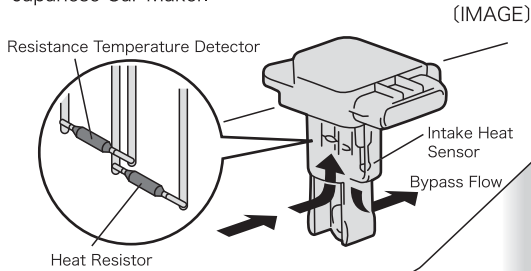


What is an Air Flow Sensor?

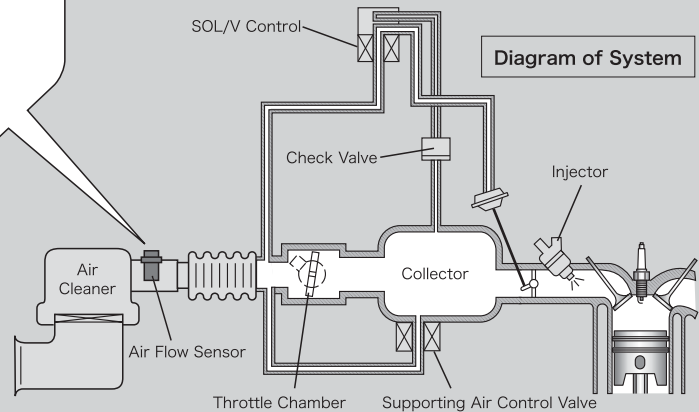
The Air Flow Sensor is installed to intake system of control system in engine control unit, and is used to measure the mass of air entering the engine.

There are many types of Air Flow Sensors such as Karman vortex sensor and Vane meter sensor, etc.
 A hot wire mass Air Flow Sensor determines the mass of air flowing into the engine's air intake system by heating a wire with an electric current that is transmitted to the engine's air stream.
 A hot wire mass Air Flow Sensor is lower air flow restriction than vane meter sensor and can measure wider range of mass air flow than vane meter sensor.
 Therefore, a hot wire mass Air Flow Sensor is widely used by Japanese Car Maker.



(Intake System)

The mass of air flowing into the engine's air intake system flows into "Air Flow Sensor", which go through air cleaner. Air Flow Sensor measures the mass and the temperature of air, and the information of data is transmitted to the computer. And, the mass of air flowing through "Air Flow Sensor" flows into fuel chamber through throttle chamber.



The Main Symptoms of Defect and The Methods of Inspection

The defective phenomena are found out by following symptoms.

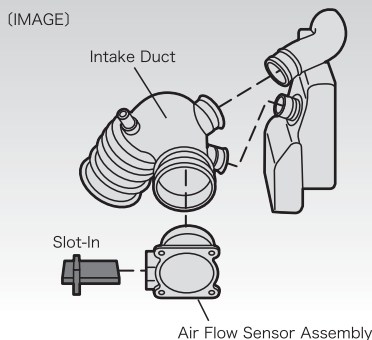
- The engine stalls or is likely to stall in reducing speed or stopping.
- The revolution of idling goes down.
- The engine stalls or is likely to stall when the engine is warmed up, or the engine is re-started.
- The revolution of engine goes down when stepping off the accelerator passing on the curved road.

When checking the Air Flow Sensor, check the change of the output voltage of Air Flow Sensor moving within the regulated area, in accordance with the change of revolution of engine with Diagnostic Monitor.

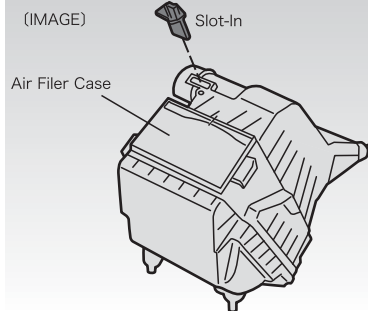
Please refer to service manual published by car maker when inspecting Air Flow Sensor, as each car maker has his own method of inspection for Air Flow Sensor.

Installation Types of Air Flow Sensor

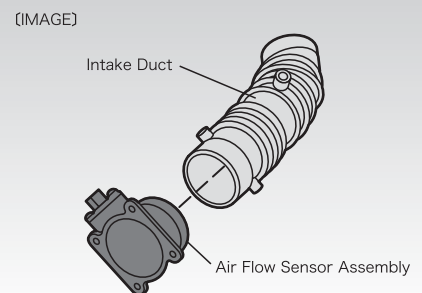
- 1** Insert into Air Flow Sensor Assembly.
 "Air Flow Sensor·Slot-In" Type



- 2** Directly insert into air filter case or intake pipe.
 "Air Flow Sensor·Slot-In" Type



- 3** Only air flow sensor cannot be changed.
 "Air Flow Sensor·Assembly" Type



The Guide of Engine Management System General Catalog

The purpose of Catalog 2010 is to furnish our customers with complete listings of parts requirements.

This Catalog is compiled with parts of engine management system according to product and car model based on the information by May 2010.

Please note that any change may occur without notice and we do not take any responsibility for possible errors in listings, applications and compatibilities.

How to use this Catalog

The order of displacement of Catalog

Car's name is lined in car maker, alphabetical order

Sample of Applicable Car List

[Air Flow Sensor]

CAR Series	ENG. MODEL	CC DISP'T	WD	YEAR	HITACHI APS PARTS No.	CAR MODEL DESCRIPTION	REFERENCE No.
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CUBE Z11 Series

YZ11	HR15DE	1500	2WD	05.05 ~ 08.01	U08001-AFS	CVT	22680-7S000
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[Electronic Control Throttle Chamber]

CAR MODEL	ENG. MODEL	CC DISP'T	WD	YEAR	HITACHI APS PARTS No.	CAR MODEL DESCRIPTION	REFERENCE No.	GASKET REFERENCE No.	GAS KET QTY
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FORWARD

FRD35	6HL1-S	7200	4X2	04.04 ~	U09006-ETB	Short Cab/Long Chassis	897602-2051	909566-3900	2
				05.07 ~	U09006-ETB	Short Cab/ex.(Short Cab)-Long Chassis/G>0512-0610	897602-2051	898004-3230	2
						Short Cab/ex.(Short Cab)-Long Chassis/G>0611-	897602-2051	898047-5980	2
						Short Cab/ex.(Short Cab)-Long Chassis/G1>0507-0511	897602-2051	909566-3900	2

After Electronic Control Throttle Chamber and connector are exchanged, it is necessary to set up ECU.

Also, it is necessary to use the tool recommended by Car makers in some case.

[Fuel Pump]

CAR MODEL	ENG. MODEL	CC DISP'T	WD	YEAR	HITACHI APS PARTS No.	CAR MODEL DESCRIPTION	REFERENCE No.	REFERENCE No. (RECOMMENDED REPLACEMENT PARTS)		
								O RING (large) 17342	PACKING 17044	O RING (small) 17049

STAGEA M35 Model

PM35	VQ35DE	3500	2WD	04.08 ~ 07.07	XFP-38035		17042-5Y700	17342-01A00	17044-4M405	17049-4M400
PNM35	VQ35DE	3500	4WD	04.08 ~ 07.07	XFP-38035		17042-5Y700	17342-01A00	17044-4M405	17049-4M400

[Ignition Coil]

CAR MODEL	ENG. MODEL	CC DISP'T	WD	YEAR	HITACHI APS PARTS No.	CLY Q'TY	CAR MODEL DESCRIPTION	REFERENCE No.
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BLUEBIRD U14 Series

QU14	QG18DE	1800	2WD	98.09 ~ 01.08	U08001-COIL	4		22448-4M500
	QG18DD	1800	2WD	98.09 ~ 01.08	U08002-COIL	4		22448-6J901

Sign and Explanation of Abbreviation

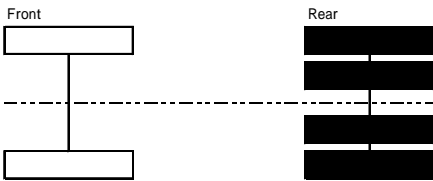
Sign

/	division	ex.(***)	Except(***)	G>	Year of Gasket
** , **	** of **	w/ ***	with ***		Discontinued stock sales only
** , **	** and **	w/o ***	without ***		

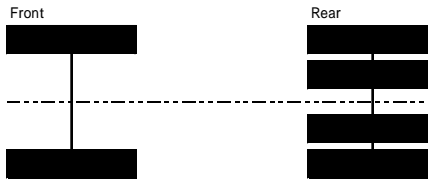
Abbreviation

AT	Automatic Transmission	SHORT	Short Wheel Base
CVT	Continuously Variable Transmission	LONG	Long Wheel Base
MCVT	Continuously Variable Transmission with Manual	ACT	Active Suspension
MT	Manual Transmission	IRS	IRS Suspension
F4	Floor Shift 4 Speed	ABS	spec.ABS
F5	Floor Shift 5 Speed	TRC	Traction Control System
R4	Column Shift 4 Speed	VDC	Vehicle Dynamic Control System
R5	Column Shift 5 Speed	2WD	2 Wheel Drive
HB	Hatchback	4WD	4 Wheel Drive
VAN	Van	4 x 2	Front 1 Shaft · Rear 1 Shaft / 1 Shaft Drive
WG	Wagon	4 x 4	Front 1 Shaft · Rear 1 Shaft / 2 Shaft Drive
GDI	Mitsubishi Gasoline Direct Injection	6 x 2	Front 1 Shaft · Rear 2 Shaft / 1 Shaft Drive
EPI	Suzuki Car Electronic Petrol Injection		Front 2 Shaft · Rear 1 Shaft / 1 Shaft Drive
TURBO	with Turbo	6 x 4	Front 1 Shaft · Rear 2 Shaft / 2 Shaft Drive
HICAS	with Hicas	6 x 6	Front 1 Shaft · Rear 2 Shaft / 6 Shaft Drive
CNG	Compressed Natural Gas Car	8 x 4	Front 2 Shaft · Rear 2 Shaft / 2 Shaft Drive
LPG	Liquid Petroleum Gas Car		

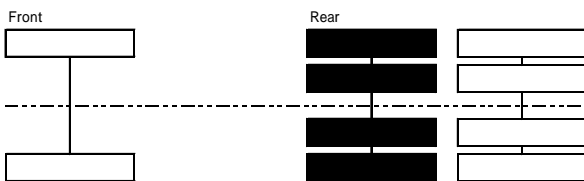
4 x 2 (Front 1 Shaft · Rear 1 Shaft / 1 Shaft Drive)



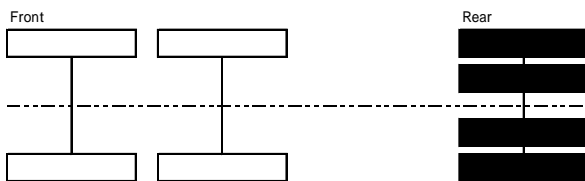
4 x 4 (Front 1 Shaft · Rear 1 Shaft / 2 Shaft Drive)



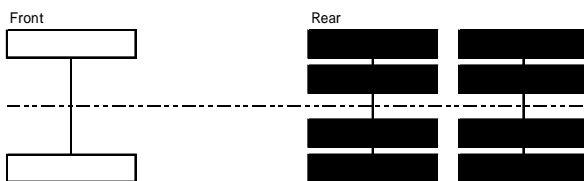
6 x 2 (Front 1 Shaft · Rear 2 Shaft / 1 Shaft Drive)



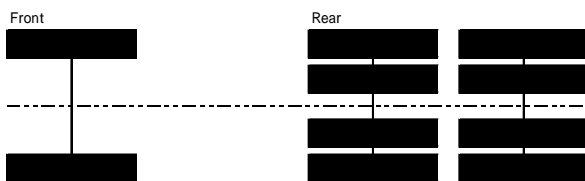
6 x 2 (Front 2 Shaft · Rear 1 Shaft / 1 Shaft Drive)



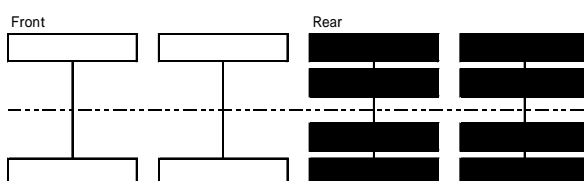
6 x 4 (Front 1 Shaft · Rear 2 Shaft / 2 Shaft Drive)



6 x 6 (Front 1 Shaft · Rear 2 Shaft / 6 Shaft Drive)



8 x 4 (Front 2 Shaft · Rear 2 Shaft / 2 Shaft Drive)



□ Tire ■ Drive Wheel

The total weight of truck is spread into each drive shafts, to support the vehicle.
 Each drive shafts have weight limit.
 The structure of drive shafts is displayed on this page.
 The total number of wheel x the number of drive wheel.
 Above black color drive shafts stand for the number of drive wheel.

Please use this Catalog when you exchange spare parts of Engine Management System.

When you use this Catalog, please note the following points and place your order after confirming your requested spare parts in accordance with your requested parts number and car application.

In case you are not able to find your requested spare parts, please do not hesitate to contact your agents.

This Catalog is compiled with parts of Engine Management System based on the information by May 2010. Please note that any change may occur without notice.

Please note that each cylinder may be applied to different Ignition Coils.

Please note that listings, applications and compatibilities described in this Catalog may differ from actual one.

Please read following points before replacing parts.



Safety Warning

*When replacing parts, please ask for qualified engineer to replace parts according to the proper instruction manuals.

Inappropriate operation may cause of an accident or fire.

*Do not install parts to inapplicable vehicle, it may cause of an accident or fire.

*Do not use parts for the proper and original purpose of use.

It may cause of an accident or fire, if you do not use parts for the proper and original purpose.

*When you start your work, please work in a place well ventilated and a fire extinguisher nearby, If you work in a place where inflammable things are put nearby, it may cause of fire.

*After installing parts, please check that fuel does not leak in starting engine.

If fuel leaks, it may cause of an accident or fire.

ISUZU

CAR MODEL	ENG. MODEL	CC DISP'T	WD	YEAR	HITACHI APS PARTS No.	CAR MODEL DESCRIPTION	REFERENCE No.
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ISUZU

ELF

NHR85	4JJ1-TCN	3000	4X2	07.02 ~	U09005-AFS		897601-9670
NHS85	4JJ1-TCN	3000	4X4	07.02 ~	U09005-AFS		897601-9670
NJR85	4JJ1-TCS	3000	4X2	07.02 ~	U09005-AFS	Single Cab/Double Cab	897601-9670
NJS85	4JJ1-TCS	3000	4X4	07.02 ~	U09005-AFS		897601-9670
NKR81	4HL1	4800	4X2	04.05 ~	U09004-AFS	Single Cab/Double Cab	897371-5260
NKR85	4JJ1-TCS	3000	4X2	07.02 ~	U09005-AFS	Single Cab/Double Cab(0902-)	897601-9670
NKS81	4HL1	4800	4X4	04.05 ~	U09004-AFS		897371-5260
					U09005-AFS		897601-9670
NKS85	4JJ1-TCS	3000	4X4	07.02 ~	U09005-AFS		897601-9670
NLR85	4JJ1-TCS	3000	4X2	06.11 ~	U09005-AFS	Single Cab/Double Cab(0702-)	897601-9670
NLS85	4JJ1-TCS	3000	4X4	06.11 ~	U09005-AFS	Single Cab/Double Cab(0702-)	897601-9670
NMR85	4JJ1-TCS	3000	4X2	06.11 ~	U09005-AFS	Single Cab/Double Cab(0702-)	897601-9670
NMS85	4JJ1-TCS	3000	4X4	06.11 ~	U09005-AFS	Single Cab/Double Cab(0702-)	897601-9670
NNR85	4JJ1-TCS	3000	4X2	06.12 ~	U09005-AFS	Double Cab(0902-)	897601-9670
NNS85	4JJ1-TCS	3000	4X4	06.12 ~	U09005-AFS		897601-9670
NPR81	4HL1	4800	4X2	04.06 ~	U09004-AFS	Single Cab	897371-5260
						Single Cab/Double Cab	897371-5260
					U09005-AFS	Single Cab	897601-9670
NPR85	4JJ1-TCS	3000	4X2	06.12 ~	U09005-AFS	Single Cab/Double Cab(0702-)	897601-9670
NPS81	4HL1	4800	4X4	04.06 ~	U09004-AFS		897371-5260
					U09005-AFS		897601-9670
NPS85	4JJ1-TCS	3000	4X4	06.12 ~	U09005-AFS		897601-9670

ERGA

LV234	6HK1-TCC	7800	4X2	06.12 ~	U09005-AFS		897601-9670
	6HK1-TCS	7800	4X2	07.06 ~	U09005-AFS		897601-9670

ERGA Mio

LR234	6HK1-TCN	7800	4X2	07.06 ~	U09005-AFS		897601-9670
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FORWARD (to be continued)

FRD33	6HH1-S	8200	4X2	99.02 ~ 04.03	U09005-AFS	Short Cab	897601-9670
FRD35	6HL1-S	7200	4X2	05.07 ~	U09005-AFS	ex.(Short Cab)/Short Chassis	897601-9670
				99.02 ~	U09005-AFS	Short Cab	897601-9670
FRD90	4HK1-TCS	5200	4X2	05.07 ~	U09005-AFS	ex.(Short Cab)/Short Chassis	897601-9670
FRR33	6HH1-S	8200	4X2	99.02 ~ 04.03	U09005-AFS	Short Cab	897601-9670
	6HL1-N	7200	4X2	99.02 ~ 04.03	U09005-AFS	Short Cab	897601-9670
	6HL1-S	7200	4X2	99.02 ~	U09005-AFS	Short Cab	897601-9670
FRR34	6HK1-TCN	7800	4X2	07.04 ~	U09005-AFS	Short Cab,Full Cab(0704-)/Short Cab(0905-)	897601-9670
	6HL1-S	7200	4X2	99.02 ~	U09005-AFS	Short Cab	897601-9670
FRR35	6HL1-N	7200	4X2	99.02 ~ 04.03	U09005-AFS	Short Cab	897601-9670
				05.07 ~	U09005-AFS	ex.(Short Cab)/Short Chassis	897601-9670
				99.02 ~	U09005-AFS	Short Cab	897601-9670
FRR90	4HK1-TCS	5200	4X2	05.07 ~	U09005-AFS	ex.(Short Cab)/Short Chassis	897601-9670
				07.04 ~	U09005-AFS	Short Cab,Full Cab(0704-)/Double Cab(0707-)	897601-9670
FRS33	6HH1-S	8200	4X4	99.04 ~ 04.03	U09005-AFS	Short Cab	897601-9670
FRS35	6HL1-S	7200	4X4	04.04 ~	U09005-AFS	Short Cab	897601-9670
FRS90	4HK1-TCC	5200	4X4	07.08 ~	U09005-AFS	Single Cab/Double Cab	897601-9670
	4HK1-TCS	5200	4X4	07.08 ~	U09005-AFS	Single Cab/Double Cab	897601-9670
FSD33	6HH1-S	8200	4X2	99.02 ~	U09005-AFS	Short Cab	897601-9670
FSD34	6HK1-TCN	7800	4X2	05.07 ~	U09005-AFS	Short Cab	897601-9670
FSR33	6HH1-S	8200	4X2	99.02 ~	U09005-AFS	Short Cab	897601-9670
FSR34	6HK1-TCN	7800	4X2	07.04 ~	U09005-AFS	Short Cab/Full Cab	897601-9670
FSR90	4HK1-TCS	5200	4X2	07.04 ~	U09005-AFS	Short Cab/Double Cab(0707-)/Full Cab	897601-9670
FSS33	6HH1-S	8200	4X4	99.04 ~ 04.03	U09005-AFS	Short Cab	897601-9670
FSS35	6HL1-S	7200	4X4	04.04 ~	U09005-AFS	Short Cab	897601-9670

ISUZU

CAR MODEL	ENG. MODEL	CC DISP'T	WD	YEAR	HITACHI APS PARTS No.	CAR MODEL DESCRIPTION	REFERENCE No.
FORWARD (please refer to previous pages)							
FSS90	4HK1-TCC	5200	4X4	07.08 ~	U09005-AFS	Single Cab/Double Cab	897601-9670
	4HK1-TCS	5200	4X4	07.08 ~	U09005-AFS	Single Cab/Double Cab	897601-9670
FTR34	6HK1-TCC	7800	4X2	07.04 ~	U09005-AFS	Full Cab	897601-9670
	6HK1-TCN	7800	4X2	07.04 ~	U09005-AFS	Short Cab(0905-)/Full Cab(0704-)	897601-9670
FTS34	6HK1-TCC	7800	4X4	07.07 ~ 08.05	U09005-AFS		897601-9670
				09.05 ~	U09005-AFS		897601-9670
FVR34	6HK1-TCC	7800	4X2	07.06 ~	U09005-AFS		897601-9670
FVZ34	6HK1-TCS	7800	6X4	07.06 ~	U09005-AFS		897601-9670
GSR34	6HK1-TCN	7800	4X2	07.04 ~	U09005-AFS		897601-9670
NRR35	6HL1-N	7200	4X2	99.02 ~ 04.03	U09005-AFS		897601-9670
	6HL1-S	7200	4X2	99.02 ~	U09005-AFS		897601-9670
GIGA							
CVR52	6WG1-TCR	15700	4X2	07.05 ~	U09005-AFS	Fire Engine Double Cab	897601-9670
CVR77	6UZ1-TCN	9800	4X2	07.01 ~	U09005-AFS		897601-9670
CXE77	6UZ1-TCN	9800	6X2	07.02 ~	U09005-AFS		897601-9670
	6UZ1-TCS	9800	6X2	07.02 ~	U09005-AFS		897601-9670
CXG77	6UZ1-TCN	9800	6X2	07.02 ~	U09005-AFS		897601-9670
	6UZ1-TCS	9800	6X2	07.02 ~	U09005-AFS		897601-9670
CXM77	6UZ1-TCN	9800	6X2	05.07 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CXY77	6UZ1-TCN	9800	6X4	07.01 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CXZ52	6WG1-TCR	15700	6X4	07.05 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CXZ77	6UZ1-TCN	9800	6X4	07.01 ~	U09005-AFS	ex.(Short Cab)	897601-9670
	6UZ1-TCS	9800	6X4	07.01 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CYE77	6UZ1-TCN	9800	6X2	07.02 ~	U09005-AFS		897601-9670
	6UZ1-TCS	9800	6X2	07.02 ~	U09005-AFS		897601-9670
CYG52	6WG1-TCR	15700	6X2	07.05 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CYG77	6UZ1-TCN	9800	6X2	07.02 ~	U09005-AFS		897601-9670
	6UZ1-TCS	9800	6X2	07.02 ~	U09005-AFS		897601-9670
CYH52	6WG1-TCR	15700	8X4	07.05 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CYH77	6UZ1-TCS	9800	8X4	07.02 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CYJ52	6WG1-TCR	15700	8X4	07.05 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CYJ77	6UZ1-TCN	9800	8X4	05.07 ~	U09005-AFS	ex.(Short Cab)	897601-9670
				07.02 ~	U09005-AFS		897601-9670
	6UZ1-TCS	9800	8X4	05.07 ~	U09005-AFS	ex.(Short Cab)	897601-9670
				07.02 ~	U09005-AFS		897601-9670
CYL52	6WG1-TCR	15700	6X2	07.05 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CYL77	6UZ1-TCN	9800	6X2	05.07 ~	U09005-AFS	ex.(Short Cab)	897601-9670
				07.01 ~	U09005-AFS		897601-9670
	6UZ1-TCS	9800	6X2	05.07 ~	U09005-AFS	ex.(Short Cab)	897601-9670
				07.01 ~	U09005-AFS		897601-9670
CYM52	6WG1-TCR	15700	6X2	07.05 ~	U09005-AFS	ex.(Short Cab)/Fire Engine Double Cab	897601-9670
CYM77	6UZ1-TCN	9800	6X2	05.07 ~	U09005-AFS	ex.(Short Cab)	897601-9670
				07.01 ~	U09005-AFS	ex.(Short Cab)	897601-9670
	6UZ1-TCS	9800	6X2	05.07 ~	U09005-AFS	ex.(Short Cab)	897601-9670
				07.01 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CYY52	6WG1-TCR	15700	6X4	07.05 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CYY77	6UZ1-TCN	9800	6X4	07.01 ~	U09005-AFS		897601-9670
	6UZ1-TCS	9800	6X4	07.01 ~	U09005-AFS		897601-9670
CYZ52	6WG1-TCR	15700	6X4	07.05 ~	U09005-AFS	ex.(Short Cab)	897601-9670
CYZ77	6UZ1-TCS	9800	6X4	07.01 ~	U09005-AFS	ex.(Short Cab)	897601-9670
EXD52	6WG1-TCC	15700	4X2	07.05 ~	U09005-AFS	Semi Tractor	897601-9670
	6WG1-TCN	15700	4X2	07.05 ~	U09005-AFS	Semi Tractor	897601-9670
	6WG1-TCS	15700	4X2	07.05 ~	U09005-AFS	Semi Tractor	897601-9670
EXZ52	6WG1-TCC	15700	6X4	07.05 ~	U09005-AFS	Semi Tractor	897601-9670
	6WG1-TCN	15700	6X4	07.05 ~	U09005-AFS	Semi Tractor	897601-9670
	6WG1-TCS	15700	6X4	07.05 ~	U09005-AFS	Semi Tractor	897601-9670

Parts No. Comparison List of Air Flow Sensor

REFERENCE No. and HITACHI APS PARTS No.

REFERENCE No.	HITACHI APS PARTS No.
ISUZU	
897016-6260	U09001-AFS
897016-6261	
897177-1180	U09002-AFS
897177-1181	
897312-3950	U09003-AFS
897371-5260	U09004-AFS
897601-9670	U09005-AFS

HITACHI APS PARTS No. and REFERENCE No.

HITACHI APS PARTS No.	REFERENCE No.
U09001-AFS	897016-6260
	897016-6261
U09002-AFS	897177-1180
	897177-1181
U09003-AFS	897312-3950
U09004-AFS	897371-5260
U09005-AFS	897601-9670