

GCS Inc.

Jan. 2023

PART I

COMPANY HISTORY

PRODUCTION FACILITIES

QUALITY MANAGEMENT

TECHNICAL INSTITUTE

PART II – PRODUCTS

DENSO MODEL

VISTEON MODEL

HANON(HALLA)MODEL

DELPHI MODEL

VALEO MODEL

1. COMPANY HISTORY

- 2005 Established and started manufacturing A/C compressor & component parts.
- 2006 Developed 10PA15C, 10PA17C, HT6, HD6, HR6 and 10S20F compressors.
- 2007 Developed HU6 10P15 6P148 compressors
- 2008 Acquired certification of **ISO/TS16949:2002.**
- 2010 Developed HS17, HS18, New 10PA series compressors (X & J – Doowon Type)
- 2011 Acquired certification of **ISO 14001:2009.**
- 2012 Developed HS series compressors (HS15, HS17 & HS18)
- 2014 Developed 10S20H, HS18R compressors.
- 2016 Developed New HS18(J) compressor.
- 2017 Developed SK17(Replacement of Scroll type), FS20 compressors.
- 2018 Developed 10S20C compressor
- 2019 Developed DKS17D compressor for Nissan Rogue
- 2020 Developed 10SR15C, 10SR17C, RS20 compressors Acquired certification of IATF16949.
- 2021 Developed DKS17DS . DKS20 , 10SRE20C compressors
- 2022 Developed DKS17, DKS20, 10S17C (J), FS18, 10SRE18C , RS15 compressors
- 2023 Under development plan - A10HF20 , Variable type compressors
- (6SEU, 7SEU, 7SAS, VS16 , VS18, DV etc.)

2. COMPANY ORGANIZATION



3. SALES BY REGIONS



4. MAJOR CUSTOMERS

USA

- Standard Motor Products, Inc.
- Global Parts Distributors, LLC.
- Omega Environment Technology
- Ranshu
- Universal Air Conditioner, INC. (U.A.C Inc.)
- Worldpac, Inc. / Autopart International

ASIA

- Sinlin Automotive Co., Ltd. –Japan / Young Shine Electric – Taiwan
- Sanden – Singapore / FORMULA – Thailand

EU

- NISSENS / AVA Cooling / BORG Automotive / Euro Klima / AutoDoc

BRAZIL

- Denso Do Brasil Ltda. / Royce Connect Aire Condicionado Ltda.

5. PRODUCTION CAPACITY (Max.)

Assembly Line	DAY (10 Hours)	MONTH (22 Days)	YEAR (264 Days)
DENSO 10PA & 10S Series	400 units	8,800 units	105,600 units
DELPHI HT6, HD/HR6, HU6	450 units	9,900 units	118,800 units
VISTEON FS, HS15/17/18, DKS, RS	450 units	9,900 units	118,800 units
TOTAL	1,300 units	28,600 units	343,200 units

6. LIST OF MANUFACTURING EQUIPMENTS

MACHINING LINE

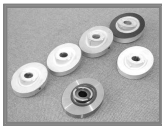
- MCT : 21 Units
- CNC Lathe : 22 Units
- Custom machine : 6 Units
- Leak tester of case parts(Cylinder, Nose, Head) : 3 Units

ASSEMBLY LINE

- Pump kit (Compressor body) : 3 Lines
- Clutch assembly : 1 Line

7. MACHINING LINES(1)

Pistons

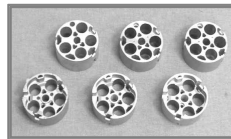


Swash Plates



8. MACHINING LINES(2)

Cylinders



Front & Rear heads



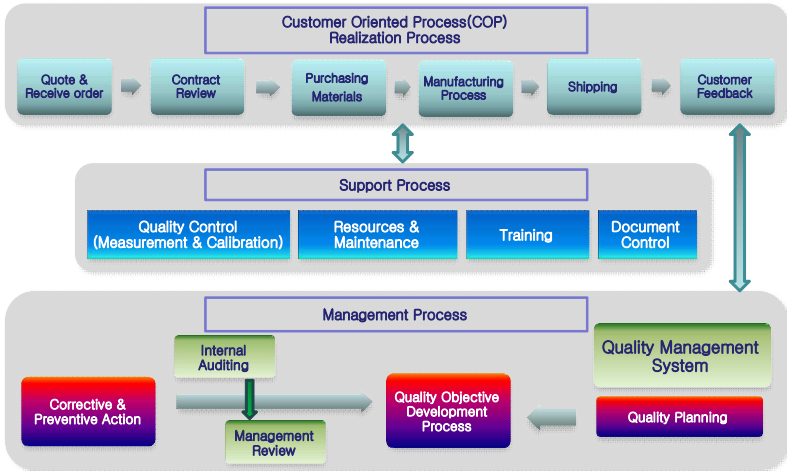
9. ASSEMBLY LINES(Pump kit)



10. ASSEMBLY LINES(CLUTCH)



11. QUALITY MANAGEMENT



12. QUALITY & EQUIPMENTS

No.	NAME	SPEC	MANUFAC.	UNITS
1	CASE LEAK TEST	PART LEAK TEST	SMC/KONICS	4
2	NUT RUNNERS	MULTI AXES CONTROL	TAIYO	3
3	PUMPING TEST	ASS' Y TEST	SUN IRON WORKS	3
4	BODY LEAK TEST	ASS' Y LEAK TEST	SMC/KONICS	3
5	DURABILITY TEST	9000RPM MAX	SEOUL IND TECH.	2
6	MAGNETIC COIL TEST	AT	SEJIN, Inc.	8

CASE LEAK TEST



NUT RUNNER



PUMPING TEST



BODY LEAK TEST



DURABILITY TEST

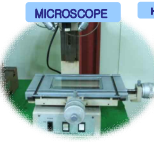


FOR THE BEST QUALITY

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13. MEASUREMENT EQUIPMENTS

No.	NAME	TYPE	MANU.	UNITS	VALIDITY
1	CMM	CONTACT	CARL ZEISS	1	~13.4.8
2	PROFILE PROJECT	PH-3500	MITUTOYO	1	~13.4.8
3	ROUGHNESS TESTER	TR100×4	MITUTOYO	1	~13.4.8
4	MICROSCOPE	×2, ×5	MITUTOYO	1	~13.4.8
5	HARDNESS TESTER	AR-10	MITUTOYO	1	~13.4.8
6	TRIMOS VERTICAL HEIGHT GAUGE	0.001mm	CHAVANNES SUISSE	2	~13.4.8
7	HEIGHT GAUGE	300mm	MITUTOYO	2	~13.4.8
8	GAUGE BLOCK SETS	1.005 ~100mm	MITUTOYO	1	~13.4.8
9	MICRO METERS, ETC.	0.001cm	MITUTOYO	16	~13.4.8



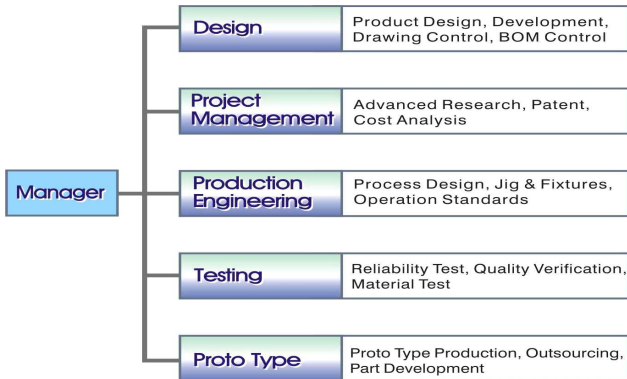
14. CERTIFICATION

No.	CERTIFICATION	YEAR	AUTHORIZED	REM
1	QS9000	2002	IAF	
2	ISO9001:2007	2006	IAF	
3	ISO 14001:2015	2022	KMAR	
4	IATF 16949:2016	2022	KMAR	



15. Research & Development Dept.

Persons : 3



16. TECHNICAL INSTITUTE

HISTORY OF DEVELOPMENTS

- 2005 : KS10 Replacement for **Visteon** FS10 Series.
- 2006 : GT/GD/GR17 Replacement for **Delphi** H6 Series, GS20F Replacement for **Denso** 10S20F/10S17F.
- 2007 : GU17 Replacement for **Delphi** HU6.
- 2008 : BP15(E) Replacement for **Denso** 6P148A / 10P15.
- 2010 : KH17/18 Replacement for **Hanon** HS17/18 , 10PA15/17 (X&J type) for **Doowon**'s new 10PA Series.
- 2012 : KH15 Replacement for **Hanon** HS15.
- 2014 : KH18R Replacement for HS18 (Dodge Ram) and 10S20H (Chrysler Voyager).
- 2016 : KH18 (J) Replacement for **Hanon** HS18 (J) for Jeep Liberty.
- 2018 : (N)10S20C for Honda – SUV & Van types.
- 2019 : **VALEO** DKS17 for Nissan Rogue.
- 2020 : RS20 For Ford F Series. (F-250 , F-350, F-450 , F-550, F-650, F-750).
- 2021 : **DENSO** 10SR15C , 10SR17C for Honda – SUV & Van types.
- 2022 : (N) 10S17C , 10SRE18C , 10SRE20C , DKS20 for Ford Expedition & Ford Transit & Lincoln Navigator.
- 2023 : Under development plan : A10HF20 compressor & Variable type compressors.

17. TECHNICAL INSTITUTE

TEST RIGS

Compressor Durability Tester



Automotive A/C System Unit Tester



Calorimeter



18. PATENTS

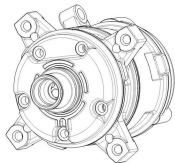
No.	COUNTRY	CONTENT	APPLICATION NO.	REGISTRATION NO.	DESCRIPTION
1	USA	Design	29/214.015	D506477	END CAP FOR AIR COMPRESSOR (GT17 REAR HEAD)
2	USA	Design	29/214.016	D507280	END CAP FOR AIR COMPRESSOR (GT1 FRONT HEAD)
3	KOREA	Design	2005-0017471	30-0409871	FRONT COVER FOR AIR COMPRESSOR (GD17-Front Head Type-II)
4	KOREA	Design	2005-0017472	30-0409872	AUTOMOTIVE A/C COMPRESSOR ASSY (GD17-Ass'y)
5	KOREA	Design	2005-0017473	30-0409873	REAR COVER FOR A/C COMPRESSOR (GD17-Rear Head Type-R)
6	KOREA	Design	2005-0017474	30-0409874	A/C COMPRESSOR PUMP KIT (GD17-Cylinder Block)
7	KOREA	Design	2005-0017492	30-0409873	REAR COVER FOR A/C COMPRESSOR (GD17-Rear Head Type-D)
8	CHINA	TRADE MARK	6019607		GCS LOGO AND BRAND
9	USA	Design	29 / 258.627	D540,823	AUTOMOTIVE A/C COMPRESSOR (GS20F-Ass'y)
10	USA	Design	29 / 266.424	D555.174	FRONT COVER FOR A/C COMPRESSOR (GU17-Front Head)
11	USA	Design	29 / 266.423	D555.670	REAR COVER FOR A/C COMPRESSOR (GU17-Rear Head)
12	USA	Design	29-301.800	D586.684	CYLINDER BLOCK FOR A/C COMPRESSOR (GT17_Cylinder Block)
13	KOREA BRASIL	Design	30-2008-0024485 DI 6804492-5	30-054224	AUTOMOTIVE A/C COMPRESSOR (BP15)
14	KOREA BRASIL	Design	30-2008-0024486 DI 6804487-9	30-0542241	AUTOMOTIVE A/C COMPRESSOR (BP15E)



PART II

PRODUCTS

Jan. 2023



GCS Inc.
www.gcsnetwork.com

Denso -10PA15C

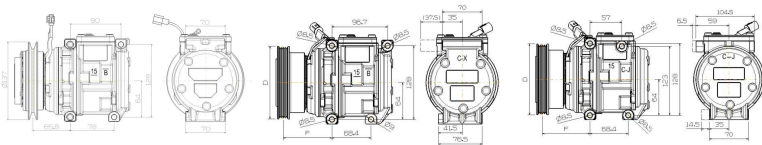
BU15

TYPE: **T, C, L, X, J**



APPLICATION

HYUNDAI	CLICK 1.3 SOHC
	TUCSON 05-08
KIA	SPORTAGE 05-08
	SPECTRA 05-06
MITSUBISHI	MOTERO 94-00
TOYOTA	TACOMA 95-04
ACURA	INTEGRA 90-99
HONDA	CIVIC DEL SOL 97
MERCEDES BENZ	500 SERIES 90-91



Denso -10PA17

BU17C



KT 170344 FS 57344

BU17T



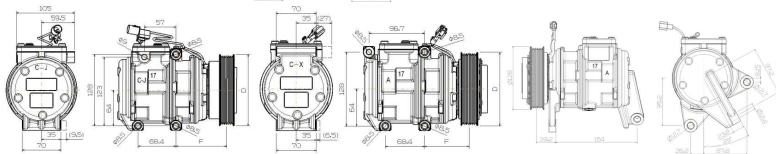
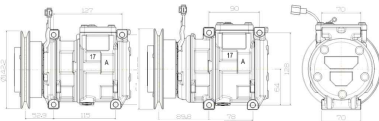
KT 170305 FS 57305

BU17J



KT 170376 FS 57376

TYPE: C, T, J, C-X, C-J, Sensor



APPLICATION

HYUNDAI	T	TUCSON
KIA	T	SPORTAGE
TOYOTA	T	CAMRY 92-01
HONDA	T	ACCORD 90-97
MERCEDES BENZ	T	SL CLASS 94-99
BMW	C	M SERIES 95-99
CHRYSLER	C	300 SERIES 99-04
DODGE	C	INTERPID 02-04
JEEP	C	GRAND CHEROKEE 93-98
LEXUS	T	ES300 92-98

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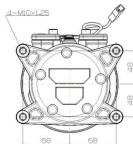
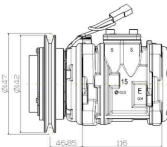
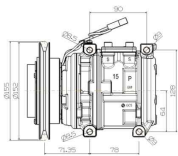
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Denso - 6P148A , 10P15

BP15



BP15E



APPLICATION		
HONDA	BP15	LEGEND 2.5 86-88
FORD	BP15	SIERRA 88-93
ROVER	BP15	800 COUPE 92-99
MERCEDES BENZ	BP15	W201 90-93
PORSCHE	BP15	911 CABRIO 86-89
TOYOTA	BP15E	LAND CRUISER 79-85

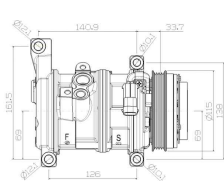
Denso – 10S17/20F

GS20F

DENSO – 10S20F



MODEL	GS20
TYPE	SWASH PLATE
MOUNTING	4-MOUNT.(DIRECT)
DISPLACEMENT (cc)	195
Bore Dia X Stroke (mm)	31 X 26
Cylinders	10
OIL (cc)	220
Weight (Kg)	≈4.8 (w/o CLUTCH)
Max. Revolution (rpm)	8,000



APPLICATION	
CHEVROLET LIGHT TRUCK	FULLSIZE PICKUP 99-08
	EXPRESS 03-06
	AVALANCHE 02-09
GMC LIGHT TRUCK	YUKON 00-09
	SAVANA 03-06
HUMMER	H2 08'
CADILLAC	ESCALADE 02-08

Visteon – FS10

Top Port Type

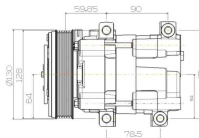
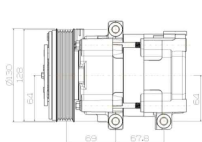


Narrow Mount Type



APPLICATION

HYUNDAI	T	SONATA 92-98
	T	ACCENT 92-98
FORD	T	FOCUS 05-07
	T	MUSTANG 96-08
MERCURY	R	MONTEREY 04-06
NISSAN	R	QUEST 93-02
LINCOLN	R	DONTINENTAL 95-02
MAZDA	T	TRIBUTE 01-06



(WIDE)

(NARROW)

Visteon / Hanon(Halla) – HS15 , HS15 (S-Type)

HS15

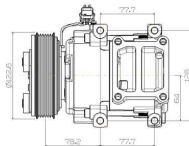
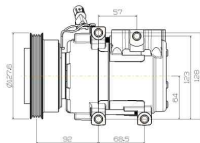
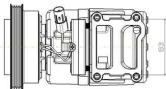


HS15S



APPLICATION

HYUNDAI	AVANTE 1.5DOHC 97–
	SONATA 93–
	TUCSAN 05–
	POTER II 03–
KIA	SEPHIA 99–
	SPECTRA 00–
	RIO
	BONGO III 04–
CHRYSLER	SEBRING 04–06
DODGE	STRATUS 04–06

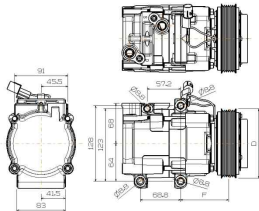


Hanon(Halla) – HS17/18/18 (R-Type)

KH17/18

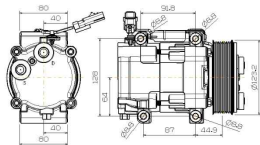


KH18R



APPLICATION

APPLICATION	
HYUNDAI	GRANDEUR XG 01-05
	SONATA 99-05
	SANTA FE 2.0
	STAREX
KIA	OPIRUS 04-06
	CALNIVAL 02-05
	SORRENTO 03-04
	OPTIMA 01-05
DODGE	NITRO 07-08
Jeep	LIBERTY 06-08

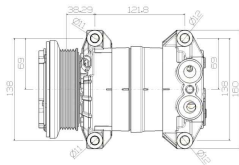


Delphi – HT6

GT17



DELPHI – HT6



APPLICATION

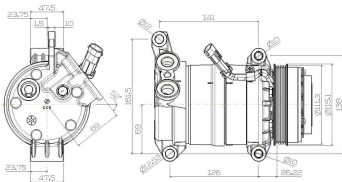
CADILLAC	ESCALADE 99-00
CHEVROLET LIGHT TRUCK	FULLSIZE PICKUP 99-02
	ASTRO 96-05
	EXPRESS 97-00
GMC LIGHT TRUCK	S15 PICKUP 99-04
	S15 JIMMY 99-01
	SAFARI 96-04
ISUZU	HOMBRE 99-00
OLDSMOBILE	BRAVADA 99-01

Delphi – HU6

GU17



DELPHI – HU6



MODEL	GU17
TYPE	SWASH PLATE
MOUNTING	4-MOUNT. (DIRECT)
DISPLACEMENT (cc)	178
Bore Dia X Stroke (mm)	29.5 X 26
Cylinders	10
OIL (cc)	200 (PAG46)
Weight (Kg)	≈4.7 (w/o CLUTCH)
Max. Revolution (rpm)	9,000

APPLICATION	
GMC	YUKON 00-02
	SIERRA 99-02
CHEVROLET	SILVERADO 99-02
	TAHOE 00-02

Delphi – HD6, HR6

GD17/GR17

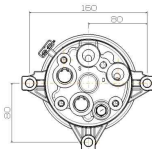
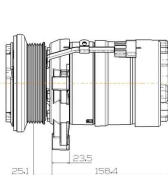


DELPHI – HD6/HR6

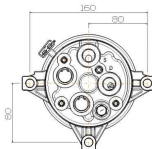


APPLICATION

BUICK	D	ROADMASTER 94–96
	R	LESABRE SEDAN 89–94
CADILLAC	D	CONCOURSE 96–99
	R	DEVILLE 91–93
CHEVROLET	D	CAMARO 95–97
ISUZU	D	TROOPER 98–00
OLDSMOBILE	D	AURORA 95–99
PONTIAC	D	FIREBIRD 93–97



GD



GR

Denso - 10S20H



GCS-109	GCS P/N: 1191211006	5005440AA	4S# 78374	10S20H	CHRYSLER TOWN & COUNTRY (01~05) / DODGE CARAVAN (01~07)
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Denso – New 10S17F , 10S20F



GCS-105	GCS P/N: 1201221024	15080961 15169966 15100339 15036041	4S# 78348 68316 98369 98303	10S17F, 10S20F	<ul style="list-style-type: none">• CHEVROLET EXPRESS SERIES (04~09)• CHEVROLET SILVERADO SERIES (02~11)• GMC SAVANA SERIES (02~12)• GMC SIERA 2500/3500 (03~11)• HUMMER H1 (06)
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Hanon / Visteon – FS20



GCNCOM-089	GCS P/M : 1221241045	9L1419D629AA	4S# 68192	FS20	<ul style="list-style-type: none">• FORD : F150, F250, F350, F450, F550 (07~14)• FORD LOBO (07~14)• LINCOLN MARK LT (07~08)• LINCOLN NAVIGATOR (07~14)
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Denso – 10SE18F Comp.



GCNCOM-110	GCS P/N 1211231024	20762515 20880831 15-22180	4S# 198353	10SE18F	<ul style="list-style-type: none">• CHEVROLET EXPRESS 1500 (10~14)• CHEVROLET EXPRESS 2500 (10~16)• CHEVROLET EXPRESS 3500 (12~16)• CHEVROLET EXPRESS 4500 (10~16)• GMC SAVANA 1500/2500/3500/4500 (10~16)• GMC SIERRA 2500/3500 (12) (14)
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SK17 Comp. (Visteon Scroll /*10PA mechanism applied)



GCNCOM-111	GCS P/N : 1229011044	YCC151 15-21481 15-21486	4S# 178588	SK17	<ul style="list-style-type: none">• FORD E SERIES (02~07)• FORD EXPEDITION (02~06)• FORD EXPLORER (02~05)• LINCOLN AVIATOR (03~05)• LINCOLN NAVIGATOR (02)• MERCURY MOUNTAINNER (02~05)
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Denso – 10S20C Comp.



GCNCOM-112	GCS# 1231251049	38810RDJA01 471-1001	4S# 98307	10S20C	<ul style="list-style-type: none">• HONDA ACCORD (03~07)• HONDA ODYSSEY (05~07)• HONDA PILOT (05~08)• HONDA RIDGELINE (06~08)• ACURA MDX (03~06)• ACURA TL (04~08)
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Valeo – DKS17 Comp.



GCNCOM-350	GCS# 1252151740	92610JM01C 92610JM01E	4S# 98490	DKS17D	<ul style="list-style-type: none">• NISSAN ROGUE (08~14)• NISSAN ROGUE SELECT (14)
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DENSO – 10SR17C Comp.



GCNCOM-360	GCS# 1251291054	38810RN0A01	4S# 158334	10SR17C	<ul style="list-style-type: none">• ACURA MDX (07~13)• ACURA ZDX (10~13)• HONDA ODYSSEY (08~17)• HONDA PILOT (08~15)• HONDA RIDGELINE (09~14)
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DENSO – 10SR15C Comp.



GCNCOM-361	GCS# 1251301054	38810R70A01	4S# 158335	10SR15C	<ul style="list-style-type: none">• ACURA RDX (13~15)• ACURA TL (09~14)• HONDA ACCORD (08~12)
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DENSO – RS20 Comp.



GCNCOM-370	GCS# 1261331057	BC3Z19703AA YCC257	4S# 98322	RS20	<ul style="list-style-type: none">• FORD F-250 SUPER DUTY (11~16)• FORD F-350 SUPER DUTY (11~16)• FORD F-450 SUPER DUTY (11~16)• FORD F-650 (16) / FORD F-750 (16)
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DENSO – DKS20 (R-TYPE) Comp.



GCNCOM-354	GCS# 1271351064	YCC270 BL3Z19703A	4S# 168662	DKS20	<ul style="list-style-type: none">• FORD EXPEDITION (15~17)• ACURA RDX (13~15)• ACURA TL (09~14)
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DENSO – FS18 Comp.



GCNCOM-400	GCS# 1282211830	7C2Z19703A YCC-2532	4S# 68198	FS18	<ul style="list-style-type: none">• FORD FORD E SERIES (07~19)• FORD ECONOLINE VAN (10~14)• FORD MUSTANG (07~09)
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DENSO – 10SRE18C Comp.



GCNCOM-364	GCS# 1281401071	55111442AG 68454989AA	4S# 158377	10SRE18C	• DODGE RAM SERIES (09~20)
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DENSO – 10SRE20C Comp.



GCNCOM-363	GCS# 1271371067	5511104AC RL111104AC	4S# 98320	10SRE20C	<ul style="list-style-type: none">• CHRYSLER 200 / TOWN & COUNTRY (11~16)• DODGE AVENGER (11~14)• DODGE GRAND CARAVAN (11~20)• DODGE JOURNEY (11~19)• DODGE RAM C/V (12~15)• VOLKSWAGEN ROUTAN (11~14)
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DENSO – (N)10S17 Comp.



GCNCOM-114	GCS# 1271391069	55111444AB R5111444AB	4S# 178313	(N) 10S17C	<ul style="list-style-type: none">• DODGE RAM 2500/3500/4500 (10)• RAM 1500/2500/3500 (11~20)• RAM 4000 (11~13)• RAM 4500/5500 (11~18)
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GCS Inc.

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