



SPECIFICATION  
OF  
MITSUBISHI DIESEL ENGINE  
MODEL : S12R-PTA  
(WITH FAN)  
FOR DIESEL GENERATOR SET  
EMERGENCY APPLICATION

**Used for 1250kVA generator**

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MITSUBISHI HEAVY INDUSTRIES, LTD

							APPROVED BY	CHECKED BY	DRAWN BY
							橋口	井	坂本
				DATE	2016/4/1				

1. DRAWINGS

NO.	DWG. NO.	DWG. NAME	REV.
1	38E96-00251	ENGINE OUTLINE	
2	37796-01001	JOINT DETAIL	
3	38E96-04051	WIRING DIAGRAM	
4	37796-14001	MOUNTING DETAIL	
5	37796-21001	FLYWHEEL & HOUSING DETAIL	
6	38E96-30351	AIR CLEANER	
7	37796-40001	OIL FILTER	
8	37796-43010	BREATHER	
9	37796-61312	FUEL RETURN PIPING	
10	37796-62002	FUEL FILTER	
11	37796-62112	FUEL INLET PIPING	
12	37796-63005	GOVERNOR	
13	38E96-66051	STARTING MOTOR	
14	38E96-68051	DYNAMO	
15	37796-71001	TURNING GEAR	
16	37796-87502	STOP SYSTEM	
17	38E96-90152	METER & SENSOR	
18	38E96-90251	ALARM SWITCH	
19	S35-5010	AIR CLEANER ASSY	
20	S35-5210	CAP,INLET	
21	S35-5110	BAND	
22	S11-0551	THERMO SWITCH	
23	S11-0796	PRESSURE SWITCH	
24	S11-1371	FILTER ALARM SWITCH	
25	S13-0282	SOLENOID	
26	S13-1022	CONNECTOR	
27	S13-1042	CONTROLLER,SPEED	
28	S13-1761	ACTUATOR	
29	S13-2011	MAGNETIC PICK UP	
30	S13-2020	CABLE, PICK UP	
31	S14-0330	CONNECTOR	
32	S37-1021	FLEXIBLE PIPE	
33	S35-0751	AIR HOSE	
34	S35-0731	HOSE,RUBBER	

2. TECHNICAL INFORMATION

NO.	ITEM. NO.	DWG. NAME	REV.
35	T0232-0001E	SPECIFICATION SHEETS	

3. GENERAL

Object and use	:	Diesel generator
Color of painting	:	7.5BG6/1.5
Applicable conditions		
Ambient temperature	:	5°C ~ 40°C
Altitude	:	1500m above sea level
Max ,humidity	:	85%
Place of installation	:	In door

Shop test

Diesel engine running tests shall be carried out by the following items.

Starting test

Load test	:	1/4, 2/4, 3/4 Load each
	:	4/4 Load

Governor test	:	Governor test should be done along with respective governor controller
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Safety stop device test

Standard

All items, unless otherwise specified, are in accordance with JIS, and manufacturer's standards.

4. PRINCIPAL PARTICULARS

Model	:	S12R-PTA
Type	:	4cycle stroke, water cooled diesel engine
Combustion chamber	:	Direct injection type
Aspiration	:	Turbocharged with after cooler
Number of cylinders	:	12-V
Bore × stroke	:	170mm × 180mm
Total displacement	:	49.03L
Compression ratio	:	14.0 : 1
firing order	:	1 - 12 - 5 - 8 - 3 - 10 - 6 - 7 - 2 - 11 - 4 - 9
Direction of rotation	:	Counter clockwise as viewed from flywheel side
Engine dimensions (Approx.)	:	Length           Apx. 2568 mm
	:	width            Apx. 1435 mm
	:	Height           Apx. 1592 mm
Dry weight (Approx.)	:	5350kg (without accessories)
Fuel oil	:	ASTM D975 No. 2 - D or BS 2869 class A1 ,A2
Lubricating oil	:	API service CF class or SAE15W-40

Output at ISO 3046 standard air conditions (25°C, 100kPa, 30% relative humidity)

Stand-by rating	:	1190kW/1500min <sup>-1</sup>
Prime rating	:	1080kW/1500min <sup>-1</sup>
Fuel consumption ratio at stand-by rating (allowance +5%)	:	205g/kW-hr at 1190kW/1500min <sup>-1</sup>
Fuel consumption ratio at prime rating (allowance +5%)	:	205g/kW-hr at 1080kW/1500min <sup>-1</sup>
Lub, oil consumption ratio at stand-by rating	:	Within 0.8g/kW-hr
Emission compliance	:	Not certified

5. STANDARD EQUIPMENTS

## (1) Power line system

Flywheel	: DWG.NO.37796-21001 SAE J620d 21in, except screw size
Flywheel housing	: DWG.NO.37796-21001 SAE J617c No.00, except screw size
Engine mounting	: DWG.NO.37796-14001 4 points mounting, C = 250mm
Torsional vibration damper	: Viscous type × 1pc

## (2) Air intake system

Air cleaner	: DWG.NO.38E96-30351 , S35-5010 4 pcs Paper element type with indicator (6.3kPa)
Turbocharger	: MITSUBISHI TD Type Model : TD13L
Air cooler	: Jacket water cooled type Plated element type
Air heater	: Not supply

## (3) Exhaust system

Exhaust manifold	: Air cooled type with heat insulator
Muffler	: Not supply
Flexible pipe	: DWG.NO.S37-1021 loose supply JIS 300A, L = 370mm, weight 70kg
Companion flange	: Not supply
Breather	: DWG.NO.37796-43010 Up side direction type For blow - off to outside of engine room

## (4) Lubricating system

Oil pump	: Gear pump type
Capacity of oil pump	: 480L/min ( at Engine Speed 1500min <sup>-1</sup> )
Lub. oil pressure	: 0.49~0.64 Mpa
Quantity of oil (Approx.)	: Oil pan full level : 150 L low level : 110 L Others (filter etc.) : 30 L Total : 180 L

- Lub. oil filter (Full flow) : DWG.NO.37796-40001  
Paper element cartridge type × 4pcs  
filter mesh : 20  $\mu$   
with by - pass alarm switch
- Lub. oil filter (By - pass flow) : DWG.NO.37796-40001  
Paper element cartridge type × 1pc  
filter mesh : 2  $\mu$
- Lub. oil cooler : Water cooled corrugated type with by - pass valve
- (5) Cooling system
- Water pump : Gear drive centrifugal type  
Capacity of water pump : 1650 L/min (at Engine Speed 1500min<sup>-1</sup>)  
Thermostat : Wax pellet type × 4pcs  
Open at 71°C ~ 85°C
- Fan : Pusher type steel fan 1524 diameter, Gear drive  
Fan speed ratio  $i = 0.672$
- Quantity of Coolant : Approx.125L (only Engine)  
Radiator : Not supply  
Radiator piping : Not supply
- (6) Fuel system
- Fuel inlet pipings : DWG.NO.37796-62112 loose supply  
flexible hose (Rc 3/4 joint)
- Fuel return pipings : DWG.NO.37796-61312 loose supply  
flexible hose (Rc 3/4 joint)
- Fuel overflow of Inj. Pump and fuel leak - off of Nozzle have to return to fuel tank
- Injection pump : Bosch type "PS6" without timer  
Feed pump : Piston type with priming pump  
Injection Nozzle : Hole type 0.325mm×10 holes  
Fuel filter : DWG, No.37796-62002  
: Paper element cartridge type filter mesh : 5  $\mu$
- (7) Control system
- Governor : DWG.NO.37796-63005  
TOHO Electronic speed governor  
Speed droop : 0 ~ 5% adjustable

Actuator	: DWG.NO.S13-1761 Supply voltage : DC24V± 20% Current consumption At starting : 13A Normal operation : 0.5 ~ 2A Min. Supply voltage : DC16V50%ED
Controller	: DWG.NO.S13-1042 loose supply Model : XS-400B-03 (04410-33100) Supply voltage : DC24V± 20%
Potentiometer	: Not supply
Connector	: DWG.NO.S13-1022 loose supply From actuator to controller 5000mm length
Magnetic pick up	: DWG.NO.S13-2011 With connector
Cable	: DWG.NO.S13-2020 loose supply From magnetic pick up to controller 4300mm length
 (8) Starting system	
Starter switch	: Not supply
Starting motor	: DWG.NO.38E96-66051 DC24V, 7.5KW × 2pcs Reduction type with relay to turn on electricity to solenoid coil The provided starting motor does not include the following function. Function to prevent energising of starting motor while engine is running
Auto magnetic engage relay	: Not supply
Current of starter	: Rush 1250A Cranking 400A (Ambient temp : 5°C, Lub. oil : SAE No. 30)



Alternator	: DWG.NO.38E96-68051 DC28V, 55A, with voltage regulator
Connector for alternator	: Not supply
Recommended battery capacity	: DC24V, 400AH Not supply
Battery switch	: Not supply
(9) Stopping system	: DWG.NO.37796-87502
Automatic stop	: Automatically shut - down by stop solenoid and electronic governor power off simultaneously
Stop solenoid	: DWG.NO.S13-0282 Energized to run type DC24V, 30.7A(pull), 0.58A(hold)
Manual stop	: By stop lever
(10) Safety device	
Alarm switches	: DWG.NO.38E96-90251
Alarm and trip	
Low oil press. switch	: DWG.NO.S11-0796 (04442-45400) Diaphragm type : 0.15 MPa switch on
High water temp. switch	: DWG.NO.S11-0551 (04442-34500) Wax type : 98°C switch on
Alarm	
Oil filter alarm switch	: DWG.NO.S11-1371 Piston type : 0.15 MPa switch on
Oil filter alarm lamp	: Not supply
Air filter alarm indicator	: Included in air cleaner assy Mechanical type : 6.2kPa switch on
(11) Meter and sensor	
Meter and sensor	: DWG.NO.38E96-90152
Tachometer	: Not supply
Magnetic pick up	: DWG.NO.S13-2011 For tachometer, pin-joint type
Cable	: For magnetic pick up, Not supply

Thermometer : For jacket water and lub. oil temp.  
Not supply  
Pressure gage : For lub. oil press.  
Not supply  
Connector : 2 poles for pressure gage loose supply  
DWG.NO.S14-0330  
Thermometer : For exhaust gas temp.  
Not supply

(12) Others

Turning device : DWG.NO. 37796-71001  
Gear type, for maintenance  
Tools : Not supply  
Spare parts : Not supply

**Declaration:**

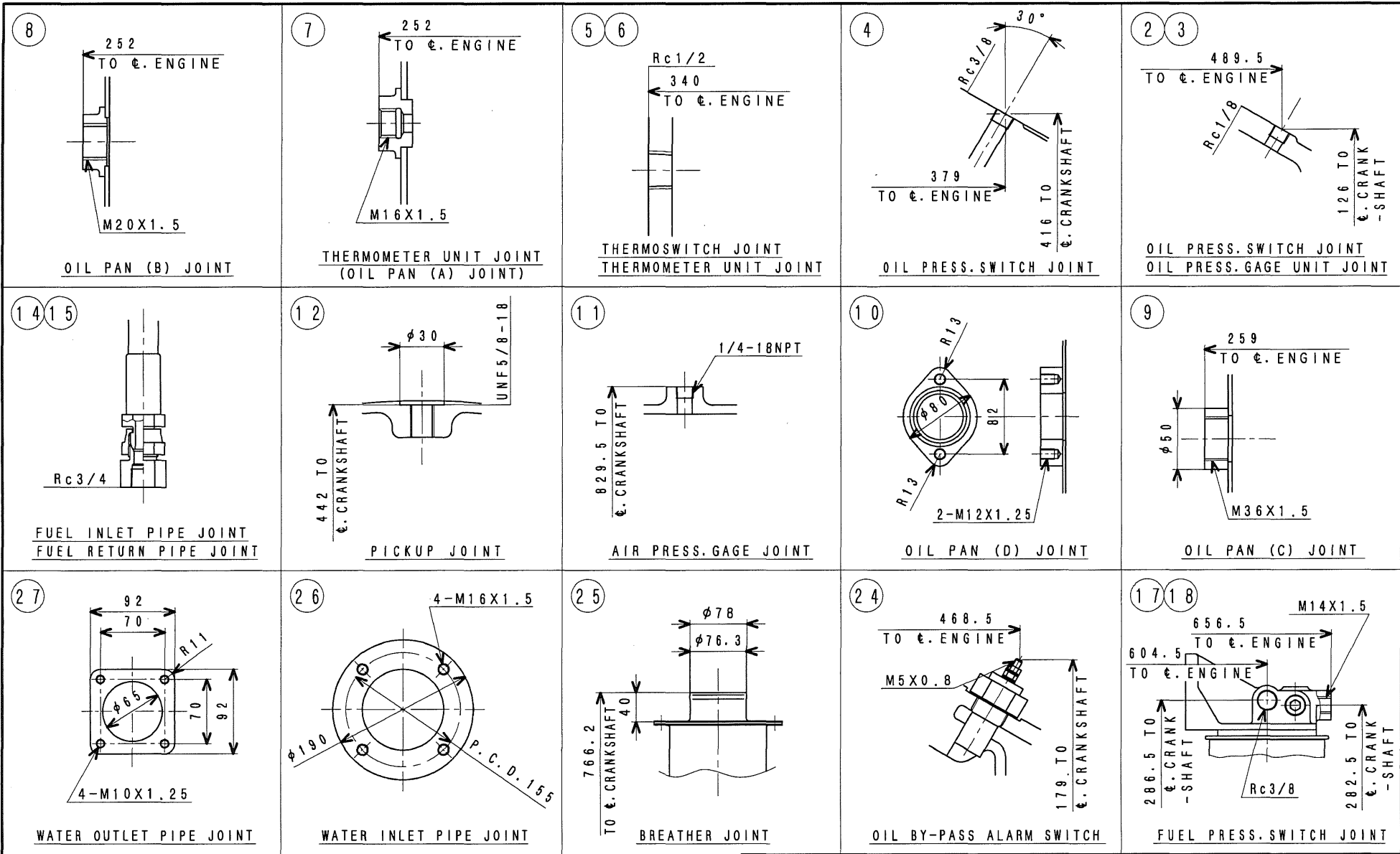
To maintain and optimize product performance and reliability, we will do some necessary change timely to product or parts in this specification without altering the basic parameters . If you need more information, please refer to our company's official website or consult us directly.

6. ACCESSORIES (Loose supply parts)

NO.	PARTS NO.	PATRS NAME	Q'TY	DWG.NO.	
1	38E30-01701	AIR CLEANER ASSY.	4	S35-5010	38E96-30351
2	38G30-03201	CAP, SCREEN	4	S35-5210	
3	45R30-71102	BRACKET, AIR CLEANER	2		
4	45R30-71200	PIPE, AIR	2		
5	05317-51801	CLAMP	4		
6	05317-51601	CLAMP	8		
7	47221-16800	HOSE, AIR	2	S35-0751	
8	45741-72900	HOSE, RUBBER	4	S35-0731	
9	38G30-09301	BAND	8	S35-5110	
10	38C32-06900	PIPE,FLEXIBLE	1	S37-1021	
11	45955-22160	HOSE	1		37796-43010
12	05317-51001	CLAMP	4		
13	47510-59300	PIPE, BREATHER	1		
14	45950-51700	PIPE,FLEXIBLE	1		37796-61312
15	45950-11300	CONNECTOR	1		
16	45950-51700	PIPE,FLEXIBLE	1		37796-62112
17	45950-11300	CONNECTOR	1		
18	04410-33100	CONTROLLER	1	S13-1042	37796-63005
19	04410-32902	CONNECTOR, ACTUATOR	1	S13-1022	
20	04410-43500	CABLE, PICK UP	1	S13-2020	
21	MH052231	CONNECTOR	1	S14-0330	38E96-90152

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注記 (1) 本図は、PTA/ファン付用ジョイント詳細図である。

5	4590-J417	'15.10.14	長沼
4	4590-H520	'13.12.27	谷戸
3	4590-E889	'08.10.3	斉藤
2	4591-0364	'03.10.27	福田
CHG	EO-NO	DATE	CHK
1	4590-4993	'99.2.25	福田
CHG	EO-NO	DATE	CHK

5	4590-J417	'15.10.14	長沼
4	4590-H520	'13.12.27	谷戸
3	4590-E889	'08.10.3	斉藤
2	4591-0364	'03.10.27	福田
CHG	EO-NO	DATE	CHK
認可 APPD	中村	検図 CHK	谷戸
製図 DRN	村田	1999. 6. 8	

S12R

JOINT DETAIL

三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.

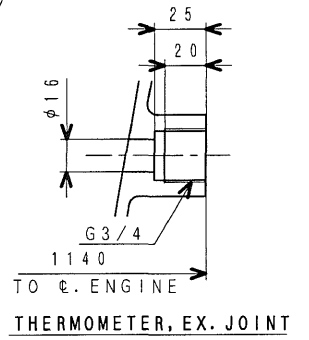
図面番号 37796-01001 1/2  
DRAWING No.

3 新図 サイズ A 3  
1 旧引図  
2 鋳造標準品  
5 切削品  
3 板金溶接品  
6 その他(購入品)  
4 組立品

旧引  
MHI  
相模原  
2015  
10.19


M/C

30



旧引  
  
 汎特  
 2014  
 1.17

M/C

4	4590-H520	'13.12.27	谷戸	 3rd ANGLE PROJECTION 尺度 SCALE	
2	4591-0364	'03.10.27	福田		
1	4590-4993	'99.2.25	福田		
CHG	EO-NO	DATE	CHK	:	
認可 APPD	橋	検図 CHK	谷戸	製図 DRN	村田
				1998.6.B	

S12R

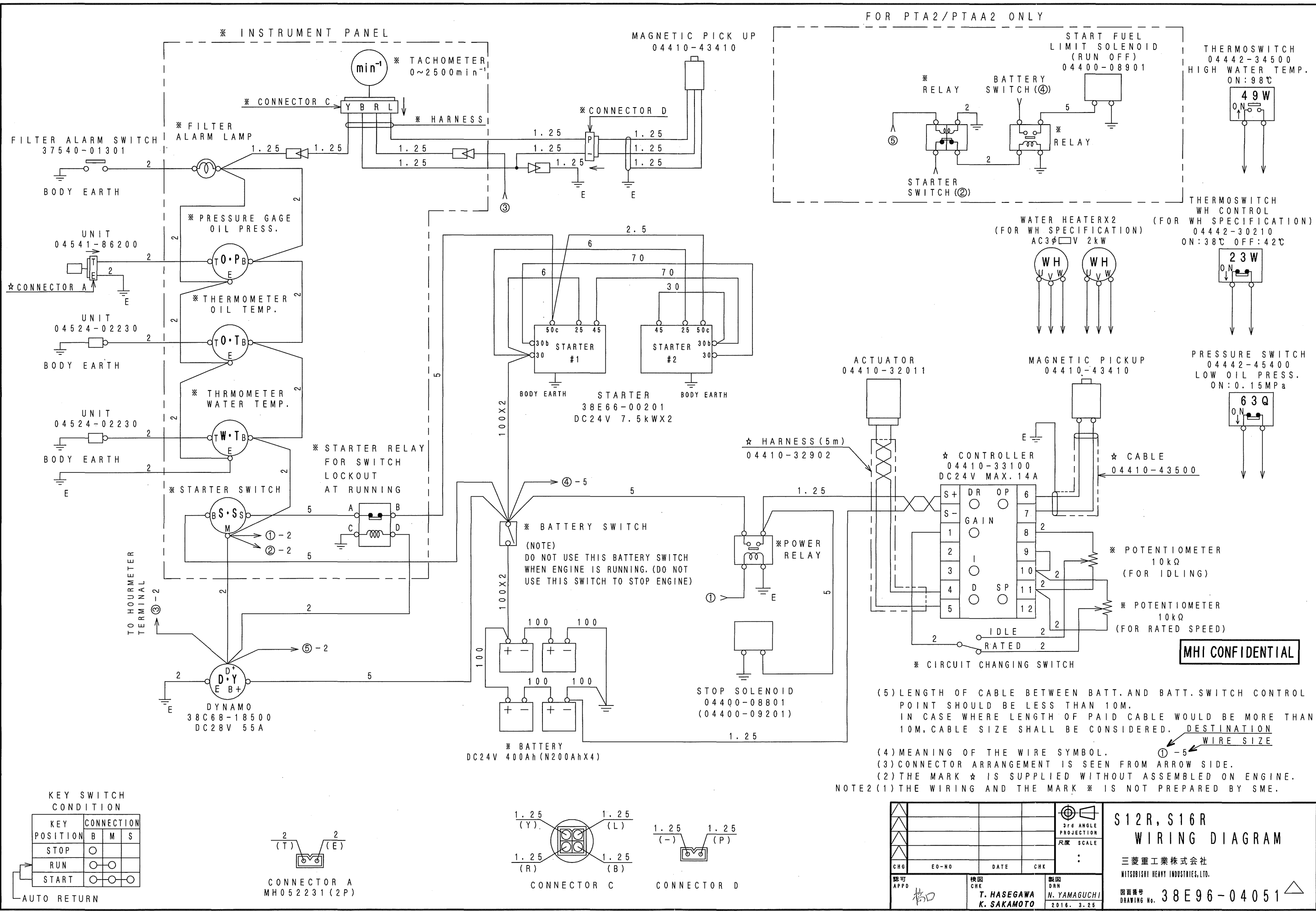
JOINT DETAIL

三菱重工業株式会社 汎用機・特車事業本部  
 MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLES.

図面番号  
 DRAWING No. 37796-01001 2/2

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3 新図 サイズ  
 ④ 旧引図 A 3  
 ① 組立図  
 2 鋳造部品  
 5 切削品  
 3 板金溶接品  
 6 その他(購入品)  
 4 組立品



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(5) LENGTH OF CABLE BETWEEN BATT. AND BATT. SWITCH CONTROL POINT SHOULD BE LESS THAN 10M. IN CASE WHERE LENGTH OF PAID CABLE WOULD BE MORE THAN 10M, CABLE SIZE SHALL BE CONSIDERED. DESTINATION WIRE SIZE

(4) MEANING OF THE WIRE SYMBOL.

(3) CONNECTOR ARRANGEMENT IS SEEN FROM ARROW SIDE.

(2) THE MARK \* IS SUPPLIED WITHOUT ASSEMBLED ON ENGINE.

NOTE2 (1) THE WIRING AND THE MARK \* IS NOT PREPARED BY SME.

CHG	EO-NO	DATE	CHK
認可 APPD	換圖 CHK	製圖 DRH	2016. 3. 25
	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI	

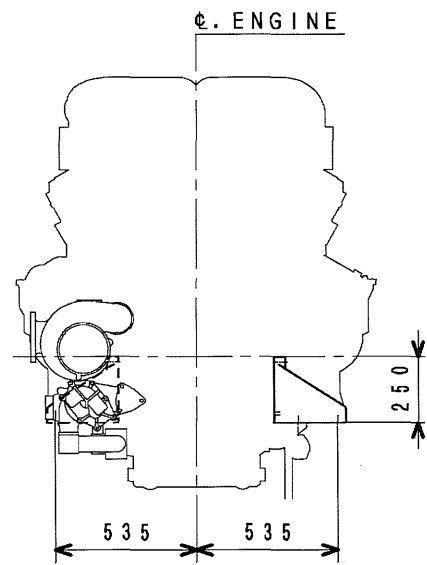
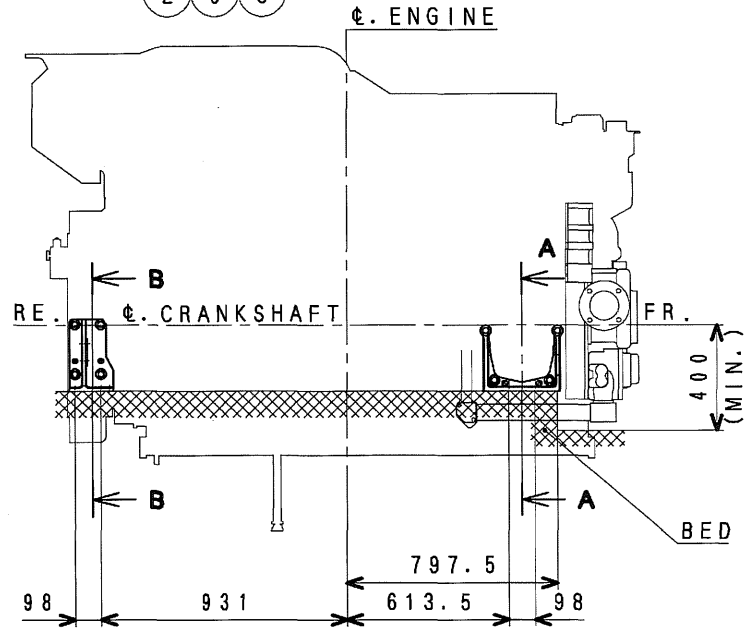
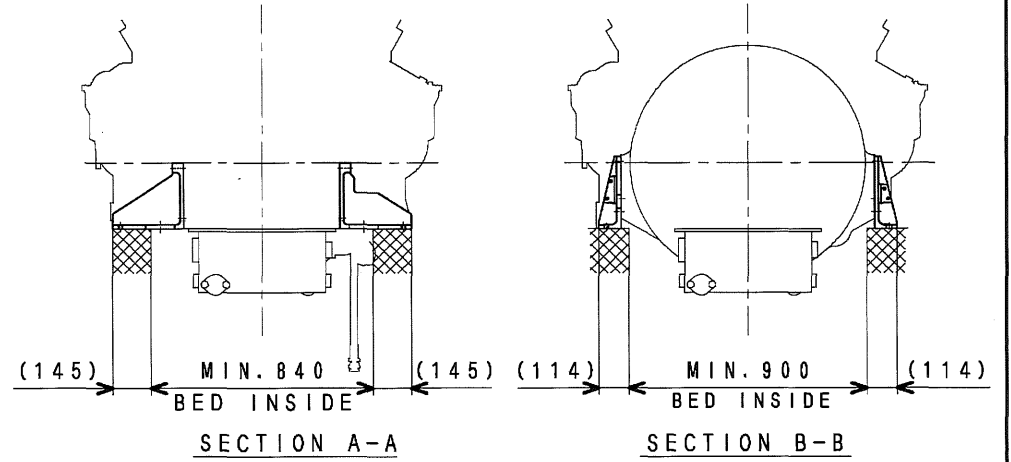
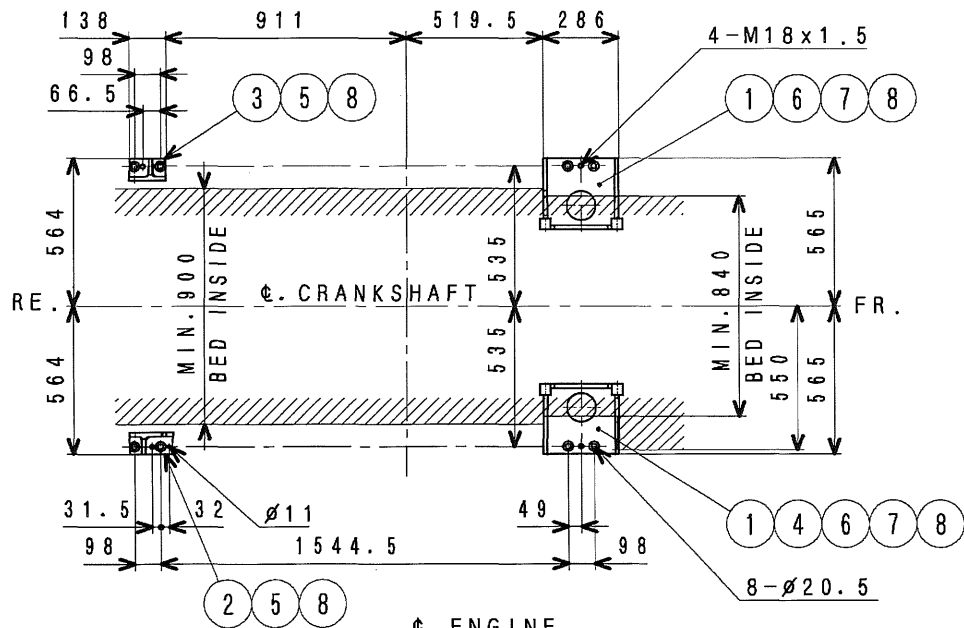
**S12R, S16R WIRING DIAGRAM**

三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号 **38E96-04051**

M/C

①新図 ②サイズ ③組立図 ④旧図 A 2 ⑤印刷品 ⑥その他(購入品)



8	33401-02600	WASHER	16
7	F1035-20075	BOLT	4
6	F1035-20050	BOLT	3
5	F1035-20045	BOLT	8
4	F1035-20035	BOLT	1
3	37714-42100	BRACKET, MTG. L	1
2	37714-32200	BRACKET, MTG. R	1
1	37714-20100	BRACKET, MTG. FR	2
No.	PARTS NO.	PARTS NAME	Q'TY

3	4590-H414	'12.11.16	谷戸
2	4590-E890	'08.10.3	斉藤
1	4590-5475	'99.8.6	福田
CHG	ED-NO	DATE	CHK
認可 APPD	橋	換図 CHK	竹谷 福田
		製図 DRN	谷戸 錫島
		1997.9.4	

S12R  
MOUNTING  
三菱重工業株式会社汎用機・特車事業本部  
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.  
図面番号 37796-14001

注記 (1) 本図は、マウンティングセンターハイトC=250用である。

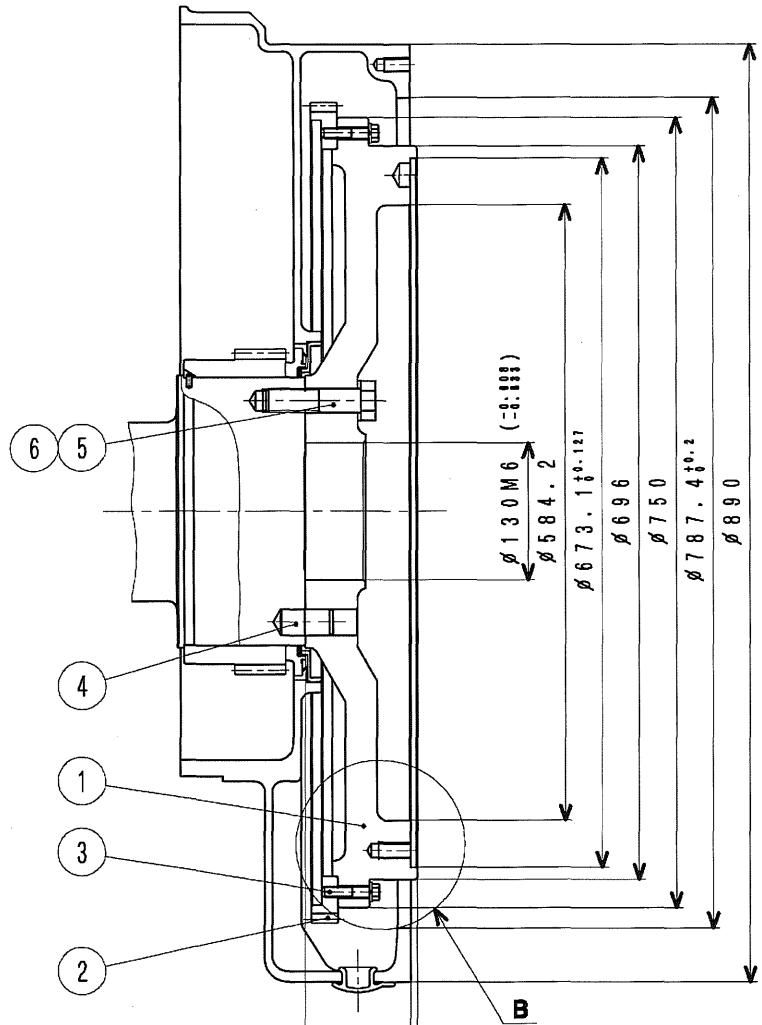
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旧引  
汎特  
2013  
2-8

M/C

3 新図  
① 旧引図  
サイズ  
A 3  
① 組立図  
2 鋳造部品  
5 切削品  
3 板金溶接品  
6 その他(購入品)  
4 組立品

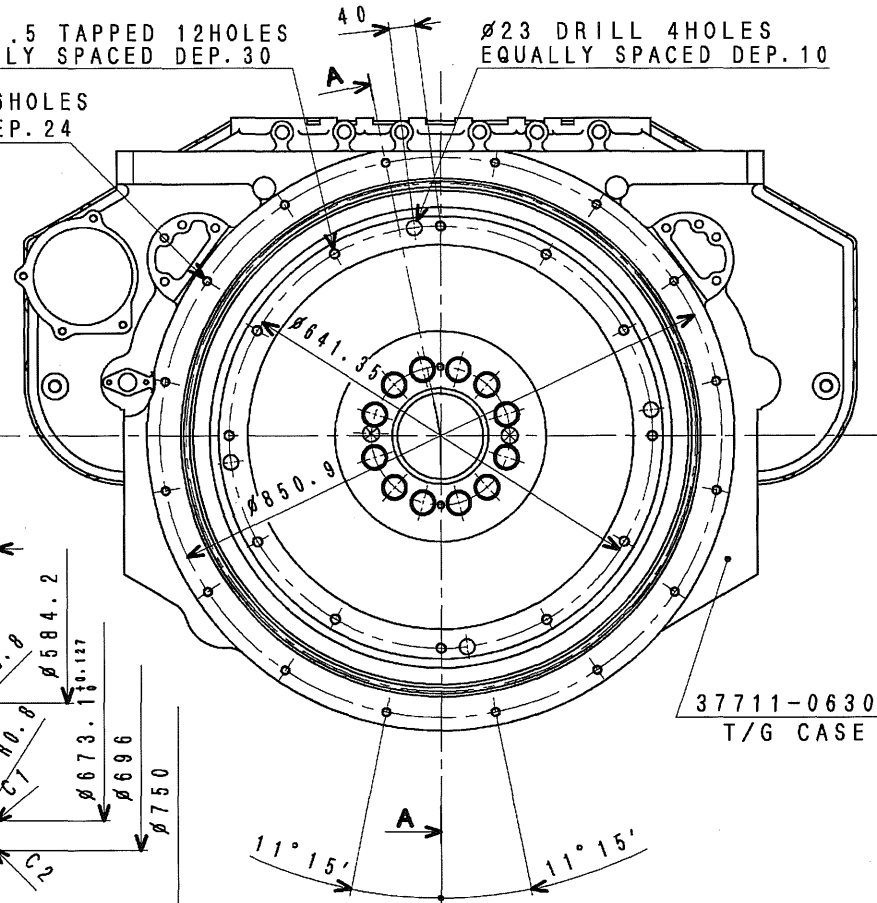




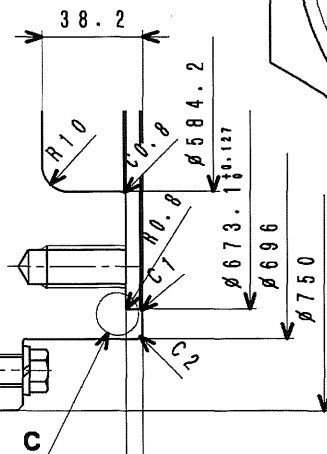
949.9 TO  $\phi$ . ENGINE 106.5  
 1050 TO  $\phi$ . ENGINE 6.4  
 1056.4 TO  $\phi$ . ENGINE

SECTION A-A

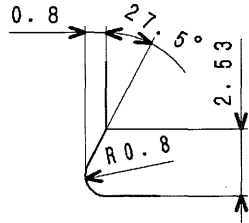
M16x1.5 TAPPED 12HOLES  
 EQUALLY SPACED DEP. 30  
 M14x1.5 TAPPED 16HOLES  
 EQUALLY SPACED DEP. 24



37711-06303  
 T/G CASE



DETAIL B



DETAIL C

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No.	PARTS NO.	PARTS NAME	Q'TY
6	33707-11701	WASHER	12
5	F1035-22090	BOLT	12
4	33320-04701	PIN, DOWEL	2
3	F1805-10045	BOLT	12
2	37721-20201	GEAR, RING	1
1	37721-00601	FLYWHEEL	1
37721-00061 F/W ASSY.			1

CHG	EO-NO	DATE	CHK
4	4590-D566	'07. 9. 4	齊藤
3	4590-A708	'05. 3. 24	浅沼
2	4591-0260	'03. 9. 12	福田
5	4590-G643	'11. 3. 24	齊藤

認可 APPD	橋	換図 CHK	竹 福 谷 田	製図 DRN	谷 齊 戸 藤
				1997. 9. 22	

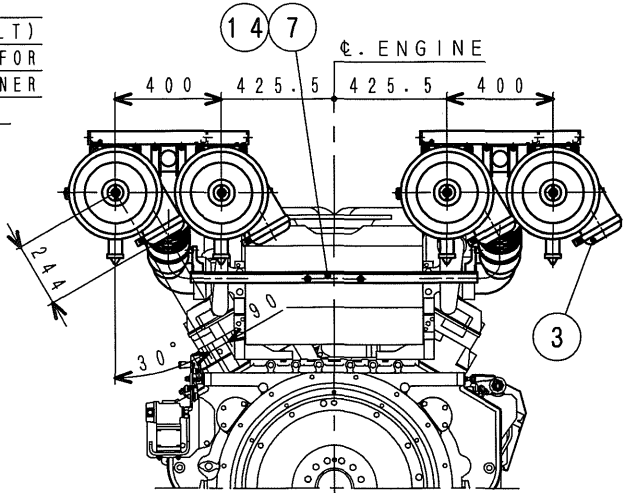
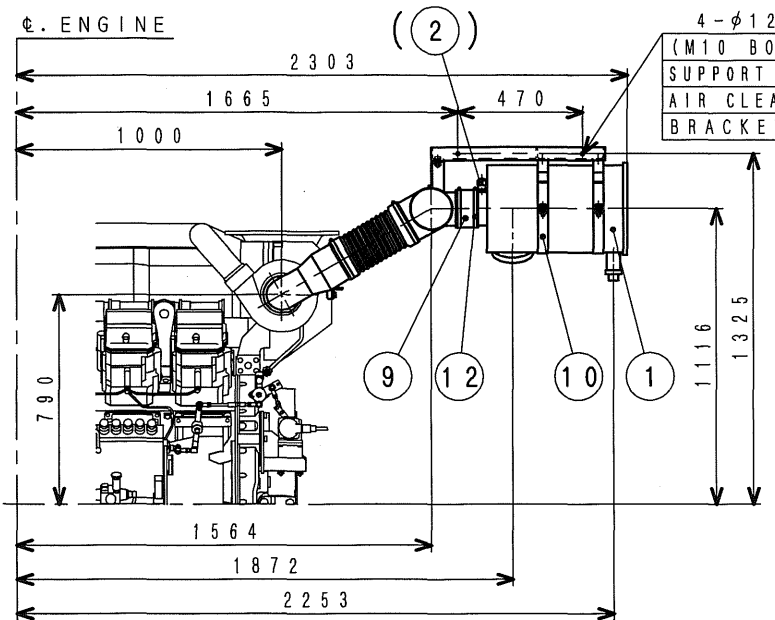
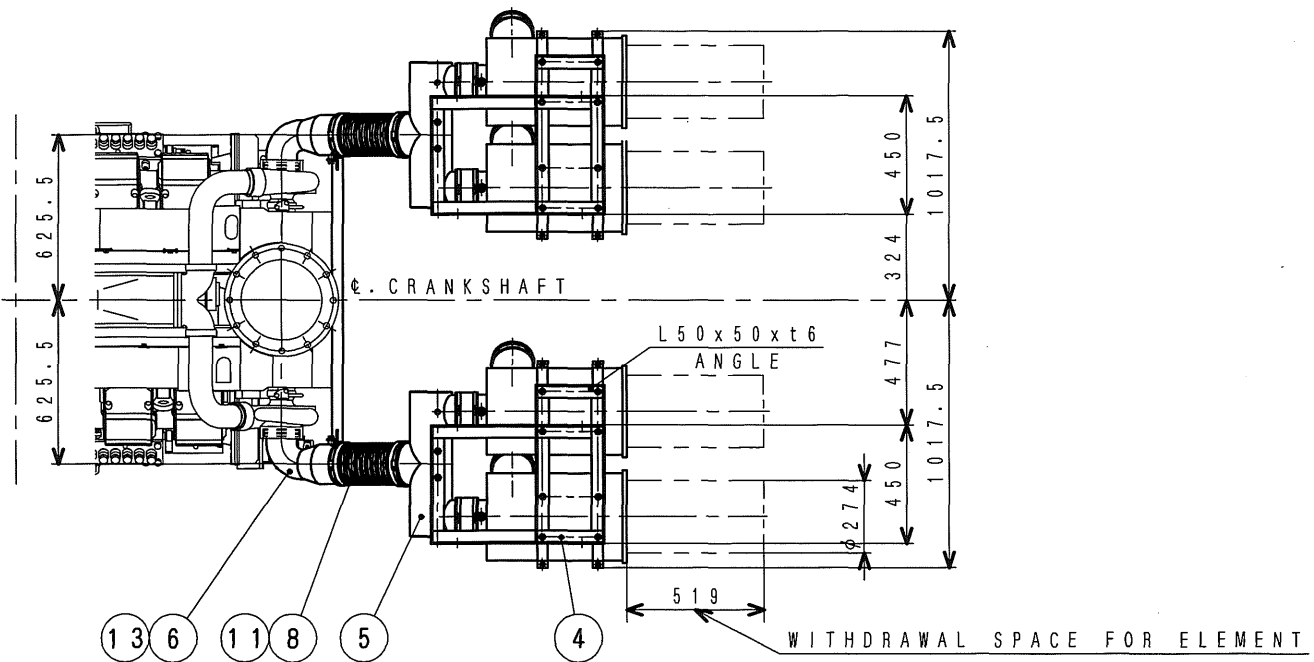
S12R  
 FLYWHEEL & HOUSING  
 三菱重工業株式会社 汎用機・特車事業本部  
 MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.  
 図面番号 37796-21001  
 DRAWING No.

注記 (2) 本図のフライホイールは、部番37721-00061 F/W ASSY. に含まれる。  
 (1) 本図は、標準フライホイール&ハウジングであり、SAE J620c21 inフライホイール  
 及びSAE617b NO. 00フライホイールハウジングに準拠する。

旧引  
 汎特  
 2011  
 5.23

FULL-CAD

3 新図 サイズ  
 ① 旧引図 A 3  
 ① 組立図 2 隣接部品 3 板金溶接品 4 組立品  
 5 切削品 6 その他(購入品)



MHI CONFIDENTIAL

14	F1805-10020	BOLT	4	
13	32330-09400	O-RING	4	
☆	12	05317-51601	CLAMP	8
☆	11	05317-51801	CLAMP	4
☆	10	38G30-09301	BAND ASSY D330.2	8
☆	9	45741-72900	HOSE, RUBBER	4
☆	8	47221-16800	HOSE, AIR	2
	7	45R30-70300	STAY	1
	6	47510-70301	PIPE, AIR	2
☆	5	45R30-71200	PIPE, AIR	2
☆	4	45R30-71102	BRACKET, AIR CLEANER	2
☆	3	38G30-03201	CAP ASSY	4
☆	2	(INCLUDED IN A/C)	(INDICATOR)	4
☆	1	38E30-01701	AIR CLEANER ASSY	4
	No.	PARTS NO.	PARTS NAME	Q'TY

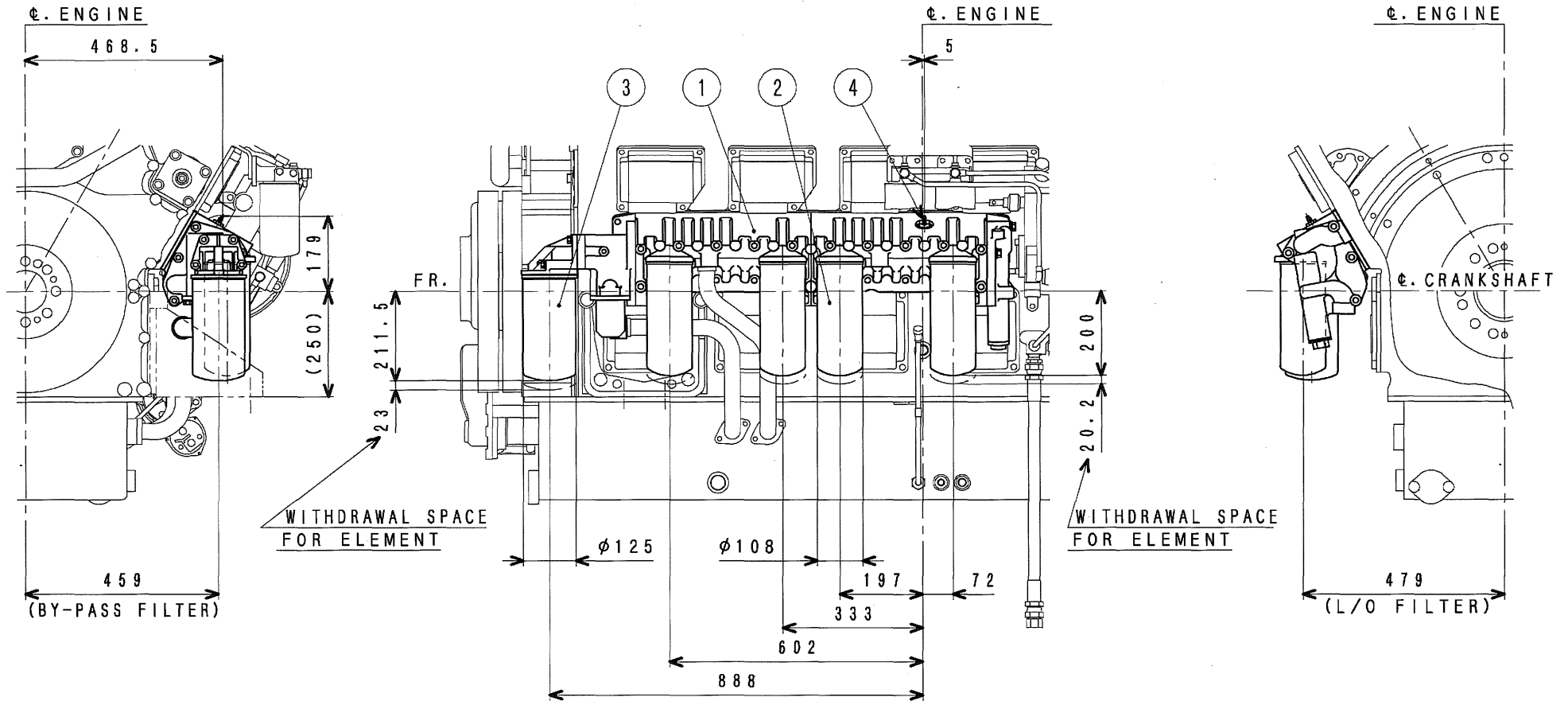
NOTES (1) THE ☆ MARKED PARTS ARE LOOSE SUPPLY.  
 (2) THIS AIR CLEANER IS AH-330013 TYPE PRODUCED BY ADRINDO.

CHG	EO-NO	DATE	CHK
認可 APPD	橋口	核図 CHK	製図 DRN
		T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI 2016. 3. 25

S12R-PTA  
 AIR CLEANER  
 三菱重工業株式会社  
 MITSUBISHI HEAVY INDUSTRIES, LTD.  
 図面番号  
 DRAWING No. 38E96-30351

M/C

①新図 ②サイズ ③組立図 ④脚輪車部品 ⑤板金溶接品 ⑥組立品  
 ④旧引図 A 3 ⑤切削品 ⑥その他(購入品)



4	37540-01301	ALARM, OIL FILTER	1
3	37540-02100	BY-PASS FILTER CARTRIDGE	1
2	37540-11100	ELEMENT, L/O, CTRG	4
1	37740-60010	OIL FILTER ASSY. L.H-P	1
No.	PARTS NO.	PARTS NAME	Q'TY

MHI CONFIDENTIAL

4	4590-H415	'12.11.16	谷戸
3	4590-E892	'08.10.3	斉藤
2	4590-B016	'05.3.24	浅沼
5	4590-H522	'13.12.27	谷戸
CHG	EO-NO	DATE	CHK
認可 APPD	橋	検図 CHK	谷戸
製図 DRN	村田	1991.12.13	

S12R  
LUB. OIL FILTER  
三菱重工業株式会社 汎用機・特車事業本部  
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLES.  
図面番号 37796-40001

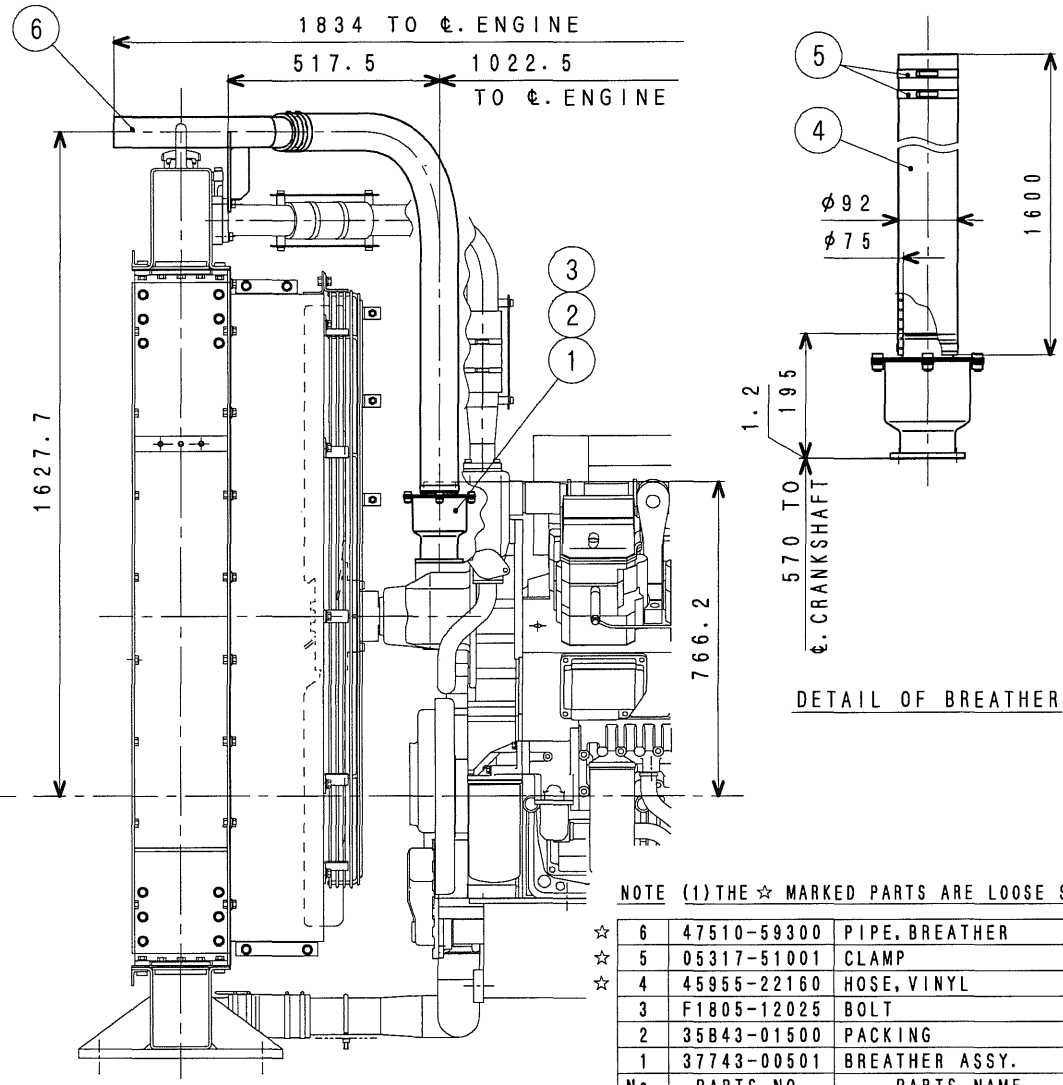
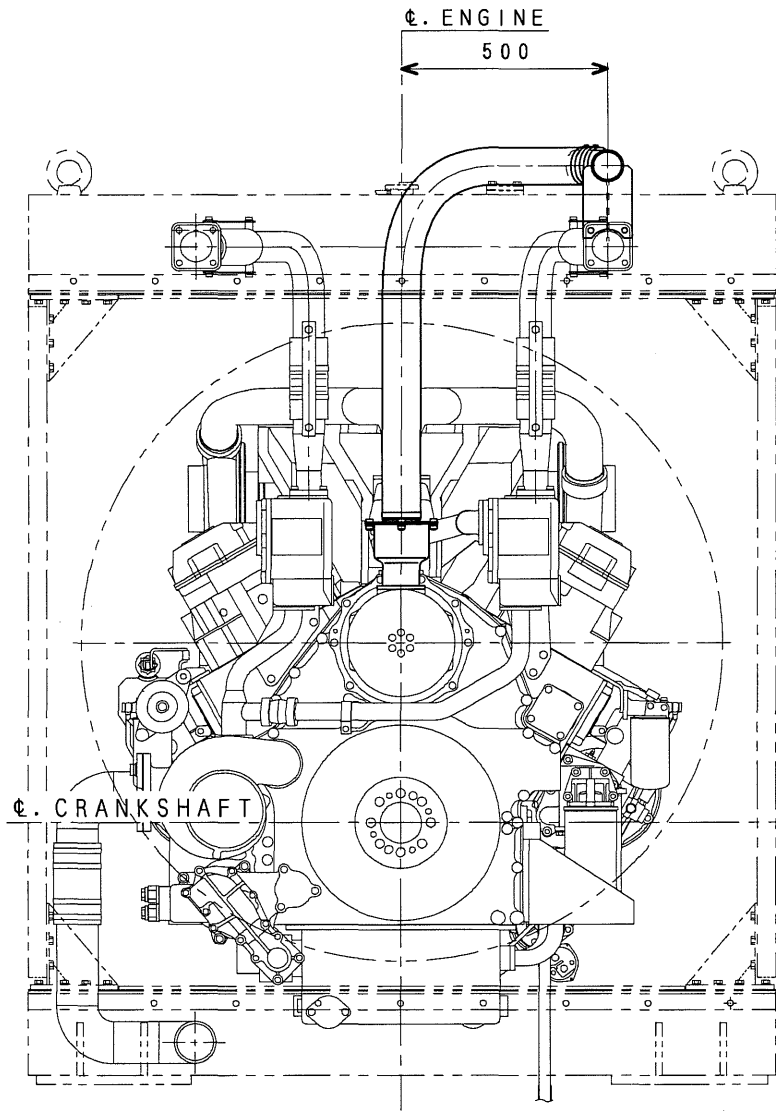
注記 (1) 本図は、標準4連オイルフィルタ装着図である。

1	4590-5321	'99.6.10	福田
CHG	EO-NO	DATE	CHK

3 新図	サイズ	組立図	2 鋳造部品	3 板金部品	4 相立品
① 旧図	A 3	① 組立図	5 切削品	6 その他(購入品)	

旧引  
汎特  
2014  
1.17

M/C



NOTE (1) THE ☆ MARKED PARTS ARE LOOSE SUPPLY.

No.	PARTS NO.	PARTS NAME	Q'TY
☆ 6	47510-59300	PIPE, BREATHER	1
☆ 5	05317-51001	CLAMP	4
☆ 4	45955-22160	HOSE, VINYL	1
☆ 3	F1805-12025	BOLT	4
2	35B43-01500	PACKING	1
1	37743-00501	BREATHER ASSY.	1
No.	PARTS NO.	PARTS NAME	Q'TY

MHI CONFIDENTIAL

注記 (1) 本図は、オイルフィルラ装備前側上向きブリーザ及びパイピング図である。

CHG	EO-NO	DATE	CHK	3rd ANGLE PROJECTION 尺度 SCALE
認可 APPD	橋	検図 CHK	塚 中 本 村	製図 DRN 谷 戸
				2012.11.28

S12R

BREATHER

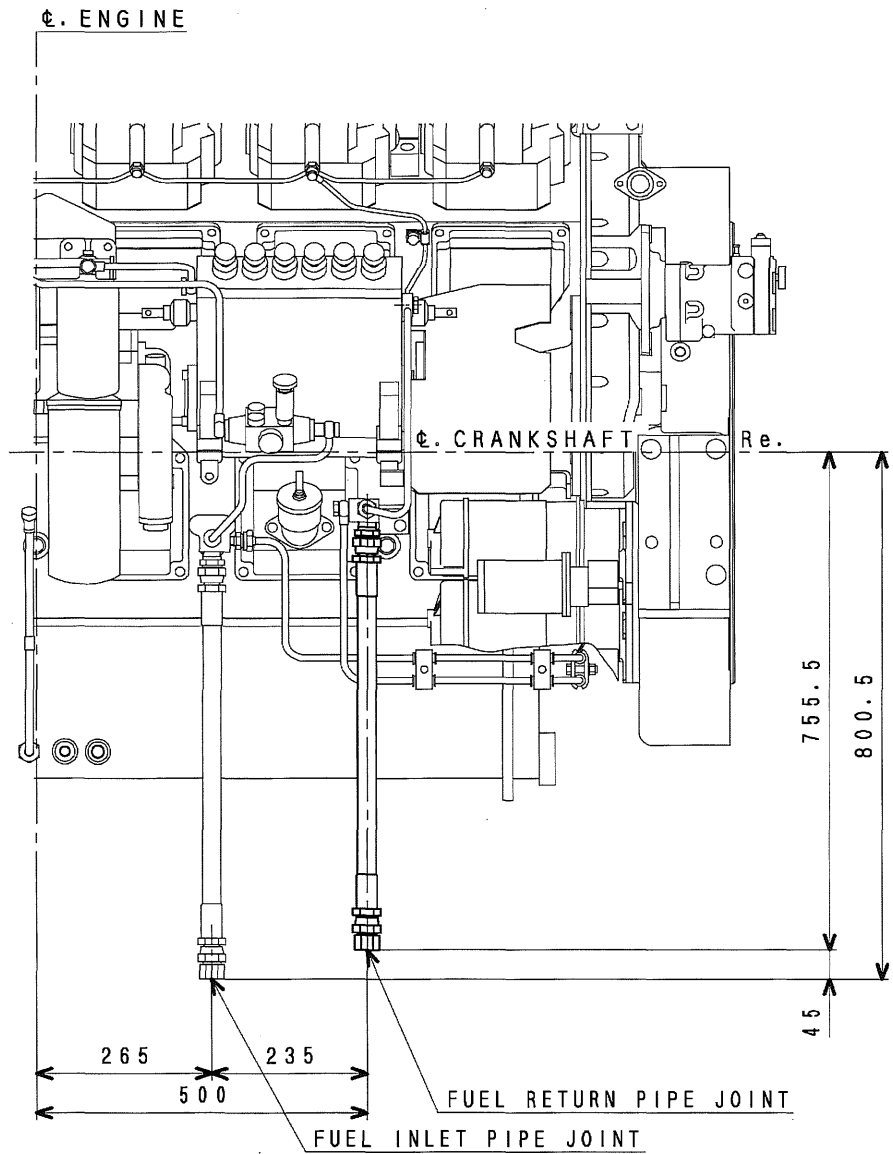
三菱重工業株式会社 汎用機・特車事業本部  
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.

図面番号  
DRAWING No. 37796-43010

① 新図 ② サイズ ③ 組立図 ④ 2 鋳造部品 ⑤ 3 板金溶接品 ⑥ 4 組立品  
⑦ 旧引図 ⑧ A 3 ⑨ 1 切削品 ⑩ 5 切削品 ⑪ 6 その他(購入品)

出図  
汎特  
2013  
2.8

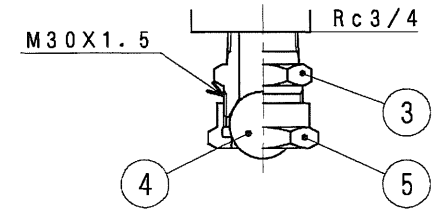
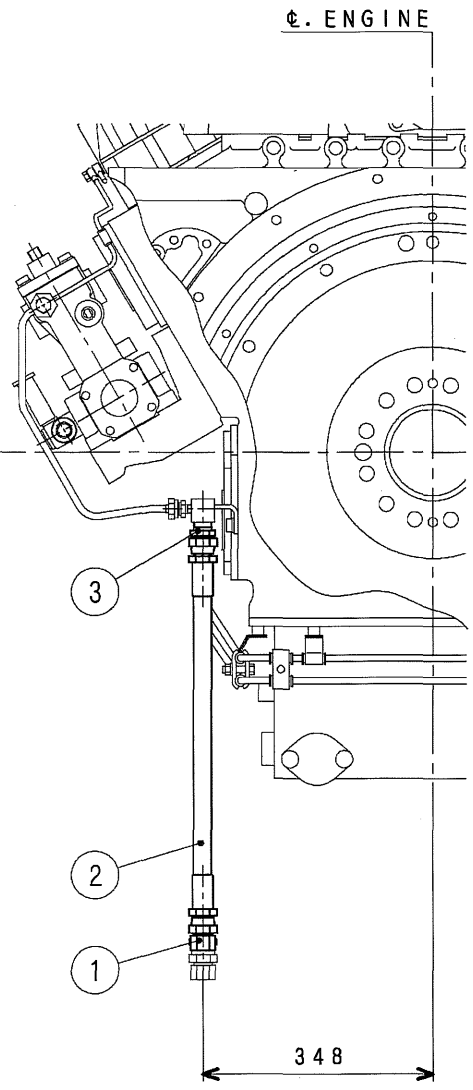
M/C



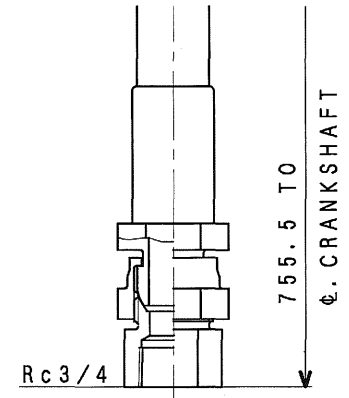
L. H.

**MHI CONFIDENTIAL**

注記 (1) 本図は、図番 37796-61305 に対しフレキホース及び先端コネクタを別送品としたものである。  
 (2) 本図の符号 ④⑤ は、燃料戻り口盲栓である。(エンジン出荷状態)



FUEL RETURN PIPE JOINT



FUEL RETURN PIPE JOINT

NOTE (1) THE ☆ MARKED PARTS ARE LOOSE SUPPLY.

NO.	PARTS NO.	PARTS NAME	Q'TY
5	F4521-20000	NUT, UNION	1
4	F8000-32000	STEEL BALL, BEARING	1
3	F4540-20000	CONNECTOR	1
☆ 2	45950-51700	PIPE, FLEXIBLE	1
☆ 1	45950-11300	CONNECTOR	1

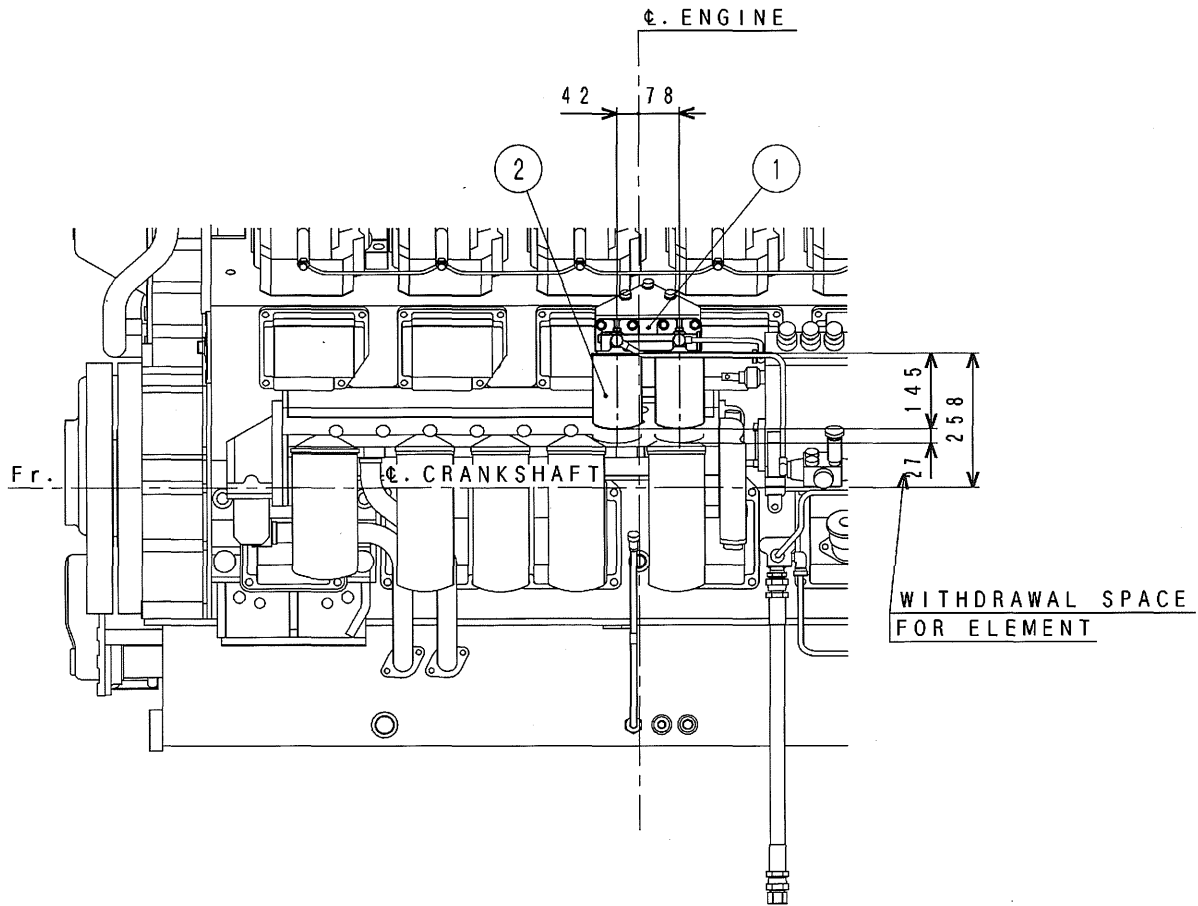
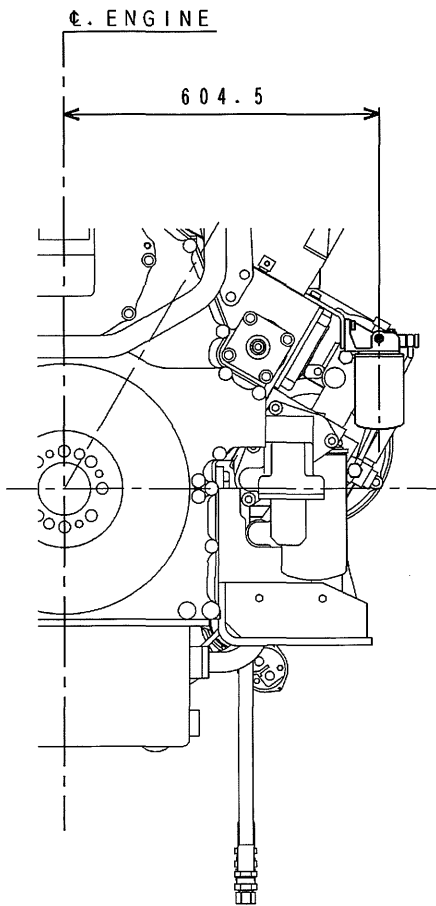
CHG	EO-NO	DATE	CHK	3rd ANGLE PROJECTION 尺度 SCALE
認可 APPD	橋	換図 CHK	三谷 上戸	製図 DRN 浅沼
				2008.12.9

S12R  
**FUEL RETURN PIPING**  
 三菱重工業株式会社 汎用機・特車事業本部  
 MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.  
 図面番号 37796-61312

出図  
 汎特  
 2008  
 12.10

FULL-CAD

① 新図 A 3 ② 組立図 ③ 銅鍛造部品 ④ 相立品 ⑤ 切削品 ⑥ その他(購入品)



2	32562-60300	ELEMENT	(4)
1	37562-60100	F/F ASSY. CTR L.O	2
No.	PARTS NO.	PARTS NAME	Q'TY

▲				
▲				
▲				
▲	4590-6300	'00. 4.12	福田	
CHG	EO-NO	DATE	CHK	
認可 APPD	清国	検図 CHK	竹谷 福田	製図 DRN
				谷 箱 戸 島
				1998. 2. 2

3/4 ANGLE  
PROJECTION  
尺度 SCALE

S12R  
FUEL FILTER PIPING

三菱重工業株式会社相模原製作所  
SAGAMIHARA MACHINERY WORKS. MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号  
DRAWING No. 37796-62002 1/2

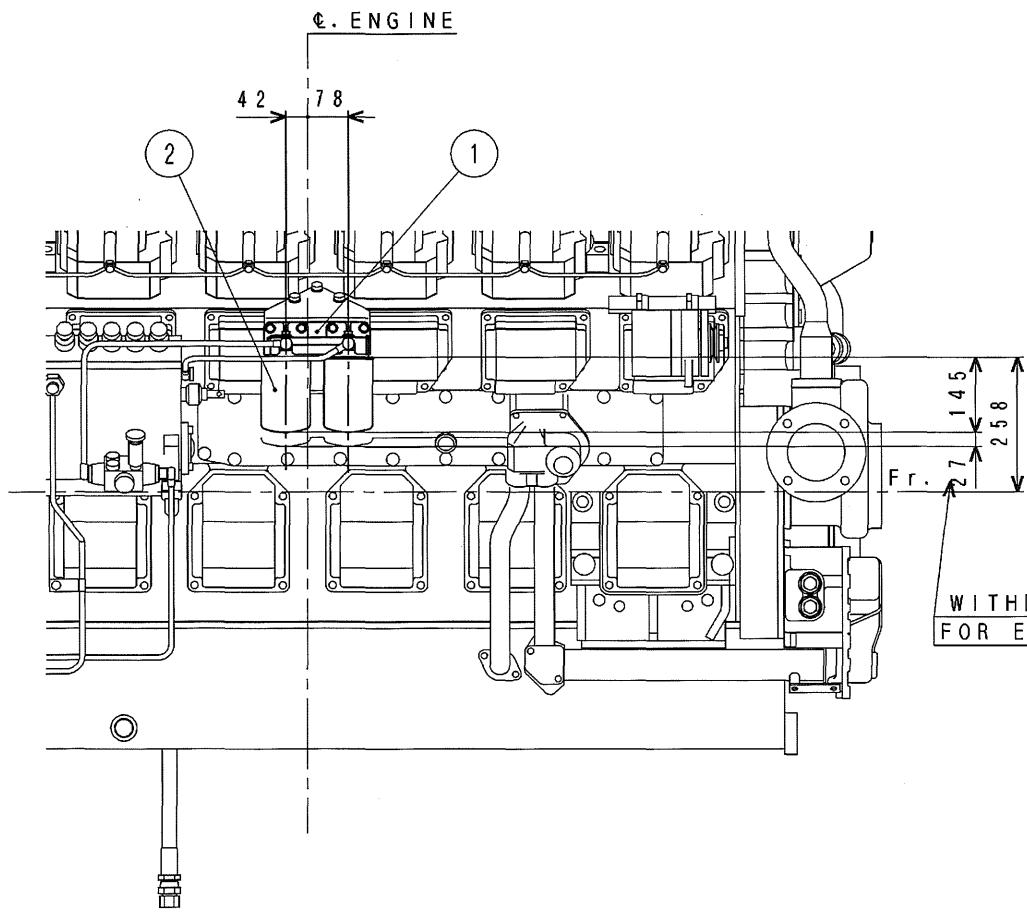
3 新図 4 訂正  
① 旧引図 A 3 ② 組立図 5 切削品 6 金型加工品 7 組立品 8 その他(購入品)

注記 (1) 本図のF. Oエレメントは、軽油用である。

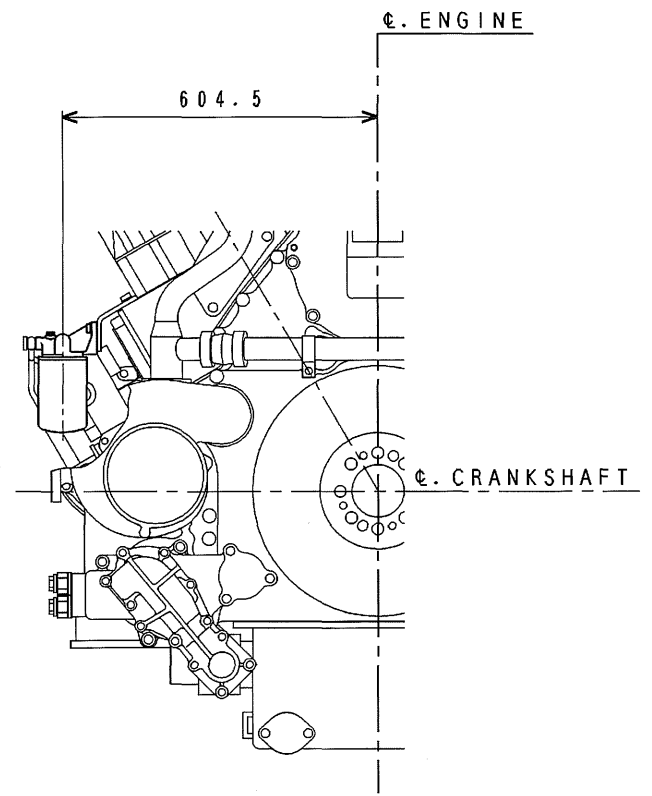
MHI CONFIDENTIAL

旧引  
▲  
汎特  
2000  
4.28

FULL-CAD



WITHDRAWAL SPACE  
FOR ELEMENT



MHI CONFIDENTIAL

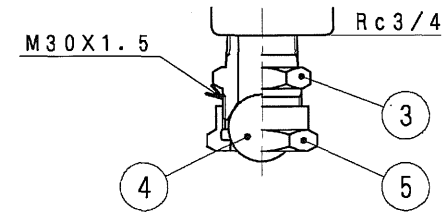
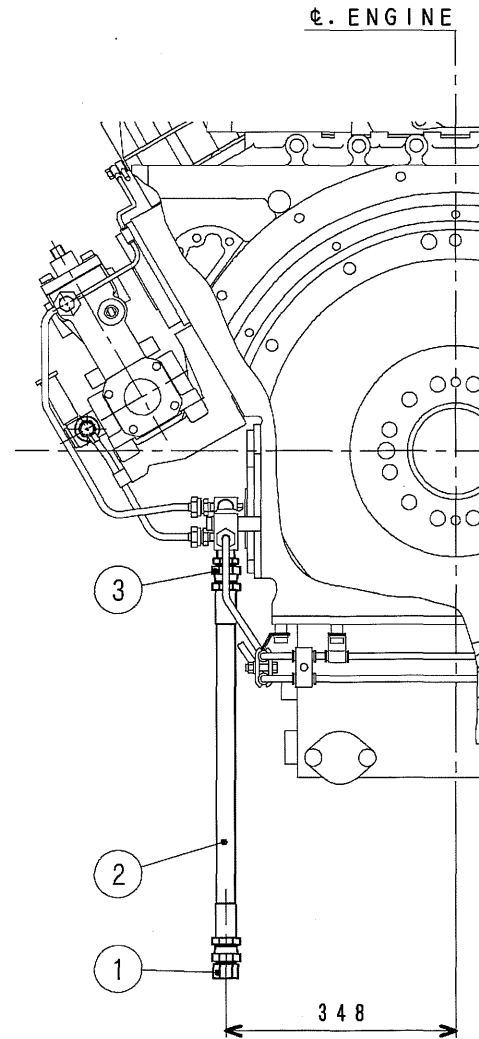
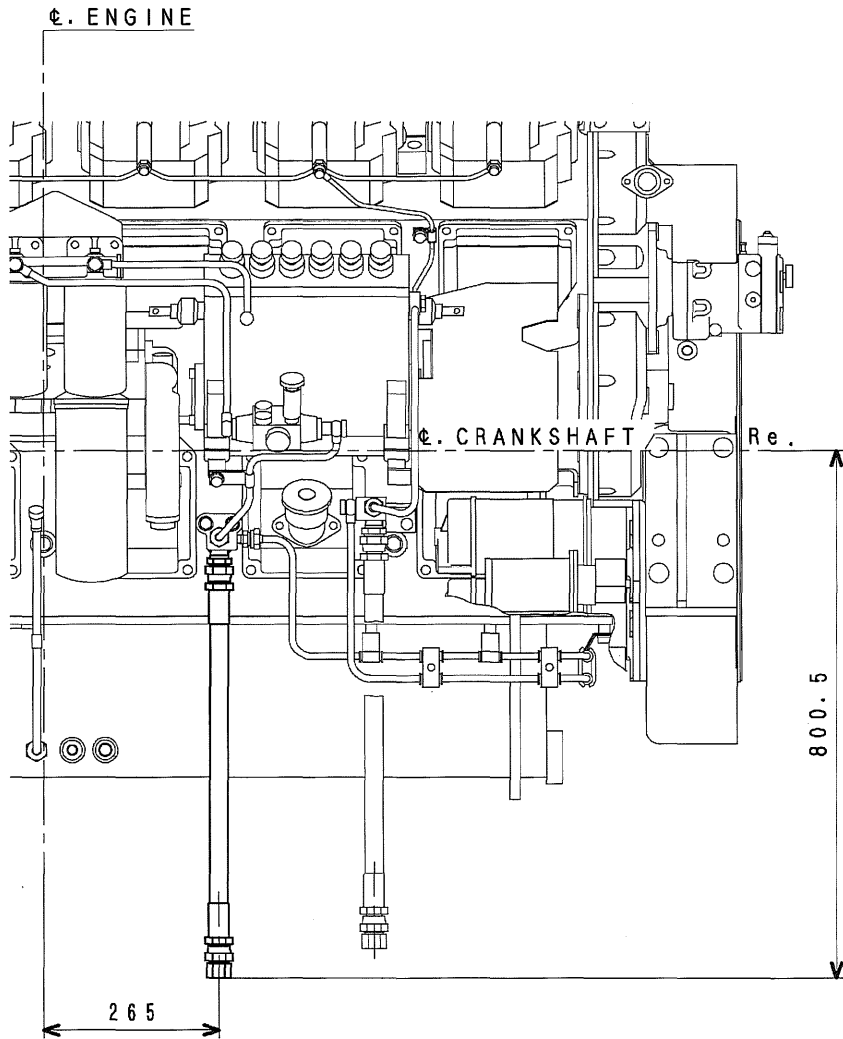
▲				 3rd ANGLE PROJECTION 尺度 SCALE
▲				
▲	4590-6300	'00. 4.12	福田	:
CHG	EO-NO	DATE	CHK	
認可 APPD	清 園	検図 CHK	竹 谷 福 田	製図 DRN 谷 銅 戸 島 1998. 2. 2

S12R  
FUEL FILTER PIPING  
三菱重工業株式会社相模原製作所  
SAGAHARA MACHINERY WORKS. MITSUBISHI HEAVY INDUSTRIES, LTD.  
図面番号  
DRAWING No. 37796-62002 2/2

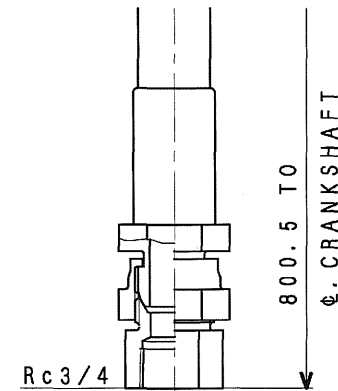
旧引  
▲  
汎特  
2000  
4.28

FULL-CAD

- ③ 新図
- ④ 旧引図
- ① 組立図
- ② 鋳造部品
- ⑤ 切削品
- ③ 板金溶接品
- ⑥ その他(購入品)
- ④ 組立品



DETAIL OF INLET PIPE JOINT



DETAIL OF INLET PIPE JOINT

NOTE (1) THE ☆ MARKED PARTS ARE LOOSE SUPPLY.

NO.	PARTS NO.	PARTS NAME	Q'TY
5	F4521-20000	NUT, UNION	1
4	F8000-32000	STEEL BALL, BEARING	1
3	F4540-20000	CONNECTOR	1
☆ 2	45950-51700	PIPE, FLEXIBLE	1
☆ 1	45950-11300	CONNECTOR	1

☆  
☆

MHI CONFIDENTIAL

注記 (1) 本図は、図番37796-62101に対しフレキホース及び先端コネクタを別送品としたものである。  
(2) 本図の符号④⑤は、燃料入口盲栓である。(エンジン出荷状態)

CHG	EO-NO	DATE	CHK	3rd ANGLE PROJECTION
認可 APPD	橋	換図 CHK	三谷	尺度 SCALE
			上戸	製図 DRN
				浅沼
				2008.12.9

S12R  
FUEL INLET PIPING  
三菱重工業株式会社 汎用機・特車事業本部  
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.

図面番号 37796-62112  
DRAWING No.

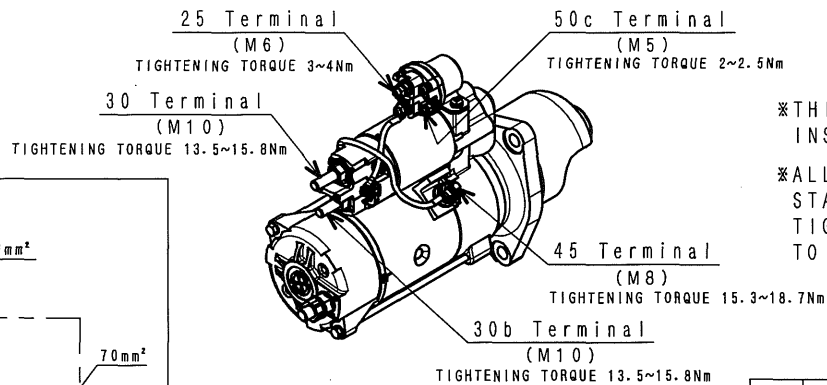
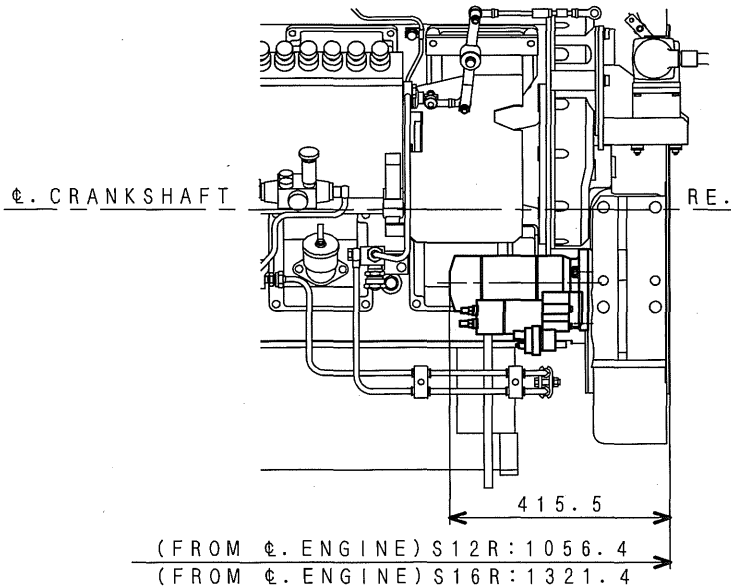
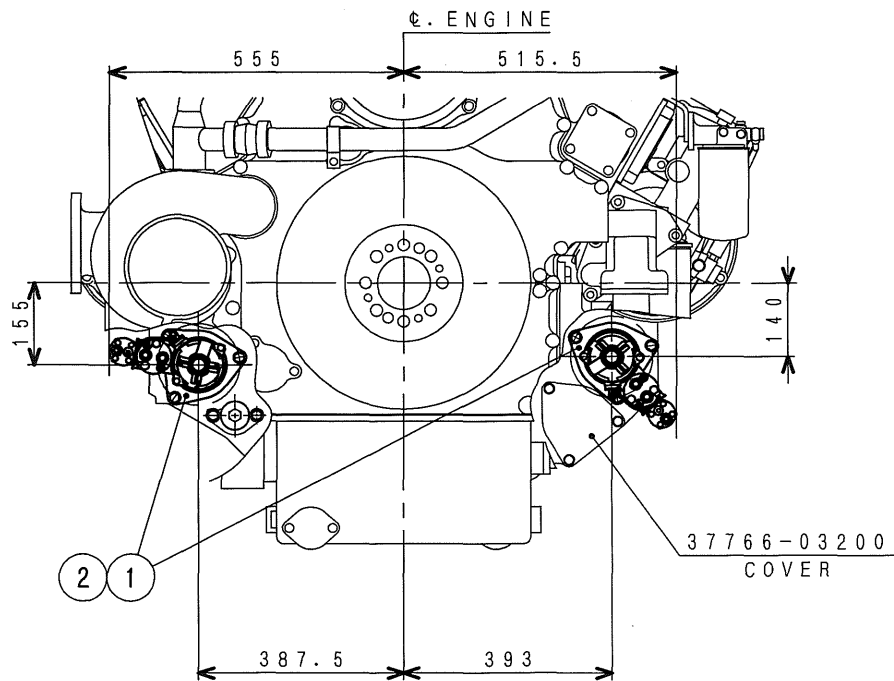
③ 新図 サイズ ① 組立図 2 鋳造部品 3 板金溶接品 4 組立品  
4 旧引図 A 3 5 切削品 6 その他(購入品)

出図  
汎特  
2008  
12.10

FULL-CAD

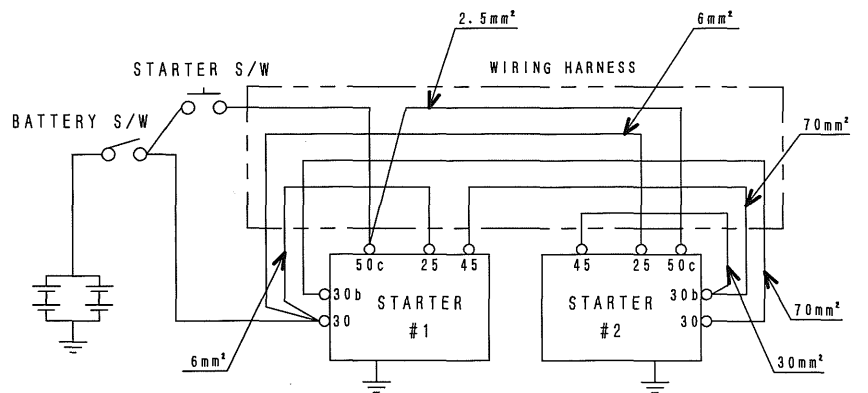






※THIS VIEW DOES NOT SHOW THE INSTALLATION ATTITUDE.

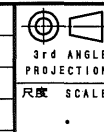
※ALL NUTS FOR WIRING BELONG TO STARTER (NO NEED TO PREPARE)  
 TIGHTENING TORQUE SHALL CONFORM TO THE INDICATION ON THIS FIGURE.



**MHI CONFIDENTIAL**

2	F1805-12035	BOLT	6
1	38E66-00201	STARTER, 7.5kW, PARA	2
No.	PARTS NO.	PARTS NAME	Q'TY

CHG	EO-NO	DATE	CHK
認可 APPD	検図 CHK	製図 DRH	
	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI	
	2016. 3. 25		



S12R, S16R  
 STARTING MOTOR

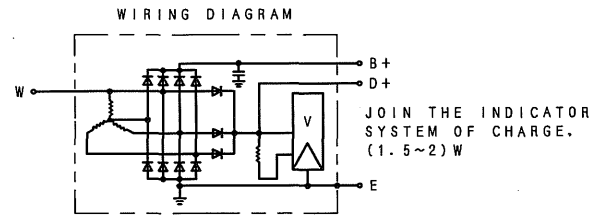
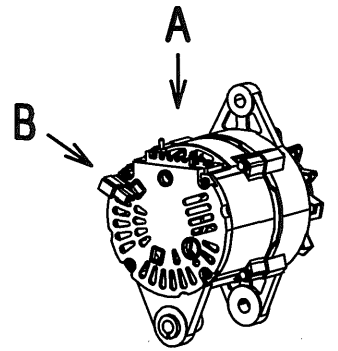
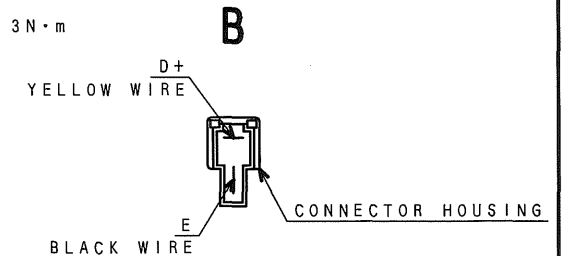
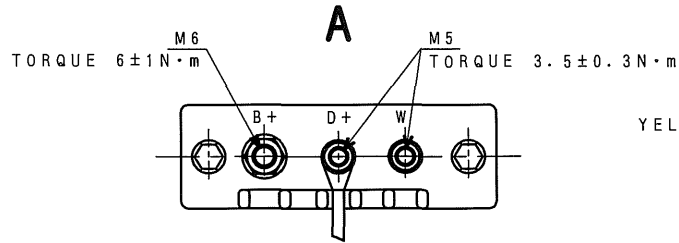
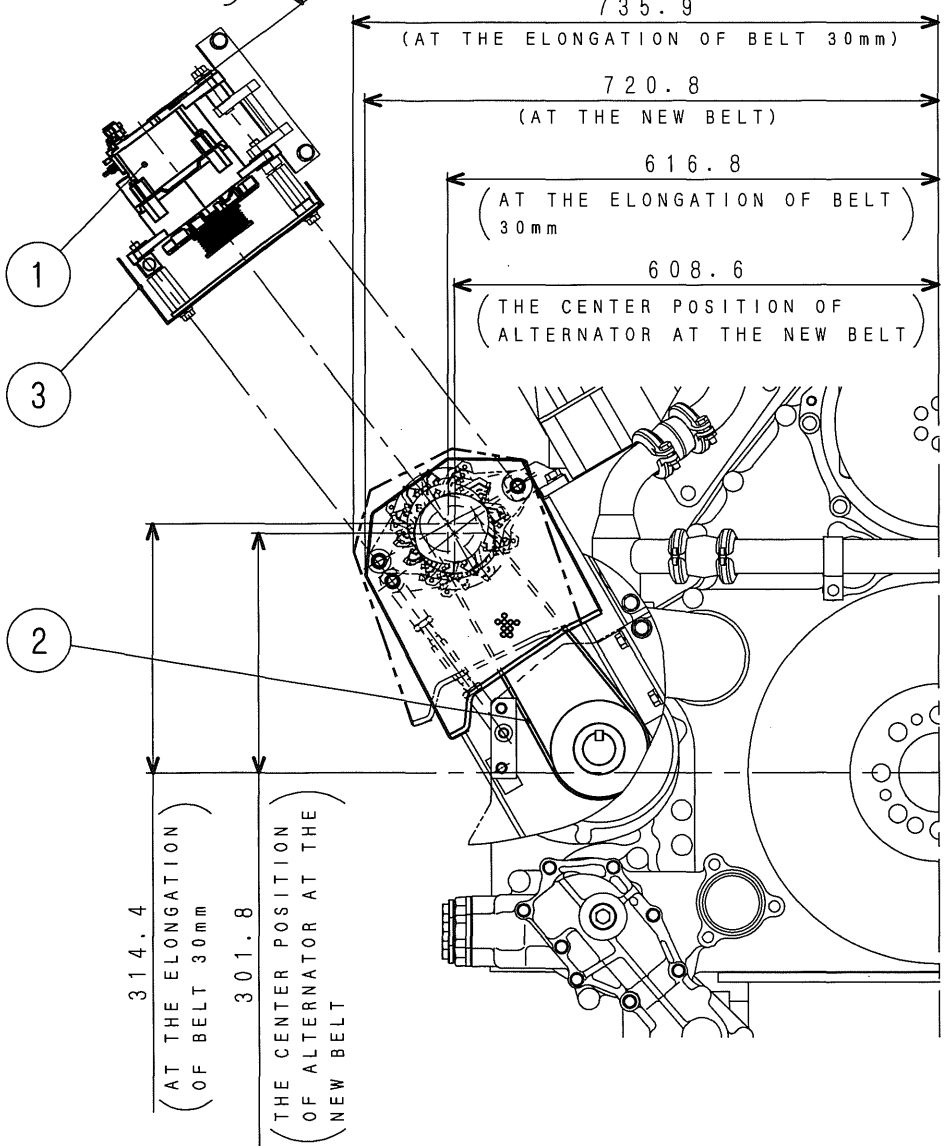
三菱重工業株式会社  
 NISSAN HEAVY INDUSTRIES, LTD.

図面番号  
 DRAWING No. 38E96-66051

①新図 ②旧図 ③A ④B ⑤組立図 ⑥組立品 ⑦部品 ⑧その他(購入品)

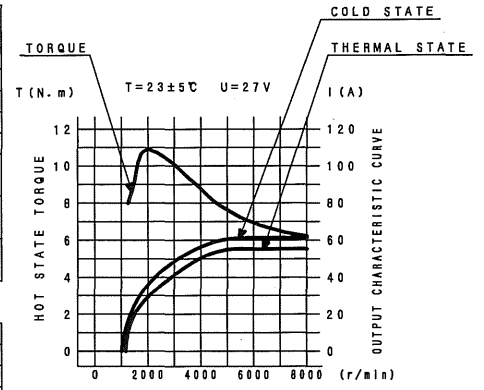
M/C

S12R:616  
S16R:881  
(FROM e. ENGINE)



SPECS	28V 55A
PAIRS OF CLAWS	6
WORKING TEMPERATURE	-40°C~105°C
RATED SPEED	6000r/min
MAXIMUM SPEED	12000r/min
STARTING GENERATE SPEED	≤1200r/min (COLD)
POLARITY	CONTINUOUS
VOLTAGE REGULATED VALUE	n=6000r/min I=27.5A U=28.5±0.3V
SPEED CHARACTERISTIC	n=2000~10000r/min I=5.5A ΔU ≤ 0.3V
LOAD CHARACTERISTIC	n=6000r/min I=5.5~49.5A ΔU ≤ 0.5V

VOLTAGE (V)	SPEED (rpm)	COLD STATE	HOT STATE
27	1500	≥25A	≥20A
27	2500	≥40A	≥35A
27	5000	≥62A	≥57A



3	38E68-12500	COVER, ALT BELT, KD	1
2	38E68-04400	BELT, RIB 6PK-951	1
1	38C68-18500	DYNAMO, 28V-55A, 6PK	1
No.	PARTS NO.	PARTS NAME	Q'TY

**MHI CONFIDENTIAL**

CHG	ED-NO	DATE	CHK	3rd ANGLE PROJECTION 尺度 SCALE
認可 APPD	検図 CHK	製図 DRN		
	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI	2016. 3. 25	

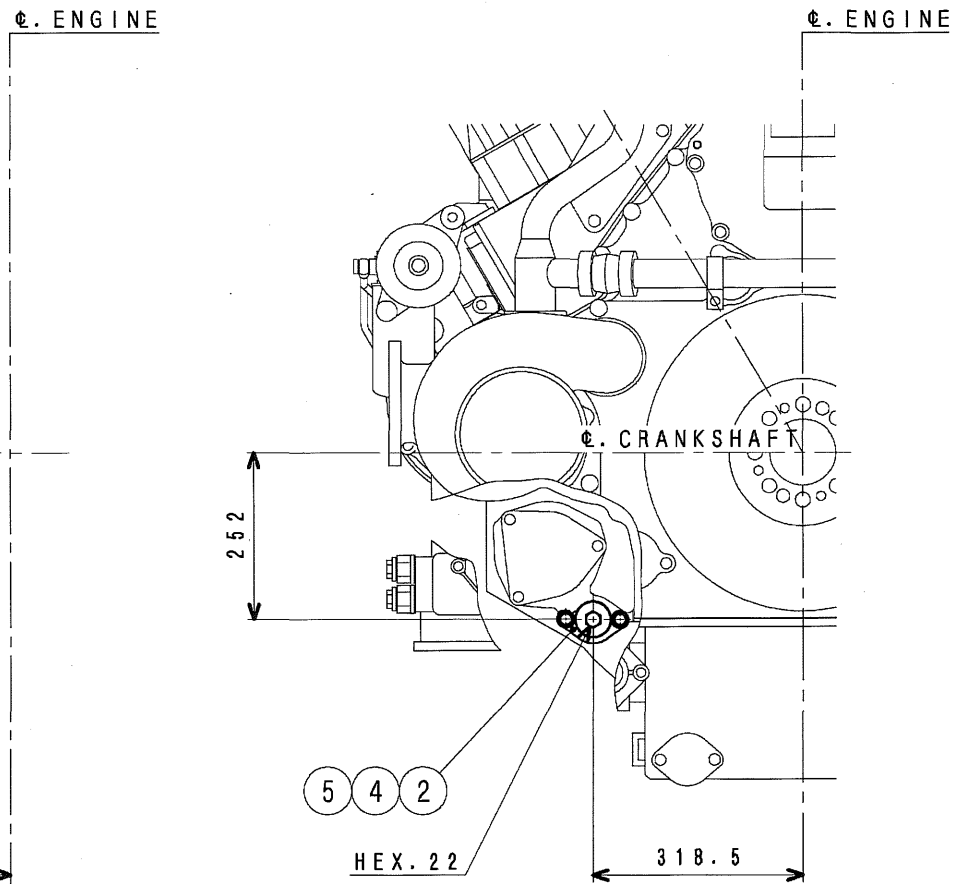
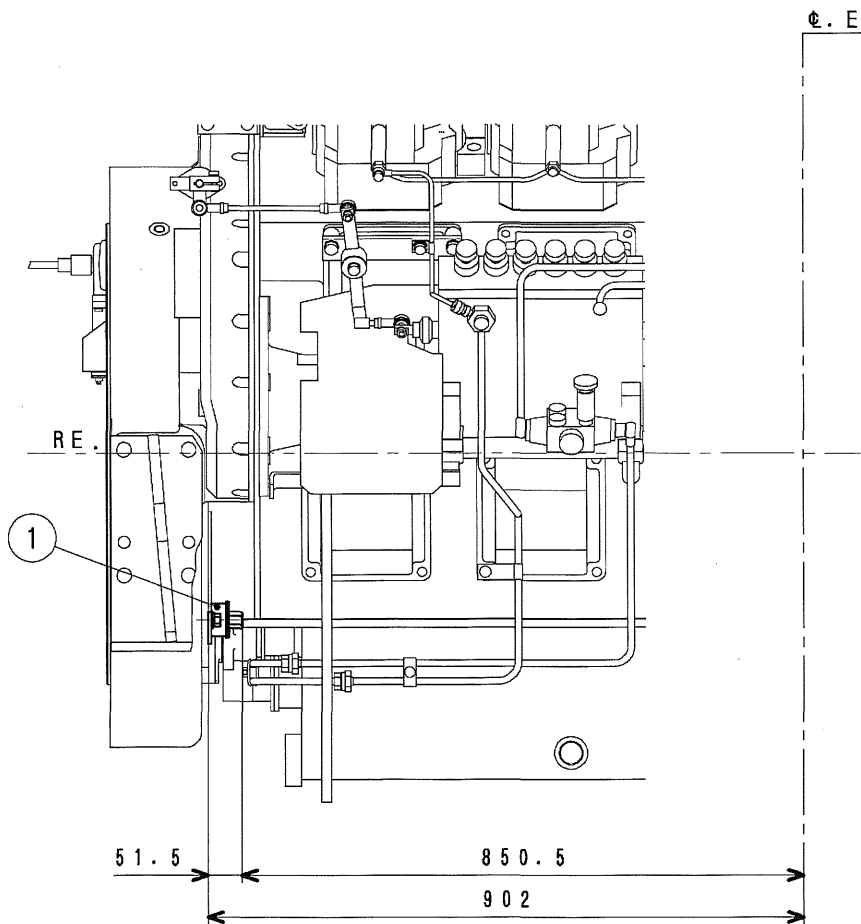
S12R, S16R  
DYNAMO

三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号 38E96-68051  
DRAWING No.

- ① 新図
- ② 訂正
- ③ 削除
- ④ 追加
- ⑤ 変更
- ⑥ 訂正
- ⑦ 訂正
- ⑧ 訂正
- ⑨ 訂正
- ⑩ 訂正
- ⑪ 訂正
- ⑫ 訂正
- ⑬ 訂正
- ⑭ 訂正
- ⑮ 訂正
- ⑯ 訂正
- ⑰ 訂正
- ⑱ 訂正
- ⑲ 訂正
- ⑳ 訂正

M/C



5	F2500-12000	WASHER, PLAIN	2
4	F1805-12020	BOLT	2
3	37571-01500	PLATE, CAUTION	1
2	37571-10300	FLANGE	1
1	37771-00102	GEAR, TURNING	1
No.	PARTS NO.	PARTS NAME	Q'TY

MHI CONFIDENTIAL

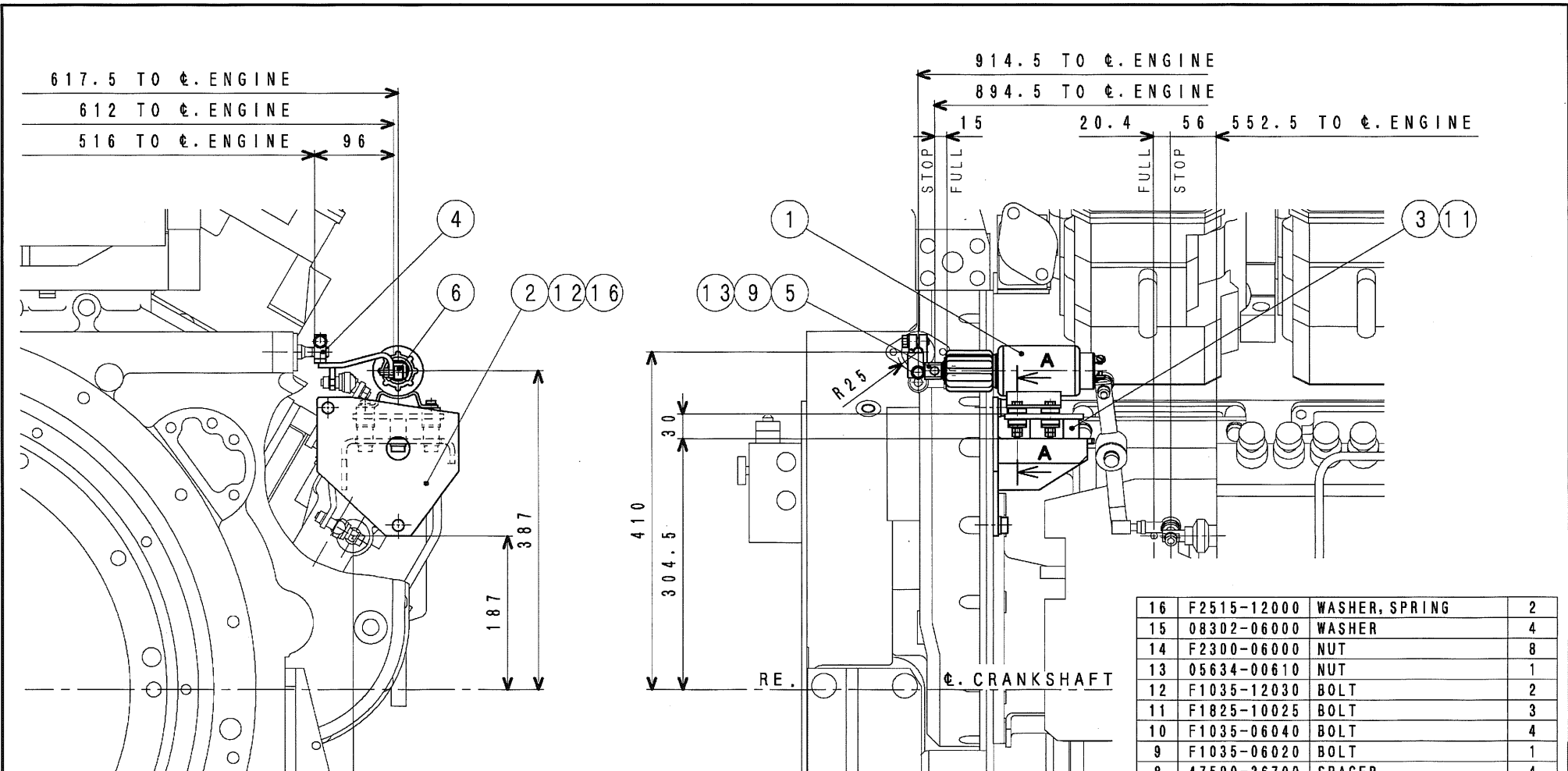
▲							
▲							
▲	4590-G648	'11. 3.24	斉藤				
CHG	EO-NO	DATE	CHK				
認可 APPD	橋	換図 CHK	竹 谷	福田	製図 DRM	谷 戸	鶏 島
							1998. 3.11

S12R  
TURNING DEVICE  
三菱重工業株式会社 汎用機・特車事業本部  
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.  
図面番号 37796-71001  
DRAWING No.

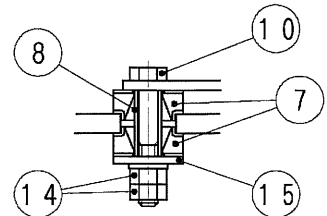
3 新 図	サイズ	1 組立図	2 鋼鍛鋼車品	3 板金溶接品	4 組立品
④ 旧引図	A 3	5 切削品	6 その他 (購入品)		

旧引  
汎特  
2011  
5.23

FULL-CAD



No.	PARTS NO.	PARTS NAME	Q'TY
16	F2515-12000	WASHER, SPRING	2
15	08302-06000	WASHER	4
14	F2300-06000	NUT	8
13	05634-00610	NUT	1
12	F1035-12030	BOLT	2
11	F1825-10025	BOLT	3
10	F1035-06040	BOLT	4
9	F1035-06020	BOLT	1
8	47500-36700	SPACER	4
7	47500-34100	RUBBER, CUSHION	8
6	37587-00900	FOLLOWER	1
5	37787-03200	ADAPTER	1
4	37761-36902	LEVER, R. H., RUN-ON	1
3	47520-25800	PLATE, SOLENOID	1
2	37787-03300	BRACKET, SOLENOID	1
1	04400-08801	SOLENOID	1



SECTION A-A

MHI CONFIDENTIAL

CHG	EO-NO	DATE	CHK
4	4590-H417	'12.11.16	谷戸
3	4590-G649	'11.3.24	齊藤
2	4590-D572	'07.9.4	齊藤
5	4590-H524	'13.12.27	谷戸

S12R  
**STOP SOLENOID**  
 三菱重工業株式会社 汎用機・特車事業本部  
 MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLES.  
 図面番号 37796-87502  
 DRAWING No. 37796-87502

注記 (1) 本図のソレノイドは、ウッドワード製である。

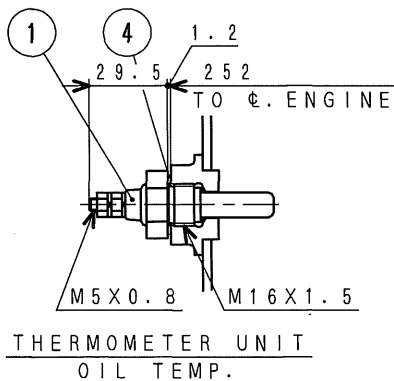
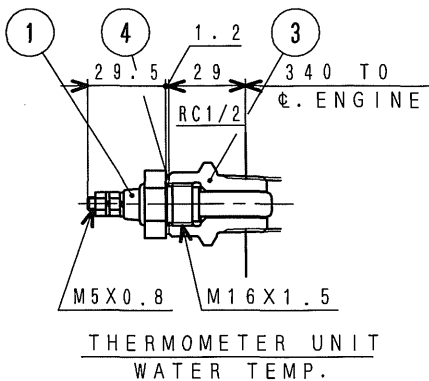
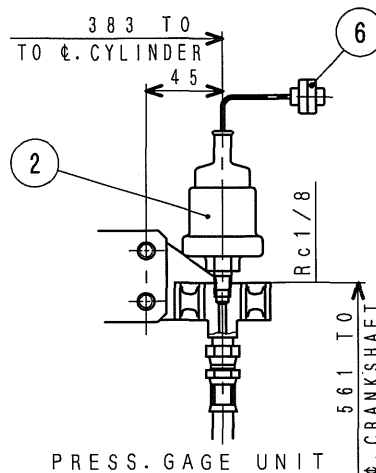
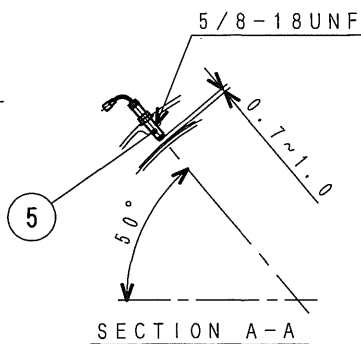
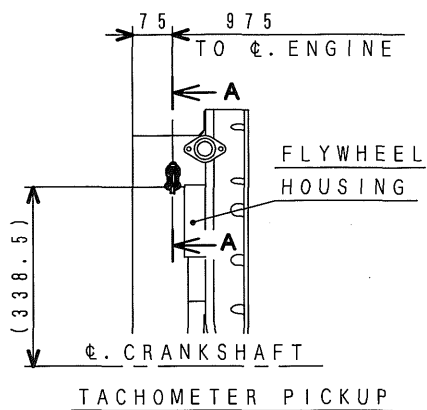
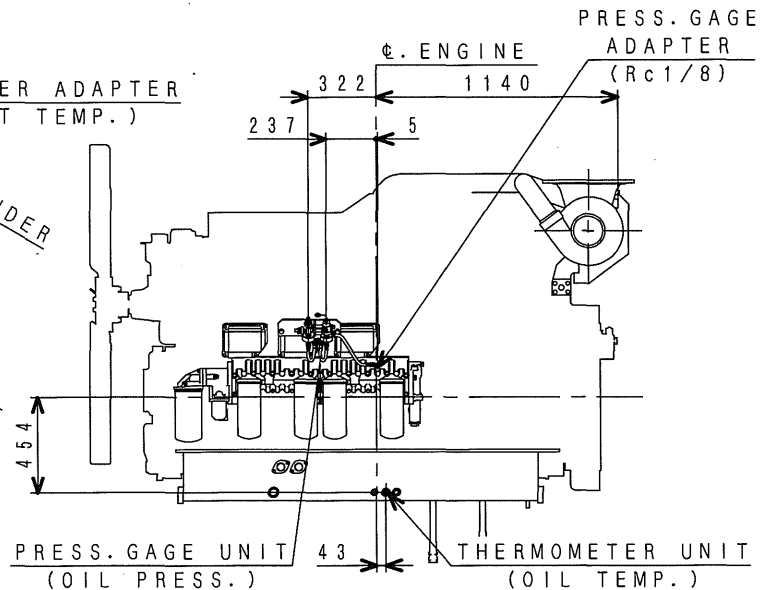
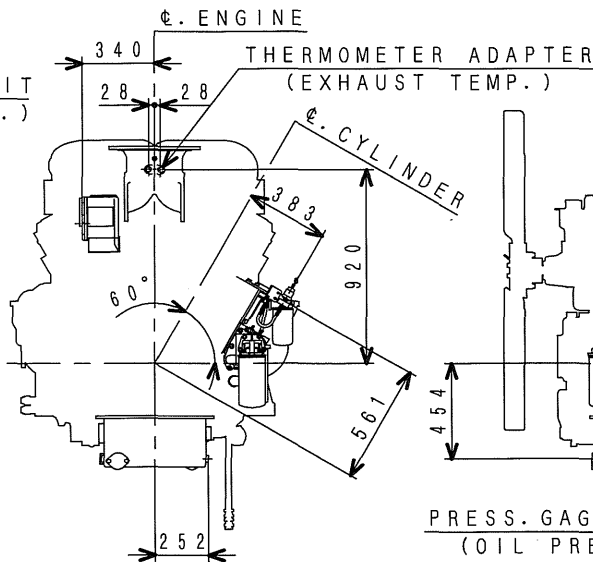
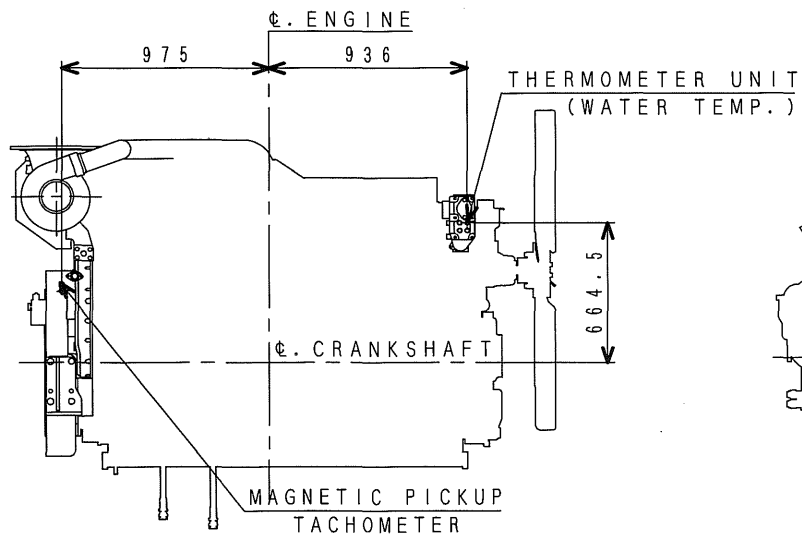
CHG	EO-NO	DATE	CHK
1	4590-B021	'05.3.25	谷戸

認可 APPD	橋	検図 CHK	谷戸	製図 DRN	村田
1997.10.30					

3 新図 サイズ A 3  
 4 旧図  
 1 粗立図  
 2 鋳造品  
 3 鍛造品  
 4 粗立品  
 5 切削品  
 6 その他(購入品)

旧引  
 汎特  
 2014  
 1.17

M/C



NOTE (1) THE ☆ MARKED PARTS ARE LOOSE SUPPLY.

No.	PARTS NO.	PARTS NAME	Q'TY
☆ 6	MH052-231	CONNECTOR	1
5	04410-43410	PICKUP, MAGNETIC	1
4	05946-01601	WASHER SEALING	2
3	45600-42902	CONNECTOR	1
2	04541-86200	UNIT, GAGE	1
1	04524-02230	UNIT, THERMO	2

MHI CONFIDENTIAL

CHG	EO-NO	DATE	CHK
認可 APPD	検図 CHK	製図 DRN	
	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI	2016. 3. 25

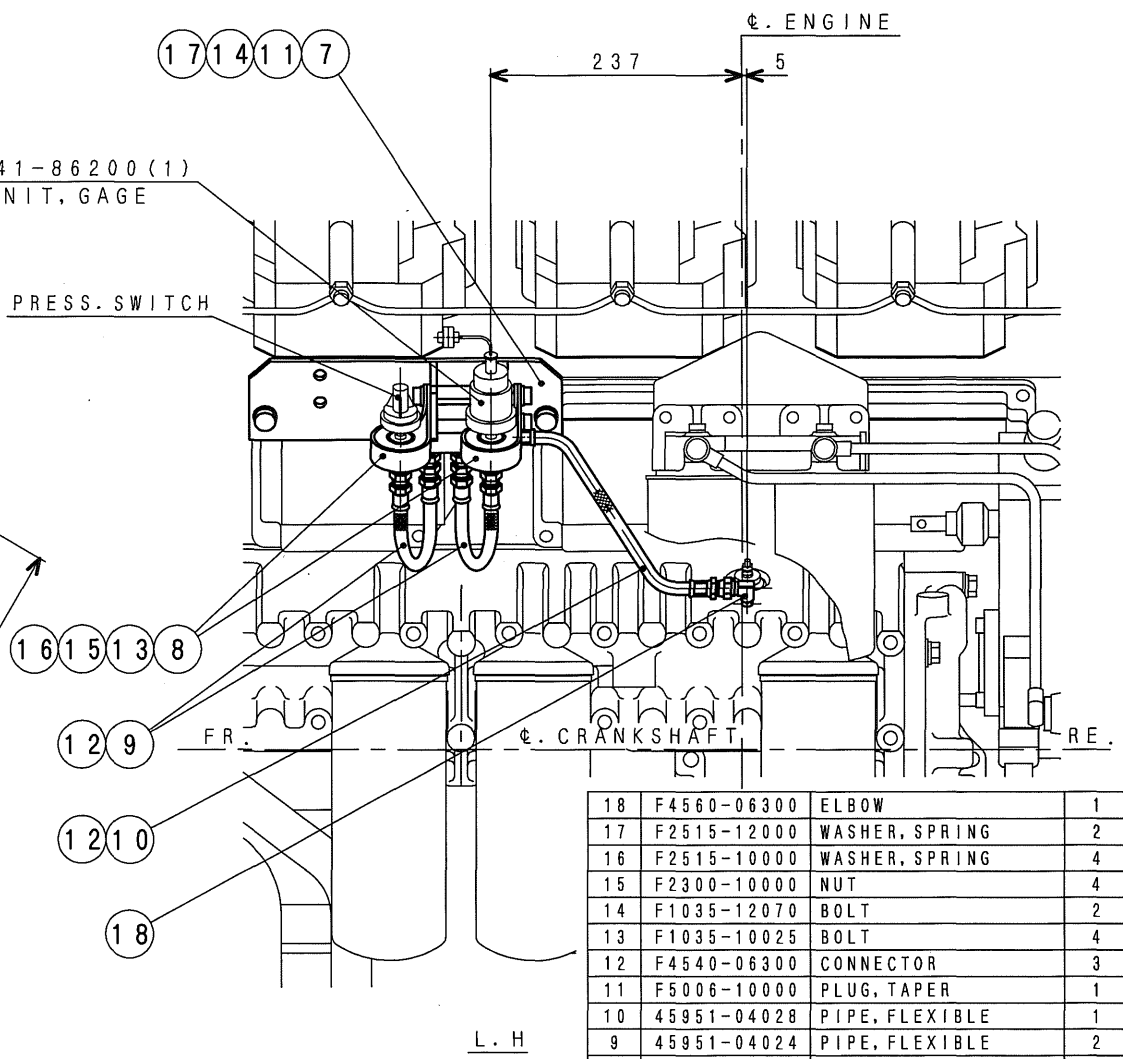
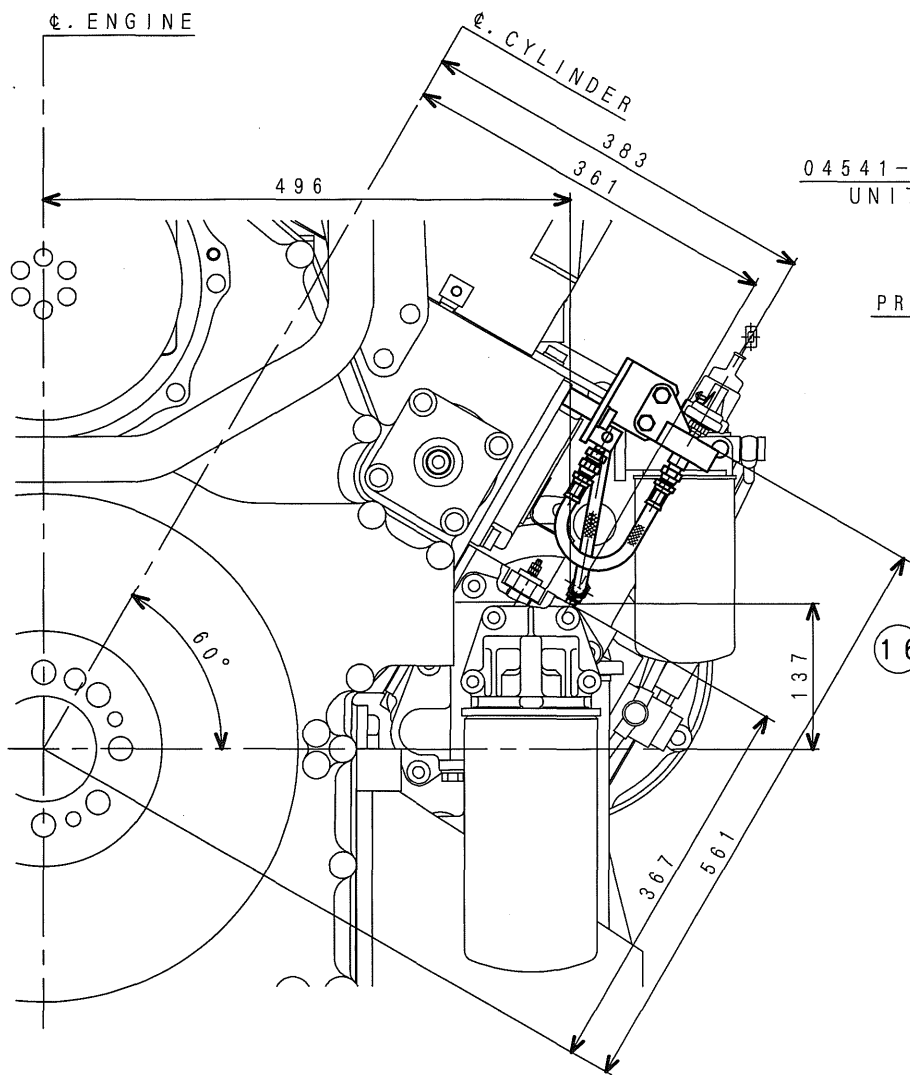
S12R  
METER & SENSOR

三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号 38E96-90152  
DRAWING No. 1/2

①新図 ②サイズ ③脚線線取品 ④板金溶接品 ⑤組立品  
④旧引図 ④A 3 ①組立図 ⑤切削品 ⑥その他(購入品)

M/C



04541-86200 (1)  
UNIT, GAGE

PRESS. SWITCH

1615138

129

1210

18

18	F4560-06300	ELBOW	1
17	F2515-12000	WASHER, SPRING	2
16	F2515-10000	WASHER, SPRING	4
15	F2300-10000	NUT	4
14	F1035-12070	BOLT	2
13	F1035-10025	BOLT	4
12	F4540-06300	CONNECTOR	3
11	F5006-10000	PLUG, TAPER	1
10	45951-04028	PIPE, FLEXIBLE	1
9	45951-04024	PIPE, FLEXIBLE	2
8	45644-47900	MOUNT	2
7	47520-40702	BRACKET	1
No.	PARTS NO.	PARTS NAME	Q'TY

**MHI CONFIDENTIAL**

CHG	EO-NO	DATE	CHK
認可 APPD	接図 CHK	製図 DRN	
橋口	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI	2016. 3. 25

3rd ANGLE  
PROJECTION  
尺度 SCALE

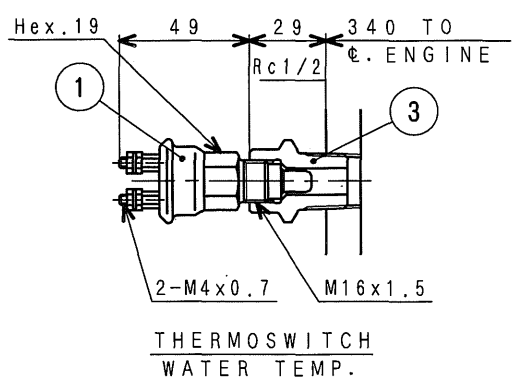
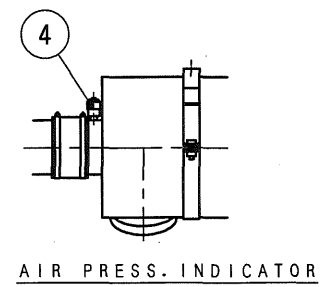
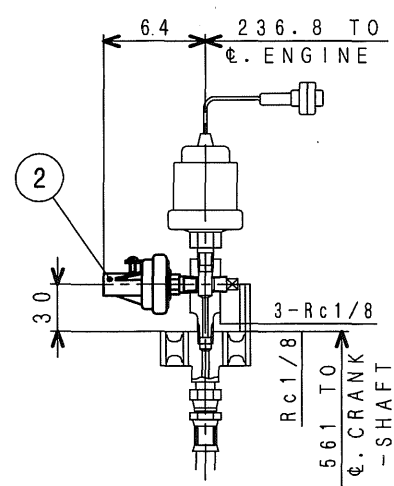
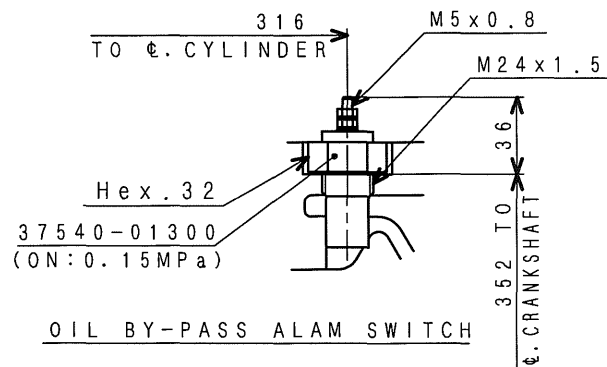
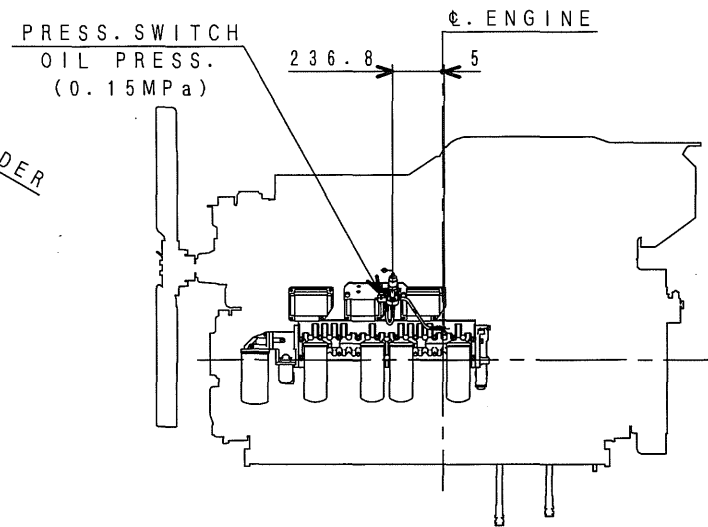
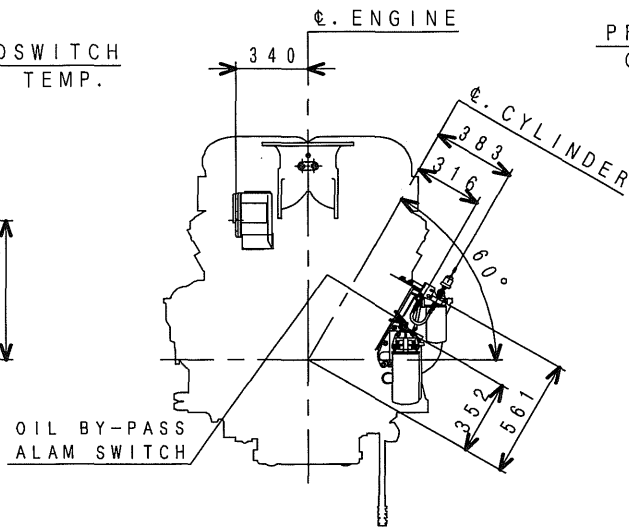
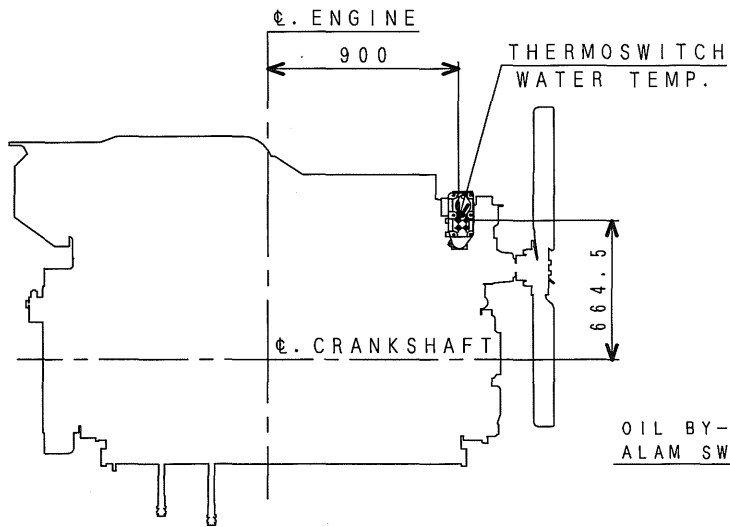
S12R  
METER & SENSOR

三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号 38E96-90152 2/2

①新図 ②サイズ ③組立図 ④ 2 ⑤ 3 ⑥ 4  
④旧引図 ④ A 3 ④ 組立図 ④ 2 ④ 3 ④ 4  
④ 4 ④ 5 ④ 6  
④ 切削品 ④ その他(購入品)

M/C



NOTE (1) THE ☆ MARKED PARTS ARE LOOSE SUPPLY.

No.	PARTS NO.	PARTS NAME	Q'TY
☆ 4	(INCLUDED IN A/C)	INDICATOR 635mmH <sub>2</sub> O ON	4
3	45600-42902	CONNECTOR	1
2	04442-45400	PRESS. SWITCH 0.15MPa ON	1
1	04442-34500	THERMO SWITCH 98°C ON	1

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CHG	EO-NO	DATE	CHK
認可 APPD	検図 CHK	製図 DRN	
	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI	2016. 3. 25

S12R  
ALARM SWITCH  
三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
図面番号 38E96-90251  
DRAWING No. 38E96-90251

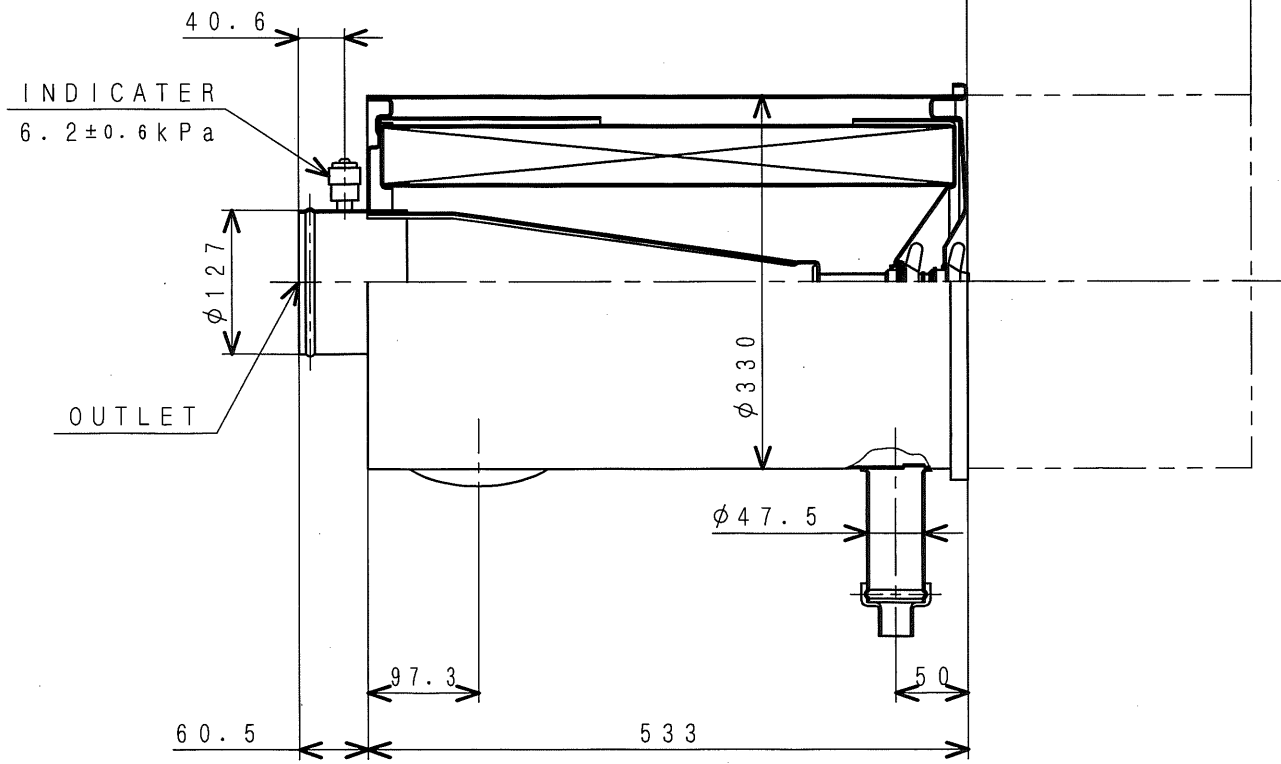
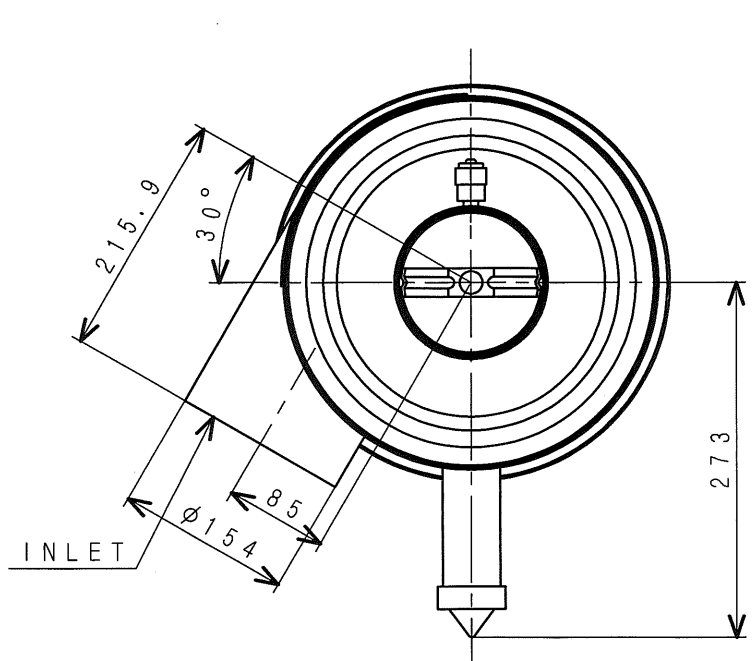
①新図 ②サイズ ③脚線標準品 ④相立品  
④旧引図 A 3 ①相立図 ⑤切別品 ⑥その他(購入品)

W/C



CHECKED BY

WITHDRAWAL SPACE  
FOR ELEMENT



ELEMENT PARTS No.	38G30-09212
WEIGHT (kg)	17.5
MODEL No.	AH-330013

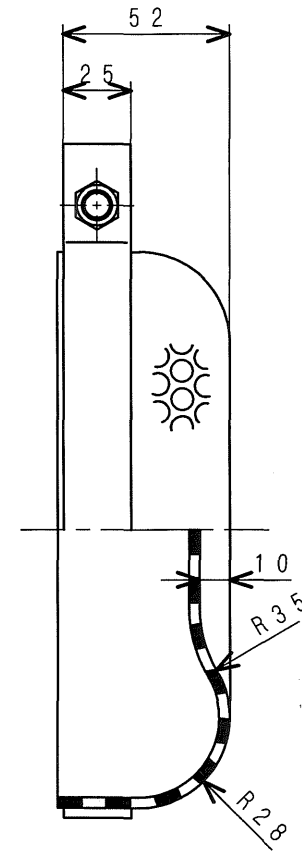
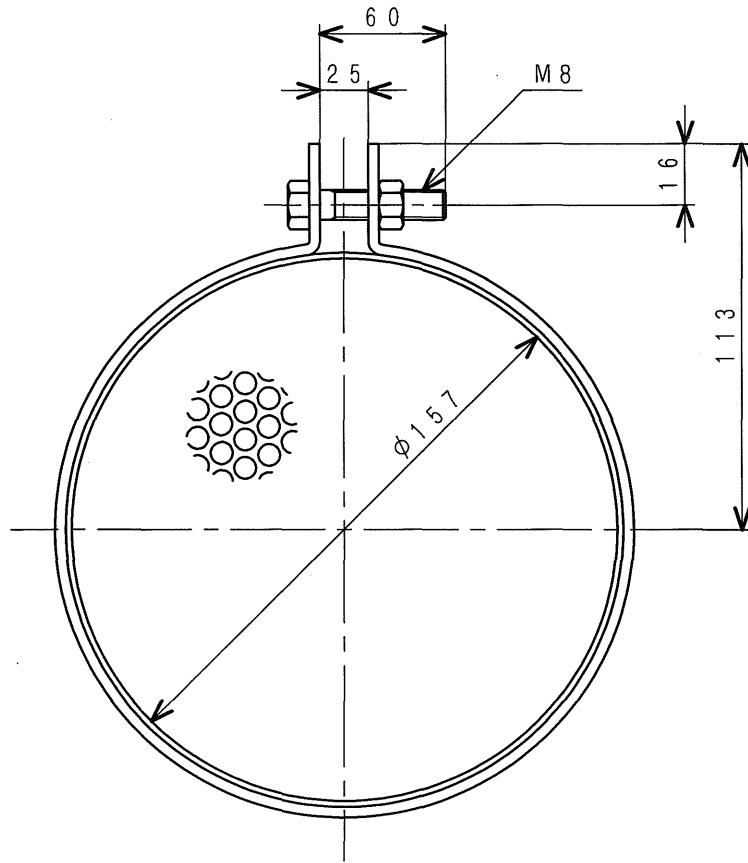
MHI CONFIDENTIAL

△	
△	
△	
REV.	DATE

AIR CLEANER ASSY.  
PART NO. 38E30-01701

DWG. NO. S35-5010  
MITSUBISHI HEAVY INDUSTRIES, LTD.

CHECKED BY



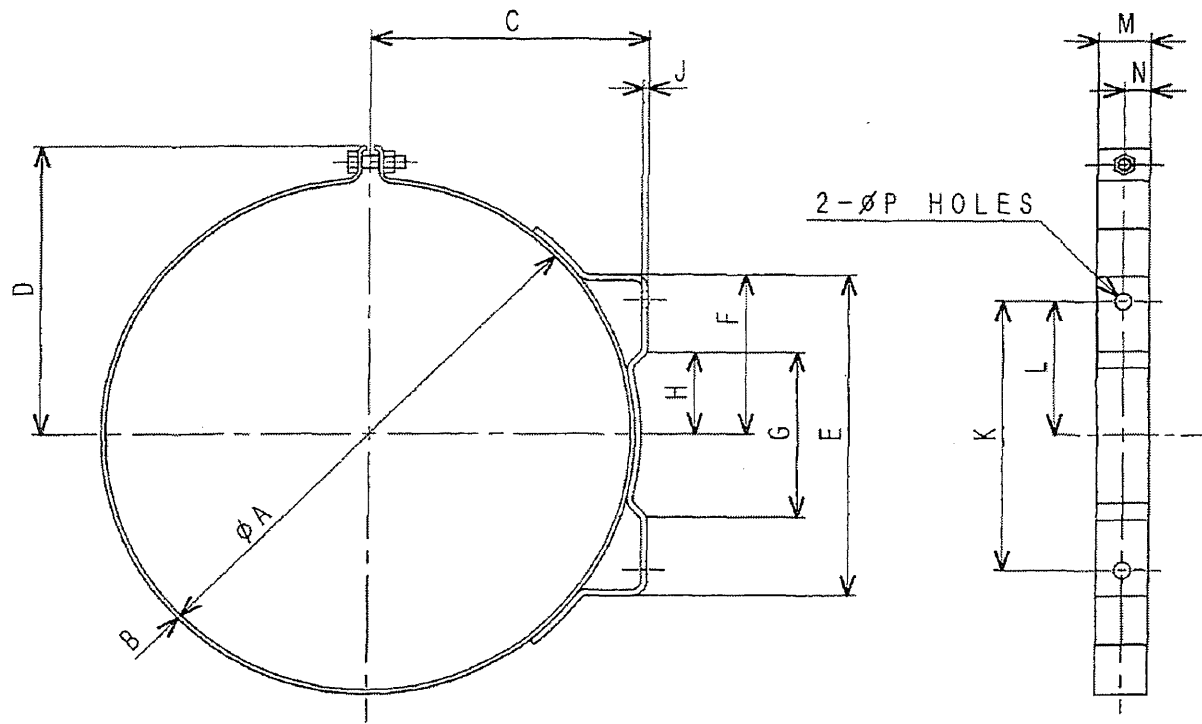
MHI CONFIDENTIAL

REV.	DATE

CAP, INLET  
PART NO. 38G30-03201

DWG. NO. S35-5210  
MITSUBISHI HEAVY INDUSTRIES, LTD.

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38630-08301	15" ( $\phi 387.0$ )	387	2.0	201	230	241.4	120.7	/	/	5	203.2	101.6	40	20	2- $\phi 12$	
38630-08301	13" ( $\phi 330.2$ )	330.2	2.0	185.2	200	185	162.5	53.8	26.9	5	152	76	38	18	2- $\phi 10.3$	
PARTS NO.	TYPE MEASURE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	REMARKS

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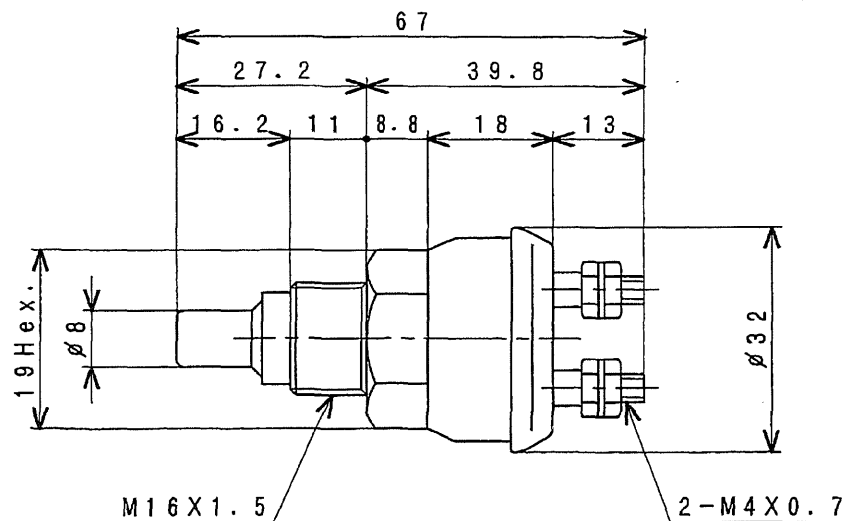
REV.	DATE

BAND

DWG. NO. S35-5110  
 MITSUBISHI HEAVY INDUSTRIES, LTD.

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NAKAMURA



CONNECTING TYPE	PARTS NO.	SET TEMP. (°C)		CONTACTOR CAPACITY	WEIGHT
		ON	OFF		
NO (A-CONTACT)	04442-34300	92±2	85±2	DC24V 0.05A~3A DC100V 0.05A~0.4A AC100V 0.05A~1A	60g
NO (A-CONTACT)	04442-34400	95±2	88±2		
NO (A-CONTACT)	04442-34500	98±2	91±2		
NO (A-CONTACT)	04442-34600	110±2	103±2		
NO (A-CONTACT)	04442-34700	105±2	98±2		
NO (A-CONTACT)	04442-34800	101±2	94±2		
NO (A-CONTACT)	04442-34900	88±2	81±2		
NO (A-CONTACT)	04442-38700	115±2	108±2		
NO (A-CONTACT)	37547-04100	101±2	94±2		

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6	'00.4.26
8	'08.6.5
7	'06.3.17
REV.	DATE

THERMO SWITCH

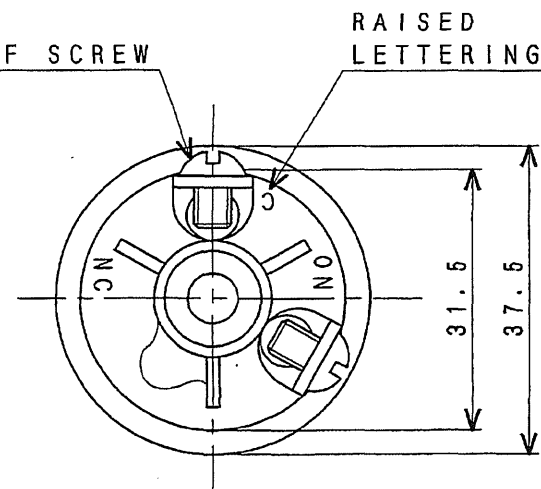
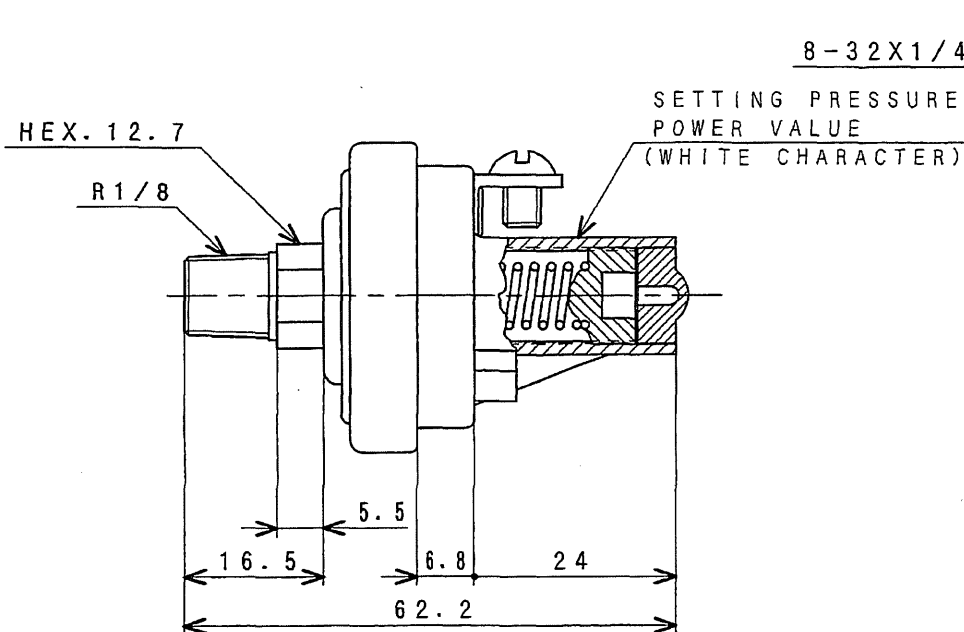
DWG. NO. S11-0551

MITSUBISHI HEAVY INDUSTRIES, LTD.

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY

K. YATO



- 5. ON-OFF DIFFERRECE : WITHIN 5%
- 4. POINT OF CONTACT : (NO) (NC)
- 3. USE TEMP. : -40.0°C~+120.0°C
- 2. RARING : 12VDC-8AMP, 24VDC-4AMP,  
120VAC-1AMP, 240VAC-0.5AMP

仕 様 1. MAXIMUM PERMISSIBLE WORKING PRESSURE  
 : 1.05MPa (SETTING PRESS. : 0.007~0.17MPa)  
 : 1.75MPa (SETTING PRESS. : 0.18~1.05MPa)

NO	04442-46500	0.15	±0.0075
NO	04442-46400	0.10	±0.005
NO	04442-46300	0.05	±0.0025
NC	04442-46100	6.2KPa	±0.31KPa
NC	04442-45900	0.40	±0.02
NC	04442-45800	0.35	±0.0175
NC	04442-45700	0.30	±0.015
NC	04442-45600	0.25	±0.0125
NC	04442-45500	0.22	±0.011
NC	04442-45400	0.15	±0.0075
NC	04442-45300	0.10	±0.005
NC	04442-45200	0.05	±0.0025
NC	04442-45100	0.03	±0.0015
接点形式	PARTS NO.	ON	ALLOWANCE
		SET PRESS. MPa	

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3	'11.10.28
2	'08.6.5
1	'06.3.17
REV.	DATE

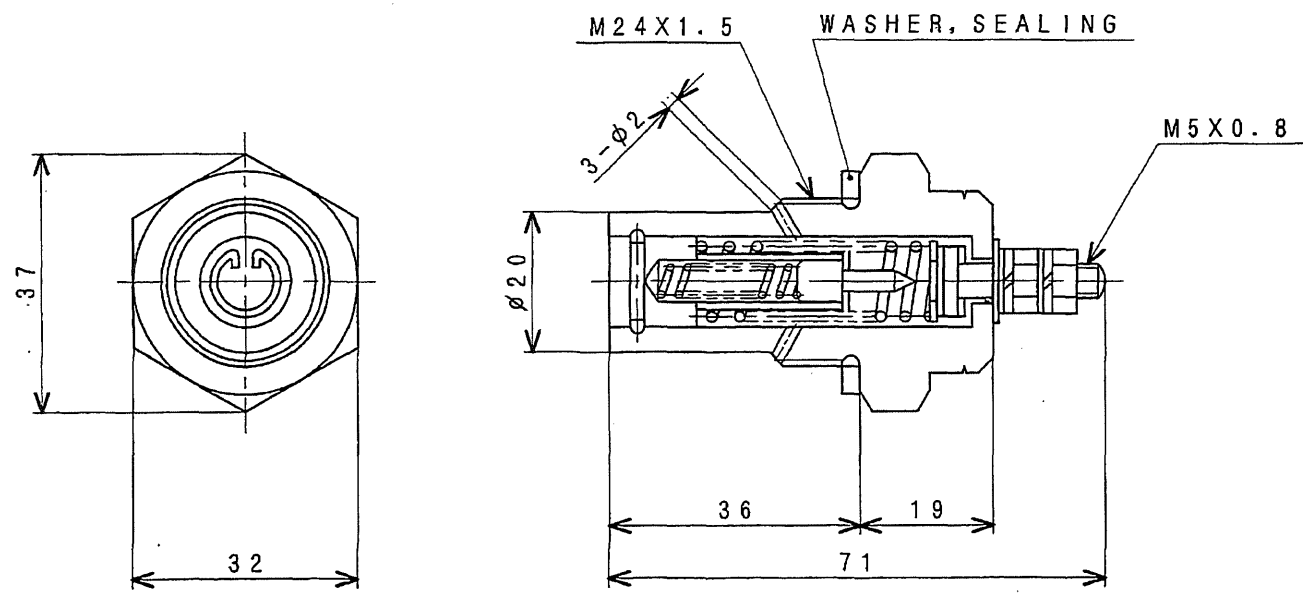
SWITCH, PRESS

DWG. NO. S11-0796

MITSUBISHI HEAVY INDUSTRIES, LTD.  
 GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY

中村



注記 (1) 本図は、部番37540-01300に対し表面処理を変更したもので。  
3価クロメート処理 ← 6価クロメート処理

SET PRESS. 0.15MPa

MHI CONFIDENTIAL

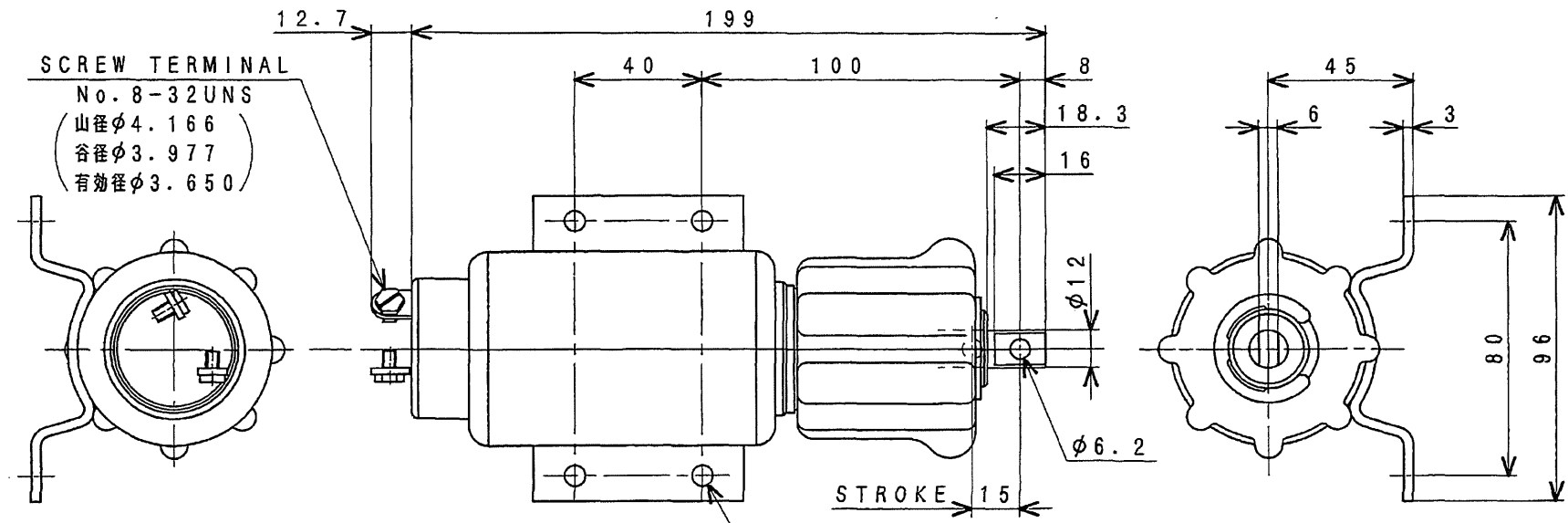
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△	
REV.	DATE

ALARM, OIL FILTER  
PART NO. 37540-01301

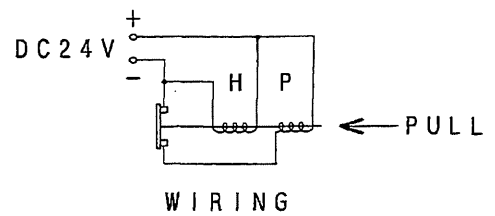
DWG. NO. S11-1371  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

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Y. FUKUDA



SCREW TERMINAL  
No. 8-32UNS  
(山径 $\phi 4.166$   
谷径 $\phi 3.977$   
有効径 $\phi 3.650$ )



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04400-08901	0.2 MPa
04400-08801	1.0 MPa
PARTS NO.	RETURN SPRING PRESS.

SPECIFICATION	
VOLTAGE	DC24V
CURRENT	PULL 30.7A, HOLD 0.58A
RATED TIME	CONTINUOUS

注記 本部品は04400-08800及び04400-08900  
に対し下記が異なる。

1. 保持コイルリードワイヤー取出部に太いサイズの皮膜付  
リードワイヤーを溶接接続したものである。
2. 吸引、保持コイル切換えスイッチの固定コンタクトの  
曲げを平に変更したものである。

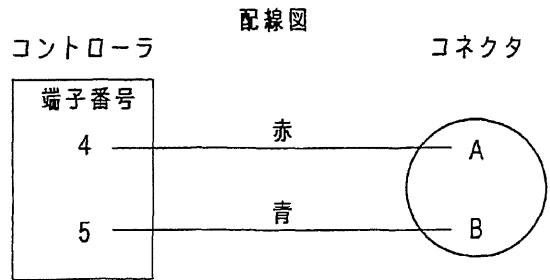
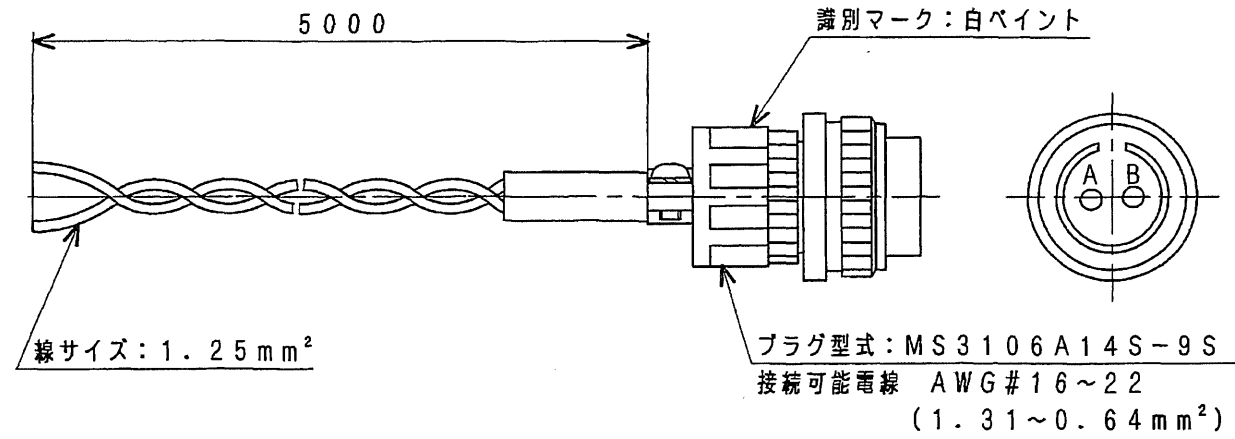
△	
△	
△	
REV.	DATE

SOLENOID

DWG. NO. S13-0282  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

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Y. FUKUDA



備考 使用先: コントローラ~アクチュエータ間の配線用部品として使用するツイストペアケーブルである。

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△	
△	
△	
REV.	DATE

CONNECTOR  
PART NO. 04410-32902

DWG. NO. S13-1022  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

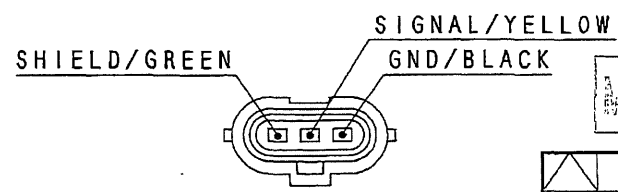
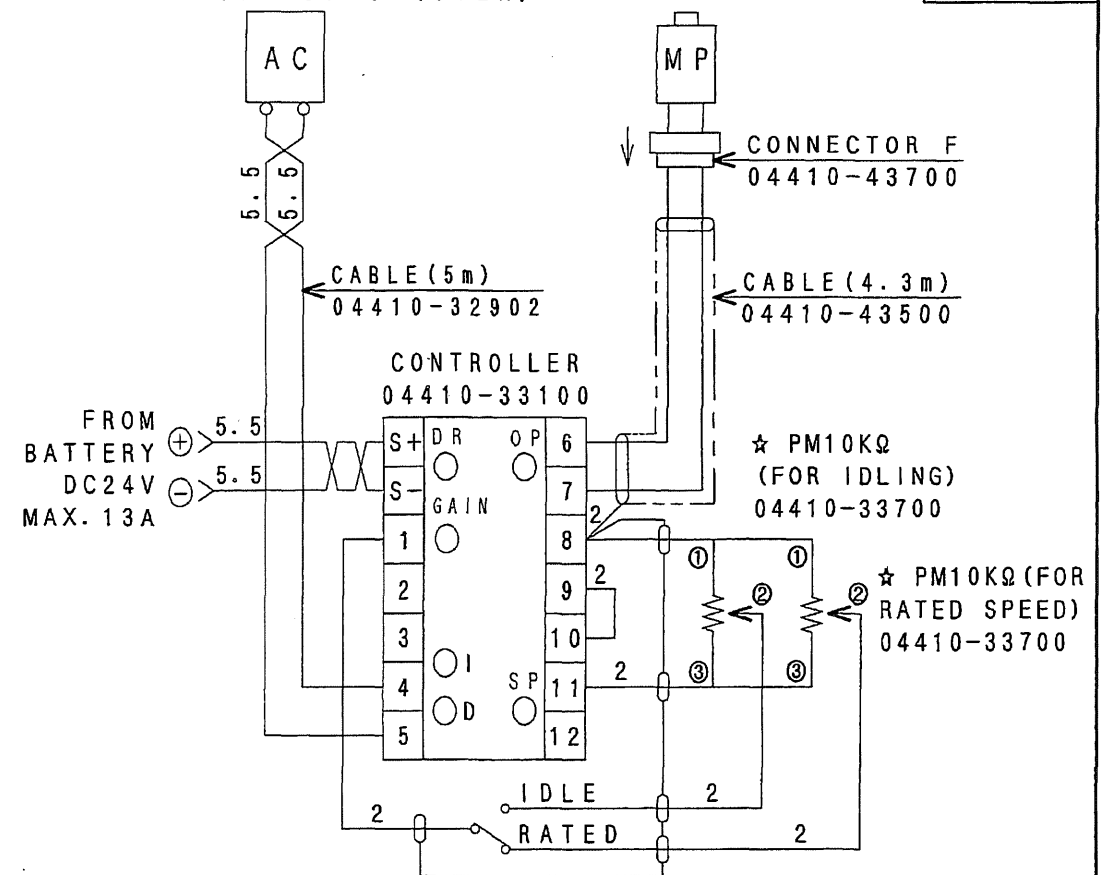
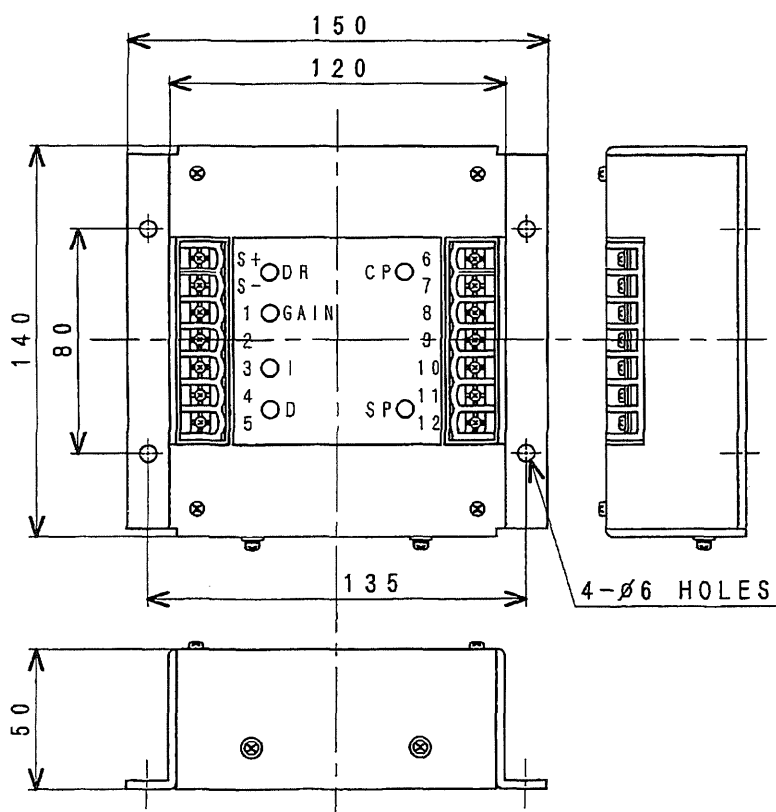


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Y. FUKUDA

ACTUATOR  
04410-32011  
04410-37081 (S12H)

MAGNETIC PICKUP  
04410-43410



CONNECTOR F  
04410-43700

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★ MODE CHANGEOVER CONTACTOR (SHALL BE USE GOLD PLATING CONTACTOR)

WIRING

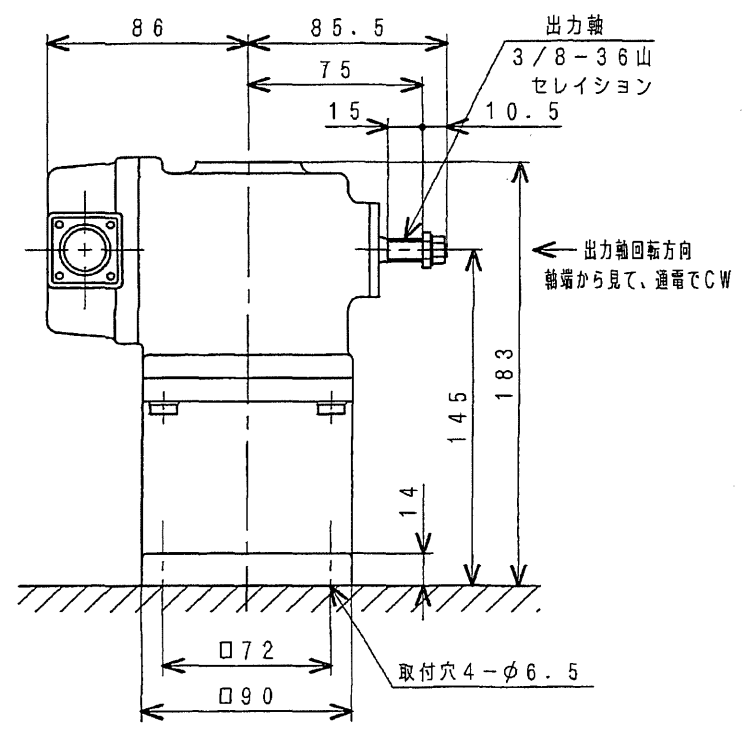
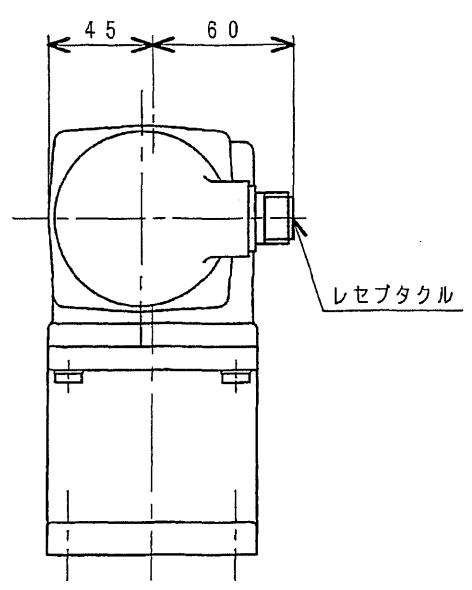
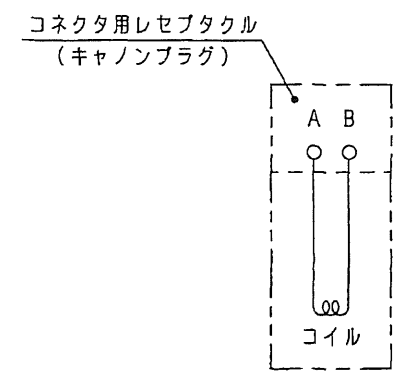
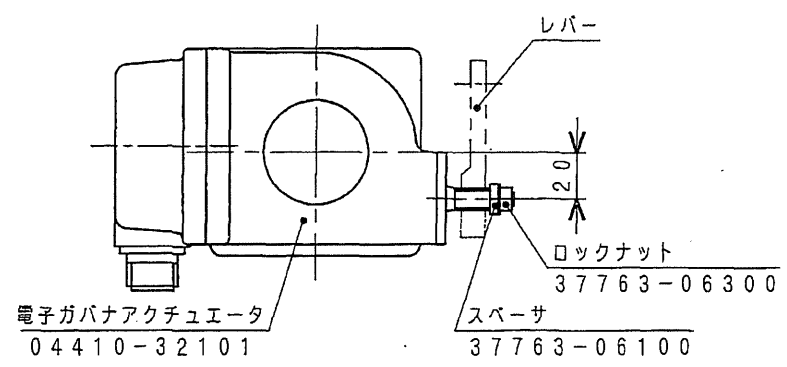
△	
2	'11.4.20
1	'01.6.29
REV.	DATE

CONTROLLER SPEED  
PART NO. 04410-33100

DWG. NO. S13-1042  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

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Y. FUKUDA



仕様

- 回転角度 : MAX40°
- トルク : 0.17kgf・m 起動時  
起動時常温8Aにて
- 電源 : DC24V パルス
- 起動最低電圧 : DC16V 50% ed以下
- 電流 : MAX13A
- 常用電流 : 軽負荷制御時0.5A~2A
- 周囲温度 : -30℃~100℃
- 耐震 : 25G JIS D 1601
- 重量 : 4.7kgf

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(2) 本部品は、部番04410-32010に対し出力軸の材料を変更したものである。  
注記(1) 本部品は、2線式アクチュエータである。

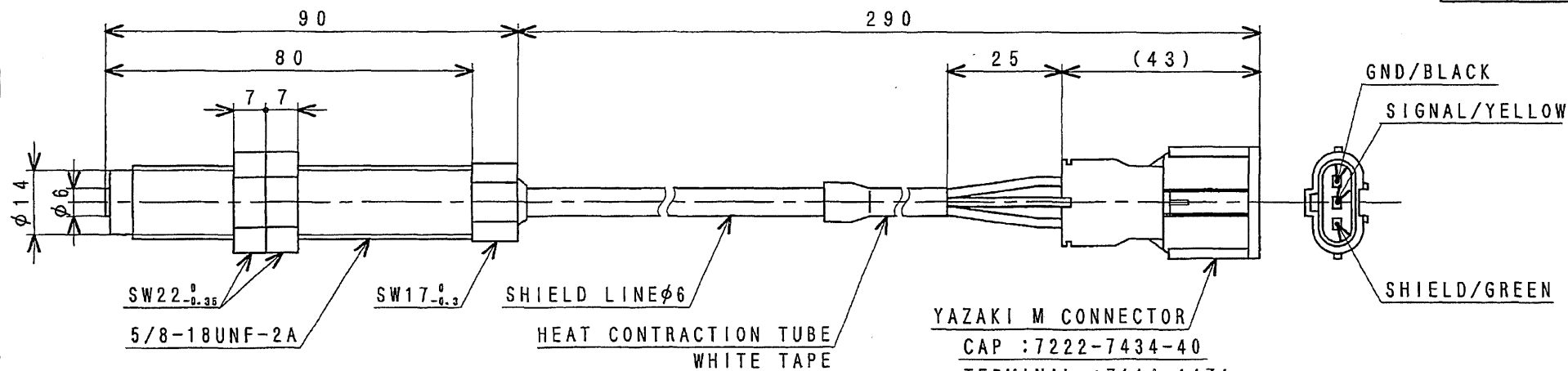
△	
△	
1	09.12.8
REV.	DATE

ACTUATOR/SG4017BR  
PART NO. 04410-32011

DWG. NO. S13-1761  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY

T. HASHIGUCHI



SPECIFICATION

1. ELECTRIC MACHINE CHARACTERISTIC

OUTPUT VOLTAGE : FIGURE 1. MEASUREMENT CONDITION

4.0Vp-p MORE (at 700Hz)

7.0Vp-p MORE (at 6700Hz)

DIRECT CURRENT RESISTANCE : 1.3kΩ~1.6kΩ (at +25°C)

INSULATION RESISTANCE : 1MΩ以上 at DC 500V  
(CONNECTOR TERMINAL-HOUSING)

ELECTRIC STRENGTH : 50/60Hz AC 500V 1MINUTE  
(CONNECTOR TERMINAL-HOUSING)

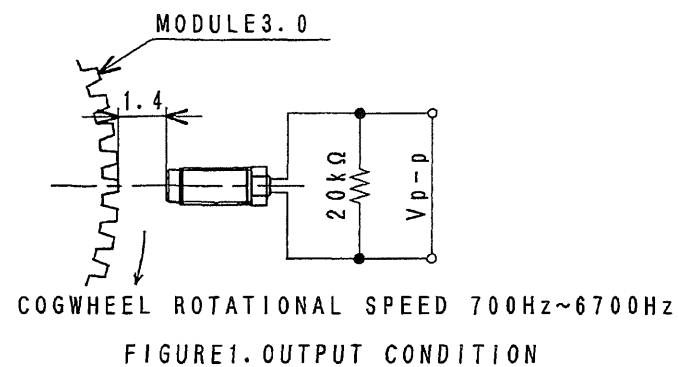
2. MECHANICAL CHARACTERISTIC

CONNECTOR PULL OMISSION POWER : 49N MORE

TIGHTENING DESTRUCTION TORQUE : 49N·m MORE

3. OPERATING TEMPERATURE LIMIT

-40°C~+120°C



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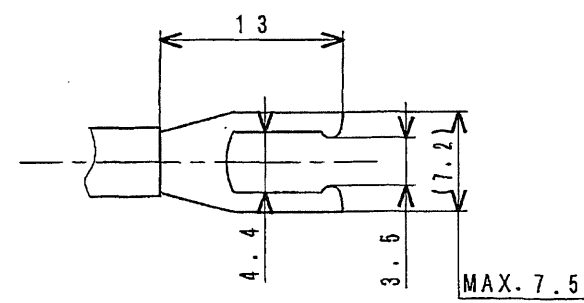
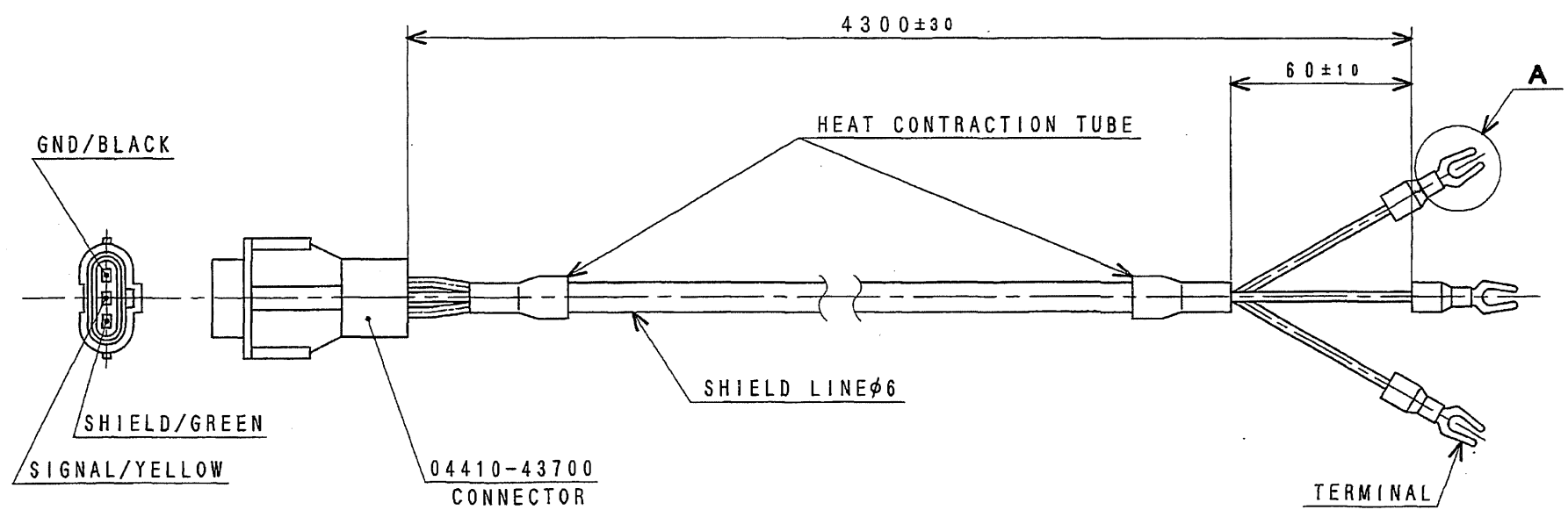
2	'11.10.28
1	'06.6.9
REV.	DATE

PICKUP, MAGNETIC  
PART NO. 04410-43410

DWG. NO. S13-2011

MITSUBISHI HEAVY INDUSTRIES, LTD.  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

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T. HASHIGUCHI




DETAIL A

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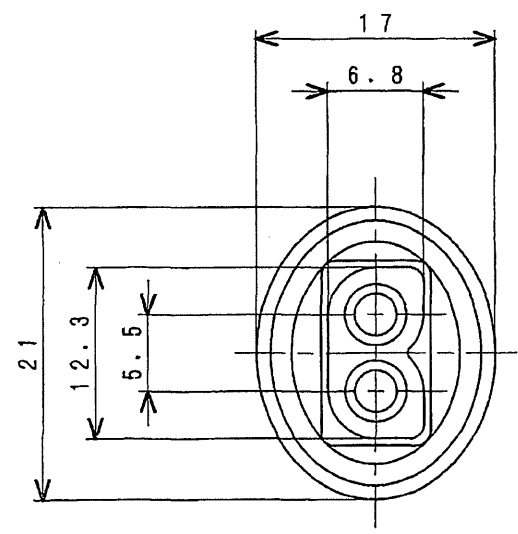
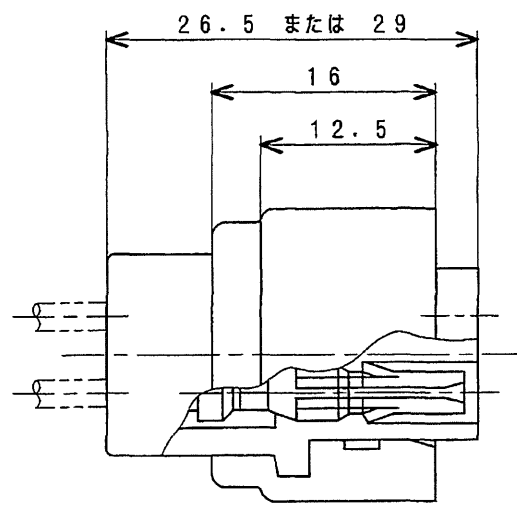
△	
△	
1	'09.12.6
REV.	DATE

CABLE, PICKUP  
PART NO. 04410-43500

DWG. NO. S13-2020  
 MITSUBISHI HEAVY INDUSTRIES, LTD.  
 GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

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Y. FUKUDA

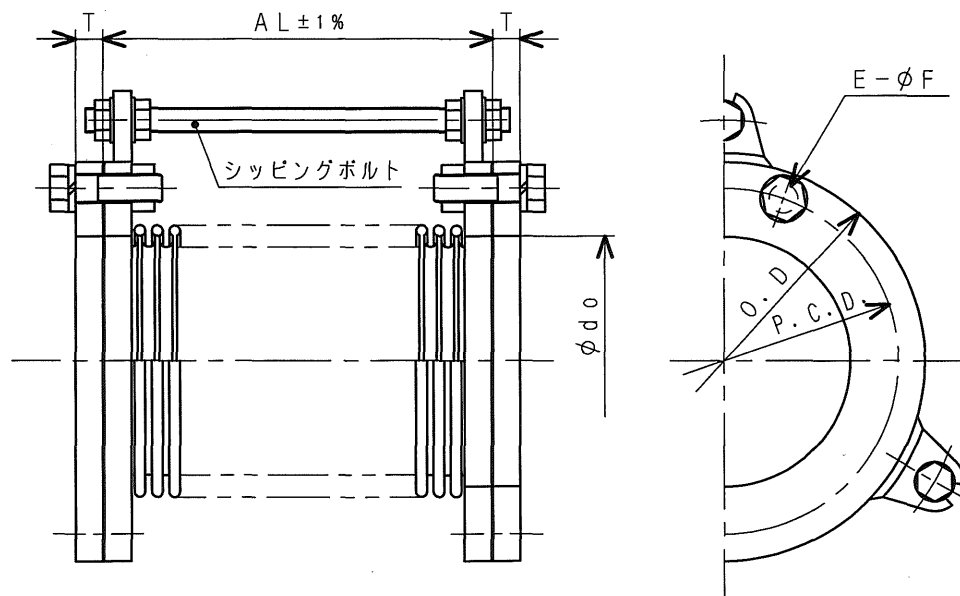


MHI CONFIDENTIAL

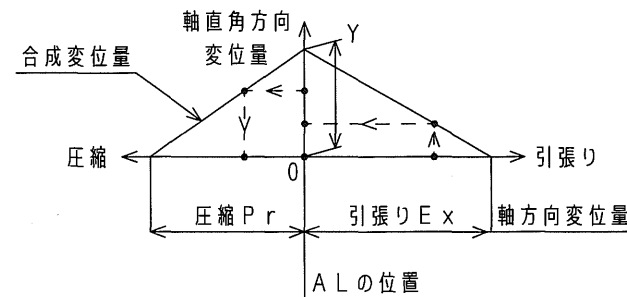
REV.	DATE
2	'04.3.12
1	'93.8.4

CONNECTOR  
PART NO. MH052231

DWG. NO. S14-0330  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS



- 注記 (1) 許容変位量はAL寸法からの最大圧縮、引張り、及び軸直角変位量を示す。  
 (2) 各方向の変位が同時に作用する場合の許容変位量は、下図の合成変位量線を作図して求めた値とします。  
 (3) 配管後シッピングボルト、ナットは取外すこと。  
 (4) 取付寸法は、AL寸法とすること。



部品番号	サイズ		主要寸法						許容変位量 (mm)			ばね定数 (kgf/mm)		重量 (kg)
	(A)	(B)	φdo	T	O. D	P. C. D.	E-φF	AL	Pr	Ex	Y	軸方向	軸直角方向	
47910-81100	150	6	166.6	18	265	230	8-19	210	29	22	16	6.4	10.3	32
47910-81200	200	8	218.0	20	320	280	8-23	230	33	20	14	6.9	14.5	46
47910-81300	250	10	269.5	22	385	345	12-23	280	42	13	15	9.0	18.5	63
47910-81400	300	12	321.0	22	430	390	12-23	370	55	17	23	11.3	17.6	70
47910-97100	350	14	358.1	24	480	435	12-25	335	60	22	16	18.6	27.0	87
47910-97200	400	16	409	24	540	495	16-25	335	60	22	14	21.0	39.0	105
47910-97300	450	18	460	24	605	555	16-25	335	60	22	12	23.5	54.9	125
47910-97400	500	20	511	24	655	605	20-25	335	60	44	14	17.9	154.2	143
47910-97500	550	22	562	26	720	655	20-27	335	60	44	13	19.6	202.3	182
47910-97600	600	24	613	26	770	715	20-27	335	60	44	12	21.3	259.4	193
47910-97700	650	26	664	26	825	770	24-27	430	105	19	16	15.3	143.7	217
47910-97800	700	28	715	26	875	820	24-27	430	105	19	15	16.4	177.8	228

Same with →  
38C32-06900

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仕様	
設計圧力	0.05MPa
設計温度	MAX. 600℃
用途	排気ガス

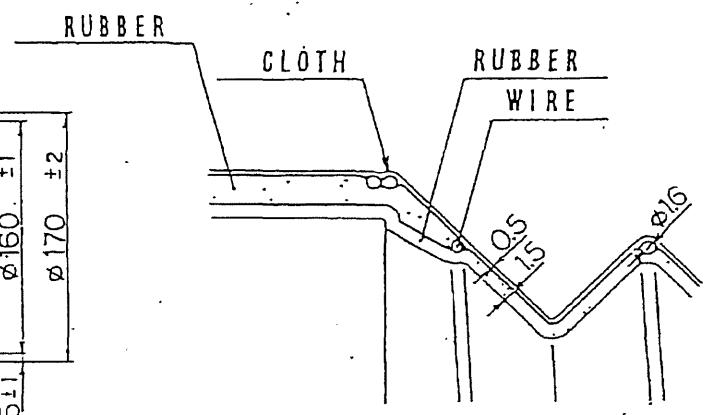
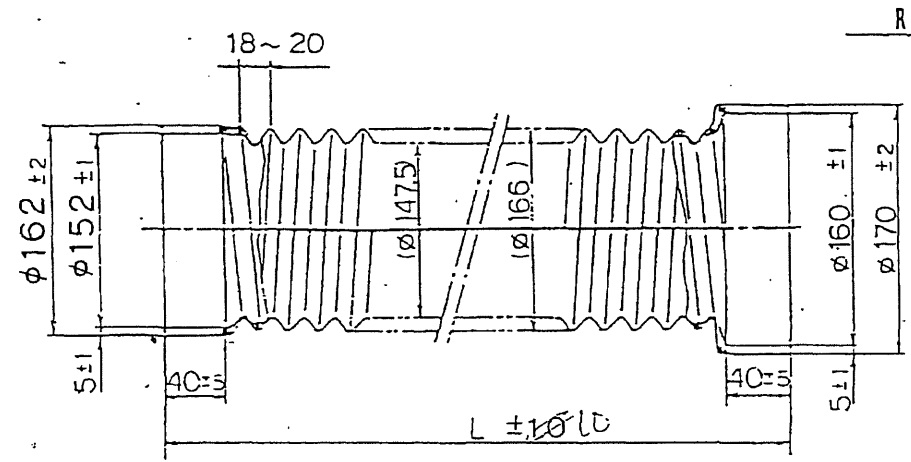
REV.	DATE

FLEXIBLE PIPE

DWG. NO. S37-1021  
 MITSUBISHI HEAVY INDUSTRIES, LTD.

CHECKED BY

*Y. Fukuda*



47221-16900	500
" -16800	300
" -16700	850
" -16600	900
" -15500	2700
" -15400	1750
" -15300	1100
" -15200	1000
" -15100	700
PARTS NO.	LENGTH (mm)

MHI CONFIDENTIAL

△	
△	
REV.	DATE

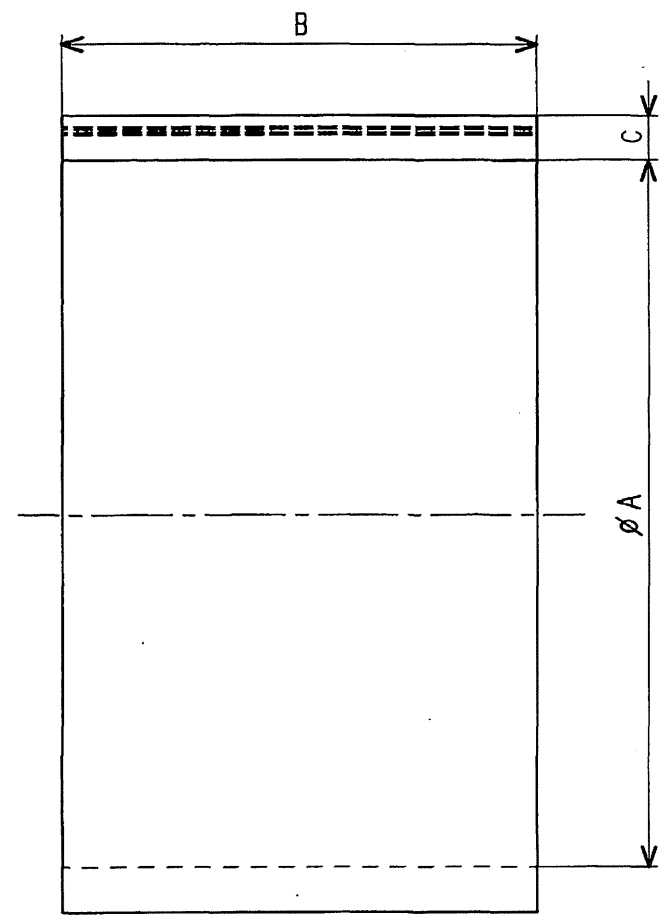
AIR HOSE

DWG. NO. S35-0751

 **mitsubishi heavy industries, ltd.**  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY

Y. FUKUDA



47510-74800	160	150	8
45735-73400	152	85	8
45741-72900	127	85	8
PARTS NO.	A	B	C

MHI CONFIDENTIAL

△	
△	
△	
REV.	DATE

HOSE, RUBBER

DWG. NO. S35-0731

⚡ MITSUBISHI HEAVY INDUSTRIES, LTD.  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS



<b>mitsubishi Diesel Engine TECHNICAL INFORMATION</b>	ITEM NO.	T0232-0001E (1/4)
	DATE	April, 2016

Specification Sheets of S12R-PTA Engine

Specification Sheets of S12R-PTA Engine are enclosed herein.

Revision	First Edition : September, 2007 (T13-0309-E Jun.99)	Engine Engineering Department High Speed Engine Designing Section		
		Approved by	Checked by	Drawn by
		T.HASHIGUCHI	T.HASEGAWA K.SAKAMOTO	N.Y

**MITSUBISHI HEAVY INDUSTRIES, LTD.**

## GENERAL ENGINE DATA

Type .....	4-Cycle, Water Cooled	
Aspiration .....	Turbo-Charged, After Cooler	
	(Jacket water to Cooler)	
Cylinder Arrangement .....	60°V	
No. of Cylinders .....	12	
Bore mm(in.) .....	170	(6.69)
Stroke mm(in.) .....	180	(7.09)
Displacement liter(in <sup>3</sup> ) .....	49.03	(2992)
Compression Ratio .....	14.0:1	
Dry Weight - Engine only - kg(lb) .....	5350	(11797)
Wet Weight - Engine only - kg(lb) .....	5630	(12414)

## PERFORMANCE DATA

## Steady State Speed Stability Band at any Constant Load

Electric Governor - % .....	±0.25 or better	
Maximum Overspeed Capacity - rpm .....	2100	
Moment of inertia of Rotating Components - N·m <sup>2</sup> (lbf·ft <sup>2</sup> ) .....	738	(1787)
(Includes Std. Flywheel)		
Cyclic Speed Variation with Flywheel at 1800rpm .....	1/565	
1500rpm .....	1/394	
1200rpm .....	1/253	

## ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - N·m(lbf·ft) .....	4413	(3256)
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## AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)		
With Clean Filter Element - mm H <sub>2</sub> O (in. H <sub>2</sub> O) .....	400	(15.7)
With Dirty Filter Element - mm H <sub>2</sub> O (in. H <sub>2</sub> O) .....	635	(25.0)

## EXHAUST SYSTEM

Maximum Allowable Back Pressure - mm H <sub>2</sub> O (in. H <sub>2</sub> O) .....	600	(23.6)
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## LUBRICATION SYSTEM

Oil Pressure at Idle - MPa(psi) .....	0.2~0.3	(29~43)
at Rate Speed - MPa(psi) .....	0.49~0.64	(71~93)
Maximum Oil Temperature of Oil pan - °C(°F) .....	110	(230)
Oil Capacity of Standard Oil pan High - liter (U.S. gal) .....	150	(39.6)
Low - liter (U.S. gal) .....	110	(29.1)
Total System Capacity (Includes Oil Filter) - liter (U.S. gal) .....	180	(47.6)
Maximum Angle of Installation (Std. Pan) Front Down .....	6.5°	
(Engine Only) Front Up .....	6.5°	
Side to Side .....	22.5°	

## COOLING SYSTEM

Coolant Capacity (Engine only) - liter (U.S. gal) .....	125	(33.0)
Maximum External Friction Head at Engine Outlet - MPa(psi) .....	0.034	(5.0)
Maximum Static Head of Coolant above Crankshaft Center - m(ft) .....	10	(32.8)
Maximum Outlet Pressure of Engine Water Pump - MPa(psi) .....	0.20	(28.6)
Standard Thermostat (modulating) Range- °C(°F) .....	71~85	(160~185)
Maximum Coolant Temperature at Engine Outlet- °C(°F) .....	98	(208)
Minimum Coolant Expansion Space - % of System Capacity .....	10	
Maximum Coolant Temperature at Intercooler Inlet, TK type- °C(°F) .....	-	
Maximum Air Restriction on Discharge Side of Radiator and Fan- mm H <sub>2</sub> O (in. H <sub>2</sub> O) .....	10	(0.4)

The specifications are subject to change without notice.

APPLICATION : GENERATOR

Pub. No. T0232-0001E 2/4

## FUEL SYSTEM

Fuel Injector .....	Mitsubishi PS6 Type × 2
Maximum Suction Head of Feed Pump - mm Hg (in. Hg) .....	75 (3.0)
Maximum Static Head of Return & Leak Pipe - mm Hg (in.Hg) .....	150 (5.9)

## STARTING SYSTEM

Battery Charging Alternator - V-Ah .....	24-30
Starting Motor Capacity - V -kW .....	24-7.5×2
Maximum Allowable Resistance of Cranking Circuit - m Ω .....	1.5
Recommended Minimum Battery Capacity	
At 5°C(41°F) and above - Ah .....	300
Below 5°C(41°F) through - 5°C(23°F) .....	600

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The specifications are subject to change without notice.

APPLICATION : GENERATOR

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## ENGINE RATING

All data represent net performance with standard accessories such as air cleaner, inlet /exhaust manifolds, fuel oil system, L.O. pump, etc. under the condition of 100kPa(29.6inHg) barometric pressure, 77°F(25°C) ambient temperature and 30% relative humidity.

ITEM	UNIT	STAND-BY POWER			PRIME POWER			CONTINUOUS C	CONTINUOUS D
		60Hz	50Hz	60Hz	60Hz	50Hz	60Hz	50Hz	50Hz
Engine Speed	rpm	1800	1500	1200	1800	1500	1200	1500	1500
No. of Cylinders		12							
Bore	mm (in.)	170 (6.69)							
Stroke	mm (in.)	180 (7.09)							
Displacement	liter (in. <sup>3</sup> )	49.03 (2992)							
Brake Horse power without Fan	kW (HP)	1320 (1769)	1220 (1635)	840 (1126)	1190 (1595)	1110 (1488)	760 (1019)	990 (1327)	880 (1180)
Brake Mean Effective Pressure without Fan	MPa (psi)	1.8 (260)	2.0 (289)	1.7 (248)	1.6 (235)	1.8 (262)	1.6 (225)	1.6 (233)	1.4 (209)
Mean Piston Speed	m/s (ft/min)	10.8 (2126)	9.0 (1772)	7.2 (1417)	10.8 (2126)	9.0 (1772)	7.2 (1417)	9.0 (1772)	9.0 (1772)
Maximum Regenerative Power Absorption Capacity without Fan	kW (HP)	144 (193)	105 (141)	72 (97)	144 (193)	105 (141)	72 (97)	105 (141)	105 (141)
Intake Air flow	m <sup>3</sup> /min (CFM)	109 (3849)	98 (3460)	66 (2330)	97 (3425)	89 (3143)	60 (2119)	80 (2825)	72 (2542)
Exhaust Gas Flow	m <sup>3</sup> /min (CFM)	287 (10134)	258 (9110)	176 (6215)	257 (9075)	235 (8298)	159 (5614)	213 (7521)	190 (6709)
Coolant Flow	liter/min (U.S. GPM)	1850 (489)	1650 (436)	1300 (343)	1850 (489)	1650 (436)	1300 (343)	1650 (436)	1650 (436)
Coolant Flow to Intercooler (TK only)	liter/min (U.S. GPM)	—	—	—	—	—	—	—	—
Cooling Air Flow (Std. Fan)	m <sup>3</sup> /min (CFM)	1800 (63558)	1800 (63558)	1410 (49787)	1800 (63558)	1800 (63558)	1410 (49787)	1800 (63558)	1800 (63558)
Fan Loss Horse Power (Std. Fan)	kW (HP)	50 (67)	30 (40)	20 (27)	50 (67)	30 (40)	20 (27)	30 (40)	30 (40)
Radiated Heat to Ambient	kJ/hr (BTU/min)	342161 (5406)	307865 (4864)	209138 (3304)	306463 (4842)	280186 (4427)	189264 (2990)	253270 (4002)	226725 (3582)
Heat Rejection to Coolant	kJ/hr (BTU/min)	2851342 (45051)	2565545 (40535)	1742814 (27536)	2553857 (40350)	2334882 (36891)	1577200 (24919)	2110580 (33347)	1889374 (29852)
Heat Rejection to Inter Cooler (TK Version)	kJ/hr (BTU/min)	—	—	—	—	—	—	—	—
Heat Rejection to Exhaust	kJ/hr (BTU/min)	3461968 (54698)	2998673 (47378)	1995909 (31535)	3072414 (48543)	2729070 (43119)	1806247 (28538)	2515377 (39742)	2273008 (35913)
Noise Level (1 m height & distance) (excludes, Intake, Exhaust & Fan)	dB(A)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

The specifications are subject to change without notice.

APPLICATION : GENERATOR

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