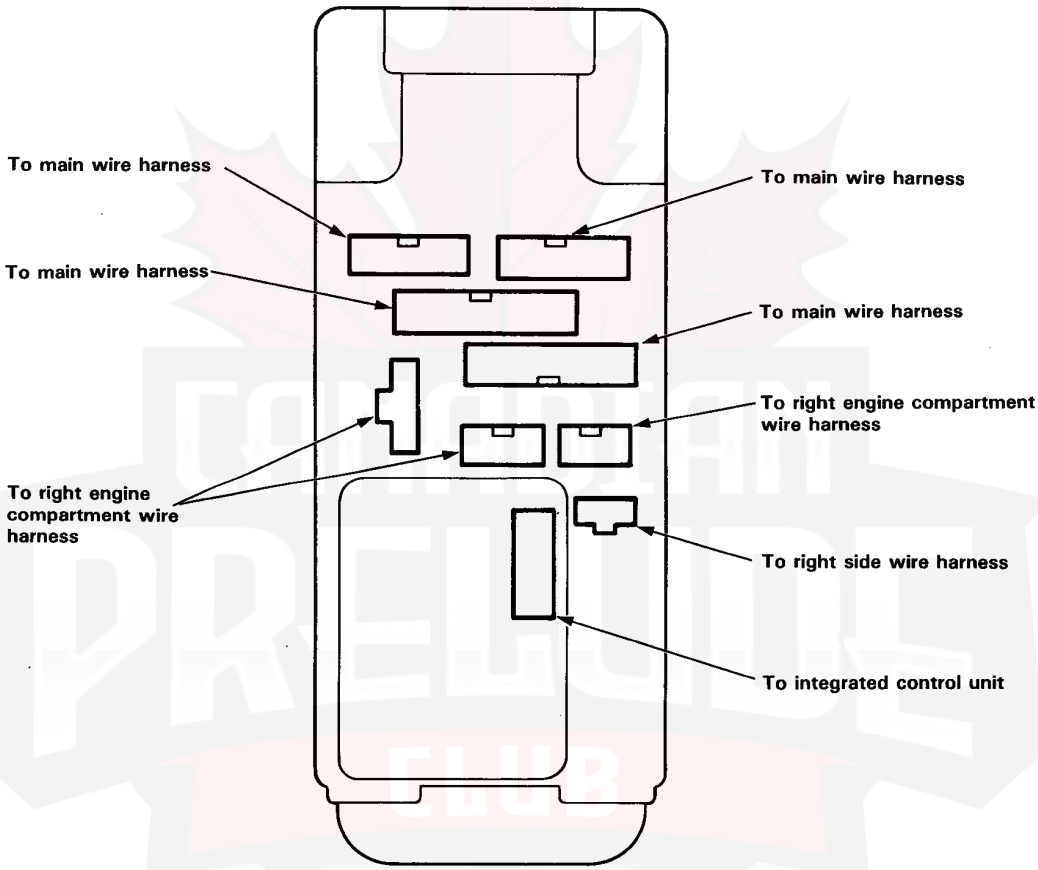
*19: UNDER-DASH FUSE BOX (Without SRS)
*21: AUXILIARY FUSE HOLDER
*22: AUXILIARY FUSE HOLDER
*23: SRS FUSE BLOCK (With SRS)
*24: SRS FUSE BLOCK (With SRS)

(cont'd)

Under-dash Fuse Box (LHD cont'd)



Under-dash Fuse Box (RHD)



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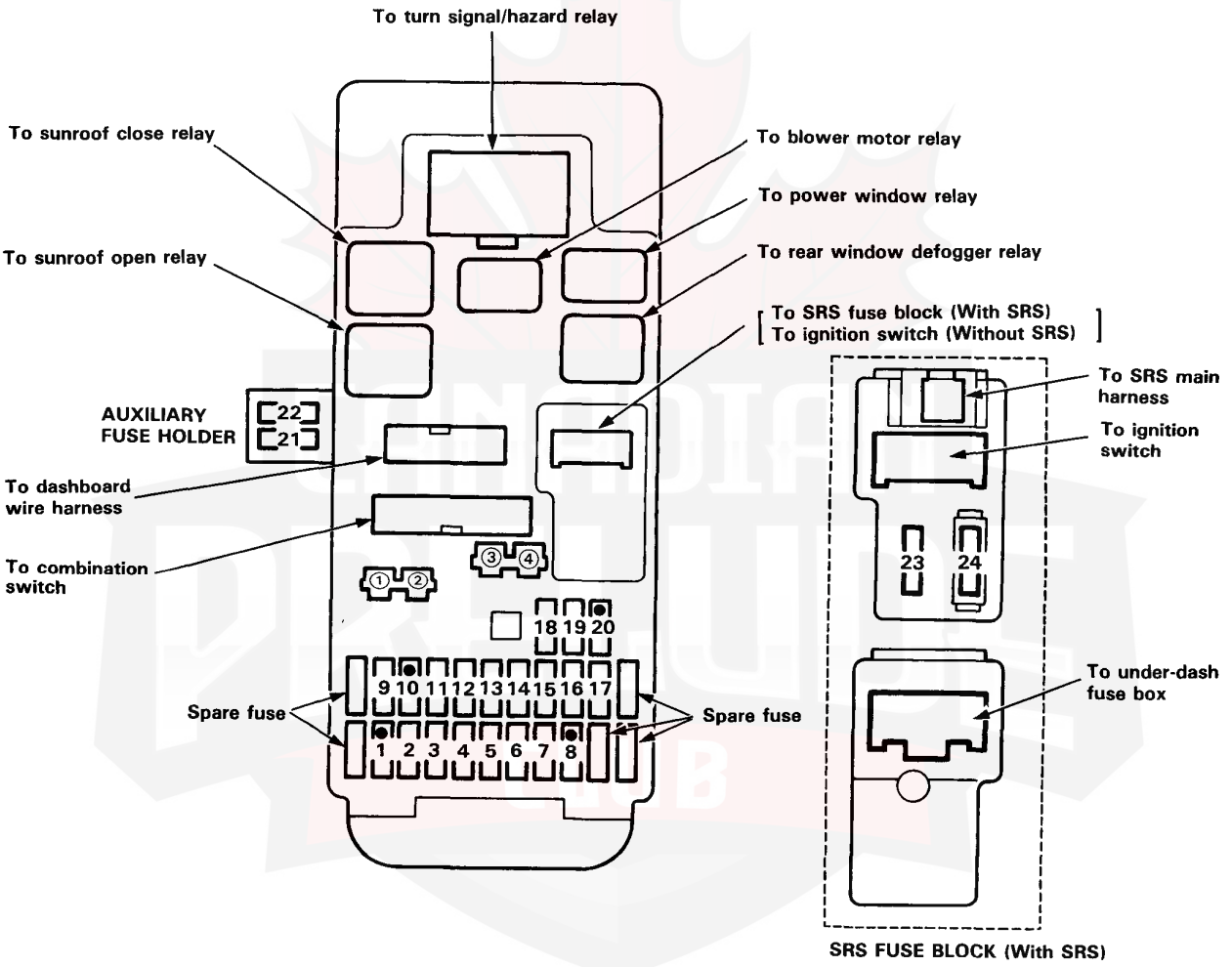
Under-dash Fuse Box (RHD cont'd)



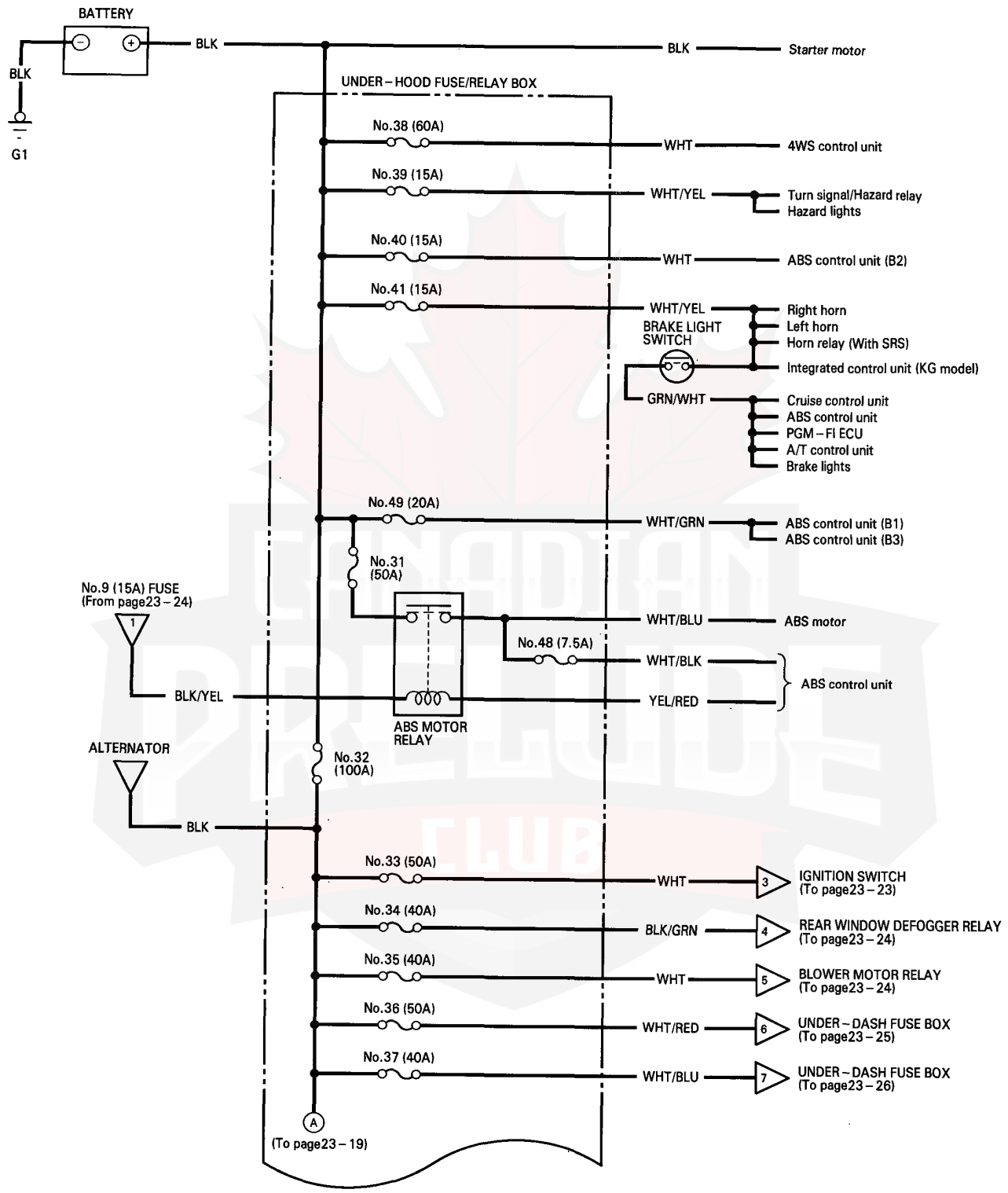
①: Option (+B)
②: Option (IG2)
③: Option (DASH LIGHTS)
④: Option (ACC)
●: Not used

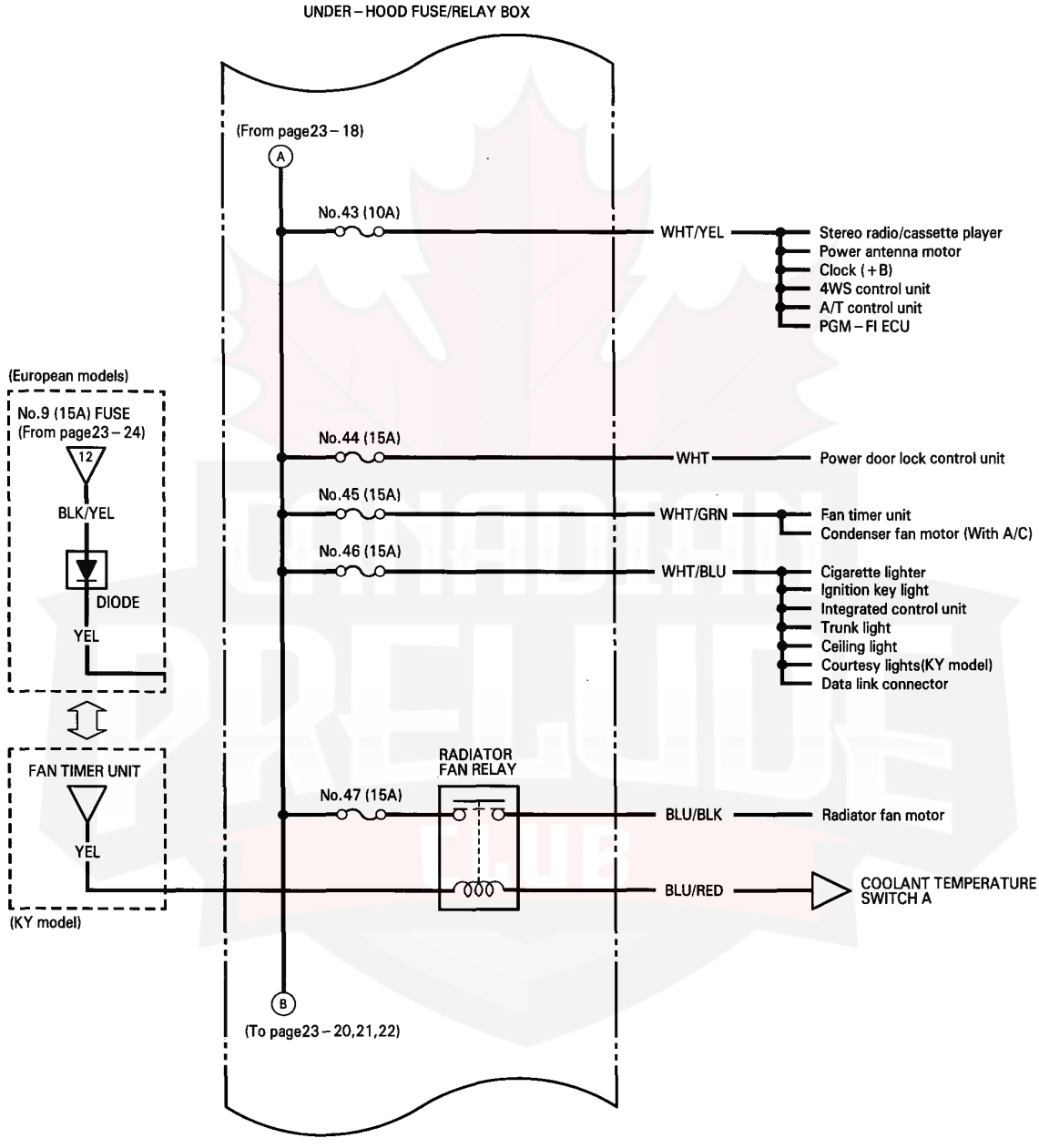
Fuse Number	Amps	Wire Color	Description
1	——	——	Not used
2	7.5 A	BLU/RED	PGM-FI ECU, PGM-FI main relay, Sub gauge (brake check circuit: KQ model)
3	15 A	BLU/RED	Front fog lights (option)
4	10 A	YEL/BLU	PGM-FI main relay
5	10 A	WHT/GRN	Voltage regulator (s) (Except KQ)
6	10 A	WHT/BLK	Integrated control unit (KE model)
7	30 A	Internal connection	Sunroof open relay, Sunroof close relay
8	——	——	Not used
9	15 A	Internal connection	Option ② connector, Blower motor relay
		BLK/YEL	Heater control panel, Power mirror system, ABS control unit, 4WS control unit, Fan timer unit, Recirculation control motor, Mode control motor
10	——	——	Not used
11	10 A	Internal connection	Rear window defogger relay
		YEL/BLK	A/C compressor clutch relay
12	7.5 A	YEL/RED	Integrated control unit (KE model)
13	10 A	YEL	Gauge and indicator lights, Clock, Back-up lights, Interlock control unit, Shift lock solenoid (A/T)
14	7.5 A	BLK/RED	Cruise control system
15	20 A	WHT/BLK	Driver's power window system
16	20 A	BLU/BLK	Passenger's power window system
17	30 A	GRN/BLK	Windshield wiper system
18	10 A	Internal connection	Option ④ connector
		YEL/RED	Stereo radio/cassette player, Cigarette lighter
*19	15 A	BLK/YEL	A/T control unit, Speed sensor, Fan timer unit, ELD unit (KQ model) PGM-FI main relay, Voltage regulator (IG1)
20	——	——	Not used
*21	10 A	YEL/GRN	Rear wiper system (Except KQ)
*22	10 A	YEL/RED	4WS control unit
*23	15 A	BLK/YEL	A/T control unit, Speed sensor, Fan timer unit, ELD unit (KQ model), PGM-FI main relay, Voltage regulator (IG1)
		RED	SRS unit (Type I)
*24	10 A	RED	SRS unit (Type II)
		PNK	SRS unit (Type I)

*19: UNDER-DASH FUSE BOX (Without SRS)
*21: AUXILIARY FUSE HOLDER
*22: AUXILIARY FUSE HOLDER
*23: SRS FUSE BLOCK (With SRS)
*24: SRS FUSE BLOCK (With SRS)

Power Distribution

Circuit Identification (LHD)





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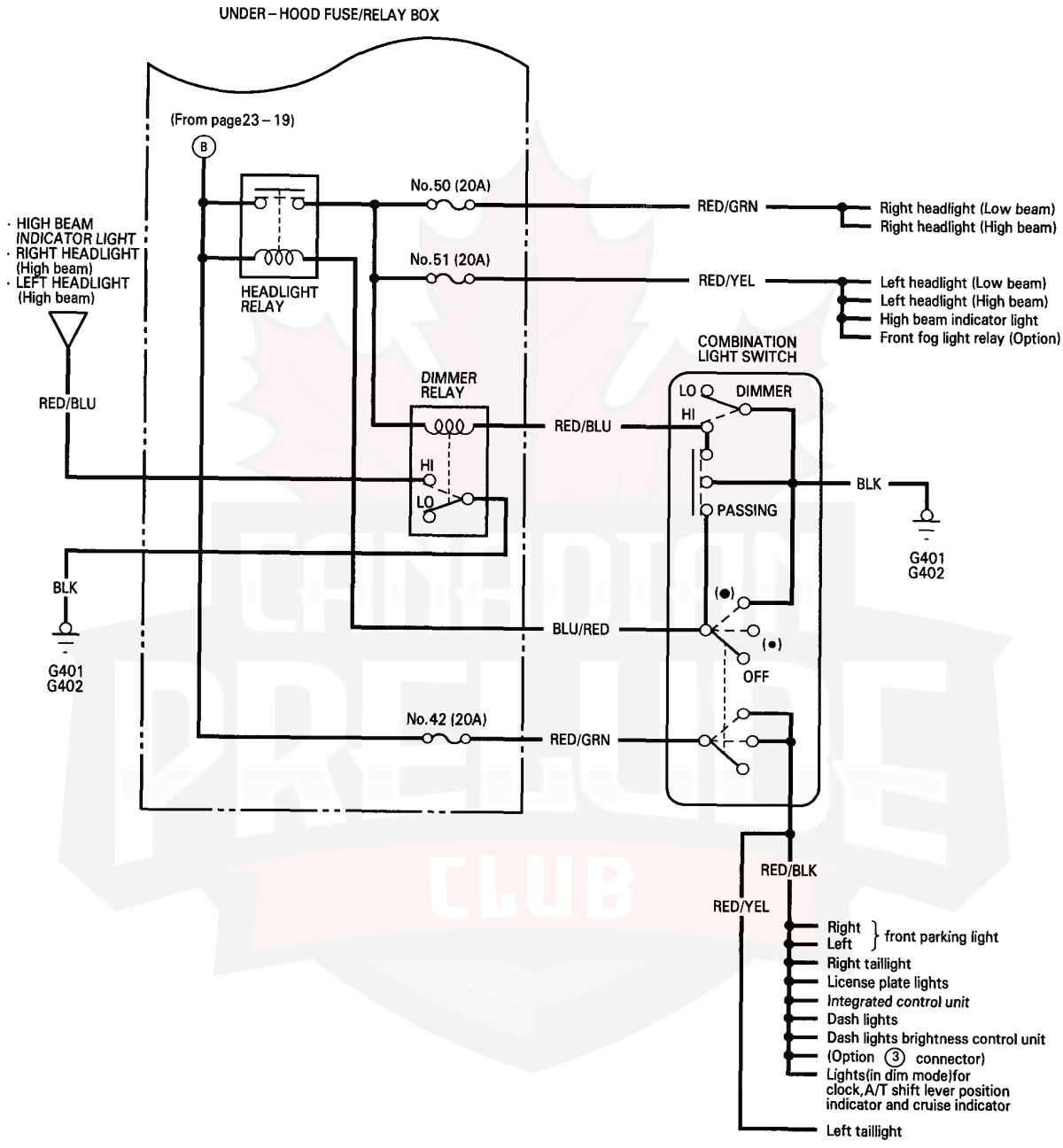
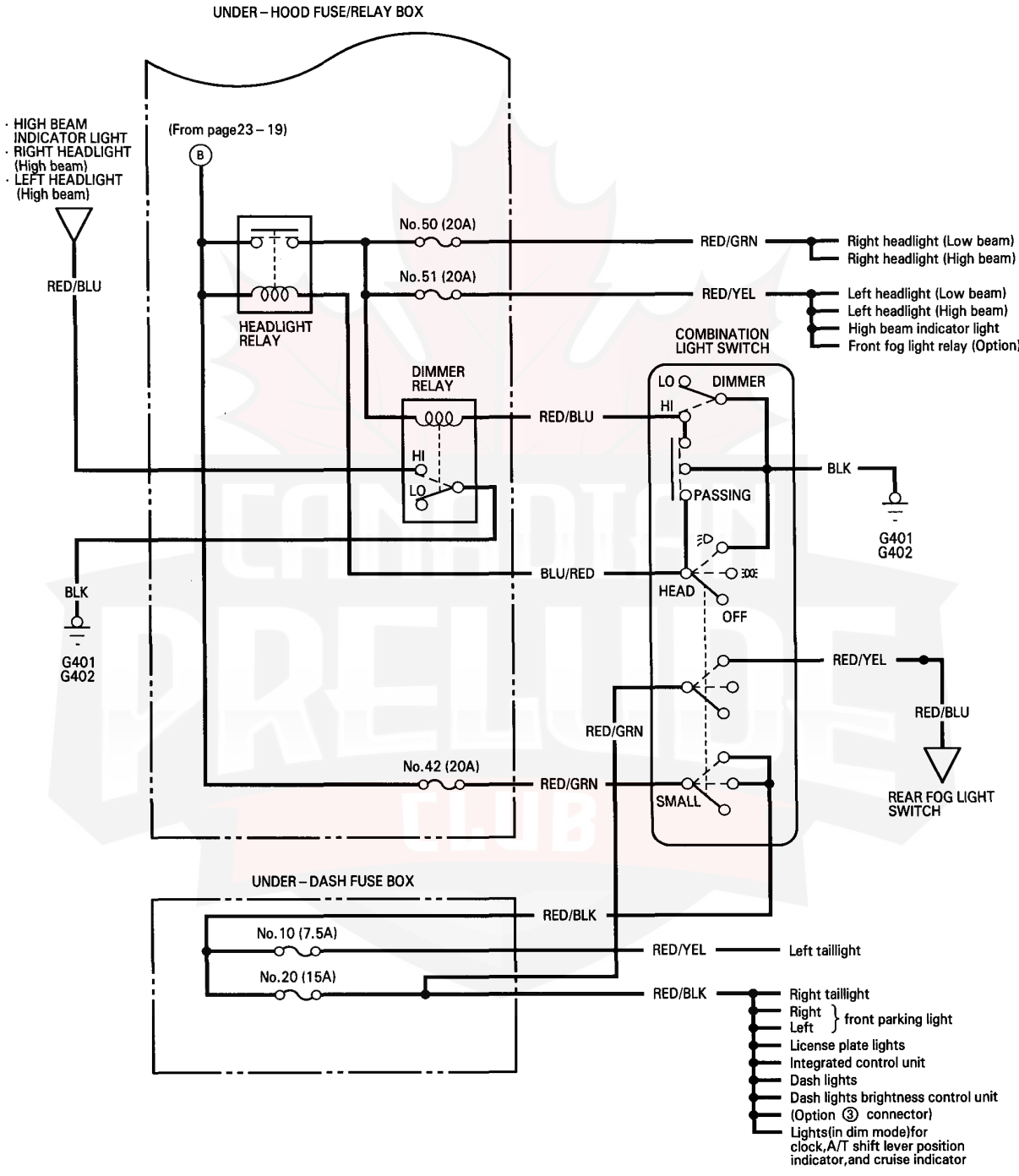
Power Distribution

Circuit Identification (LHD cont'd)

KY model:



KG and KF models:



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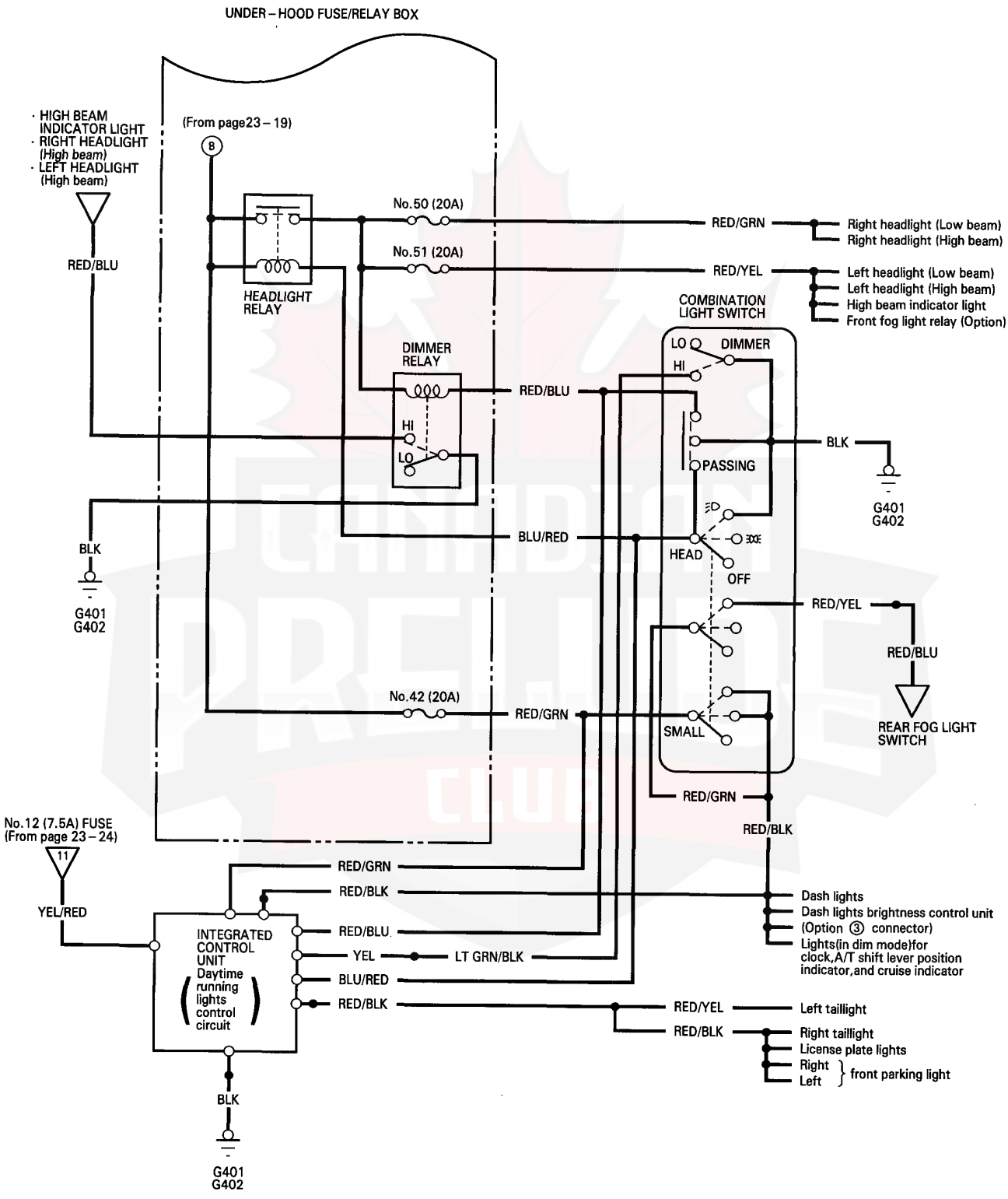
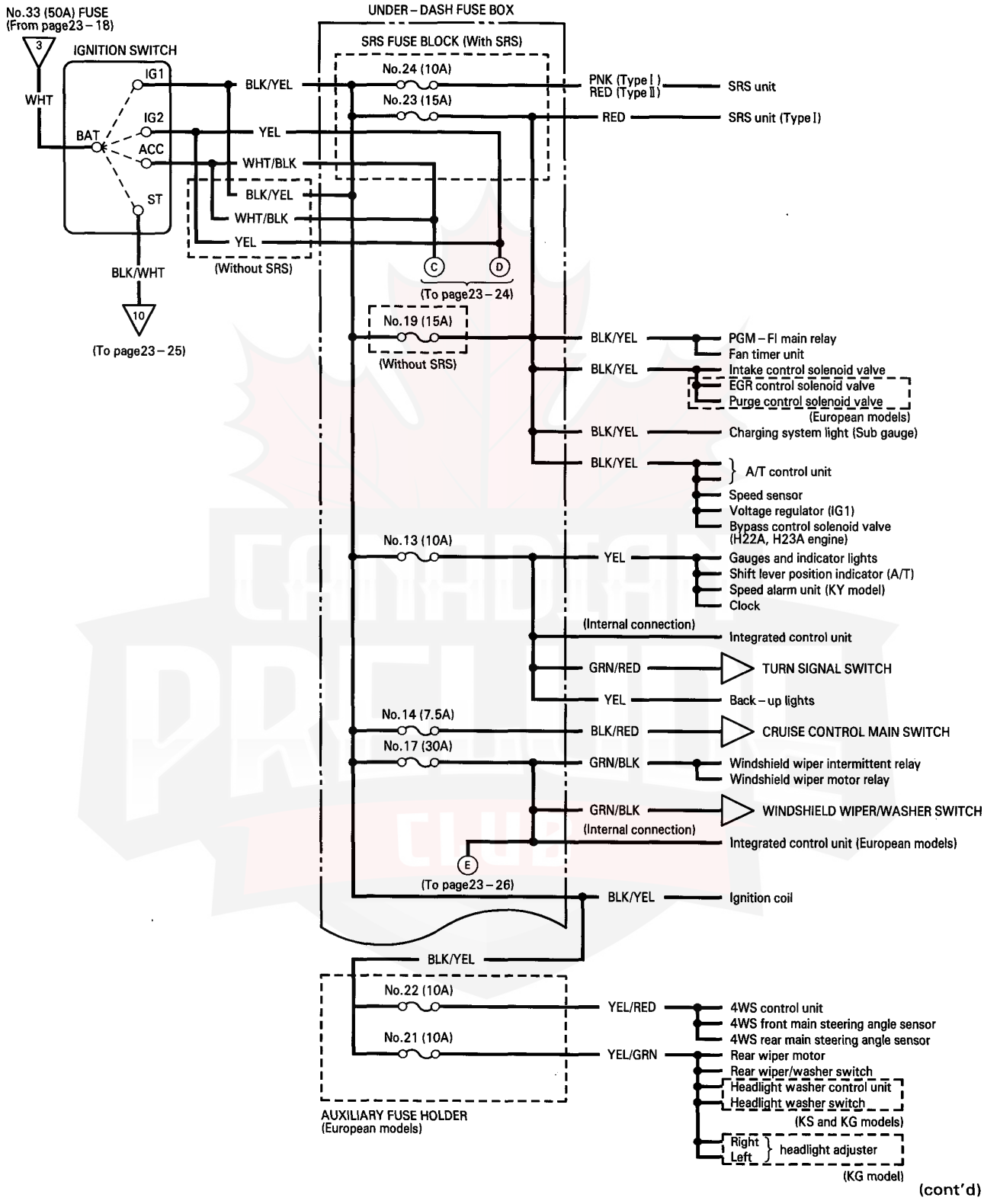
Power Distribution

Circuit Identification (LHD cont'd)

KS model:





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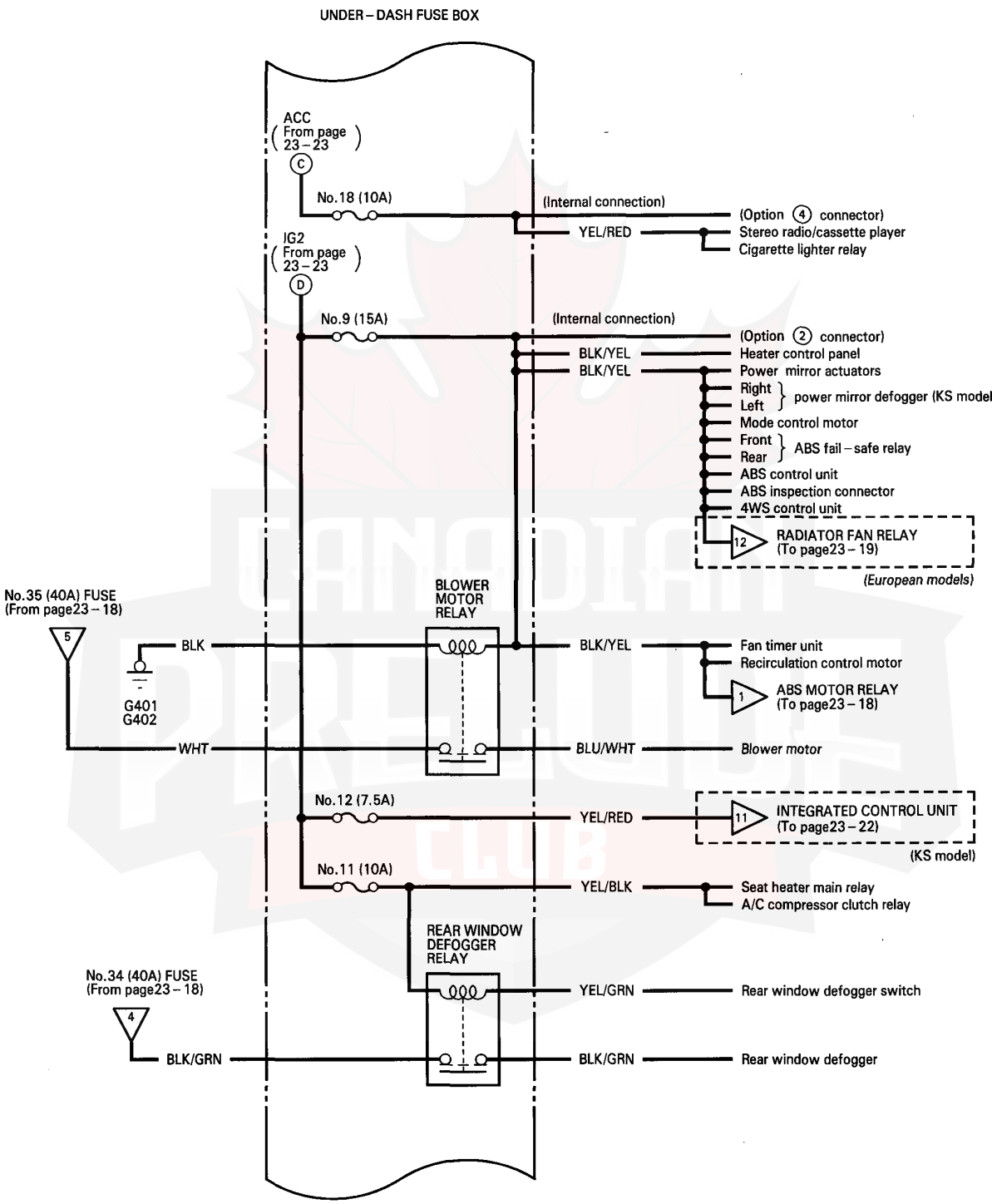
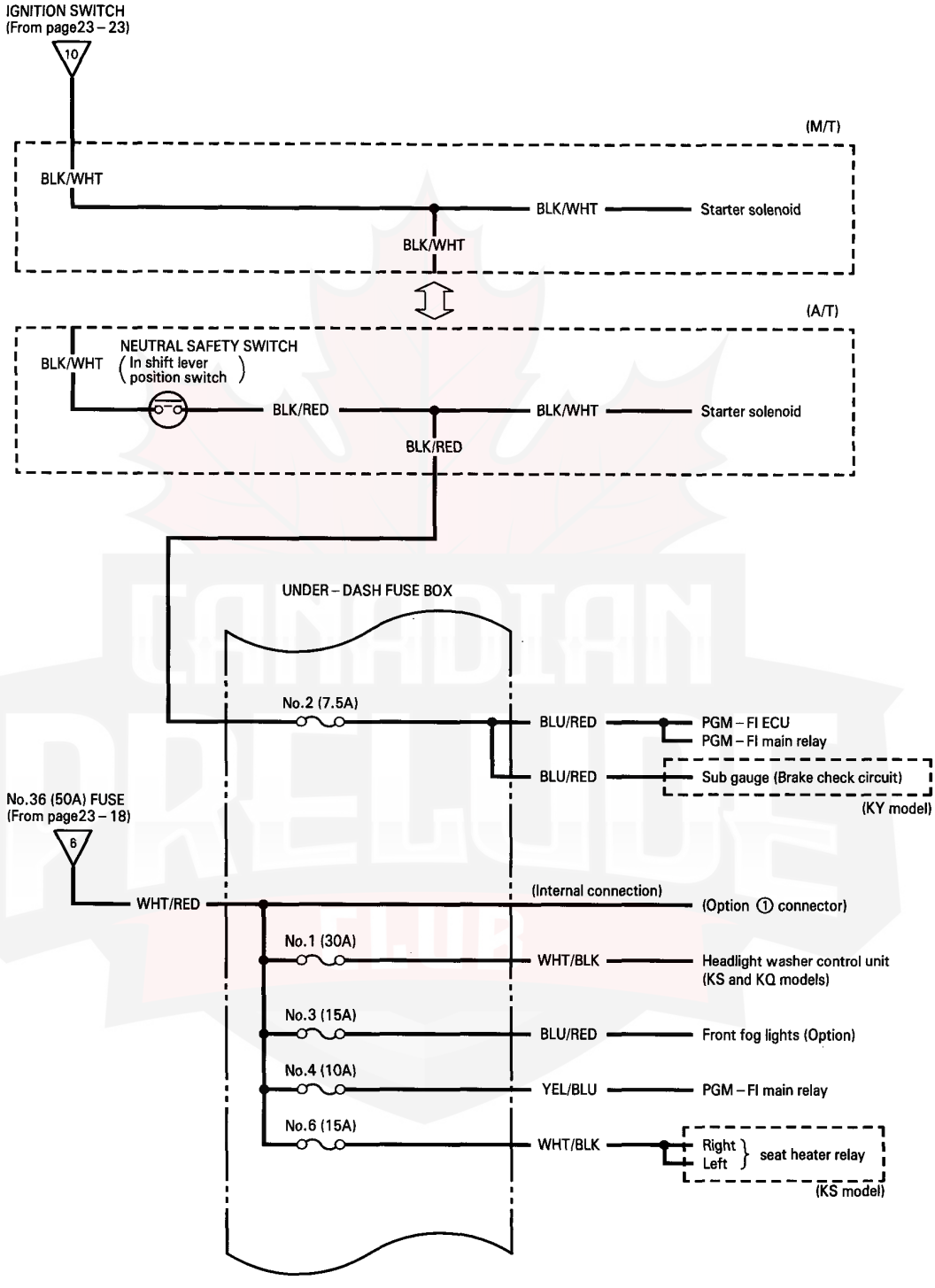
Power Distribution

Circuit Identification (LHD cont'd)





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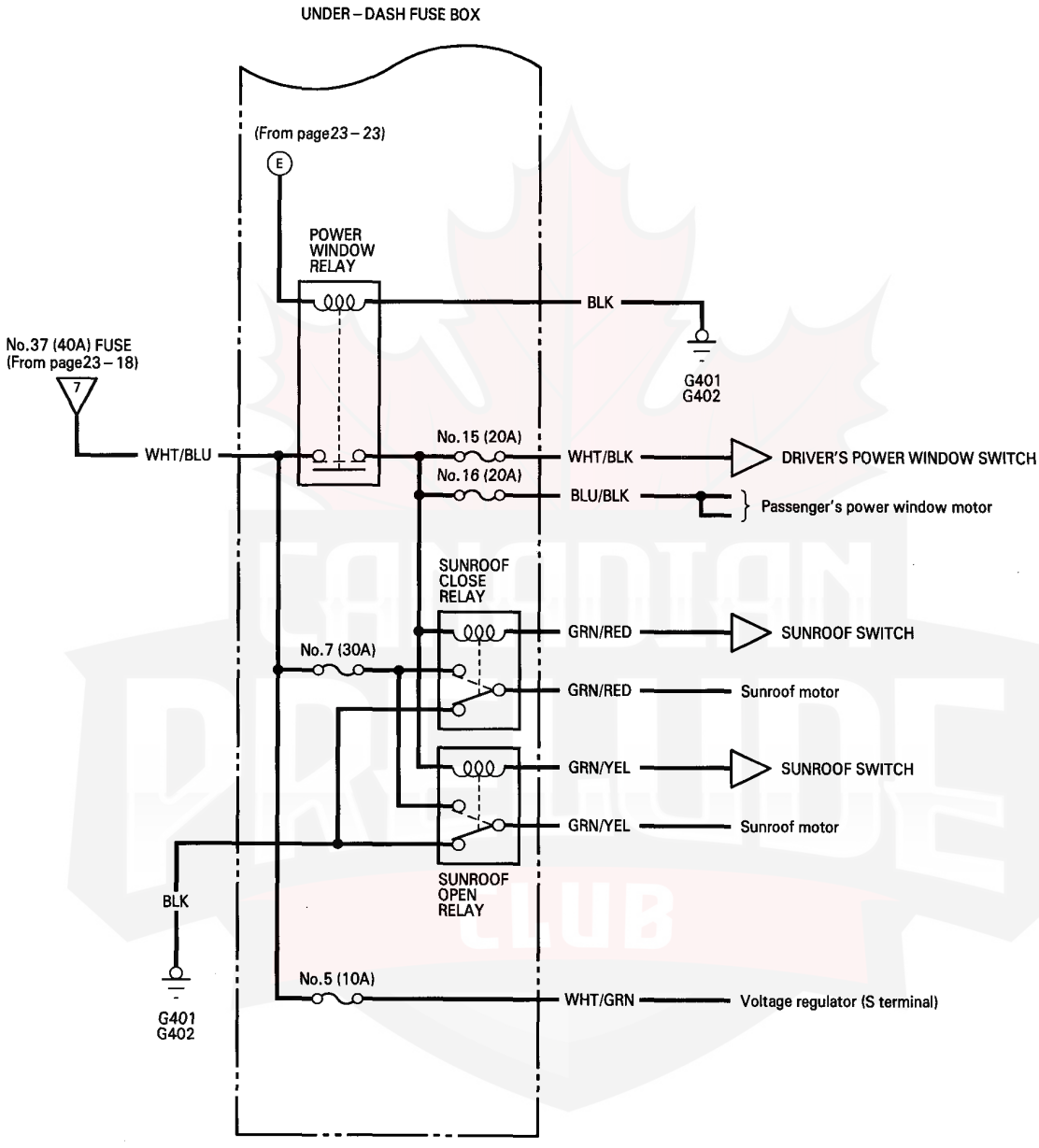
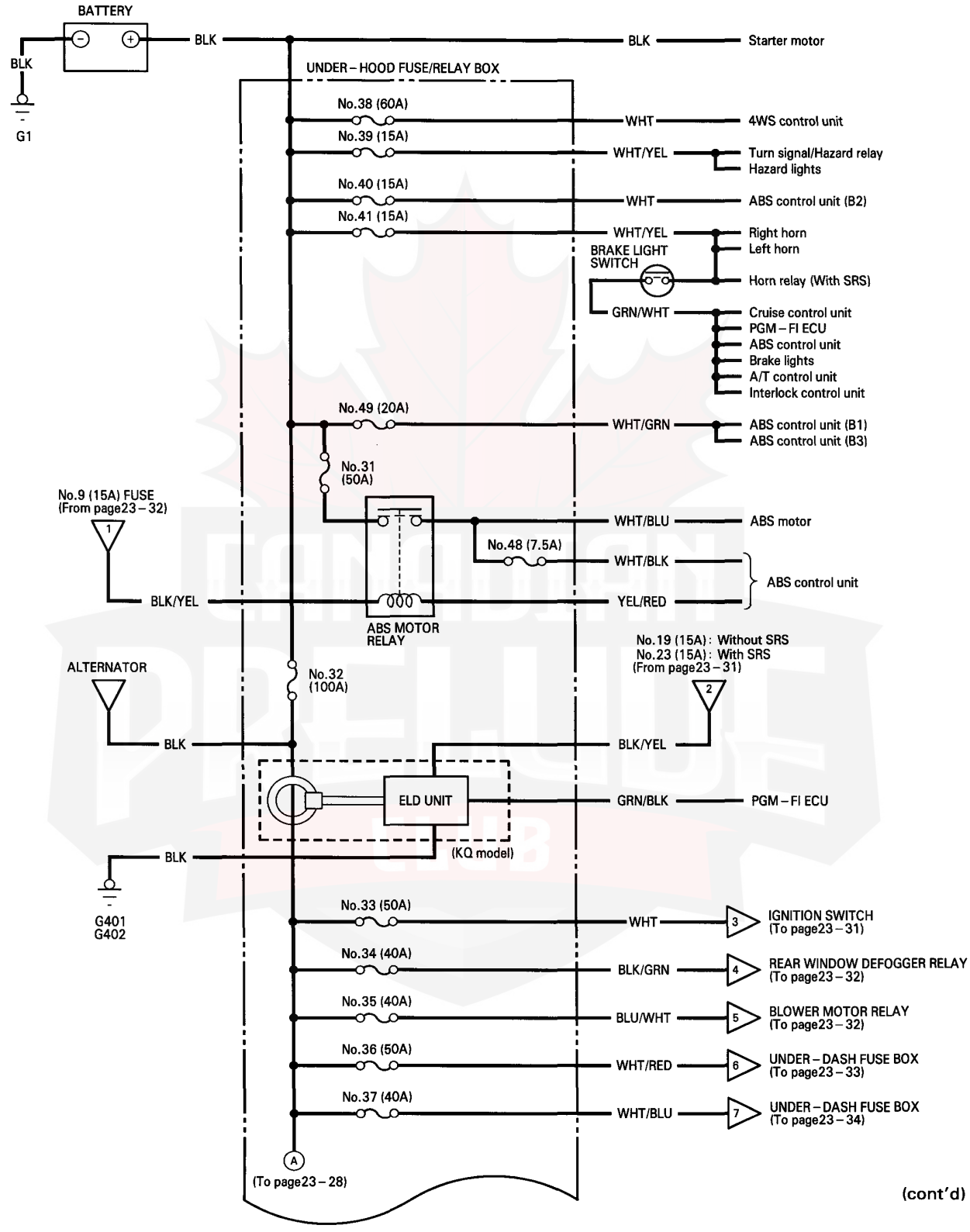


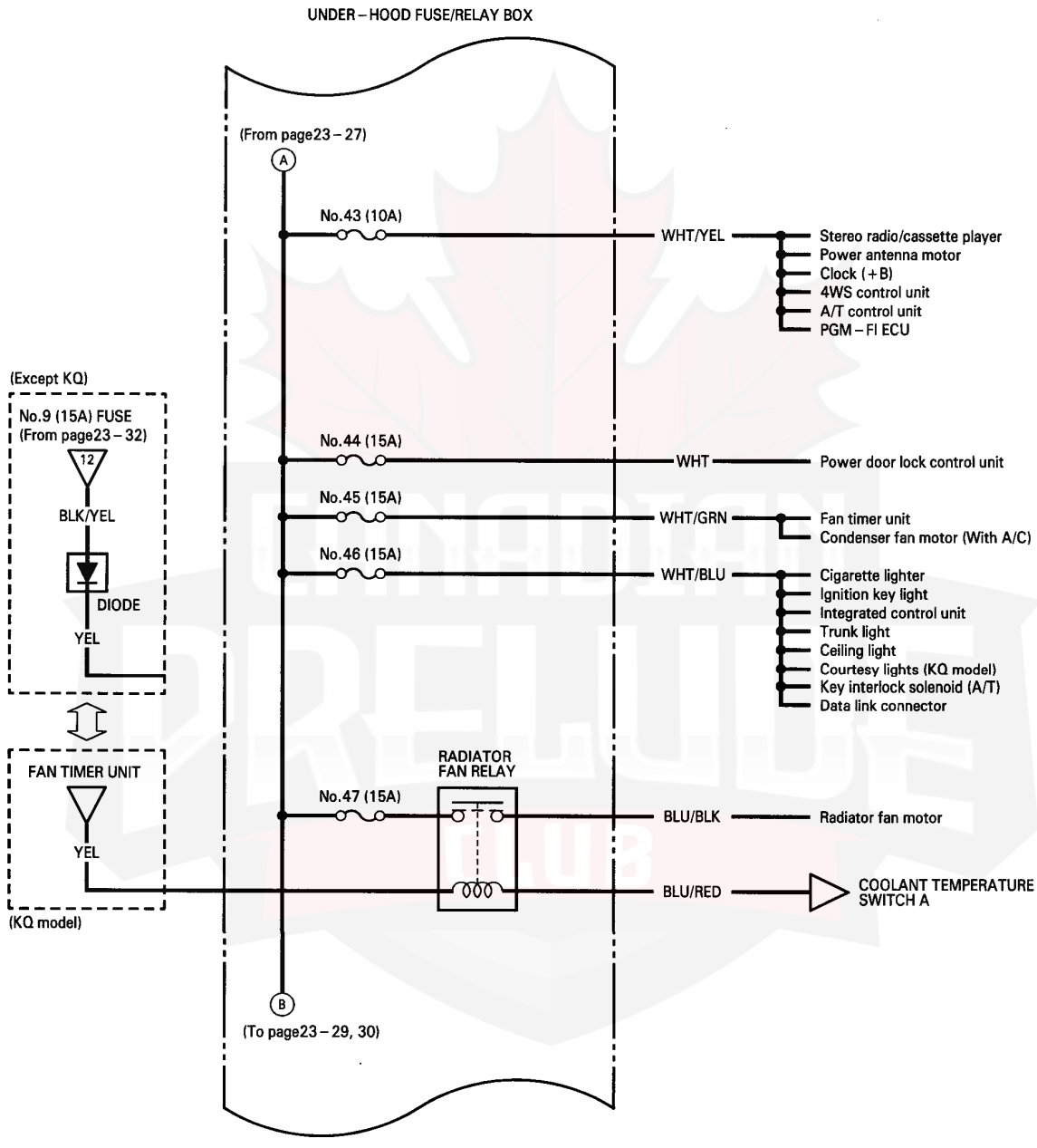
Circuit Identification (RHD)



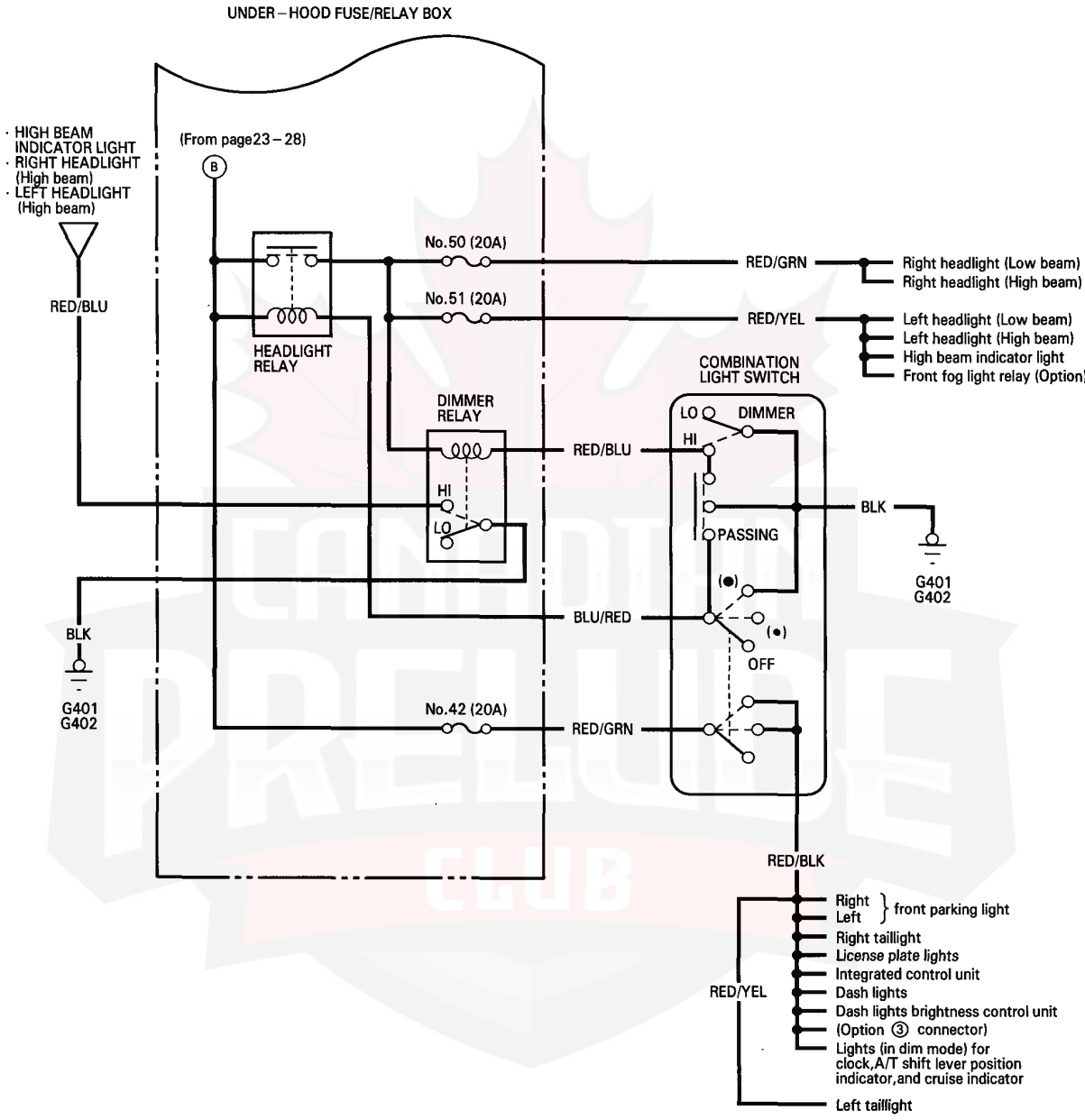
(cont'd)

Power Distribution

Circuit Identification (RHD cont'd)



Except KE :

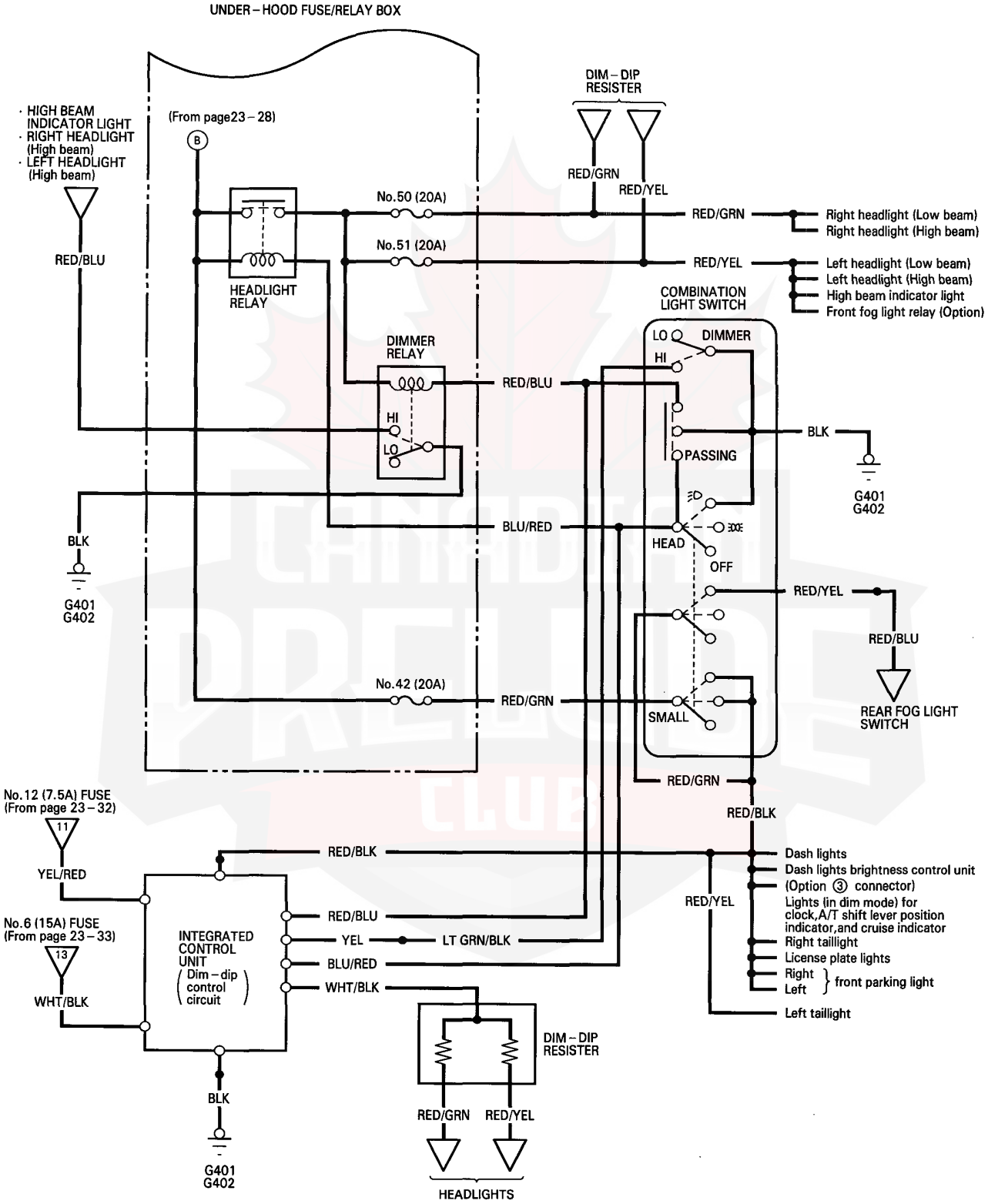


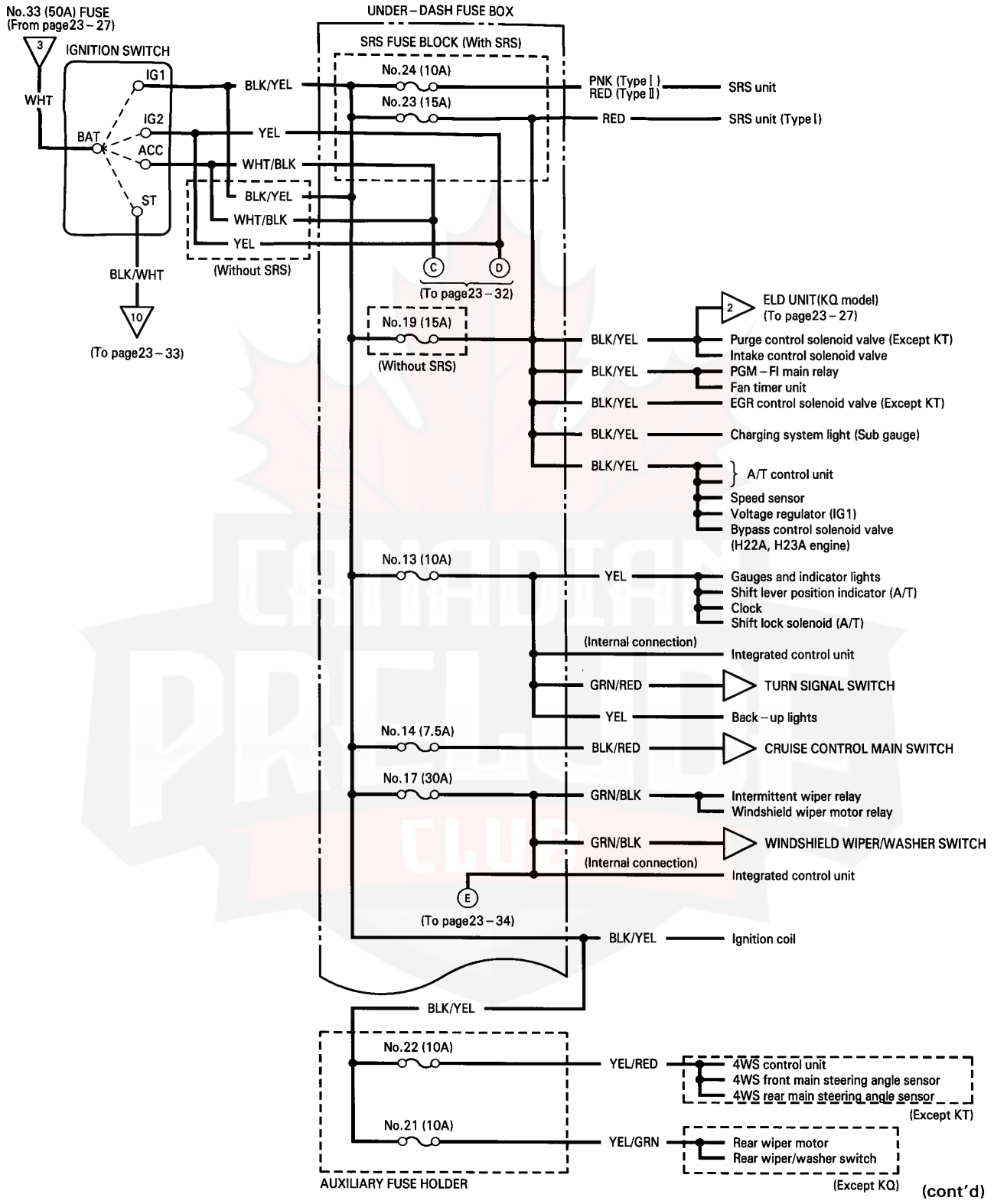
(cont'd)

Power Distribution

Circuit Identification (RHD cont'd)

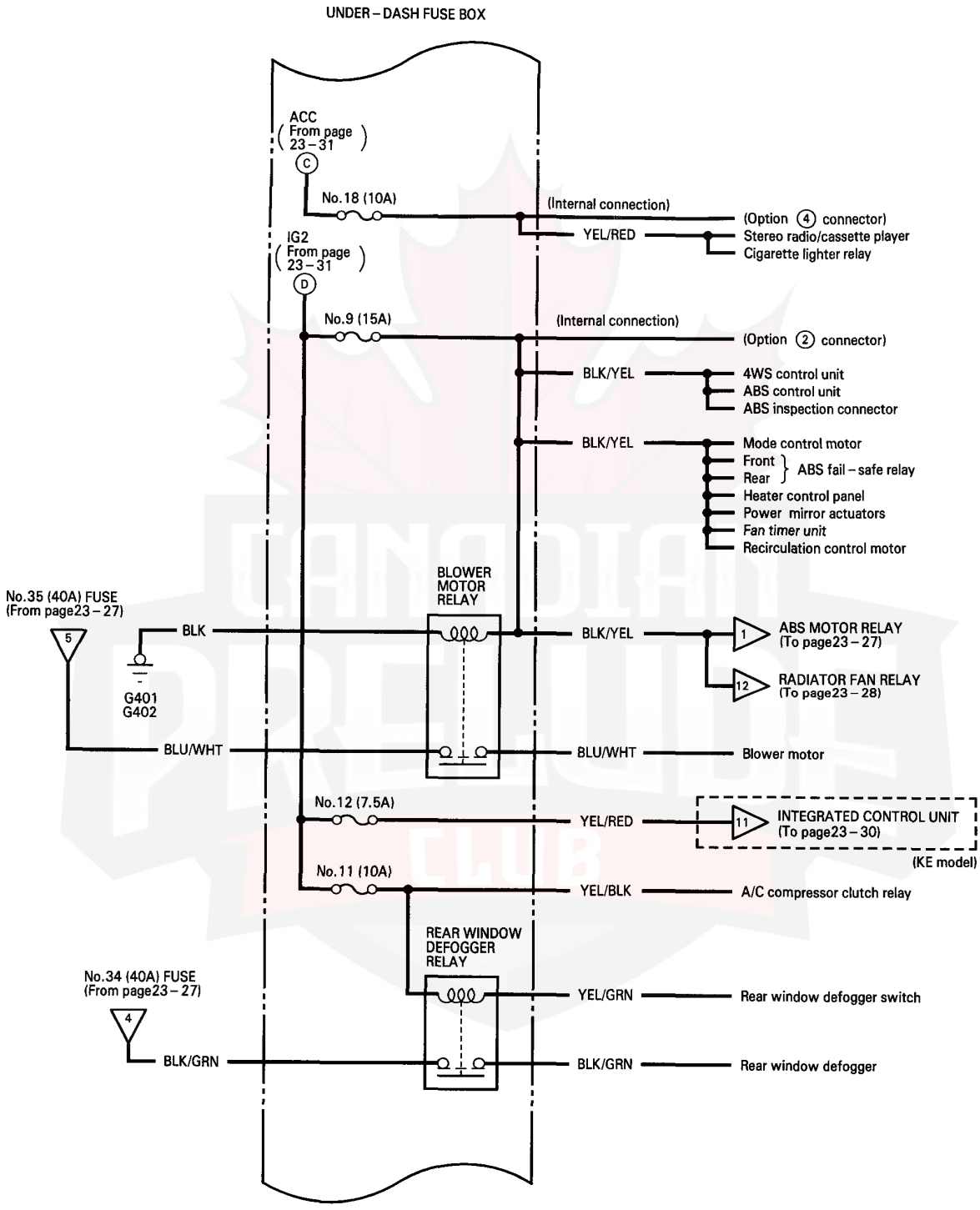
KE model:

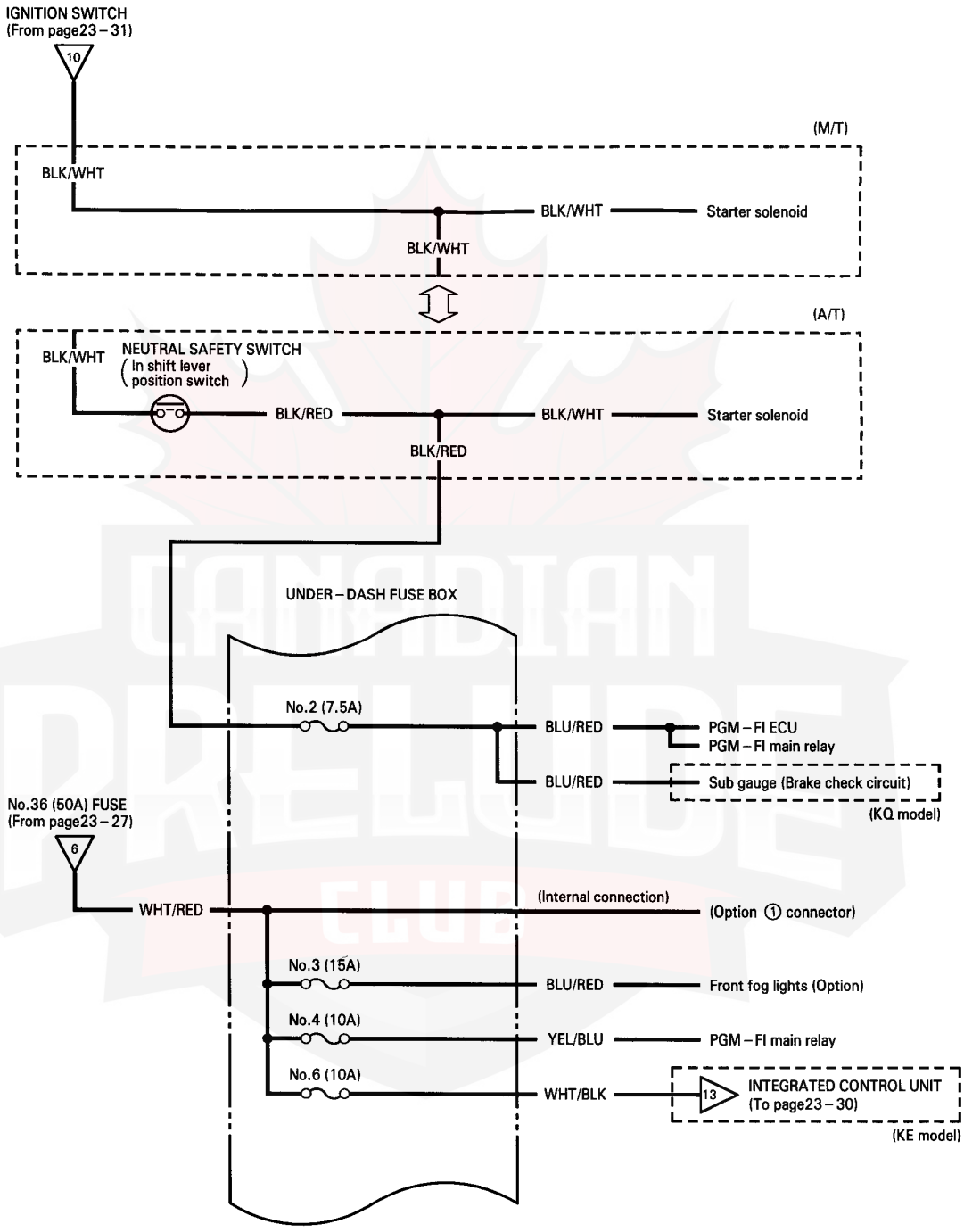




Power Distribution

Circuit Identification (RHD cont'd)





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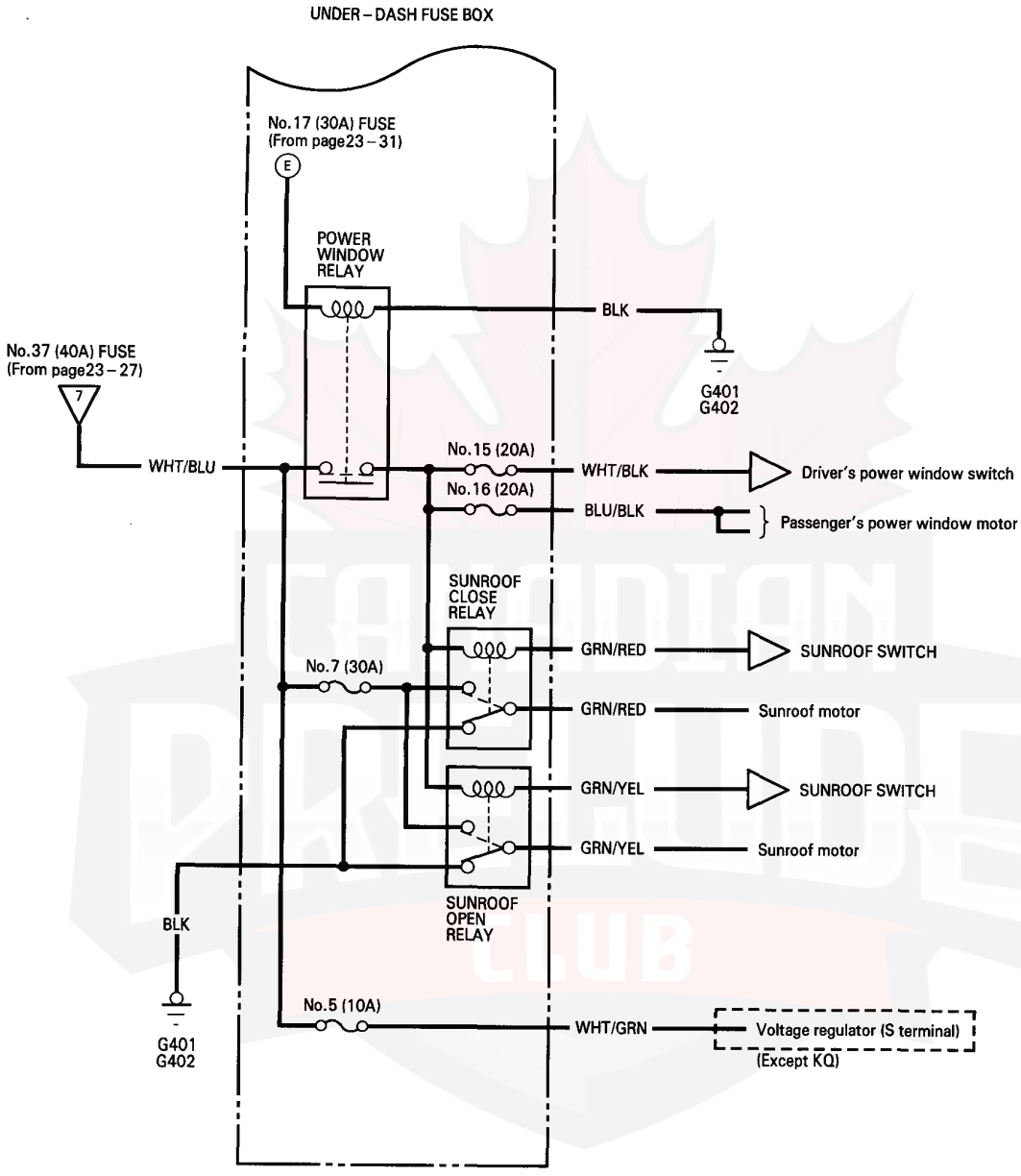
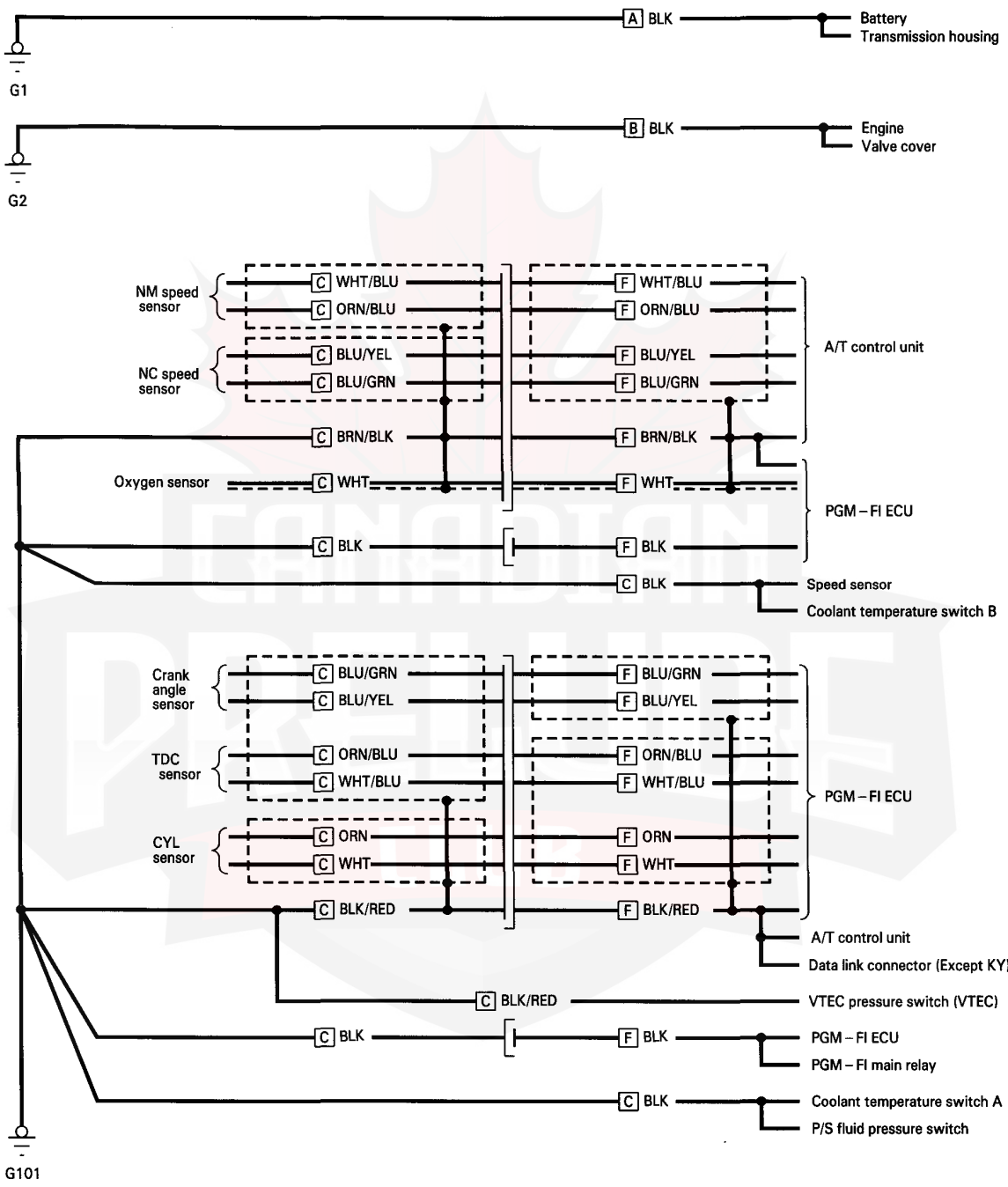


Ground Distribution

Circuit Identification (LHD)

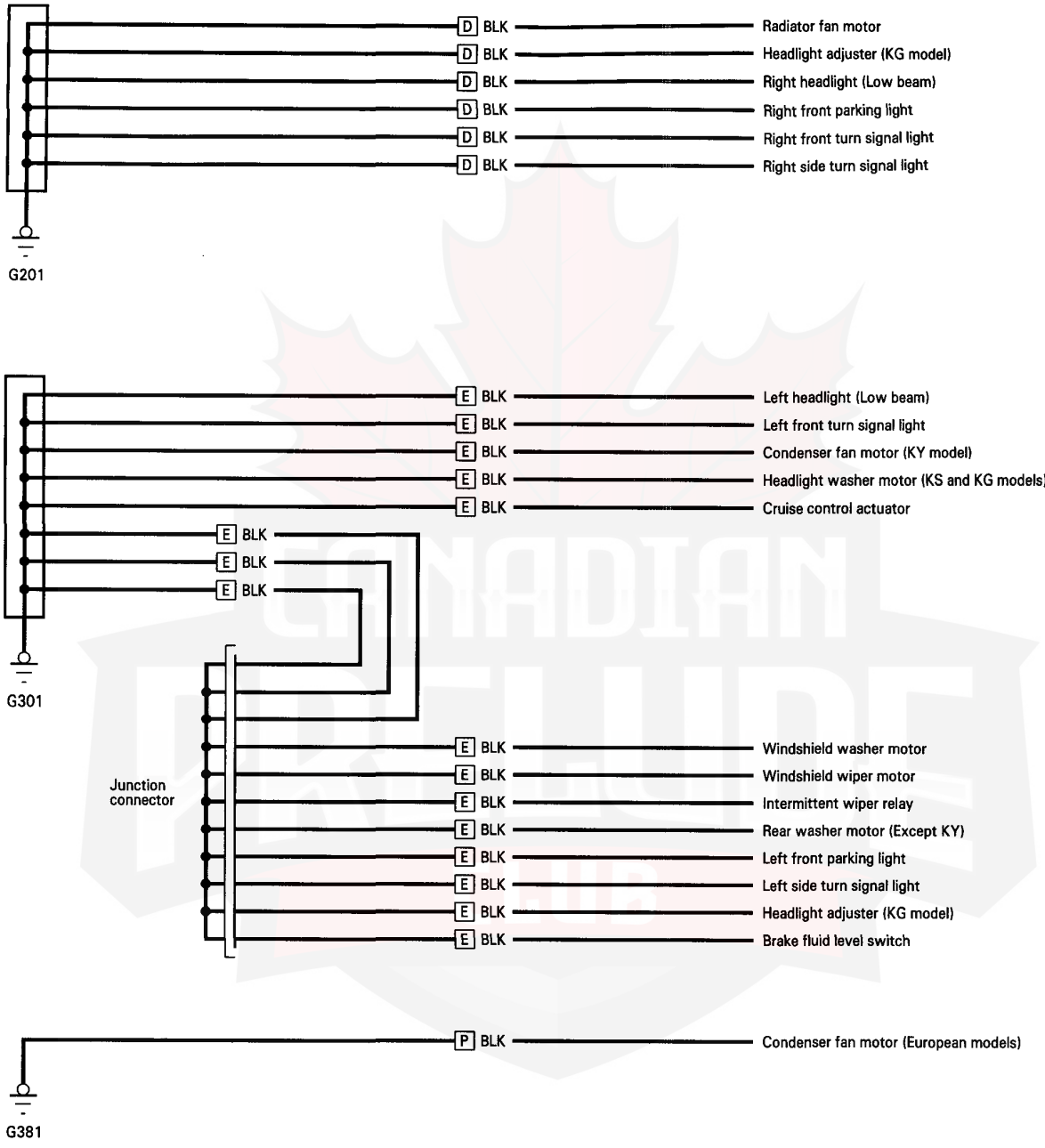


A : Battery ground cables
B : Engine ground cables
C : Engine wire harness
F : Main wire harness
Shield wire

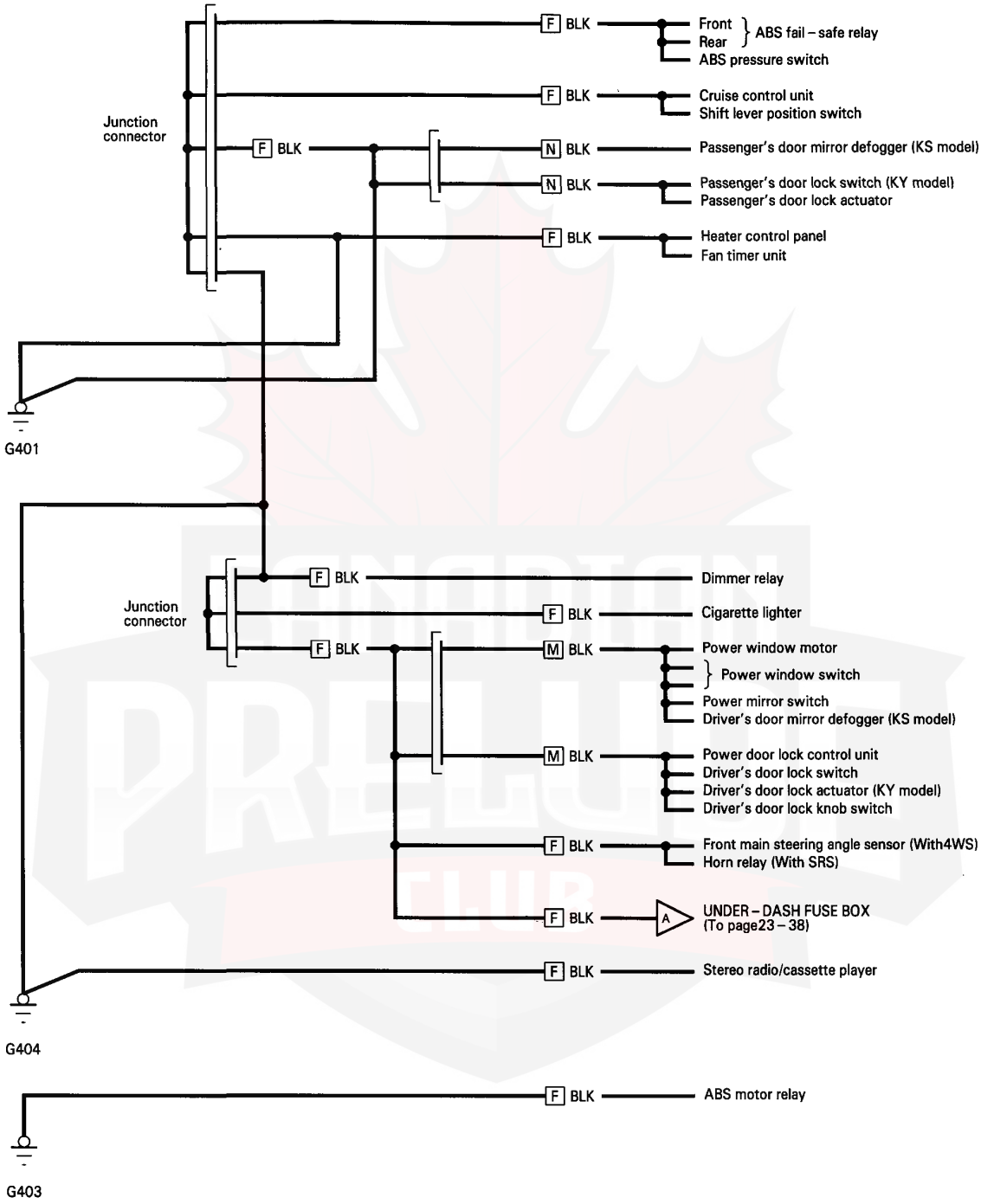
(cont'd)

Ground Distribution

Circuit Identification (LHD cont'd)



D : Right engine compartment wire harness
E : Left engine compartment wire harness
F : Main wire harness
P : A/C wire harness

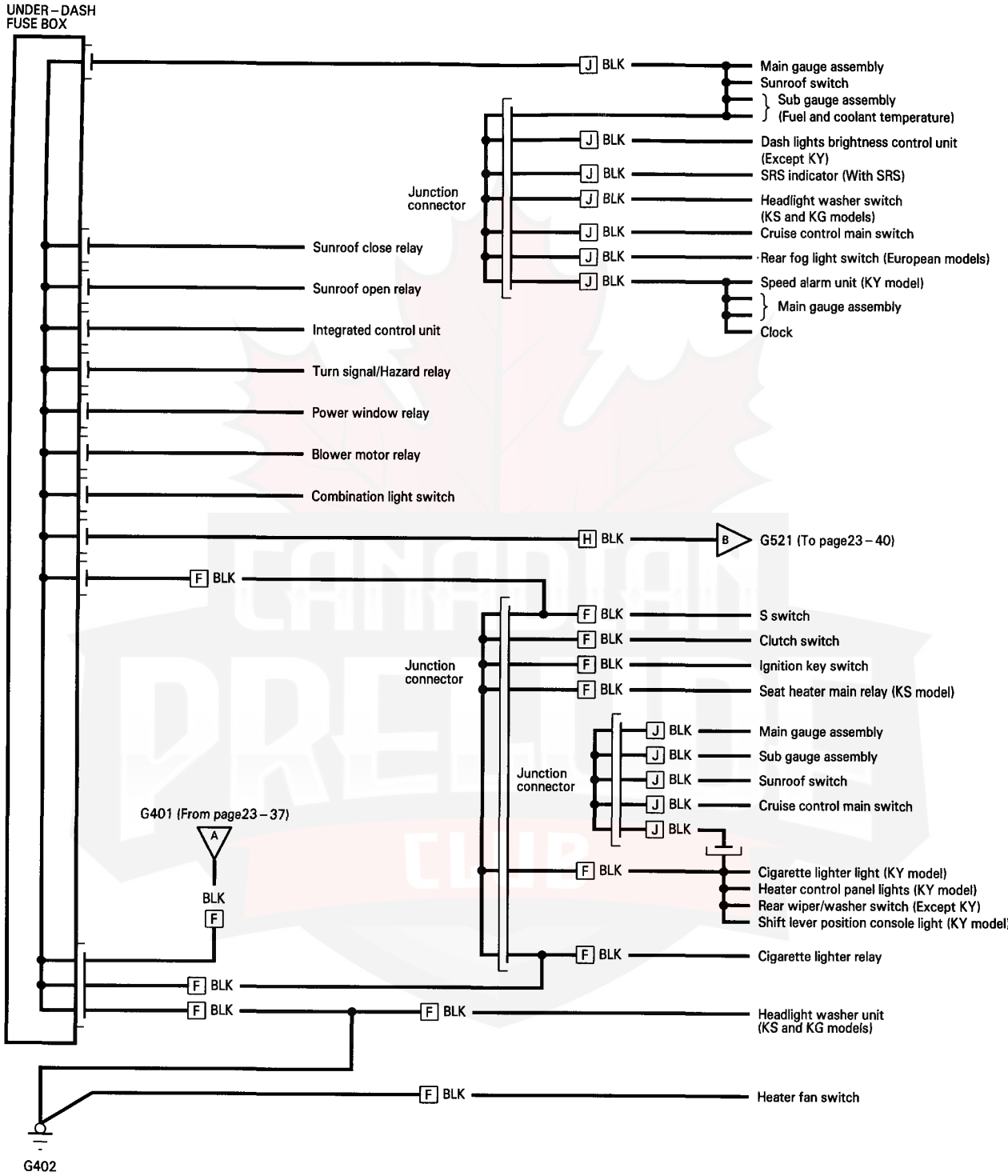


F : Main wire harness
M : Driver's door wire harness
N : Passenger's door wire harness

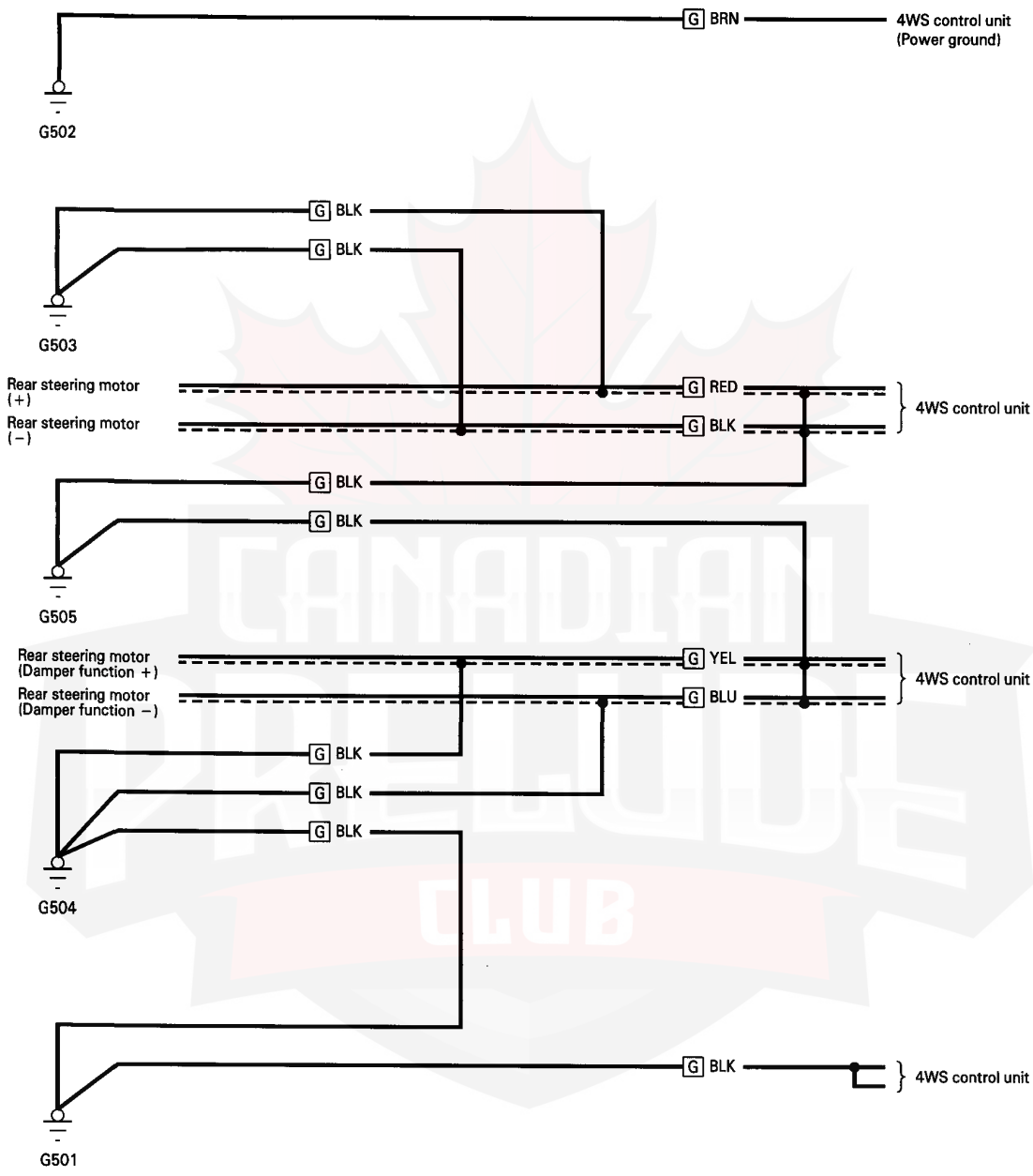
(cont'd)

Ground Distribution

Circuit Identification (LHD cont'd)



F : Main wire harness
H : Left side wire harness
J : Dashboard wire harness

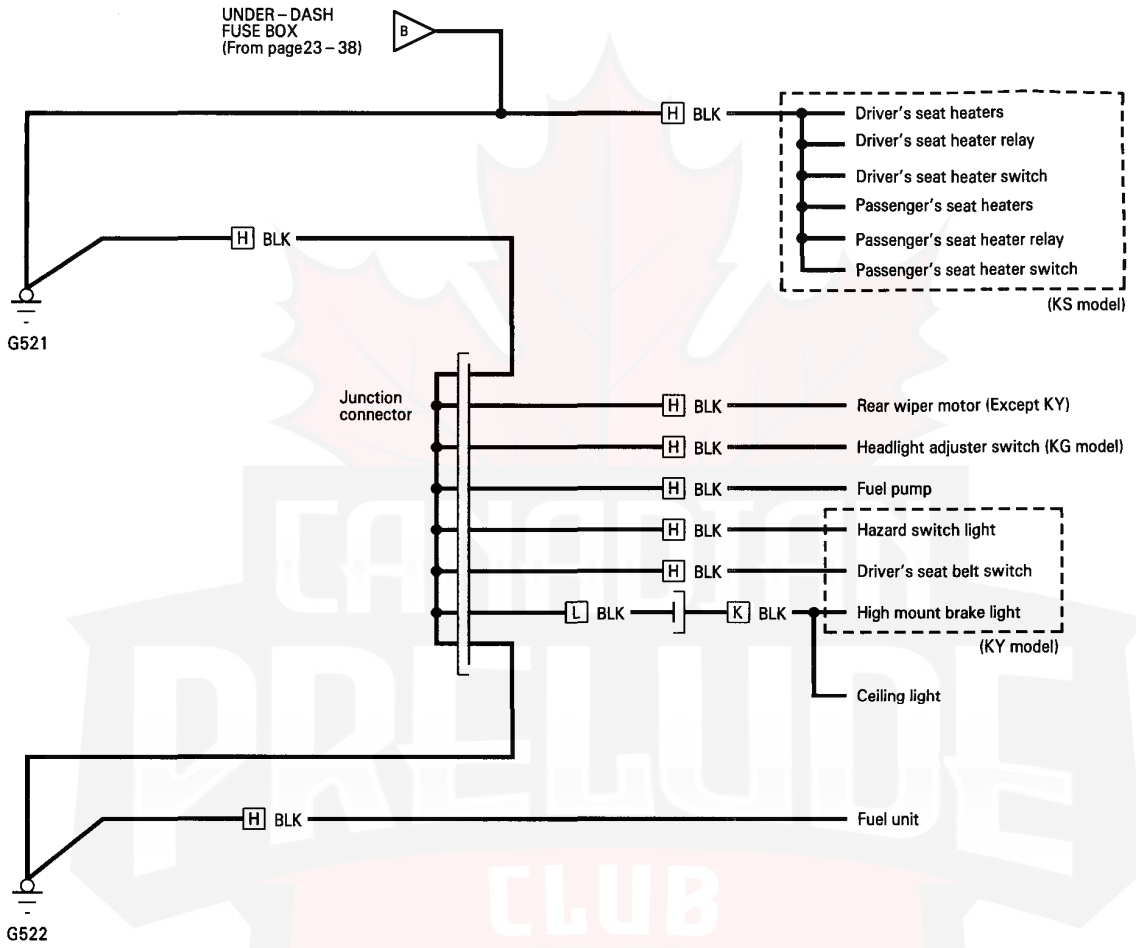


G : Right side wire harness

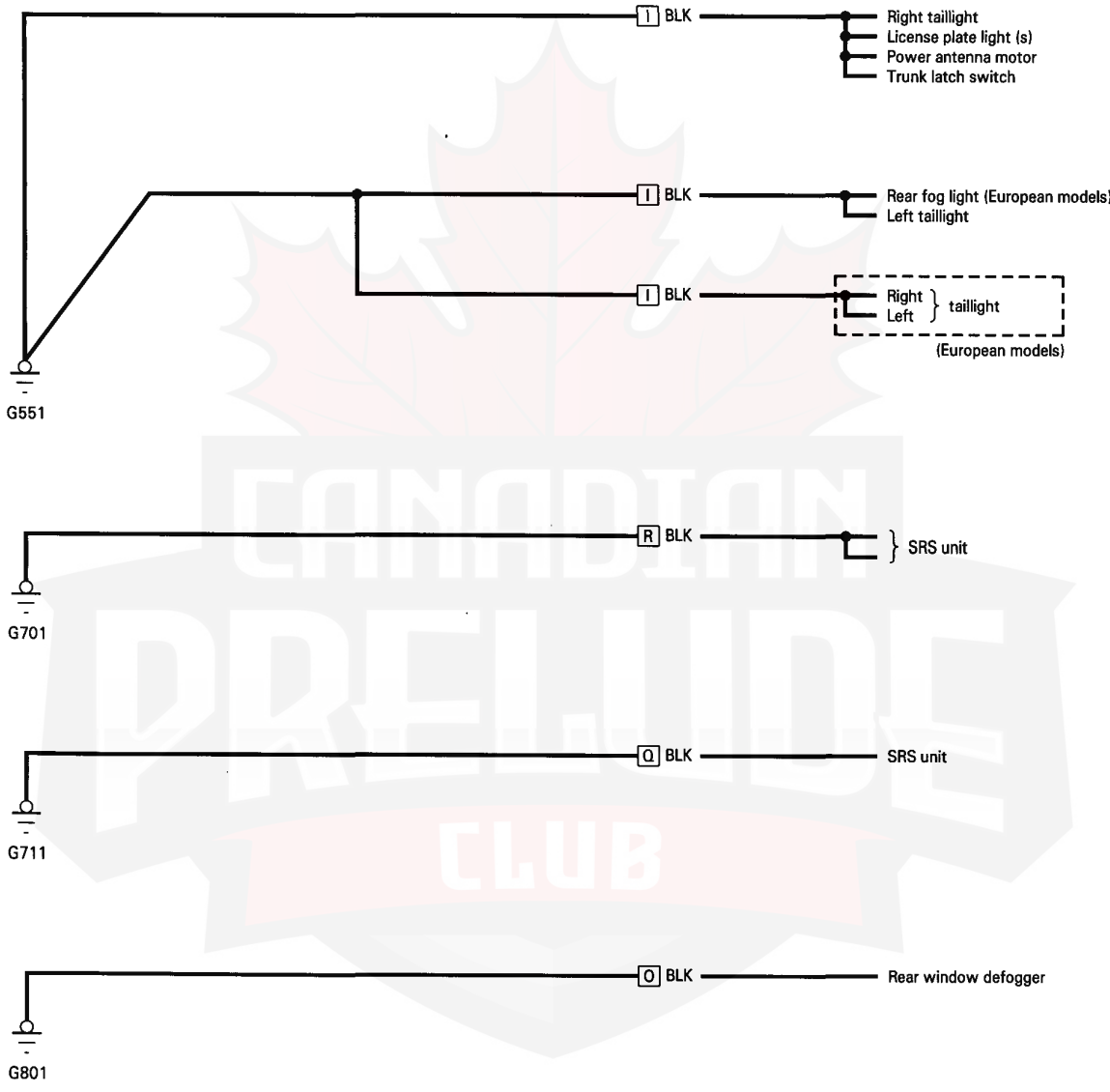
(cont'd)

Ground Distribution

Circuit Identification (LHD cont'd)



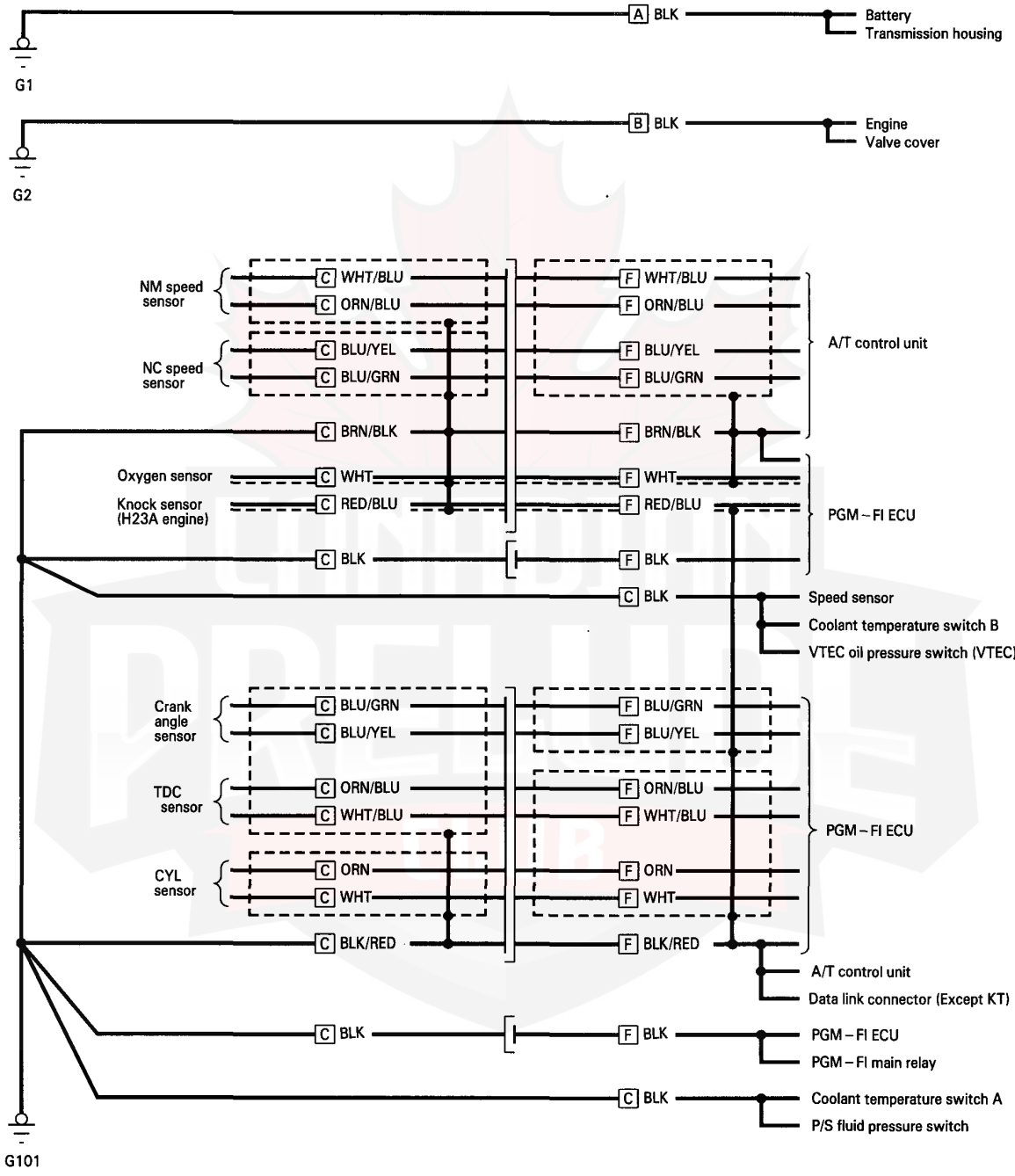
H : Left side wire harness
K : Roof wires



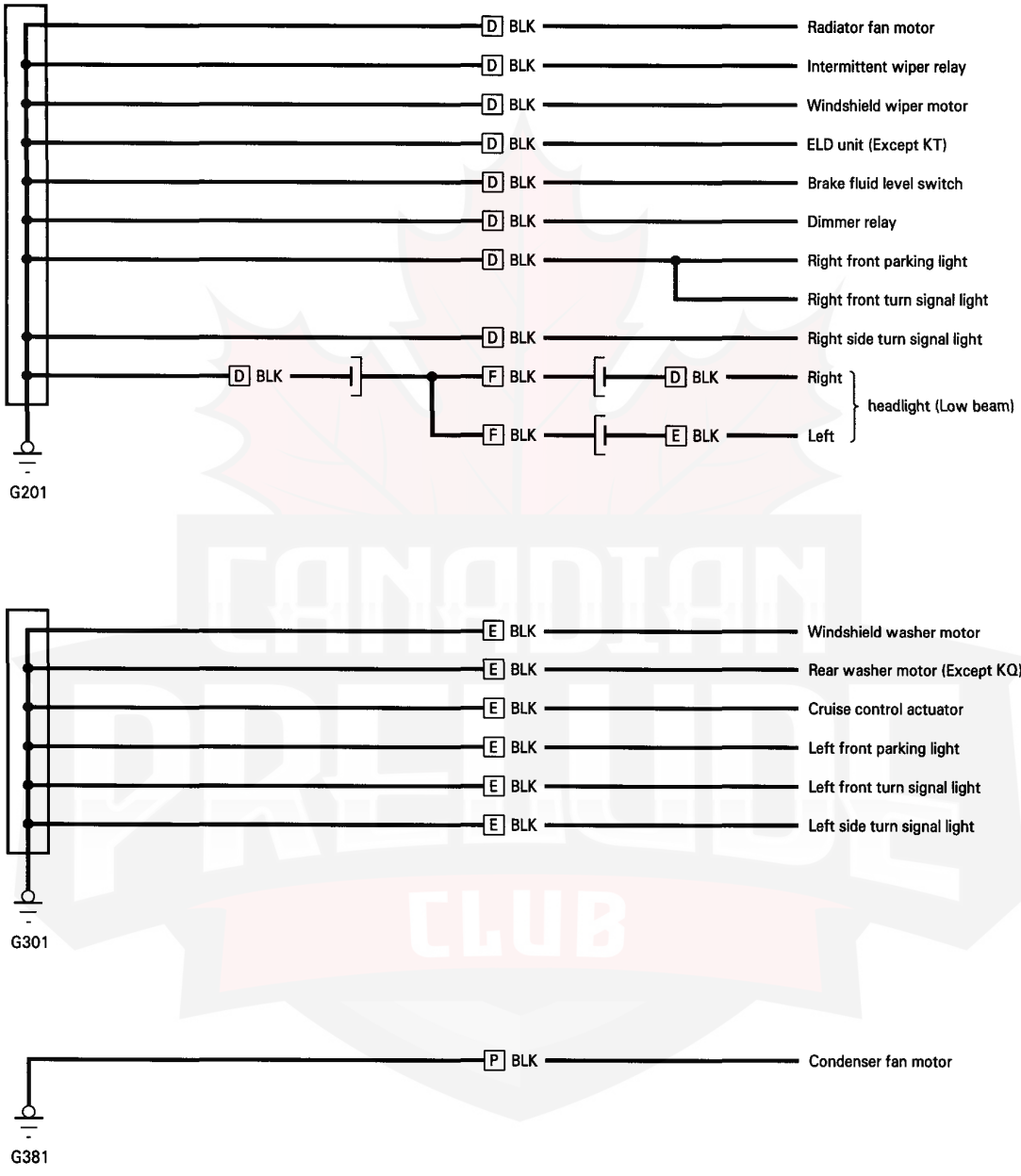
I : Rear wire harness
Q : SRS sub harness
O : Rear window defogger ground wire
R : SRS main harness

Ground Distribution

Circuit Identification (RHD)



A : Battery ground cables
B : Engine ground cables
C : Engine wire harness
F : Main wire harness
Shield wire

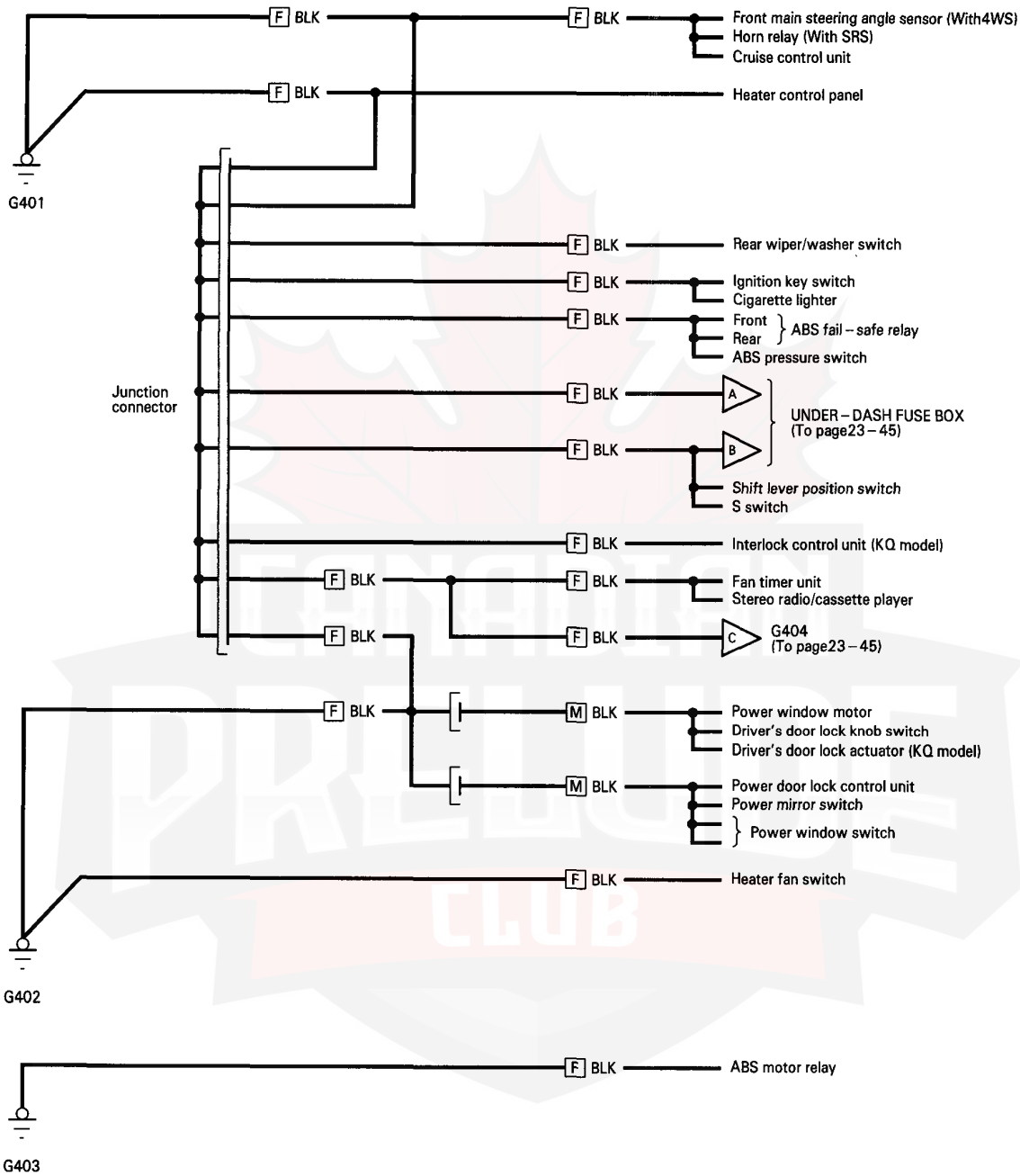


D : Right engine compartment wire harness
E : Left engine compartment wire harness
F : Main wire harness
P : A/C wire harness

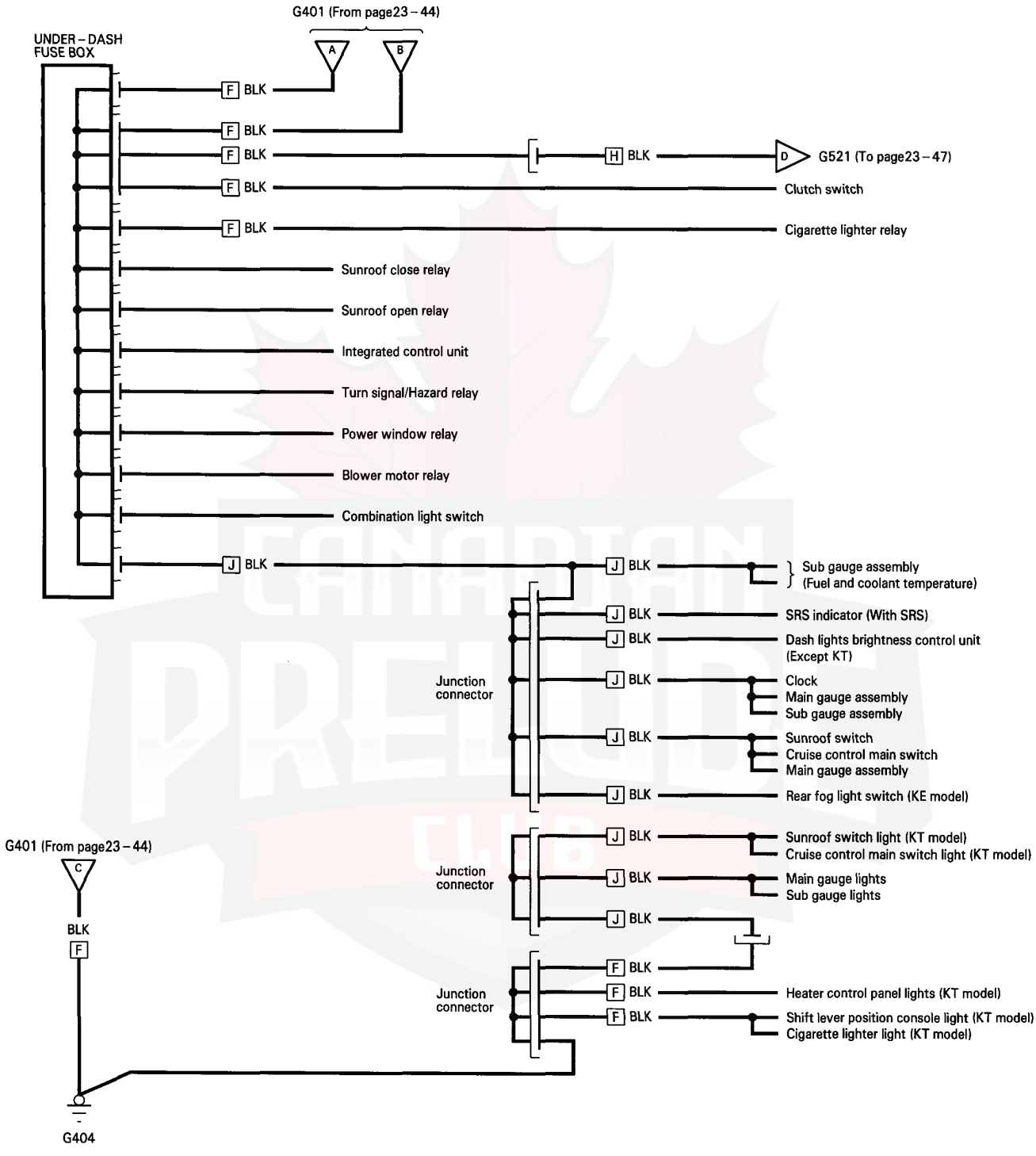
(cont'd)

Ground Distribution

Circuit Identification (RHD cont'd)



F : Main wire harness
M : Driver's door wire harness

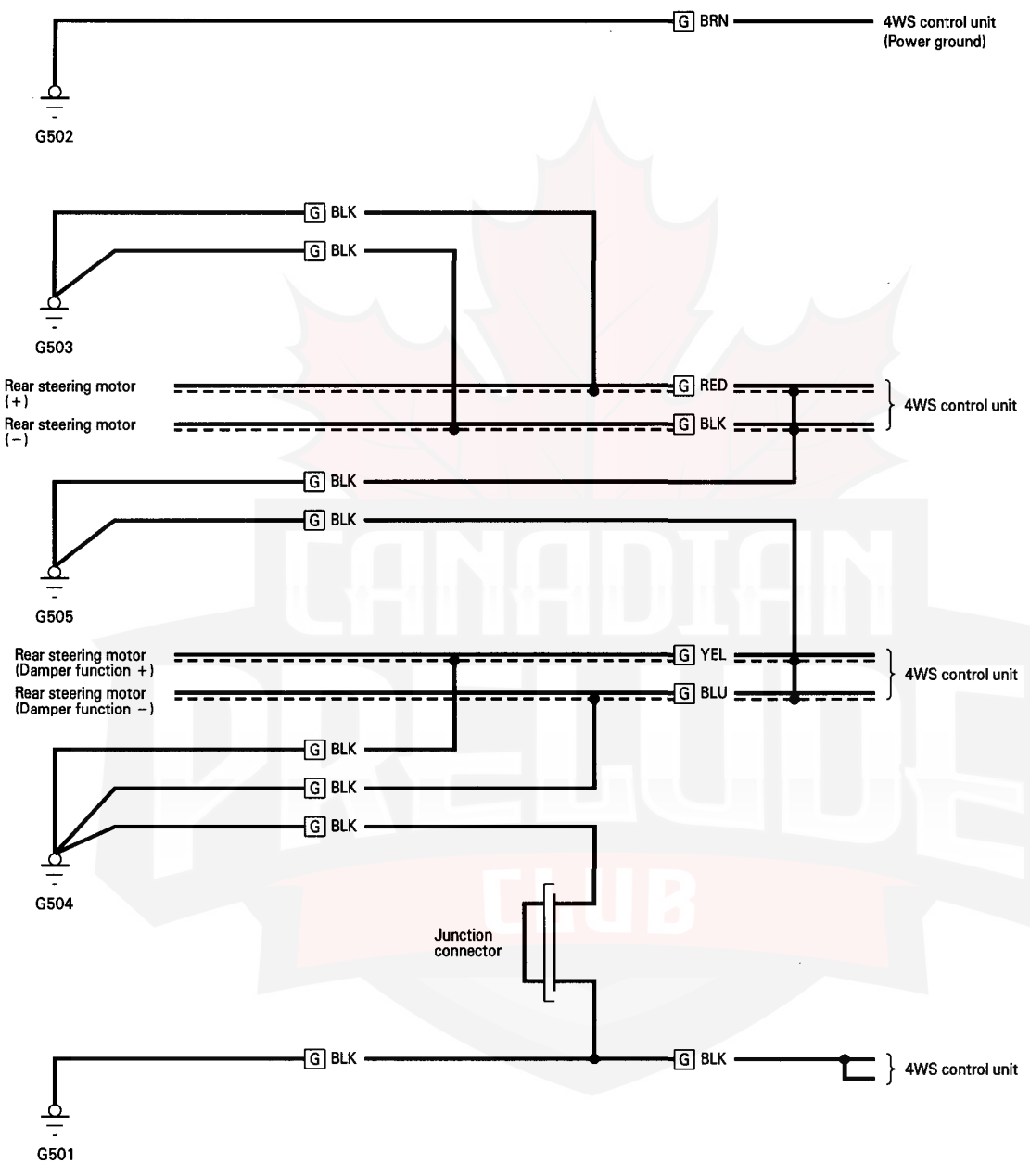


F : Main wire harness
H : Left side wire harness
J : Dashboard wire harness

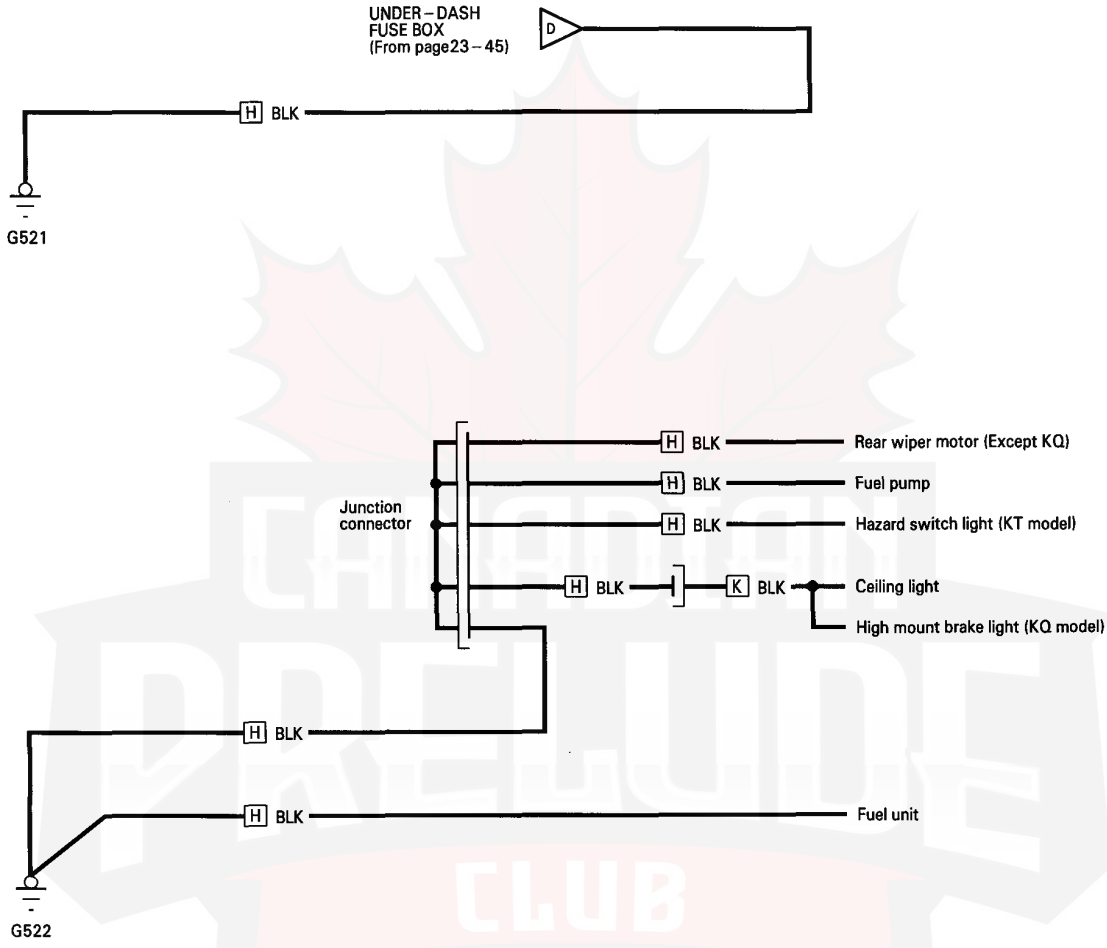
(cont'd)

Ground Distribution

Circuit Identification (RHD cont'd)



G : Right side wire harness

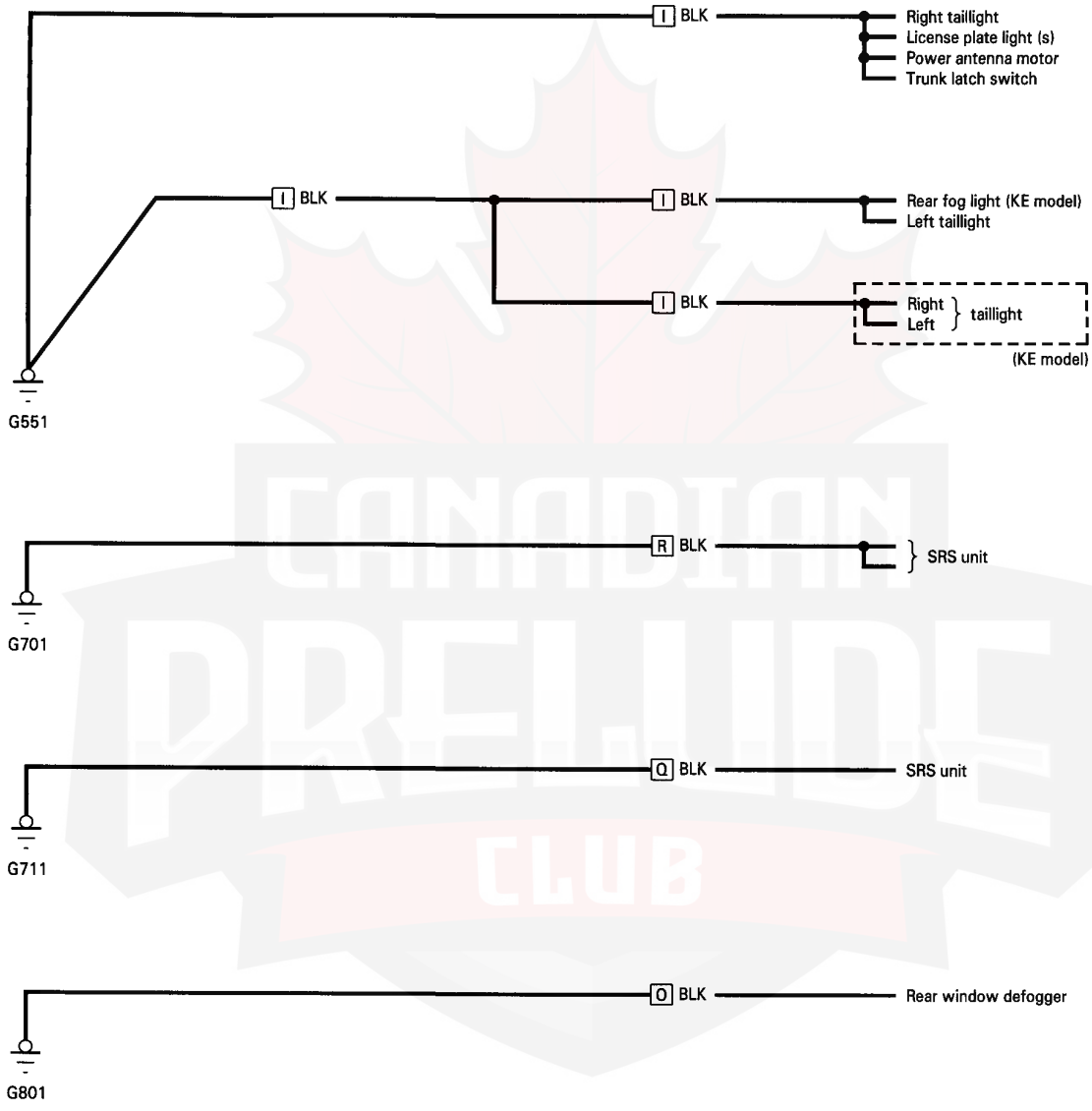


H : Left side wire harness
K : Roof wires

(cont'd)

Ground Distribution

Circuit Identification (RHD cont'd)



I : Rear wire harness
Q : SRS sub harness
O : Rear window defogger ground wire
R : SRS main harness

Starting System

Description

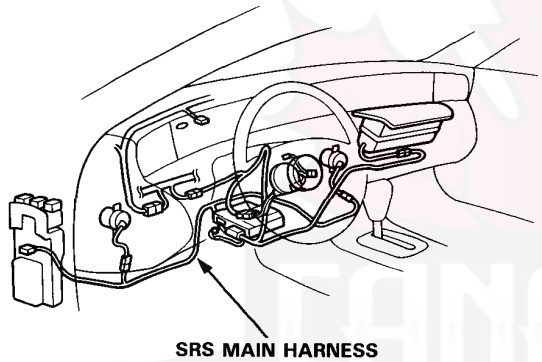
Together with the H22A2 engine, a new starter has been added to the 93 model.
For starter service information, please refer to shop manual ''PRELUDE 92'' (62SS000).
The starter/engine combinations are shown in the table below.

MITSUBA 1.4 KW	F20A4 engine (M/T) F22A1 engine (M/T) F22A2 engine (M/T) F22A2 engine (A/T)
MITSUBA 1.6 KW	F20A4 engine (A/T) F22A1 engine (A/T) H22A2 engine (M/T) H23A1 engine (M/T) H23A1 engine (A/T) H23A2 engine (M/T) H23A2 engine (A/T)

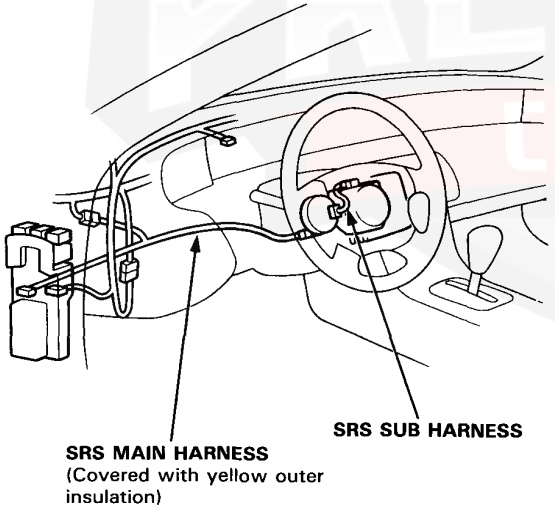
Ignition Timing Inspection and Setting

CAUTION:
- **All SRS electrical wiring harness are covered with yellow outer insulation.**
- **Replace the entire affected SRS harness assembly if it has an open circuit or dammaged wiring.**
- **SRS Type I only: Before disconnecting the SRS wire harness, install the short connectors on the airbags.**
- **SRS Type II only: Before disconnecting the SRS wire harness, turn the ignition switch off, disconnect the negative and positive battery cables, and wait at least three minutes.**

SRS Type I:

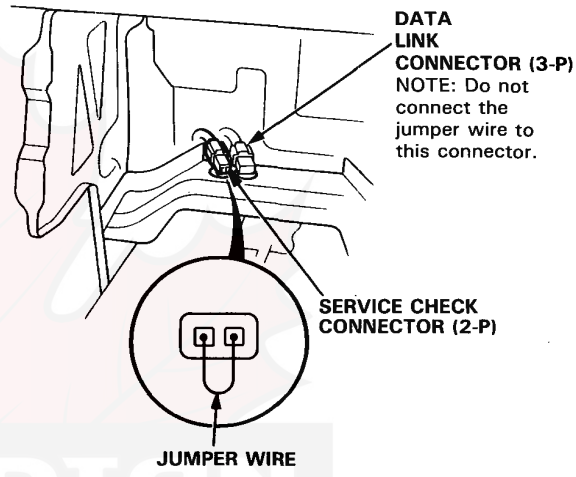


SRS Type II:



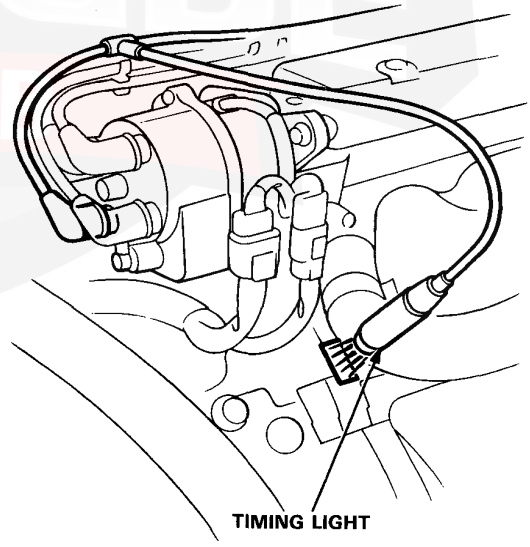
1. Start the engine and allow it to warm up (radiator fan comes on).

2. Pull out the service check connector located under the middle of the dash. Connect the BLU/WHT and BRN/WHT terminals with a jumper wire.



3. Check the idle speed (see page 23-51).

4. Connect a timing light to the No. 1 ignition wire. Remove the rubber plug from the "window" in the flywheel/drive plate housing.
While the engine idles, point the light toward the pointer on the flywheel (for M/T) or on the drive plate (for A/T).

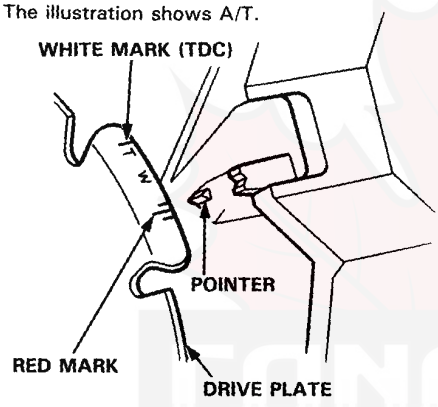


5. Adjust ignition timing, if necessary, to the following specifications:

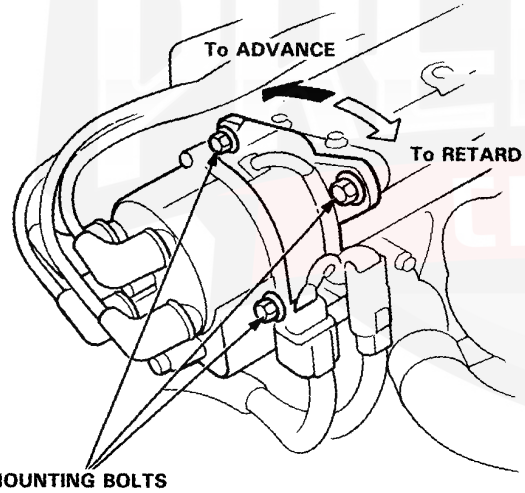
Ignition Timing: 15 ± 2° BTDC (RED) at * ± 50 min⁻¹(rpm) with shift lever in neutral position and electrical systems turned off.

*: 700 (F22A1, H23A1 engine)
770 (F20A4, F22A2 engine)
780 (H23A2 engine)
790 (H22A2 engine)

NOTE: The illustration shows A/T.



6. If it is necessary to adjust the ignition timing, loosen the distrbutor mounting bolts, and turn the distributor housing counterclockwise to advance the timing, or clockwise to retard the timing.



MOUNTING BOLTS
18 N·m (1.8 kg-m,13 lb-ft)

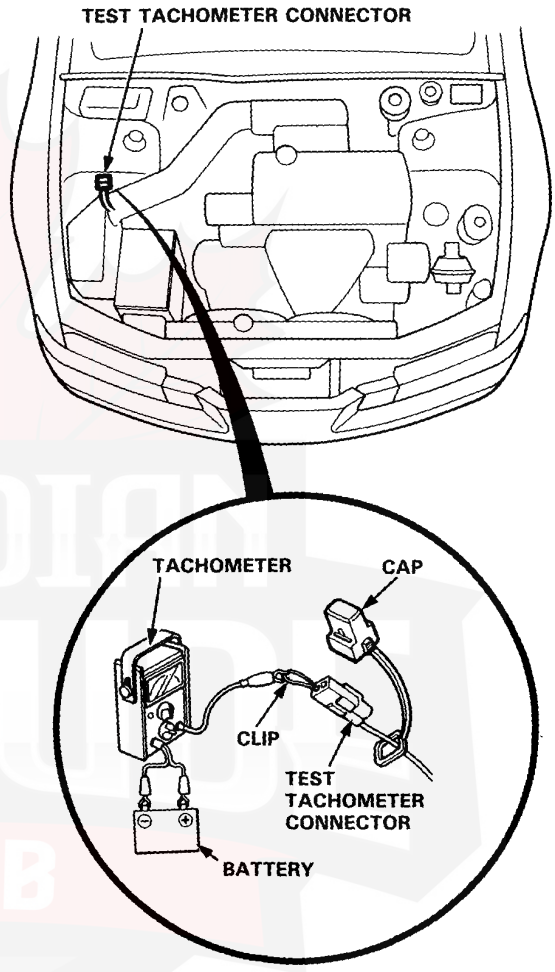
7. Tighten the mounting bolts and recheck timing.

8. Remove the jumper wire from the service check connector (2-P) and reinstall the rubber plug in the inspection window.

Idle Speed Inspection

1. Start the engine and allow it to warm up (radiator fan comes on).

2. Connect a tachometer to the test tachometer connector.



Idle speed: * ± 50 min⁻¹(rpm) with shift lever in neutral position and electrical systems turned off.

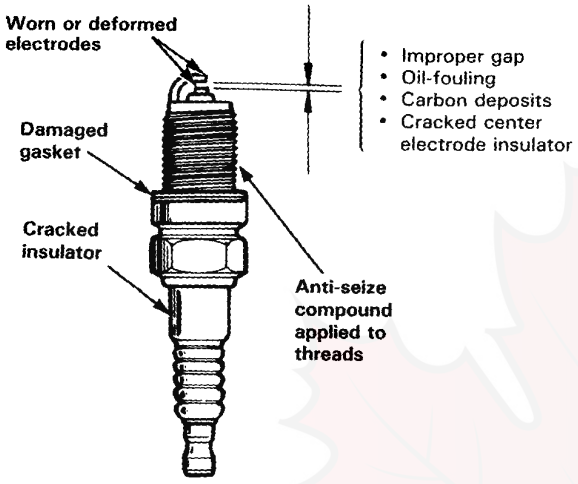
*: 700 (F22A1, H23A1 engine)
770 (F20A4, F22A2 engine)
780 (H23A2 engine)
790 (H22A2 engine)

3. Adjust the idle speed if necessary (see section 11).

Ignition System

Spark Plug Inspection

1. Inspect the electrodes and ceramic insulator for:

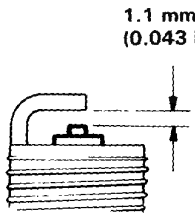


Burned or worn electrodes may be caused by:
- Advanced ignition timing
- Loose spark plug
- Plug heat range too low
- Insufficient cooling

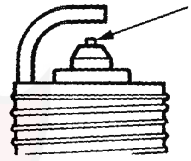
Fouled plug may be caused by:
- Retarded ignition timing
- Oil in combustion chamber
- Incorrect spark plug gap
- Plug heat range too high
- Excessive idling low speed running
- Clogged air cleaner element
- Deteriorated ignition coil or ignition wires

2. Adjust the gap with a suitable gapping tool.

Electrode Gap: 1.0 —1.1 mm (0.039—0.043 in)



H22A2 engine: Make sure that the 1.3 mm (0.051 in) plug gauge does not go into the gap for the platinum tip plug. If the gauge goes into the gap, do not attempt to adjust the side electrode; replace the plug with a new one.



Platinum tip plug:
Check and confirm that the 1.3 mm (0.051 in) plug gauge does not go into the gap.

3. Replace the plug if it is fouled or worn.

NOTE: Use only the spark plugs listed below.

F20A4/F22A1/F22A2 Engine:

ZFR5F-11 (NGK) KJ16CR-L11 *(ND)	For cold climates
ZFR6F-11 (NGK) KJ20CR-L11 *(ND)	For all normal driving.
ZFR7F-11 (NGK) KJ22CR-L11 *(ND)	For hot climates or continuous high speed driving.

H23A1/H23A2 Engine:

ZFR6F-11 (NGK) KJ20CR-L11 *(ND)	For all normal driving.
ZFR7G-11 (NGK) KJ22CR-L11 *(ND)	For hot climates or continuous high speed driving.

H22A2 Engine:

PZFR6F-11 (NGK) PKJ20CR-L11 *(ND)	For all normal driving.
PFR7G-11 (NGK) PKJ22PR-L11 *(ND)	For hot climates or continuous high speed driving.

*(ND): NIPPONDENSO

4. Apply a small quantity of anti-seize compound to the plug threads.

5. Screw the plugs into the cylinder head finger-tight, then torque them to 18 N·m (1.8 kg-m, 13 lb-ft).

Charging System

Description

Together with the H22A2 engine, a new alternator has been added to the 93 model.
For alternator service information, please refer to shop manual ''PRELUDE 92'' (62SS000).
The alternator/engine combinations are shown in the table below.

NIPPONDENSO 80A	F20A4 engine F22A1 engine F22A2 engine
NIPPONDENSO 90A	H23A1 engine H23A2 engine
NIPPONDENSO 95A	H22A2 engine

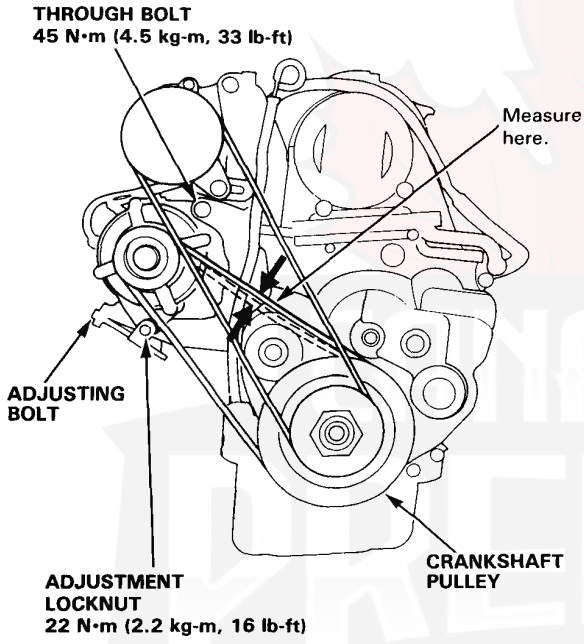
Alternator Belt Adjustment (Without A/C)

Deflection Method:

1. Apply a force of 100 N (10 kg, 22 lbs) and measure the deflection between the alternator and the crankshaft pulley.

   Deflection: 10.5—12.5 mm (0.42—0.51 in)

   NOTE: On a brand-new belt (one that has been run for less than five minutes), the deflection should be 8—10 mm 0.32—0.40 in) when first measured. If the belt is worn or damaged, replace it.



2. Loosen the through bolt and adjustment locknut.
3. Turn the adjusting bolt to obtain the proper belt tension, then retighten the nut and through bolt.
4. Recheck the belt deflection.

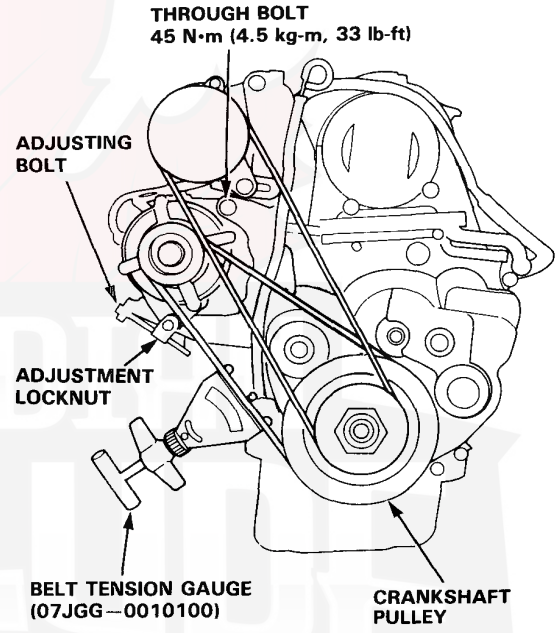
   NOTE: Install and adjust the power steering pump belt.

Belt Tension Gauge Method:

1. Following the gauge manufacturer's instructions, attach the belt tension gauge to the belt and measure the tension.

   Tension: 300—450 N (30—45 kg, 66—99 lbs)

   NOTE: On a brand-new belt (one that has been run for less than five minutes), the tension should be 450—650 N (45—65 kg, 99—143 lbs) when first measured. If the belt is worn or damaged, replace it.



2. Loosen the through bolt and adjustment locknut.
3. Turn the adjusting bolt to obtain the proper belt tension, then retighten the nut and through bolt.
4. Recheck the tension of the belt.

   NOTE: Install and adjust the power steering pump belt.

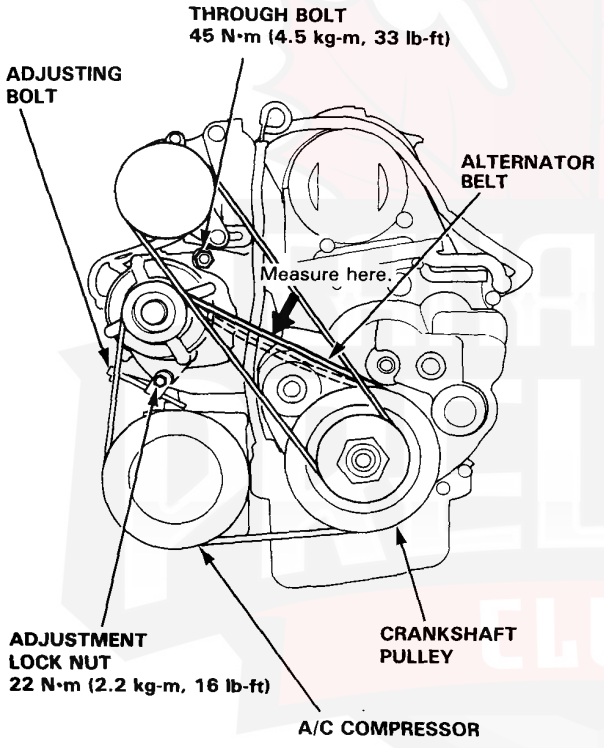
Alternator Belt Adjustment (With A/C)

Deflection Method:

1 Apply a force of 100 N (10 kg, 22 lbs) and measure the deflection between the alternator and the crankshaft pulley.

Deflection: 10—12 mm (0.39—0.47 in)

NOTE:
- On a brand-new belt (one that has been run for less than five minutes), the deflection should be 5.5—7.5 mm (0.22—0.30 in) when first measured.
- If there are cracks or any damage evident on the belt, replace it with a new one.



2. Loosen the through bolt and adjustment locknut.
3. Turn the adjusting bolt to obtain the proper belt tension, then retighten the nut and through bolt.
4. Recheck the belt deflection.

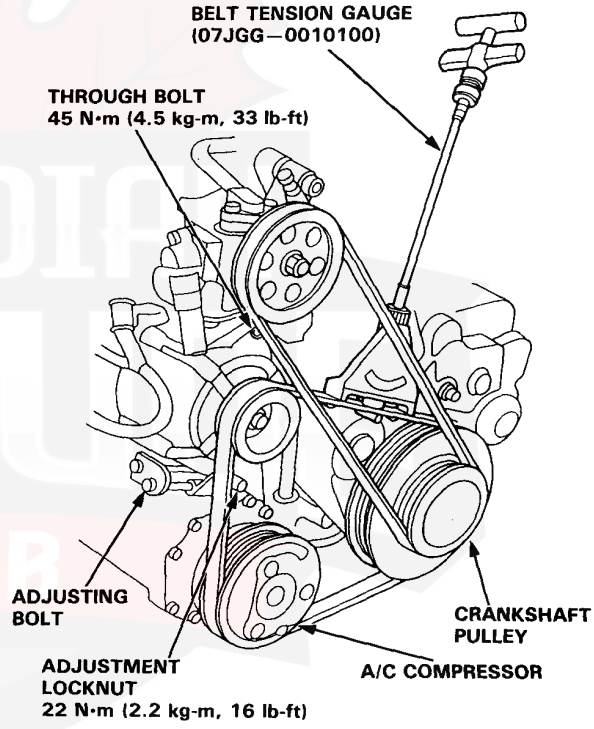
NOTE: Install and adjust the power steering pump belt.

Belt Tension Gauge Method:

1. Attach the belt tension gauge to the belt and measure the tension of the belt.

Tension: 450—600 N (45—60 kg, 99—132 lbs)

NOTE:
- On a brand-new belt (one that has been run for less than five minutes), the tension should be 950—1050 N (95—105 kg, 209—231 lbs) when first measured.
- Follow the manufacturer's instructions for the belt tension gauge.
- If there are cracks or any damage evident on the belt, replace it with a new one.



2. Loosen the through bolt and adjustment locknut.
3. Turn the adjusting bolt to obtain the proper belt tension, then retighten the nut and through bolt.
4. Recheck the tension of the belt.

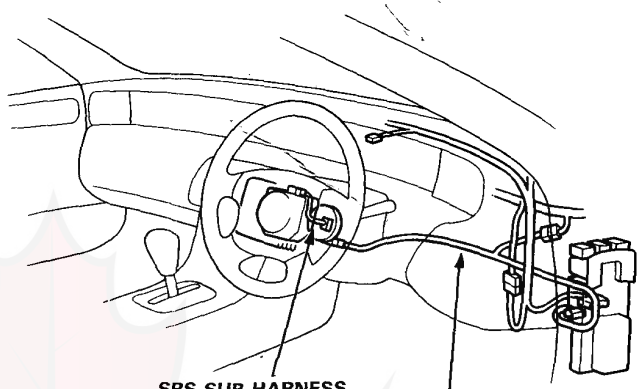
NOTE: Install and adjust the power steering pump belt.

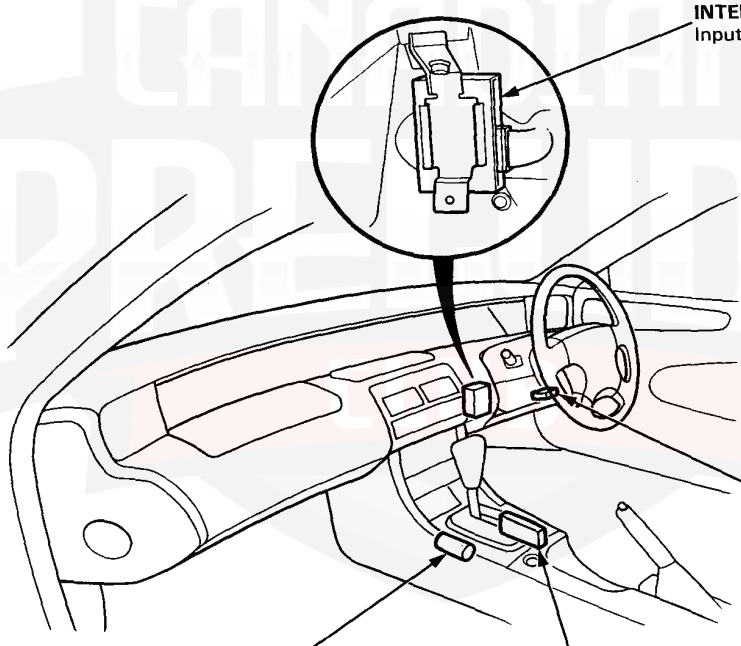
Interlock System (KQ model)

Component Location Index

CAUTION:

- **All SRS electrical wiring harnesses are covered with yellow outer insulation.**
- **Replace the entire affected SRS harness assembly if it has an open circuit or damaged wiring.**
- **Before disconnecting the SRS wiring harness, turn the ignition switch off, disconnect the negative and positive battery cables, and wait, at least three minutes.**





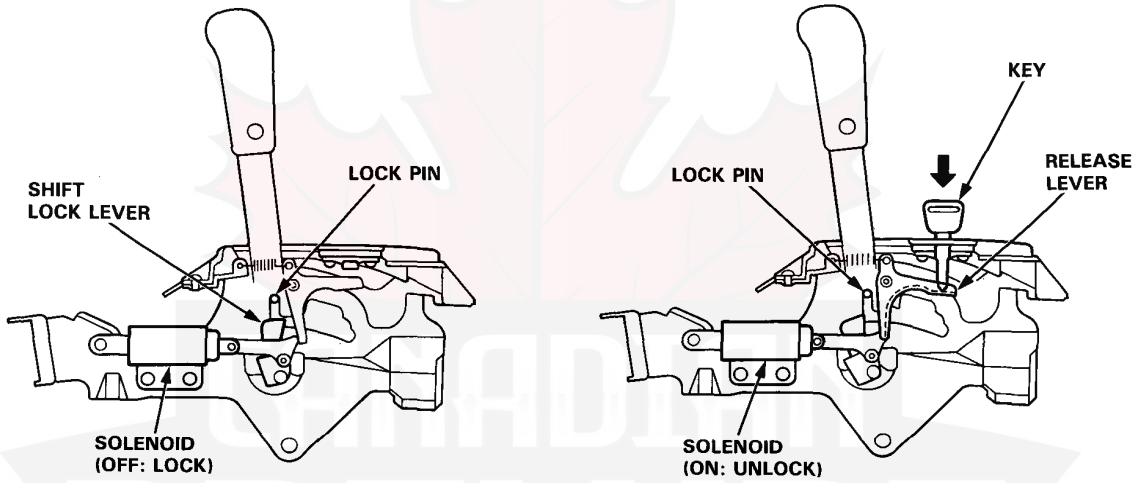
Description

The car is equipped with the following devices to prevent inadvertent shifting:

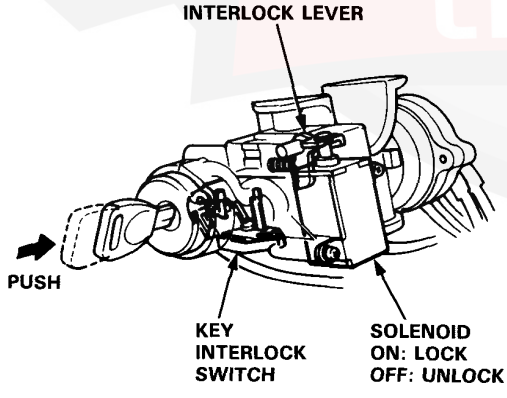
- A/T selector with shift lock
- Key cylinder with interlocked ignition key

Shift Lock System:
The shift lock system prevents the shift lever from moving to [R] or [D] from the [P] position unless you step on the brake pedal.

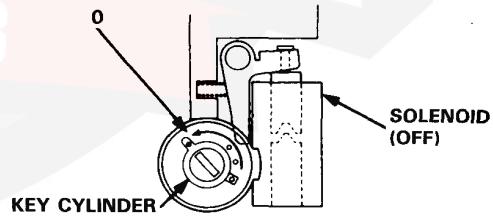
NOTE: In case of system malfunction, the shift lever can be released by pushing a key into the release slot near the shift lever.



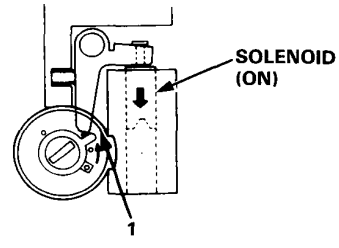
Key Interlock System:
the ignition key connot be removed from the ignition switch unless the shift lever is in the [P] position. If the key is inserted when the shift lever is in any position other than [P], a solenoid is activated, making it impossible for the key to be removed until the shift lever is moved to the [P] position.



The shift lever is in the [P] position:



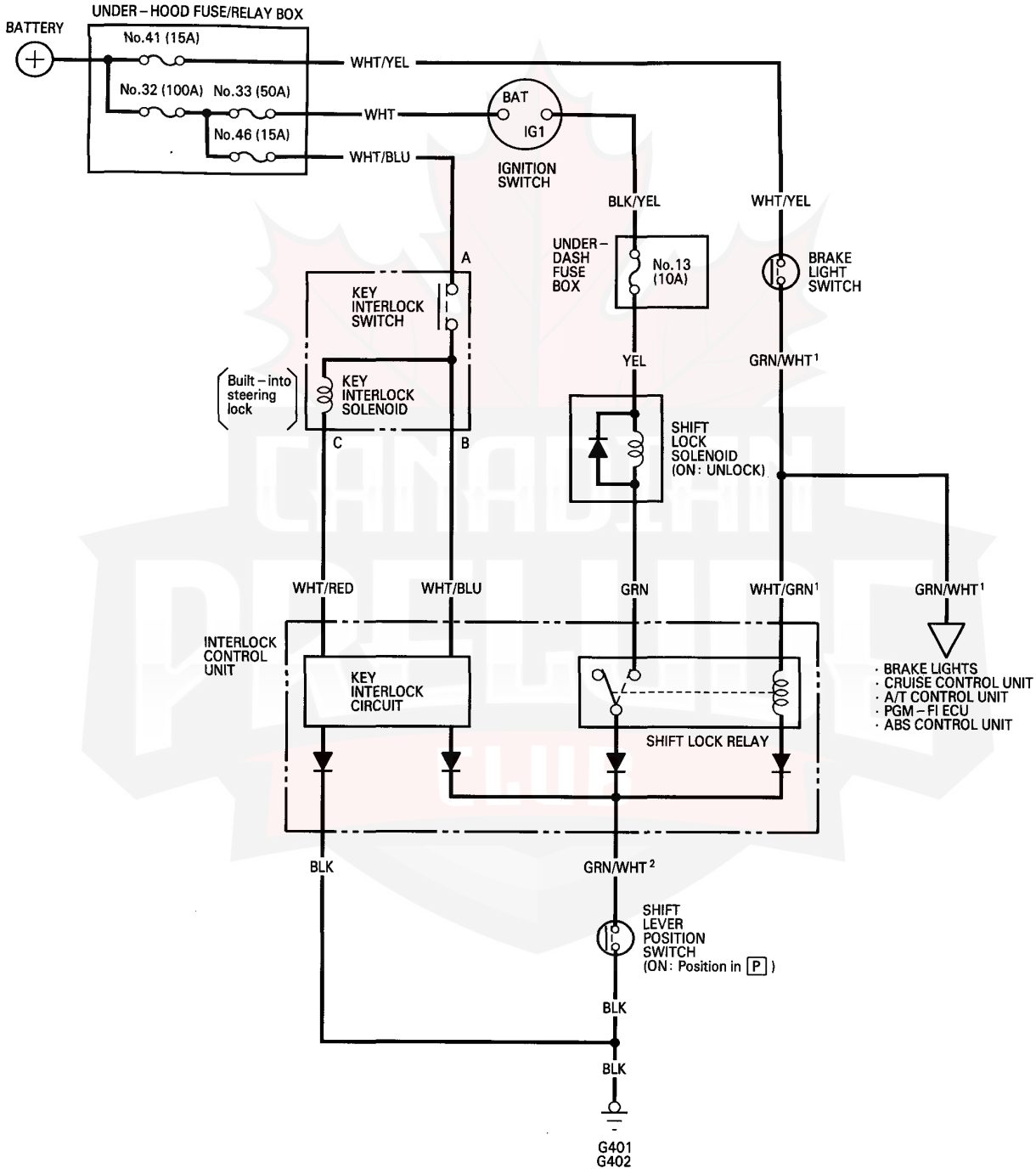
The shift lever is in any position except [P]:



Interlock System (KQ model)

Circuit Diagram

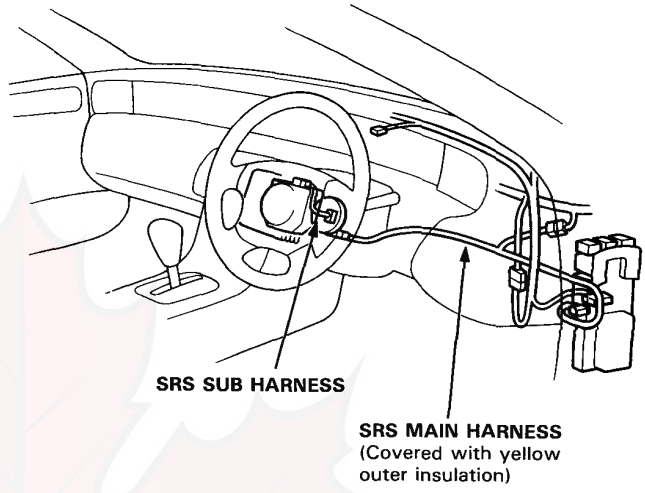
NOTE: Different wires with the same color have been given a number suffix to distinguish them (for example, GRN/WHT [1] and GRN/WHT [2] are not the same).



Control Unit Input Test

CAUTION:

- **All SRS electrical wiring harnesses are covered with yellow outer insulation.**
- **Replace the entire affected SRS harness assembly if it has an open circuit or damaged wiring.**
- **Before disconnecting the SRS wiring harnesses, turn the ignition switch off, disconnect the negative and positive battery cables, and wait at least three minutes.**



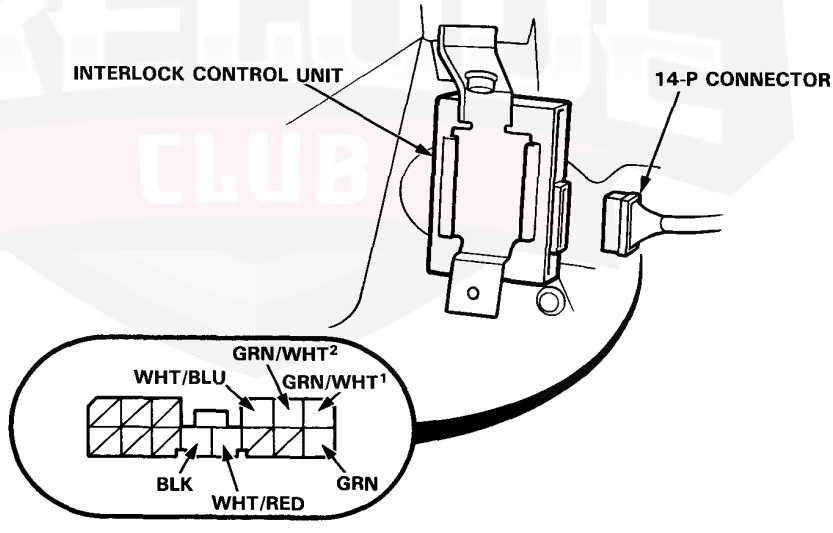
Disconnect the 14-P connector from the control unit. Inspect the connector terminals to be sure they are all making good contact.

- If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
- If the terminals look OK, make the following input tests at the connector.

— If a test indicates a problem, find and correct the cause, then recheck the system.

— If all the input tests prove OK, substitute a known-good control unit and recheck the system. If the checks OK, the control unit must be faulty; replace it.

NOTE: If the shift lock solenoid clicks when the ignition switch is ON and you step on the brake pedal (the shift lever is in the [P] position), the shift lock system is electronically normal. If the shift lever cannot be shifted from [P] position, see A/T system.



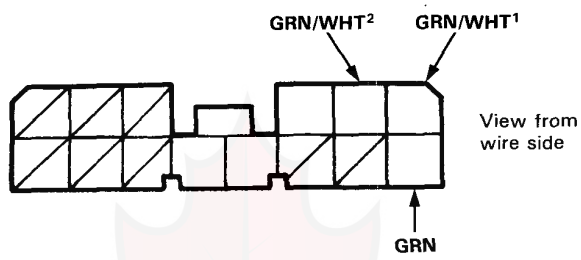
View from wire side

(cont'd)

Interlock System (KQ model)

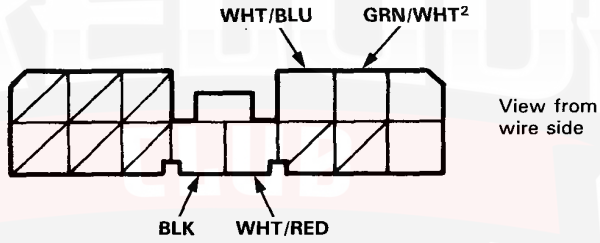
Control Unit Input Test (cont'd)

Shift Lock System:



No.	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	GRN/WHT1	Ignition switch ON. Brake pedal pushed.	Check for voltage to ground: There should be battery voltage.	• Blown No. 41 (15 A) fuse. • Faulty brake light switch. • Faulty PGM-FI ECU. • An open in the wire.
2	GRN/WHT2	Shift lever in position [P].	Check for continuity to ground: There should be continuity.	• Faulty shift lever position switch. • Poor ground (G401, G402). • An open in the wire.
3	GRN	Ignition switch ON.	Check for voltage to ground: There should be battery voltage.	• Blown No. 13 (10 A) fuse. • Faulty shift lock solenoid. • An open in the wire.

Key Interlock System:



No.	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	BLK	Under all conditions.	Check for voltage to ground: There should be continuity	• Poor ground (G401, G402) • An open in the wire.
2	GRN/WHT2	Shift lever in position [P].	Check for continuity to ground: There should be continuity.	• Faulty shift lever position switch. • Poor ground (G401, G402). • An open in the wire.
3	WHT/RED WHT/BLU	Ignition switch turned to ACC (I) and the key pushed all the way in.	Check for voltage to ground: There should be battery voltage.	• Blown No. 46 (15 A) fuse. • Faulty steering lock assembly (key interlock solenoid). • An open in the wire.

Shift Lock Solenoid Test/Replacement

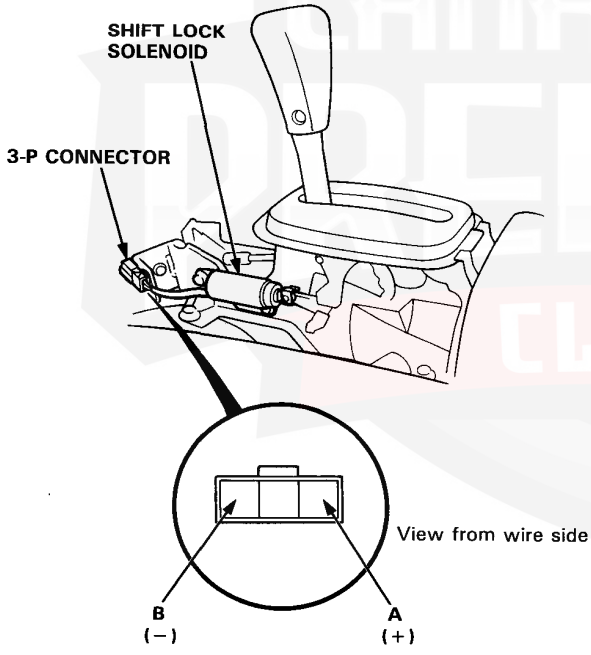
Test:

1. Remove the console, then disconnect the 3-P connector of the shift lock solenoid from the main wire harness.

   NOTE: This solenoid has a diode in it. To get an accurate reading, either test it with a volt-ohmmeter that compensates for diodes, or make sure you connect your test leads to match the polarity shown.

2. Connect battery power to the A terminal and ground to the B terminal momentarily. Check the solenoid operation.If it does not operate, replace it.

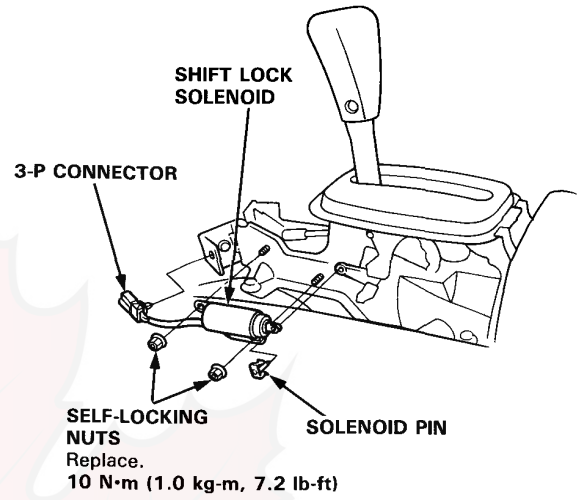
   NOTE:
   - When the shift lock solenoid is ON, check that there is a clearance of 2.5 ± 0.5 mm (0.098 ± 0.020 in) between the top of the shift lock lever and the lock pin groove (see clearance check on this page).
     When the shift lock solenoid is OFF, make sure that the lock pin is blocked by the shift lock lever.
   - If not, adjust the position of the shift lock solenoid.



Replacement:

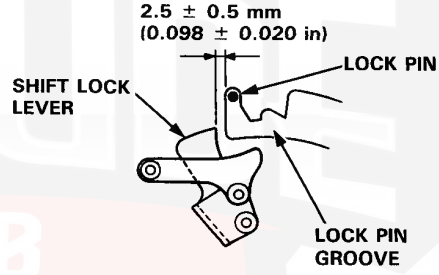
1. Remove the solenoid pin.

2. Remove the self-locking nuts and shift lock solenoid.



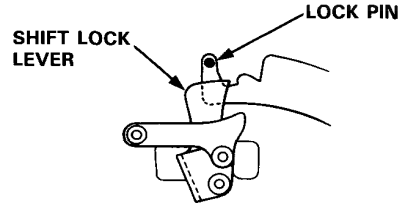
3. Install the shift lock solenoid in the reverse order of removal and adjust its position.
   - When the shift lock solenoid is OK, check that there is a clearance of 2.5 ± 0.5 mm (0.098 ± 0.020 in) between the top of the shift lock lever and the lock pin groove, and tighten the self-locking nuts.

   NOTE: Use brand-new self-locking nuts.



   - When the shift lock solenoid is OFF, make sure that the lock pin is blocked by the shift lock lever.

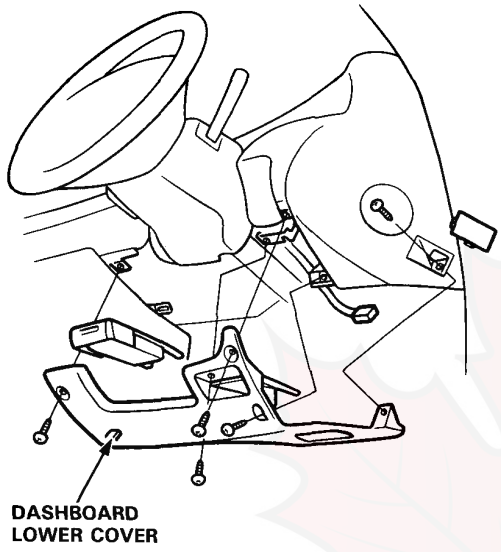
   NOTE: Test the solenoid after you assemble it.



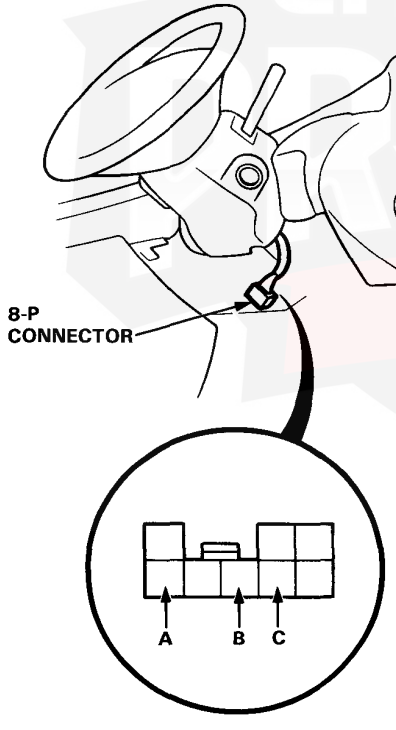
Interlock System (KQ model)

Key Interlock Solenoid Test

1. Remove the dashboard lower cover.



2. Disconnect the 8-P connector from the main wire harness.



View from wire side

3. Check for continuity between the terminals in each switch position according to the table.

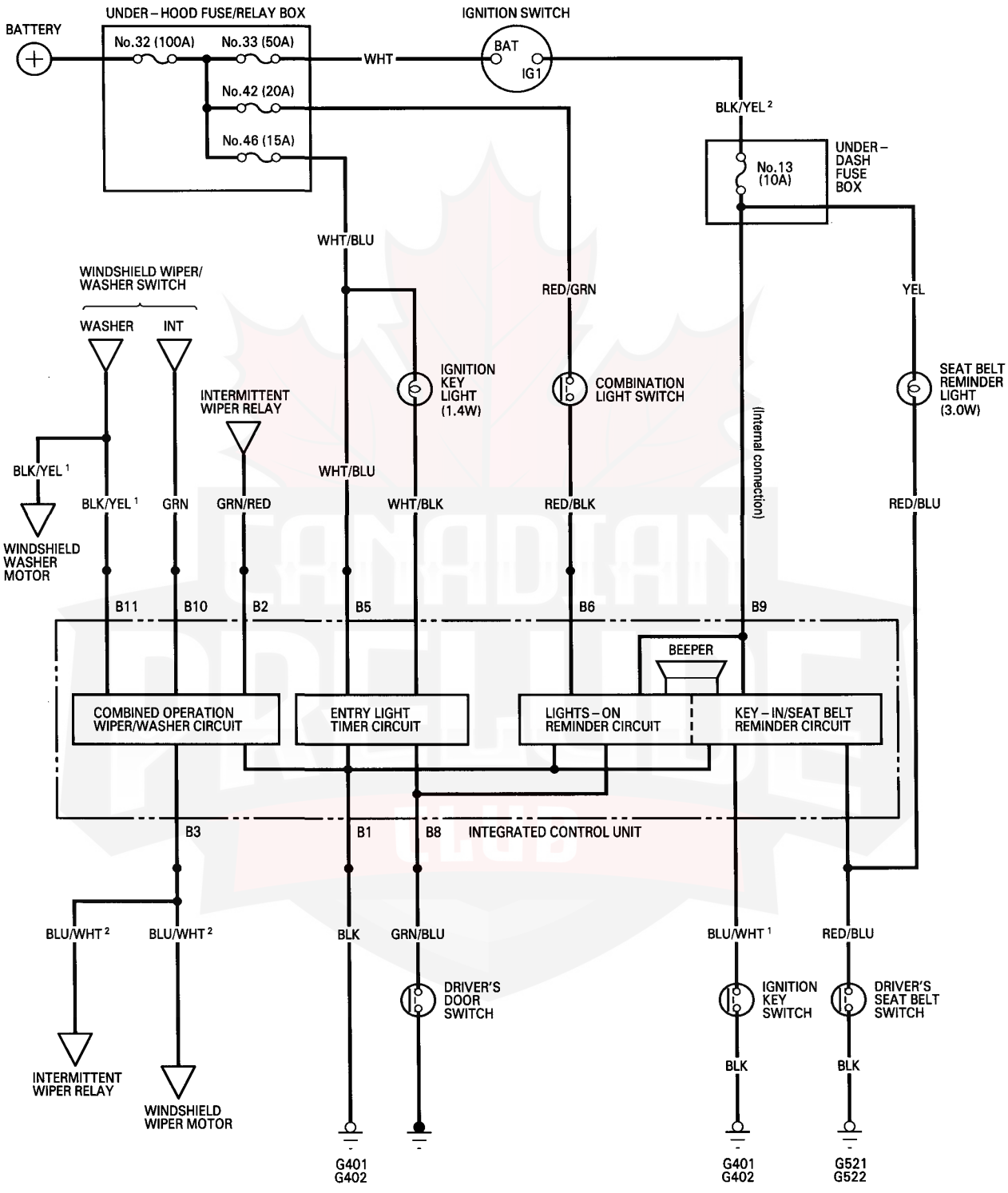
Position		Terminal A	Terminal B	Terminal C
Ignition switch ACC (I)	Key pushed in.	○	○	○
	Key released.		○	○

4. Check that the key cannot be removed with power and ground connected to the A and C terminals.

- If the key cannot be removed, the key interlock solenoid is OK.
- If the key can be removed, replace the steering lock assembly (the key interlock solenoid is not available separately).

Integrated Control Unit (KY model)

Circuit Diagram



Integrated Control Unit (KY model)

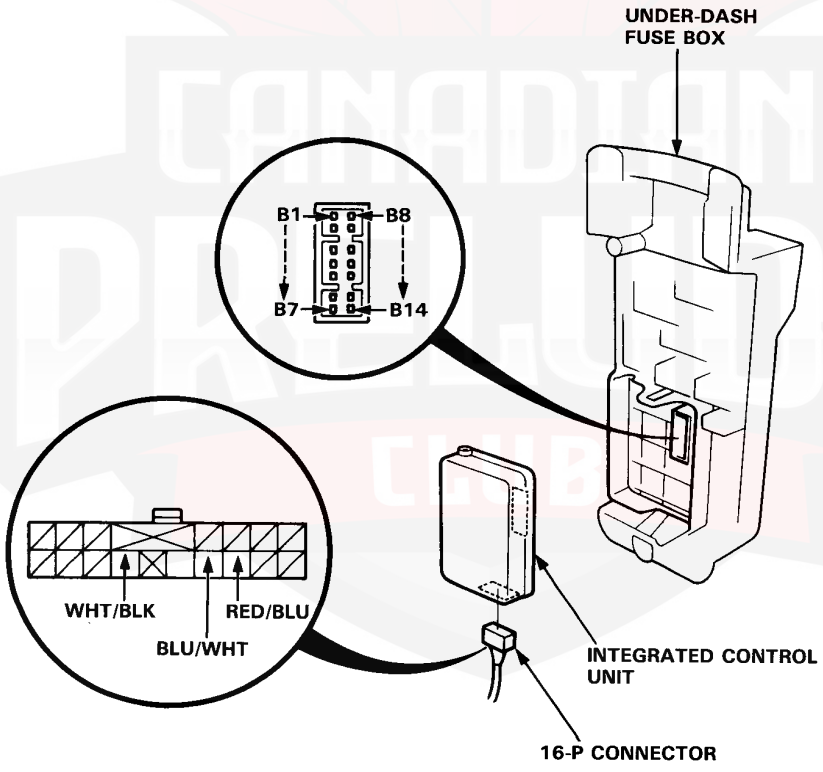
Input Test

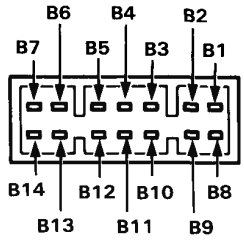
Remove the left kick panel, then disconnect the 16-P connector from the integrated control unit.
Remove the under-dash fuse box, then remove the integrated control unit.

Inspect the connector and the socket terminals to be sure they are all making good contact.

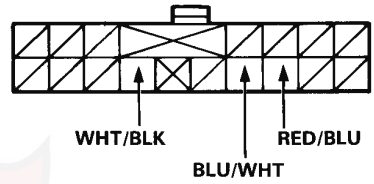
- If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
- If the terminals look OK, make the following input tests at the connector and the socket.
  - — If a test indicates a problem, find and correct the cause, then recheck the system.
  - — If all the input tests prove OK, the control unit must be faulty; replace it.

NOTE:
- Several different wires have the same color. They have been given a number suffix to distinguish them (for example, BLU/WHT[1] and BLU/WHT[2] are not the same).
- Do not disconnect any connectors from the under-dash fuse box except the one on the integrated control unit.





View from terminal side



View from wire side

Entry Light Timer System:

No.	Terminal	Test condition	Test: Desired result	Possible cause if result is not obtained
1	B1	Under all conditions.	Check for continuity to ground: There should be continuity.	• Poor ground (G401, G402). • An open in the wire.
2	B5	Under all conditions.	Check for voltage to ground: There should be battery voltage.	• Blown No.46 (15 A) fuse. • An open in the wire.
3	WHT/BLK	Under all conditions.	Attach to ground: Ignition key light should come on.	• Blown bulb. • An open in the wire.
4	B8	Driver's door open.	Check for voltage to ground: There should be 1 V or less.	• Faulty driver's door switch. • An open in the wire.

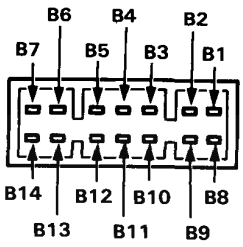
Lights-on Reminder System:

No.	Terminal	Test condition	Test: Desired result	Possible cause if result is not obtained
1	B1	Under all conditions.	Check for continuity to ground: There should be continuity.	• Poor ground (G401, G402). • An open in the wire.
2	B6	Headlight switch ON (Second position).	Check for voltage to ground: There should be battery voltage.	• Blown No. 42 (20 A) fuse. • Faulty combination light switch. • An open in the wire.
3	B9	Ignition switch ON.	Check for voltage to ground: There should be battery voltage.	• Blown No. 13 (10 A) fuse. • An open in the wire.
4	B8	Driver's door open.	Check for voltage to ground: There should be 1 V or less.	• Faulty driver's door switch. • An open in the wire.

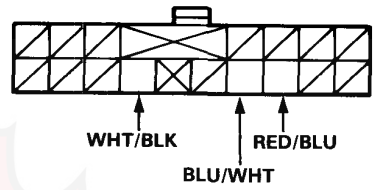
(cont'd)

Integrated Control Unit

Input Test (cont'd)



View from terminal side



View from wire side

Wiper System:

No.	Terminal	Test condition	Test: Desired result	Possible cause if result is not obtained
1	B1	Under all conditions.	Check for continuity to ground: There should be continuity.	• Poor ground (G401, G402). • An open in the wire.
2	B2	Ignition switch ON.	Check for voltage to ground: There should be battery voltage.	• Blown No. 17 (30 A) fuse. • Faulty intermittent wiper relay. • An open in the wire.
3	B10	Ignition switch On and wiper switch in INT position.	Check for voltage to ground: There should be battery voltage.	• Blown No. 17 (30 A) fuse. • Faulty windshield wiper switch. • An open in the wire.
4	B11	Ignition switch ON and washer switch ON.	Check for voltage to ground: There should be battery voltage.	• Blown No. 17 (30 A) fuse. • Faulty windshield wiper switch. • An open in the wire.
5	B3	Ignition switch ON.	Check for voltage to ground: There should be battery voltage.	• Blown No. 17 (30 A) fuse. • Faulty intermittent wiper relay. • Faulty windshield wiper motor. • An open in the wire.

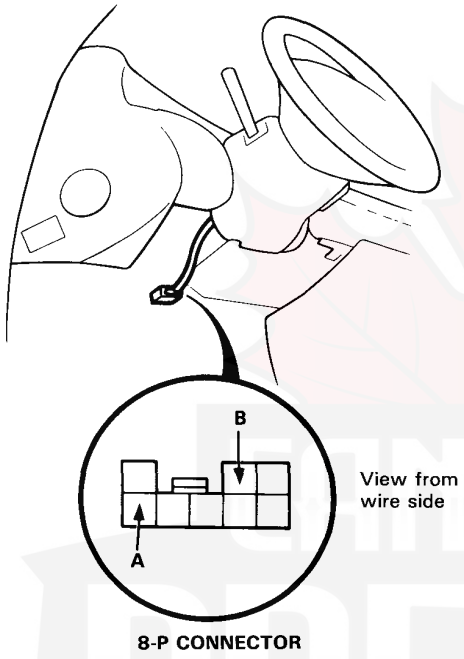
Key-in/Seat Belt Reminder System:

No.	Terminal	Test condition	Test: Desired result	Possible cause if result is not obtained
1	B1	Under all conditions.	Check for continuity to ground: There should be continuity.	• Poor ground (G401, G402). • An open in the wire.
2	B9	Ignition switch ON.	Check for voltage to ground: There should be battery voltage.	• Blown No. 13 (10 A) fuse. • An open in the wire.
3	BLU/WHT	Ignition key is inserted into the ignition switch.	Check for voltage to ground: It should be 1 V or less.	• Poor ground (G401, G402). • Faulty ignition key switch. • An open in the wire
4	RED/BLU	Driver's seat belt is not buckled.	Check for voltage to ground: It should be 1 V or less.	• Poor ground (G521, G522). • Blown bulb. • Faulty driver's seat belt switch. • An open in the wire.
		Driver's seat belt is buckled.	Check for voltage to ground: There should be battery voltage.	• Blown No. 13 (10 A) fuse. • Faulty driver's seat belt switch. • Blown bulb. • An open in the wire.

Entry Light Timer System

Ignition Key Light Test

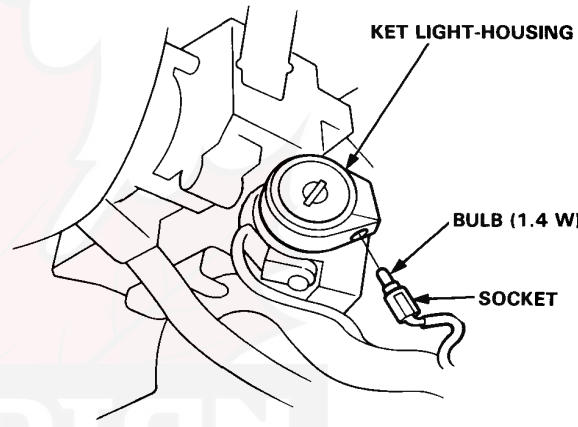
1. Remove the dashboard lower cover.
2. Disconnect the 8-P connector from the main wire harness.



3. There should be continuity between A and B terminals.
   If there is no continuity, replace the light.

Ignition Key Light Replacement

1. Remove the steering column covers.
2. Remove the bulb/socket from the key light housing by turning the socket 45°.



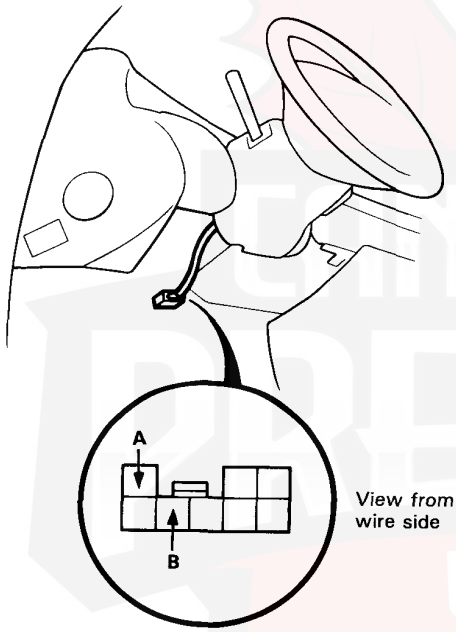
Key-in Reminder System

Ignition Key Switch Test

NOTE: Refer to page 23-63 for the diagram of the key-in beeper circuit, and page 23-66 for the input test of the beeper circuit.

When the ignition key is not removed, the key-in beeper in the integrated control unit senses ground through the closed ignition key switch. When you open the driver's door, the beeper circuit senses ground through the closed door switch. With ground at the "BLU/WHT²" and "B8" terminals, the beeper sounds.

1. Remove the dashboard lower cover.
2. Disconnect the 8-P connector from the main wire harness.



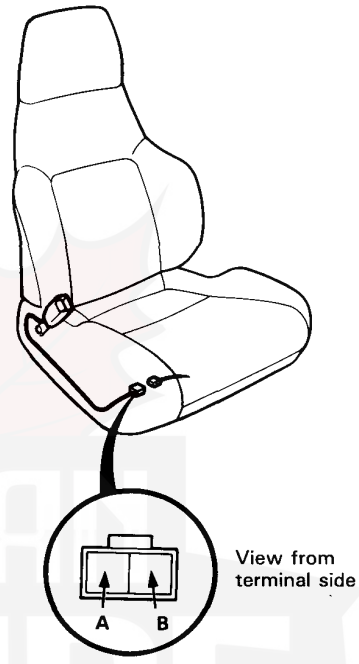
8-P CONNECTOR

3. Check continuity between terminals A and B.
   - There should be continuity with the key in the ignition switch.
   - There should be no continuity with the key removed.

Seat Belt Reminder System

Seat Belt Switch Test

1. Side the front seat all the way forward then disconnect the 2-P connector from the seat belt switch.



2-P CONNECTOR

2. There should be continuity between the A and B terminals when the seat belt is not buckled.
   There should be no continuity when the seat belt is buckled.

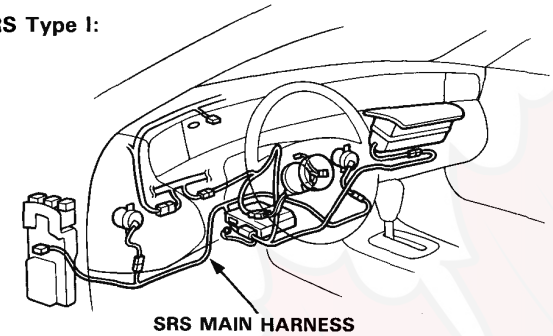
Dash Lights Brightness Control Unit

Component Location Index (European models)

CAUTION:

- **All SRS electrical wiring harnesses are covered with yellow outer insulation.**
- **Replace the entire affected SRS harness assembly if it has an open circuit or damaged wiring.**
- **SRS Type I only: Before disconnecting the SRS wire harness, install the short connector(s) on the airbag(s).**
- **SRS Type II only: Before disconnecting the SRS wiring harness, turn the ignition switch off, disconnect the negative and positive battery cables, and wait at least three minutes.**

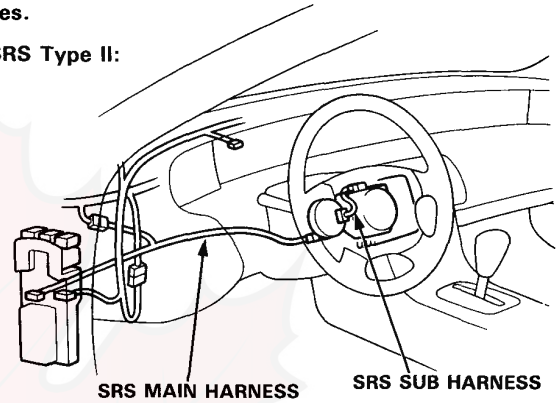
SRS Type I:



SRS MAIN HARNESS
(Covered with yellow outer insulation)

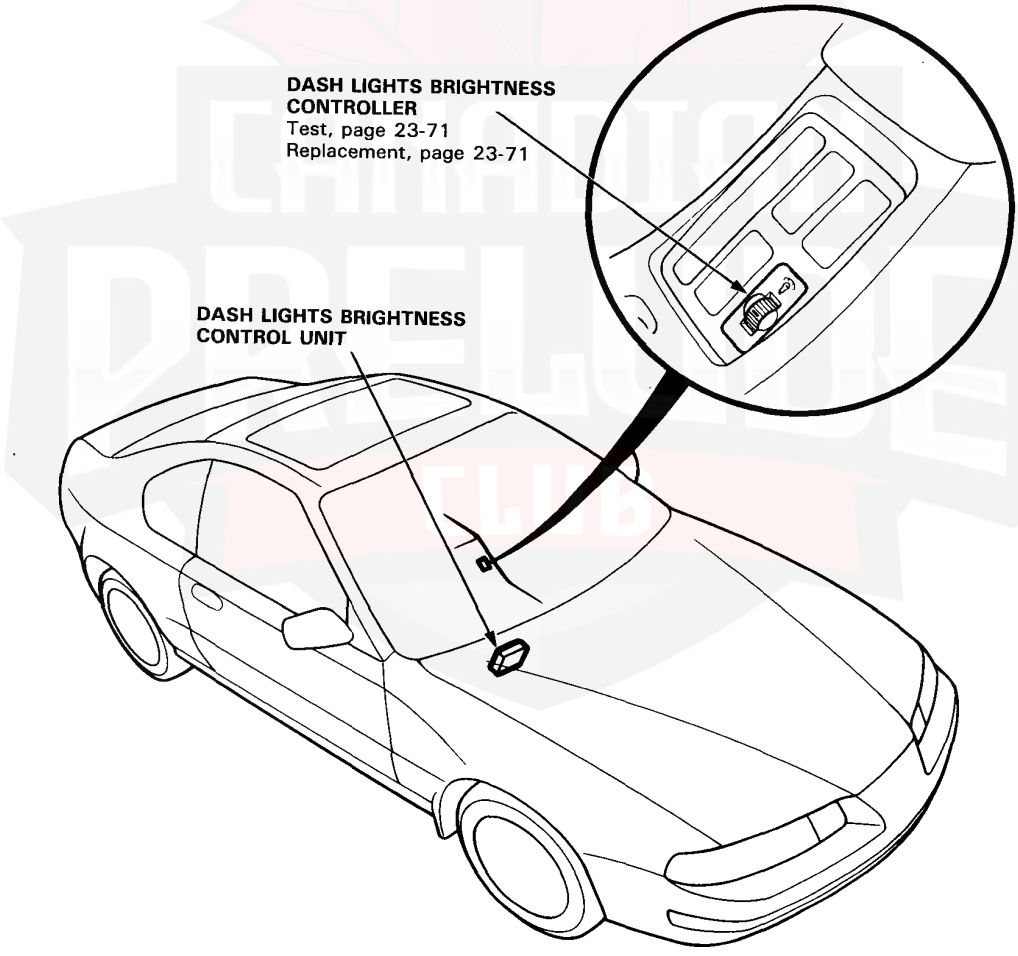
NOTE: LHD type is shown, RHD type is similar.

SRS Type II:



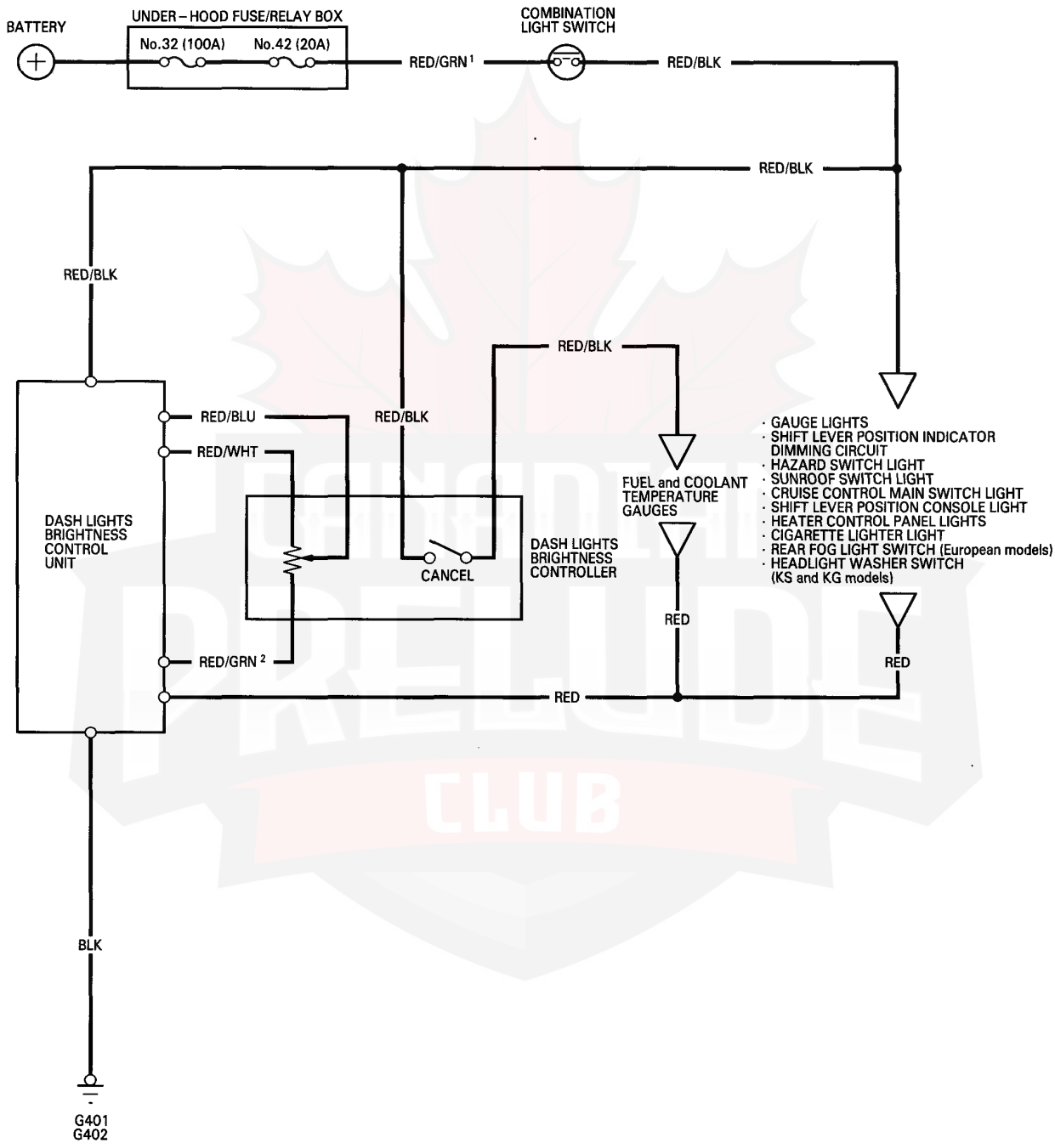
SRS MAIN HARNESS
(Covered with yellow outer insulation)

SRS SUB HARNESS



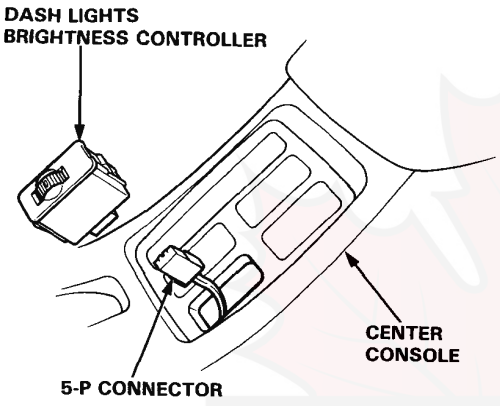
Dash Lights Brightness Control Unit

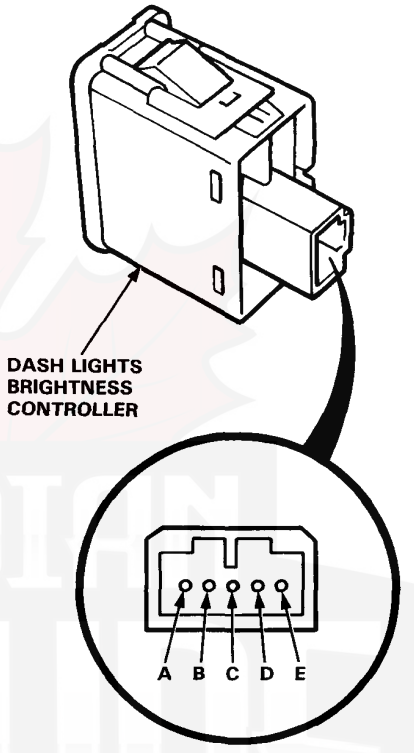
Circuit Diagram (European models)



Controller Test/Replacement (European models)

1. Carefully pry the switches out of the center console, then disconnect the 5-P connector from the controller.





2. Measure resistance between the B and D terminals.

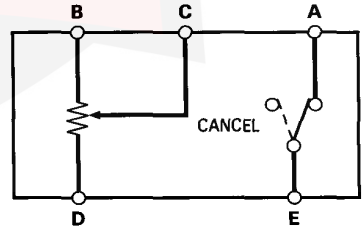
   Resistance: 8—12 k ohms

   NOTE: Resistance will vary slightly with temperature.

3. Measure resistance between the C and D terminals while rotating the adjusting dial.
   Resistance should vary from 0 to 10 k ohms as the dial is rotated.

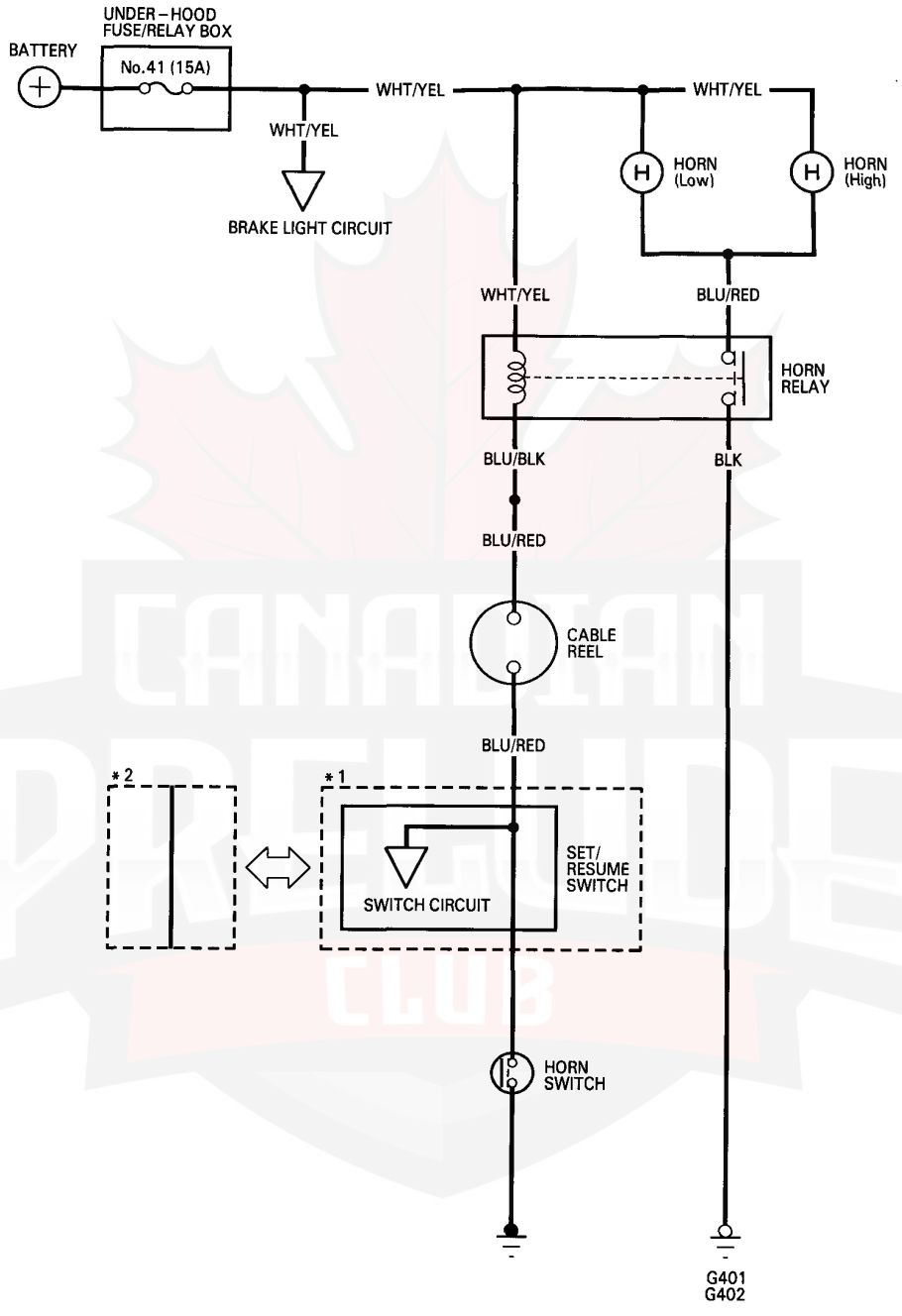
4. Open the CANCEL switch by rotating the adjusting dial beyond its end position (clicking sound). There should be no continuity between the A and E terminals.

   NOTE: The cancel switch is closed with the adjusting dial between the maximal and minimal end positions.



Horns

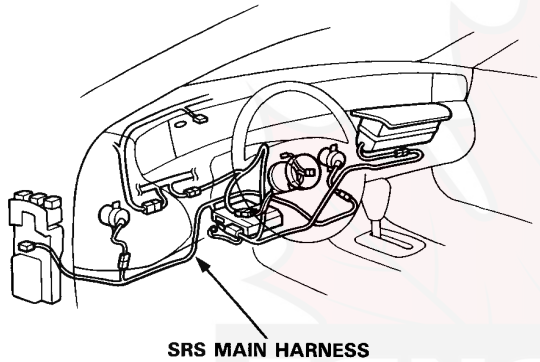
Circuit Diagram (With SRS Type I)



* 1: With CRUISE CONTROL
* 2: Without CRUISE CONTROL

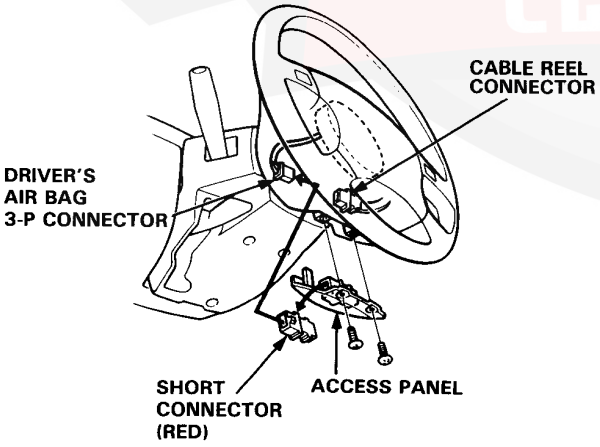
Switch Test (With SRS Type I)

CAUTION:
- **All SRS electrical wiring harnesses are covered with yellow outer insulation.**
- **Before disconnecting the SRS wire harness, install the short connector(s) on the airbag(s).**
- **Replace the entire affected SRS harness assembly if it has an open circuit or damaged wiring.**

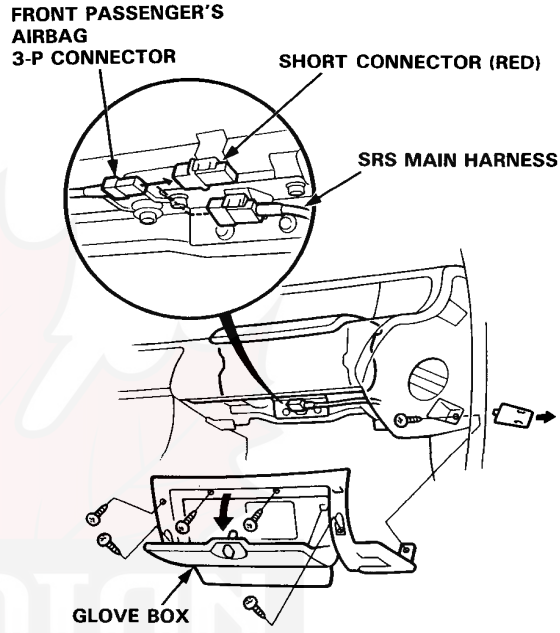


1. Disconnect the battery negative cable, then disconnect the positive cable.
2. Make sure the wheels are turned straight ahead.
3. Remove the dashboard lower cover.
4. Install the short connector on the airbag(s).

Driver's side:

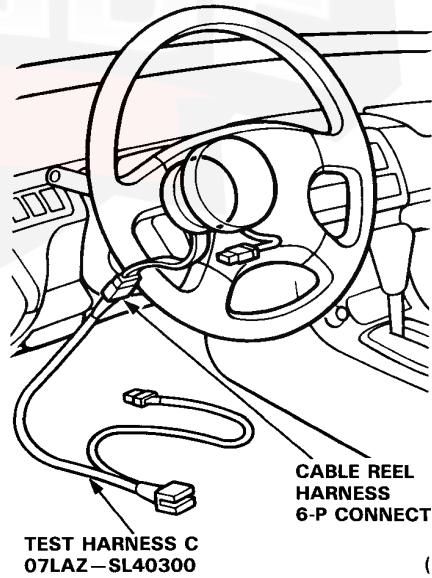


Front Passenger's side:
- Remove the glove box, then remove the short connector (RED)from its holder.



- Disconnect the 3-P connector between the front passenger's airbag and SRS main harness, then install the short connector (RED) on the airbag side of the connector.

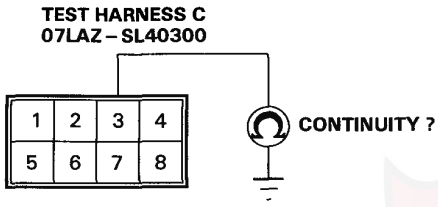
5. Disconnect the cable reel harness 6-P connector from the SRS main harness, then connect Test Harness C only to the cable reel harness.



(cont'd)

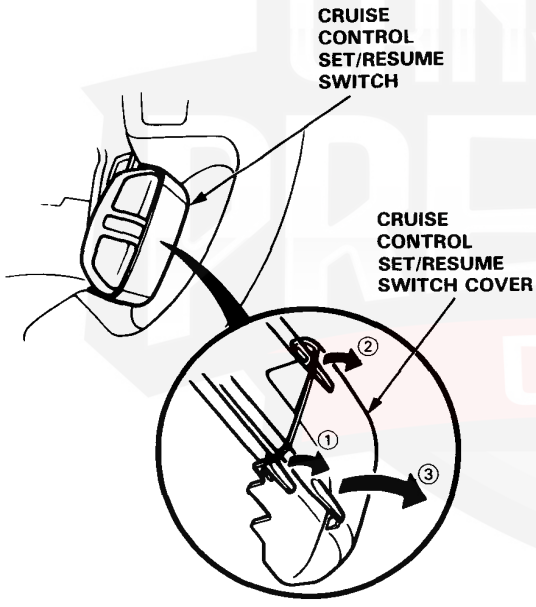
Switch Test (With SRS Type I)(cont'd)

8. Check for continuity between the No. 3 terminal of the 8-P connector of Test Harness C and body ground with the horn switch pressed.

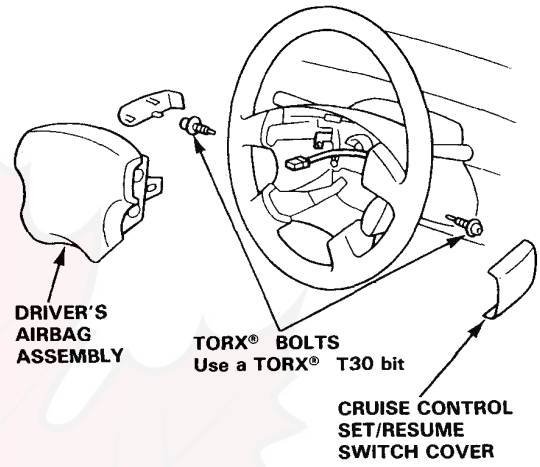


- If there is continuity, the horn switch is OK.
- If there is no continuity, go to step 9.

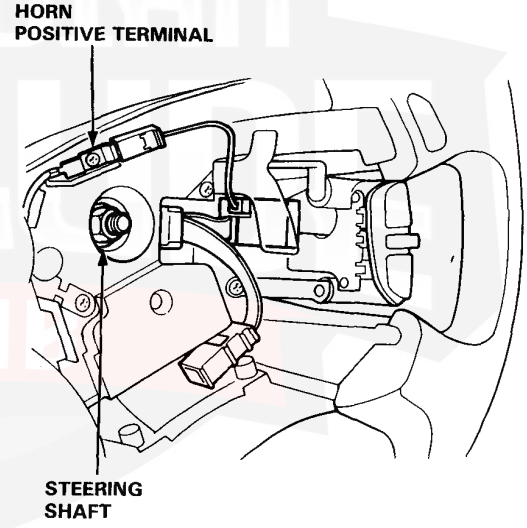
9. Carefully remove the cruise control SET/RESUME switch cover by prying between the cover and switch in the sequence shown.



10. Remove the two TORX® bolts using a TORX® T30 bit, then remove the driver's airbag assembly.



11. Check for continuity between the horn positive terminal and steering shaft with the horn switch pressed.



- If there is continuity.
  — Test the set/resum switch (see page 23-82). If the switch is OK, replace the cable reel.

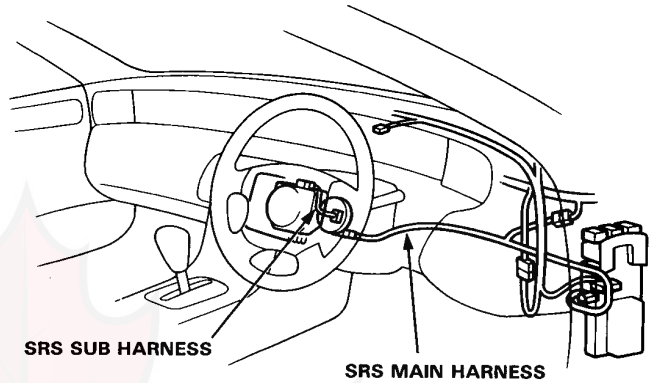
- If there is no continuity, remove the nut and four screws. Then remove the steering wheel. Remove the cover from the back of the steering wheel and replace the horn switch.

Power Door Locks (KQ model)

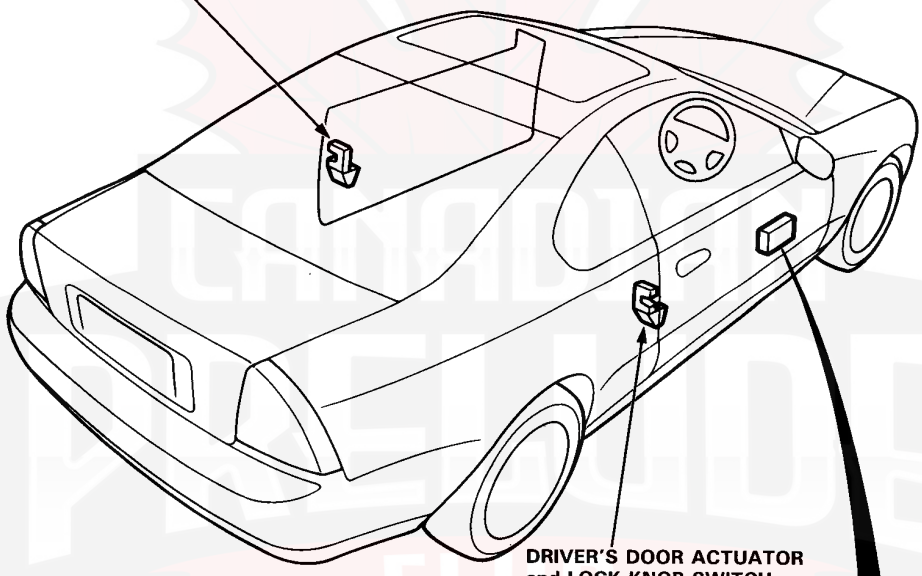
Component Location Index

CAUTION:

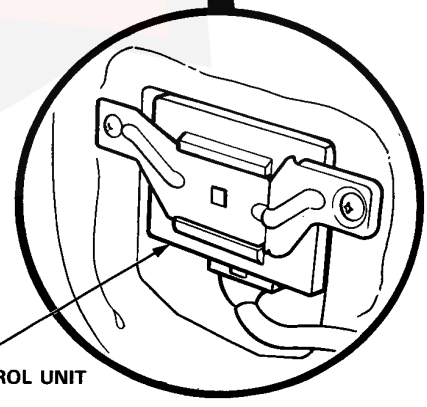
- **All SRS electrical wiring harnesses are covered with yellow outer insulation.**
- **Replace the entire affected SRS harness assembly if it has an open circuit or damaged wiring.**
- **Before disconnecting the SRS wiring harness, turn the ignition switch off, disconnect the negative and positive battery cables, and wait at least three minutes.**



PASSENGER'S DOOR ACTUATOR
Test, page 23-80



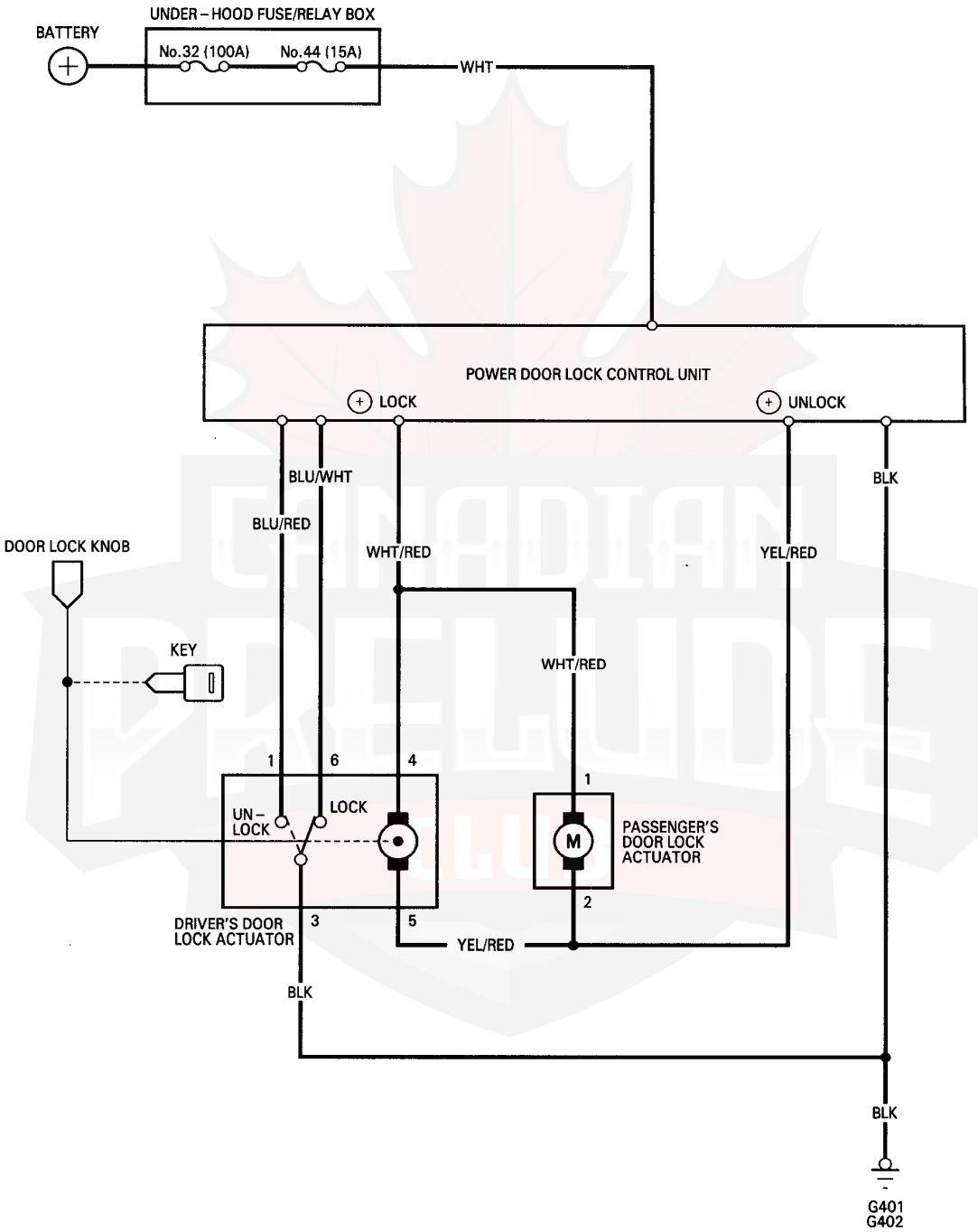
DRIVER'S DOOR ACTUATOR and LOCK KNOB SWITCH
Test, page 23-79



POWER DOOR LOCK CONTROL UNIT
Input, Test page 23-78

Power Door Locks (KQ model)

Circuit Diagram



Troubleshooting

NOTE: The numbers in the talbe show the troubleshooting sequence.

Symptom \ Item to be inspected		Blown No. 44 (15 A) fuse (In the under-hood fuse/relay box)	Door lock knob switch.	Control unit input	Door lock actuators	Disconnected or obstructed door lock rod/linkage	Poor ground	Open circuit in wires, loose or disconnected terminals
Power door lock system doesn't operate at all.		1		2			G401 G402	WHT
Doors don't lock or unlock with driver's door lock knob switch.	Both doors.	1	2	4		3	G401 G402	BLU/WHT, YEL/RED, WHT/RED or BLU/RED
	One door.				1			YEL/RED or WHT/RED

CAUTION: To prevent damage to the motor, apply battery voltage only momentarily.

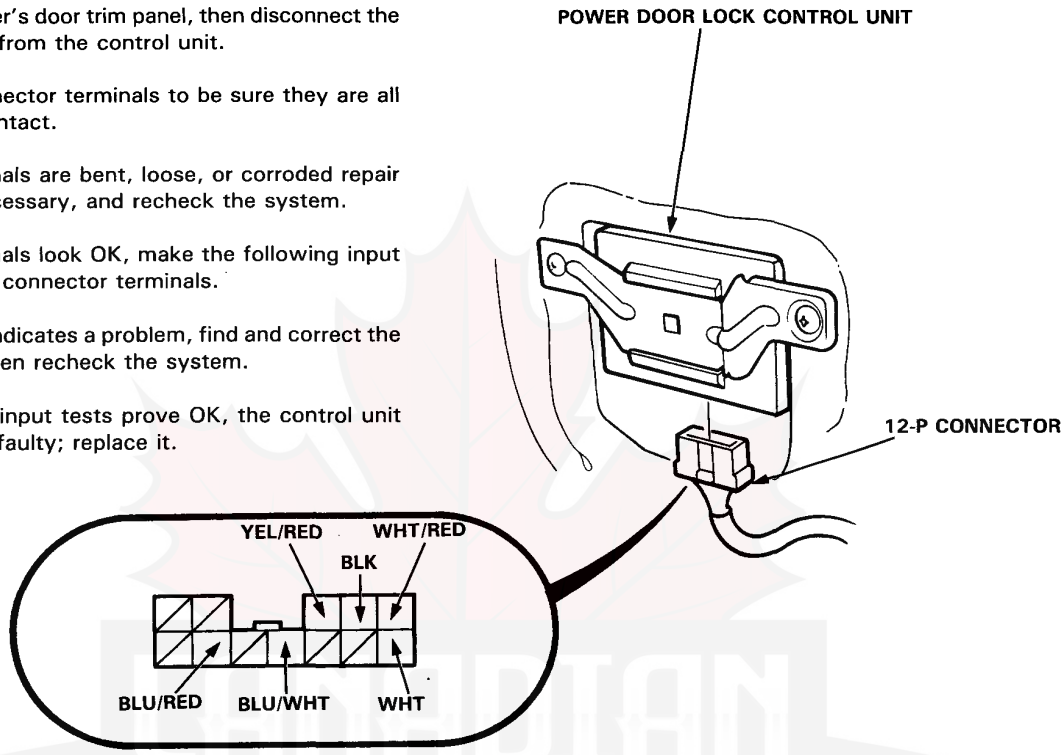
Power Door Locks (KQ model)

Control Unit Input Test

Remove the driver's door trim panel, then disconnect the 12-P connector from the control unit.

Inspect the connector terminals to be sure they are all making good contact.

- If the terminals are bent, loose, or corroded repair them as necessary, and recheck the system.
- If the terminals look OK, make the following input tests at the connector terminals.
  - — If a test indicates a problem, find and correct the cause, then recheck the system.
  - — If all the input tests prove OK, the control unit must be faulty; replace it.



View from wire side

No.	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	BLK	Under all conditions.	Check for continuity to ground: There should be continuity.	• Poor ground (G401, G402). • An open in the wire.
2	WHT	Under all conditions.	Check for voltage to ground: There should be battery voltage.	• Blown No.44 (15 A) fuse. • An open in the wire.
3	BLU/WHT	Driver's door lock knob in LOCK.	Check for voltage to ground: There should be 1 V or less.	• Poor ground (G401, G402). • Faulty driver's door lock actuator. • An open in the wire.
	BLU/RED	Driver's door lock knob in UNLOCK.		
4	WHT/RED and YEL/RED	Connect the YEL/RED terminal to the WHT terminal, and the WHT/RED terminal to the BLK terminal momentarily	Check door lock operation: All doors should unlock.	• Faulty actuator. • An open in the wire.
		Connect the WHT/RED terminal to the WHT terminal, and the YEL/RED terminal to the BLK terminal momentarily.	Check door lock operation: All doors should lock.	

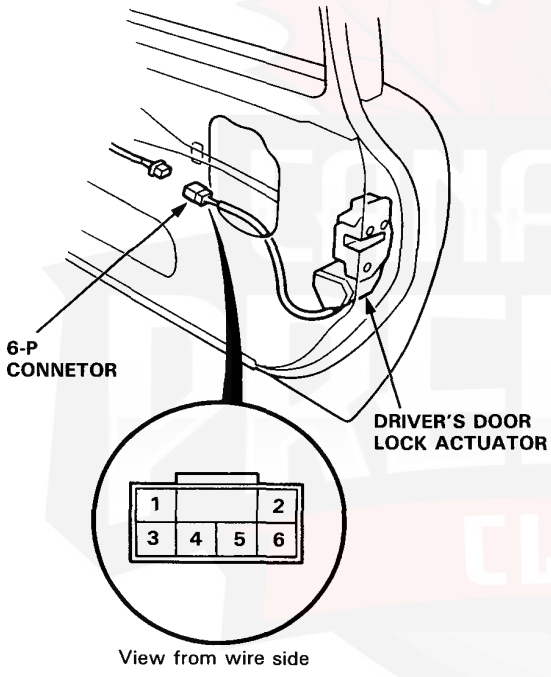
Driver's Door Lock Actuator Test

1. Remove the door trim panel.
2. Disconnect the 6-P connector from the actuator.
3. Test actuator operation:

   LOCK: With battery power connected to the No. 4 terminal, ground the No. 5 terminal momentarily.

   UNLOCK: With battery power connected to the No. 5 terminal, ground the No. 4 terminal momentarily.

   CAUTION: To prevent damage to the motor, connect power only momentarily.

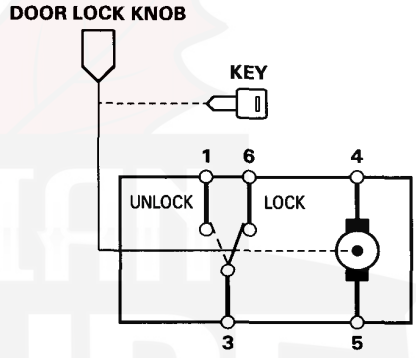


View from wire side

4. If the actuator fails to operate properly, replace it.

5. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal	1	3	6
LOCK		○	○
UNLOCK	○	○	



Power Door Locks (KQ model)

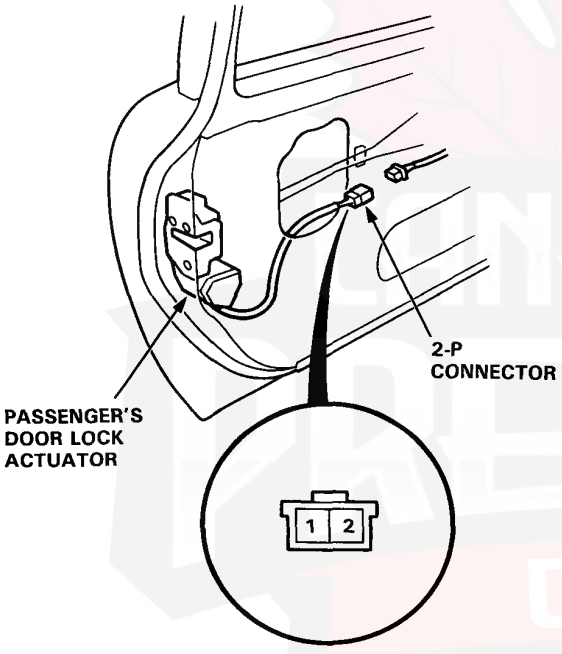
Passenger's Door Lock Actuator Test

1. Remove the door trim panel.
2. Disconnect the 2-P connector from the actuator.
3. Test actuator operation:

   LOCK: With battery power connected to the No. 1 terminal, ground the No. 2 terminal momentarily.

   UNLOCK: With battery power connected to the No. 2 terminal, ground the No. 1 terminal momentarily.

   CAUTION: To prevent damage to the motor, connect power only momentarily

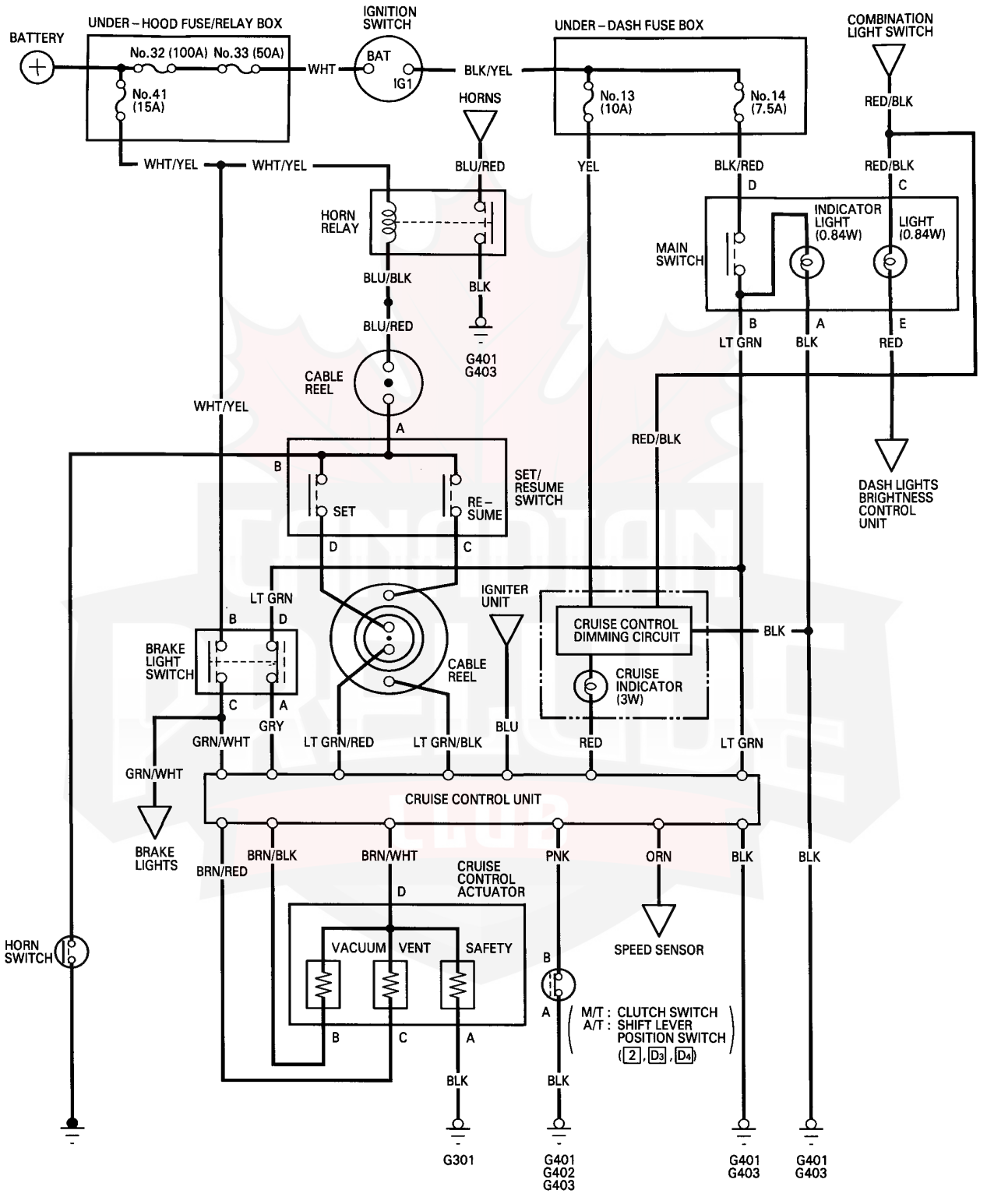


view from wire side

4. If the actuator fails to operate properly, replace it.

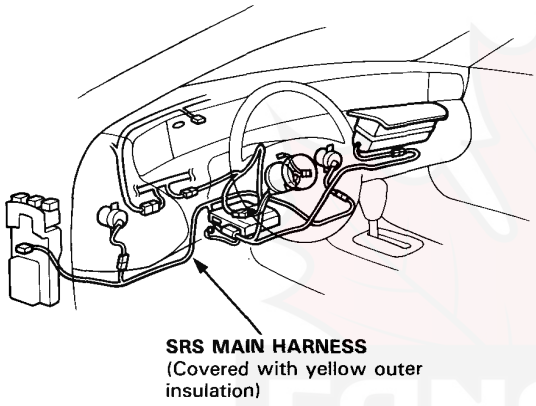
Cruise Control

Circuit Diagram (With SRS Type I)



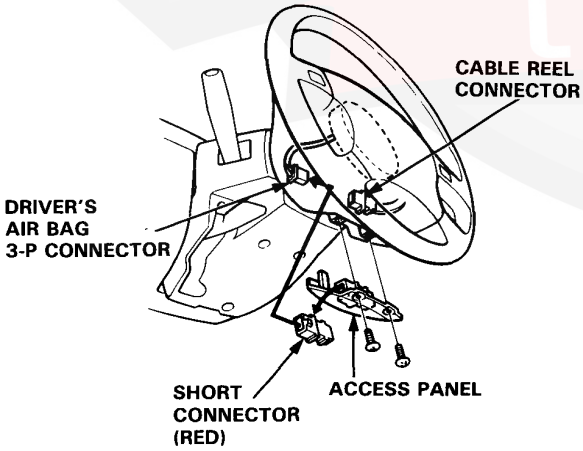
Set/Resume Switch Test (With SRS Type I)

CAUTION:
- **All SRS electrical wiring harnesses are covered with yellow outer insulation.**
- **Before disconnecting the SRS wire harness, install the short connector(s) on the airbag(s).**
- **Replace the entire affected SRS harness assembly if it has an open circuit or damaged wiring.**

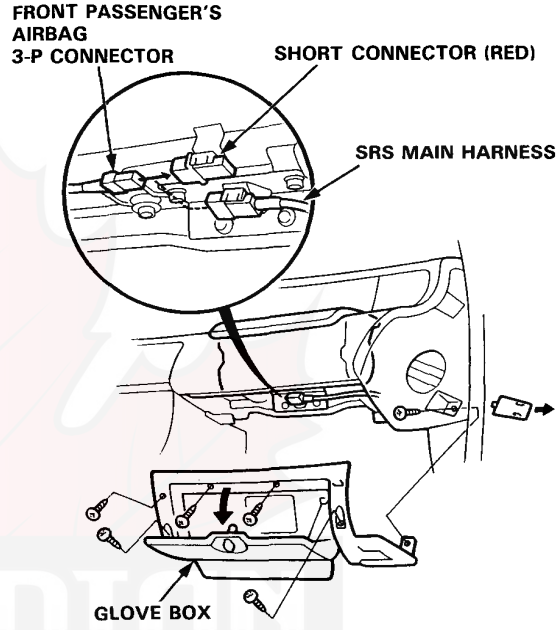


1. Disconnect the battery negative cable, then disconnect the positive cable.
2. Make sure the wheels are turned straight ahead.
3. Remove the dashboard lower cover.
4. Install the short connector on the airbags.

Driver's side:

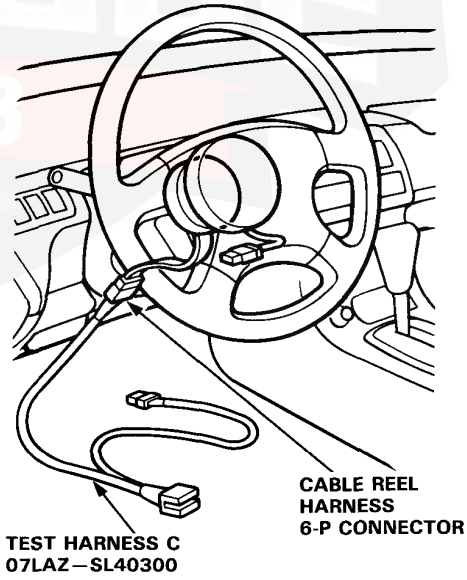


Front Passenger's side:
- Remove the glove box, then remove the short connector (RED) from its holder.



- Disconnect the 3-P connector between the front passenger's airbag and SRS main harness, then install the short connector (RED) on the airbag side of the connector.

5. Disconnect the cable reel harness 6-P connector from the SRS main harness, then connect Test Harness C only to the cable reel harness.



6. Check for continuity between the terminals of Test Harness C in each switch position according to the table.

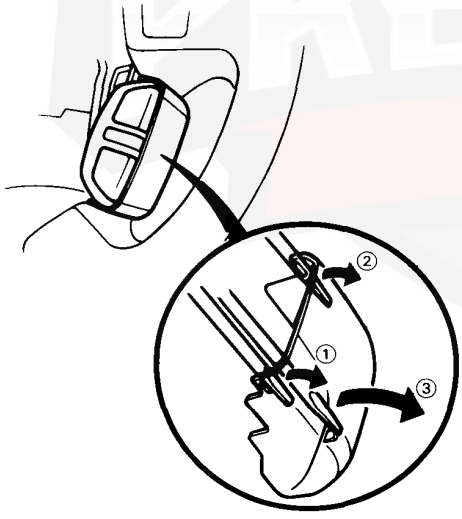
1	2	3	4
5	6	7	8

TEST HARNESS C
07LAZ – SL40300

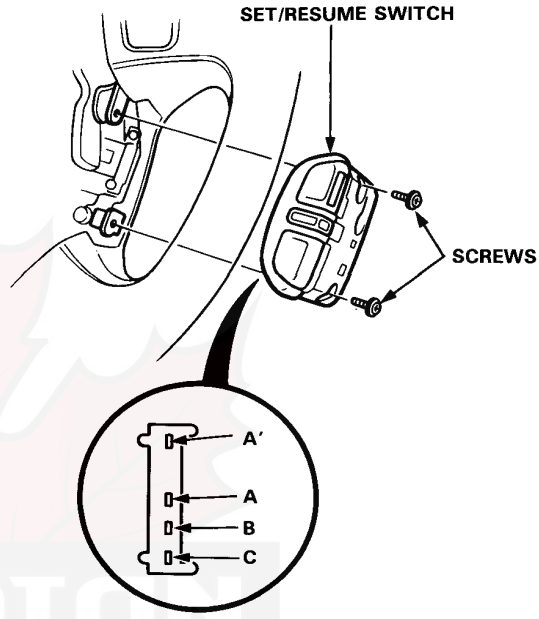
Terminal / Position	3 BLU/RED		2 LT GRN/ RED	1 LT GRN/ BLK
SET (ON)	○	—	○	
RESUME (ON)	○			○

- If there is continuity, and it matches the table, the switch is OK.
- If there is no continuity in one or both positions, go to step 7.

7. Remove the cover by carefully prying between the cover and the switch in the sequence shown:



8. Remove the two screws and the switch.



9. Check for continuity between the terminals in each switch position according to the table.

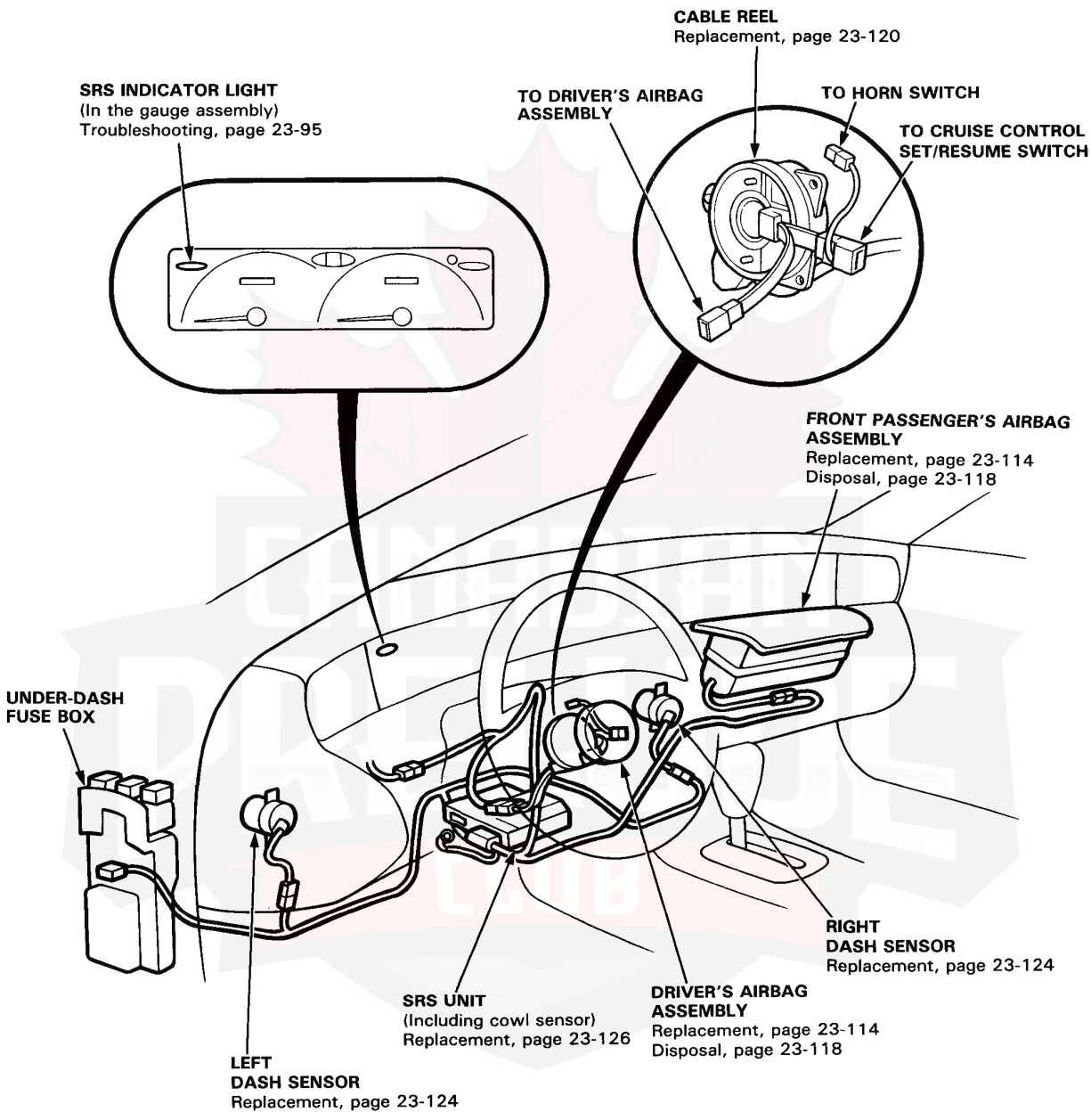
Terminal / Position	A or A'		B	C
SET (ON)	○			○
RESUME (ON)	○		○	

- If there is no continuity in one or both positions, replace the switch.
- If there is continuity and it matches the table, replace the cable reel.

Supplemental Restraint System (SRS)

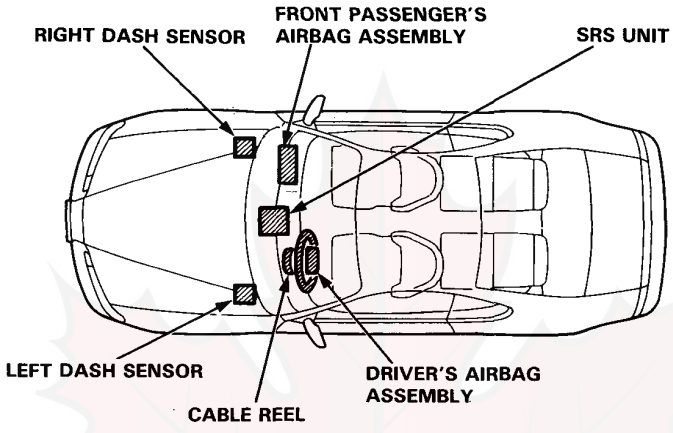
Component Location Index

NOTE: RHD type is symmetrical to LHD type.



Description

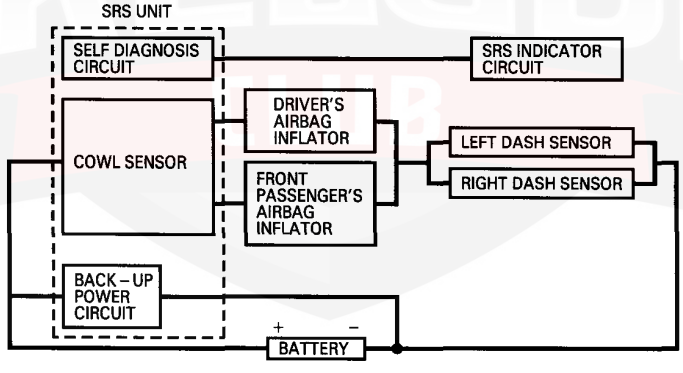
The SRS is a safety device which, when used in conjunction with the seat belt, is designed to help protect the driver and front passenger in a frontal impact exceeding a certain set limit.
The system consists of left and right dash sensors, the SRS unit (includes cowl sensor), the cable reel, driver's airbag and front passenger's airbag.



OPERATION:
As shown in the diagram below, the left and right dash sensors are connected in parallel. The parallel set of sensors is connected in series to each airbag inflator circuit and the car battery. In addition, a back-up power circuit is connected in parallel with the car battery. The back-up power circuit and the cowl sensor are located inside the SRS unit.

For the SRS to operate:
(1) One or both cowl sensor contacts and one or both dash sensors must activate.
(2) Electrical energy must be supplied to the airbag inflator by the battery, or by the back-up power circuit if the battery voltage is too low.
(3) The inflator charge must ignite and deploy the airbag.

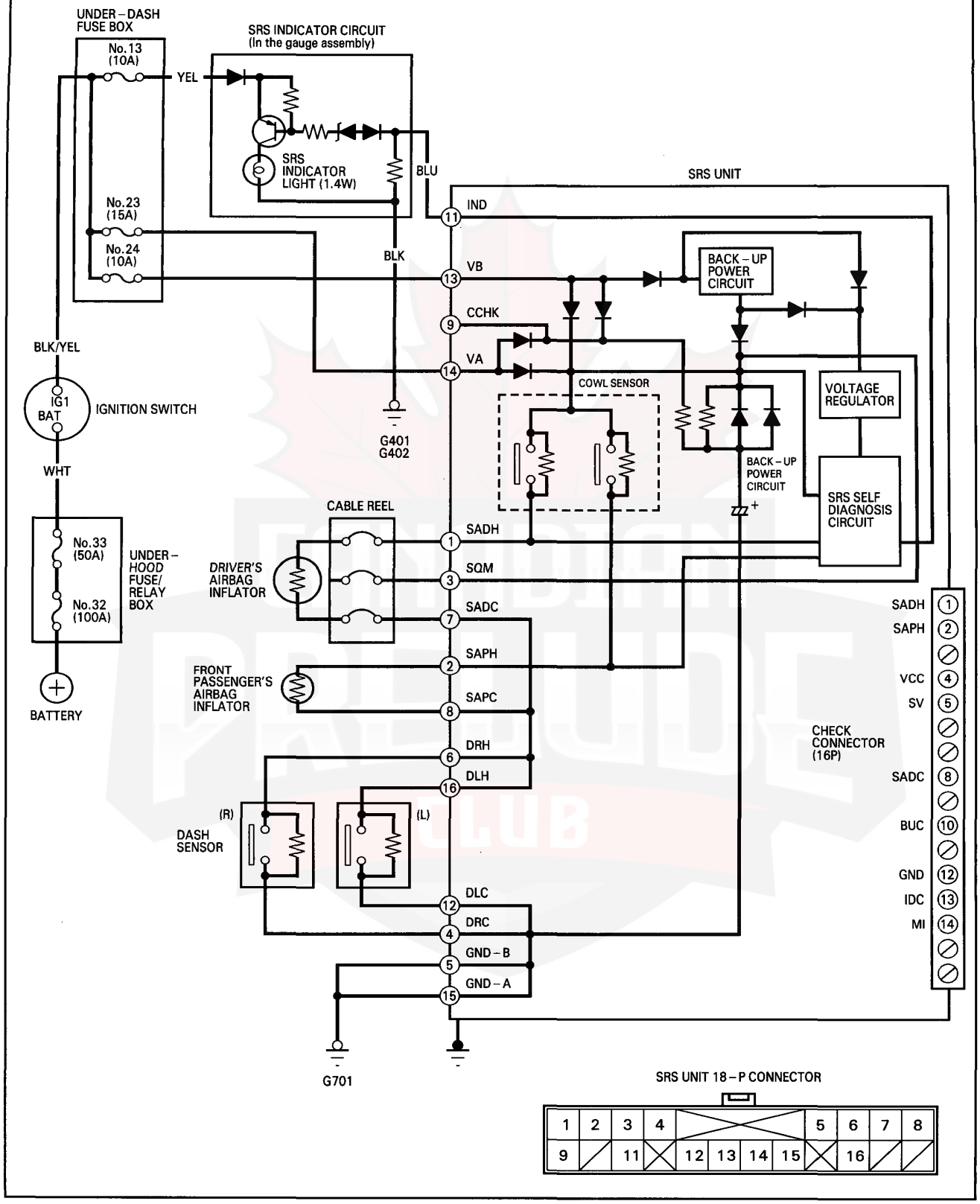
It takes about 0.1 second from the beginning of the airbags' deployment until it is completely deflated.



Self-diagnosis system
A self-diagnosis circuit is built into the SRS unit; when the ignition switch is turned ON, the SRS indicator light comes on and goes off after about six seconds if the system is operating normally. If the light does not come on, or does not go off after six seconds, or if it comes on while driving, it indicates an abnormality in the system. The system must be inspected and repaired as soon as possible.

Supplemental Restraint System (SRS) – Type I

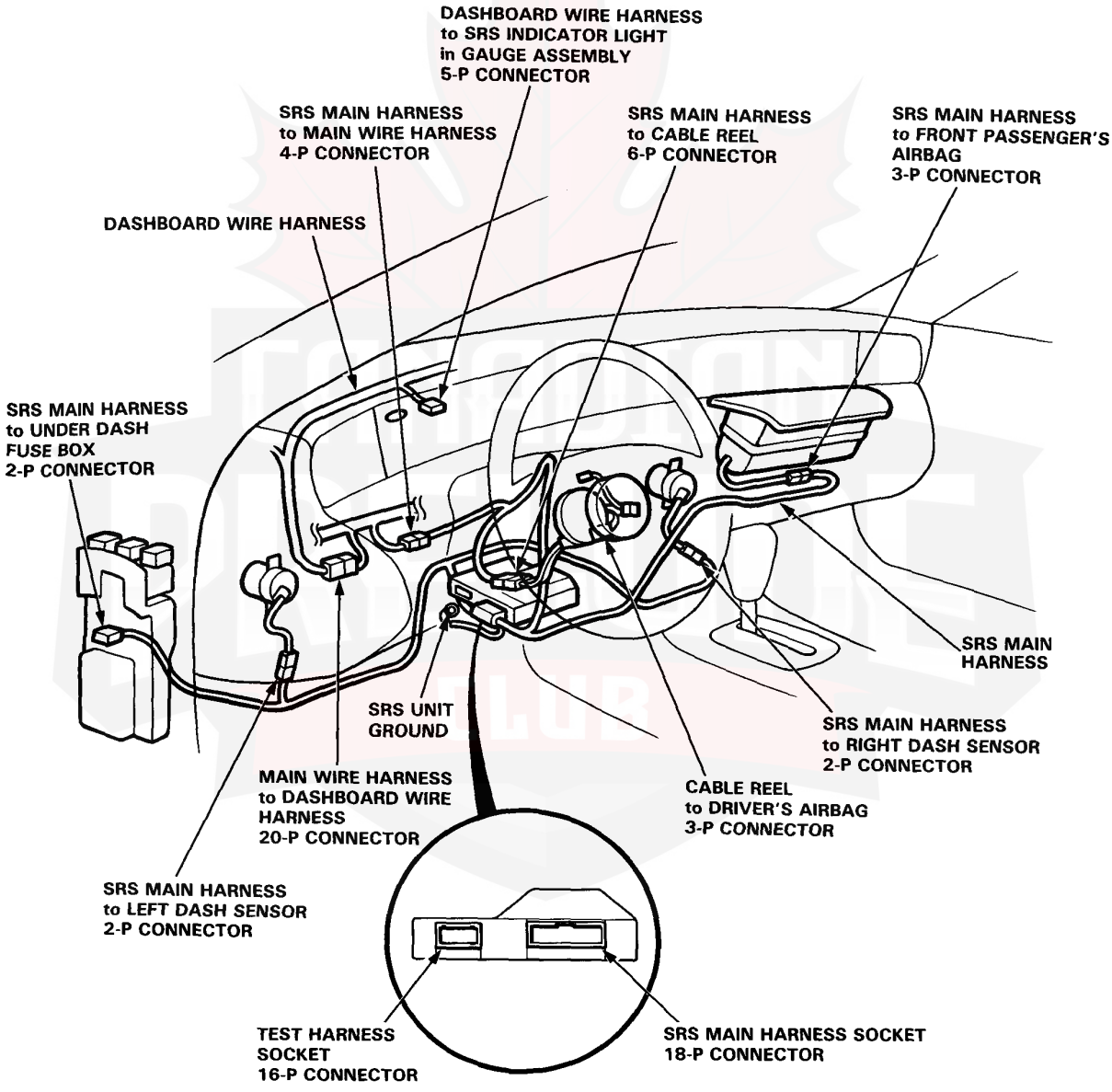
Circuit Diagram



Wiring Locations

CAUTION: Make sure all SRS ground locations are clean and grounds are securely attached.

NOTE:
- All SRS electrical wiring harnesses are covered with yellow outer insulation.
- Replace the entire affected SRS harness assembly if it has an open circuit or damaged wiring.
- RHD type is symmetrical to LHD type.

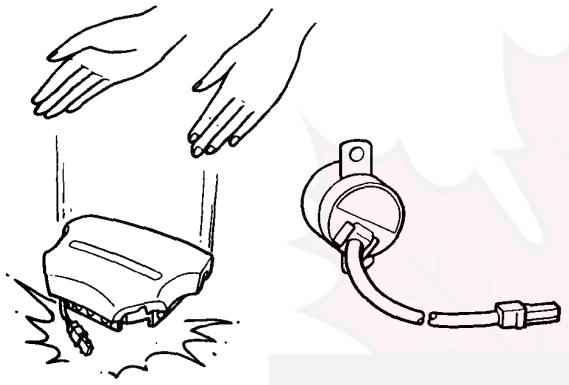


Supplemental Restraint System (SRS)-Type I

General Precautions

- Carefully inspect any SRS part before you install it. Do not install any part that shows signs of being dropped or improperly handled, such as dents, cracks or deformation:

  — Airbag assemblies.
  — Dash sensors.
  — Cable reel.
  — SRS unit.



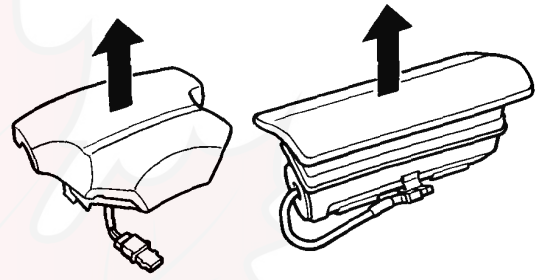
- Use only a digital circuit tester to check the system. Using an analog circuit tester may cause an accidental deployment and possible injury.
- Do not install used SRS parts from another car. When making SRS repairs, use only new parts.
- Except when performing electrical inspections, always disconnect both the negative cable and positive cable at the battery before beginning work.
- Replacement of the combination light and wiper/washer switches and cruise control switch can be done without removing the steering wheel.
- When reinstalling the SRS unit cover, be sure it snaps together properly.

Airbag Handling and Storage

Do not try to disassemble the airbag assembly. It has no serviceable parts. Once an airbag has been operated (deployed), it cannot be repaired or reused.

For temporary storage of the airbag assembly during service, please observe the following precautions:

- Store the removed airbag assembly with the pad surface up.



⚠WARNING If the airbag is improperly stored face down, accidental deployment could propel the unit with enough force to cause serious injury.

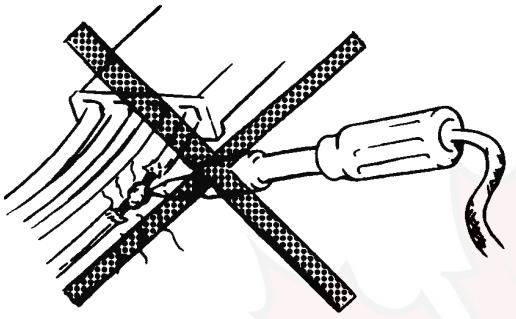
- Store the removed airbag assembly on a secure flat surface away from any high heat source (exceeding 100°C/212°F) and free of any oil, grease, detergent or water.

CAUTION: Improper handling or storage can internally damage the airbag assembly, making it inoperative.
If you suspect the airbag assembly has been damaged, install a new unit and refer to the Deployment/Disposal Procedures for disposing of the damaged airbag.

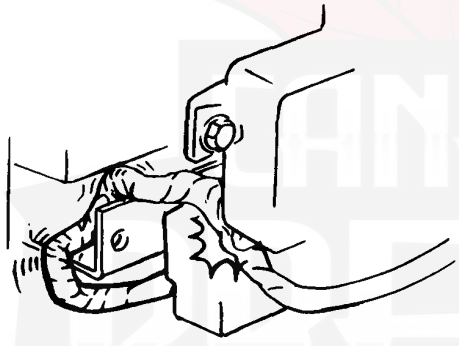
Wiring Precautions

- Never attempt to modify, splice or repair SRS wiring.

  NOTE: SRS wiring can be identified by special yellow outer protective covering.



- Be sure to install the harness wires so that they are not pinched or interfering with other car parts.



- Make sure all SRS ground locations are clean and grounds are securely fastened for optimum metal-to-metal contact. Poor grounding can cause intermittent problems that are difficult to diagnose.

Installing the short connector

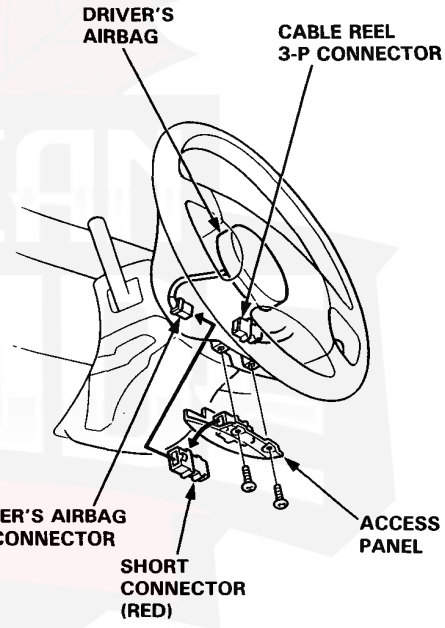
⚠ WARNING To avoid accidental deployment and possible injury, always install the protective short connectors on the driver's and passenger's airbag connectors before working near any SRS wiring.

1. Disconnect the battery negative cable, then disconnect the positive cable.

2. Install the short connectors (RED):

Driver's Side:

- Remove the access panel from the steering wheel, then remove the short connector (RED) from the panel.



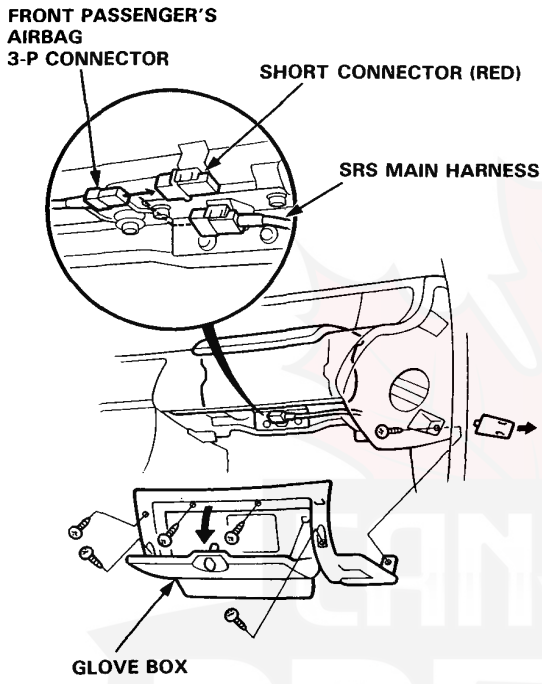
- Disconnect the 3-P connector between the driver's airbag and cable reel, then install the short connector (RED) on the airbag side of the connector.

(cont'd)

Wiring Precautions (cont'd)

Front Passenger's Side:

- Remove the glove box, then remove the short connector (RED) from its holder.

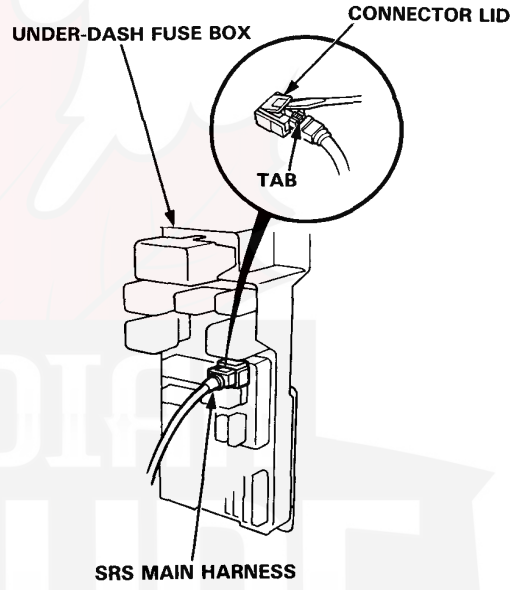


- Disconnect the 3-P connector between the front passenger's airbag and SRS main harness, then install the short connector (RED) on the airbag side of the connector.

Disconnecting the SRS Connector at the Fuse Box

CAUTION: Avoid breaking the connector; it's double-locked.

1. First lift the connector lid with a thin screwdriver, then press the connector tab down and pull the connector out.

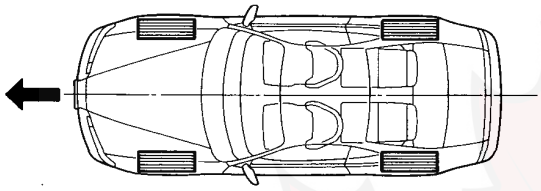


2. To reinstall the connector, push it into position until it clicks, then close its lid.

Steering-related Precautions

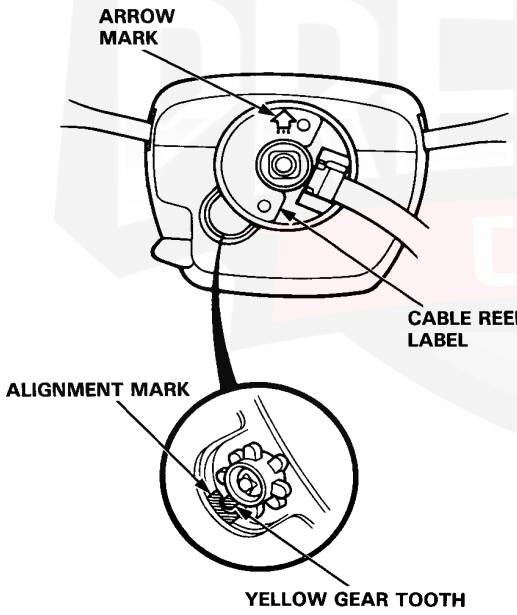
Steering Wheel and Cable Reel Alignment

NOTE: To avoid misalignment of the steering wheel or airbag on reassembly, make sure the wheels are turned straight ahead before removing the steering wheel.



Rotate the cable reel clockwise until it stops. Then rotate it counterclockwise (approximately two turns) until:

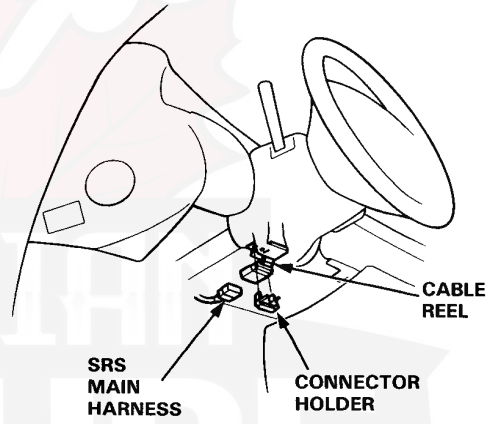
— The yellow gear tooth lines up with the alignment mark on the cover.
— The arrow mark on the cable reel label points straight up.



Steering Column Removal

CAUTION:

- **Before removing the steering column, first disconnect the connector between the cable reel and the SRS main harness.**
- **If the steering column is going to be removed without dismounting the steering wheel, lock the steering by turning the ignition key to 0-LOCK position or remove the key from the ignition so that the steering wheel will not turn.**



Do not replace the original steering wheel with any other design, since it will make it impossible to properly install the airbag (only use genuine Honda replacement parts).

After reassembly confirm that the wheels are still turned straight ahead and that the steering wheel spoke angle is correct. If minor spoke angle adjustment is necessary, do so only by adjustment of the tie-rods, not by removing and repositioning the steering wheel.

NOTE: Models with 4WS
Test and adjust the 4WS system.

Supplemental Restraint System(SRS)-Type I

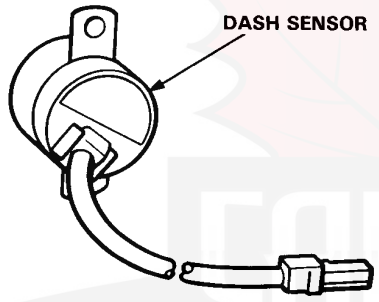
Sensor Inspection

CAUTION: Take extra care when painting or doing body work in the area below the dashboard. Avoid direct exposure of the sensors or wiring to heat guns, welding, or spraying equipment.

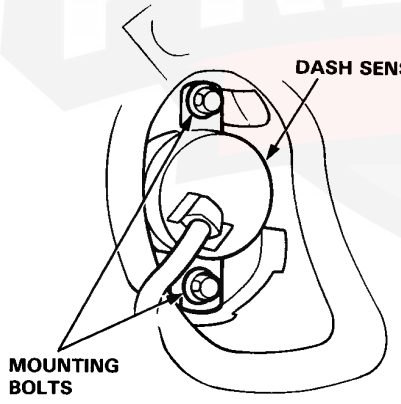
⚠WARNING

- **Disconnect both the negative and positive battery cables.**
- **Install the short connectors before working below the dashboard or near the dash sensors.**

- After any degree of frontal body damage, inspect both dash sensors. Replace a sensor if it is dented, cracked, or deformed.



- Be sure the sensors are installed securely.



Inspection After Deployment

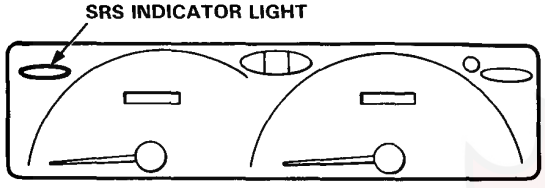
After a collision in which the airbags were deployed, inspect the following:

1. Inspect the dash sensors for physical damage. If the sensors are damaged, replace them.
2. Inspect all the SRS wire harnesses. Replace, don't repair, any damaged harnesses.
3. Inspect the cable reel for heat damage. If there is any damage, replace the cable reel.
4. After the car is completely repaired, turn the ignition switch on. If the SRS indicator light comes on for about six seconds and then goes off, the SRS system is OK. If the indicator light does not function properly, go to SRS Troubleshooting.

Troubleshooting

Self-diagnosis Function

The SRS unit includes a self-diagnosis function. If there is a failure in the sensors, SRS unit, inflator, or their circuits, the SRS indicator light in the gauge assembly goes ON.



As a system check, the SRS indicator light also comes on when the ignition is first turned to the II position. If the light goes off after approximately six seconds, the system is OK.

If the SRS indicator light remains on (or fails to come on in the system check mode), one of the SRS components (or the wiring/connectors in between) is faulty.

Troubleshooting Precautions

- **Always use the test harness. Do not use test probes directly on component connector terminals or wires; you may damage them or the SRS unit.**
- **When connecting any of the test harnesses to the system, push the connectors straight-in; do not bend the connector terminals.**
- **Before disconnecting any part of the SRS wire harness, install the short connectors (RED) on the driver's airbag and the front passenger's airbag.**

SRS Indicator Light Troubleshooting

Possible conditions:

1. SRS indicator light does not come on at all — see page 23-97.
2. SRS indicator light stays on constantly — see page 23-101.
3. SRS indicator light comes on in combination with a failure of another electrical system (brake system light, engine check light etc.). Check for damage/corrosion at the under-dash fuse box connector.

NOTE:

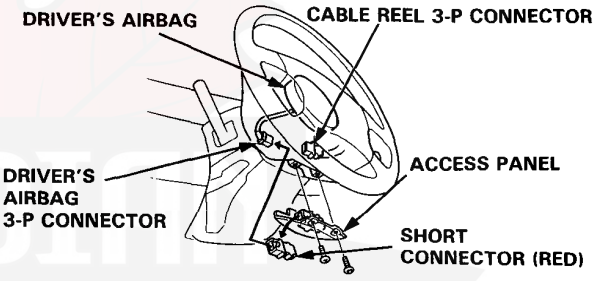
- Before starting the applicable troubleshooting, check the condition of all SRS connectors and ground points.
- If the fault is not found after completing the applicable troubleshooting, substitute a known-good SRS unit and check whether the indicator light goes off.

Short Connector Installation

⚠WARNING To avoid accidental deployment and possible injury, always install the protective short connector on the driver's airbag connectors and the front passenger's airbag, before working near any SRS wiring.

1. Disconnect the battery negative cable, then disconnect the positive cable.

2. Install the short connector(s):
   Driver's Side:
   - Remove the access panel from the steering wheel, then remove the short connector (RED) from the panel.



   - Disconnect the connector between the driver's airbag and cable reel, then install the short connector (RED) on the airbag side of the connector.

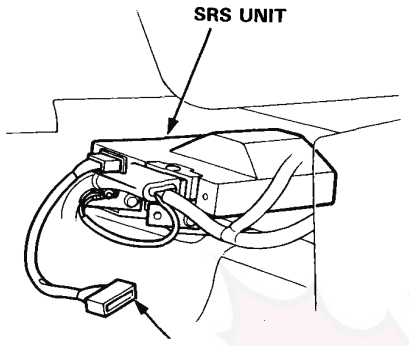
   Front Passenger's Side:
   - Remove the glove box, then remove the short connector (RED) from the holder.

   - Disconnect the connector between the front passenger's airbag and SRS main harness, then install the short connector (RED) on the airbag side of the connector (see page 23-92).

Supplemental Restraint System(SRS)-Type I

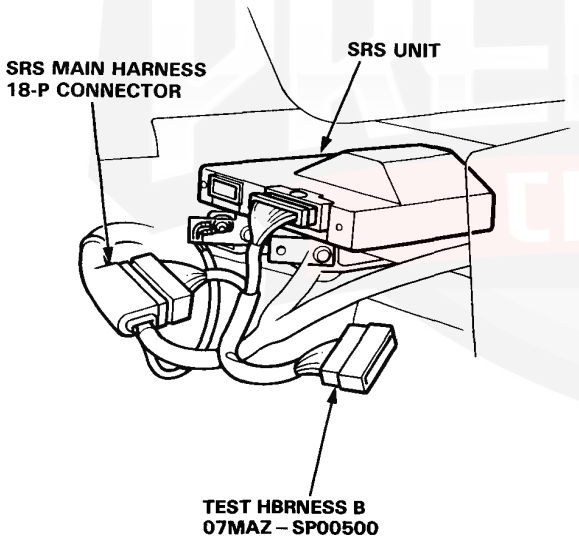
Test Harnesses and Attachment Points

Test Harness A:



1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

Test Harness B:

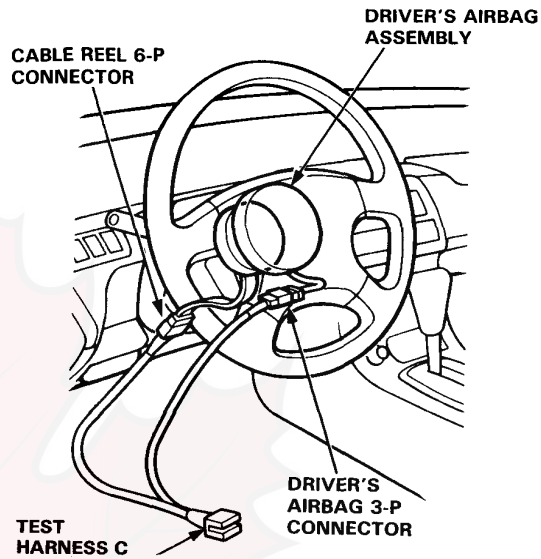


ROW A (SRS UNIT END)

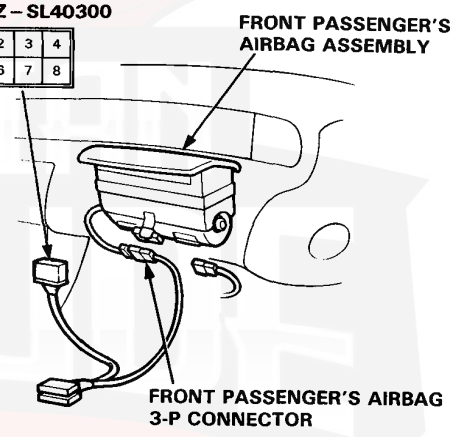
A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
B	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

ROW B (WIRE HARNESS END)

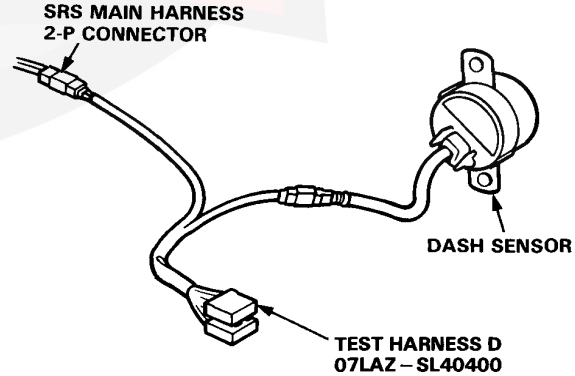
Test Harness C:



1	2	3	4
5	6	7	8



Test Harness D:



1	2
3	4

Troubleshooting

The SRS Indicator Does Not Light

CAUTION: Use only a digital circuit tester to check the system.

Disconnect the battery negative cable and then the positive cable.
Install the short connectors on the airbags (see page 23-91).

Reconnect the battery positive cable and then the negative cable.

Turn the ignition switch ON.

Do any other indicator lights (brake system light etc.) come on (in the gauge assembly)?

NO → Inspect the No. 13 (10 A) fuse (under-dash fuse box).

Is No. 13 fuse OK?

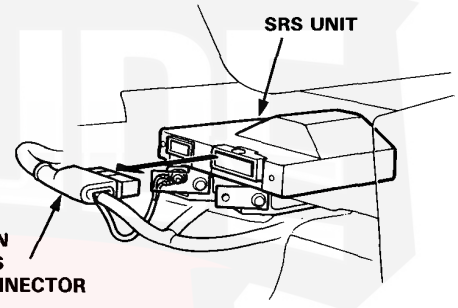
NO → **Replace the fuse.**

YES → **Repair open in dashboard wire harness between the No. 13 fuse and gauge assembly.**

YES

Turn the ignition switch OFF.

Disconnect the SRS main harness 18-P connector from the SRS unit.



Turn the ignition switch ON.

Does the SRS indicator light come on?

YES → **The SRS unit is faulty.**

NO

Turn the ignition switch OFF.

(To page 23-98)

(cont'd)

Troubleshooting (cont'd)

(From page 23-97)

Disconnect the SRS main harness 4-P connector from the main wire harness.

Turn the ignition switch ON.

Is SRS indicator light ON? YES → **The SRS main harness is faulty.**

NO

Turn the ignition switch OFF.

Remove the gauge assembly, then inspect the SRS indicator light bulb.

Is the SRS indicator light bulb OK? NO → **Replace the indicator light bulb.**

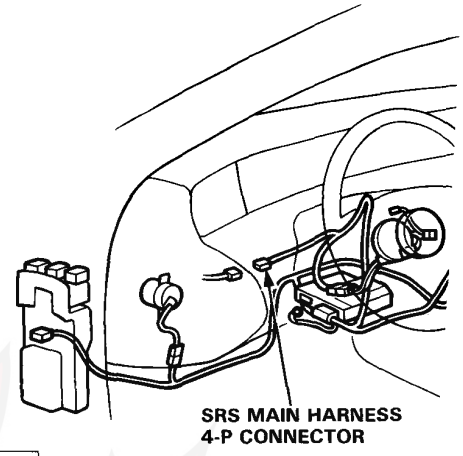
YES

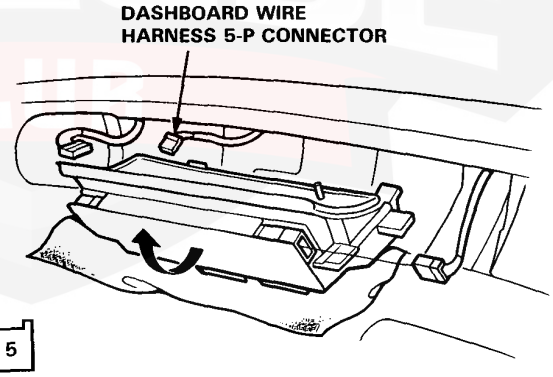
Connect a voltmeter between the No. 3 terminal of the 5-P connector and body ground.

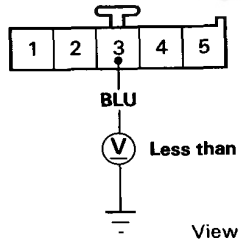
Turn the ignition switch ON.

Measure the voltage between the No. 3 terminal and body ground.

(To page 23-99)







View from terminal side.

(From page 23-98)

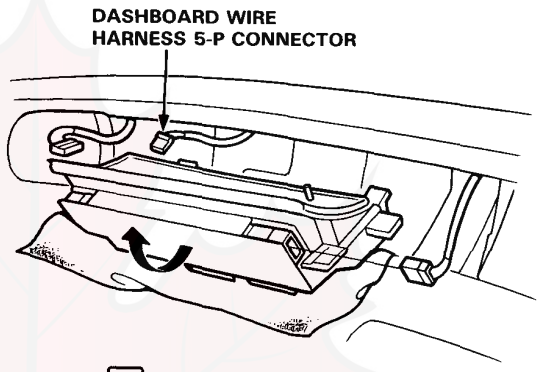
Is there less than 8.5 V with *the ignition switch* ON?

NO → **Short in BLU wire of the dashboard wire harness. Replace the dashboard wire harness.**

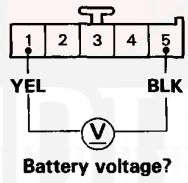
YES

Turn the ignition switch OFF.

Connect the voltmeter between the No. 1 terminal (+) and the No. 5 terminal (–) of the dashboard wire harness 5-P connector.



Turn the ignition switch ON.



View from terminal side.

Measure the voltage between the No. 1 terminal and the No. 5 terminal.

Is there battery voltage?

NO → Check for continuity between the No. 5 terminal and body ground.

YES

Turn the ignition switch OFF.

Is there continuity?

NO → **Repair open in the BLK wire (No. 5 terminal) between the gauge assembly and body ground or look for a poor ground (G401, 402).**

YES

Repair open in the YEL wire (No. 1 terminal) of the dashboard wire harness between the gauge assembly and the No. 13 (10 A) fuse.

(To page 23-100)

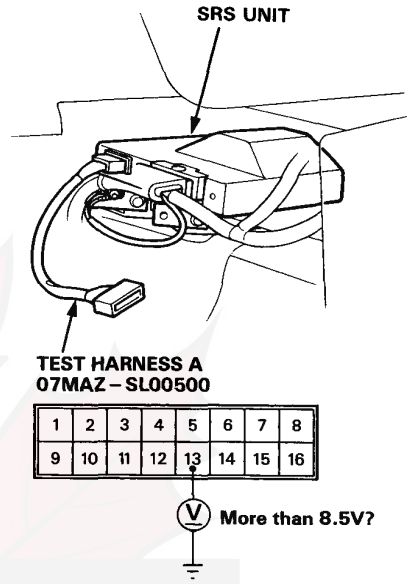
(cont'd)

Troubleshooting (cont'd)

(From page 23-99)

Reconnect each connector to the gauge assembly and SRS unit then connect Test Harness A to the SRS unit.

Measure the voltage between the No. 13 terminal and body ground for six seconds after ignition is first turned on.



Is there more than 8.5 V?

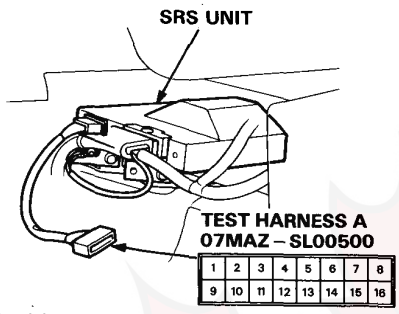
NO → **SRS indicator circuit (in the gauge assembly) is faulty.**

YES

SRS unit is faulty.

SRS Indicator Light Stays on Continuously

1. Make a photocopy of this page.
2. Connect Test Harness A (07MAZ–SL00500) to the SRS unit as shown.



3. Turn the ignition switch ON.
   - Voltages in the chart assume the car's "battery voltage" is about 12 volts. Less than 12 volts will result in different or possibly false readings.
   - Do not disconnect the airbags from the circuit when checking SRS unit voltages.

4. First, check for voltage between Test Harness Terminal No. 12 and ground.
   - If voltage is indicated, there is a poor ground (*see page 23-113*).
   - If no voltage is indicated, continue with checking all the other terminals.

5. Record your voltage readings, for each terminal, in the row of blank boxes near the top of the chart.

6. Compare each reading with the voltage ranges listed in the column below it. If the reading is within a range, circle that range.
   - *If you circled all the Failure Mode ranges across* any row, check the car for the Probable Failure Mode listed at the end of the row. (Refer to the letter for that Mode on the following pages).
   - If you did not circle all the ranges across any row, replace the SRS unit with a known-good unit, and retest.
     - If all your voltage readings are now Normal, replace the SRS unit.
     - If your voltage readings are still not Normal but they don't fit within a complete row of Failure Mode ranges, check the condition of the terminals in each of the SRS connectors shown in the system diagram on page 23-89.

NOTE: *Do not disconnect the airbags when checking SRS unit voltages.*

Test Harness Terminal	1 SADH	2 SAPH	–	4 VCC	5 SV	–	–	8 SADC	–	10 BUC1	–	12 GND	13 IDC	14 M1	–	–	Probable Failure Mode
Normal Voltage	4.3 – 5.6	4.3 – 5.6	–	4.5 – 5.5	12.0 – 14.3	–	–	5.6 – 7.3	–	11.5 – 14.5	–	0	8.5 – 13.6	8.4 – 10.9	–	–	
Your Voltage Reading		–	–			–	–		–		–				–	–	
Failure Mode Voltage	2.8 – 3.7	2.8 – 3.7	–	4.5 – 5.5	12.0 – 14.3	–	–	3.7 – 4.9	–	11.5 – 14.5	–	0	2.0 – 8.5	8.4 – 10.9	–	–	A Open in one cowl sensor contact.
	0	0	–	4.5 – 5.5	12.0 – 14.3	–	–	0	–	11.5 – 14.5	–	0	2.0 – 8.5	8.4 – 10.9	–	–	B • Open in both cowl sensor contacts. • Short in one dash sensor. • Short to driver's or passenger's airbag inflator (body ground).
	8.6 – 11.3	8.6 – 11.3	–	4.5 – 5.5	12.0 – 14.3	–	–	11.2 – 14.6	–	11.5 – 14.5	–	0	2.0 – 8.5	8.4 – 10.9	–	–	C Short in cowl sensor contacts or open in both dash sensors.
	5.7 – 7.4	5.7 – 7.4	–	4.5 – 5.5	12.0 – 14.3	–	–	7.4 – 9.7	–	11.5 – 14.5	–	0	2.0 – 8.5	8.4 – 10.9	–	–	D Open in one dash sensor.
	8.6 – 11.3	2.9 – 3.7	–	4.5 – 5.5	12.0 – 14.3	–	–	3.7 – 4.9	–	11.5 – 14.5	–	0	2.0 – 8.5	8.4 – 10.9	–	–	E Open in driver's airbag inflator or cable reel.
	2.9 – 3.7	8.7 – 11.2	–	4.5 – 5.5	12.0 – 14.3	–	–	3.7 – 4.9	–	11.5 – 14.5	–	0	2.0 – 8.5	8.4 – 10.9	–	–	F Open in front passenger's airbag inflator.
	8.6 – 11.3	8.6 – 11.3	–	4.5 – 5.5	12.0 – 14.3	–	–	0	–	11.5 – 14.5	–	0	2.0 – 8.5	8.4 – 10.9	–	–	G Open in driver's and passenger's airbag inflator.
	4.3 – 5.6	4.3 – 5.6	–	0	0	–	–	5.6 – 7.3	–	11.5 – 14.5	–	0	2.0 – 8.5	8.4 – 10.9	–	–	H Blown SRS fuse (No. 24 10 A) or open in the wire.
	4.3 – 5.6	4.3 – 5.6	–	4.5 – 5.5	12.0 – 14.3	–	–	5.6 – 7.3	–	11.5 – 14.5	–	0	0 (8.5 – 13.6)	8.4 – 10.9	–	–	I Short (or open) in SRS indicator wire harness.

Troubleshooting (cont'd)

Mode A: Open in one cowl sensor contact.

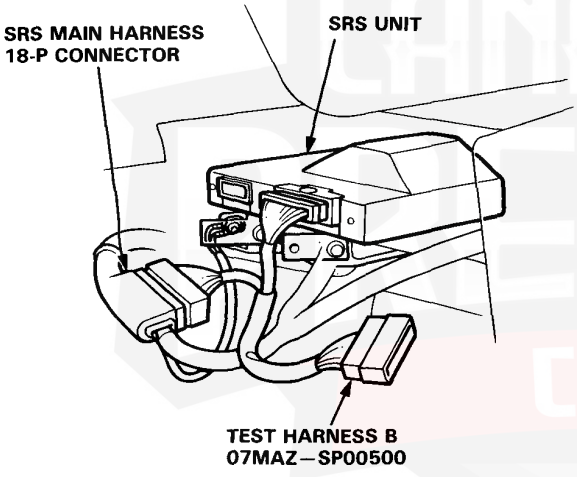
- The SRS unit is faulty. Substitute a known-good SRS unit and recheck the voltages according to the chart on page 23-101.

Mode B:

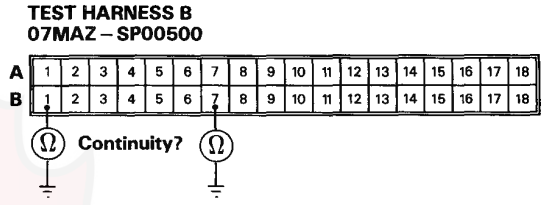
- **Short to driver's or passenger's airbag inflator (body ground).**
- **Short in one dash sensor.**
- **Open in both cowl sensor contacts.**

1. Before disconnecting any part of the SRS wire harness, install the short connectors (RED) on the airbags (see page 23-91).

2. Connect Test Harness B (07MAZ—SP00500) between the SRS unit and SRS main harness 18-P connector.

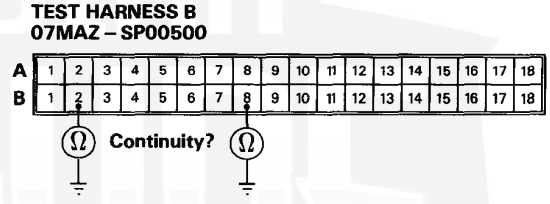


3. Reconnect the driver's airbag connector, then check continuity between the B1 terminal and body ground, and between the B7 terminal and body ground.



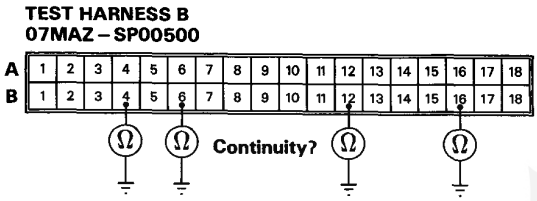
- If there is continuity at either terminal, go to step 6.
- If there is no continuity at either terminal, go to step 4.

4. Reconnect the front passenger's airbag connector, then check continuity between the B2 terminal and body ground, and between the B8 terminal and body ground.



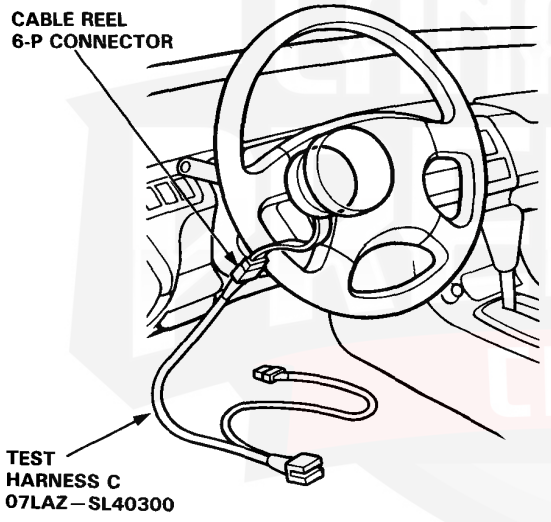
- If there is continuity at either terminal, go to step 10.
- If there is no continuity at either terminal, go to step 5.

5. Check continuity between body ground and each terminal of both dash sensors.

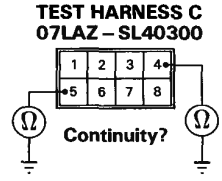


- If there is continuity at any of the terminals, go to step 12.
- If there is no continuity at any terminal, go to step 13.

6. Disconnect the cable reel 6-P connector from the SRS main harness, then connect Test Harness C (07LAZ–SL40300) only to the cable reel side of the 6-P connector.



7. Check continuity between the No. 4 terminal and body ground, and between the No. 5 terminal and body ground.

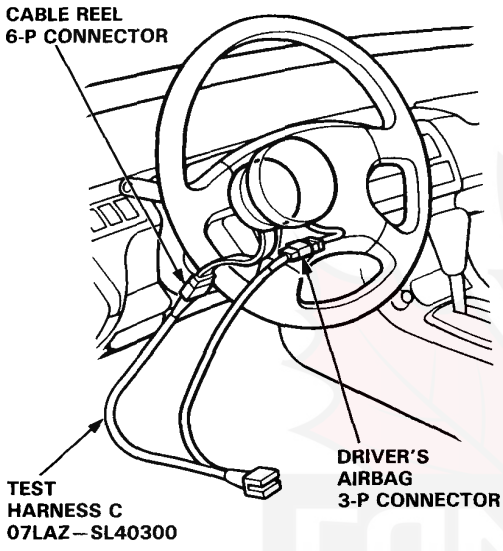


- If there is continuity at either terminal, go to step 8.
- If there is no continuity at either terminal, the SRS main harness is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

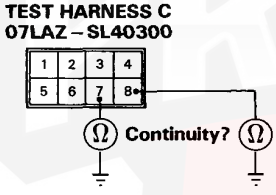
(cont'd)

Troubleshooting (cont'd)

8. Disconnect the driver's airbag 3-P connector from the cable reel, then connect Test Harness C (07LAZ–SL40300) to the driver's airbag 3-P connector.

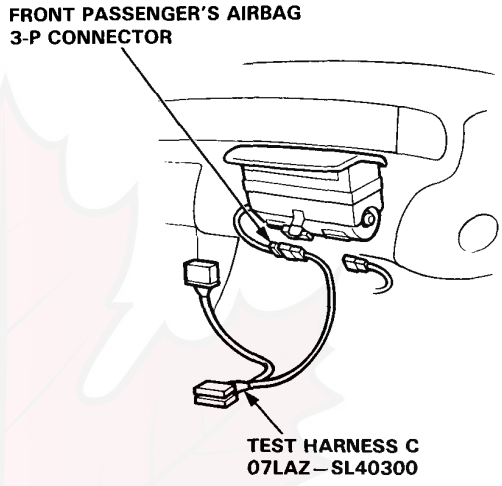


9. Check continuity between the No. 7 terminal and body ground, and between the No. 8 terminal and body ground.

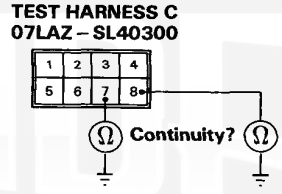


- If there is continuity at either terminal, the driver's airbag inflator is faulty. Replace it and recheck the voltages according to the chart on page 23-101.
- If there is no continuity at either terminal, the cable reel is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

10. Disconnect the front passenger's airbag 3-P connector from the SRS main harness, then connect Test Harness C (07LAZ–SL40300) to the airbag side of the connector.

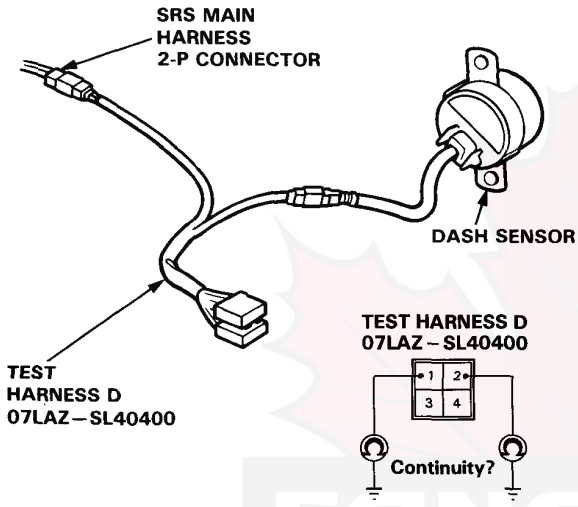


11. Check continuity between the No. 7 terminal and body ground, and between the No. 8 terminal and body ground.



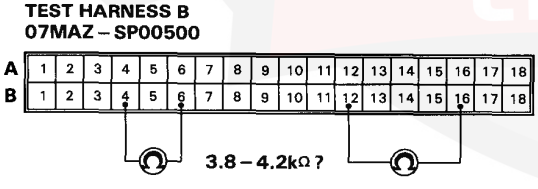
- If there is continuity at either terminal, the front passenger's airbag inflator is faulty. Replace it and recheck the voltages according to the chart on page 23-101.
- If there is no continuity at either terminal, the SRS main harness is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

12. Connect Test Harness D (07LAZ—SL40400) between the dash sensor and SRS main harness 2-P connector. Check continuity between the No.1 terminal and body ground, and between the No.2 terminal and body ground.



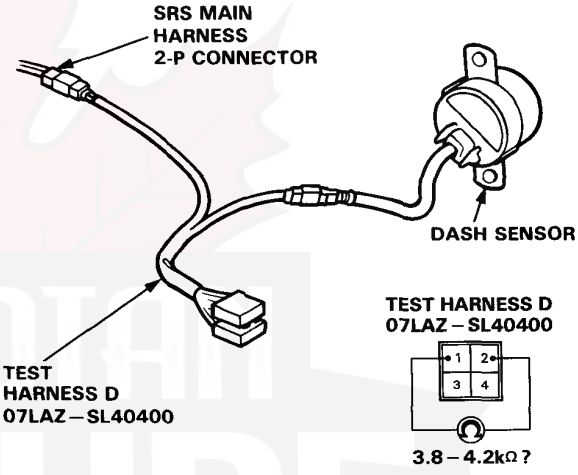
- If there is continuity at either terminal, the dash sensor is faulty. Replace it and recheck the voltages according to the chart on page 23-101.
- If there is no continuity at either terminal, the SRS main harness is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

13. Check the resistance between the left dash sensor terminals B12 and B16, and between the right dash sensor terminals B4 and B6.



- If resistance is 3.8—4.2 kΩ for both sensors, the SRS unit is faulty. Substitute a know-good SRS unit and recheck the voltages according to the chart on page 23-101.
- If resistance is less than 3.8 kΩ for either sensor, go to step 14.

14. Connect Test Harness D (07LAZ—SL40400) between the dash sensor and SRS main harness 2-P connector. Check the resistance between the No.1 terminal and No. 2 terminal.



- If resistance is 3.8—4.2 kΩ, the SRS main harness is faulty. Replace it and recheck the voltages according to the chart on page 23-101.
- If resistance is less than 3.8 kΩ, the dash sensor is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

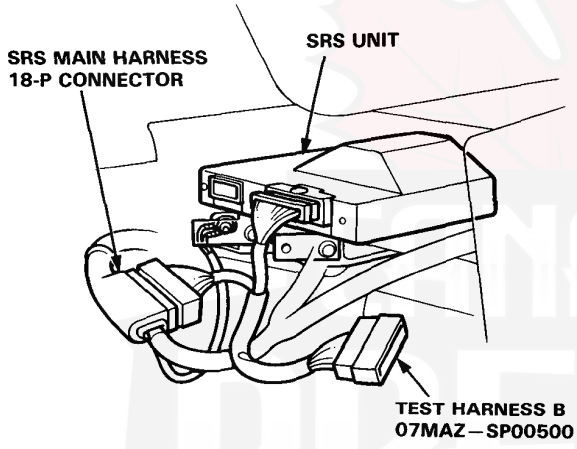
(cont'd)

Troubleshooting (cont'd)

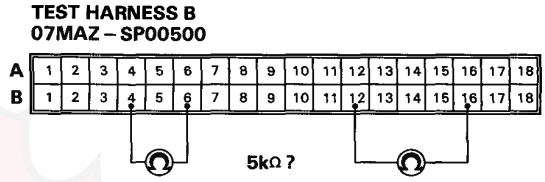
Mode C: Short in cowl sensor contact, or open in both dash sensors.
Mode D: Open in one dash sensor.

1. Before disconnecting any part of the SRS wire harness, install the short connectors (RED) on the airbags (see page 23-91).

2. Connect Test Harness B (07MAZ—SP00500) between the SRS unit and SRS main harness 18-P connector.



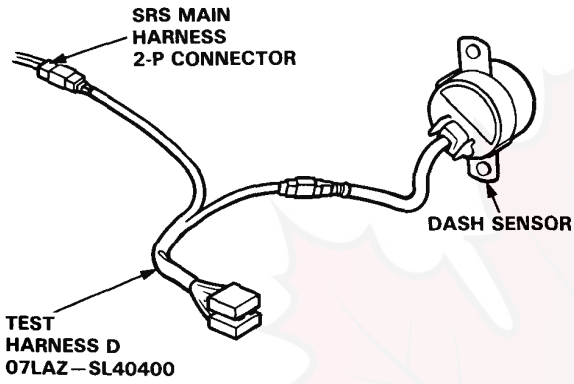
3. Check the resistance between the left dash sensor terminals B12 and B16, and between the right dash sensor terminals B4 and B6.



- If resistance is more than 5 kΩ for either set of terminals, go to step 4.

- If resistance is less than 5 kΩ for both sets of terminal, the SRS unit is faulty. Substitute a known-good SRS unit and recheck the voltages according to the chart on page 23-101.

4. Connect Test Harness D (07LAZ—SL40400) between the dash sensor and SRS main harness 2-P connector.
   Check the resistance between the No. 1 terminal and No. 2 terminal.

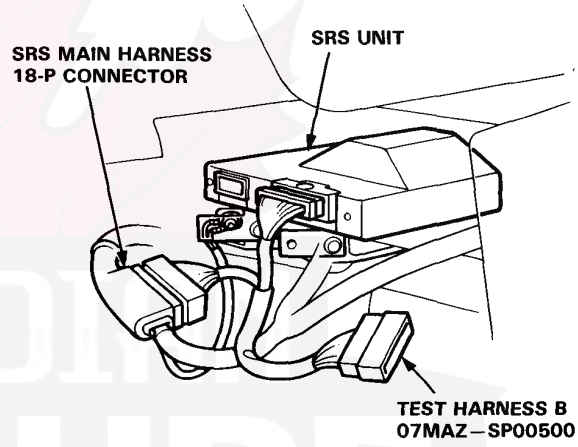


- If resistance is more than 5 kΩ, the dash sensor is faulty. Replace it and recheck the voltages according to the chart on page 23-101.
- If resistance is less than 5 kΩ, the SRS main harness is faulty. Replace the SRS main harness and recheck the voltages according to the chart on page 23-101.

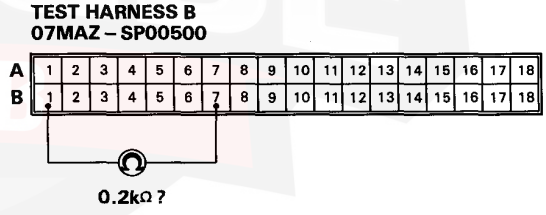
Mode E: Open in driver's airbag inflator or cable reel.

1. Before disconnecting any part of the SRS wire harness, install the short connectors (RED) on the airbags (see page 23-91).

2. Connect Test Harness B (07MAZ—SP00500) between the SRS unit and SRS main harness 18-P connector.



3. Reconnect the driver's airbag connector, then check the resistance between the B1 and the B7 terminals.

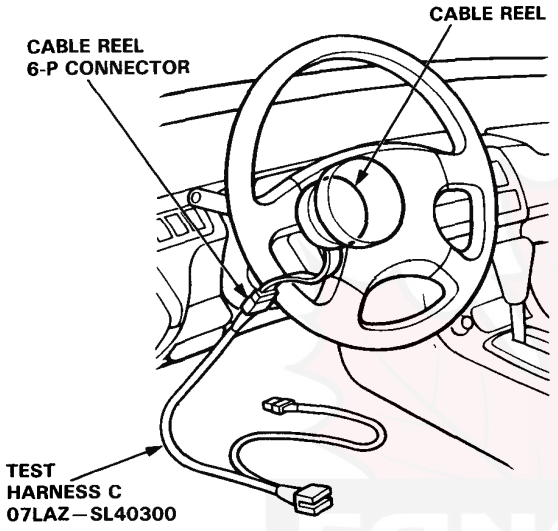


- If resistance is more than 0.2 kΩ, go to step 4.
- If resistance is less than 0.2 kΩ, the SRS unit is faulty. Substitute a known-good SRS unit and recheck the voltages according to the chart on page 23-101.

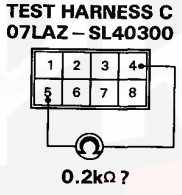
(cont'd)

Troubleshooting (cont'd)

4. Disconnect the cable reel 6-P connector from the SRS main harness, then connect Test Harness C (07LAZ—SL40300) only to the cable reel side of the connector.

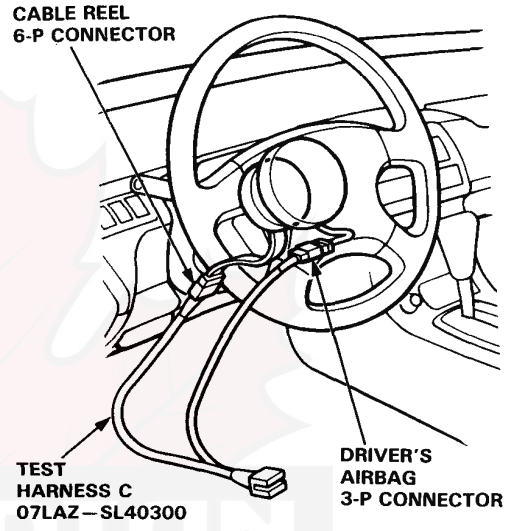


5. Measure the resistance between the No. 4 terminal and the No. 5 terminal.

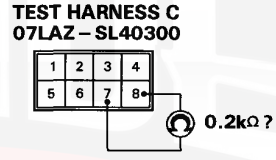


- If resistance is more than 0.2 kΩ, go to step 6.
- If resistance is less than 0.2 kΩ, the SRS main harness is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

6. Disconnect the driver's airbag 3-P connector from the cable reel harness, then connect Test Harness C (07LAZ—SL40300) to the driver's airbag 3-P connector.



7. Measure the resistance between the No. 7 terminal and the No. 8 terminal.



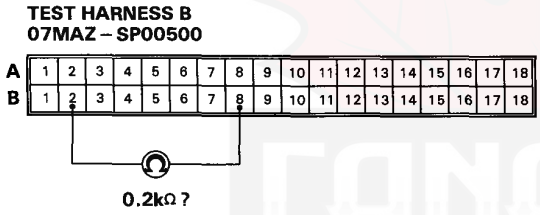
- If resistance is more than 0.2 kΩ, the driver's airbag inflator is faulty. Replace the airbag assembly and recheck the voltages according to the chart on page 23-101.
- If resistance is less than 0.2 kΩ, the cable reel is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

Mode F: Open in front passenger's airbag inflator.

1. Before disconnecting any part of the SRS wire harness, install the short connectors (RED) on the airbags (see page 23-91).

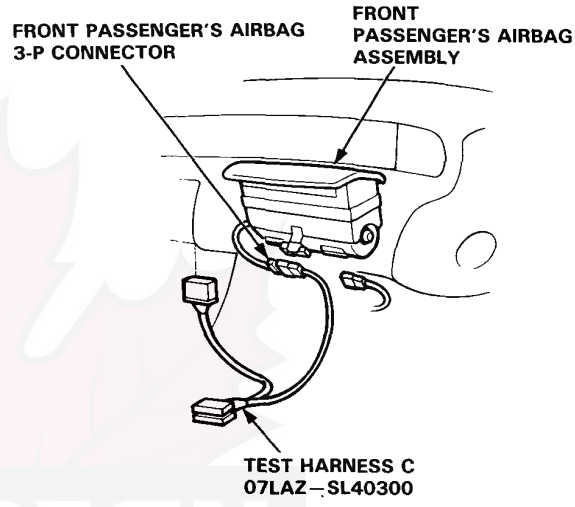
2. Connect Test Harness B (07MAZ—SP00500) between the SRS unit and SRS main harness 18-P connector.

3. Reconnect the front passenger's airbag connector, then measure the resistance between the B2 terminal and B8 terminal.

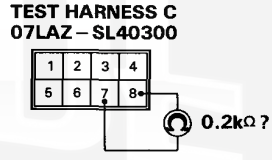


- If resistance is more than 0.2 kΩ, go to step 4.
- If resistance is less than 0.2 kΩ, the SRS unit is faulty. Substitute a known-good SRS unit and recheck the voltages according to the chart on page 23-101.

4. Disconnect the front passenger's airbag 3-P connector from the SRS main harness, then connect Test Harness C (07LAZ—SL40300) to the front passenger's airbag side of the connector.



5. Measure the resistance between the No. 7 terminal and the No. 8 terminal.



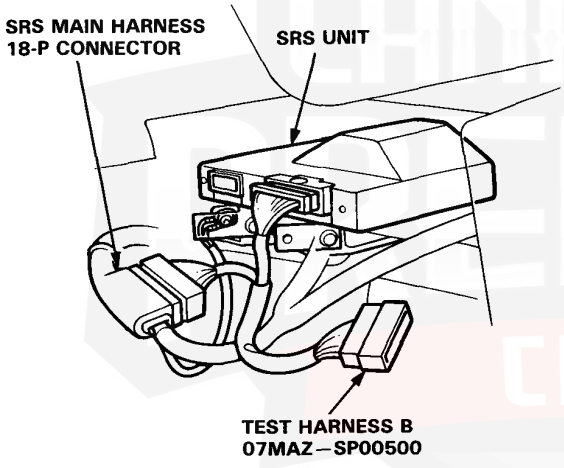
- If resistance is more than 0.2 kΩ, the front passenger's airbag inflator is faulty. Replace the front passenger's airbag assembly and recheck the voltages according to the chart on page 23-101.
- If resistance is less than 0.2 kΩ, the cable reel is faulty. Replace the cable reel and recheck the voltages according to the chart on page 23-101.

(cont'd)

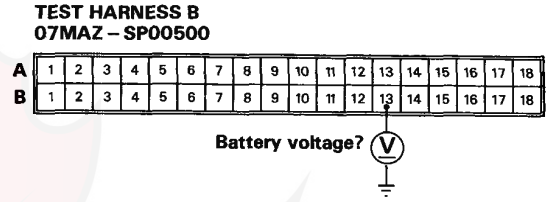
Troubleshooting (cont'd)

Mode H: Blown SRS No. 24 fuse, or open in the wire.

1. Check the SRS No. 24 (10 A) fuse in the under-dash fuse box. If it's OK, go on to step 2.
   If it's blown, replace it with a new 10 A fuse, then turn the ignition switch ON:
   - If fuse doesn't blow, go on to step 2.
   - If the fuse blows, troubleshoot as necessary to find the short.
2. Before disconnecting any part of the SRS wire harness, install the short connectors (RED) on the airbags (see page 23-91).
3. Connect Test Harness B (07MAZ—SP00500) between the SRS unit and SRS main harness 18-P connector.



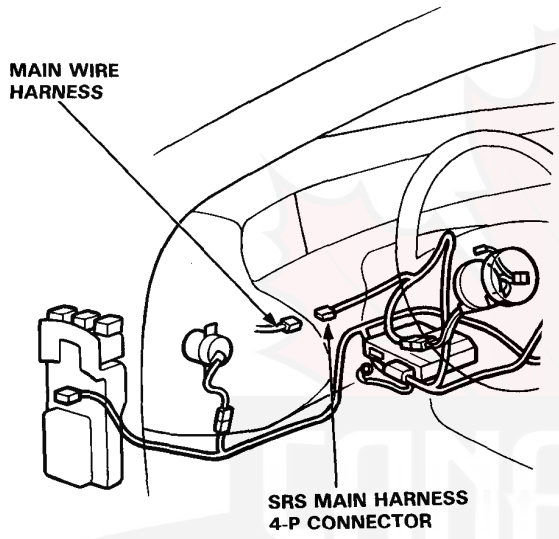
4. Reconnect the positive and negative cables to the battery.
5. Measure the voltage between the B13 terminal and body ground with the ignition switch ON.



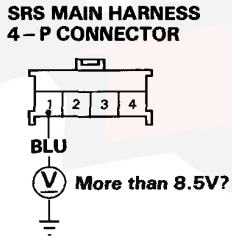
- If there is battery voltage, the SRS unit is faulty. Replace it and recheck the voltages according to the chart on page 23-101.
- If less than battery voltage, the SRS main harness is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

Mode I: Short or open in SRS indicator wire harness.

1. Disconnect the SRS main harness 4-P connector from the main wire harness.



2. Turn the ignition switch ON and wait for six seconds. Measure the voltage between the No. 1 terminal and body ground on the SRS main harness 4-P connector side.

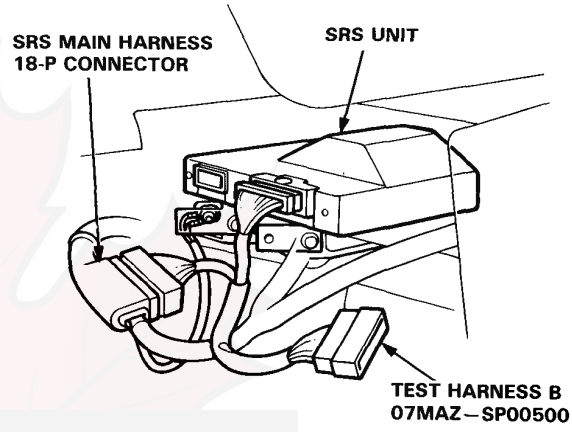


View from terminal side.

- If voltage is more than 8.5 V, go to step 8.
- If voltage is less than 8.5 V, go to step 3.

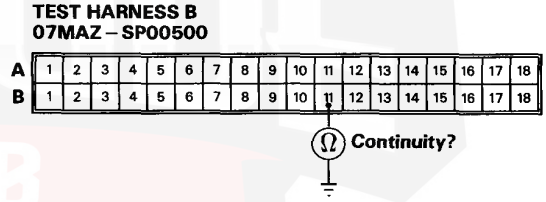
3. Before disconnecting any part of the SRS wire harness, install the short connectors (RED) on the airbags (see page 23-91).

4. Connect Test Harness B (07MAZ—SP00500) between the SRS unit and SRS main harness 18-P connector.



5. Reconnect the battery positive cable and negative cable.

6. Check for continuity between the B11 terminal and body ground.

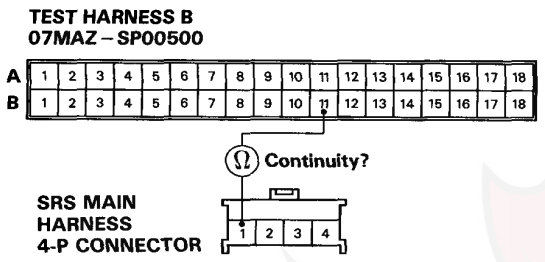


- If there is continuity, the SRS main harness is shorted. Replace the SRS main harness and recheck the voltages according to the chart on page 23-101.
- If there is no continuity, go to step 7.

(cont'd)

Troubleshooting (cont'd)

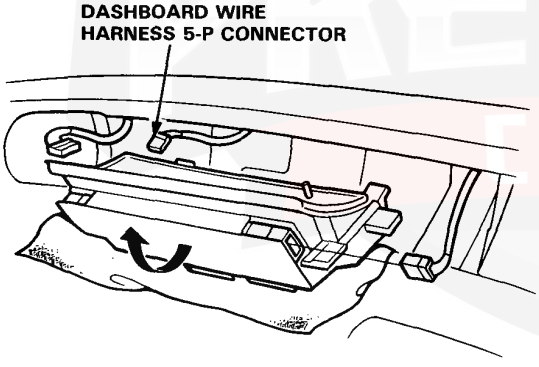
7. Check for continuity between the B11 terminal of Test Harness B (07MAZ—SP00500) and the No. 1 terminal of the SRS main harness 4-P connector.



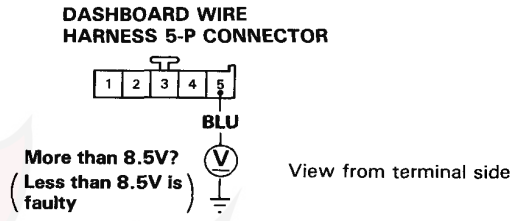
View from terminal side.

- If there is continuity, the SRS unit is faulty. Replace it and recheck the voltages according to the chart on page 23-101.
- If there is no continuity, there is an open in the SRS main harness. Replace the SRS main harness and recheck the voltages according to the chart on page 23-101.

8. Reconnect the SRS main harness 4-P connector to the main wire harness. Disconnect the dashboard wire harness 5-P connector from the gauge assembly.



9. Turn the ignition switch ON and wait for six seconds.
Measure the voltage between the No. 5 terminal and body ground.



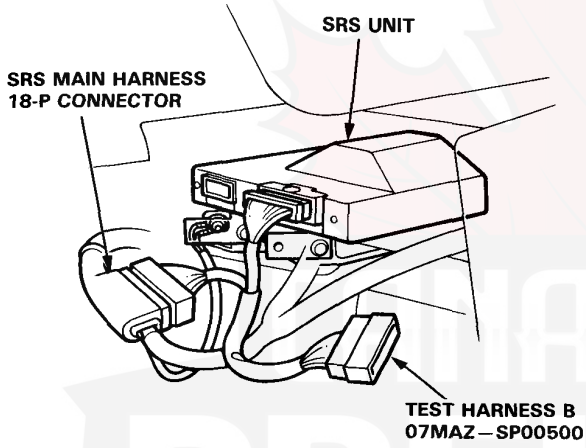
View from terminal side

- If voltage is more than 8.5 V, the SRS indicator circuit is faulty (in the gauge assembly). Replace the SRS indicator assembly and recheck the voltages according to the chart on page 23-101.
- If voltage is less than 8.5 V, the dashboard wire harness (or the main wire harness) is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

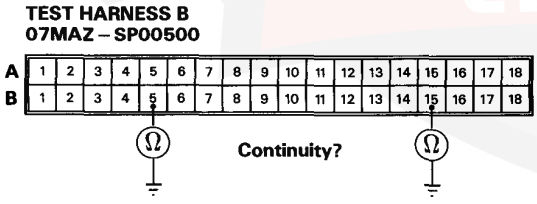
Poor ground at SRS unit or unit mounting bolts.

1. Before disconnecting any part of the SRS wire harness, install the short connectors (RED) on the airbags (see page 23-91).

2. Connect Test Harness B (07MAZ–SP00500) between the SRS unit and SRS main harness 18-P connector.



3. Check for continuity between the B5 terminal and body ground, and the B15 terminal and body ground.



- If there is continuity at either terminal, the SRS unit is faulty. Replace it and recheck the voltages according to the chart on page 23-101.

- If there is no continuity at either terminal, the SRS unit ground, the SRS unit component grounds, or the SRS main harness is faulty. Check the grounds (check the SRS unit ground wire and mounting bolts) and, if necessary, replace the SRS main harness. Recheck the voltages according to the chart on page 23-101.

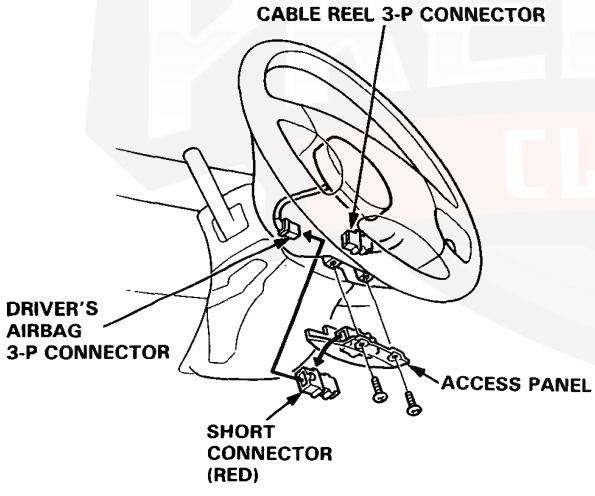
Airbag Assembly Replacement

⚠WARNING Store a removed airbag assembly with the pad surface up. If the airbag is improperly stored face down, accidental deployment could propel the unit with enough force to cause serious injury.

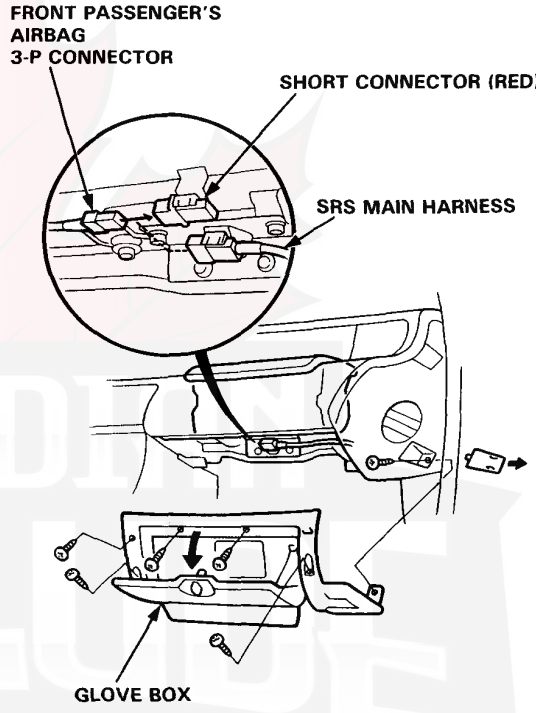
CAUTION:
- **Do not install used SRS parts from another car. When repairing as SRS, use only new parts.**
- **Carefully inspect the airbag assembly before you install it. Do not install an airbag assembly that shows signs of being dropped or improperly handled, such as dents, cracks or deformation.**
- **Always keep the short connectors (RED) on the airbags when the harness is disconnected.**
- **Do not disassemble or tamper with the airbag assembly.**

1. Disconnect the battery negative cable, then disconnect the positive cable.
2. Install the short connectors (RED) on the airbag side of the connectors:

   Driver's Side:
   - Remove the access panel from the steering wheel, then remove the short connector (RED) from the panel.
   - Disconnect the 3-P connector between the driver's airbag and cable reel, then install the short connector (RED) on the airbag side of the connector.



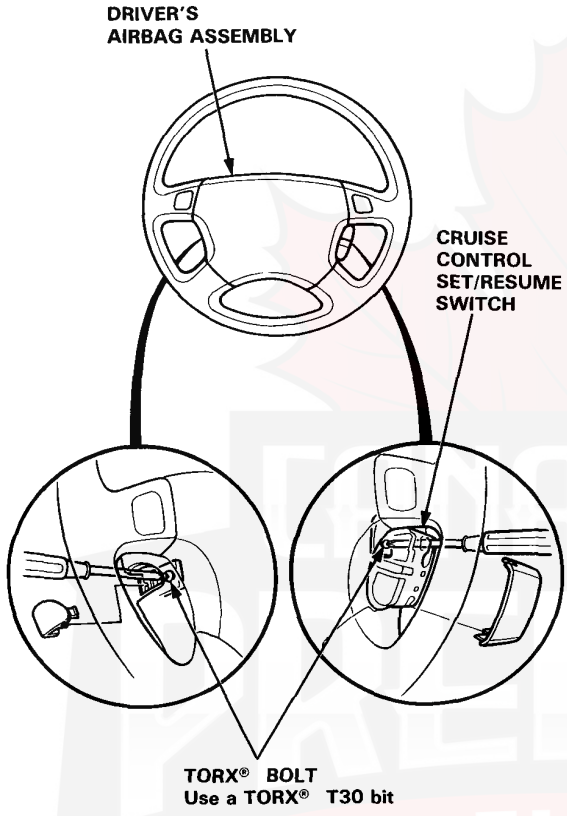
Front Passenger's Side:
- Remove the glove box, then remove the short connector (RED) from its holder.
- Disconnect the 3-P connector between the front passenger's airbag and SRS main harness, then install the short connector (RED) on the airbag side of the connector.



3. Remove the airbag(s):

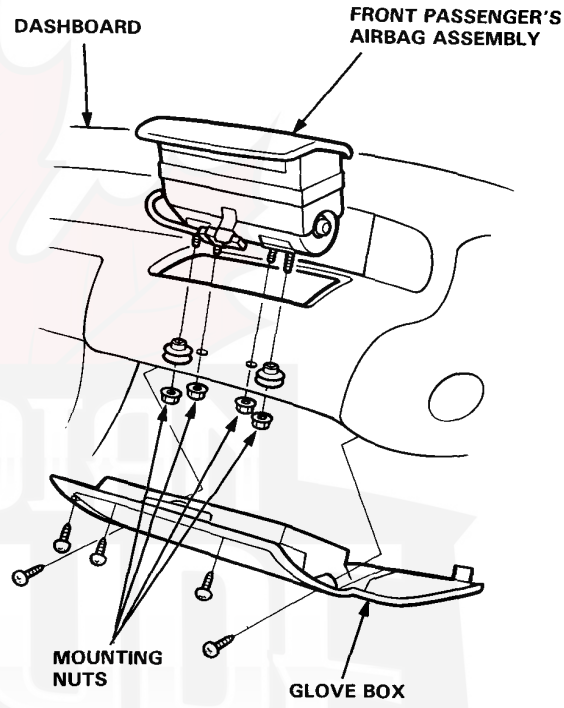
Driver's Side:

- Remove the two TORX® bolts using a TORX® T30 bit, then remove the driver's airbag assembly.



Front Passenger's Side:

- Remove the tweeter cover from the dashboard, then remove the visor and black face panel.
- Remove the glove box, then remove the four mounting nuts from the front passenger's airbag assembly.



- Carefully lift the front passenger's airbag assembly out of the dashboard.

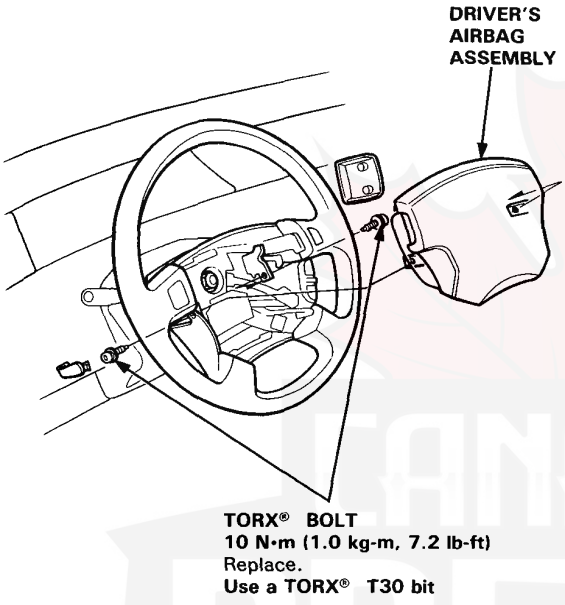
(cont'd)

Airbag Assembly Replacement (cont'd)

CAUTION: Be sure to install the SRS wiring so that it is not pinched or interfering with other car parts.

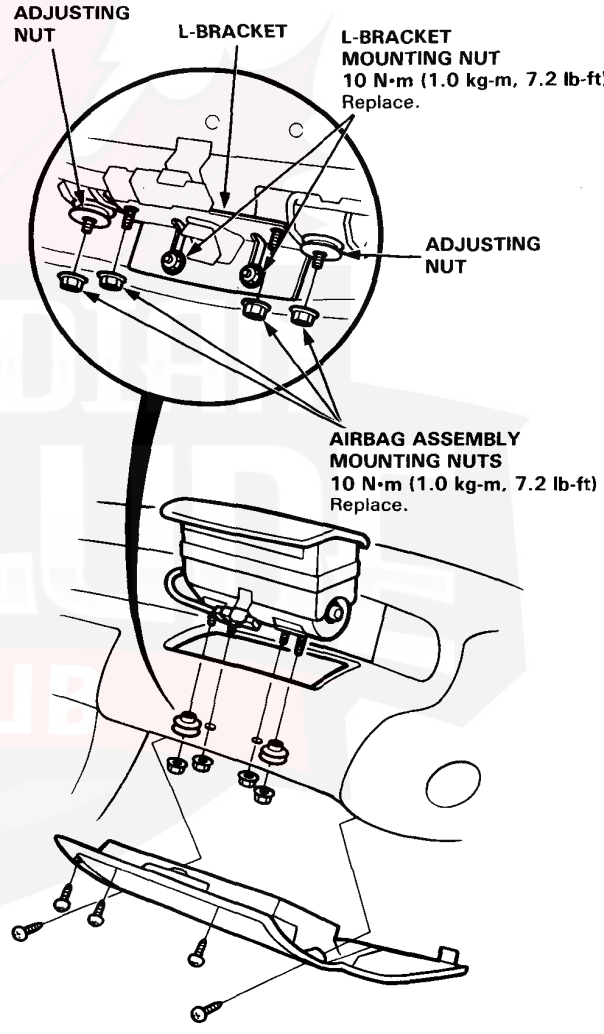
4. Install the new airbag(s).

   Driver's Side: Place the driver's airbag assembly in the steering wheel, and secure it with new TORX® bolts.



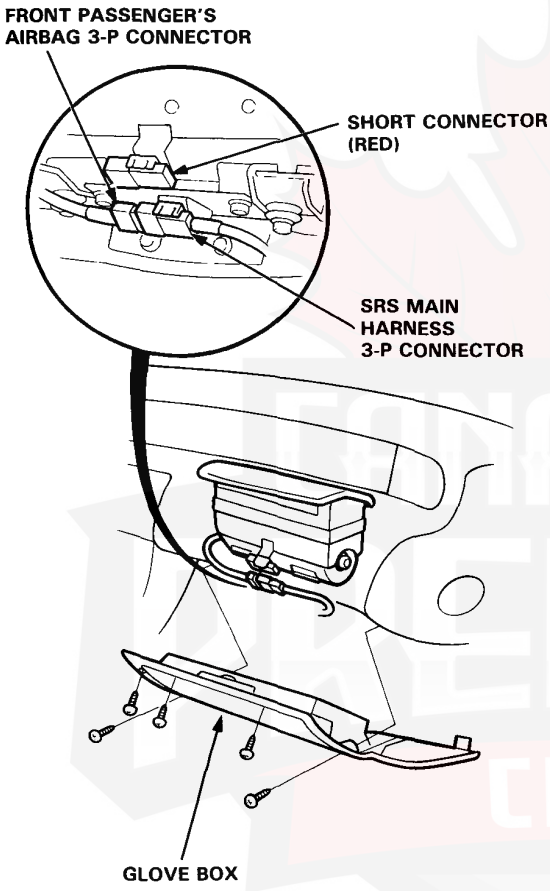
Front Passenger's Side:

- Place the front passenger's airbag assembly in the dashboard.
- Loosen the two mounting nuts on the L-bracket.
- Press the airbag assembly downwards and turn the adjusting nuts until they touch the lower part of the airbag assembly.
- Tighten the four airbag mounting nuts, then tighten the two mounting nuts on the L-bracket.

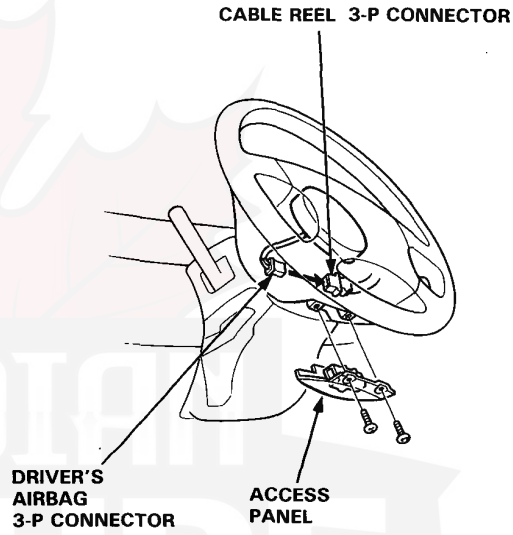


5. Remove and properly store the short connectors, then reconnect the airbag connectors.

   Front passenger's Side:
   - Attach the short connector (RED) to the connector holder.
   - Then reinstall the glove box, visor, and tweeter cover on the dashboard.



Driver's Side:
- Remove the short connector (RED) from the driver's airbag connector, then connect the airbag 3-P connector to the cable reel 3-P connector.
- Attach the short connector (RED) to the access panel, then reinstall the panel on the steering wheel.



6. Connect the battery positive cable, then the negative cable.

7. After installing the airbag assembly, confirm proper system operation:
   - Turn the ignition ON (II): The instrument panel SRS indicator light should go on for about six seconds and then go off.
   - Make sure both horn buttons work.
   - Take a test drive and make sure the cruise control set/resume switch works.

Airbag Assembly Disposal

Before scrapping any airbags (including one in a whole car to be scrapped) the airbag must be deployed. If the car is still within the warranty period, before you deploy the airbag, the Honda District Service Manager must give approval and/or special instructions.
Only after an airbag has been deployed (as the result of vehicle collision, for example), it can be scrapped.
If an airbag appears intact (not deployed), treat it with extreme caution.
Follow this procedure, described below.

Deploying the Airbags: In-car

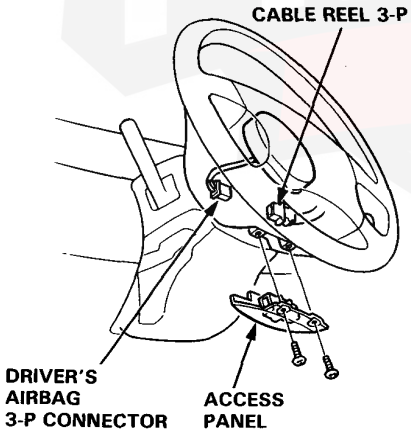
NOTE: If an SRS car is to be entirely scrapped, its airbags should be deployed while still in the car.
The airbags should not be considered as salvageable part and should never be installed in another car.

⚠WARNING Confirm that the airbag assembly is securely mounted; otherwise severe personal injury could result during deployment.

1. Disconnect both the negative cable and positive cable from the battery.
2. Confirm that the special tool is functioning properly by following the check procedure on the label of the tool set box, or on page 23-119

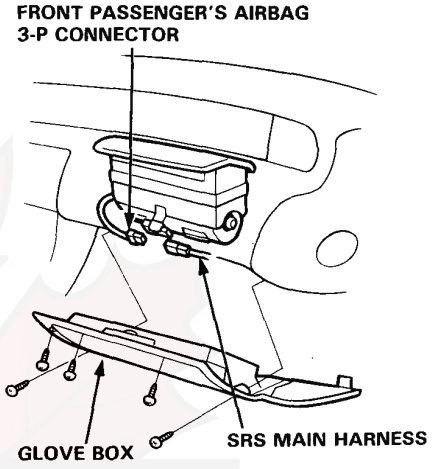
Driver's Airbag:

3. Remove the access panel, then disconnect the 3-P connector between the driver's airbag and the cable reel.

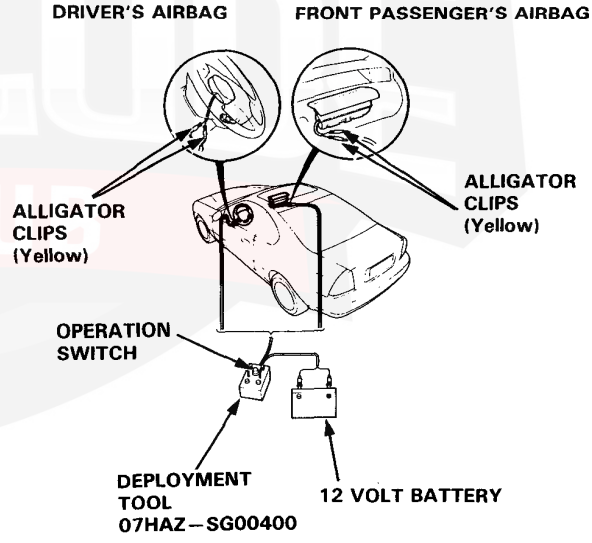


Front Passenger's Airbag:

4. Remove the glove box, then disconnect the 3-P connector between the front passenger's airbag and SRS main harness.



5. Cut off the airbag connector, strip the ends of the aibag, wires, and connect the special tool alligator clips to the bare wires. Place the special tool approximately 10 meters (30 ft) away from the airbag.



6. Connect a 12 volt battery to the tool:
   - If the green light on the tool goes on, the airbag igniter circuit is defective and cannot deploy the bag. Go to Damaged Airbag Special Procedure.
   - If the red light on the tool goes on, the airbag is ready to be deployed.

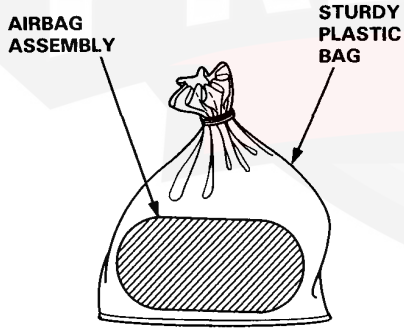
7. Push the tool's deployment switch. The airbag should deploy (deployment is both highly audible and visible — a loud noise and rapid inflation of the bag, followed by slow deflation).

   - If audible/visible deployment happens and the green light on the tool goes on, continue with this procedure.
   - If the airbag doesn't deploy, yet the green light goes ON, its igniter is defective. Go to Damaged Airbag Special Procedure.

⚠WARNING During deployment, the airbag assembly can become hot enough to burn you. Wait thirty minutes after deployment before touching the assembly.

8. Dispose of the complete airbag assembly. No part of it can be reused. Place it in a sturdy plastic bag and seal it securely.

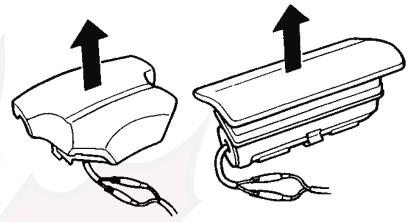
CAUTION:
- **Wear a face shield and gloves when handling a deployed airbag.**
- **Wash your hands and rinse them well with water after handling a deployed airbag.**



Deploying the Airbags: Out-of-car.

NOTE: If an intact airbag assembly has been removed from a scrapped car or has been found defective or damaged during transit, storage, or service, it should be deployed as follows:

⚠WARNING Position the airbag assembly face up, outdoors on flat ground at least 10 meters (30 ft) from any obstacles or people.



1. Confirm that the special tool is functioning properly by following the check procedure on this page or on the tool box label.
2. Remove the short connector from the airbag connector.
3. Follow steps 5, 6, 7 and 8 of the in-car deployment procedure.

Damaged Airbag Special Procedure.

⚠WARNING If an airbag cannot be deployed, it should not be treated as normal scrap; it should still be considered a potentially explosive device that can cause serious injury.

1. If installed in a car, follow the removal procedure on page 23-115.
2. In all cases, make sure a short connector is properly installed on the airbag connector.
3. Package the airbag in exactly the same packaging that the new replacement part came in.
4. Mark the outside of the box "DAMAGED AIRBAG NOT DEPLOYED" so it does not get confused with your parts stock.
5. Contact your Honda District Service Manager for how and where to return it for disposal.

Deployment Tool: Check Procedure.

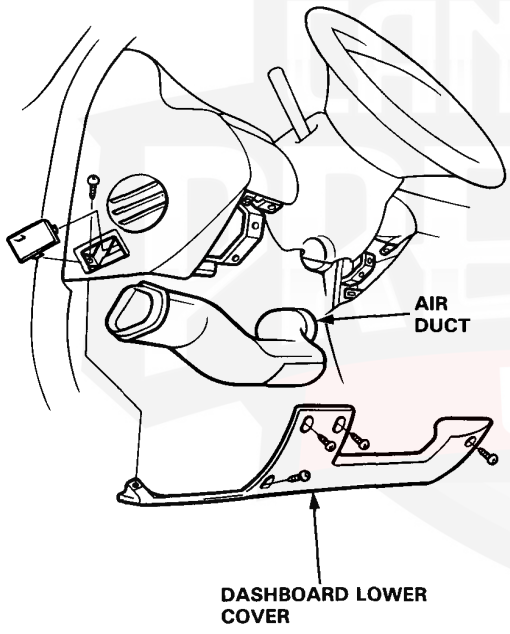
1. Connect the yellow clips to both switch protector handles on the tool; connect the tool to a battery.
2. Push the operation switch: green means tool is OK; red means tool is faulty.
3. Disconnect the battery and the yellow clips.

Cable Reel Replacement

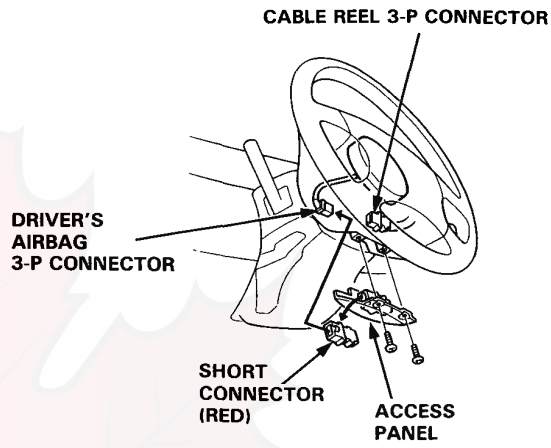
⚠ WARNING **Store a removed airbag assembly with the pad surface up. If the airbag is improperly stored face down, accidental deployment could propel the unit with enough force to cause serious injury.**

CAUTION:
- **Carefully inspect the airbag assembly before installing it. Do not install an airbag assembly that shows signs of being dropped or improperly handled, such as dents, cracks or deformation.**
- **Always keep the short connectors on the airbags when the harness is disconnected.**
- **Do not disassemble or tamper with any airbag assembly.**

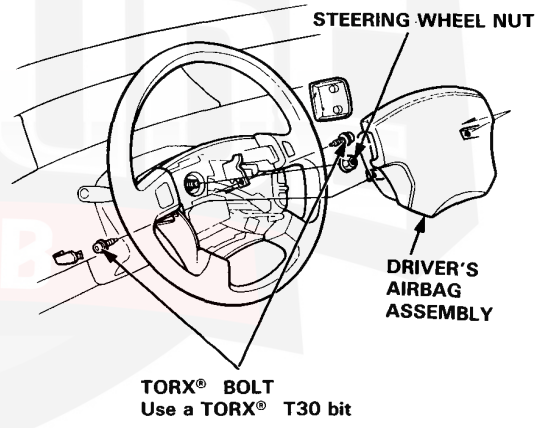
1. Disconnect the battery negative cable and then the positive cable.
2. Make sure the wheels are facing straight ahead.
3. Remove the dashboard lower cover, and air duct.



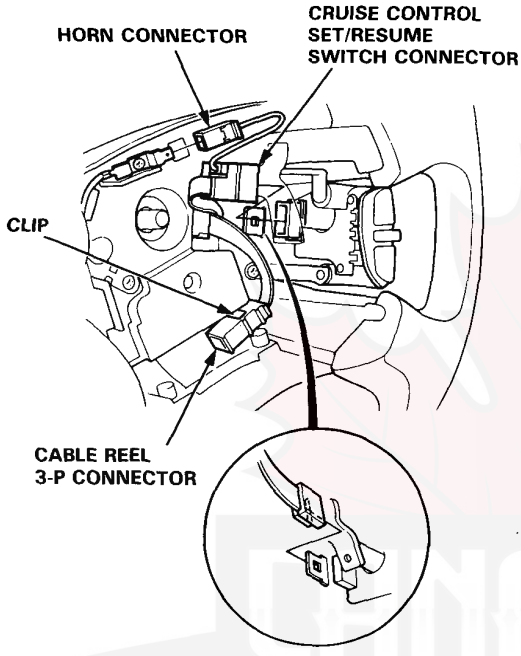
4. Install the short connectors on the airbags (see page 23-91).



5. Remove the driver's airbag assembly from the steering wheel (two T30 TORX® bolts), then remove the steering wheel nut.

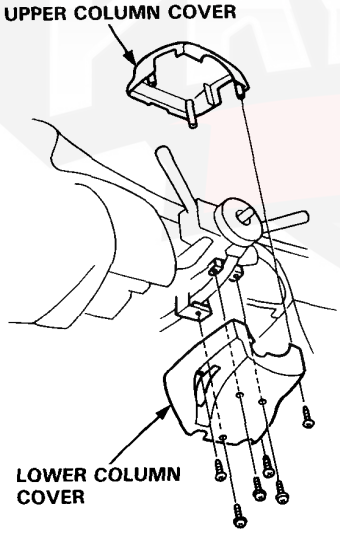


6. Disconnect the connectors from the horn and cruise control set/resume switches, then remove the cable reel 3-P connector from its clip.

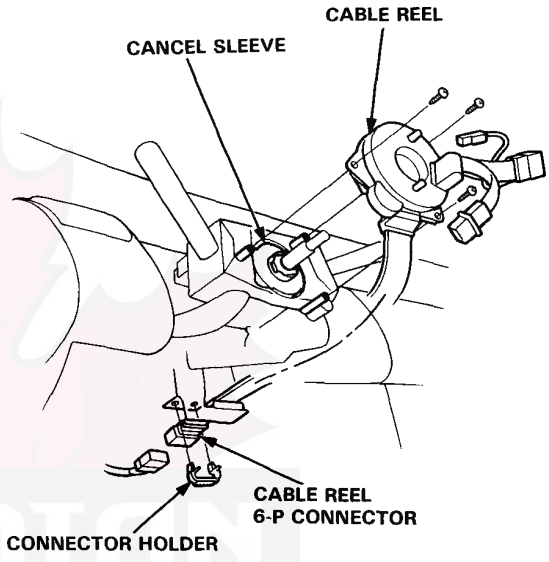


7. Remove the steering wheel from the column.

8. Remove the upper and lower column covers.



9. Disconnect the 6-P connector between the cable reel and SRS main harness, then remove the connector holder from the steering column.



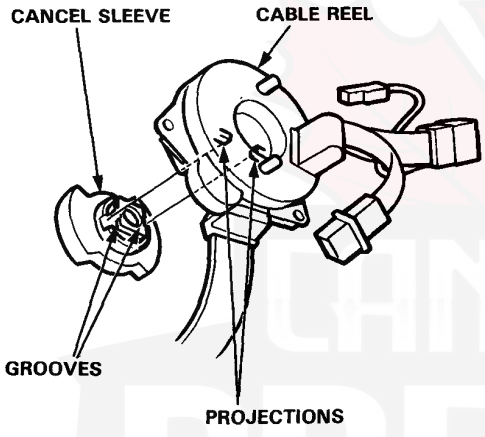
10. Remove the cable reel from the column.

(cont'd)

Cable Reel Replacement (cont'd)

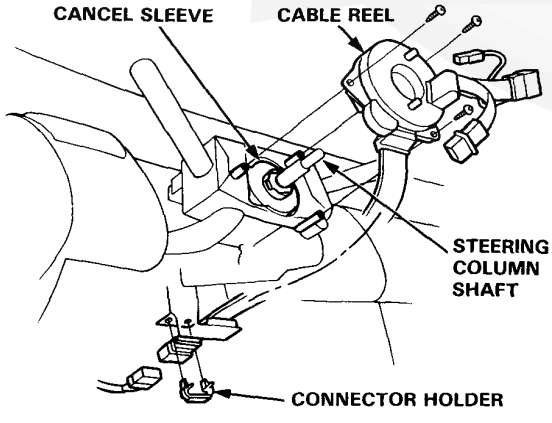
CAUTION:
- **Before installing the steering wheel, the front wheels should be aligned straight ahead.**
- **Be sure to install the harness wires so that they are not pinched or interfering with other car parts.**
- **After reassembly, confirm that the wheels are still straight ahead and that the steering wheel spoke angle is correct (road test). If minor spoke angle adjustment is necessary, do so only by adjustment of the tie-rods, not by removing and repositioning the steering wheel.**

11. 2WS: Align the cancel sleeve grooves with the cable reel projections.



4WS: Be sure that the yellow make on the front main steering angle sensor rotor faces downwards. If it doesn't, turn the rotor till it is in the neutral lock position.

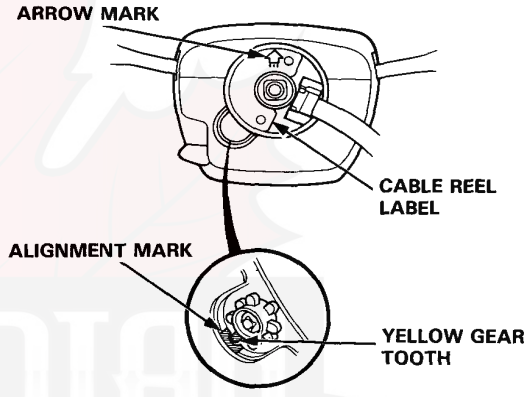
12. Carefully install the cable reel on the steering column shaft. Then attach the connector holder to the steering column.



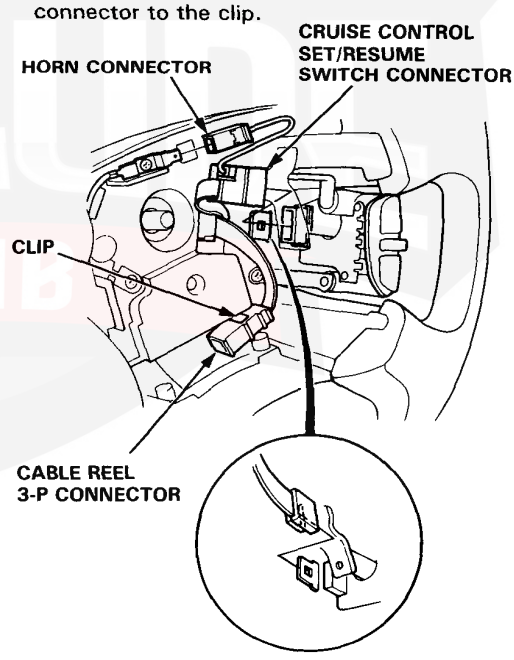
13. Install the steering column upper and lower covers.

14. Center the cable reel.
Do this by first rotating the cable reel clockwise until it stops.
Then rotate it counterclockwise (approximately two turns) until:

- The yellow gear tooth lines up with the alignment mark on the cover.
- The arrow mark on the cable reel label points straight up.



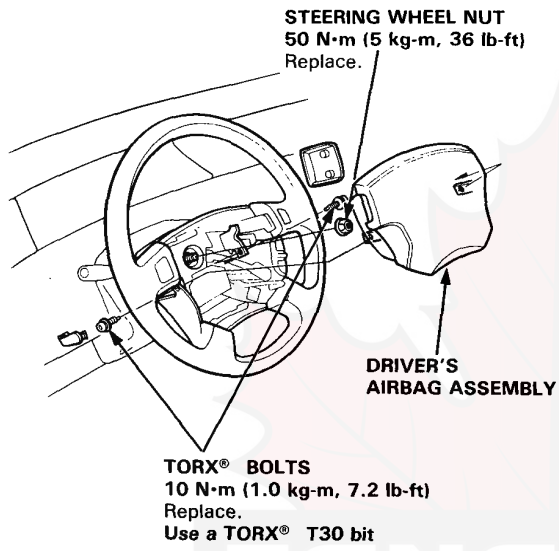
15. Install the steering wheel and attach the cable reel connector to the clip.



16. Connect the horn connector and cruise control set/resume switch connector.

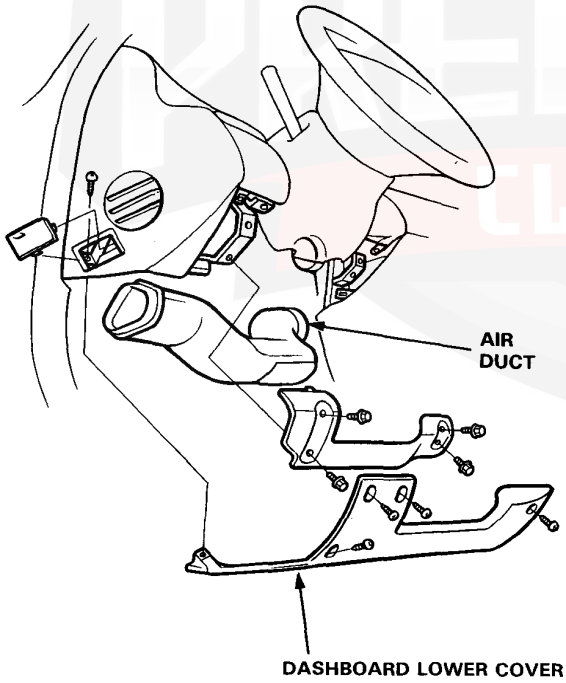
17. Install the steering wheel nut.

NOTE: Models with 4WS
Check that the 4WS system is neutral.



18. Install the driver's airbag assembly.

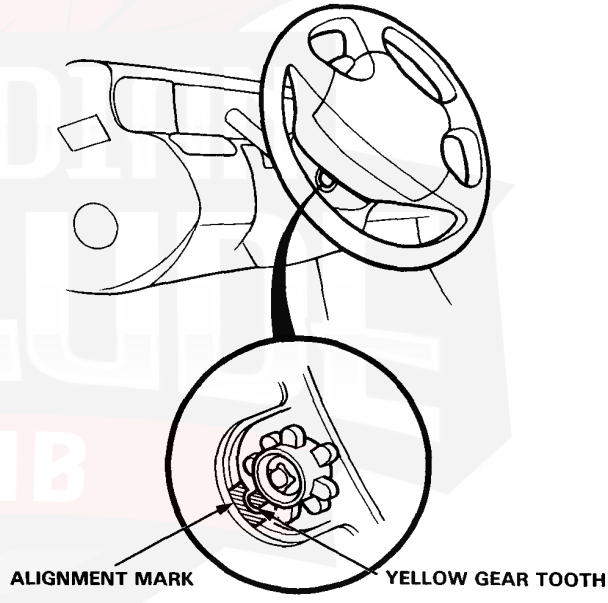
19. Connect the cable reel 6-P connector to the SRS main harness, then install the air duct and dashboard lower cover.



20. Remove and properly store the short connectors (RED), then reconnect the airbag connectors (and reinstall the glove box).

21. Reconnect the battery positive cable, then the negative cable.

22. After installing the cable reel, confirm proper system operation:
- Turn the ignition ON (II); the instrument panel SRS indicator light should go on for about six seconds and then go off.
- Make sure both horn buttons work.
- Make sure the headlight and wiper switches work.
- Go for a test drive and make sure the cruise control set/resume switch work.
- Rotate the steering wheel counterclockwise to make sure the yellow gear tooth lines up with the slot on the cover.

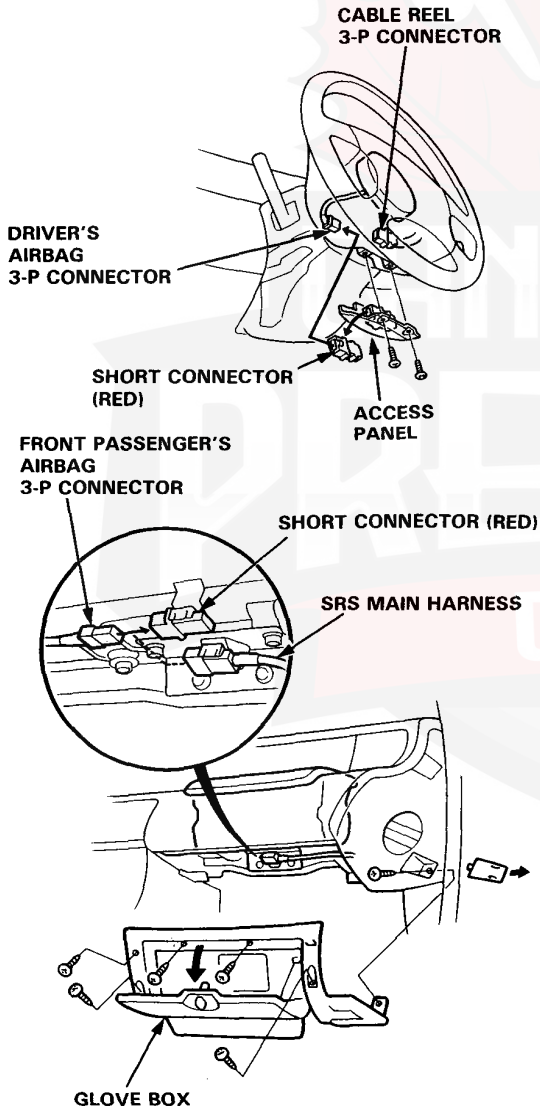


Dash Sensor Replacement

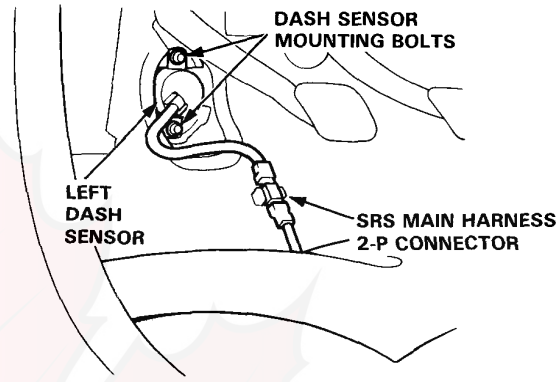
CAUTION:
- **Do not damage the sensor wiring.**
- **Do not install used SRS parts from another car. When repairing an SRS, use only new parts.**
- **Replace a sensor if it is dented, cracked, or deformed.**

1. Disconnect the battery negative cable, then the positive cable.

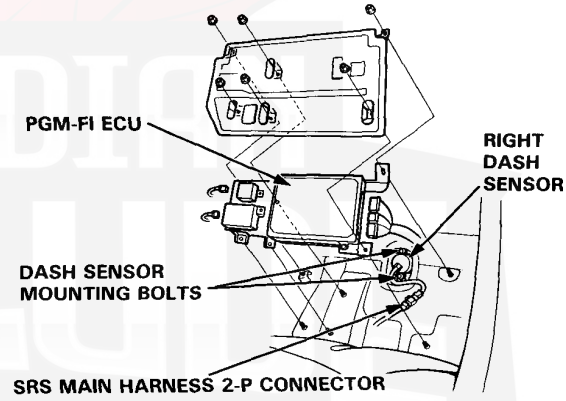
2. Install the short connectors on the airbags.



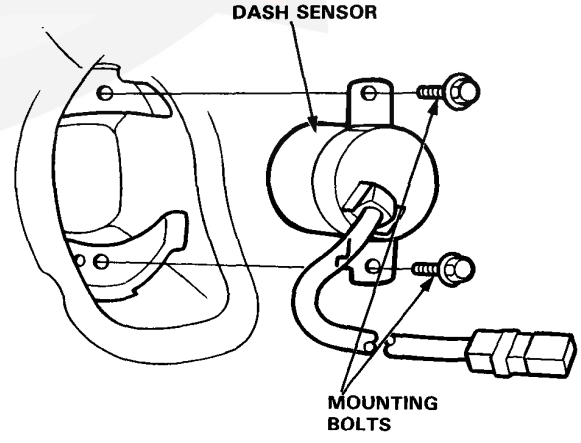
3. Driver's side:
Remove the footrest and left door sill molding, then pull the carpet back.



4. Front passenger's side:
Remove the right door sill molding and pull back the carpet. Remove the PGM-FI ECU.

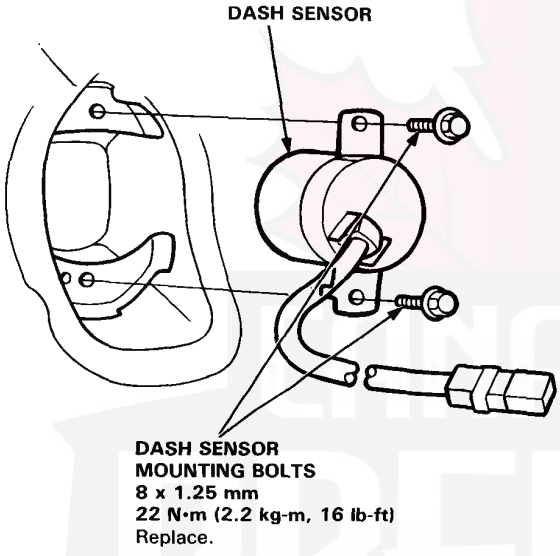


5. Remove the two mounting bolts, then remove the left or right dash sensor.



CAUTION:
- **Be sure to install the harness wires so they are not pinched or interfering with other car parts.**
- **Carefully inspect the new dash sensor(s) for signs of being dropped or improperly handled, such as dents, cracks or deformation.**
- **For the SRS to function properly, the right and left sensors must be installed on the proper sides.**

6. Install the sensor securely.



7. Reinstall all other removed parts.

8. Remove and properly store the short connectors (RED), then reconnect to airbag connectors (and reinstall the glove box).

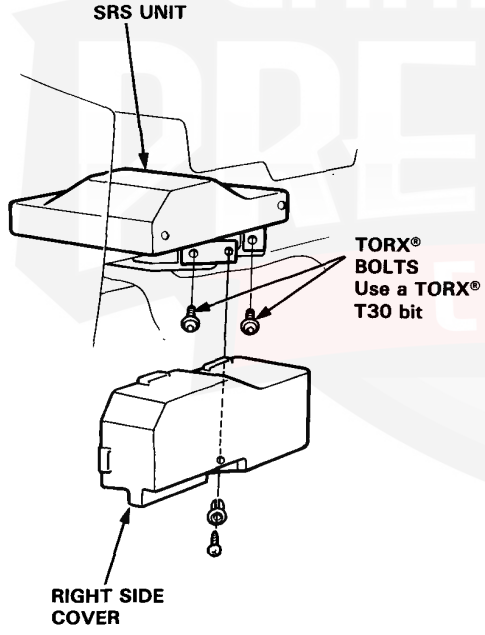
9. Reconnect the battery positive cable, then the negative cable.

10. After installing the dash sensor, confirm proper system operation: Turn the ignition ON (II); the instrument panel SRS indicator light should go on for about six seconds and then go off.

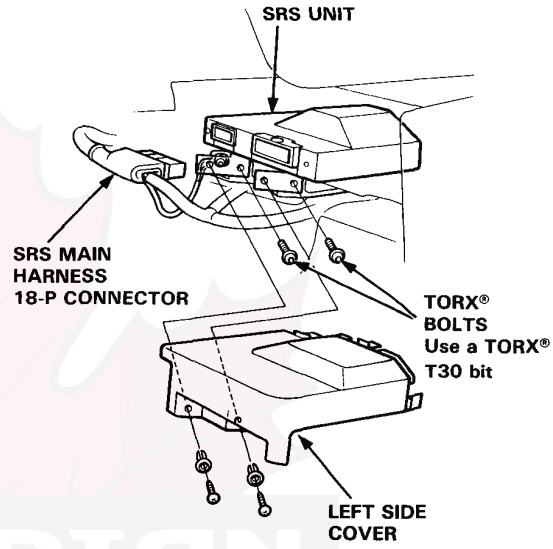
SRS Unit Replacement

CAUTION:
- **Before disconnecting any part of the SRS wire harness, install the short connectors on the airbags.**
- **Do not damage the SRS unit terminals or connectors.**
- **Do not disassemble the SRS unit; it has no serviceable parts.**
- **Store the SRS unit in a clean, dry area.**
- **Do not use any SRS unit which has been subjected to water damage or shows signs of being dropped or improperly handled, such as dents, cracks or deformation.**

1. Disconnect the battery negative cable, then the positive cable.
2. Install the short connectors on the airbags (see page 23-91).
3. Remove the right side cover from the SRS unit.



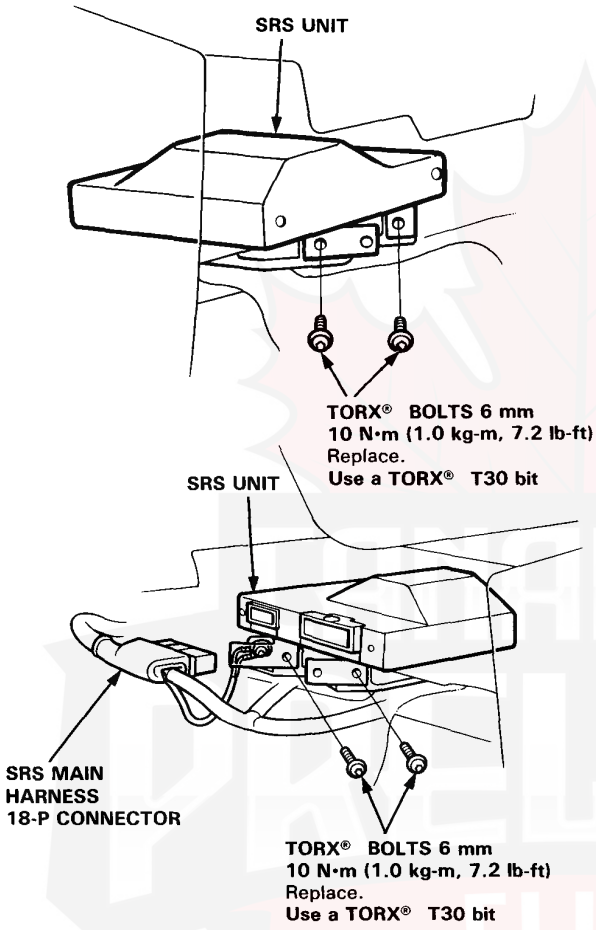
4. Remove the left side cover from the SRS unit, then disconnect the SRS main harness 18-P connector from the SRS unit.



5. Remove the four SRS unit TORX® bolts, then pull the SRS unit out from the left side.

CAUTION: Be sure to install the SRS wiring so that *it is not pinched or interfering* with other car parts.

6. Install the new SRS unit.



7. Connect the SRS main harness 18-P connector to the SRS unit; push it into position until it clicks.

8. Install the SRS unit covers (right and left).

9. Remove and properly store the short connectors (RED), then reconnect the airbag connectors (and reinstall the glove box).

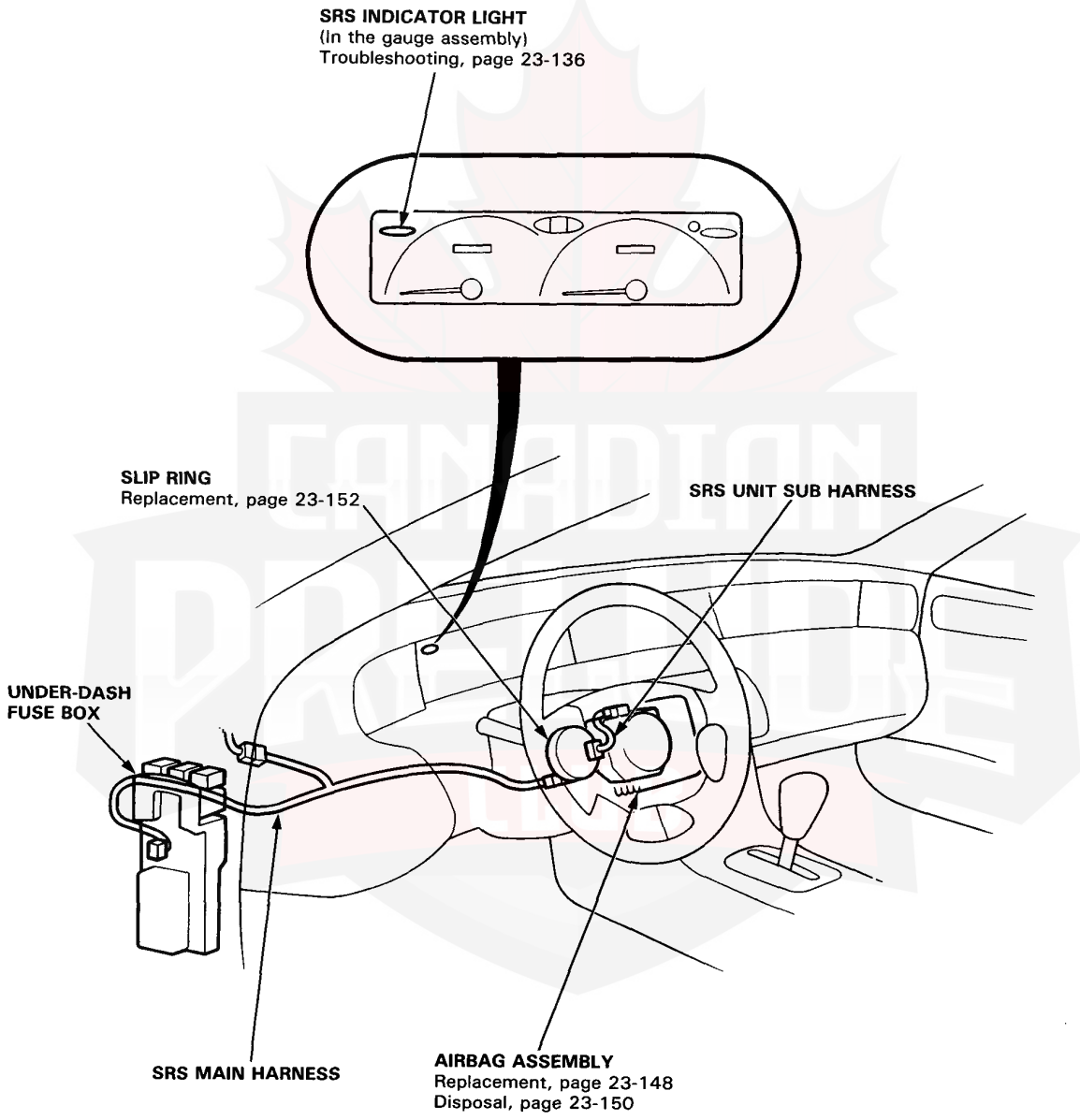
10. Reconnect the battery positive cable, then the negative cable.

11. After installing the SRS unit, confirm proper system operation: Turn the ignition ON (II); the instrument panel SRS indicator light should go on for about six seconds and then go off.

Supplemental Restraint System (SRS)-Type II

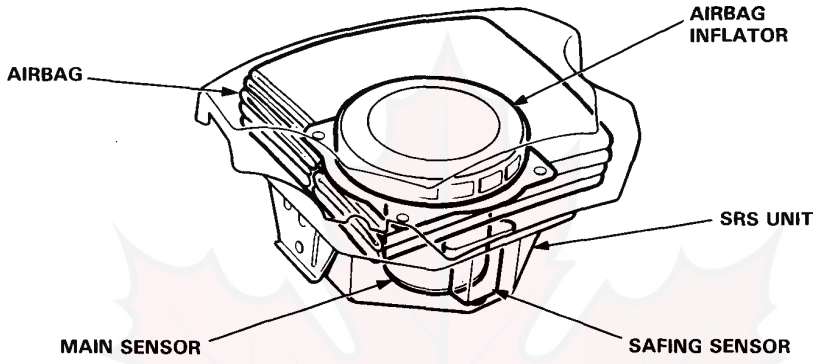
Component Location Index

NOTE: RHD type is symmetrical to LHD type.



Description

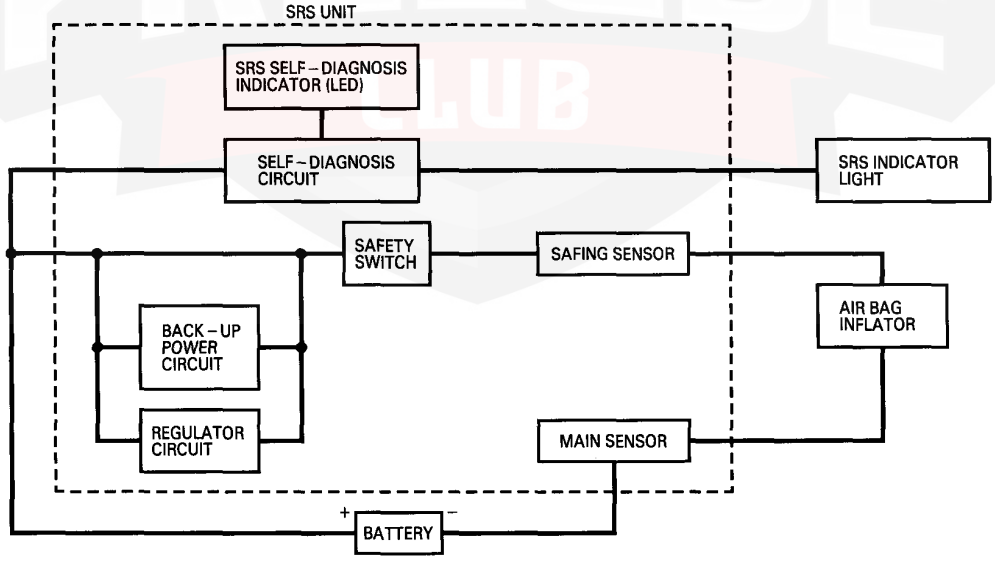
The SRS is a safety device which, as a supplement to the seat belt, is designed to protect the driver by operating when the car receives a frontal impact exceeding a certain set limit.
The system is comprised of the airbag assembly (which in turn consists of the SRS unit, airbag inflator, and airbag) and the slip ring.



Operation
As shown in the diagram below, the main and safing sensors, and the safety switch are connected in series to the airbag inflator and the battery. A regulator circuit (increasing the reliability of the SRS system by raising the voltage when battery voltage drops) and a back-up power circuit are connected in parallel with the battery. The sensors, the safety switch, regulator and back-up circuits, and a self-diagnosis circuit (see description on next page) are all built into the SRS unit.

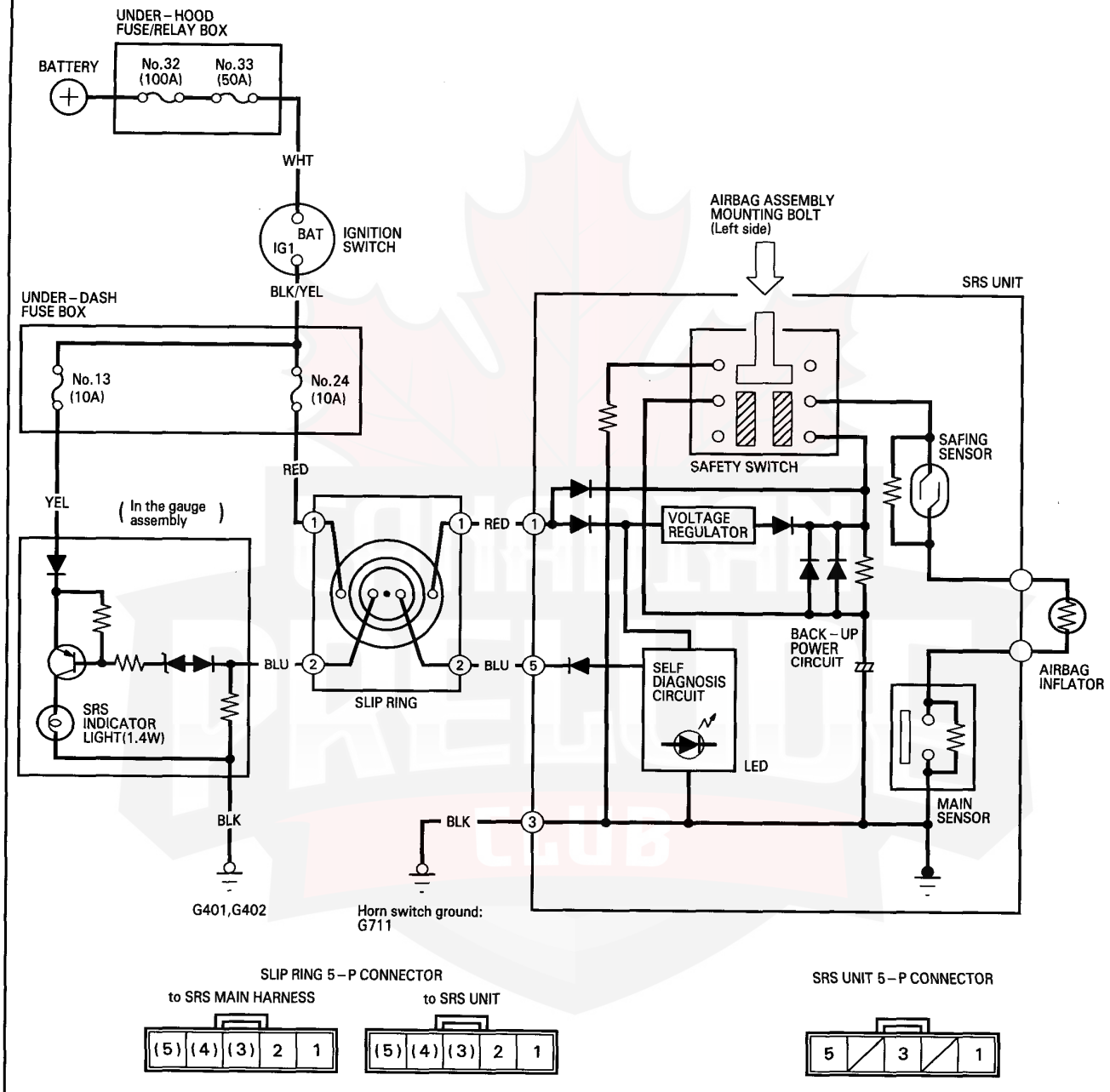
Sequence of operation:
(1) The main sensor and the safing-sensor activate.
(2) Power is supplied to the airbag inflator by the battery or the back-up power circuit if the battery is disconnected due to the impact.
(3) The airbag deploys.

It takes about 0.1 seconds from the beginning of the airbag deployment until it is completely deflated.



Supplemental Restraint System (SRS) – Type II

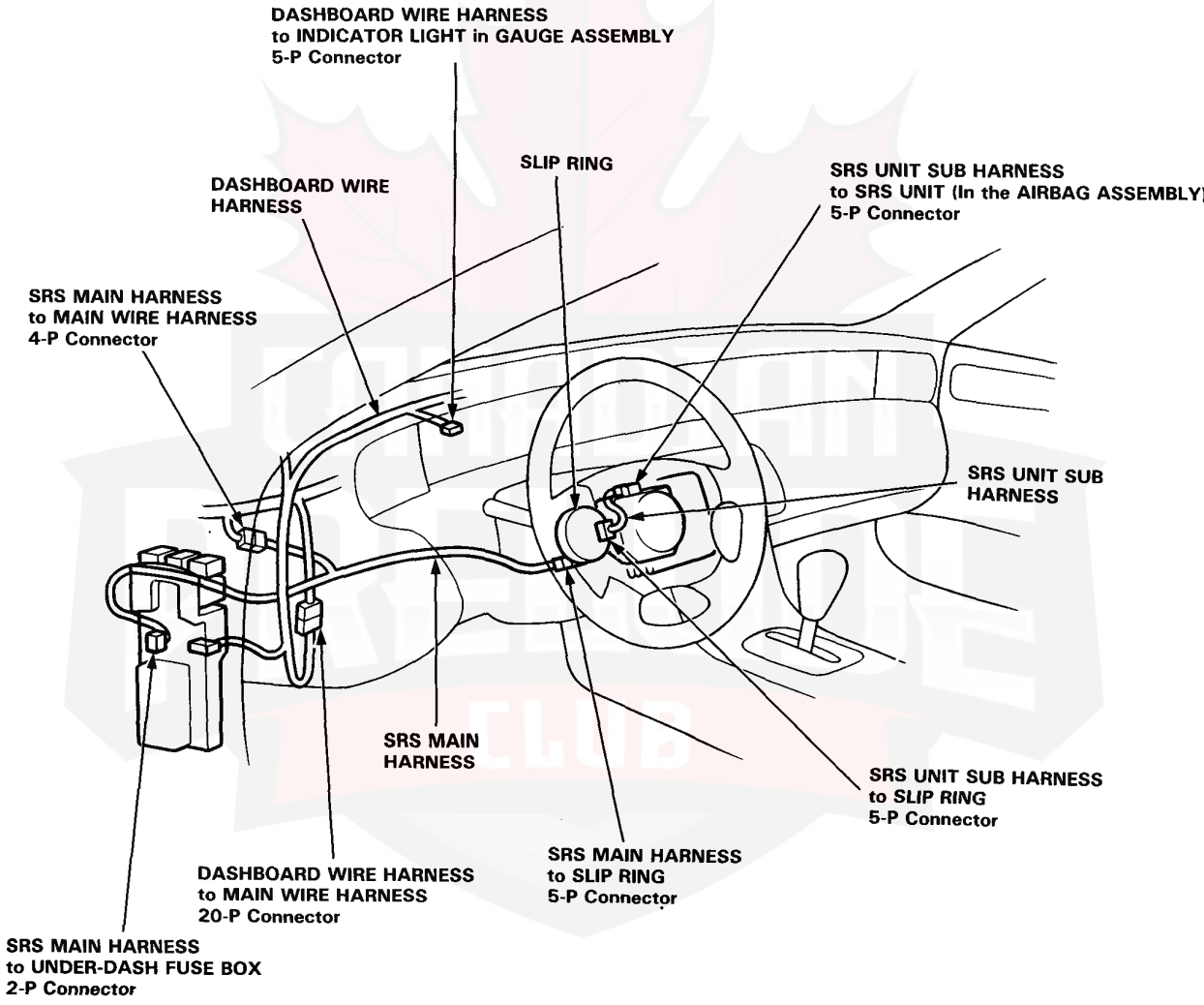
Circuit Diagram



Wiring Locations

CAUTION: Make sure all SRS ground locations are clean and grounds are securely attached.

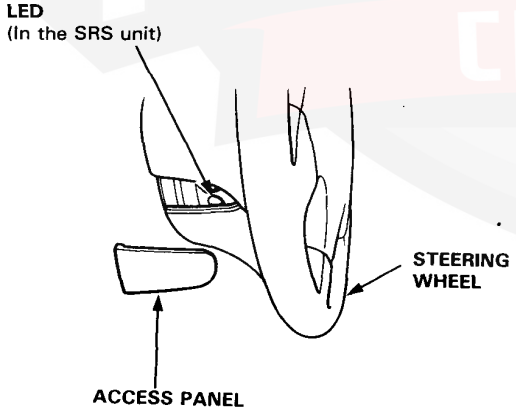
NOTE:
- All SRS electrical wiring harnesses are covered with yellow outer insulation.
- Replace the entire affected SRS harness assembly if it has an open circuit or damaged wiring.
- RHD type is symmetrical to LHD type.



Supplemental Restraint System (SRS)-Type II

General Precautions

- Carefully inspect any SRS part before you install it. Do not install any part that shows signs of being dropped or improperly handled, such as dents, cracks or deformation:
  - — Airbag assembly.
  - — Slip ring.
  - — Steering wheel.
- Use only a digital circuit tester to check the system. Using an analog circuit tester may cause an accidental deployment and possible injury.
- Do not install used SRS parts from another car. When repairing an SRS, use only new parts.
- Before beginning work related to the SRS system, turn the ignition switch off, disconnect the negative and positive battery cables, and wait three minutes.
- Replacement of the combination light and wiper/washer switches and cruise control switch can be done without removing the steering wheel.
- After completed work, check that the connectors are installed tightly:
  - — the SRS indicator light should go off six seconds after the ignition switch has been turned on.
  - — with the ignition switch turned on, the LED of the SRS unit should blink one time.

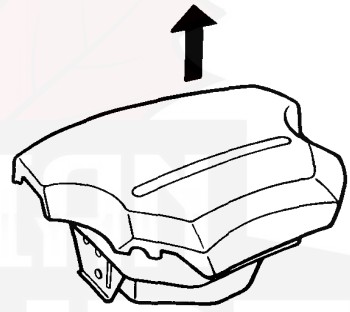


Airbag Handling and Storage

- Do not try to disassemble the airbag assembly. It has no serviceable parts. Once an airbag has been deployed, it cannot be repaired or reused.
- Be careful that the airbag assembly receives no strong shocks; it could deploy.
- Special bolts are necessary for installing the airbag assembly. Do not use other bolts.

For temporary storage of the airbag assembly during service, observe the following precautions:

- Store the removed airbag assembly with the pad surface up.



⚠WARNING If the airbag is improperly stored face down, accidental deployment could propel the unit with enough force to cause serious injury.

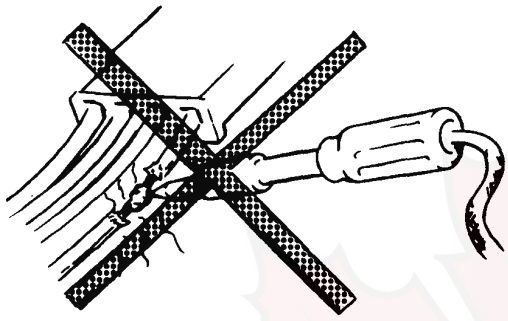
- Store the removed airbag assembly on a secure flat surface away from any high heat source (exceeding 85°C/185°F) and free of any oil, grease, detergent or water.

CAUTION: Improper handling or storage can internally damage the airbag assembly, making it inoperative. If you suspect the airbag assembly has been damaged, install a new unit and refer to the Deployment/Disposal Procedures for disposing of the damaged airbag.

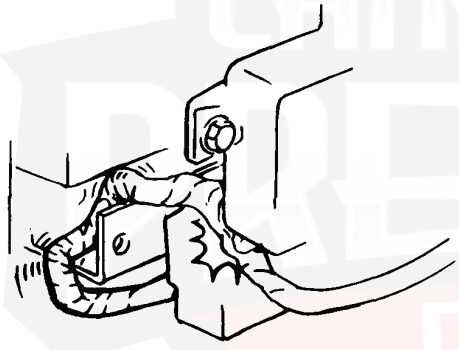
Wiring-related Precautions

- Never attempt to modify, splice or repair SRS wiring.

NOTE: SRS wiring can be identified by special yellow outer protective covering.



- Be sure to install the harness wires so that they are not pinched or interfering with other car parts.

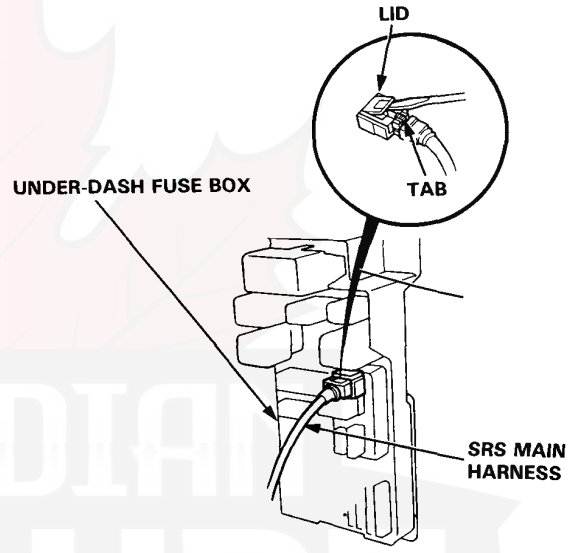


- Make sure all SRS ground locations are clean and grounds are securely fastened for optimum metal-to-metal contact. Poor grounding can cause intermittent problems that are difficult to diagnose.

Disconnecting the SRS Connector at the Fuse Box

CAUTION: Avoid breaking the connector; it's double-locked.

1. First lift the connector lid with a thin screwdriver,then press the connector tab down and pull the connector out.



2. To reinstall the connector, push it into position until it clicks, then close its lid.

(cont'd)

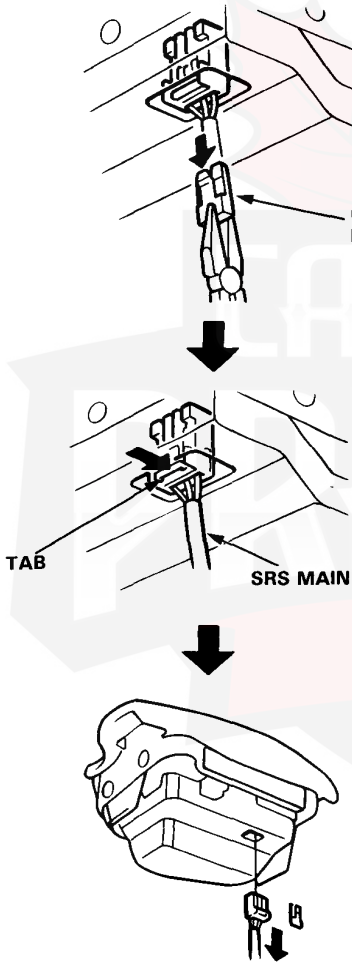
Wiring-related Precautions (cont'd)

Disconnecting the SRS Connector at the SRS Unit and Slip ring

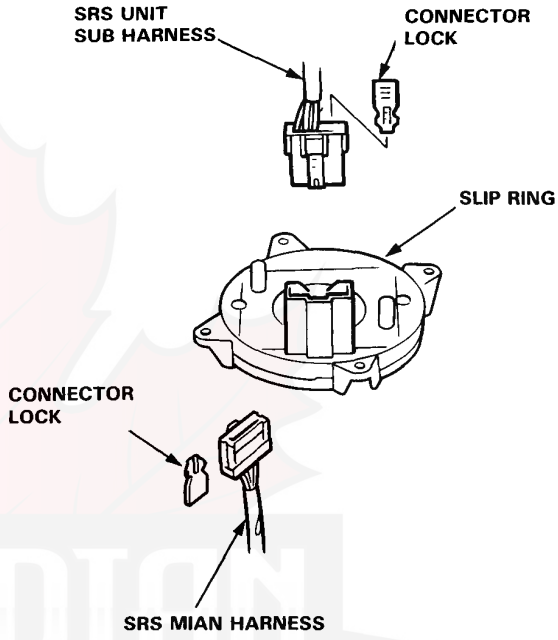
NOTE: Dispose of the connector lock; not reuse it.

1. Pull the connector lock out with pliers.
2. Depress the connector tab and pull the connector out.

SRS Unit:



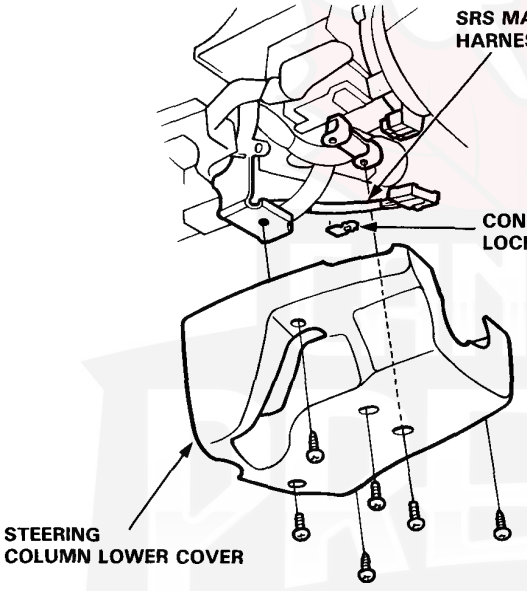
Slip Ring:



Steering-related Precautions

Steering Column Removal

CAUTION:
- Turn the ignition switch off, disconnect the negative and positive battery cables, and wait three minutes.
- Be careful that the steering wheel receives no strong shocks.
- Before removing the steering column, first disconnect the connector between the slip ring and the SRS main harness.
- If the steering column is going to be removed without dismounting the steering wheel, lock the steering by turning the ignition key to 0-LOCK position or remove the key from the ignition so that the steering wheel will not turn.

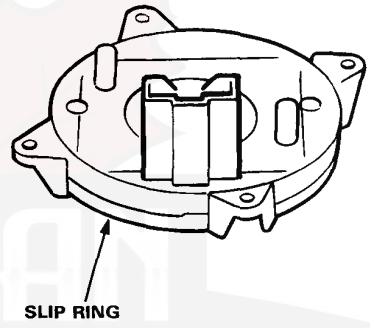


Do not replace the original steering wheel with any other design, since it will make it impossible to properly install the airbag (only use genuine Honda replacement parts).

NOTE: Models with 4WS
Test and adjust the 4WS system.

Slip Ring

CAUTION:
- Do not grease the slip ring.
- Do not disassemble the slip ring. It has no serviceable parts and has to be replaced as a whole.
- Replace the slip ring every 10 years.
- The slip ring is a special part of models equipped with SRS. When replacing, be sure to use only a genuine Honda spare part.

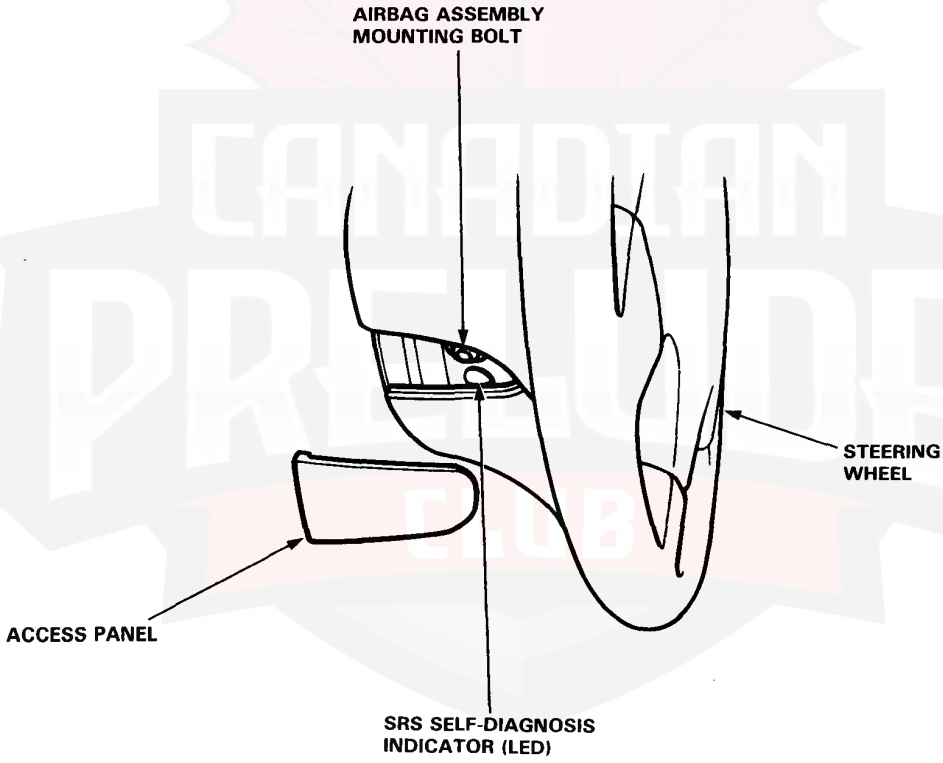


Troubleshooting

Self-diagnosis System

When the ignition switch is turned ON, the SRS indicator light comes on and goes off after about six seconds, and the self-diagnosis indicator (LED) blinks one time, if the system is operating normally. If there is an abnormality in the SRS, the SRS indicator light will stay on while the LED in the SRS unit will indicate the system problem by blinking a failure code (see the table on next page).

- If the SRS indicator light does not come on, or does not go off after six seconds, or if it comes on while driving, the system must be inspected and repaired as soon as possible.
- To see the indicated failure code, remove the access panel at the left side of the steering wheel.
- If there is a failure in the system, the LED will first blink one time (OK signal), then it will indicate the failure code.
- If simultaneous system problems occur, the LED will indicate only the problem with the higher priority. The problem with the highest priority is that on top of the failure code table, the problem with the lowest priority is that at the bottom of the table (see page 23-137).



Failure Code Table

Self-diagnosis indicator (LED) blinks	SRS indicator light	Cause
1	Doesn't come on (with the ignition switch turn ON)	● Blown No. 13 (10 A) fuse. ● Blown SRS indicator light bulb. ● Poor ground.
0	Doesn't go off	● Blown No. 24 (10 A) fuse. ● Faulty SRS unit. ● Poor ground.
1		● Short (or open) in SRS indicator wire harness.
Stay on continuously		● Faulty SRS self-diagnosis circuit.
2		● Faulty safety switch.
3		● Faulty back-up power circuit.
4		● Faulty safety switch.
5		● Open in airbag inflator.
6		● Open in main sensor. ● Short in safing sensor.
7		● Short in main sensor. ● Open in safing sensor.

(cont'd)

Troubleshooting (cont'd)

The SRS Indicator Does Not Light

- **The SRS indicator light will not come on until six seconds after the ignition switch has been turned on.**
- **The LED of the SRS unit should blink one time.**

CAUTION:
- **Use only a digital circuit tester to check the system.**

Turn the ignition switch ON.

Do any other indicator light (brake system light etc.) come on (in the gauge assembly)?

NO → Inspect No. 13 (10 A) fuse in the under-dash fuse box.

YES

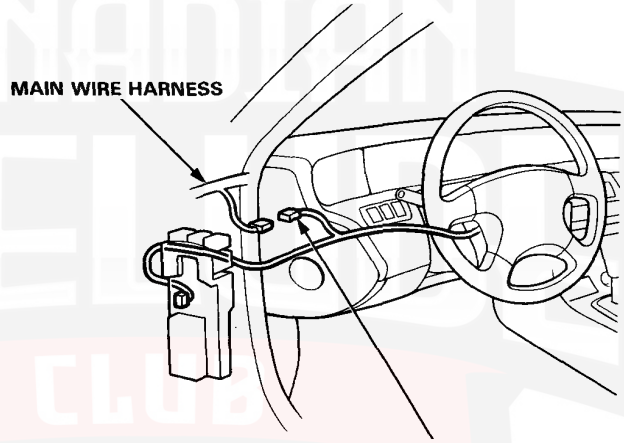
Is No. 13 (10 A) fuse OK?

NO → **Replace the fuse.**

YES → **Repair open in dashboard wire harness between the No. 13 fuse and gauge assembly.**

Turn the ignition switch OFF.

Disconnect the SRS main harness 4-P connector from the main wire harness.



Turn the ignition switch ON.

Does the SRS indicator light come on?

NO → A

(To page 23-140)

YES

Turn the ignition switch OFF.

(To page 23-139)

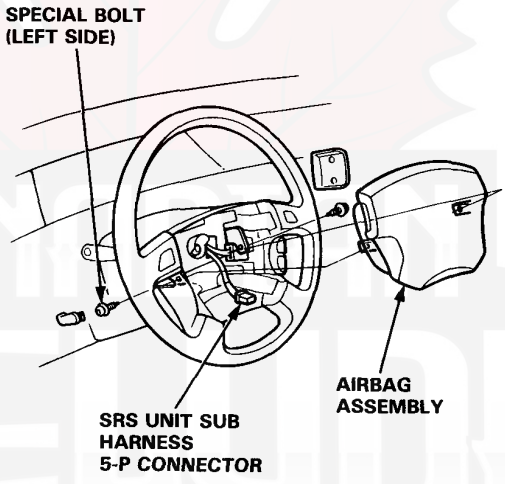
(From page 23-138)

Reconnect the SRS main harness 4-P connector to the main wire harness.

Disconnect the negative and positive battery cables, and wait three minutes.

CAUTION: Make sure the wheels are aligned straight ahead. Remove the left airbag assembly mounting special bolt first (the safety switch will automatically turn off). Use a new special bolts for reinstalling the airbag.

Remove the airbag assembly from the steering wheel (see page 23-148).



Disconnect the SRS unit sub harness 5-P connector from the SRS unit (In the airbag assembly).

Reconnect the positive and negative battery cables, then turn the ignition switch ON.

Does the SRS indicator light come on?

NO → **Short in the BLU wire of SRS unit sub harness, SRS main harness or the slip ring. Replace faulty component.**

YES

SRS unit is faulty. Replace the airbag assembly.

(cont'd)

Troubleshooting (cont'd)

(From page 23-138)

A

Turn the ignition switch OFF.

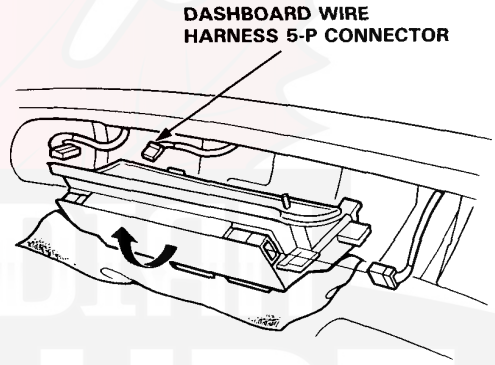
Remove the gauge assembly, then inspect the SRS indicator light bulb.

Is the SRS indicator light bulb OK?

NO → **Replace the indicator light bulb.**

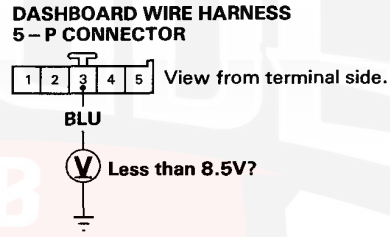
YES

Connect a voltmeter between the No. 3 terminal of the 5-P connector and body ground.



Turn the ignition switch ON.

Measure the voltage between the No. 3 terminal and body ground.



Is there less than 8.5 V with ignition switch ON?

NO → **Short in BLU wire of the dashboard wire harness. Replace the dashboard wire harness.**

YES

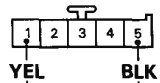
Turn the ignition switch OFF.

(To page 23-141)

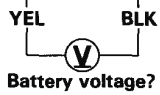
(From page 23-140)

Connect the voltmeter between the No. 1 terminal (+) and the No. 5 terminal (–) of the dashboard wire harness 5-P connector.

DASHBOARD WIRE HARNESS 5 – P CONNECTOR



View from terminal side.



Battery voltage?

Turn the ignition switch ON.

Measure the voltage between the No. 1 terminal and the No. 5 terminal.

Is there battery voltage?

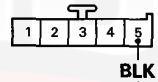
NO

Check for continuity between the No. 5 terminal and body ground.

YES

The SRS indicator circuit in the gauge assembly is faulty.

DASHBOARD WIRE HARNESS 5 – P CONNECTOR



View from terminal side.

Continutiy?

Is there continuity?

NO

Repair open in the BLK wire (No. 5 terminal) between the gauge assembly and body ground or lock for a poor ground (G201, 401).

YES

Repair open in the YEL wire (No. 1 terminal) of the dashboard wire harness between the gauge assembly and the No. 13 fuse.

(cont'd)

Troubleshooting (cont'd)

The SRS Indicator Light Stays on Continuously

- The LED of the SRS unit does not light.

Turn the ignition switch OFF, then inspect No. 24 (10 A) fuse in the under-dash fuse box.

Is No. 24 (10 A) fuse OK?

NO → **Replace the fuse.**

YES

Disconnect the negative and positive battery cables, and wait three minutes.

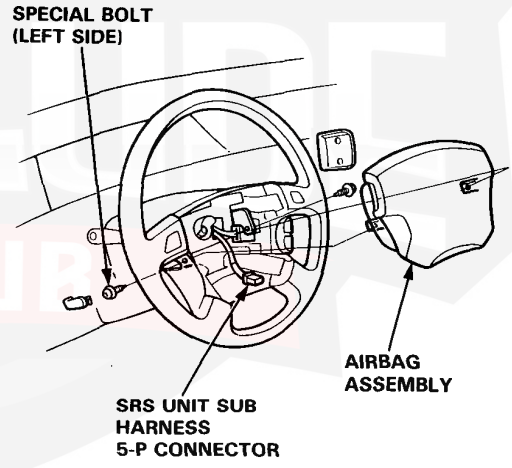
Remove the airbag assembly from the steering wheel (see page 23-148).

Disconnect the SRS unit sub harness 5-P connector from the SRS unit (In the airbag assembly).

Reconnect the positive and negative battery cables, then turn the ignition switch ON.

(To page 23-143)

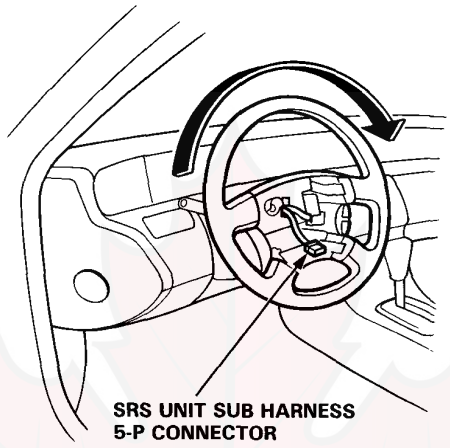
CAUTION: Make sure the wheels are aligned straight ahead. Remove the left airbag assembly mounting special bolt first (the safety switch will automatically turn off). Use a new special bolts for reinstalling the airbag.

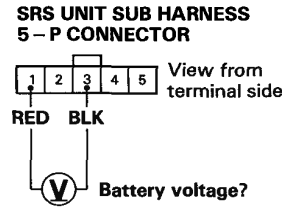


(From page 23-142)

NOTE: Rotate the steering wheel slowly to check that there is good contact to the slip ring.

Measure the voltage between the No. 1 terminal and the No. 3 terminal of the SRS unit sub harness 5-P connector.



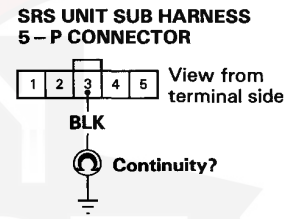


Is there battery voltage?

YES → **SRS unit is faulty. Replace the airbag assembly.**

NO

Check for continuity between the No. 3 terminal and body ground.

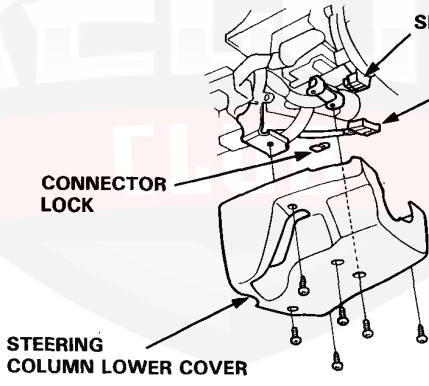


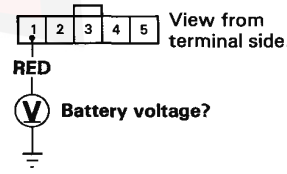
Is there continuity?

NO → **Open in the BLK wire (No. 3 terminal) of the SRS unit sub harness between the SRS unit and body ground or look for poor ground (G711).**

YES

Disconnect the SRS main harness 5-P connector from the slip ring.





Measure the voltage between the No. 1 terminal of the SRS main harness 5-P connector and body ground.

Is there battery voltage?

NO → **Open in the RED wire of the SRS main harness between the under-dash fuse box and the slip ring. Replace the harness.**

YES

Open in the RED wire of the SRS unit sub harness or the slip ring. Replace the faulty component.

(cont'd)

Troubleshooting (cont'd)

The SRS Indicator Light Stays on Continuously

- **The LED of the SRS unit blinks one time.**

Turn the ignition switch OFF, then disconnect the SRS main harness 4-P connector from the main wire harness.

Measure the voltage between the No. 1 terminal of the SRS main harness 4-P connector and body ground.

Is there more than 8.5 V until six seconds after the ignition switch has been turned on.

YES → B

(To page 23-146)

NO

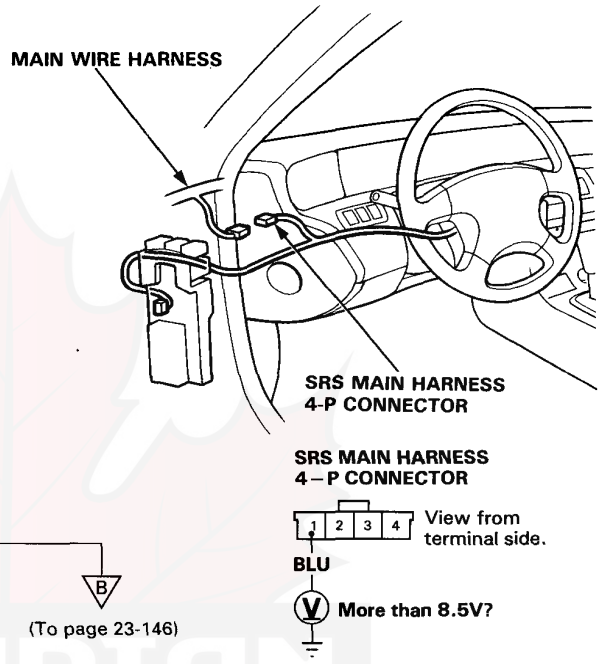
Turn the ignition switch OFF.

Disconnect the negative and positive battery cables, and wait three minutes.

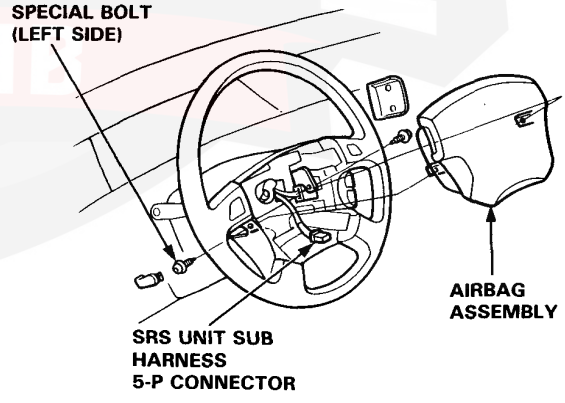
Remove the airbag assembly from the steering wheel (see page 23-148).

Disconnect the SRS unit sub harness 5-P connector from the SRS unit (In the airbag assembly).

(To page 23-145)



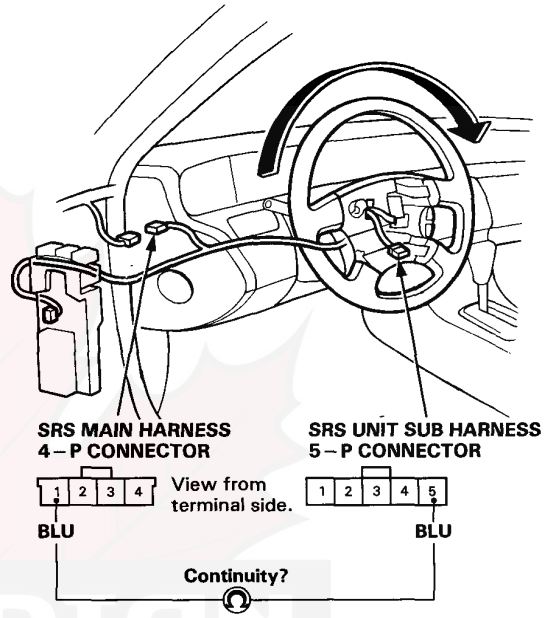
CAUTION: Make sure the wheels are aligned straight ahead. Remove the left airbag assembly mounting special bolt first (the safety switch will automatically turn off). Use a new special bolts for reinstalling the airbag.



(From page 23-144)

Check for continuity between the No. 1 terminal of the SRS main harness 4-P connector and No. 5 terminal of the SRS unit sub harness 5-P connector.

NOTE: Rotate the steering wheel slowly to check that there is good contact to the slip ring.



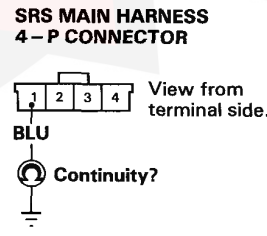
Is there continuity?

NO → **Open in the BLU wire of the SRS main harness, SRS unit sub harness or the slip ring. Replace the faulty component.**

YES

Check for continuity between the No. 1 terminal of the SRS main harness 4-P connector and body ground.

NOTE: Rotate the steering wheel slowly to check that there is good contact to the slip ring.



Is there continuity?

YES → **Short in the BLU wire of the SRS main harness, SRS unit sub harness or the slip ring. Replace the faulty component.**

NO

SRS unit is faulty. Replace the airbag assembly.

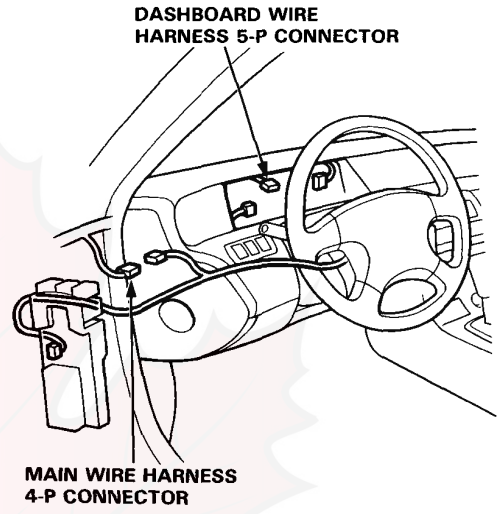
(cont'd)

Troubleshooting (cont'd)

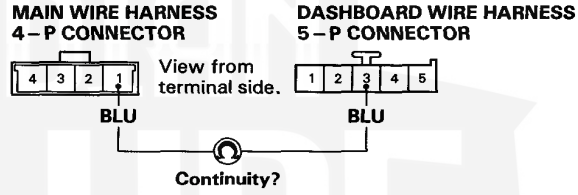
(From page 23-144)

B

Turn the ignition switch OFF, then remove the gauge assembly.



Check for continuity between the No. 1 terminal of the main wire haness and the No. 3 terminal of the dashboard wire harness.



Is there continuity?

NO → **Open in the BLU wire of the dashboard wire harness or the main wire harness. Replace the faulty component.**

YES

The SRS indicator circuit in the gauge assembly is faulty. Replace it.

The SRS Indicator Light Stays on Continuously

- The LED of the SRS unit doesn't go off or blinks 2, 3, 4, 5, 6 or 7 times.

Replace the airbag assembly.

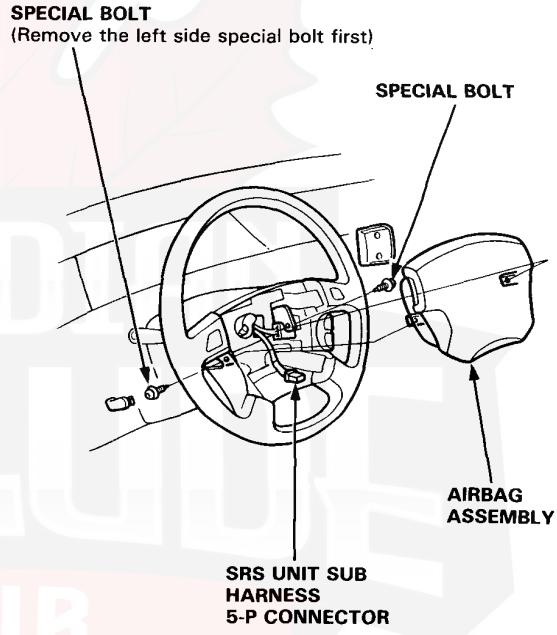
Airbag Assembly Replacement

⚠WARNING Store a removed airbag assembly with the pad surface up, if the airbag is improperly stored face down, accidental deployment could propel the unit with enough force to cause serious injury.

CAUTION:
- **Before beginning work related to the SRS system, turn the ignition switch off, disconnect the negative and positive battery cables, and wait three minutes.**
- **Do not install used SRS parts from another car. When repairing an SRS, use only new parts.**
- **Carefully inspect the airbag assembly before installing it. Do not install an airbag assembly that shows signs of being dropped or improperly handled, such as dents,cracks or deformation.**
- **Do not disassemble or tamper with the airbag assembly.**
- **Special bolts are necessary for installing the airbag assembly. Do not use other bolts.**
- **Make sure the wheels are aligned straight ahead. Remove the left airbag assembly mounting special bolt first (the safety switch will automatically turn off).**

1. Turn the ignition switch off, then disconnect the negative and positive battery cables, and wait three minutes.
2. Remove the airbag assembly.
   - Remove the special bolts using a TORX® T30 bit, then remove the airbag assembly.
   - Pull out the connector lock, then disconnect the SRS unit sub harness 5-P connector from the SRS unit, then remove the airbag assembly from the steering wheel.

   NOTE: Dispose of the connector lock, it is not to be reused.

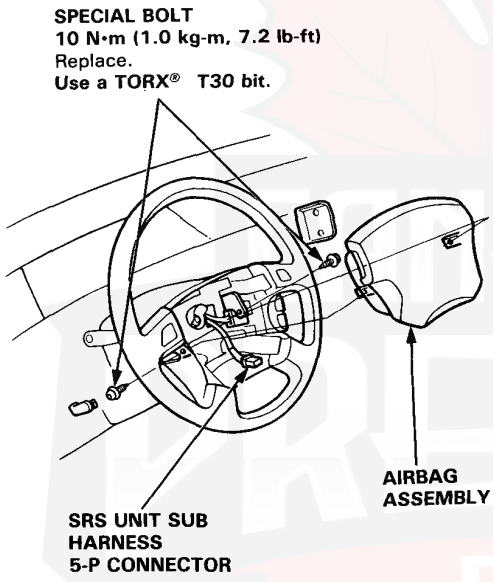


CAUTION: Be sure to install the SRS wiring so that it is not pinched or interfering with other car parts.

3. Install the new airbag assembly.

   - Reconnect the SRS unit sub harness 5-P connector to the SRS unit.
   - Place the airbag assembly in the steering wheel, and secure it with new special bolts.

   NOTE: Be sure to torque the bolts as specified.



4. Reconnect the battery positive and negative cables.

5. After installing the airbag assembly, confirm proper system operation:

   - Turn the ignition ON (II): the instrument panel SRS indicator light should go on for about six seconds and then go off.
   - The SRS self diagnosis indicator (LED) should blink one time with the ignition switch ON.

Airbag Disposal

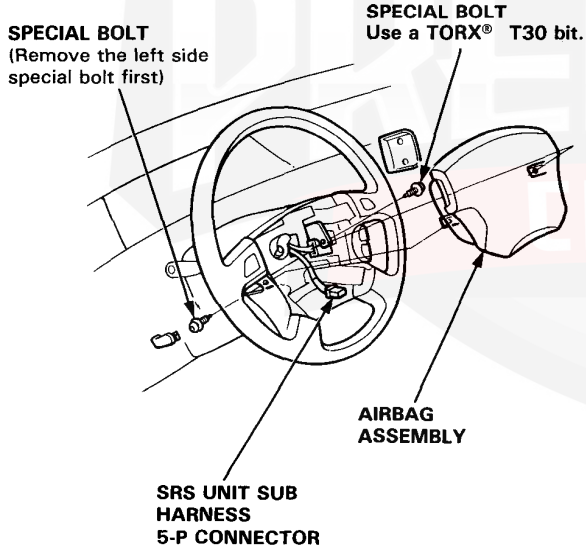
Before scrapping any airbag (including one in a whole car to be scrapped) the airbag must be deployed. If the car is still within the warranty period, before deploying the airbag, the Honda District Service Manager must give approval and/or special instruction.
Only after an airbag is already deployed (as the result of vehicle collision, for example), can the normal scrapping procedure be done.
If the airbag appears, intact (not deployed), it should be treated with extreme caution.
Follow the procedure, described below.

1. Turn the ignition switch off, then disconnect the negative and positive battery cables, and wait three minutes.

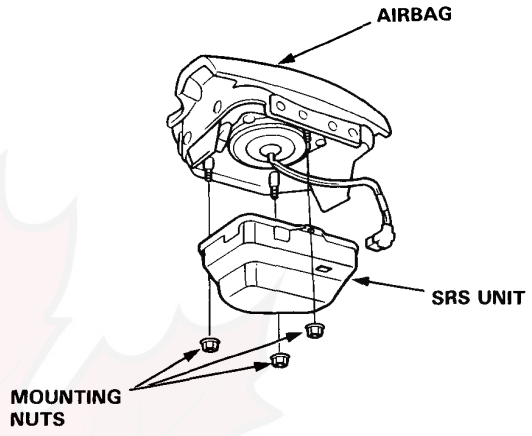
2. Remove the special bolts using a TORX® T30 bit, then remove the airbag assembly (see page 23-148).

   CAUTION: Make sure the wheels are aligned straight ahead. Remove the left airbag assembly mounting special bolt first (the safety switch will automatically turn off).

3. Disconnect the SRS unit sub harness 5-P connector from the SRS unit, then remove the airbag assembly from the steering wheel.



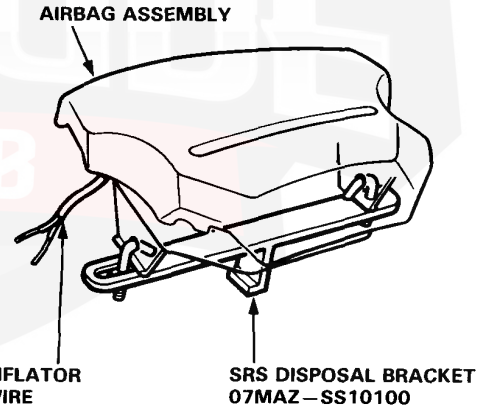
4. Remove the three SRS unit mounting nuts from the airbag assembly, then remove the SRS unit.



5. Install the SRS Disposal Bracket on the airbag assembly, and clamp it firmly into a vice.

   ⚠WARNING Confirm that the airbag assembly is securely clamped or mounted; otherwise, severe personal injury could be caused by the deployment.

   NOTE: Instead of using the SRS Disposal Bracket, the airbag assembly may be reinstalled to the steering wheel.

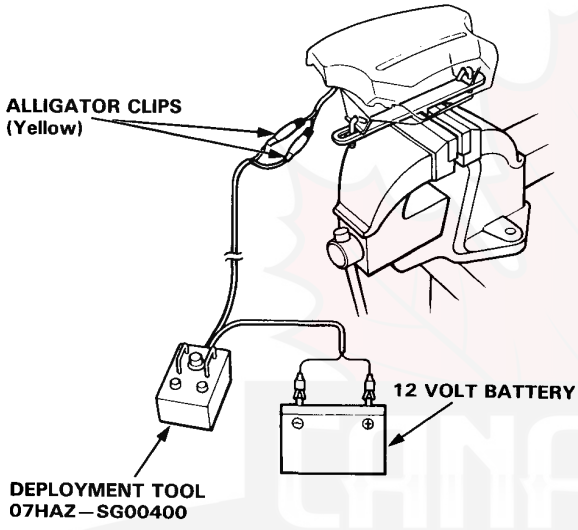


6. Cut off the airbag connector, then strip the wire ends.

7. Confirm that the Deployment Tool is functioning properly (see check procedure on this page).

8. Connect the alligator clips to the inflator wire ends.

⚠WARNING The distance between deployment tool and airbag assembly has to be at least 10 meters (30 ft).



9. Connect a 12 volt battery to the tool:

- If the green light on the tool goes on, the airbag igniter circuit is defective and cannot deploy the bag. Go to Damaged Airbag Special Procedure.
- If the red light on the tool goes on, the airbag is ready to be deployed.

10. Push the tool's deployment switch. The airbag should deploy (deployment is both highly audible and visible—a loud noise and rapid inflation of the bag, followed by slow deflation).

- If audible / visible deployment happens and the green light on the tool goes on, continue with this procedure.
- If the airbag doesn't deploy, yet the green light goes on, it's igniter is defective. Go to Damaged Airbag Special Procedure.

⚠WARNING During deployment,the airbag assembly can become hot enough to burn you. Wait thirty minutes after deployment before touching the asssembly.

11. Dispose of the complete airbag assembly. No part of it can be reused. Place it in a sturdy plastic bag and seal it securely.

CAUTION:
- **Wear a face shield and gloves when handling a deployed airbag.**
- **Wash your hands and rinse them well with water after handling a deployed airbag.**

Damaged Airbag Special Procedure.

⚠WARNING If an airbag cannot be deployed, it should not be treated as normal scrap; it should still be considered a potentially explosive device that can cause serious injury.

1. If installed in a car, follow the removal procedure on page 23-148.

2. Package the airbag in exactly the same packaging that the new replacement part came in.

3. Mark the outside of the box "DAMAGED AIRBAG NOT DEPLOYED" so it does not get confused with your parts stock.

4. Contact your Honda District Service Manager for how and where to return it for disposal.

Deployment Tool: Check Procedure.

1. Connect the yellow clips to both switch protector handles on the tool; connect the tool to a battery.

2. Push the operation switch: green means tool is OK; red means tool is faulty.

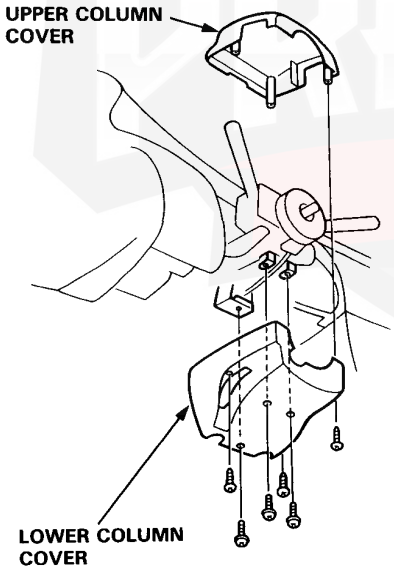
3. Disconnect the battery and the yellow clips.

Slip Ring Replacement

⚠ WARNING Store a removed airbag assembly with the pad surface up, if the airbag is improperly stored face down, accidental deployment could propel the unit with enough force to cause serious injury.

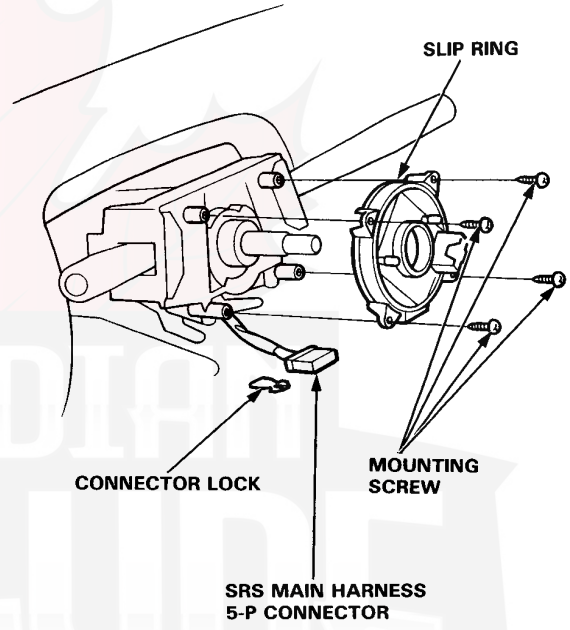
CAUTION:
- **Before beginning work related to the SRS system, turn the ignition switch off, disconnect the negative and positive battery cables, and wait three minutes.**
- **Do not install used SRS parts from another car. When repairing an SRS, use only new parts.**
- **Do not disassemble the slip ring. It has no serviceable parts and has to be replaced as a whole.**
- **Replace the slip ring every 10 years.**
- **The slip ring is a special part of models equippe with SRS. When replacing, be sure to use only a genuine Honda spare part.**
- **Make sure the wheels are aligned straight ahead. Remove the left airbag assembly mounting special bolt first (the safety switch will automatically turn off).**

1. Turn the ignition switch off, then disconnect the negative and positive battery cables, and wait three minutes.
2. Remove the airbag assembly (see page 23-148).
3. Remove the steering wheel, then remove the upper and lower steering column covers.



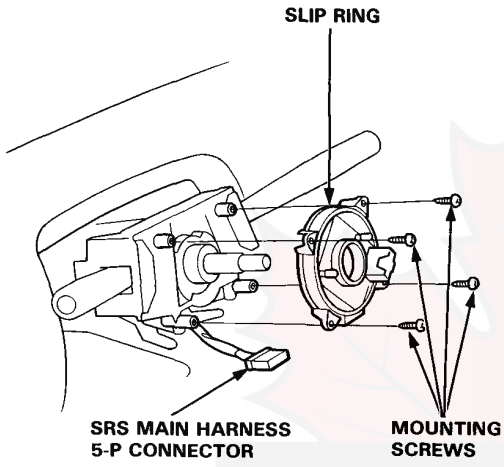
4. Pull out the connector lock, then disconnect the SRS main harness 5-P connector from the slip ring.

   NOTE: Dispose of the connector lock, it is not to be reused.



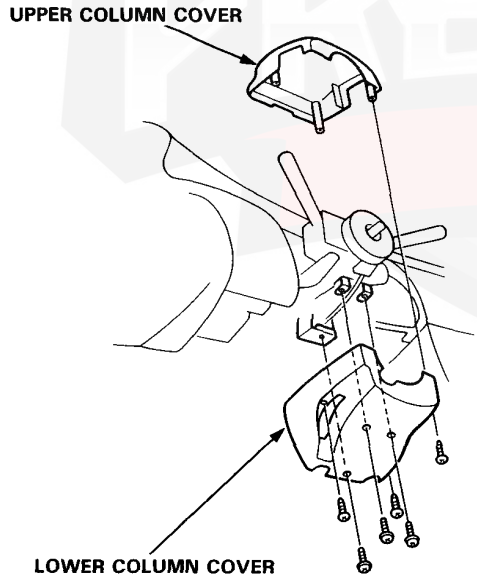
5. Remove the four mounting screws, then remove the slip ring.

6. 2WS: Install the slip ring on the steering column, then connect the SRS main harness 5-P connector to the slip ring.

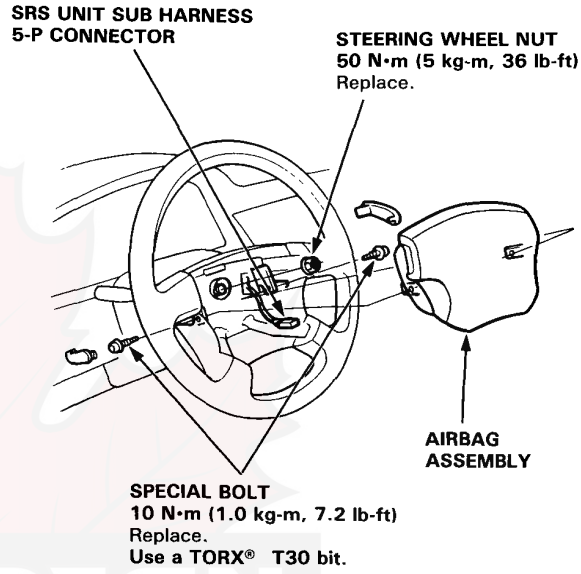


4WS: Be sure that the yellow mark on the front main steering angle sensor rotor faces downwards. If it doesn't, turn the rotor till it is in the neutral lock position.

7. Install the steering column upper and lower covers.



8. Install the steering wheel.



9. Connect the SRS unit sub harness 5-P connector to the SRS unit.
   NOTE: Models with 4WS
   Check that the 4WS system is neutral.

10. Place the airbag assembly into the steering wheel, and secure it with new special bolts.
    NOTE: Be sure to torque the bolts as specified.

11. Reconnect the battery positive and negative cables.

12. After installing the slip ring, confirm proper system operation:

    - Turn the ignition ON (II): the instrument panel SRS indicator light should go on for about six seconds and then go off.
    - The SRS self diagnosis indicator (LED) should blink one time with the ignition switch ON.