



SPECIFICATION  
OF  
MITSUBISHI DIESEL ENGINE  
MODEL : S16R-PTAA2  
(WITHOUT FAN)  
FOR DIESEL GENERATOR SET  
EMERGENCY APPLICATION

**Used for 2000kVA generator**

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MITSUBISHI HEAVY INDUSTRIES,LTD

							APPROVED BY	CHECKED BY	DRAWN BY
							橋口	田	坂本
				△					
				DATE	2016/4/1				

1. DRAWINGS

NO.	DWG. NO.	DWG. NAME	REV.
1	38F96-00451	ENGINE OUTLINE	
2	37896-01014	JOINT DETAIL	
3	38E96-04051	WIRING DIAGRAM	
4	37896-14001	MOUNTING DETAIL	
5	37896-21001	FLYWHEEL & HOUSING DETAIL	
6	38F96-30352	AIR CLEANER	
7	37896-43012	BREATHER	
8	37896-46308	WATER HEATER PIPING	
9	37896-61312	FUEL RETURN PIPING	
10	37896-62112	FUEL INLET PIPING	
11	37896-63005	GOVERNOR	
12	38E96-66051	STARTING MOTOR	
13	38E96-68051	DYNAMO	
14	37896-71001	TURNING GEAR	
15	37896-87503	STOP SYSTEM	
16	38F96-90153	METER & SENSOR	
17	38F96-90251	ALARM SWITCH	
18	S35-5020	AIR CLEANER ASSY	
19	S11-0551	THERMO SWITCH	
20	S11-0796	PRESSURE SWITCH	
21	S11-1371	FILTER ALARM SWITCH	
22	S14-0014	WATER HEATER	
23	S13-0282	SOLENOID	
24	S13-1022	CONNECTOR	
25	S13-1042	CONTROLLER,SPEED	
26	S13-1761	ACTUATOR	
27	S13-2011	MAGNETIC PICK UP	
28	S13-2020	CABLE, PICK UP	
29	S14-0330	CONNECTOR	
30	S37-1090	FLEXIBLE PIPE	
31	S35-0701	HOSE,RUBBER	
32	S35-0711	HOSE,RUBBER	

2. TECHNICAL INFORMATION

NO.	ITEM. NO.	DWG. NAME	REV.
33	T0233-0003E	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	:	S16R-PTAA2
Type	:	4cycle stroke, water cooled diesel engine
Combustion chamber	:	Direct injection type
Aspiration	:	Turbocharged with after cooler
Number of cylinders	:	16-V
Bore × stroke	:	170mm × 180mm
Total displacement	:	65.37liter
Compression ratio	:	14.0 : 1
firing order	:	1 - 9 - 6 - 14 - 2 - 10 - 4 - 12 - 8 - 16 - 3 - 11 - 7 - 15 - 5 - 13
Direction of rotation	:	Counter clockwise as viewed from flywheel side
Engine dimensions (Approx.)	:	Length                      3075mm
	:	Width                        1870mm
	:	Height                       1995mm
Dry weight (Approx.)	:	6650kg (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	:	1895kW/1500min <sup>-1</sup>
Prime rating	:	1684kW/1500min <sup>-1</sup>
Fuel consumption ratio at stand-by rating (allowance +5%)	:	TBD
Fuel consumption ratio at prime rating (allowance +5%)	:	TBD
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.37896-21001 SAE J620d 21in, except screw size
Flywheel housing	: DWG.NO.37896-21001 SAE J617c No.00, except screw size
Engine mounting	: DWG.NO.37896-14001 4 points mounting, C = 250mm
Torsional vibration damper	: Viscous type × 2pc

## (2) Air intake system

Air cleaner	: DWG.NO.38F96-30352 , S35-5020 4pcs Paper element type with indicator (6.3kPa)
Turbocharger	: MITSUBISHI TD Type Model : TD13M
Charged air cooler	: Air cooled type
Air heater	: Not supply

## (3) Exhaust system

Exhaust manifold	: Air cooled type with heat insulator
Muffler	: Not supply
Flexible pipe	: DWG.NO.S37-1090 loose supply JIS 350A, L = 335mm, weight 31.6kg
Companion flange	: Not supply
Breather	: DWG.NO.37896-43012 Down 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 : 200 liter low level : 140 liter Others (filter etc.) : 30 liter Total : 230 liter

- Lub. oil filter (Full flow) : Paper element cartridge type × 4pcs  
filter mesh : 20 μ  
with by - pass alarm switch
- Lub. oil filter (By - pass flow) : Paper element cartridge type × 1pc  
filter mesh
- Lub. oil cooler : Water cooled corrugat : 2 μ
- (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 : Not supply(mounted on radiator)  
Blet drive (Fan speed ratio i = 0.566)
- Quantity of Coolant : Approx.170L (only Engine)
- Jacket water heater
- Water heater piping : Install on common bed loose supply  
DWG.NO.37896-46308
- Water heater : 2.0kW, 3 phase, 220 ~ 480V  
1 Phase, 110 ~ 480V
- Operation : Convection type, controlled by thermo switch
- Thermo switch : 42°C - off, 35°C - on
- Radiator : Not supply
- Radiator piping : Not supply
- (6) Fuel system
- Fuel inlet pipings : DWG.NO.37896-62112 loose supply  
flexible hose (Rc 3/4 joint)
- Fuel return pipings : DWG.NO.37896-61312 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 "PS8" without timer
- Feed pump : Piston type with priming pump
- Injection Nozzle : Hole type 0.325mm×10 holes
- Fuel filter : Paper element cartridge type filter mesh : 5 μ

## (7) Control system

Governor	: DWG.NO.37896-63005 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)
Fuel limit solenoid	: DWG.NO.38E96-87503 DWG.NO.S13-0282 Fuel limit at engine starting Energized to fuel control until rated speed
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.37896-87502
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.38F96-90251
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.38F96-90153
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. 37896-71001 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)

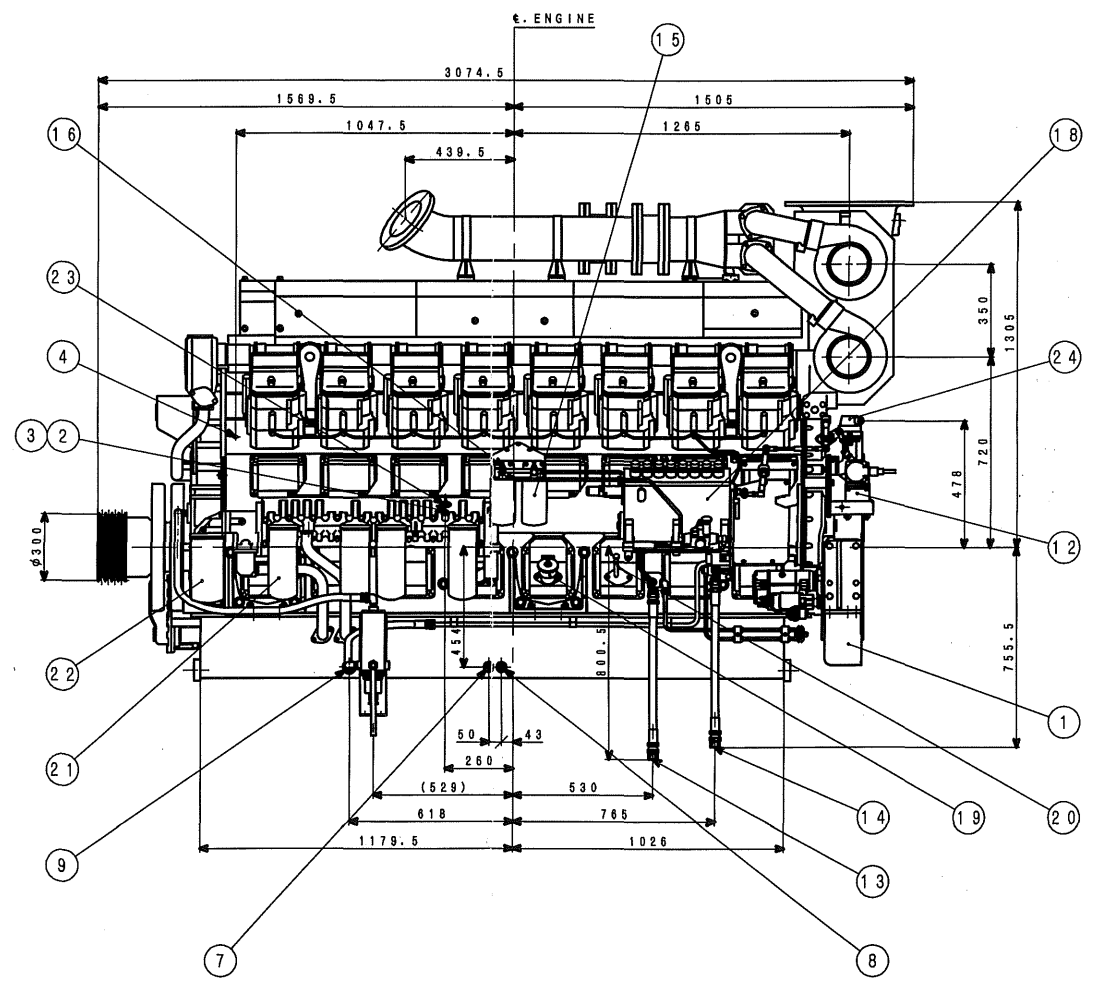
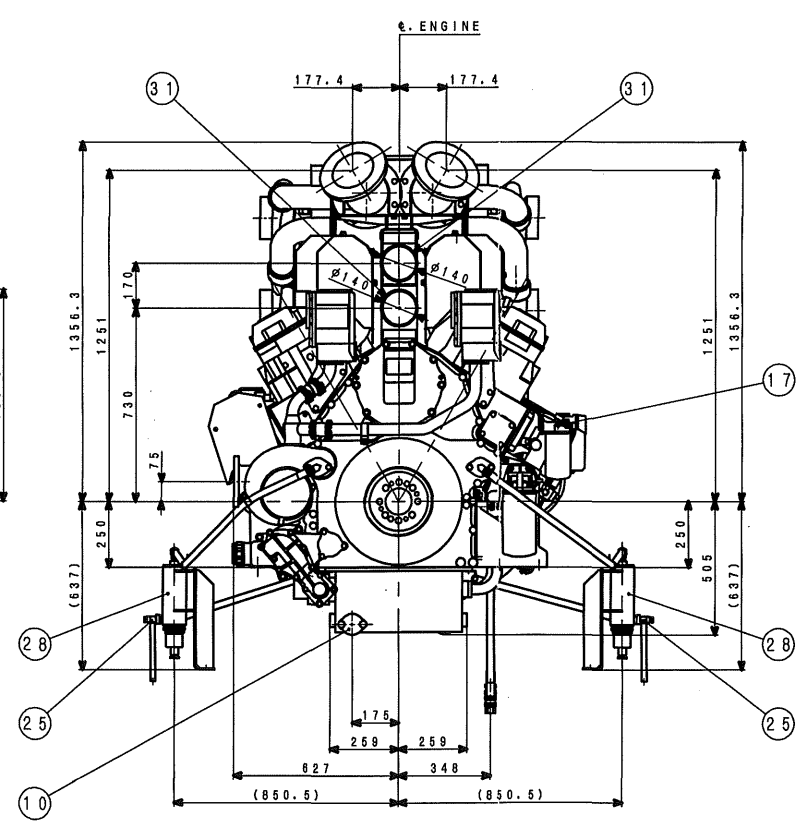
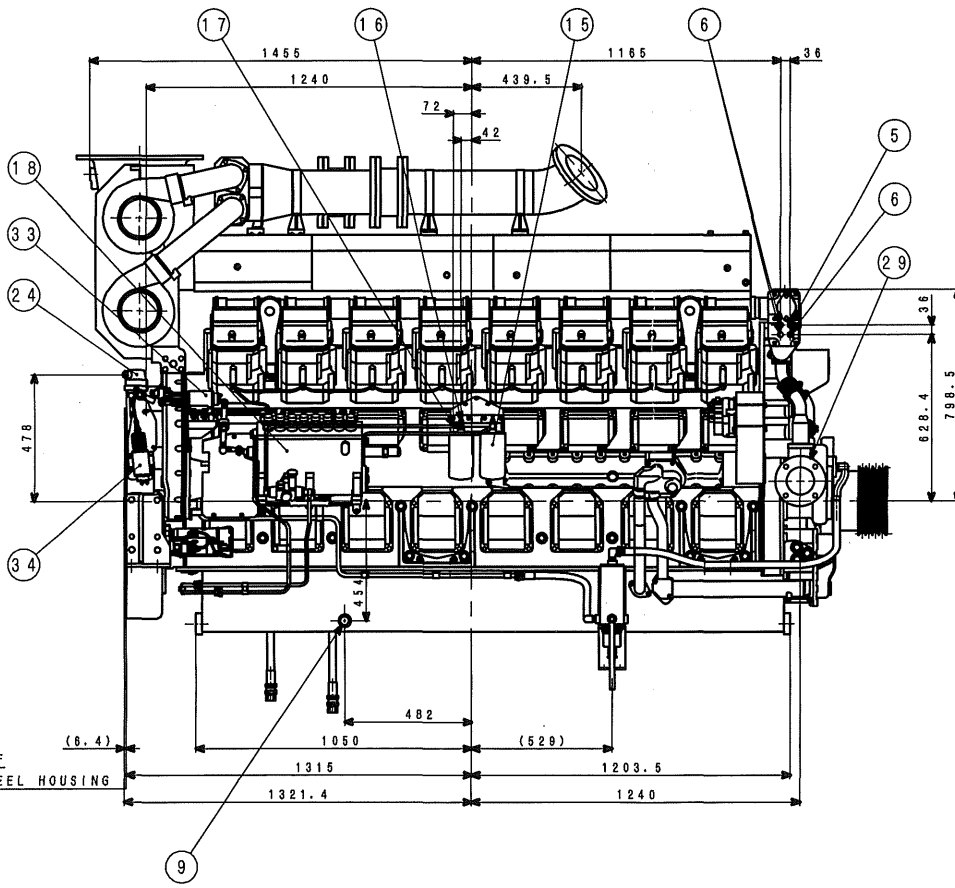
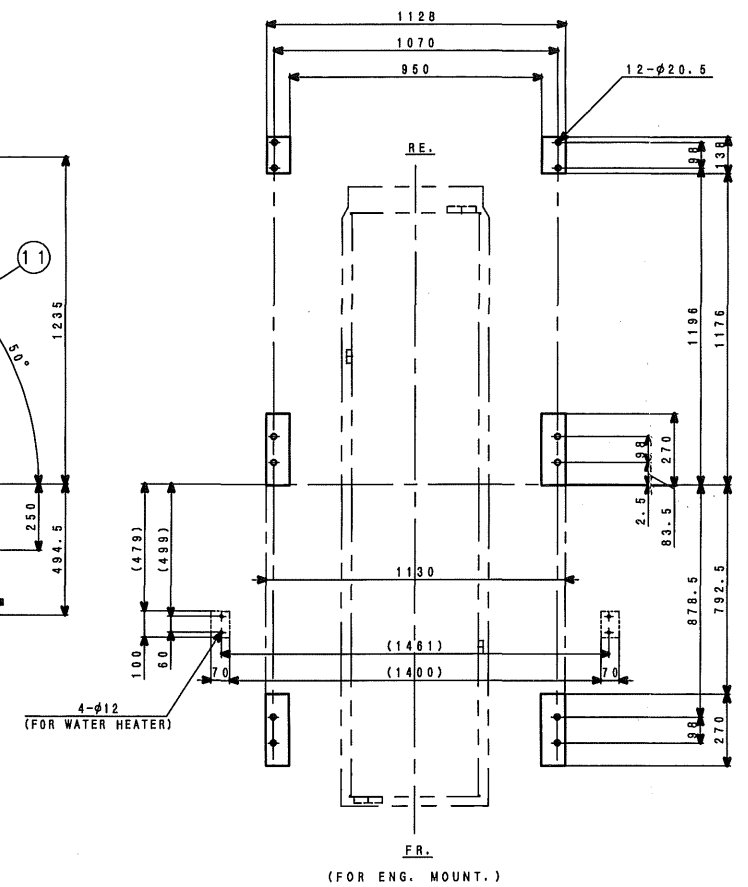
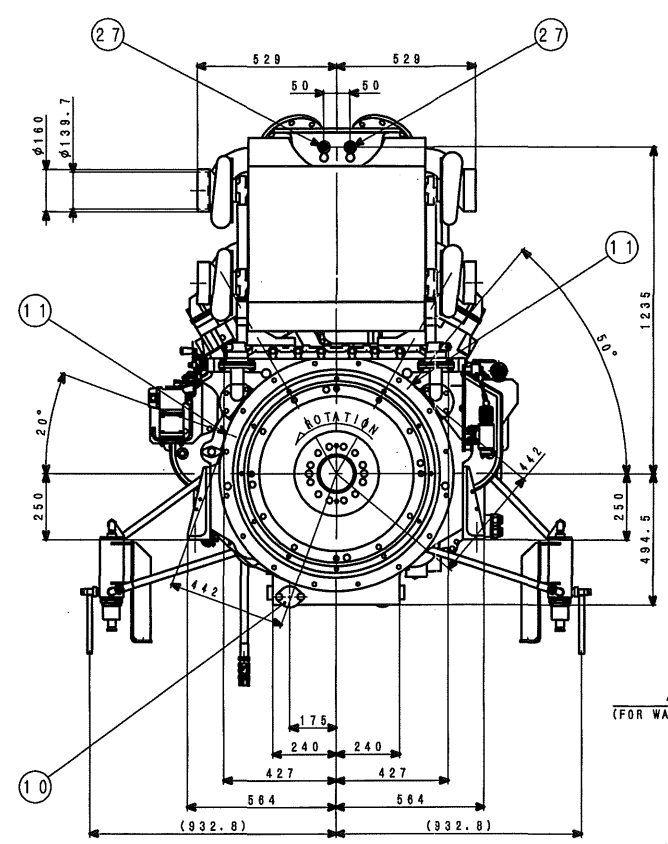
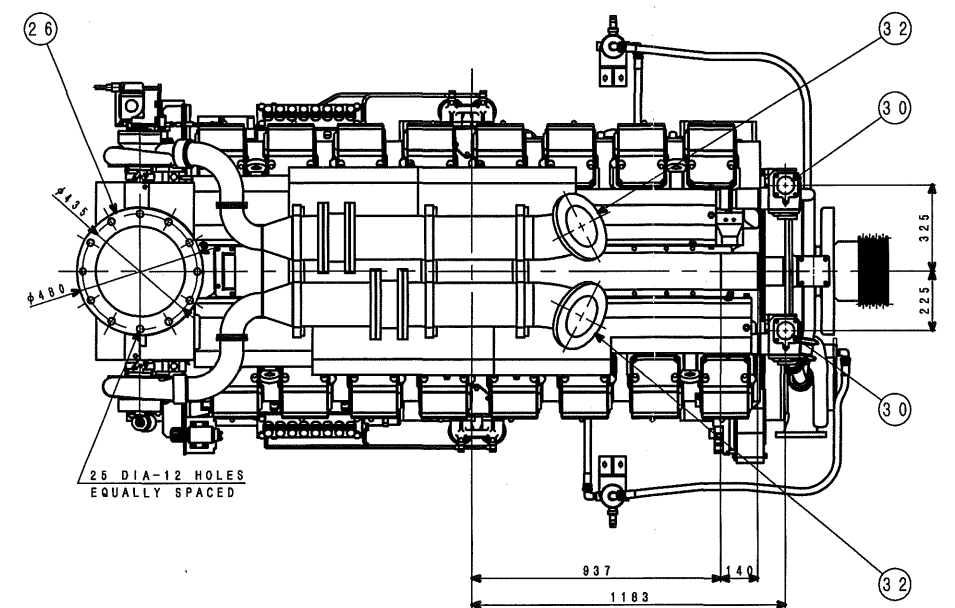
NO.	PARTS NO.	PATRS NAME	Q'TY	DWG.NO.	
1	38G30-07701	AIR CLEANER ASSY.	2	S35-5020	38F96-30352
5	47220-47600	HOSE, ELBOW	4	S35-0701	
6	47521-74100	PIPE, AIR (L.H.)	1		
7	47521-74200	PIPE, AIR (R.H.)	1		
8	47521-74300	PIPE, AIR (L.H.)	1		
9	47521-74400	PIPE, AIR (R.H.)	1		
10	47220-47300	HOSE, RUBBER	4	S35-0711	
11	47521-73800	STAY, PIPE (L.H.)	1		
12	47521-73900	STAY, PIPE (R.H.)	1		
13	05317-52001	CLAMP	8		
14	05317-52801	CLAMP	8		
15	38G32-02400	PIPE,FLEXIBLE	1	S37-1090	37896-43012
16	45955-20160	HOSE,VINYL	2		
17	05317-50401	CLAMP	4		
19	04393-32220	HEATER, WATER	2	S12-0014	37896-46308
20	47521-62901	CASE, HEATER	2		
21	45961-13079	PIPE, FLEXIBLE	1		
22	45961-13125	PIPE, FLEXIBLE	1		
23	30007-65200	VINYL HOSE	2		
24	33407-16100	COCK, DRAIN	2		
25	05946-02001	WASHER, SPRING	2		
26	45961-13072	PIPE, FLEXIBLE	1		
27	45961-13154	PIPE, FLEXIBLE	1		
28	47521-63100	STAY	1		
29	F2882-25000	CLIP	1		
30	F4300-01800	CLAMP	2		
31	F4656-15000	ELBOW	6		
32	F5006-21000	PLUG, TAPER	2		
33	45950-51700	PIPE,FLEXIBLE	1		37896-61312
34	45950-11300	CONNECTOR	1		
35	45950-51700	PIPE,FLEXIBLE	1		37896-62112
36	45950-11300	CONNECTOR	1		

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NO.	PARTS NO.	PATRS NAME	Q'TY	DWG.NO.	
37	04410-33100	CONTROLLER	1	S13-1042	37896-63005
38	04410-32902	CONNECTOR, ACTUATOR	1	S13-1022	
39	04410-43500	CABLE, PICK UP	1	S13-2020	
40	MH052231	CONNECTOR	1	S14-0330	38F96-90153

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NO.	PARTS NAME	SIZE	REFERENCE
1	FLYWHEEL & HOUSING		37896-21001
2	OIL PRESS. GAGE UNIT JOINT	Rc1/8	37896-01014
3	OIL PRESS. SWITCH JOINT	Rc1/8	
4	OIL PRESS. SWITCH JOINT	Rc3/8	
5	THERMOMETER UNIT JOINT	Rc1/2	
6	THERMOSWITCH JOINT	Rc1/2	
7	OIL PAN (A) JOINT	M16x1.5	
8	OIL PAN (B) JOINT	M20x1.5	
9	OIL PAN (C) JOINT	M36x1.5	
10	OIL PAN (D) JOINT		
11	PICKUP JOINT	5/8-18UNF	37896-01014
12	GOVERNOR		
13	FUEL INLET PIPE JOINT	Rc3/4	37896-01014
14	FUEL RETURN PIPE JOINT	Rc3/4	37896-01014
15	FUEL FILTER		
16	FUEL PRESS. SWITCH JOINT	M14x1.5	37896-01014
17	FUEL PRESS. SWITCH JOINT	Rc3/8	37896-01014
18	FUEL INJECTION PUMP		
19	OIL FILLER		
20	OIL LEVEL GAGE		
21	OIL FULL-FLOW FILTER		
22	OIL BY-PASS FILTER		
23	OIL BY-PASS ALARM SWITCH		37896-01014
24	BREATHER		37896-01014
25	WATER DRAIN COCK		
26	EXHAUST FLANGE	300A	
27	THERMOMETER, EX. JOINT	G3/4	37896-01014
28	WATER HEATER	Rc1/2	
29	WATER INLET PIPE JOINT	90A	37896-01014
30	WATER OUTLET PIPE JOINT		
31	AIR INLET JOINT (FROM A/C)	φ140	
32	AIR OUTLET JOINT (TO A/C)	150A	37896-01014
33	STOP SOLENOID		
34	RACK LIMIT SOLENOID		



ENGINE SPEED	1500
TURBO CHARGER	TD13M-37Q22VRC-N28.3

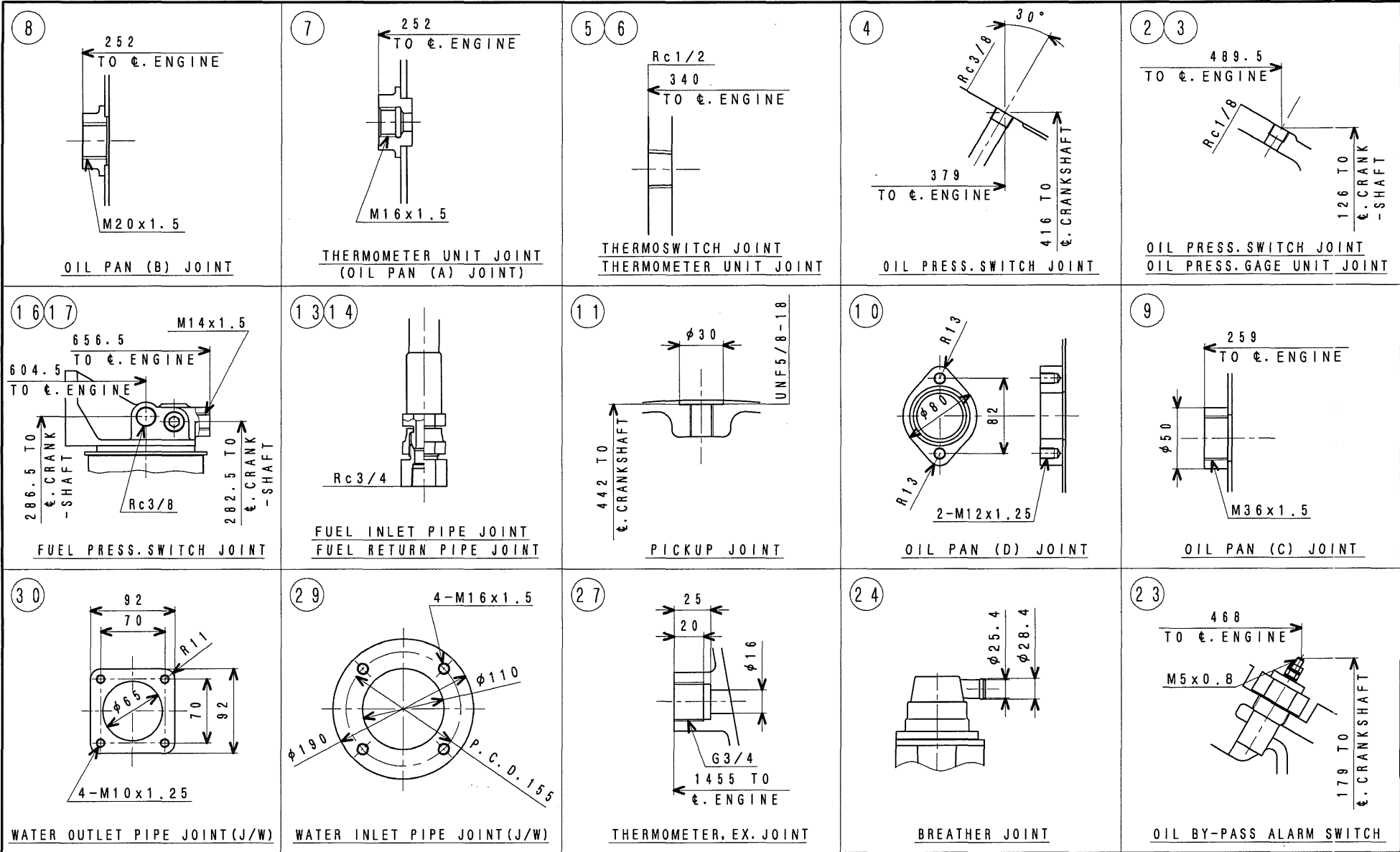
(5) THIS MOUNTING HEIGHT FROM THE CRANK SHAFT CENTER IS 250mm.  
 (4) THE GOVERNOR ON THIS DRAWING IS ELECTRIC GOVERNOR.  
 (3) THIS ENGINE NEEDS WATER HEATER.  
 (2) FAN & AIR TO AIR COOLER ARE OUT OF SUPPLY.  
 THOSE SHOULD BE PREPARED BY D/G SET MANUFACTURER.  
 NOTES (1) THIS DRAWING SHOWS S16R-PTAA2.

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DATE	CHK	DATE	CHK
1:10			

三菱重工業株式会社  
 MITSUBISHI HEAVY INDUSTRIES, LTD.  
 図面番号 38F96-00451  
 T. HAREGAWA  
 K. SAKAMOTO  
 M. YAMAGUCHI  
 1981. 3. 22

W/C



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NOTE (1) ALL SYMBOLS ARE INDICATED IN S16R-PTAA2 DIESEL ENGINE 37896-00406.

注記 (1) 本図は、S16R-PTAA2 外觀図番号：37896-00406のジョイント詳細図である。

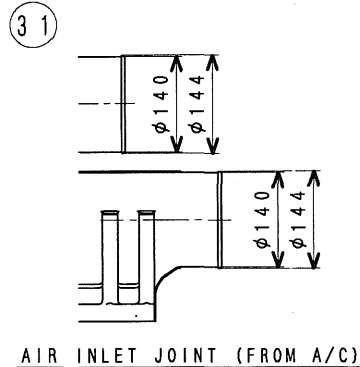
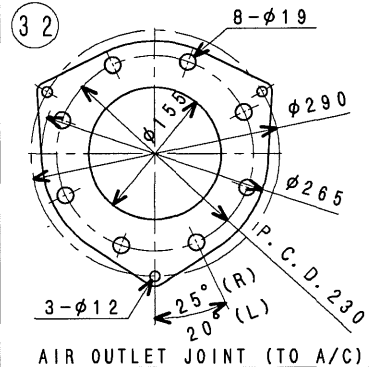
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橋		13.12.20	谷戸
認可 APPD	橋	検図 CHK	谷戸
		製図 DRN	K. Y
			2012. 3. 1

S16R  
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 37896-01014  
DRAWING No. 37896-01014 1/2

旧引  
汎特  
2014  
1.10

M/C

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



AIR OUTLET JOINT (TO A/C)

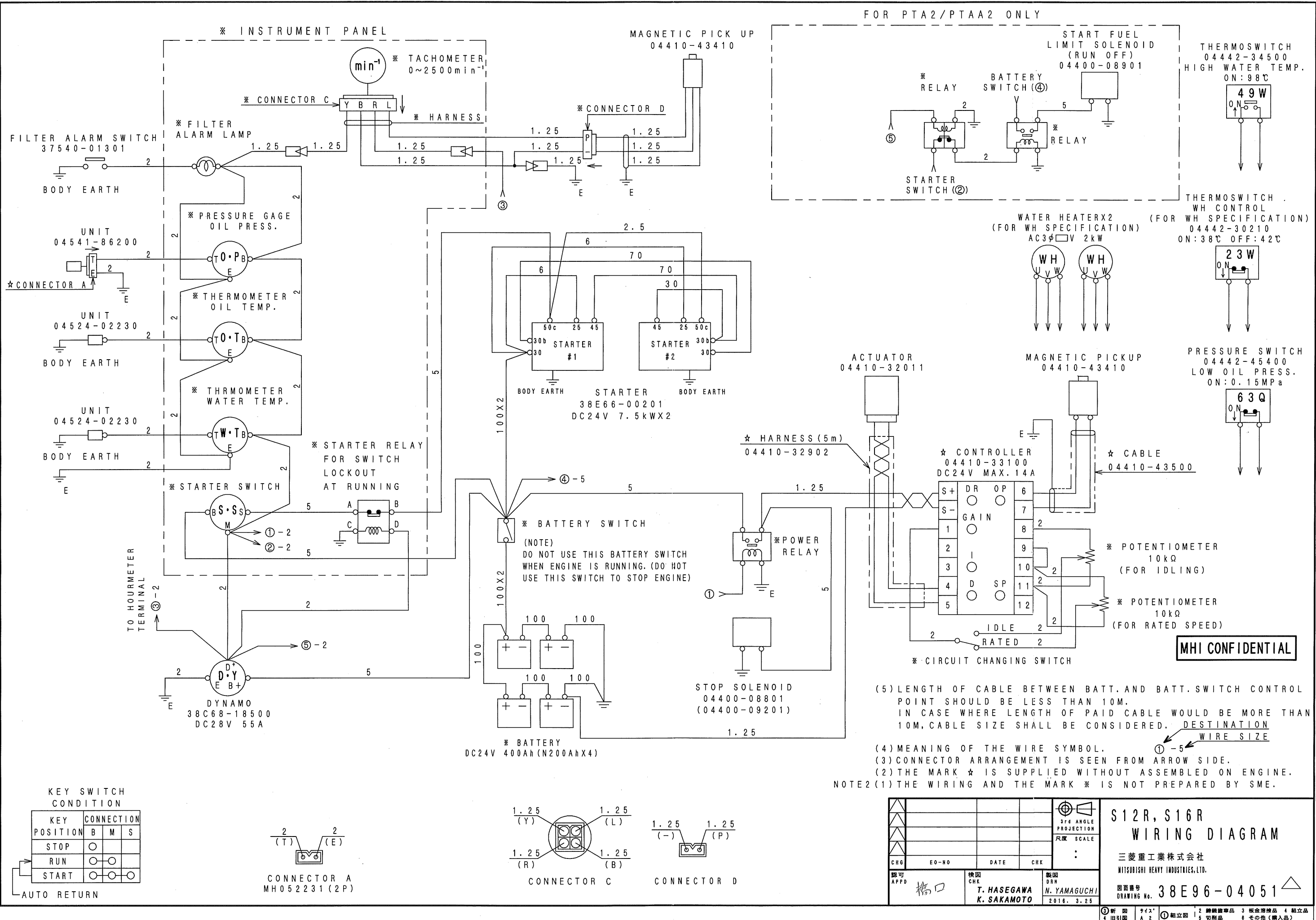
AIR INLET JOINT (FROM A/C)

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 3rd ANGLE PROJECTION 尺度 SCALE		<b>S16R</b> <b>JOINT DETAIL</b> 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.	
CHG 4590-H533	EQ-NO '13.12.20	DATE 谷戸	CHK 谷戸
認可 APPD 橋口	検図 CHK 谷戸	製図 DRN K. Y.	図面番号 DRAWING No. 37896-01014
2012. 3. 1		2/2	
3 新図 ① 旧引図	サイズ A 3	① 組立図	2 鋳造部品 3 板金溶接品 4 組立品 5 切削品 6 その他(購入品)

旧引  
  
 汎特  
 2014  
 1.10

M/C



FOR PTA2/PTAA2 ONLY

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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
APPD	検口	換図	DRN
	T. HASEGAWA	N. YAMAGUCHI	
	K. SAKAMOTO		2016. 3. 25

S12R, S16R  
WIRING DIAGRAM

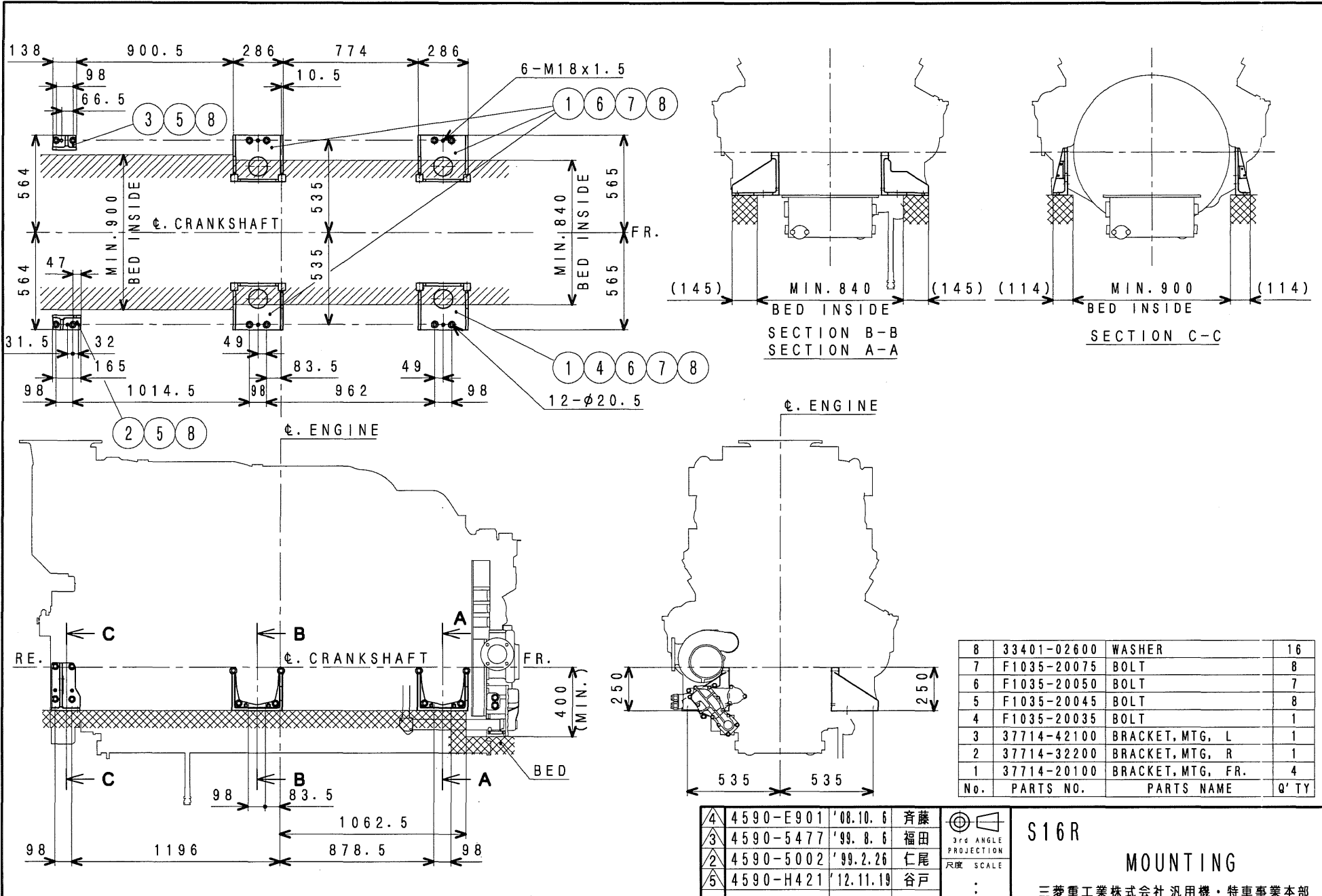
三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号  
DRAWING No. 38E96-04051

①新図 ②サイズ ③脚線部品 ④組立品  
④旧引図 A 2 ⑤組立図 ⑥印刷品 ⑦その他(購入品)

M/C





8	33401-02600	WASHER	16
7	F1035-20075	BOLT	8
6	F1035-20050	BOLT	7
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.	4
No.	PARTS NO.	PARTS NAME	Q' TY

4	4590-E901	'08.10.6	齊藤	製図	谷戸
3	4590-5477	'99.8.6	福田	検図	仁尾
2	4590-5002	'99.2.26	仁尾	承認	橋口
5	4590-H421	'12.11.19	谷戸	承認	橋口
CHG	EQ-NO	DATE	CHK		
認可	橋口	検図	仁尾	製図	谷戸
APPD	橋口	CHK	仁尾	DRN	谷戸
1998. 8. 20					

S16R  
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 37896-14001

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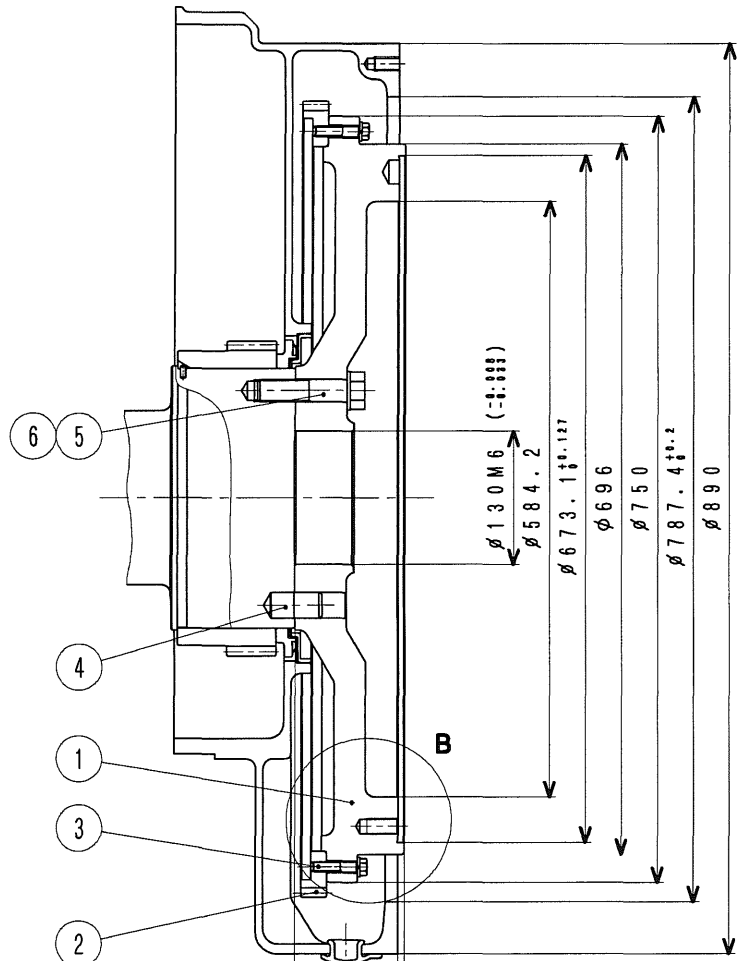
注記 (1) 本図は、マウンティングセンター・ハイトC=250用である。

4590-4536	'98.8.18	福田
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旧引  
汎特  
2013  
2.8

M/C

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



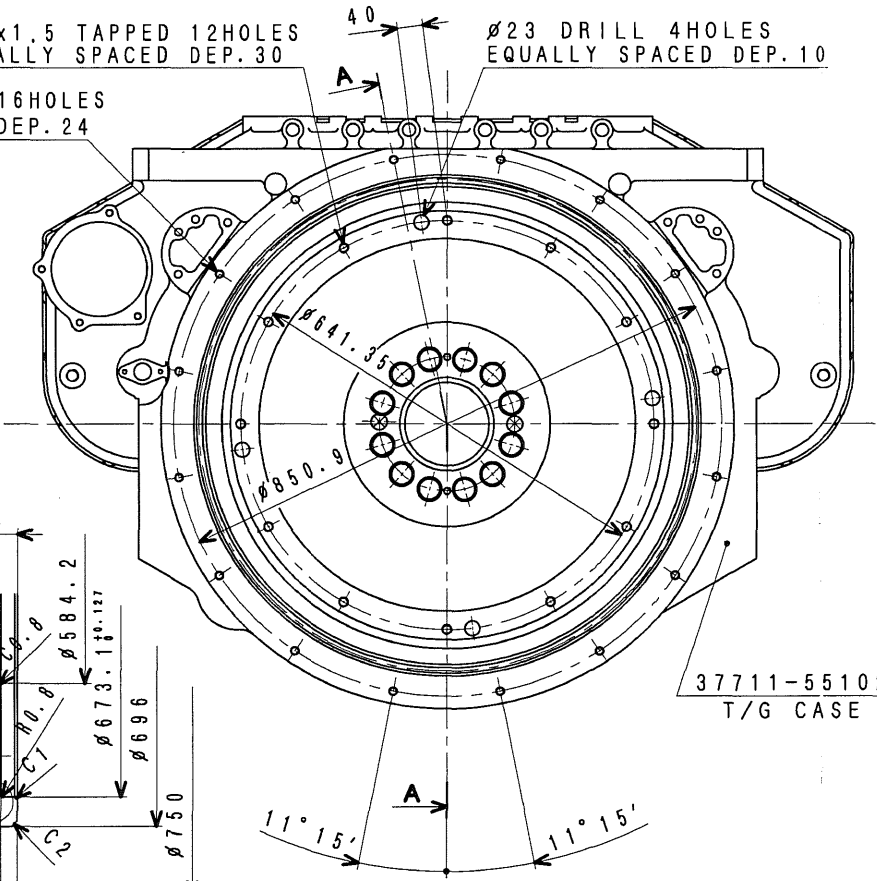
1214.9 TO  $\phi$ . ENGINE 106.5  
 1315 TO  $\phi$ . ENGINE  
 1321.4 TO  $\phi$ . ENGINE

SECTION A-A

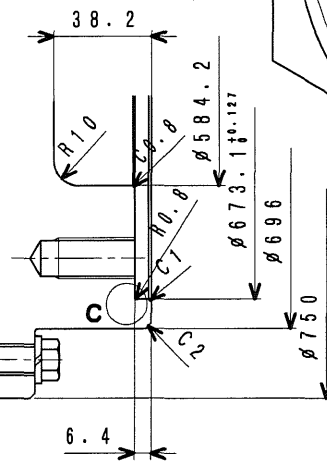
M16x1.5 TAPPED 12HOLES  
 EQUALLY SPACED DEP. 30

M14x1.5 TAPPED 16HOLES  
 EQUALLY SPACED DEP. 24

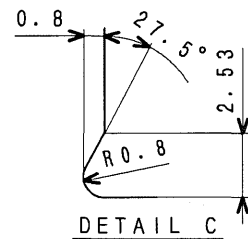
$\phi$ 23 DRILL 4HOLES  
 EQUALLY SPACED DEP. 10



37711-55102  
 T/G CASE



DETAIL B



DETAIL C

No.	PARTS NO.	PARTS NAME	Q'TY
6	33707-11701	WASHER	12
5	F1035-22090	BOLT	12
4	37820-04600	PIN, DOWEL	2
3	F1805-10045	BOLT	12
2	37721-20201	GEAR, RING	1
1	37721-00601	FLYWHEEL	1

37721-00061 F/W ASSY.

MHI CONFIDENTIAL

CHG	EO-NO	DATE	CHK
3	4590-G654	'11. 3.28	齊藤
2	4590-D678	'07.10. 4	齊藤
1	4591-0261	'03. 9.12	福田

認可 APPD 橋 検図 CHK 竹 福 製図 DRN 谷 齊 戸 藤

S16R  
 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.

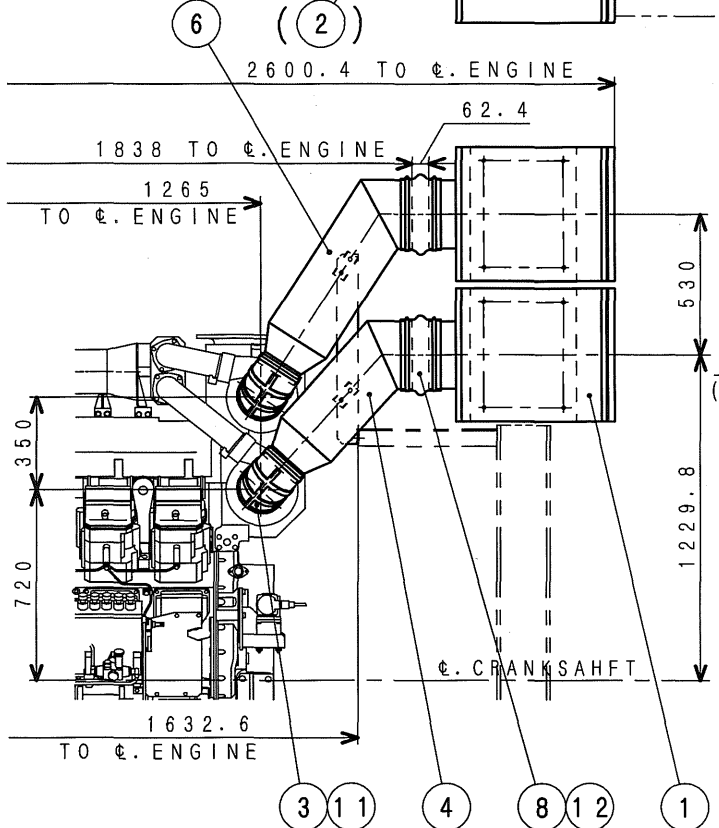
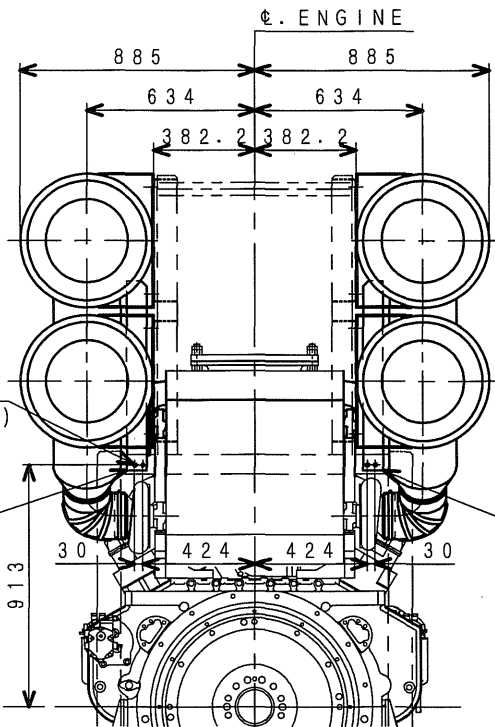
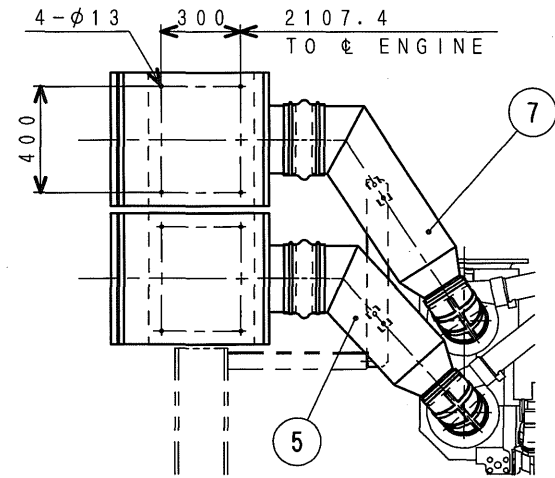
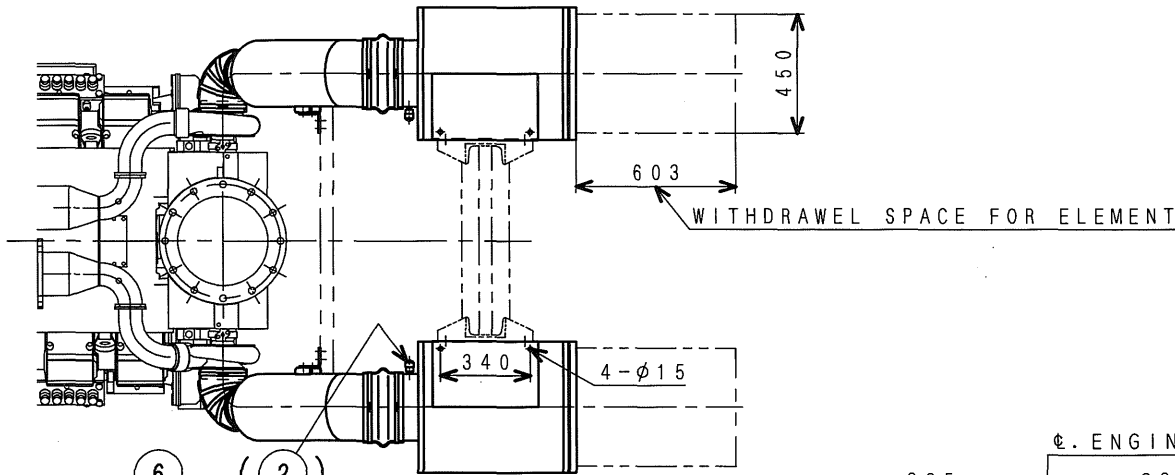
図面番号 37896-21001

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、SAEJ620c21in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  
 12.12

FULL-CAD

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



☆	15	F2515-10000	WASHER, SPRING	8
☆	14	F2500-10000	WASHER, PLANE	8
☆	13	F1035-10020	BOLT	8
☆	12	05317-52801	CLAMP	8
☆	11	05317-52001	CLAMP	8
☆	10	47521-73900	STAY, AIR PIPE (R.H)	1
☆	9	47521-73800	STAY, AIR PIPE (L.H)	1
☆	8	47220-47300	HOSE, RUBBER	4
☆	7	47521-74400	PIPE, AIR (R.H)	1
☆	6	47521-74300	PIPE, AIR (L.H)	1
☆	5	47521-74200	PIPE, AIR (R.H)	1
☆	4	47521-74100	PIPE, AIR (L.H)	1
☆	3	47220-47600	HOSE, ELBOW	4
☆	2	(INCLUDED IN A/C)	(INDICATOR) 635mmH <sub>2</sub> O	4
☆	1	38G30-07701	AIR CLEANER ASSY	4
	No.	PARTS NO.	PARTS NAME	Q'TY

MHI CONFIDENTIAL

CHG	EO-NO	DATE	CHK
認可 APPD	検図 CHK	製図 DRN	
	T. HASEGAWA	N. YAMAGUCHI	
	K. SAKAMOTO	2D16. 3. 25	

S16R-PTA2, -PTAA2  
AIR CLEANER  
三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
図面番号 38F96-30352

NOTES (2) THIS AIR CLEANER IS AH-495001 TYPE PRODUCED BY ADRINDO.  
(1) THE ☆ MARKED PARTS ARE LOOSE SUPPLY.

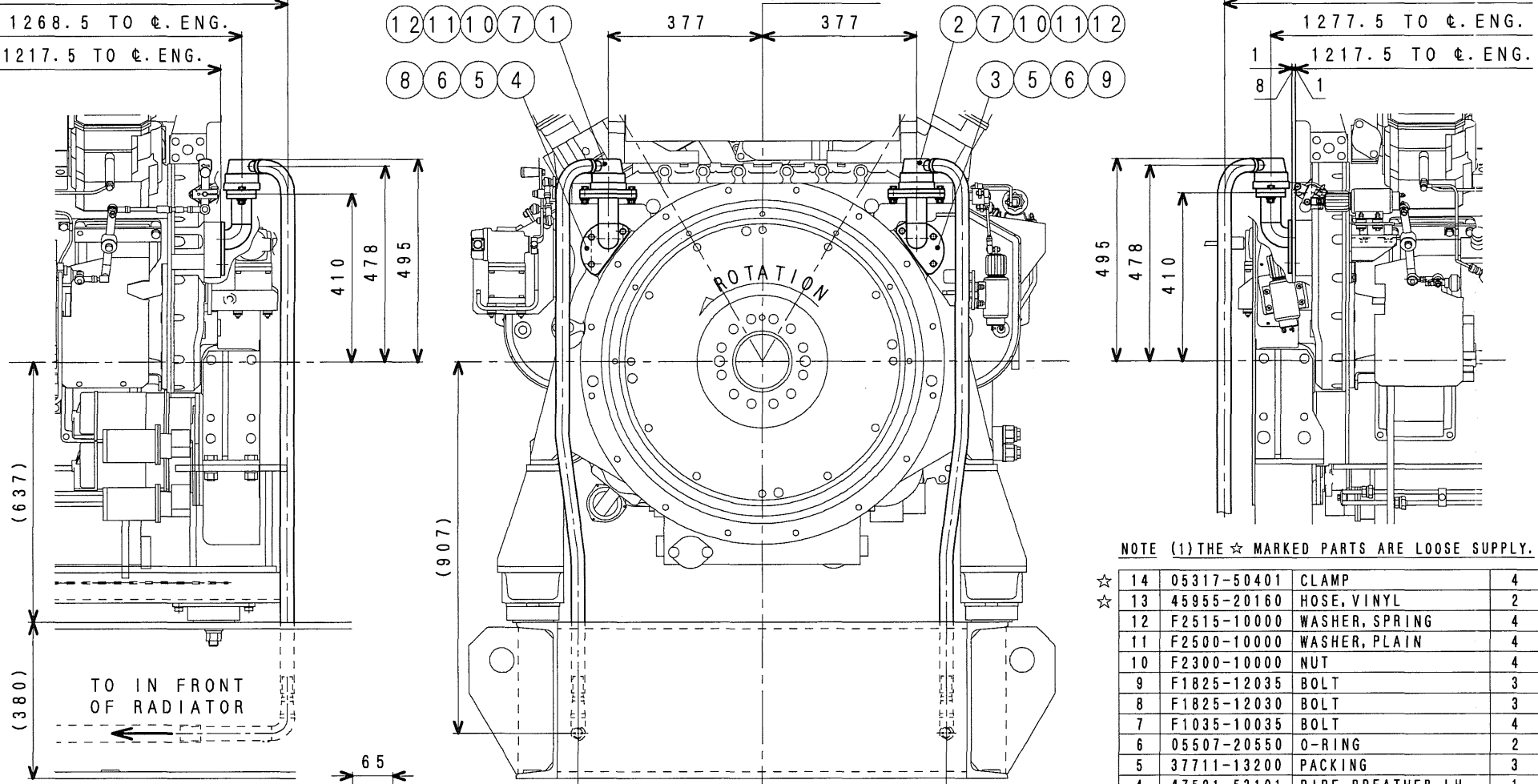
① 新図 サイズ A 3 ② 組立図 ③ 2 鋼線織物品 3 板金溶接品 4 組立品  
④ 旧引図 5 切削品 6 その他(購入品)

M/C

(1380.6) TO  $\phi$ . ENG.  
 1268.5 TO  $\phi$ . ENG.  
 1217.5 TO  $\phi$ . ENG.

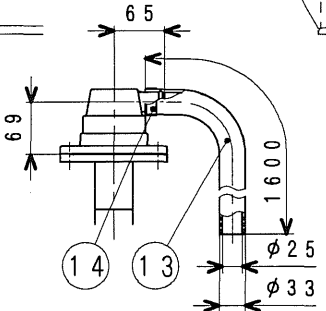
$\phi$ . ENGINE

(1389.6) TO  $\phi$ . ENG.  
 1277.5 TO  $\phi$ . ENG.  
 1217.5 TO  $\phi$ . ENG.



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

No.	PARTS NO.	PARTS NAME	Q' TY
☆ 14	05317-50401	CLAMP	4
☆ 13	45955-20160	HOSE, VINYL	2
12	F2515-10000	WASHER, SPRING	4
11	F2500-10000	WASHER, PLAIN	4
10	F2300-10000	NUT	4
9	F1825-12035	BOLT	3
8	F1825-12030	BOLT	3
7	F1035-10035	BOLT	4
6	05607-20550	O-RING	2
5	37711-13200	PACKING	3
4	47521-53101	PIPE, BREATHER LH	1
3	47521-53201	PIPE, BREATHER RH	1
2	47521-52900	BREATHER ASSY.	1
1	36243-10010	BREATHER ASSY.	1
No.	PARTS NO.	PARTS NAME	Q' TY



DETAIL OF BREATHER

MHI CONFIDENTIAL

注記 (1) プリーザホースは、プロパイガスをラジエータ前方に排出するよう配管接続する。

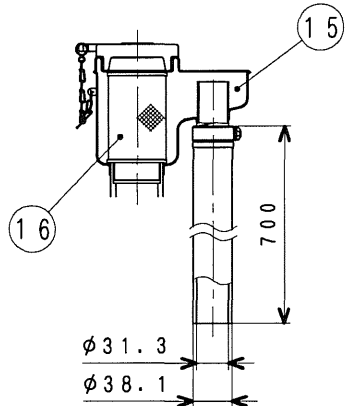
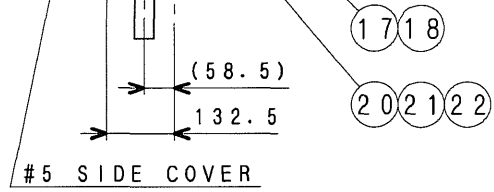
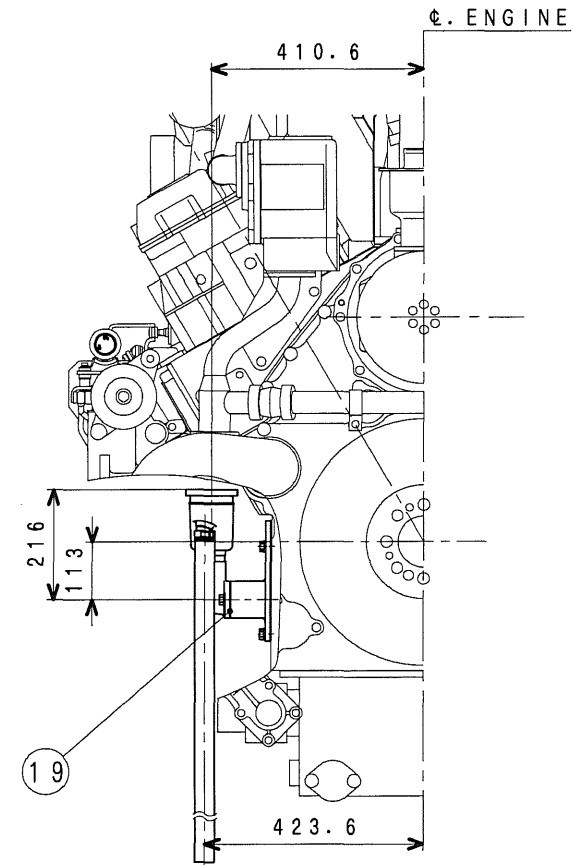
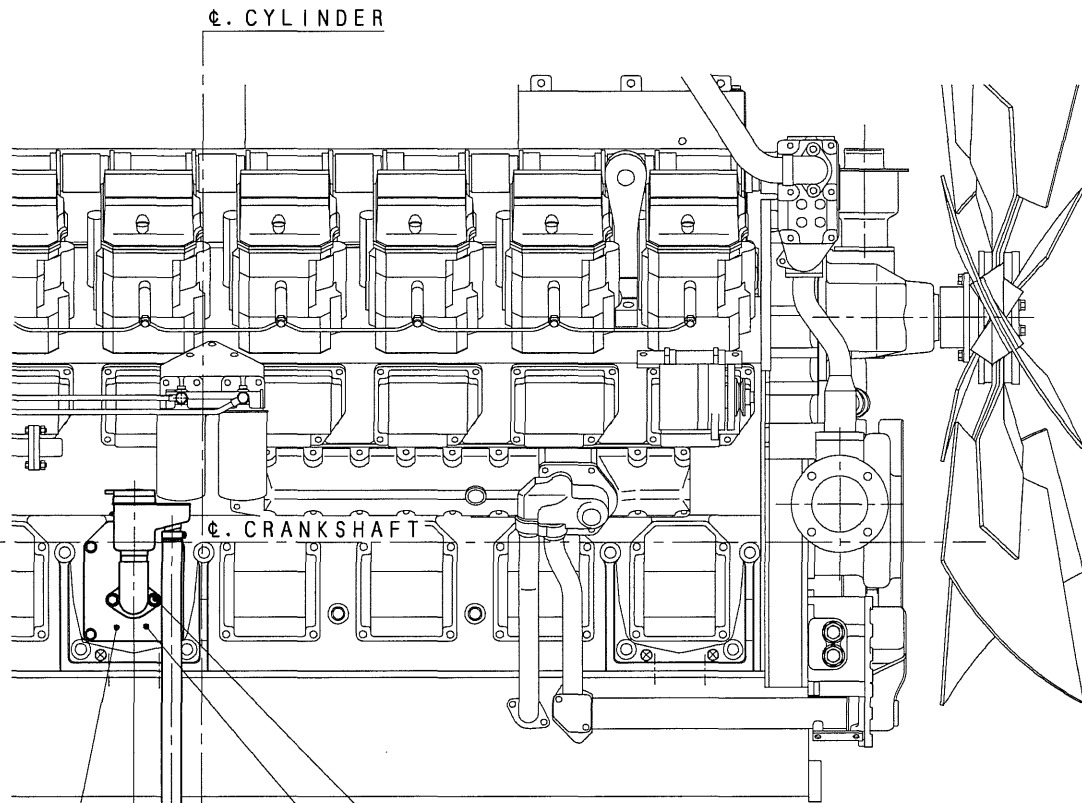
CHG	EO-NO	DATE	CHK
認可 APPD	橋	換図 CHK	中 谷 村 戸
製図 DRN		音 藤	
2010. 6. 7			

S16R  
 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. 37896-43012 1/2

出図  
 汎特  
 2010  
 6.11

FULL-CAD

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



22	F1805-12030	BOLT WASHER ASSY	4
21	37707-17200	PACKING, SIDE COVER	1
20	37807-07300	COVER, SIDE BREATHER	1
19	35B36-02900	GASKET, OIL	2
18	F2515-12000	WASHER, SPRING	2
17	F1035-12030	BOLT	2
16	32542-11300	ELEMENT, BREATHER	1
15	37543-10020	BREATHER ASSY.	1
No.	PARTS NO.	PARTS NAME	Q'TY

出図  
  
 汎特  
 2010  
 6.11

FULL-CAD

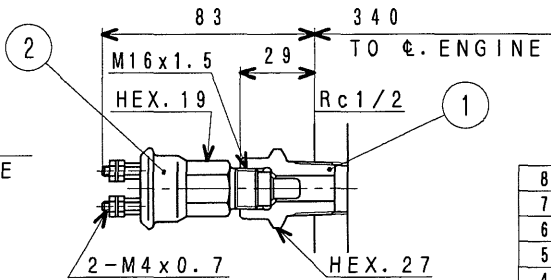
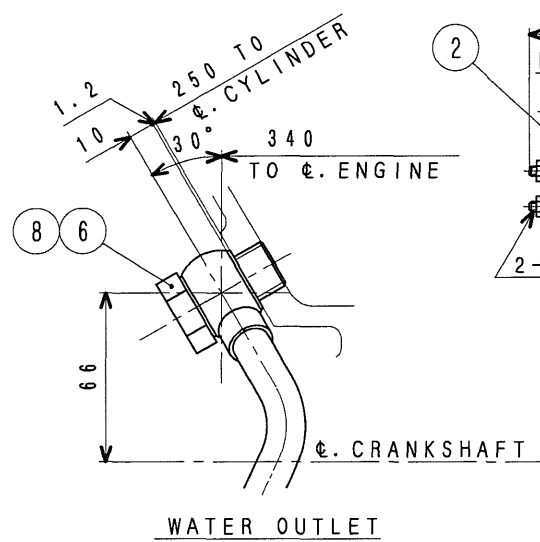
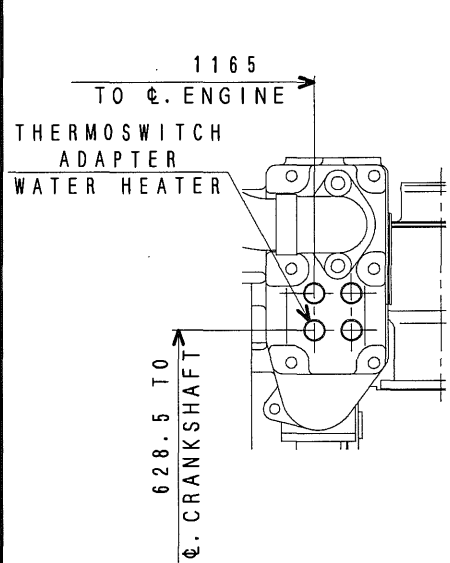
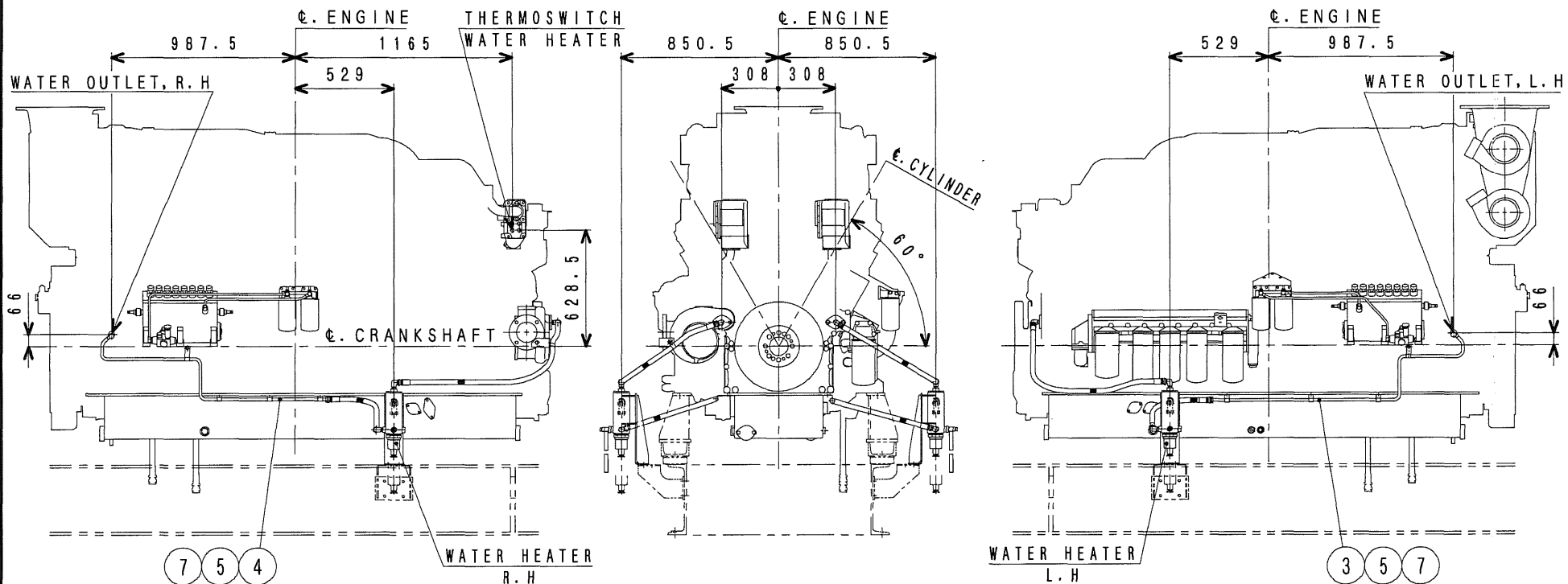
MHI CONFIDENTIAL

DETAIL OF BREATHER

CHG	ED-NO	DATE	CHK
認可 APPD	橋	検図 CHK	中 谷 村 戸
製図 DRN		齋 藤	
2010. 6. 7			

S16R  
 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 37896-43012 2/2

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



No.	PARTS NO.	PARTS NAME	Q' TY
8	05946-02001	WASHER, SEALING	4
7	F2515-12000	WASHER	2
6	F4610-20000	BOLT, EYE	2
5	F1035-12060	BOLT	2
4	47520-65402	PIPE, WATER	1
3	47520-65500	PIPE, WATER	1
2	04442-30210	SWITCH, THERMO 42COFF	1
1	45600-42902	CONNECTOR	1

THERMOSWITCH  
MHI CONFIDENTIAL

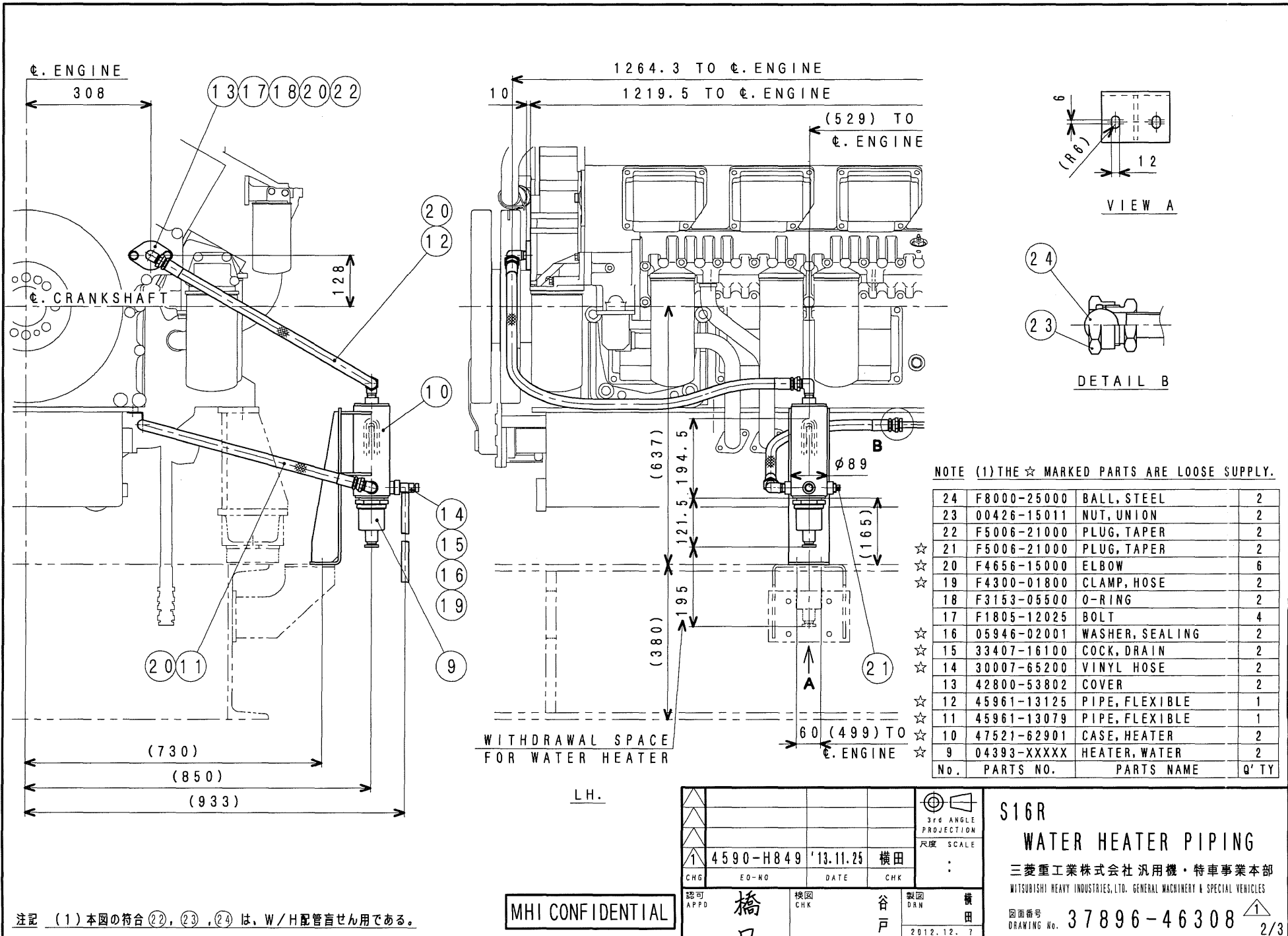
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CHG	ED-NO	DATE	CHK
認可 APPD	橋	横田	谷戸
製図 DRN	横田	2012.12.7	

S16R  
WATER HEATER 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 VEHICLES  
図面番号 DRAWING No. 37896-46308 1/3

旧引  
汎特  
2013  
12.16

M/C

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



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

No.	PARTS NO.	PARTS NAME	Q'TY
24	F8000-25000	BALL, STEEL	2
23	00426-15011	NUT, UNION	2
22	F5006-21000	PLUG, TAPER	2
☆ 21	F5006-21000	PLUG, TAPER	2
☆ 20	F4656-15000	ELBOW	6
☆ 19	F4300-01800	CLAMP, HOSE	2
18	F3153-05500	O-RING	2
17	F1805-12025	BOLT	4
☆ 16	05946-02001	WASHER, SEALING	2
☆ 15	33407-16100	COCK, DRAIN	2
☆ 14	30007-65200	VINYL HOSE	2
☆ 13	42800-53802	COVER	2
☆ 12	45961-13125	PIPE, FLEXIBLE	1
☆ 11	45961-13079	PIPE, FLEXIBLE	1
☆ 10	47521-62901	CASE, HEATER	2
☆ 9	04393-XXXXX	HEATER, WATER	2

注記 (1) 本図の符合(2), (23), (24) は、W/H配管直せん用である。

MHI CONFIDENTIAL

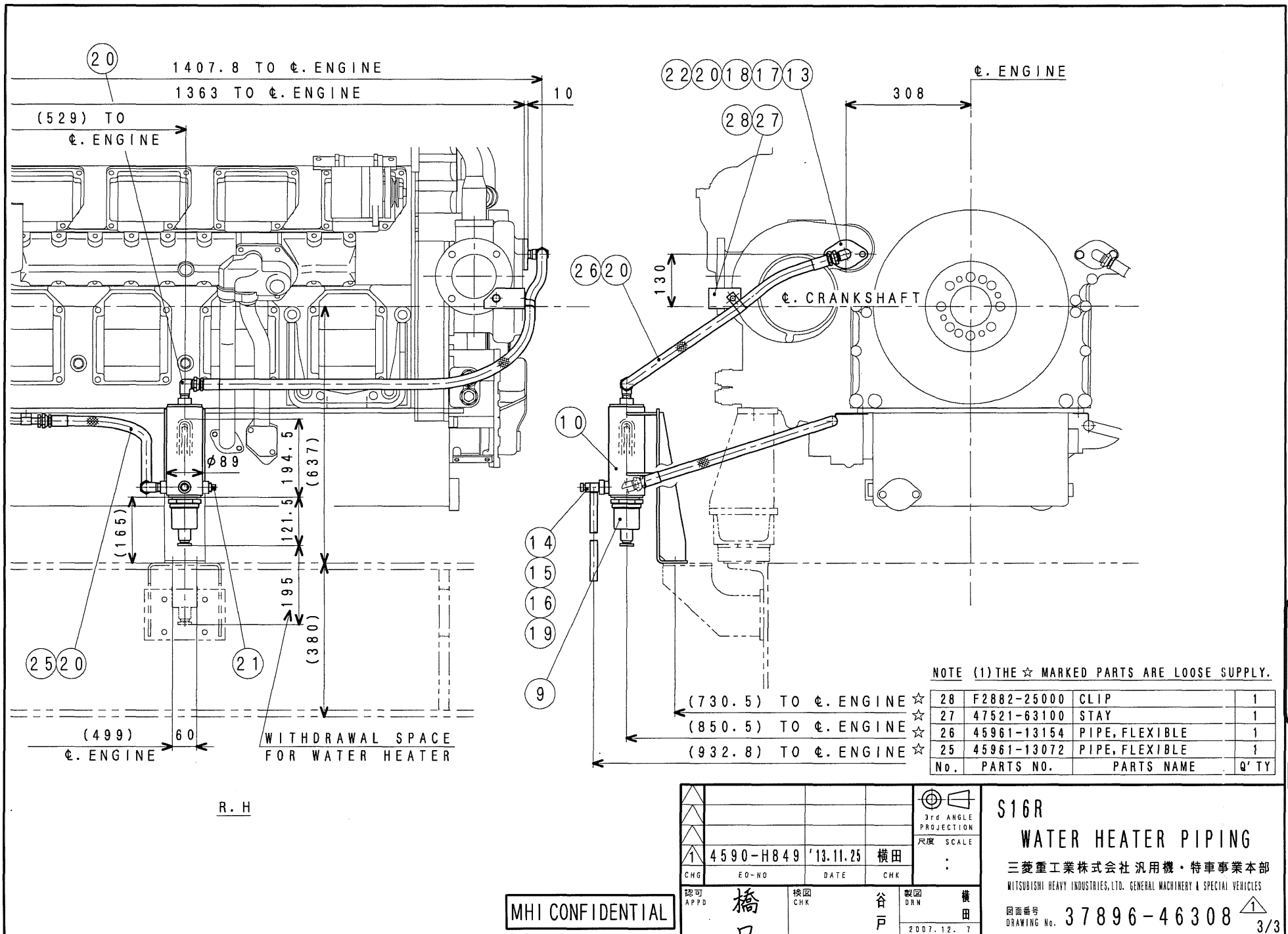
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CHG	EO-NO	DATE	CHK
認可 APPD	橋	換図 CHK	谷 戸
製図 DRN	横 田	2012.12.7	

S16R  
**WATER HEATER 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 VEHICLES  
 図面番号 **37896-46308** 2/3

旧引  
 汎特  
 2013  
 12.16

M/C

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



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

No.	PARTS NO.	PARTS NAME	Q'TY
28	F2882-25000	CLIP	1
27	47521-63100	STAY	1
26	45961-13154	PIPE, FLEXIBLE	1
25	45961-13072	PIPE, FLEXIBLE	1

旧引  
  
 汎特  
 2013  
 12.16

M/C

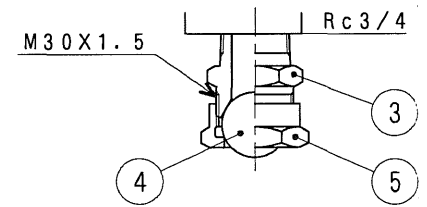
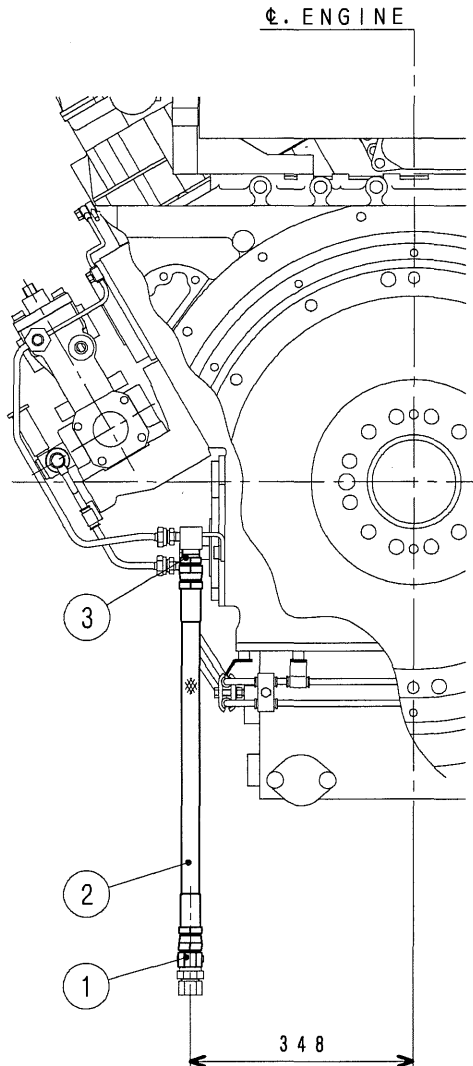
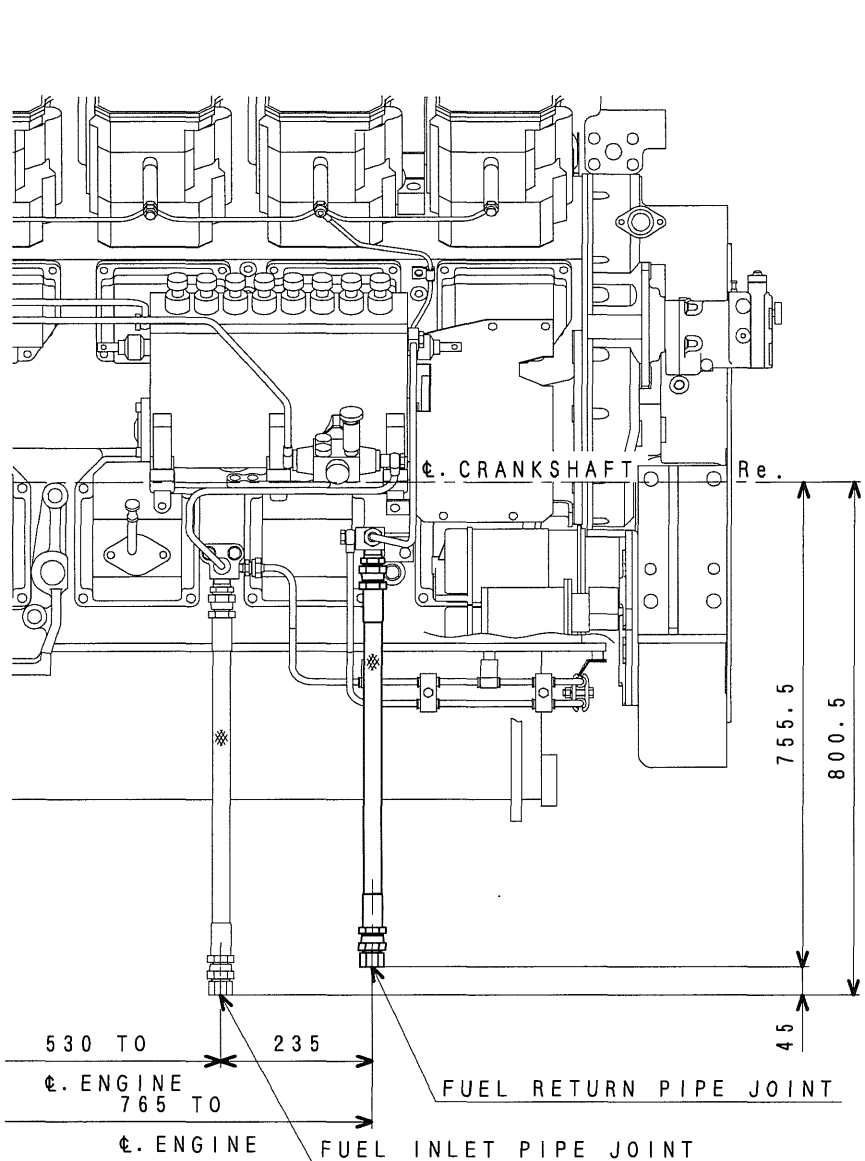
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CHG	ED-NO	DATE	CHK
認可 APPD	橋	換圖 CHK	谷 戸
製造 DRN		横 田	
2007.12.7			

S16R  
 WATER HEATER 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 VEHICLES  
 図面番号 37896-46308 3/3

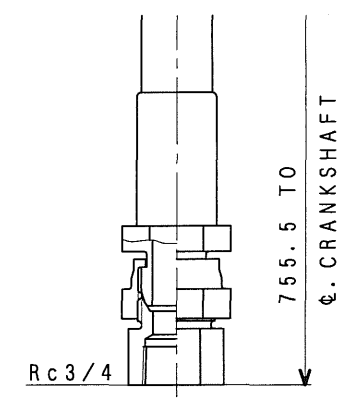
MHI CONFIDENTIAL

3 折図 サイズ  
 ② 旧引図 A 3 ① 組立図 2 鋼線継手品 3 板金溶接品 4 組立品  
 5 切削品 6 その他(購入品)





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

L. H.

**MHI CONFIDENTIAL**

(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)  
 注記 (1) 本図は、図番 37896-61305 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。

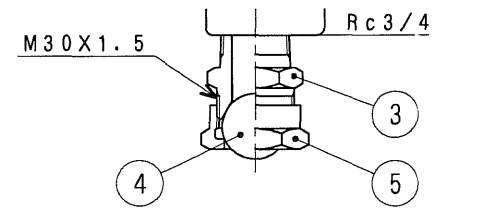
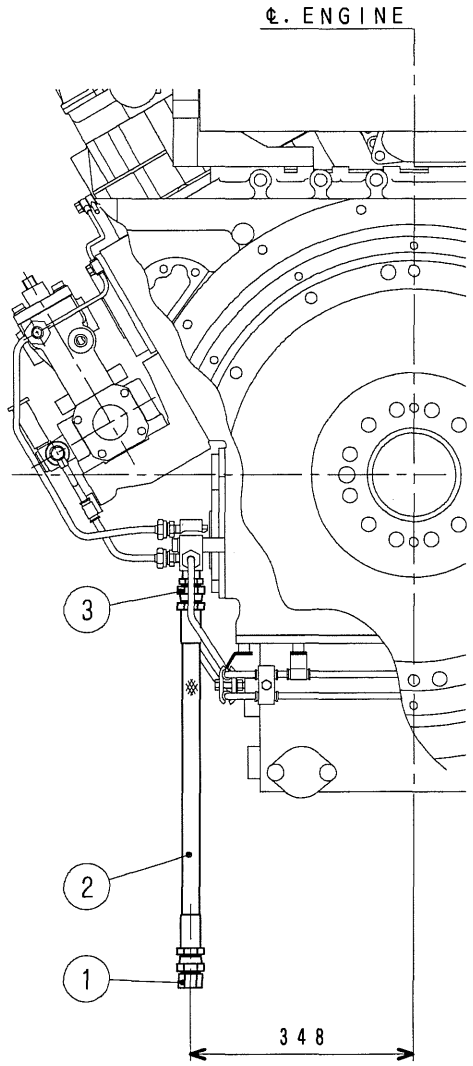
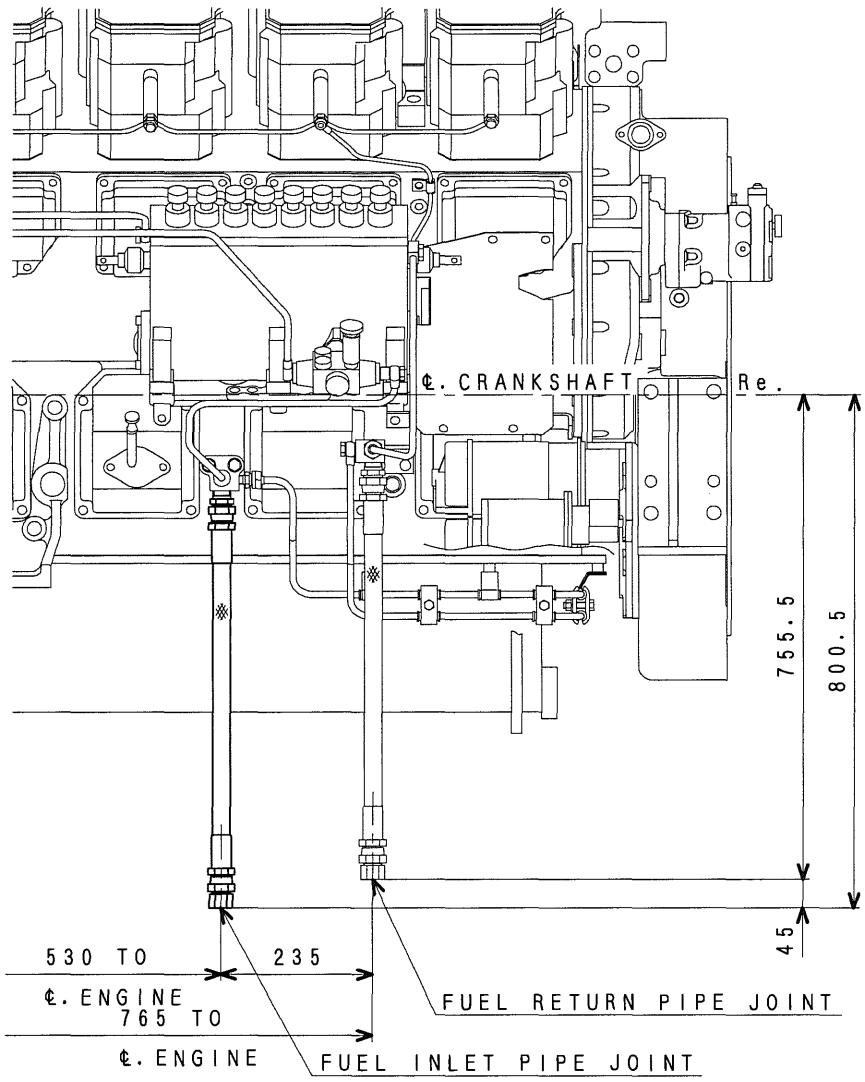
CHG	EQ-NO	DATE	CHK
認可 APPD	橋	検図 CHK	三谷 上戸
製図 DRN		浅沼	
2008.12.10			

**S16R**  
**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  
 DRAWING No. **37896-61312**

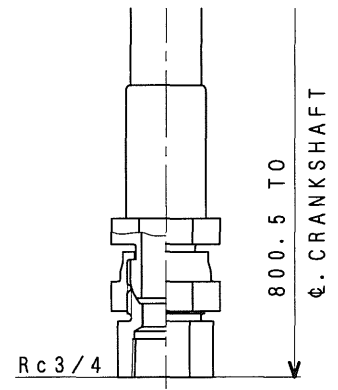
**出図**  
**汎特**  
 2008  
 12.12

FULL-CAD

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



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37896-62101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 (4)(5) は、燃料入口盲栓である。(エンジン出荷状態)

CHG	EQ-NO	DATE	CHK
認可 APPD	橋口	検図 CHK	三谷 上戸
製図 DRN		浅沼	
2008.12.10			

**S16R**  
**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  
 DRAWING No. **37896-62112**

**出図**  
 汎特  
 2008  
 12.12

FULL-CAD

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

1316.5 TO  $\phi$ . ENGINE  
 1296.5 TO  $\phi$ . ENGINE  
 1179.5 TO  $\phi$ . ENGINE  
 817.5 TO  $\phi$ . ENGINE

STOP FULL  
 56 20.4

945.5 TO  $\phi$ . ENGINE

1181 TO  $\phi$ . ENGINE  
 1187 TO  $\phi$ . ENGINE  
 1356 TO  $\phi$ . ENGINE

注記 (2) 整定周波数範囲: 3575~5790Hz、エンジン回転数: 1500/1800rpm共用  
 (1) 本図は、SG4017BR電子ガバナコントロールボックス(ユニット)仕様である。

2132334243

204549

343749  
 113233

194549

224243

174549

1332333749

4

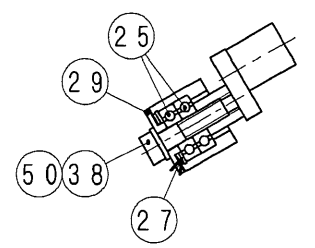
174549

94151

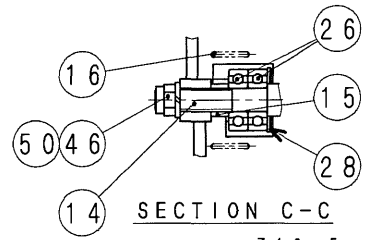
10

183233  
 424549

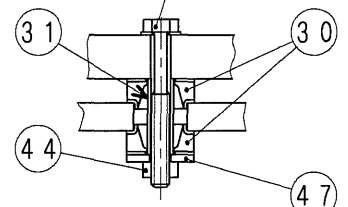
174549



SECTION B-B



SECTION C-C



SECTION A-A

710.5  
 86 624.5

286  
 145  
 141

MHI CONFIDENTIAL

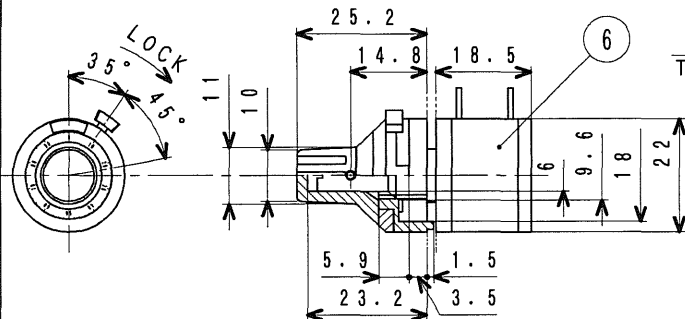
旧引  
 汎特  
 2011  
 12.12

FULL-CAD

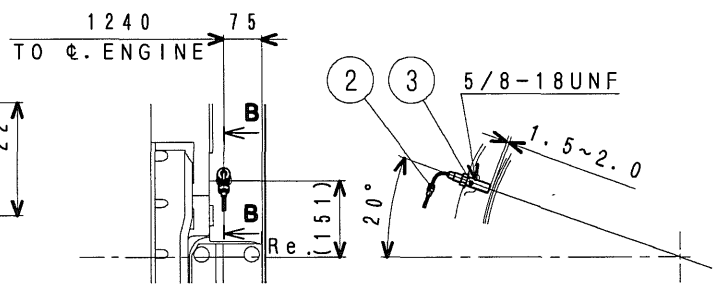
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1	4590-4983	'99. 2.25	福田	
CHG	EO-NO	DATE	CHK	
認可 APPRO	橋	検図 CHK	竹 福 製図 DRN 谷 銅	
			谷 戸 島	
			1998. 3. 9	

S16R  
 GOVERNOR  
 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 37896-63005 1/2

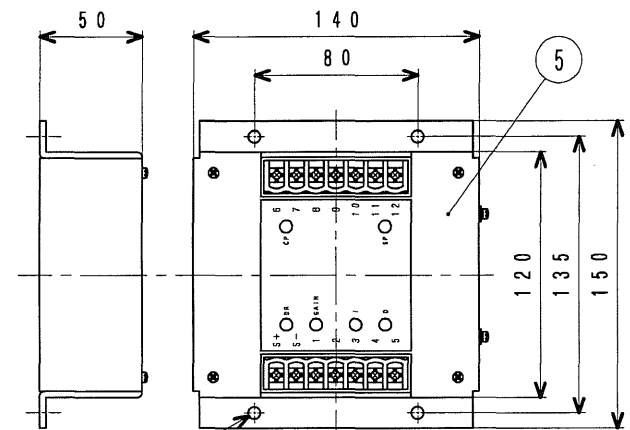
3 新図 サイズ A 3  
 1 旧引図  
 2 銅線図  
 3 板金溶接品  
 4 組立品  
 5 切削品  
 6 その他(購入品)



POTENTIOMETER



DETAIL OF PICK UP SECTION A-A

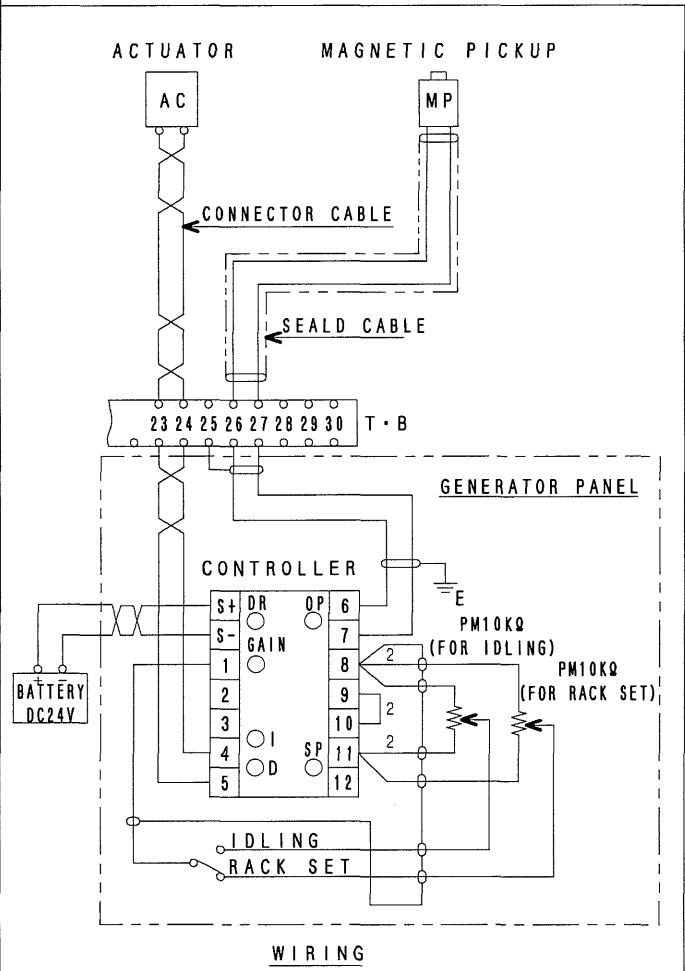


CONTROLLER

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

No.	PARTS NO.	PARTS NAME	Q'TY
51	F2515-12000	WASHER, SPRING	6
50	F2515-10000	WASHER, SPRING	2
49	F2515-08000	WASHER, SPRING	9
48	F2515-06000	WASHER, SPRING	4
47	08302-06000	WASHER	4
46	F2445-10000	NUT, SELF LOCKING	1
45	F2300-08000	NUT	6

44	F2300-06000	NUT	4
43	09413-00800	NUT, LOCK	2
42	33063-11400	NUT	3
41	F1035-12065	BOLT	2
40	F1035-12035	BOLT	3
39	F1035-12025	BOLT	1
38	F1035-10040	BOLT	1
37	F1115-08025	BOLT	2
36	F1035-08020	BOLT	1
35	F1035-06050	BOLT	4
34	F2846-06000	PIN, DOWEL	1
33	48000-96600	SEAL	5
32	34461-07700	WIRE, SEAL	5
31	47500-34200	SPACER	4
30	47500-34100	RUBBER	8
29	32561-18300	PLATE, END	1
28	F3202-03200	RING, SNAP	1
27	F3202-03000	RING, SNAP	1
26	F8007-06201	BEARING, BALL	2
25	F8007-06200	BEARING, BALL	2
24	45940-30101	PLATE, CAUTION	1
23	51776-03000	GRIP	1
22	05902-08060	ROD	1
21	05903-00100	ROD	1
20	37761-26800	LINK, L. H.	1
19	35A61-38701	JOINT, BALL (M8-L)	1
18	37563-15401	JOINT, BALL MALE	1
17	35A61-38601	JOINT, BALL (M8-R)	3
16	32561-48600	SPRING	1
15	91365-03200	SPACER	1
14	37761-27100	SHAFT, CONTROL	1
13	47520-31200	LEVER	1
12	47520-34400	LEVER, L. H., B	1
11	37761-37200	LEVER, L. H., A	1
10	37761-27800	LEVER, LINK, L. H	1
9	37761-07600	BRACKET, LEVER, L. H	1
8	47500-39901	COVER	1
7	47520-31101	BRACKET, ACTUATOR	1
☆ 6	04410-33700	POTENTIOMETER	2
☆ 5	04410-33100	CONTROLLER	1
☆ 4	04410-32902	CONNECTOR	1
3	04410-43410	PICK UP	1
☆ 2	04410-43500	CONNECTOR	1
1	04410-32011	ACTUATOR	1



WIRING

MHI CONFIDENTIAL

3rd ANGLE PROJECTION  
尺度 SCALE

2	4590-G659	'11. 3.28	齊藤
1	4590-4983	'99. 2.25	福田

CHG EO-NO DATE CHK

認可 APPD 橋 核図 CHK 竹谷 福田 製図 DRN 谷銷 戸島

1998. 3. 9

S16R

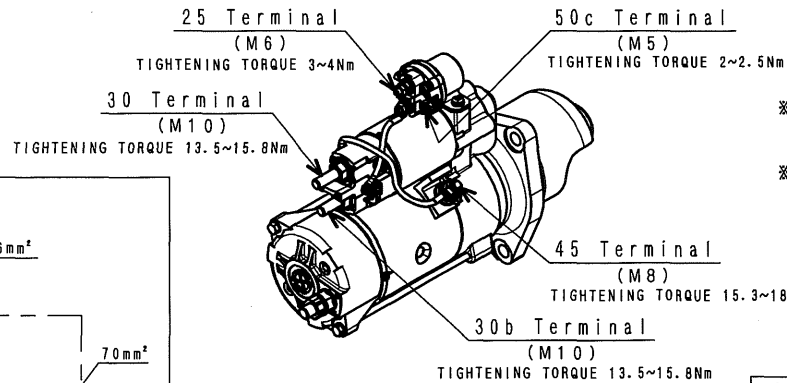
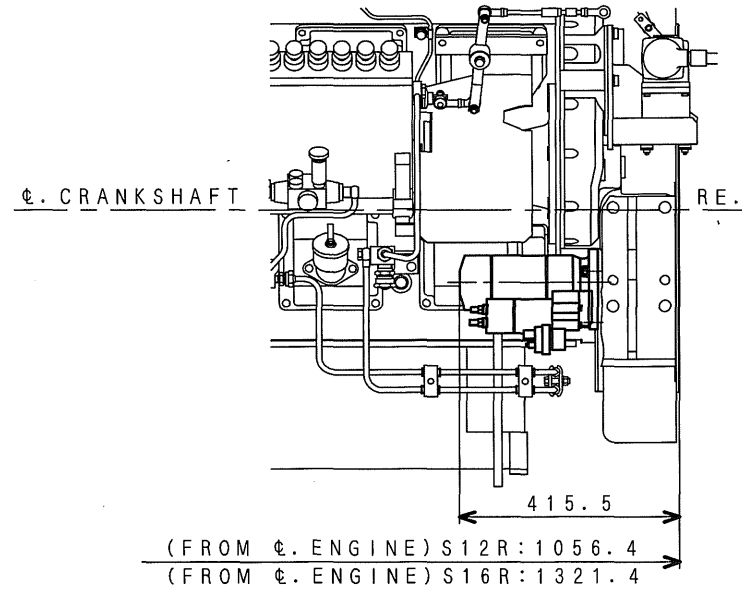
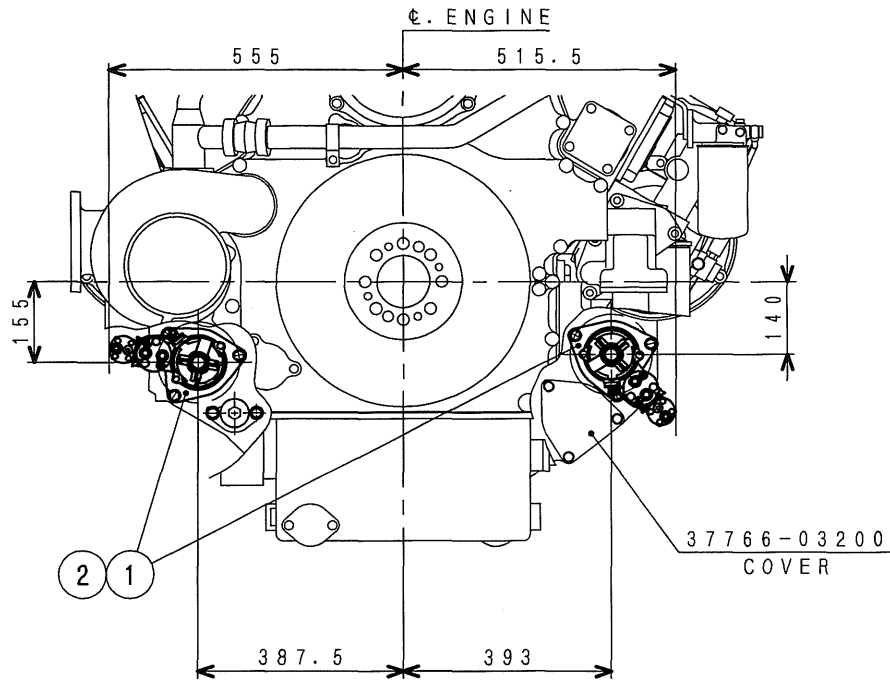
GOVERNOR

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. 37896-63005

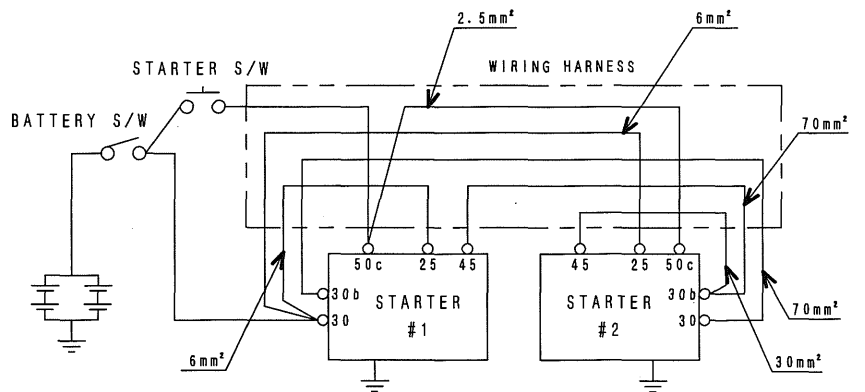
旧引 汎特 2011 12.12

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

S12R, S16R  
STARTING MOTOR

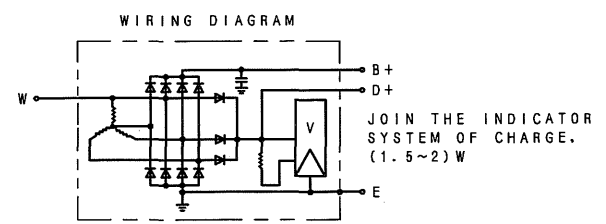
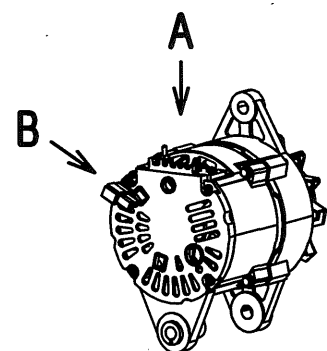
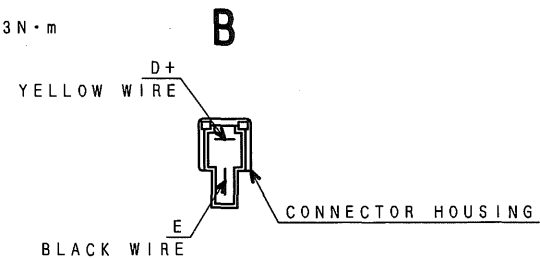
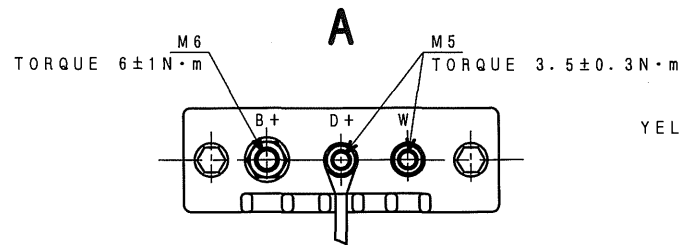
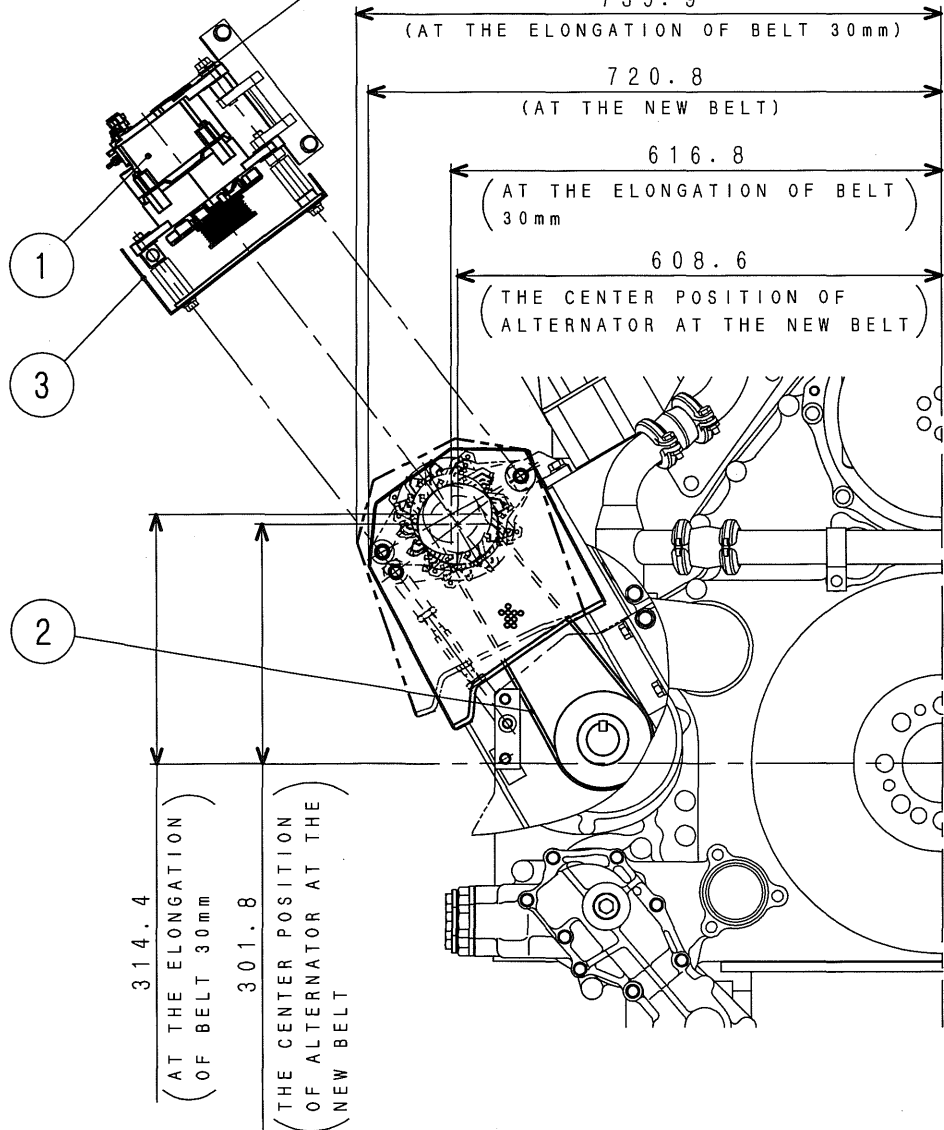
三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号  
DRAWING No. 38E96-66051

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

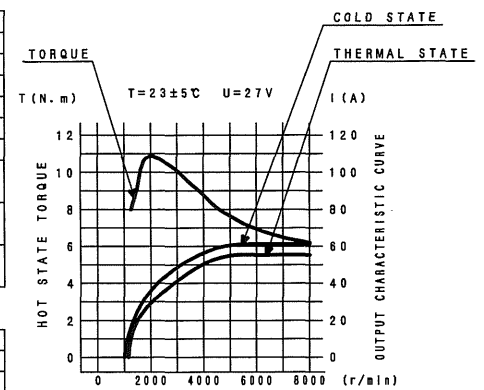
M/C

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	I≥25A	I≥20A
27	2500	I≥40A	I≥35A
27	5000	I≥62A	I≥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**

承認 APPD	ED-NO	DATE	CHK
橋口			
検図 CHK	T. HASEGAWA		製図 DRN
	K. SAKAMOTO		N. YAMAGUCHI
	2016. 3. 25		

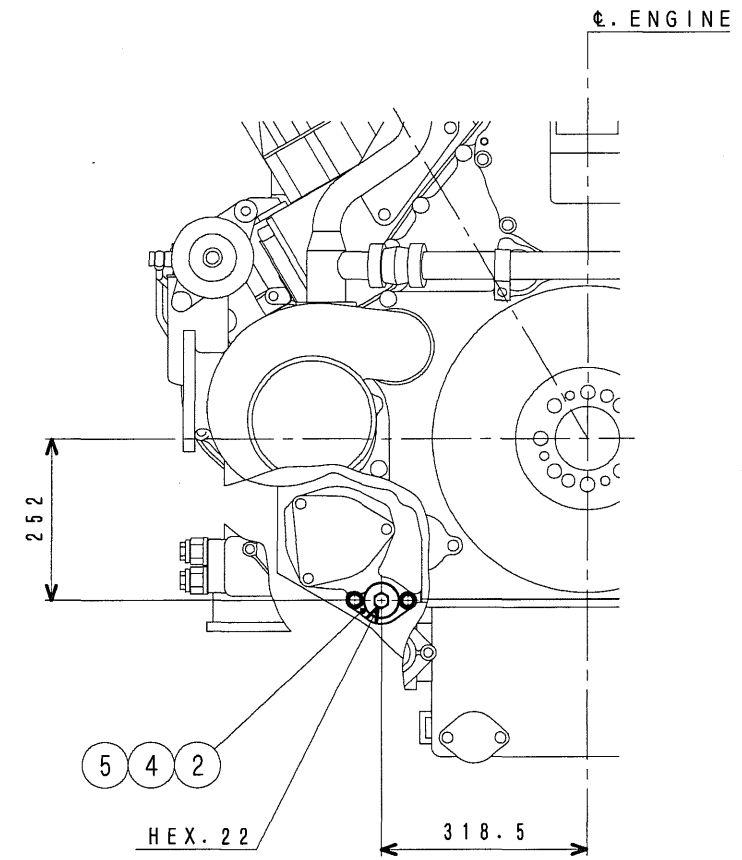
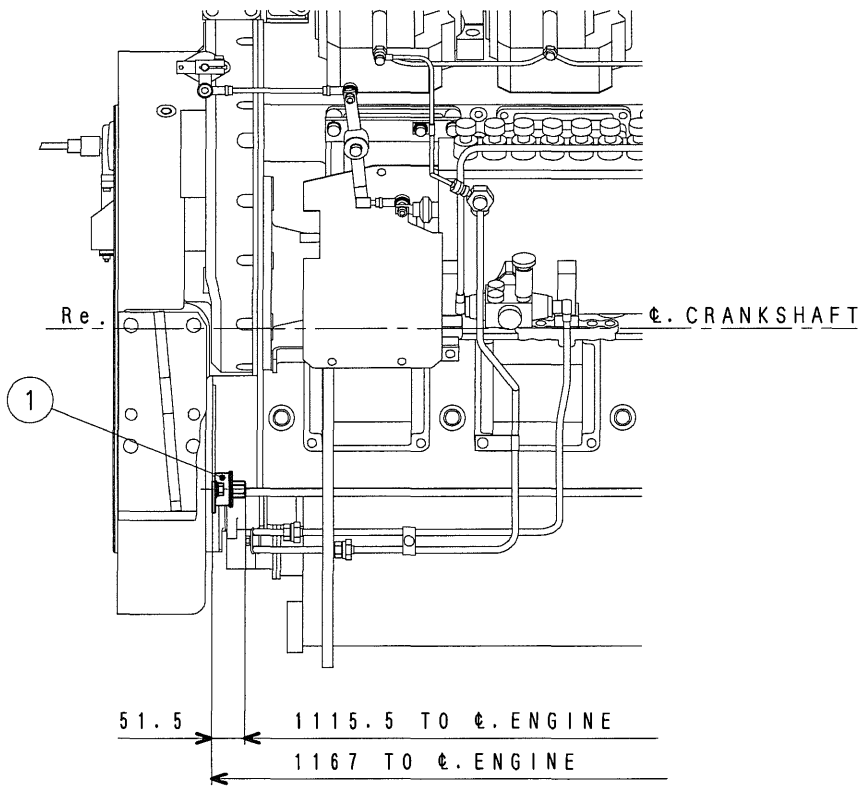
S12R, S16R  
DYNAMO

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

図面番号  
DRAWING No. 38E96-68051

①新図 ②サイズ ③組立図 ④製鋼標準品 ⑤板金溶接品 ⑥組立品  
⑦旧引図 ⑧A ⑨5 ⑩切削品 ⑪その他(購入品)

M/C



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

No.	PARTS NO.	PARTS NAME	Q' TY
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

MHI CONFIDENTIAL

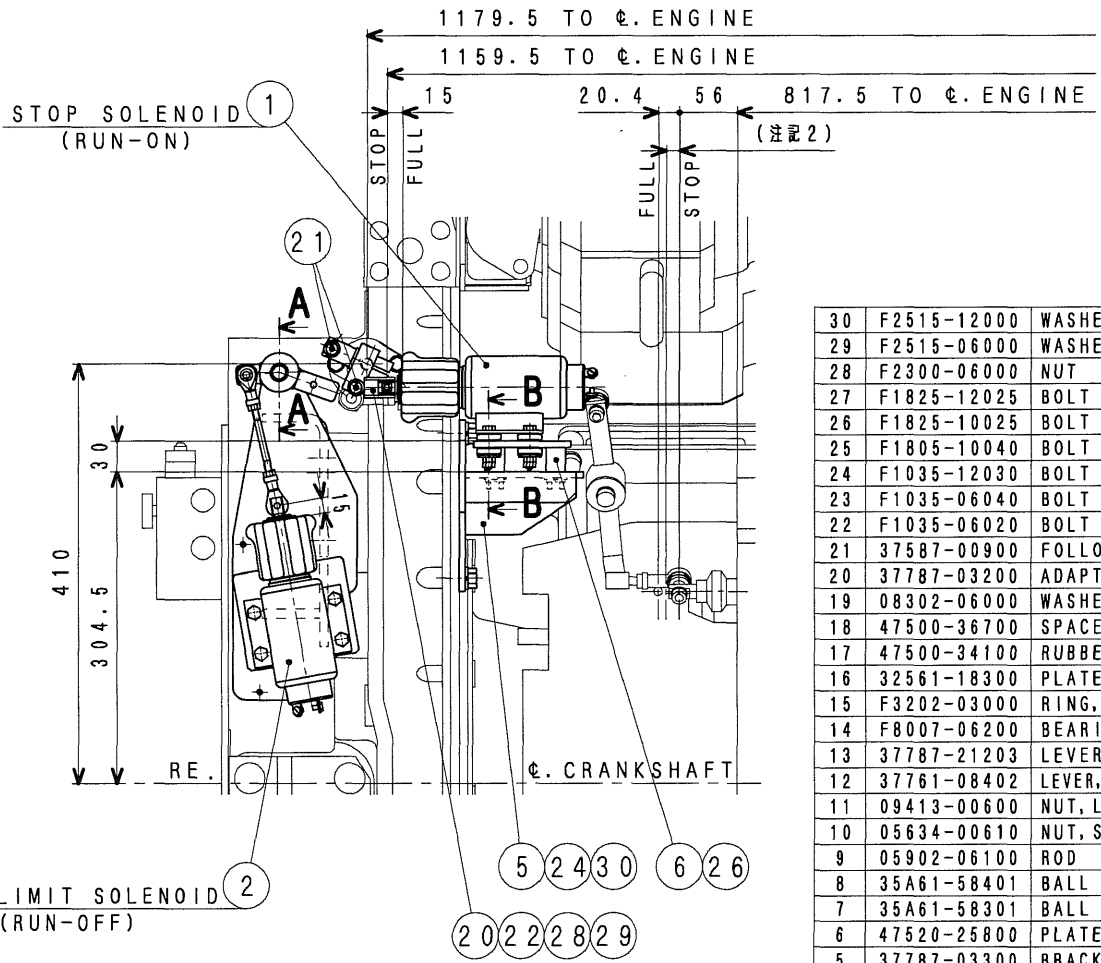
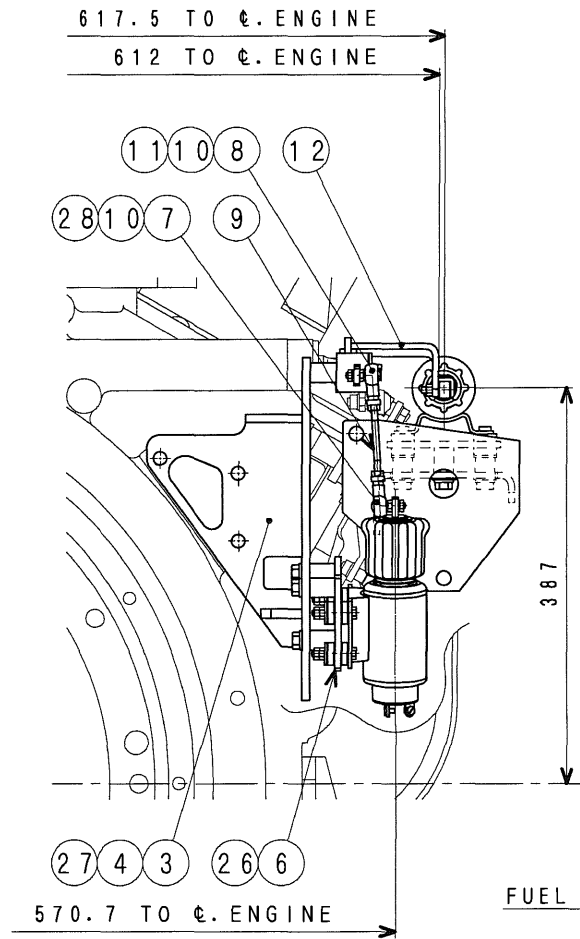
△				
△				
△	4590-G661	'11. 3.29	齊藤	
CHG	ED-NO	DATE	CHK	
認可 APPD	橋	検図 CHK	竹 福 谷 田	製図 ORN
				谷 戸 1397. B. B

S16R  
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 37896-71001

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

旧引  
汎特  
2011  
12.12

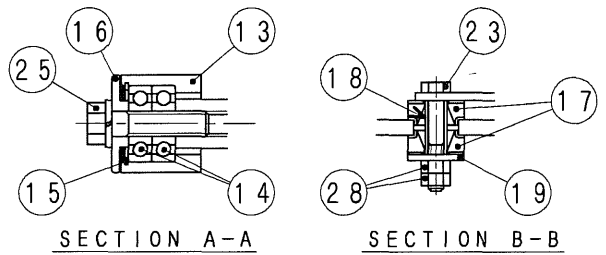
FULL-CAD



30	F2515-12000	WASHER, SPRING	2
29	F2515-06000	WASHER, SPRING	1
28	F2300-06000	NUT	18
27	F1825-12025	BOLT	3
26	F1825-10025	BOLT	6
25	F1805-10040	BOLT	1
24	F1035-12030	BOLT	2
23	F1035-06040	BOLT	8
22	F1035-06020	BOLT	1
21	37587-00900	FOLLOWER	2
20	37787-03200	ADAPTER	1
19	08302-06000	WASHER	8
18	47500-36700	SPACER	8
17	47500-34100	RUBBER, CUSHION	16
16	32561-18300	PLATE, END	1
15	F3202-03000	RING, SNAP	1
14	F8007-06200	BEARING, BALL	2
13	37787-21203	LEVER, STOP RUN-OFF	1
12	37761-08402	LEVER, R.H., RACK CONT.	1
11	09413-00600	NUT, LOCK	1
10	05634-00610	NUT, SELF LOCKING	2
9	05902-06100	ROD	1
8	35A61-58401	BALL JOINT (M6-L)	1
7	35A61-58301	BALL JOINT (M6-R)	1
6	47520-25800	PLATE, SOLENOID	2
5	37787-03300	BRACKET, SOLENOID	1
4	37711-13200	PACKING	1
3	37787-01501	BRACKET, SOLENOID	1
2	04400-08901	SOLENOID (RUN-OFF)	1
1	04400-08801	SOLENOID (RUN-ON)	1
No.	PARTS NO.	PARTS NAME	Q'TY

<表1>

機種	ラック制限値	
	50Hz	60Hz
S16R-PTA2, PTK2	-	13mm
S16R-PTAA2	13mm	13mm



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3	4590-H675	'13. 8.20	谷戸
2	4590-H436	'12.11.30	谷戸
1	4590-F689	'09. 8.25	齊藤
CHG	EO-NO	DATE	CHK
認可 APPD	橋	校図 CHK	小 中 谷 倉 村 戸
			製図 DRN
			村田
1999. 3.16			

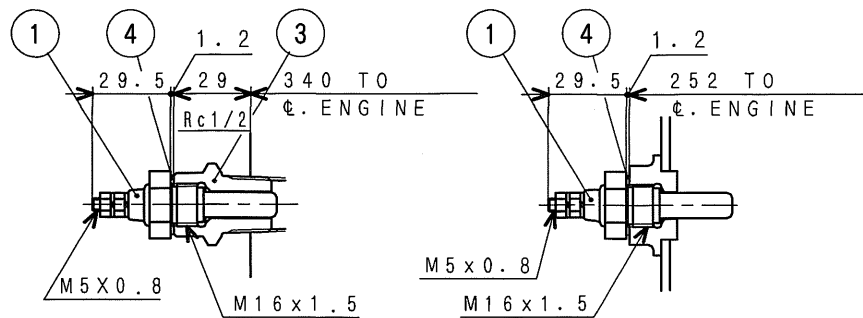
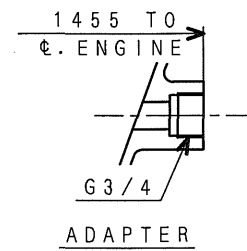
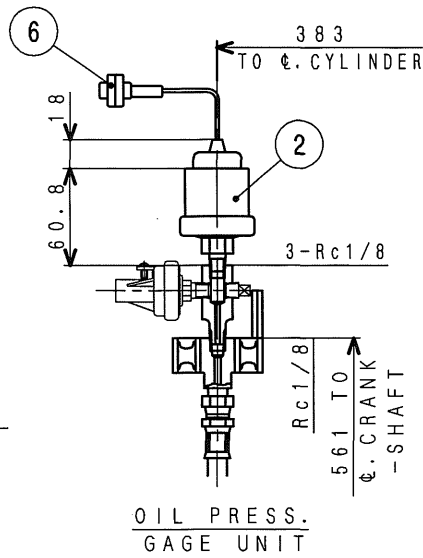
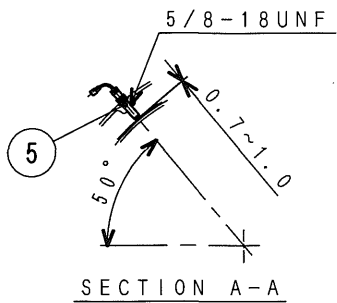
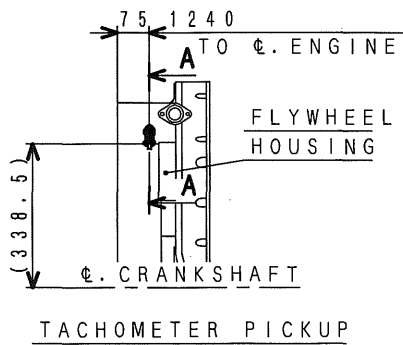
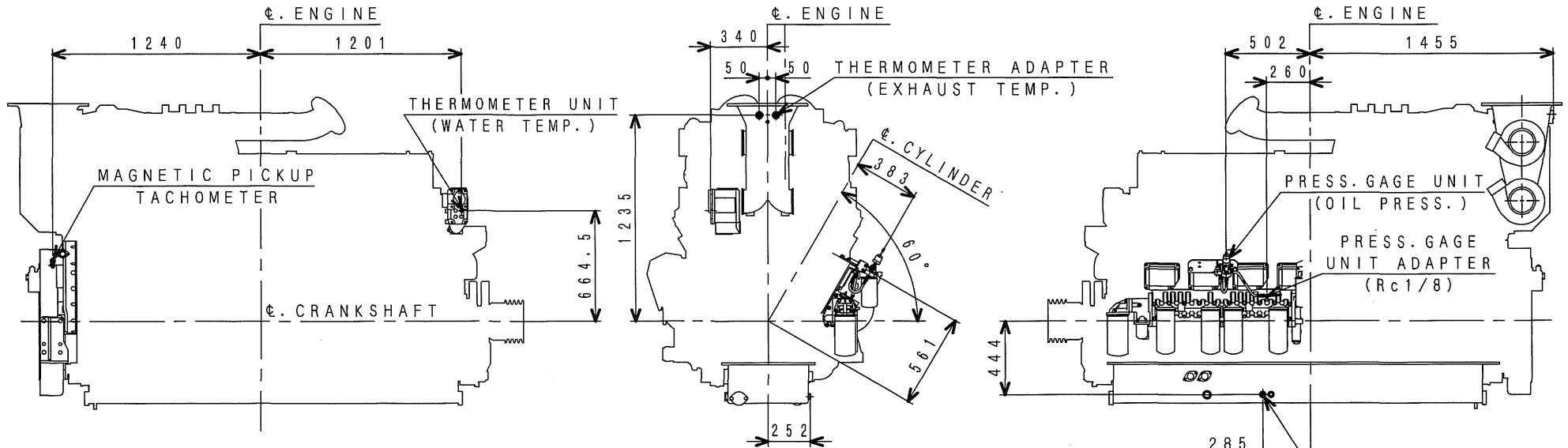
S16R-2  
STOP & FUEL LIMIT SOLENOID  
三菱重工業株式会社 汎用機・特車事業本部  
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLES.  
図面番号  
DRAWING No. 37896-87503

(2) 始動時、ラック制限値(表1参照方)は両ソレノイド電源ON状態である。  
注記 (1) 本図は、ストップソレノイド (RUN-ON) 及び、始動性容易化用ラックリミッターソレノイド (RUN-OFF) 装着図である。

旧引  
況特  
2013  
9.12

M/C





**MHI CONFIDENTIAL**

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

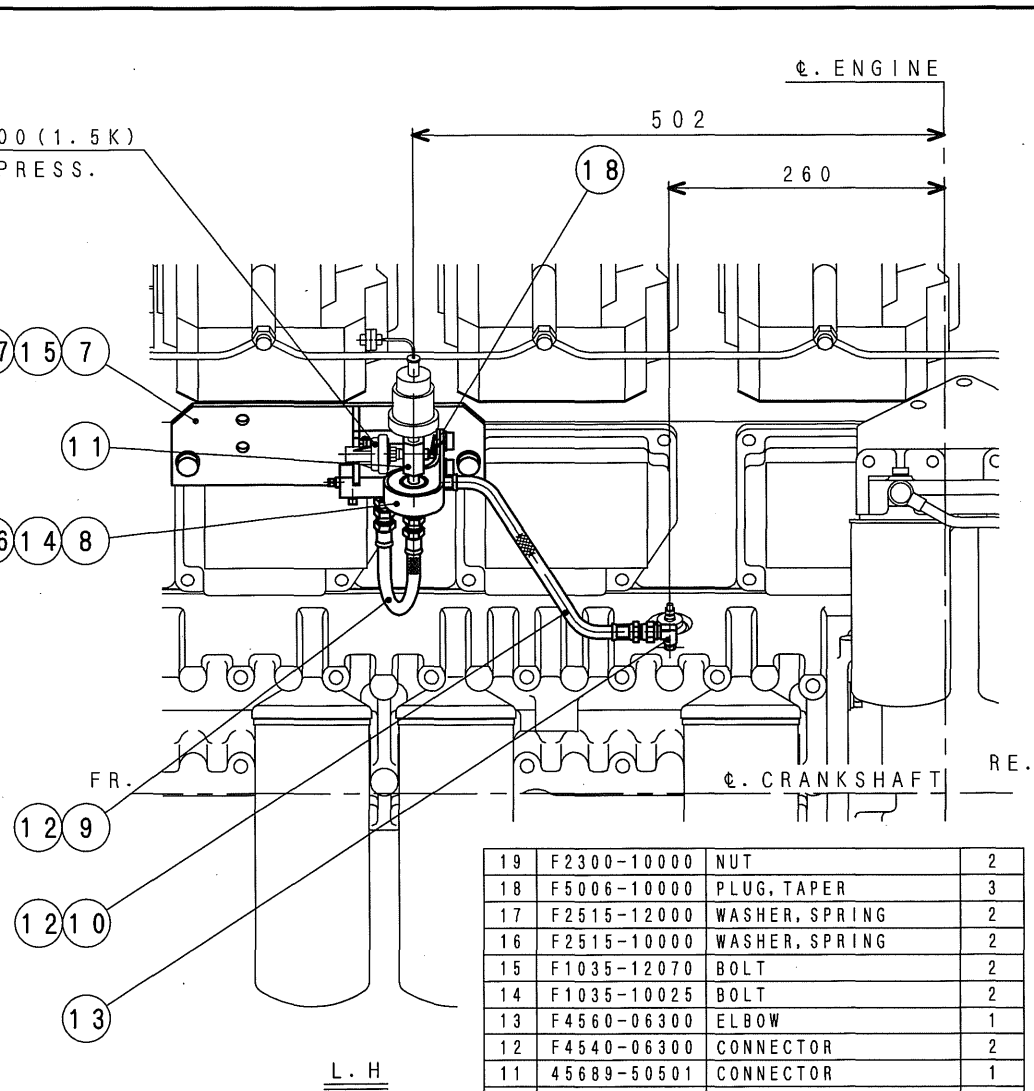
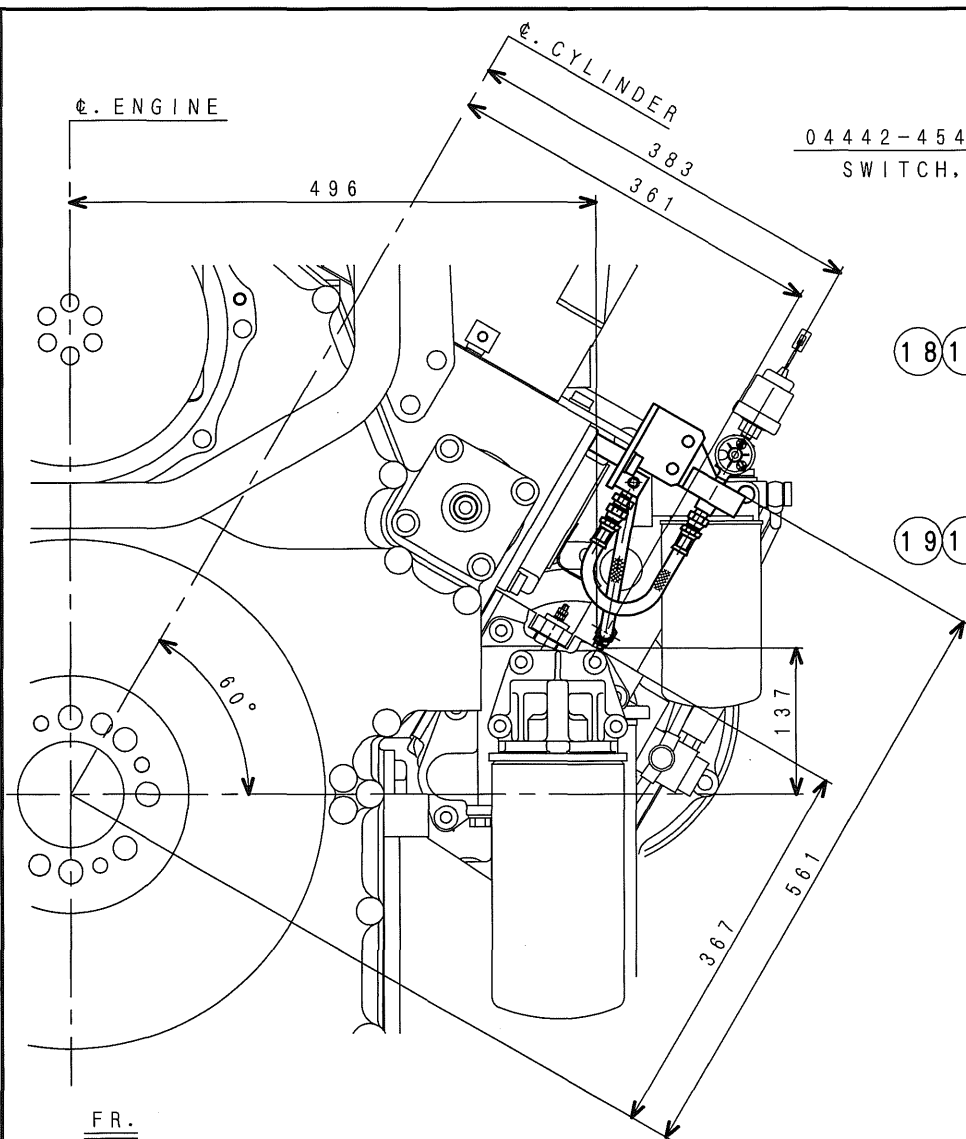
☆	No.	PARTS NO.	PARTS NAME	Q'TY
	6	MH052-231	CONNECTOR	1
	5	04410-43410	PICKUP, MAGNETIC	1
	4	05946-01601	WASHER SEALING	2
	3	45600-42902	CONNECTOR	1
	2	04541-86200	UNIT, GAGE	1
	1	04524-02230	UNIT, THERMO	2

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

**S16R-PTAA2**  
**METER & SENSOR**  
 三菱重工業株式会社  
 WITSUBISHI HEAVY INDUSTRIES, LTD.  
 図面番号 38F96-90153  
 DRAWING No. 1/2

①新図 ②サイズ A 3 ③相立図 ④旧引図 ⑤購買標準品 ⑥切削品 ⑦钣金消挿品 ⑧組立品 ⑨その他(購入品)

M/C



19	F2300-10000	NUT	2
18	F5006-10000	PLUG, TAPER	3
17	F2515-12000	WASHER, SPRING	2
16	F2515-10000	WASHER, SPRING	2
15	F1035-12070	BOLT	2
14	F1035-10025	BOLT	2
13	F4560-06300	ELBOW	1
12	F4540-06300	CONNECTOR	2
11	45689-50501	CONNECTOR	1
10	45951-04028	PIPE, FLEXIBLE	1
9	45951-04024	PIPE, FLEXIBLE	1
8	45644-47900	MOUNT	1
7	47520-40702	BRACKET	1
No.	PARTS NO.	PARTS NAME	Q'TY

MHI CONFIDENTIAL

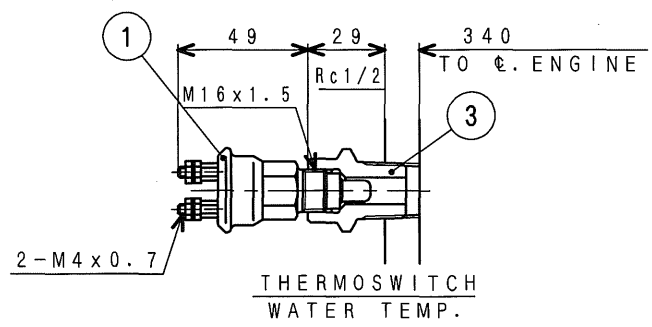
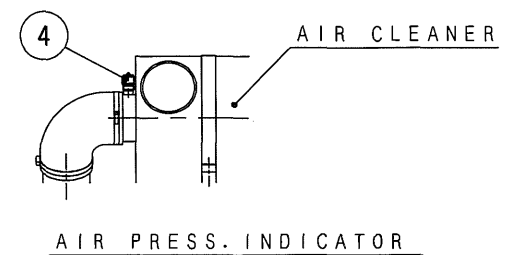
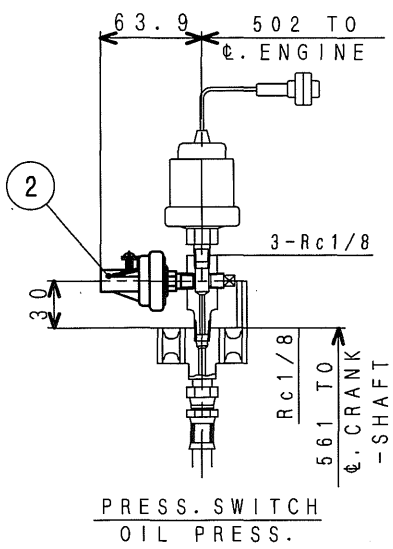
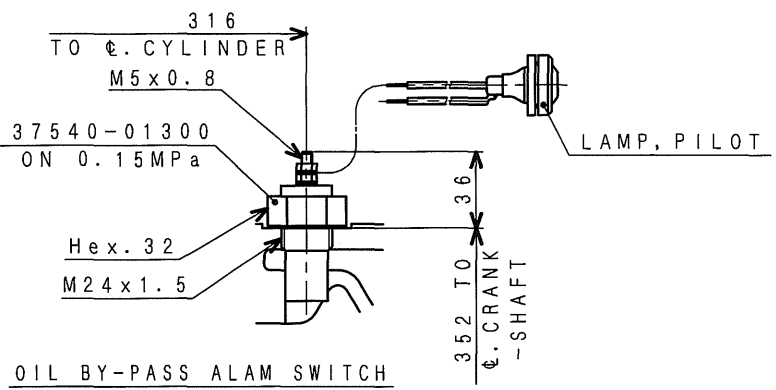
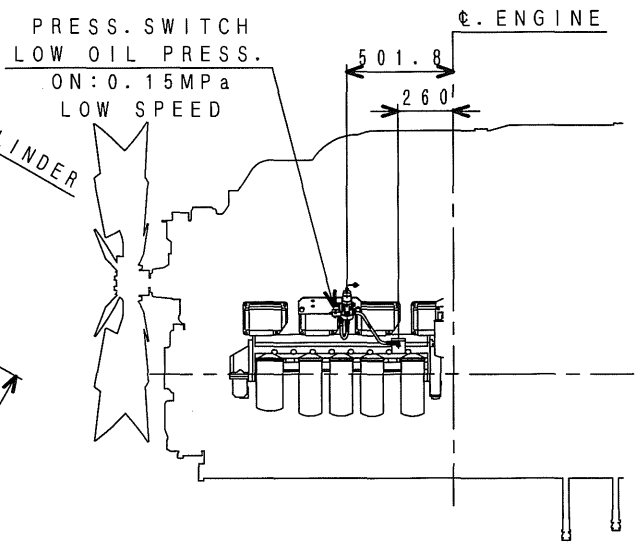
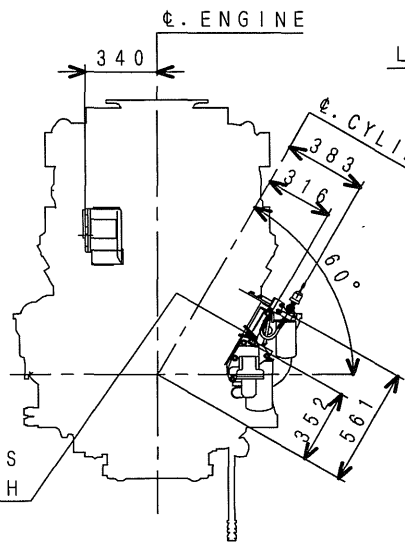
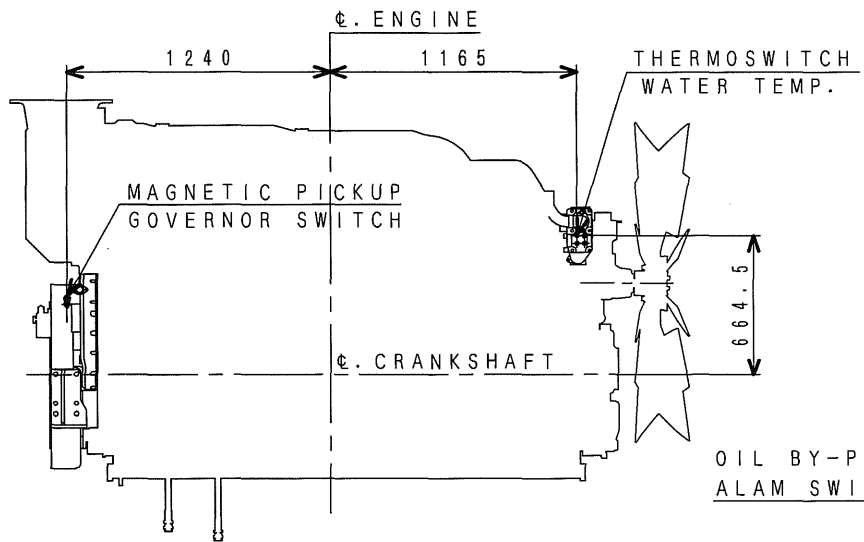
CHG	EO-NO	DATE	CHK	 3rd ANGLE PROJECTION 尺度 SCALE
認可 APPD	換図 CHK	製図 DRN		
橋口	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI	2016. 3. 25	

S16R-PTAA2  
METER & SENSOR  
三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号 38F96-90153  
DRAWING No. 38F96-90153

① 新図 ② 旧引図 ③ 組立図 ④ 部品表 ⑤ 寸法表 ⑥ 公差表 ⑦ 材料表 ⑧ 検査表 ⑨ 工程表 ⑩ 其他 (購入品)

W/C



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

No.	PARTS NO.	PARTS NAME	Q'TY
☆ 4	(INCLUDED IN A/C)	(INDICATOR) 6.2kPa 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

MHI CONFIDENTIAL

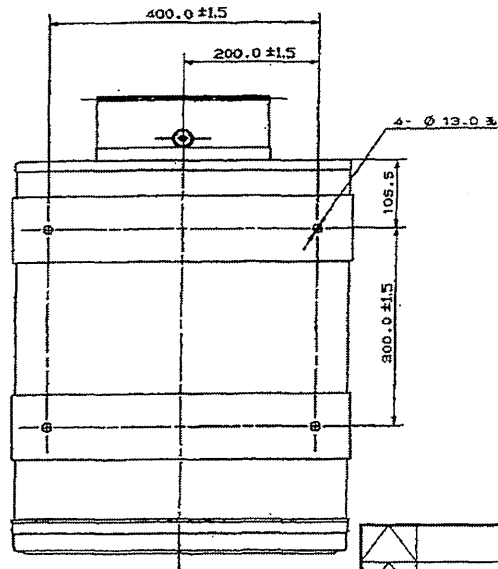
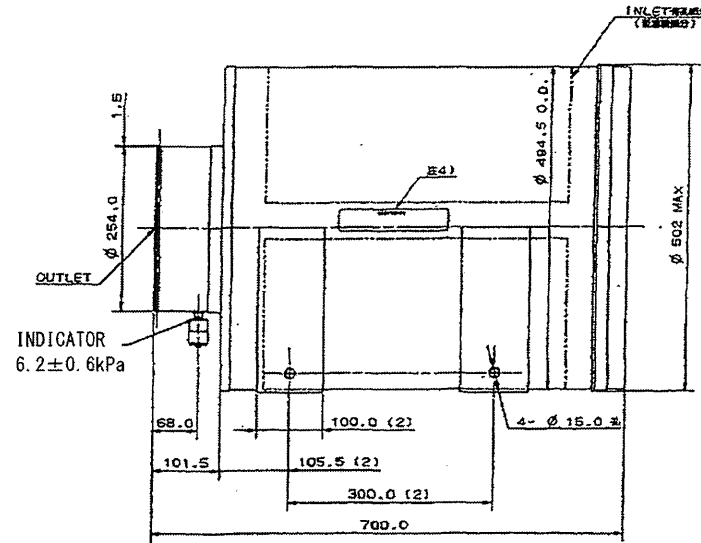
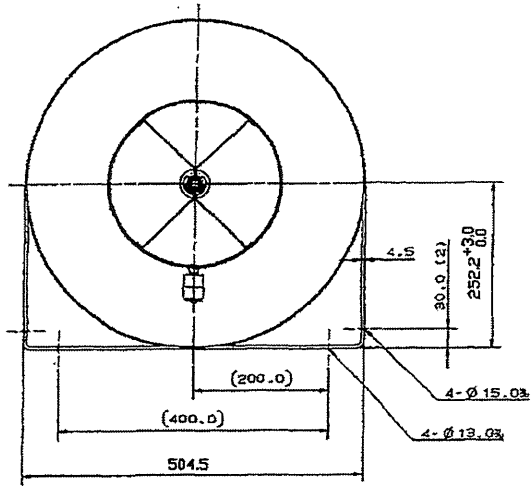
CHG	EO-NO	DATE	CHK
認可 APPD	検図 CHK	製図 DRN	
	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI	2016. 3. 25

S16R  
ALARM SWITCH  
三菱重工業株式会社  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
図面番号 38F96-90251  
DRAWING No. 38F96-90251

③ 新図	サイズ A 3	① 相立図	② 脚継手部品	③ 板金用部品	④ 組立品
④ 旧引図		⑤ 切削品	⑥ その他(購入品)		

M/C

CHECKED BY



MHI CONFIDENTIAL

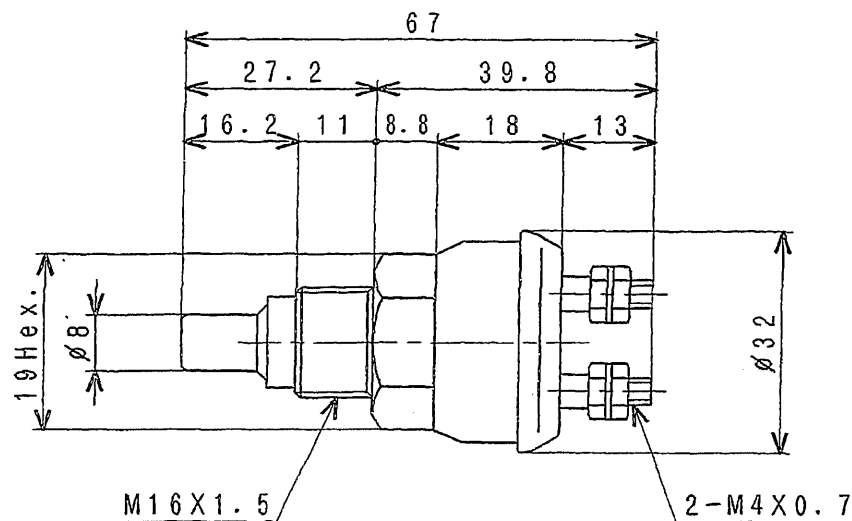
REV.	DATE

AIR CLEANER  
PART NO. 38G30-07701

DWG. NO. S35-5020  
MITSUBISHI HEAVY INDUSTRIES, LTD.

CHECKED BY

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

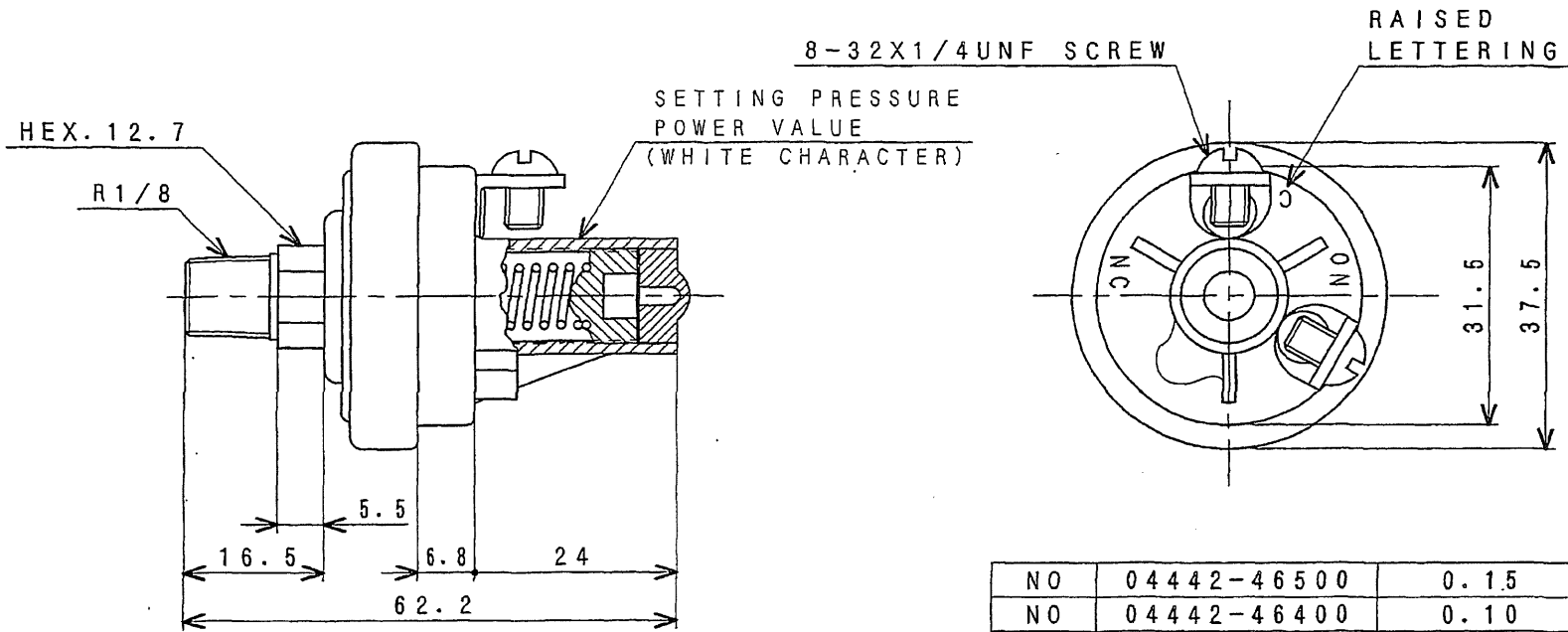
THERMO SWITCH

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 :  $\overset{\circ}{\text{NO}}$   $\overset{\circ}{\text{NC}}$
- 3. USE TEMP. :  $-40.0^{\circ}\text{C} \sim +120.0^{\circ}\text{C}$
- 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	$\pm 0.0075$
NO	04442-46400	0.10	$\pm 0.005$
NO	04442-46300	0.05	$\pm 0.0025$
NC	04442-46100	6.2 KPa	$\pm 0.31 \text{ KPa}$
NC	04442-45900	0.40	$\pm 0.02$
NC	04442-45800	0.35	$\pm 0.0175$
NC	04442-45700	0.30	$\pm 0.015$
NC	04442-45600	0.25	$\pm 0.0125$
NC	04442-45500	0.22	$\pm 0.011$
NC	04442-45400	0.15	$\pm 0.0075$
NC	04442-45300	0.10	$\pm 0.005$
NC	04442-45200	0.05	$\pm 0.0025$
NC	04442-45100	0.03	$\pm 0.0015$
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

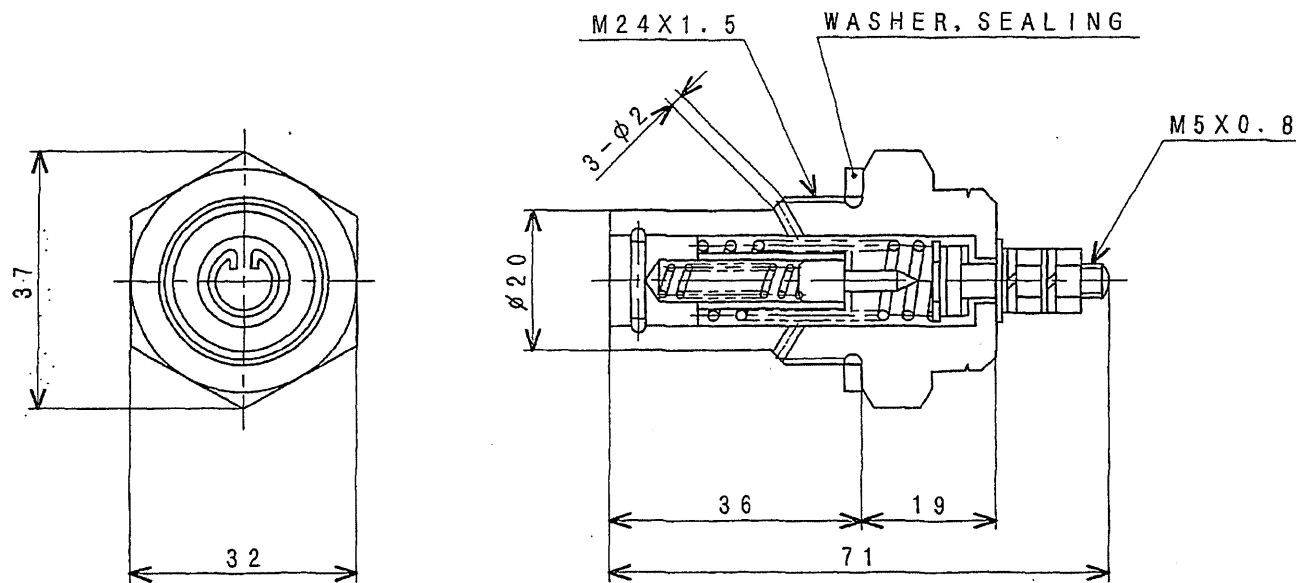
SWITCH, PRESS

DWG. NO. S11-0796

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注記 (1) 本図は、部番37540-01300に対し表面処理を変更したものだ。

3価クロメート処理 ← 6価クロメート処理

SET PRESS. 0.15MPa

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REV.	DATE

ALARM, OIL FILTER

PART NO. 37540-01301

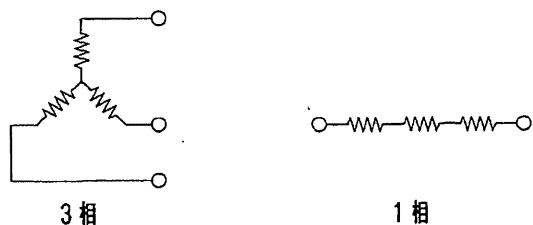
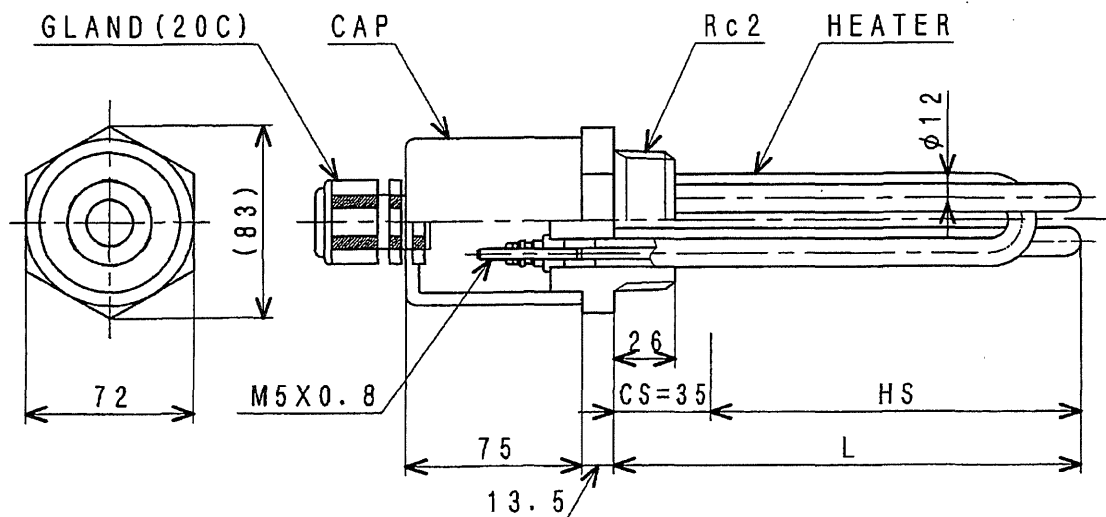
DWG. NO. S11-1371

三菱 MITSUBISHI HEAVY INDUSTRIES, LTD.

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

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CONNECTION

3. 使用温度 : 90℃連続  
 2. 加熱対象物 : 清水  
 仕様 1. 取付姿勢 : キャップを上側とした取付は不可

04393-34820	3φ 480V	2 kW	200	165			
04393-34420	3φ 440V						
04393-33820	3φ 380V						
04393-32220	3φ 220V	1 kW	125	90			
04393-34810	3φ 480V						
04393-34410	3φ 440V						
04393-33810	3φ 380V	2 kW	200	165			
04393-32210	3φ 220V						
04393-14820	1φ 480V						
04393-14420	1φ 440V	1 kW	125	90			
04393-13820	1φ 380V						
04393-12420	1φ 240V						
04393-12220	1φ 220V	1 kW	125	90			
04393-11220	1φ 120V						
04393-11120	1φ 110V						
04393-14810	1φ 480V	1 kW	125	90			
04393-14410	1φ 440V						
04393-13810	1φ 380V						
04393-12410	1φ 240V	1 kW	125	90			
04393-12210	1φ 220V						
04393-11210	1φ 120V						
04393-11110	1φ 110V	1 kW	125	90			
PARTS NO.	VOLTAGE				CAPACITY	L	HS
					LENGTH		

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REV.	DATE
2	'09.12.8
1	'01.2.21

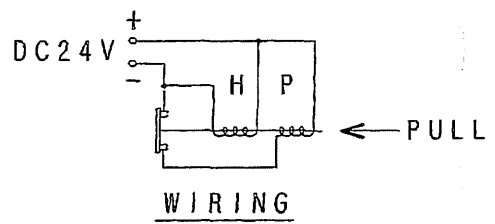
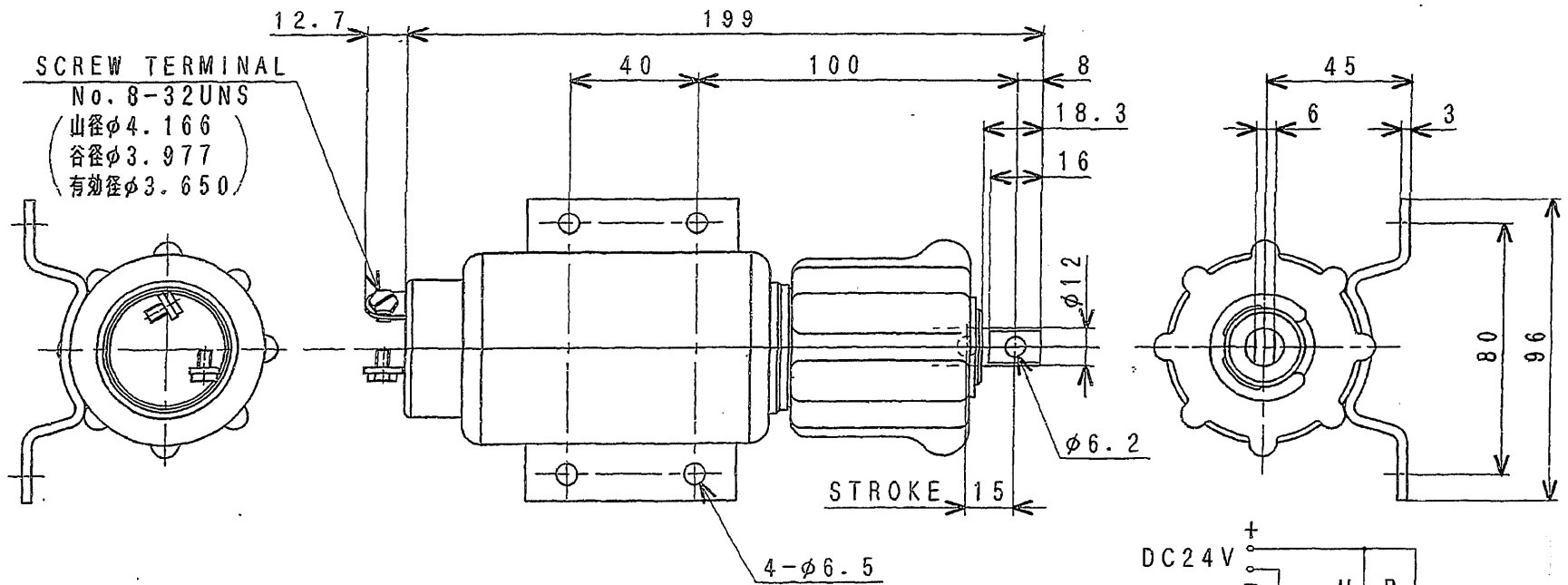
WATER HEATER

DWG. NO. S12-0014

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



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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。

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

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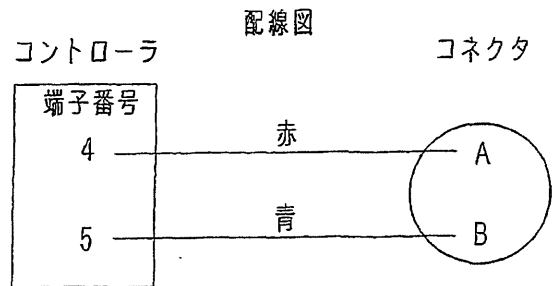
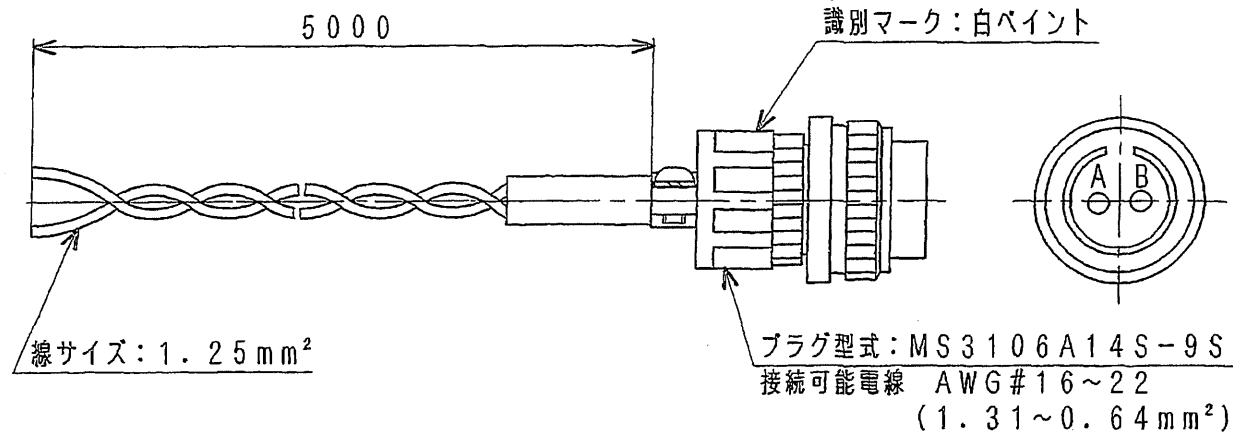
△	
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△	
REV.	DATE

SOLENOID

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

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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

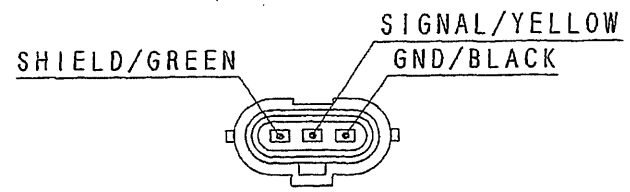
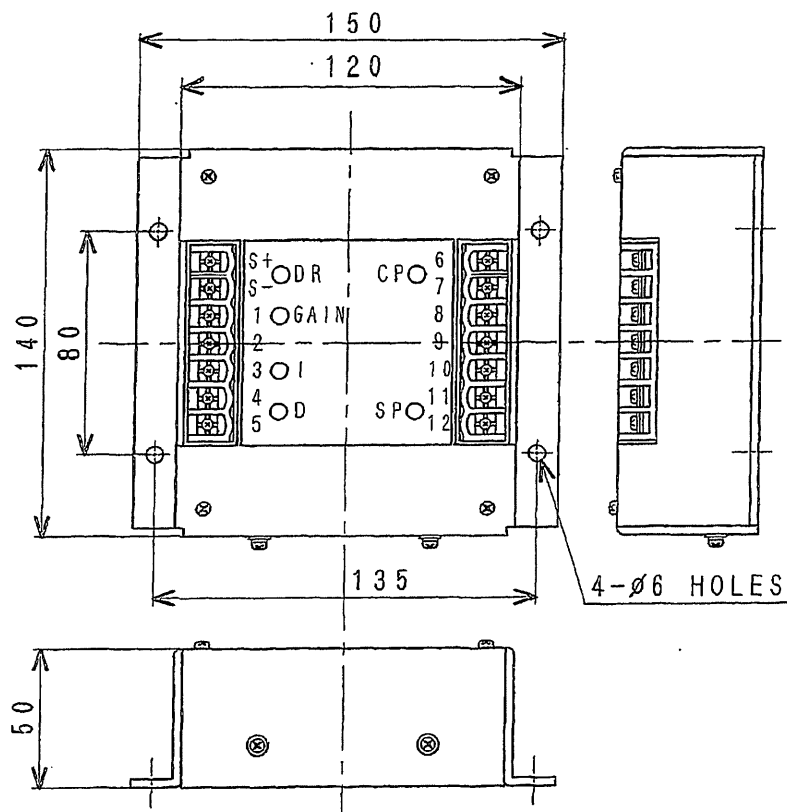
CONNECTOR  
PART NO. 04410-32902

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

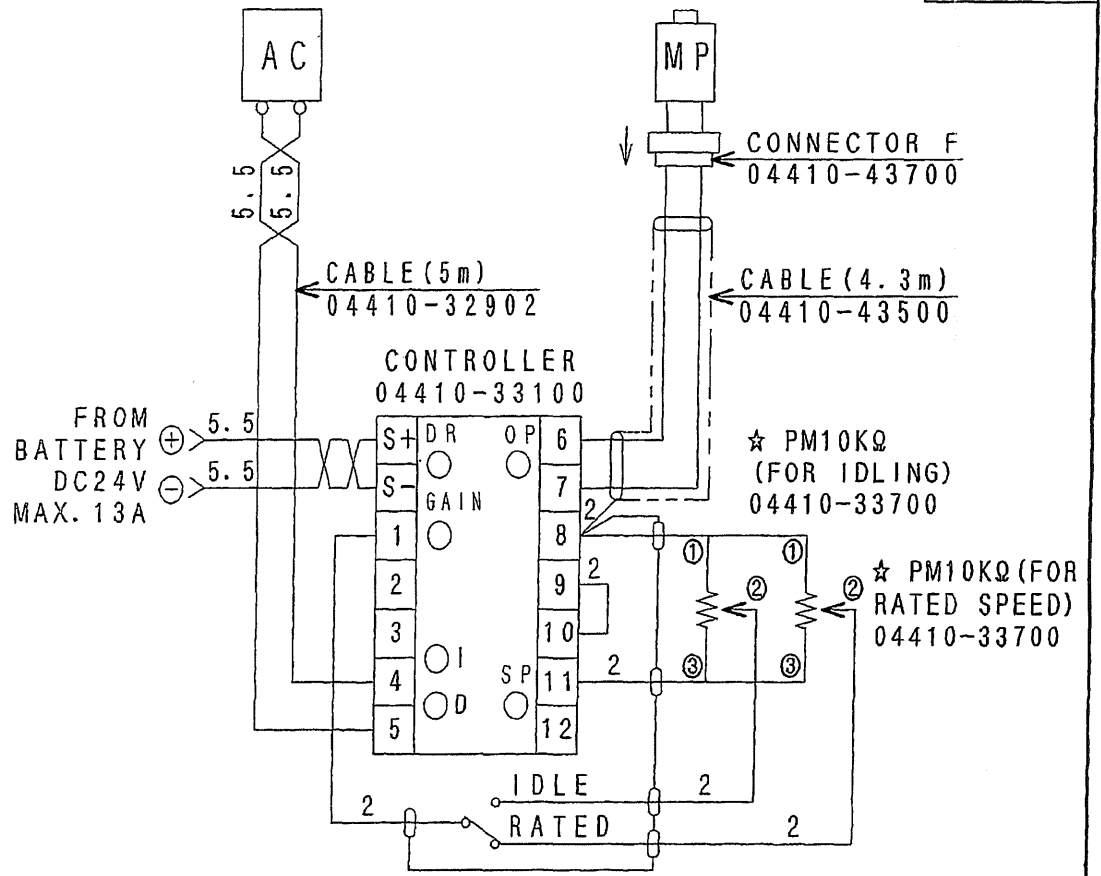
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Y. FUKUDA

ACTUATOR  
04410-32011  
04410-37081 (S12H)

MAGNETIC PICKUP  
04410-43410



CONNECTOR F  
04410-43700



★ PM10KΩ (FOR IDLING) 04410-33700

★ PM10KΩ (FOR RATED SPEED) 04410-33700

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

WIRING

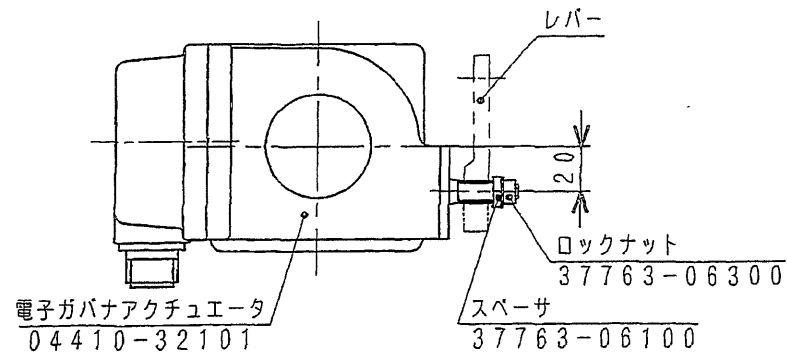
MHI CONFIDENTIAL

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2	'11.4.20
1	'01.6.29
REV.	DATE

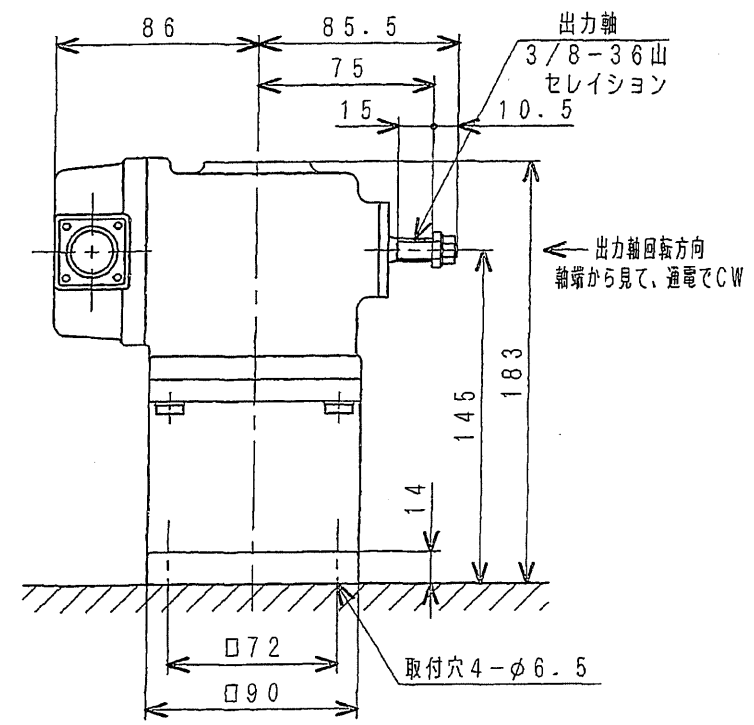
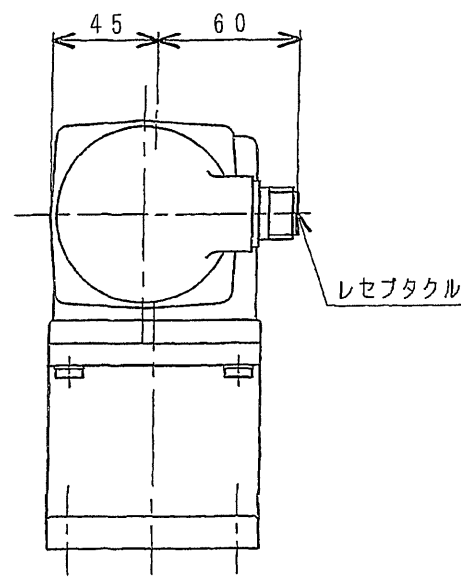
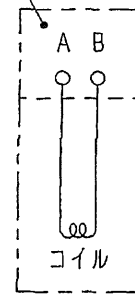
CONTROLLER SPEED  
PART NO. 04410-33100

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

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コネクタ用レセプタクル  
(キャノンプラグ)



仕様

- 回転角度 : MAX 40°
- トルク : 0.17 kgf·m 起動時  
起動時常温 8 A にて
- 電源 : DC 24 V パルス
- 起動最低電圧 : DC 16 V 50% ed 以下
- 電流 : MAX 13 A
- 常用電流 : 軽負荷制御時 0.5 A ~ 2 A
- 周囲温度 : -30°C ~ 100°C
- 耐震 : 25G JIS D 1601
- 重量 : 4.7 kgf

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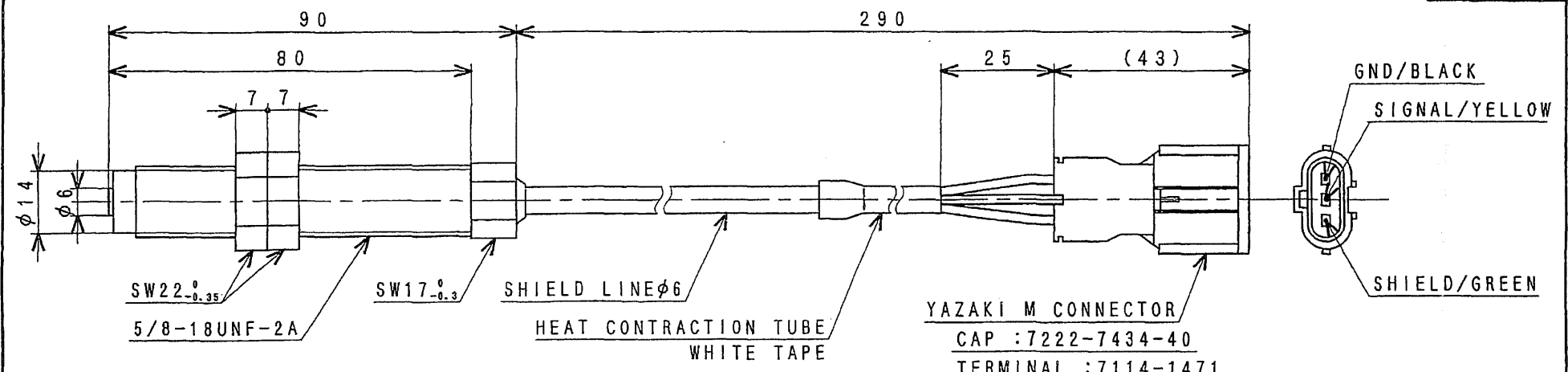
(2) 本部品は、部番 04410-32101 に対し出力軸の材料を  
変更したものである。  
注記 (1) 本部品は、2線式アクチュエータである。

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REV.	DATE

ACTUATOR/SG4017BR  
PART NO. 04410-32011

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

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T. HASHIGUCHI



YAZAKI M CONNECTOR  
CAP : 7222-7434-40  
TERMINAL : 7114-1471  
RUBBER PLUG : 7157-7812  
REAR HOLDER : 7157-7814-80

**SPECIFICATION**

1. ELECTRIC MACHINE CHARACTERISTIC
  - OUTPUT VOLTAGE : FIGURE1. 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± 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

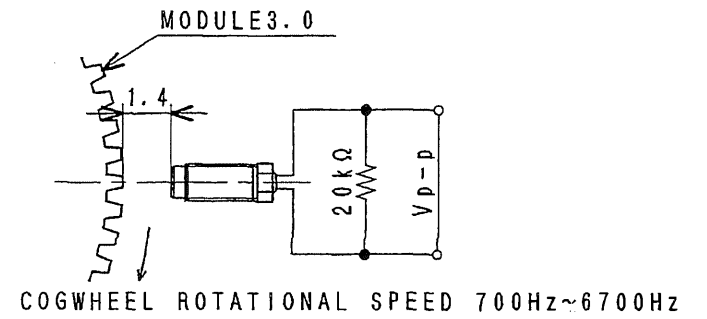


FIGURE1. OUTPUT CONDITION

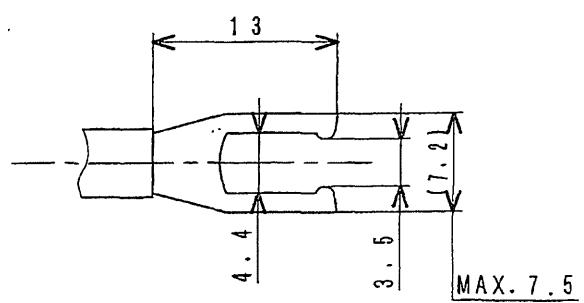
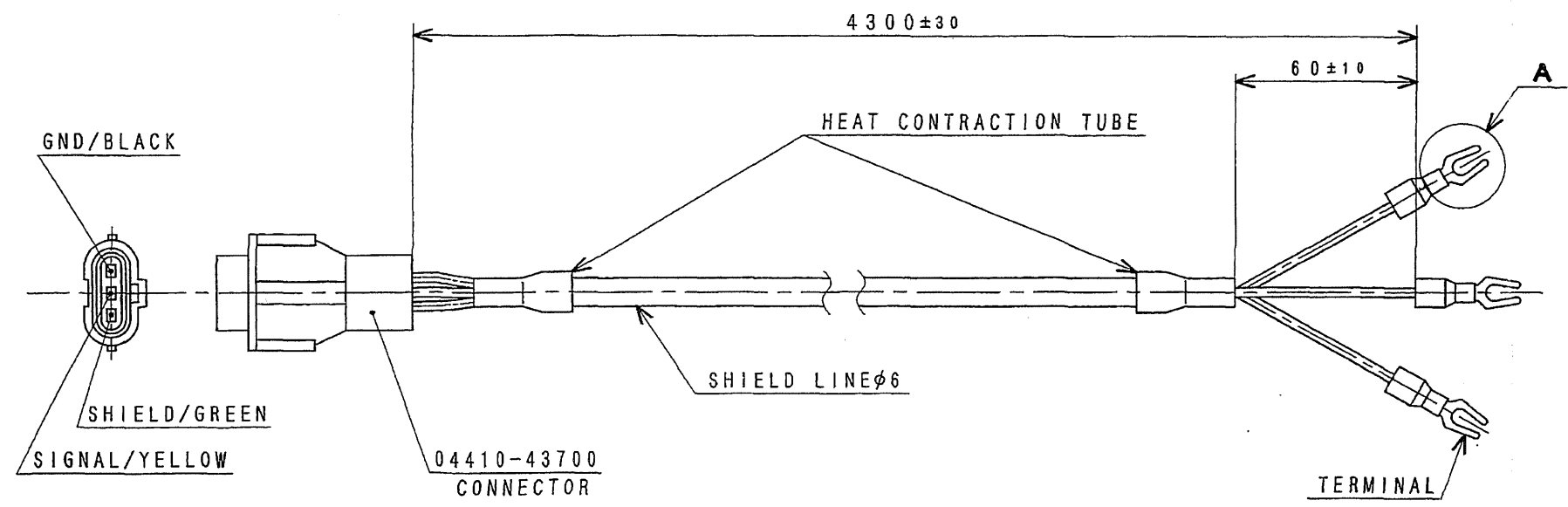
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2	'11.10.28
1	'06.6.9
REV.	DATE

PICKUP, MAGNETIC  
PART NO. 04410-43410

DWG. NO. S13-2011  
MITSUBISHI HEAVY INDUSTRIES, LTD.  
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

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DETAIL A

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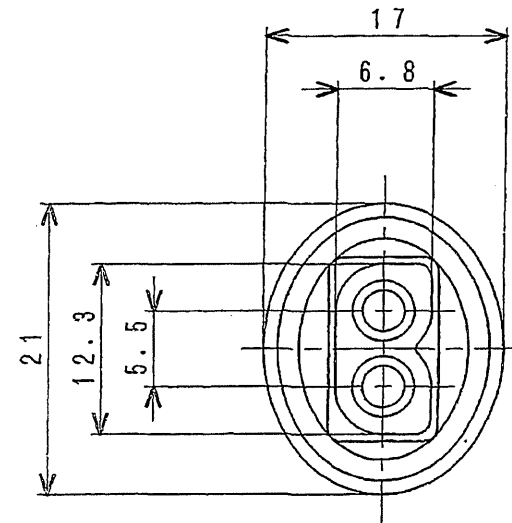
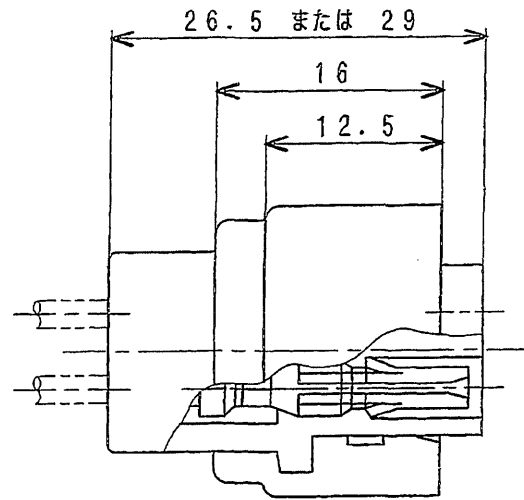
1	09.12.6
REV.	DATE

CABLE, PICKUP  
PART NO. 04410-43500

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

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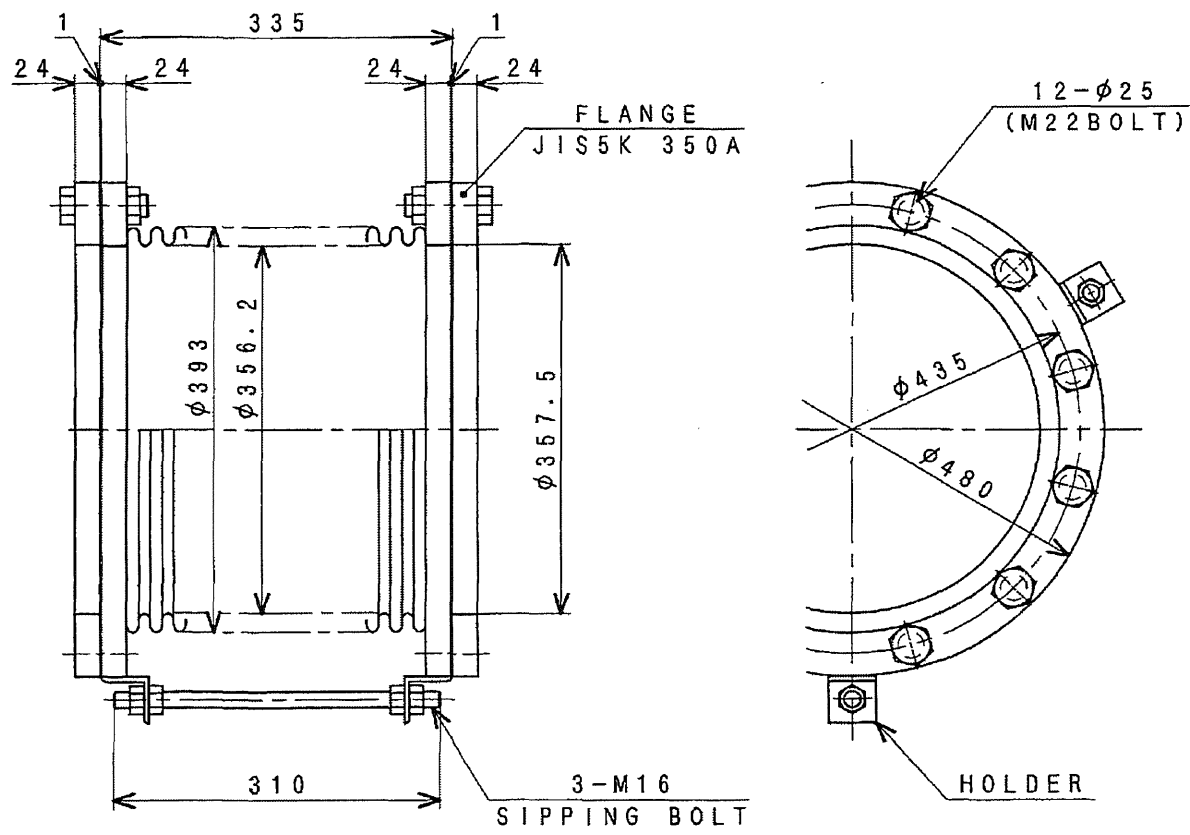
REV.	DATE
2	'04.3.12
1	'93.8.4

CONNECTOR  
PART NO. MH052231

DWG. NO. S14-0330

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GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS


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REV.	DATE

PIPE, FLEXIBLE  
PART NO. 47920-12400

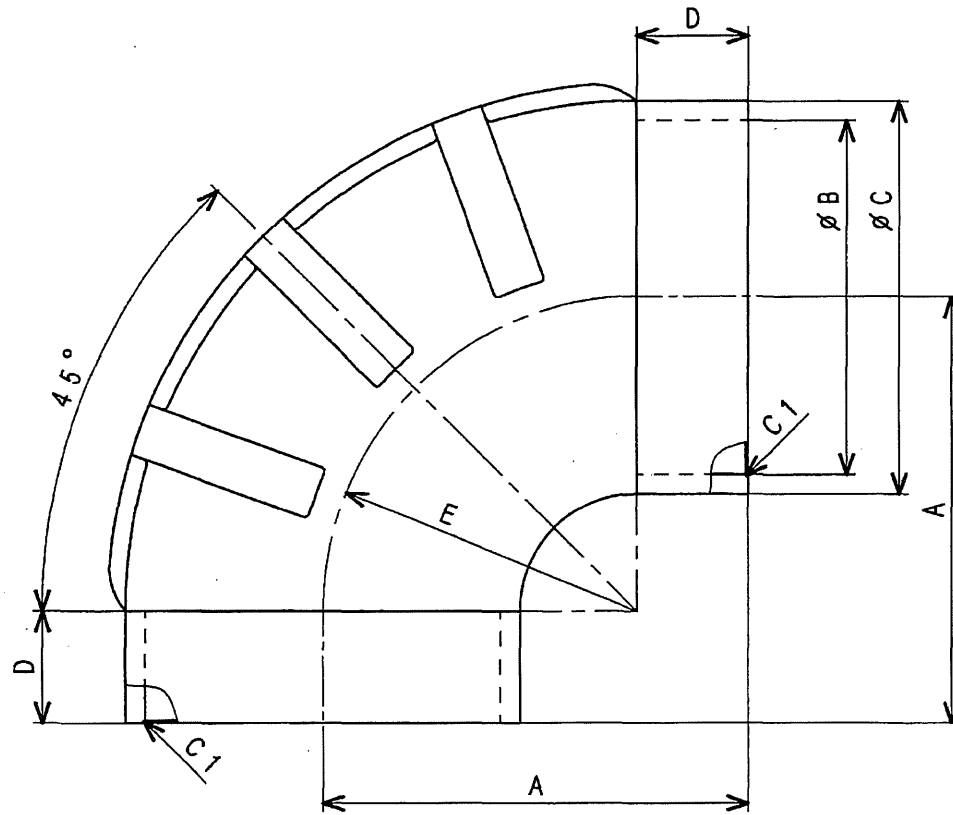
DWG. NO. S37-1090  
 MITSUBISHI HEAVY INDUSTRIES, LTD.

Same with 38G32-02400



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T. HASHIGUCHI



47220-47600	∅160	145	160	176	40	100
47220-32600	7' (∅177.8)	184.2	177.8	194.6	50.8	133.4
47220-30400	6' (∅152.4)	177.8	152.4	166.4	50.8	127
47220-12100	5' (∅127.0)	152.4	127	141	40	112.4
PARTS NO.	TYPE MEASURE	A	B	C	D	E

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REV.	DATE

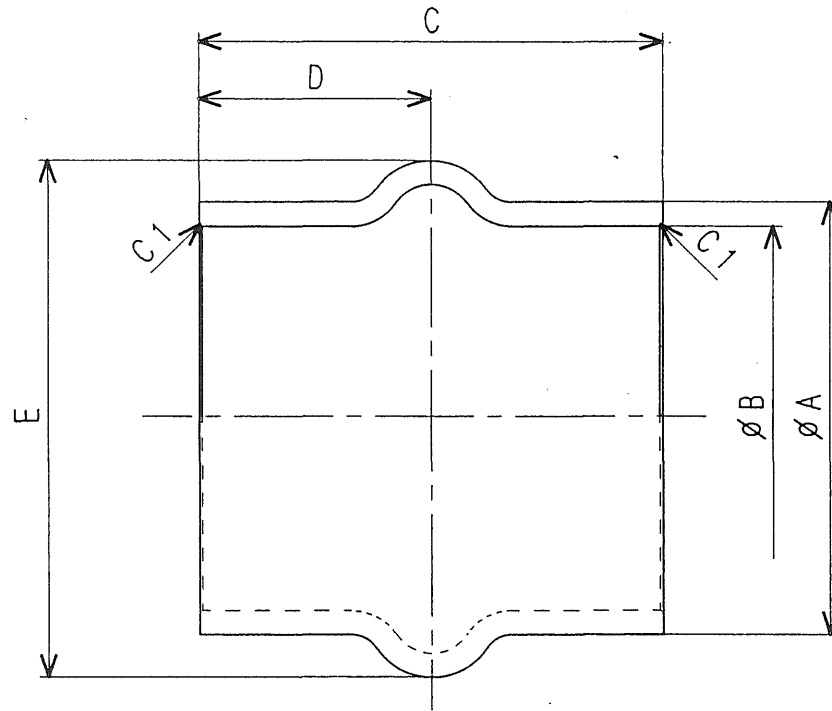
HOSE, RUBBER

DWG. NO. S35-0701


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

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*M. Fukuda*



47220-47300	10' (Ø254.0)	266.7	254	152.4	76.2	300
47220-31600	7' (Ø177.8)	194	178	178	89	222
47220-30500	6' (Ø152.4)	168.4	152.4	178	89	196.4
47220-13200	5' (Ø127.0)	143	127	152.4	76.2	171
PARTS NO.	TYPE MEASURE	A	B	C	D	E

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△	
△	
△	
REV.	DATE

HOSE, RUBBER

DWG. NO. S35-0711

MITSUBISHI HEAVY INDUSTRIES, LTD.  
SAGAMIHARA MACHINERY WORKS

<b>mitsubishi Diesel Engine TECHNICAL INFORMATION</b>	ITEM NO.	T0233-0003E (1/4)
	DATE	April, 2016

Specification Sheets of S16R-PTAA2 Engine

Specification Sheets of S16R-PTAA2 Engine are enclosed herein.

Revision	First Edition : September, 2007 (T13-0350-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, Air to Air Cooler
Cylinder Arrangement .....	60°V
No. of Cylinders .....	16
Bore mm(in.) .....	170 (6.69)
Stroke mm(in.) .....	180 (7.09)
Displacement liter(in <sup>3</sup> ) .....	65.37 (3989)
Compression Ratio .....	14.0:1
Dry Weight - Engine only - kg(lb) .....	6995 (15424)
- Radiator & Piping - kg(lb) .....	1874 (4132)
Wet Weight - Engine only - kg(lb) .....	7372 (16255)
- Radiator & Piping - kg(lb) .....	2117 (4668)
Symbol .....	Y1

## PERFORMANCE DATA

Steady State Speed Stability Band at any Constant Load	
Hydraulic (std.) or Electric Governor - % .....	±0.25 or better
Maximum Overspeed Capacity - rpm .....	2100
Moment of inertia of Rotating Components - kgf·m <sup>2</sup> (lbf·ft <sup>2</sup> ) .....	80.83 (1918)
(Includes Std. Flywheel)	
Cyclic Speed Variation with Flywheel at 1800rpm .....	1/219
1500rpm .....	1/140

## ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - kgf·m(lbf·ft) .....	450 (3256)
---	------------

## 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)
---	------------

## LUBRICATION SYSTEM

Oil Pressure at Idle - kgf/cm <sup>2</sup> (psi) .....	2~3 (29~)
at Rate Speed - kgf/cm <sup>2</sup> (psi) .....	5~6.5 (71~93)
Maximum Oil Temperature - °C(°F) .....	110 (230)
Oil Capacity of Standard Pan High - liter (U.S.gal) .....	200 (52.8)
Low - liter (U.S.gal) .....	140 (37.0)
Total System Capacity (Includes Oil Filter) - liter (U.S.gal) .....	230 (60.8)
Maximum Angle of Installation (Std. Pan) Front Down .....	5°
(Engine Only) Front Up .....	5°
Side to Side .....	22.5°

## COOLING SYSTEM

Coolant Capacity - Engine - liter (U.S.gal) .....	170 (44.9)
- Radiator & Piping - liter (U.S.gal) .....	243 (64.2)
Maximum External Friction Head at Engine Outlet - kgf/cm <sup>2</sup> (psi) .....	0.35 (5.0)
Maximum Static Head of Coolant above Crankshaft Center - m(ft) .....	10 (32.8)
Maximum Outlet Pressure of Engine Water Pump - kgf/cm <sup>2</sup> (psi) .....	2 (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 Cooling Air Temperature at Air to Air Cooler Inlet, TAA type- °C(°F) .....	40 (104)
Maximum Air Restriction on Discharge Side of Radiator and Fan-mm H <sub>2</sub> O(in.H <sub>2</sub> O) .....	40 (1.6)

The specifications are subject to change without notice.

## APPLICATION : GENERATOR

**FUEL SYSTEM**

Fuel Injector .....	Mitsubishi PS8 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

---

The specifications are subject to change without notice.

**S16R-PTAA2****SPECIFICATION SHEET**

MITSUBISHI  
DIESEL ENGINES

**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		
		60Hz	50Hz		60Hz	50Hz	
Engine Speed	rpm	1800	1500		1800	1500	
No. of Cylinders		16					
Bore	mm (in.)	170 (6.69)					
Stroke	mm (in.)	180 (7.09)					
Displacement	liter (in. <sup>3</sup> )	65.37 (3989)					
Brake Horse power without Fan	HP (kW)	2881 (2149)	2599 (1939)		2599 (1939)	2316 (1728)	
Brake Mean Effective Pressure with Fan	kgf/cm <sup>2</sup> (MPa) (psi)	22.3 (2.19) (317)	24.2 (2.37) (344)		20.2 (1.98) (287)	21.6 (2.12) (307)	
Mean Piston Speed	m/s (ft/min)	10.8 (2126)	9.0 (1772)		10.8 (2126)	9.0 (1772)	
Maximum Regenerative Power Absorption Capacity without Fan	HP (kW)	258 (192)	188 (140)		258 (192)	188 (140)	
Intake Air flow	m <sup>3</sup> /min (CFM)	194 (6850)	171 (6038)		175 (6179)	152 (5367)	
Maximum Air Temperature at Charge Air Cooler Inlet, TAA type	°C	230	230		230	230	
Maximum Air Temperature at Charge Air Cooler Outlet, TAA type	°C	70	70		70	70	
Allowable Pressure Drop at Charge Air Cooler	kgf/cm <sup>2</sup> (kPa) (psi)	0.32 (31) (5)	0.32 (31) (5)		0.32 (31) (5)	0.32 (31) (5)	
Charge Air Cooler Working Pressure	kgf/cm <sup>2</sup> (MPa) (psi)	3.5 (0.345) (50)	3.5 (0.345) (50)		3.5 (0.345) (50)	3.5 (0.345) (50)	
Exhaust Gas Flow	m <sup>3</sup> /min (CFM)	514 (18149)	453 (15995)		464 (16384)	403 (14230)	
Coolant Flow	liter/min (U.S. GPM)	1850 (489)	1650 (436)		1850 (489)	1650 (436)	
Cooling Air Flow	m <sup>3</sup> /min (CFM)	2500 (88275)	2500 (88275)		2500 (88275)	2500 (88275)	
Allowable Fan Loss Horse Power	HP (kW)	59 (44)	59 (44)		59 (44)	59 (44)	
Radiated Heat to Ambient	kcal/hr (BTU/min)	146328 (9678)	128847 (8522)		132029 (8732)	114826 (7594)	
Heat Rejection to Coolant	kcal/hr (BTU/min)	682863 (45164)	601288 (39768)		616134 (40750)	535856 (35441)	
Heat Rejection to Air to Air Cooler	kcal/hr (BTU/min)	634088 (41938)	558338 (36928)		572125 (37840)	497581 (32909)	
Heat Rejection to Exhaust	kcal/hr (BTU/min)	1566541 (103609)	1339226 (88575)		1413459 (93484)	1193492 (78936)	
Noise Level (1 m height & distance) (excludes, Intake, Exhaust & Fan)	dB(A)	TBD	TBD		TBD	TBD	

The specifications are subject to change without notice.

APPLICATION : GENERATOR

Pub. No. T0233-0003E 4/4