MITSUBISHI
HEAVY INDUSTRIES, LTD.

SPECIFICATION
OF
MITSUBISHI DIESEL ENGINE
MODEL : S16R-PTA
(WITH FAN)
FOR DIESEL GENERATOR SET
EMERGENCY APPLICATION

Used for 1650kVA 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	38F96-00251	ENGINE OUTLINE	
2	37896-01008	JOINT DETAIL	
3	38E96-04051	WIRING DIAGRAM	
4	37896-14001	MOUNTING DETAIL	
5	37896-21001	FLYWHEEL & HOUSING DETAIL	
6	38F96-30351	AIR CLEANER	
7	37896-43013	BREATHER	
8	37896-61312	FUEL RETURN PIPING	
9	37896-62112	FUEL INLET PIPING	
10	37896-63005	GOVERNOR	
11	38E96-66051	STARTING MOTOR	
12	38E96-68051	DYNAMO	
13	37896-71001	TURNING GEAR	
14	37896-87502	STOP SYSTEM	
15	38F96-90152	METER & SENSOR	
16	37896-90207	ALARM SWITCH	
17	S35-5030	AIR CLEANER ASSY	
18	S35-5110	BAND	
19	S35-5230	CAP	
20	S11-0920	INDICATOR	
21	S11-0551	THERMO SWITCH	
22	S11-0796	PRESSURE SWITCH	
23	S11-1371	FILTER ALARM SWITCH	
24	S13-0282	SOLENOID	
25	S13-1022	CONNECTOR	
26	S13-1042	CONTROLLER,SPEED	
27	S13-1761	ACTUATOR	
28	S13-2011	MAGNETIC PICK UP	
29	S13-2020	CABLE, PICK UP	
30	S14-0330	CONNECTOR	
31	S37-1090	FLEXIBLE PIPE	
32	S35-0720	ELBOW/45°	

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NO.	DWG. NO.	DWG. NAME	REV.
33	S35-0701	HOSE,RUBBER	
34	S35-0711	HOSE,RUBBER	

2.TECHNICAL INFORMATION

NO.	DWG. NO.	DWG. NAME	REV.
35	T0233-0001E	SPECIFICATION SHEETS	

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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
Safety stop device test		

Standard

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

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4. PRINCIPAL PARTICULARS

Model	:	S16R-PTA
Type	:	4cycle stroke, water cooled diesel engine
Combustion chamber	:	Direct injection type
Aspiration	:	Tarbocharged 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 Apx. 3223mm
	:	width Apx. 1401mm
	:	Height Apx. 1810mm
Dry weight (Approx.)	:	6750kg (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℃, 100kPa, 30% relative humidity)

Stand-by rating	:	1590kW/1500min^{-1}
Prime rating	:	1450kW/1500min^{-1}
Fuel consumption ratio at stand-by rating (allowance +5%)	:	204g/kW-hr at 1590kW/1500min^{-1}
Fuel consumption ratio at prime rating (allowance +5%)	:	204g/kW-hr at 1450kW/1500min^{-1}
Lub, oil consumption ratio at stand-by rating	:	Within 0.8g/kW-hr
Emission compliance	:	Not certified

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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.38F96-30351 , S35-5030 4 pcs Paper element type without indicator
Turbocharger	:	MITSUBISHI TD Type Model : TD10L
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.S37-1090 loose supply JIS 350A, L = 335mm, weight 31.6kg
Companion flange	:	Not supply
Breather	:	DWG.NO.37896-43013 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^{-1})
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

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Lub. oil filter (Full flow)	:	Paper element cartrige type × 4pcs filter mesh : 20 μ with by - pass alarm switch
Lub. oil filter (By - pass flow)	:	Paper element cartrige 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^{-1})
Thermostat	:	Wax pellet type × 4pcs Open at 71°C ~ 85°C
Fan	:	Pusher type steel fan 1530 diameter, Gear drive Fan speed ratio i = 0.568
Quantity of Coolant	:	Approx.170L (only Engine)
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 cartrige type filter mesh : 5 μ

(7) Control system

Governor	:	DWG.NO.37896-63005 TOHO Electronic speed governor Speed droop : 0 ~ 5% adjustable

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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)

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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 swtitches	:	DWG.NO.37896-90207
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	:	DWG.S11-0920
		Mechanical type : 6.2kPa switch on
(11) Meter and sensor		
Meter and sensor	:	DWG.NO.38F96-90152
Tachometer	:	Not supply
Magnetic pick up	:	DWG.NO.S13-2011
		For tachometer, pin-joint type
Cable	:	For magnetic pick up,
		Not supply

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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.

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6. ACCESSORIES (Loose supply parts)

NO.	PARTS NO.	PATRS NAME	Q'TY	DWG.NO.	
1	38G30-03101	AIR CLEANER ASSY.	2	S35-5030	38F96-30351
2	38G30-05301	AIR CLEANER ASSY.	2	S35-5030	
3	38G30-02201	CAP ASSY	4	S35-5230	
4	38G30-08301	BAND	4	S35-5110	
5	45686-76402	PIPE, AIR	4		
6	32330-09400	O-RING	8		
7	47220-31400	ELBOW, HOSE	2	S35-0720	
8	47220-30400	ELBOW, HOSE	2	S35-0701	
9	47520-71700	PIPE, AIR	2		
10	47520-71800	PIPE, AIR	2		
11	47220-30500	HOSE, RUBBER	4	S35-0711	
12	05317-51801	CLAMP	16		
13	38G32-02400	PIPE,FLEXIBLE	1	S37-1090	
14	45955-22160	HOSE, VINYL	1		37896-43013
15	05317-51001	CLAMP	4		
16	47510-59300	PIPE, BREATHER	1		
17	45950-51700	PIPE,FLEXIBLE	1		37896-61312
18	45950-11300	CONNECTOR	1		
19	45950-51700	PIPE,FLEXIBLE	1		37896-62112
20	45950-11300	CONNECTOR	1		
21	04410-33100	CONTROLLER	1	S13-1042	37896-63005
22	04410-32902	CONNECTOR, ACTUATOR	1	S13-1022	
23	04410-43500	CABLE, PICK UP	1	S13-2020	
24	MH052231	CONNECTOR	1	S14-0330	38F96-90152
25	47220-34401	INDICATOR	4	S11-0920	37896-90207

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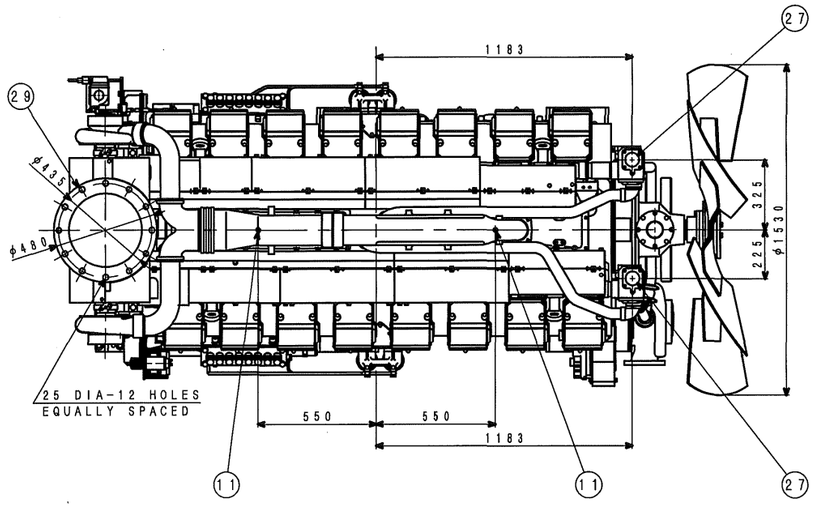
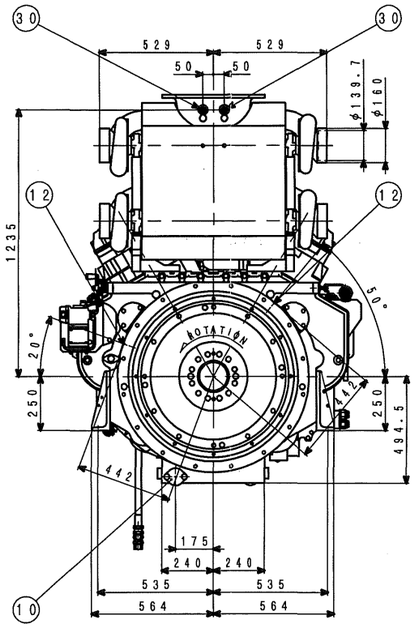
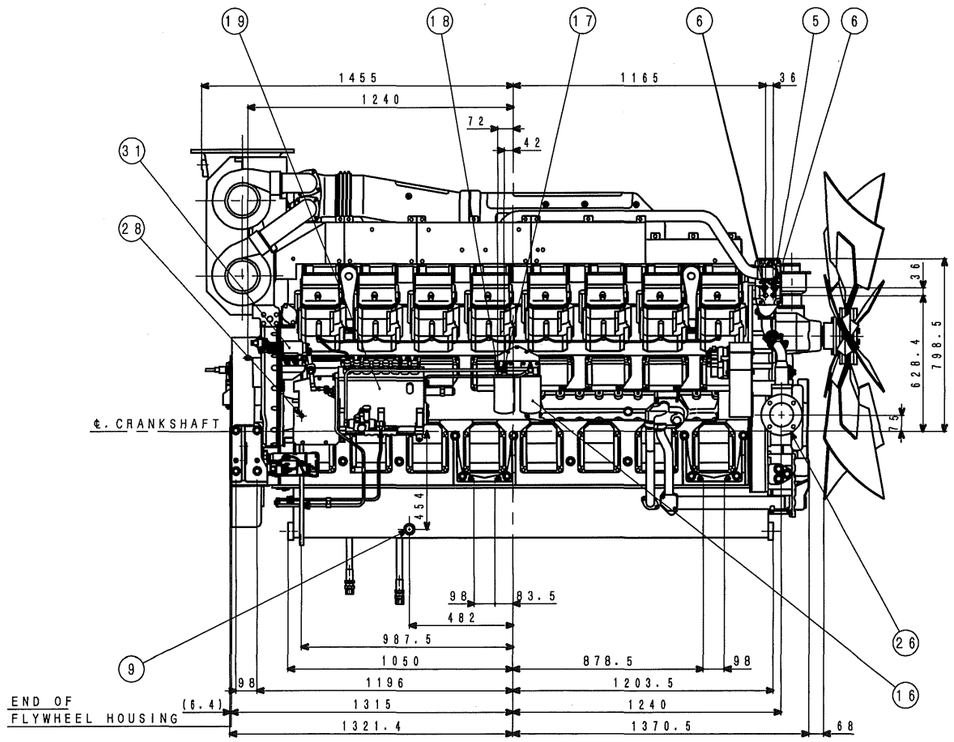
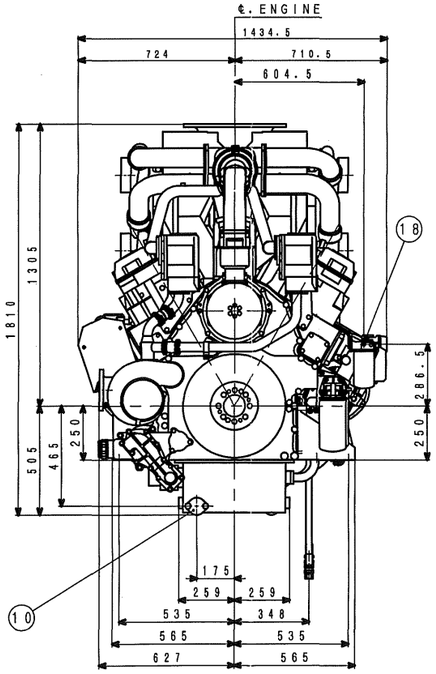
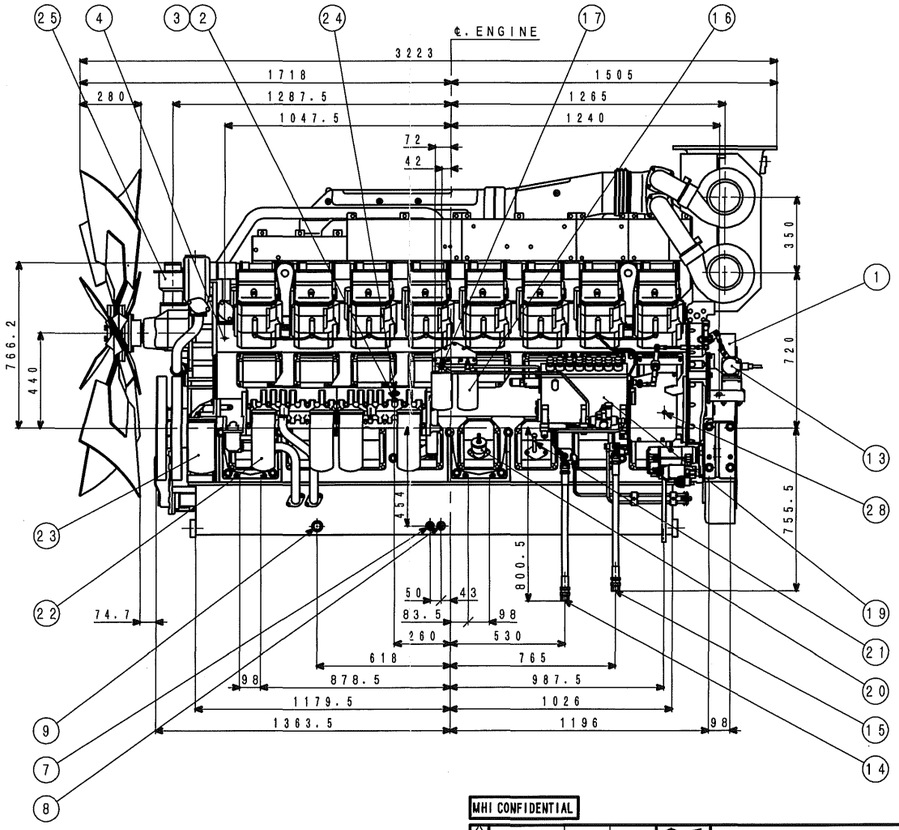
NO.	PARTS NANE	SIZE	REFERENCE
1	FLYWHEEL & HOUSING		37896-21001
2	OIL PRESS. GAGE UNIT JOINT	Rc1/8	37896-01008
3	OIL PRESS. SWITCH JOINT	Rc1/8	
4	OIL PRESS. SWITCH JOINT	Rc3/8	
5	THERMOMETER UNIT JOINT	Rc1/2	
6	THERMOSWITCH JOINT	Rc1/2	
7	OIL PAN (A) JOINT	M16x1.5	
8	OIL PAN (B) JOINT	M20x1.5	
9	OIL PAN (C) JOINT	M36x1.5	
10	OIL PAN (D) JOINT		
11	AIR PRESS. GAGE JOINT	Rc1/8	
12	PICKUP JOINT	5/8-18UNF	37896-01008
13	GOVERNOR		
14	FUEL INLET PIPE JOINT	Rc3/4	37896-01008
15	FUEL RETURN PIPE JOINT	Rc3/4	37896-01008
16	FUEL FILTER		
17	FUEL PRESS.SWITCH JOINT	M14x1.5	37896-01008
18	FUEL PRESS.SWITCH JOINT	Rc3/8	37896-01008
19	FUEL INJECTION PUMP		
20	OIL FILLER		
21	OIL LEVEL GAGE		
22	OIL FULL-FLOW FILTER		
23	OIL BY-PASS FILTER		
24	OIL BY-PASS ALARM SWITCH		37896-01008
25	BREATHER		
26	WATER INLET PIPE JOINT	90A	
27	WATER OUTLET PIPE JOINT		37896-01008
28	WATER DRAIN COCK		
29	EXHAUST FLANGE	350A	
30	THERMOMETER,EX.JOINT	G3/4	37896-01008
31	STOP SOLENOID		











NOTES (1)THIS DRAWING SHOWS S16R-PTA WITH FAN.
(2)THIS TURBOCHARGER IS MHI TD10L-36F-28 FOR 1500min⁻¹ SPEC.
(3)THE GOVERNOR ON THIS DRAWING IS ELECTRIC GOVERNOR.
(4)THIS MOUNTING HEIGHT FROM THE CRANK SHAFT CENTER IS 250mm.

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CHG	EO-NO	DATE	CHK

3rd ANGLE PROJECTION
尺度 SCALE 1 :10

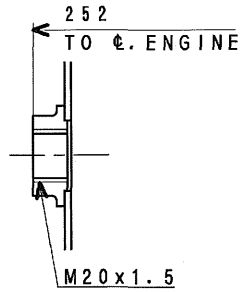
製図 APPD 櫻口
検図 CHK T. HASEGAWA K. SAKAMOTO
製図 DRN H. YAMAGUCHI 1999. 1.25

S16R-PTA
DIESEL ENGINE
三菱重工業株式会社
MITSUBISHI HEAVY INDUSTRIES,LTD.
図面番号 DRAWING No. 38F96-00251

N/C

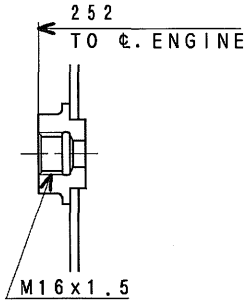
材質 MATL | サイズ SIZE A4 | 仕上区分 | 1 機械加工部品 2 切削品 3 鋳造部品 4 鍛立品 5 その他(購入品)

(8)



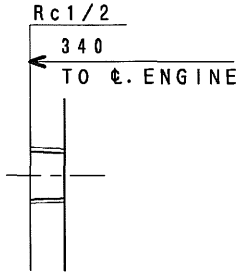
OIL PAN (B) JOINT

(7)



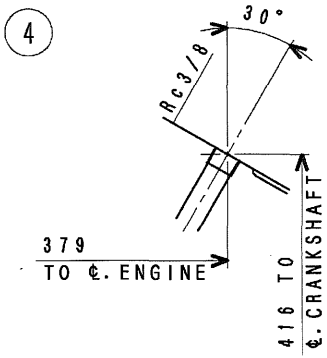
THERMOMETER UNIT JOINT
(OIL PAN (A) JOINT)

(5)(6)



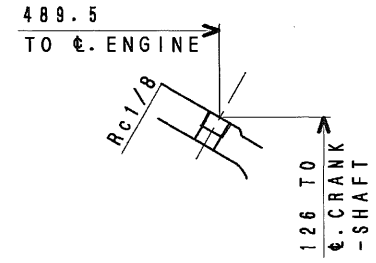
THERMOSWITCH JOINT
THERMOMETER UNIT JOINT

(4)



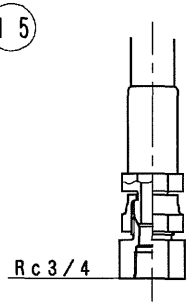
OIL PRESS. SWITCH JOINT

(2)(3)



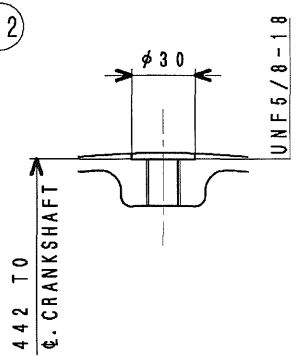
OIL PRESS. SWITCH JOINT
OIL PRESS. GAGE UNIT JOINT

(14)(15)



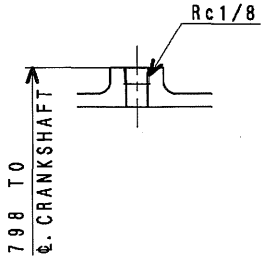
FUEL INLET PIPE JOINT
FUEL RETURN PIPE JOINT

(12)



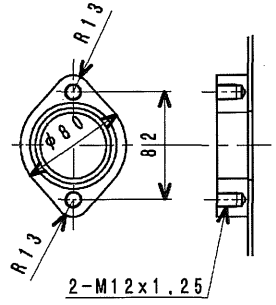
PICKUP JOINT

(11)



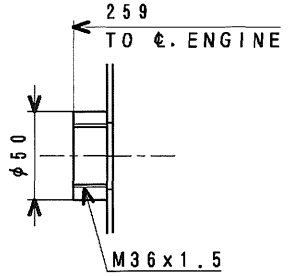
AIR PRESS. GAGE JOINT

(10)



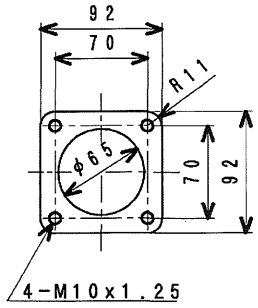
OIL PAN (D) JOINT

(9)



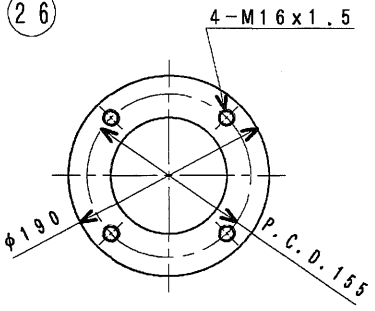
OIL PAN (C) JOINT

(27)



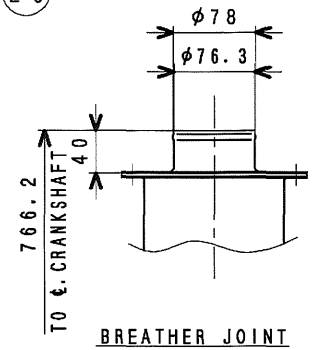
WATER OUTLET PIPE JOINT

(26)



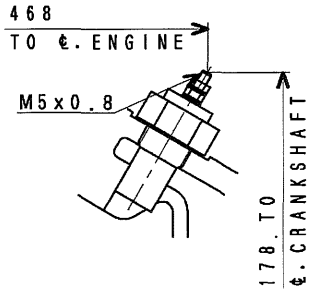
WATER INLET PIPE JOINT

(25)



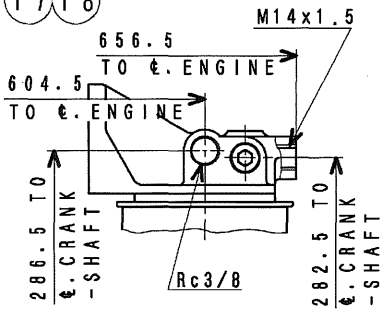
BREATHER JOINT

(24)



OIL BY-PASS ALARM SWITCH

(17)(18)



FUEL PRESS. SWITCH JOINT

旧引
三菱
汎特
2013
6.21

M/C

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注記 (1)本図は、PTAファン付用のジョイント詳細図である。

CHG	EO-NO	DATE	CHK
1	4590-H494	'13. 6.21	谷戸

3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	小倉 中村	谷戸
		1999.10.15

S16R

JOINT DETAIL

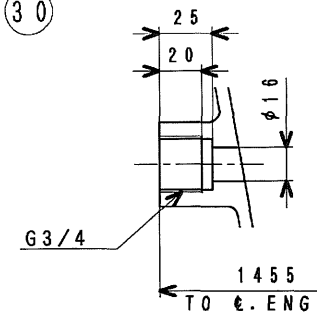
三菱重工業株式会社 汎用機・特車事業本部
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.

図面番号 DRAWING No. 37896-01008 1

1/2

3 新図 / 4 旧引図	サイズ A3	① 組立図	2 鋳鍛圧製品 3 板金溶接品 4 組立品 5 切削品 6 その他(購入品)

(30)



THERMOMETER, EX. JOINT

旧引
三菱
汎特
2013
6.21

M/C

MHI CONFIDENTIAL

1	4590-H494	'13. 6.21	谷戸
CHG	EO-NO	DATE	CHK

3rd ANGLE PROJECTION

尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	小倉 中村	谷戸
		1999.10.15

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 VEHICLE HEADQUARTERS.

図面番号 DRAWING No. 37896-01008 1 2/2

3 新 図 ④ 旧引図	サイズ A 3	① 組立図	2 鋳鍛造単品 3 板金溶接品 4 組立品 5 切削品 6 その他（購入品）

※ INSTRUMENT PANEL

※ TACHOMETER
0~2500min⁻¹

※ CONNECTOR C

※ HARNESS

※ FILTER ALARM LAMP

FILTER ALARM SWITCH
37540-01301

BODY EARTH

※ PRESSURE GAGE
OIL PRESS.

UNIT
04541-86200

☆ CONNECTOR A

※ THERMOMETER
OIL TEMP.

UNIT
04524-02230

※ THRMOMETER
WATER TEMP.

UNIT
04524-02230

※ STARTER RELAY
FOR SWITCH
LOCKOUT
AT RUNNING

※ STARTER SWITCH

TO HOURMETER
TERMINAL

DYNAMO
38C68-18500
DC28V 55A

MAGNETIC PICK UP
04410-43410

※ CONNECTOR D

STARTER
38E66-00201
DC24V 7.5kWX2

※ BATTERY SWITCH

(NOTE)
DO NOT USE THIS BATTERY SWITCH
WHEN ENGINE IS RUNNING.(DO NOT
USE THIS SWITCH TO STOP ENGINE)

※ BATTERY
DC24V 400Ah(N200AhX4)

※POWER
RELAY

STOP SOLENOID
04400-08801
(04400-09201)

FOR PTA2/PTAA2 ONLY

START FUEL
LIMIT SOLENOID
(RUN OFF)
04400-08901

※
RELAY

BATTERY
SWITCH(④)

※
RELAY

STARTER
SWITCH(②)

THERMOSWITCH
04442-34500
HIGH WATER TEMP.
ON:98℃

WATER HEATERX2
(FOR WH SPECIFICATION)
AC3φ□V 2kW

THERMOSWITCH
WH CONTROL
(FOR WH SPECIFICATION)
04442-30210
ON:38℃ OFF:42℃

ACTUATOR
04410-32011

☆ HARNESS(5m)
04410-32902

☆ CONTROLLER
04410-33100
DC24V MAX.14A

MAGNETIC PICKUP
04410-43410

☆ CABLE
04410-43500

PRESSURE SWITCH
04442-45400
LOW OIL PRESS.
ON:0.15MPa

※ POTENTIOMETER
10kΩ
(FOR IDLING)

※ POTENTIOMETER
10kΩ
(FOR RATED SPEED)

※ CIRCUIT CHANGING SWITCH

MHI CONFIDENTIAL

(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 (e.g. ① -5)

(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.

M/C

KEY SWITCH CONDITION

KEY POSITION	CONNECTION B	M	S
STOP	○		
RUN	○	○	
START	○	○	○

AUTO RETURN

CONNECTOR A
MH052231(2P)

CONNECTOR C

CONNECTOR D

CHG	EO-NO	DATE	CHK

3rd ANGLE PROJECTION
尺度 SCALE :

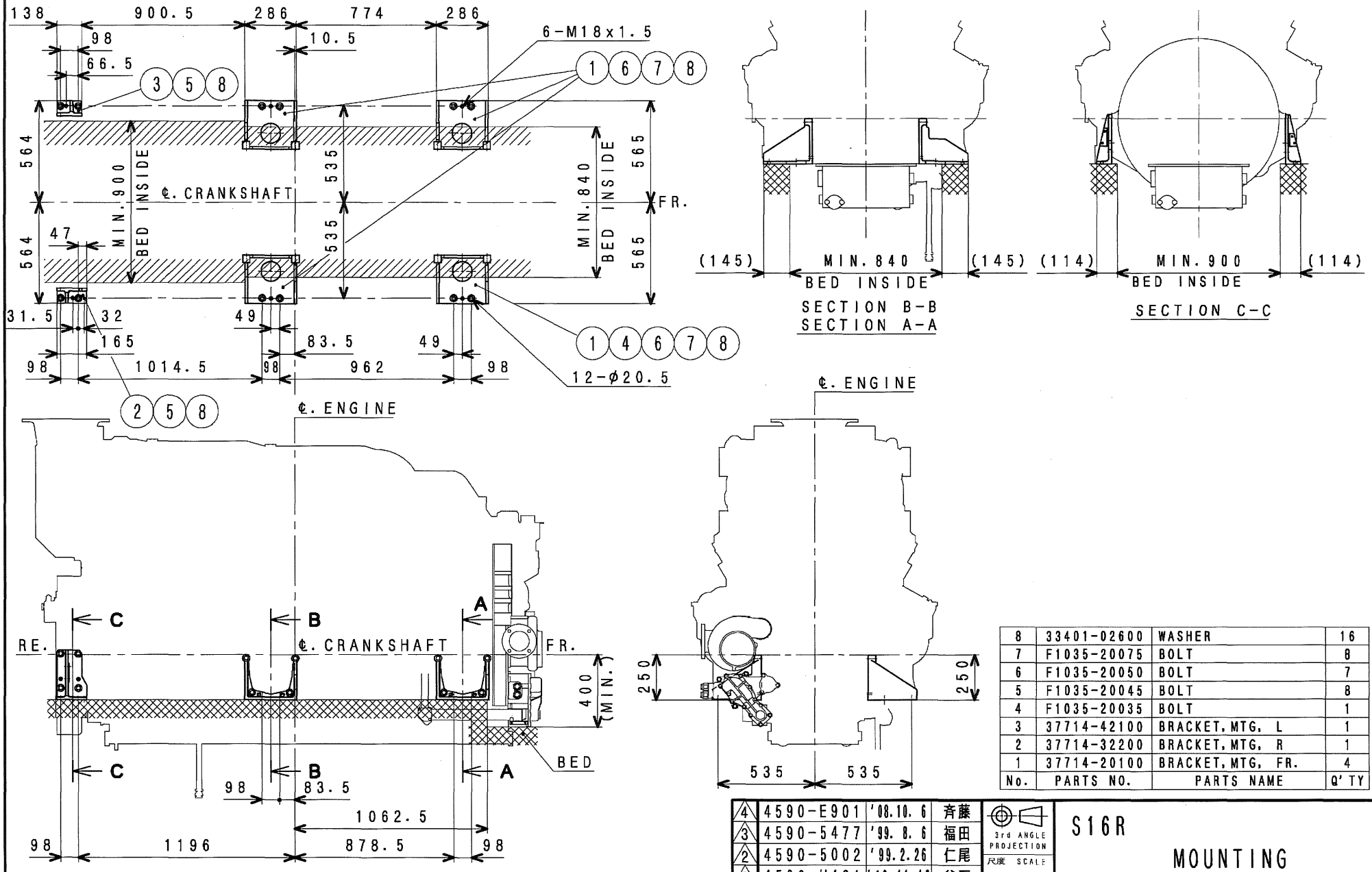
承認 APPD	検図 CHK	製図 DRN
橋口	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI 2016. 3. 25

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 △

③新 図 4旧引図 | サイズ A2 | ①組立図 | 2鋳鍛造単品 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	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

旧引
汎特
2013
2.8

M/C

注記 (1)本図は、マウンチングセンターハイトC=250用である。

MHI CONFIDENTIAL

CHG	EO-NO	DATE	CHK
4	4590-E901	'08.10.6	斉藤
3	4590-5477	'99.8.6	福田
2	4590-5002	'99.2.26	仁尾
5	4590-H421	'12.11.19	谷戸
1	4590-4536	'98.8.18	福田

3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	仁尾 福田	谷戸
		1998. 8. 20

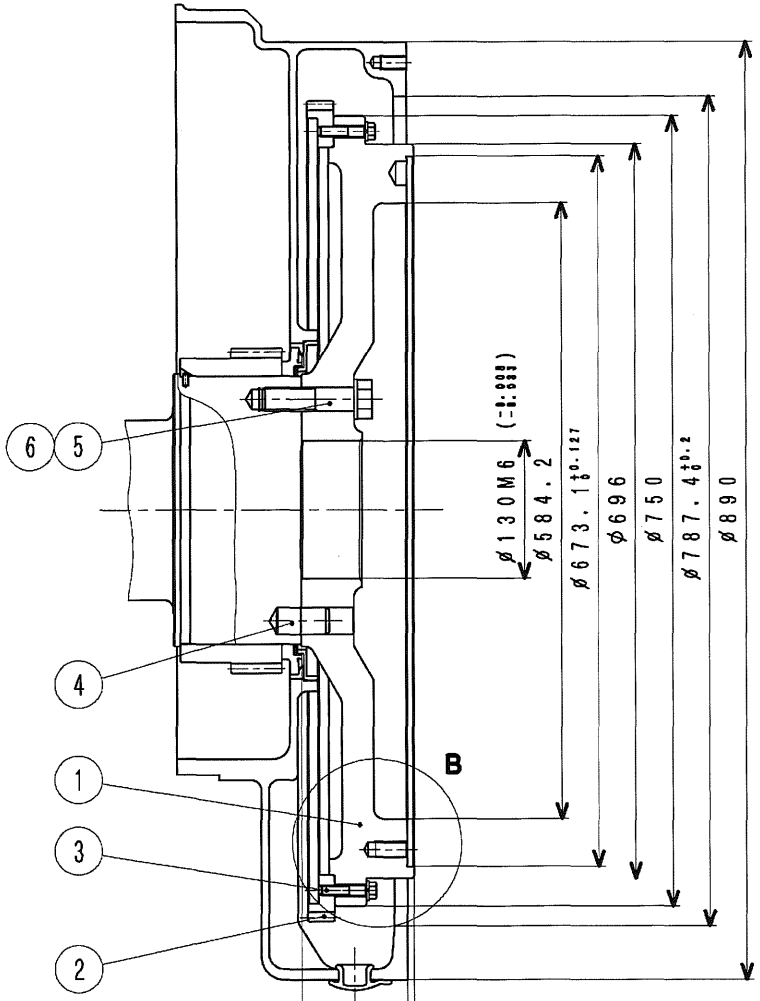
S16R

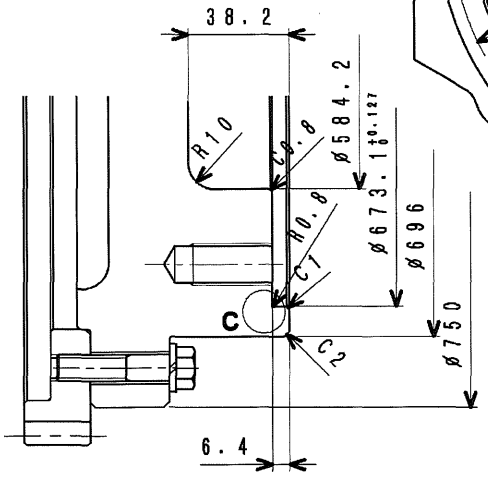
MOUNTING

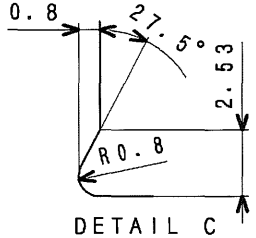
三菱重工業株式会社 汎用機・特車事業本部
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.

図面番号 DRAWING No. 37896-14001 5

3 新図 ④旧引図 | サイズ A3 | ①組立図 | 2 鋳鍛造品 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
6	33707-11701	WASHER		12
5	F1035-22090	BOLT		12
4	37820-04600	PIN, DOWEL		2
3	F1805-10045	BOLT	37721-00061 F/W ASSY.	12
2	37721-20201	GEAR, RING		1
1	37721-00601	FLYWHEEL		1

MHI CONFIDENTIAL

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

3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	竹谷 福田	谷戸 斎藤
		1997. 8. 7

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.

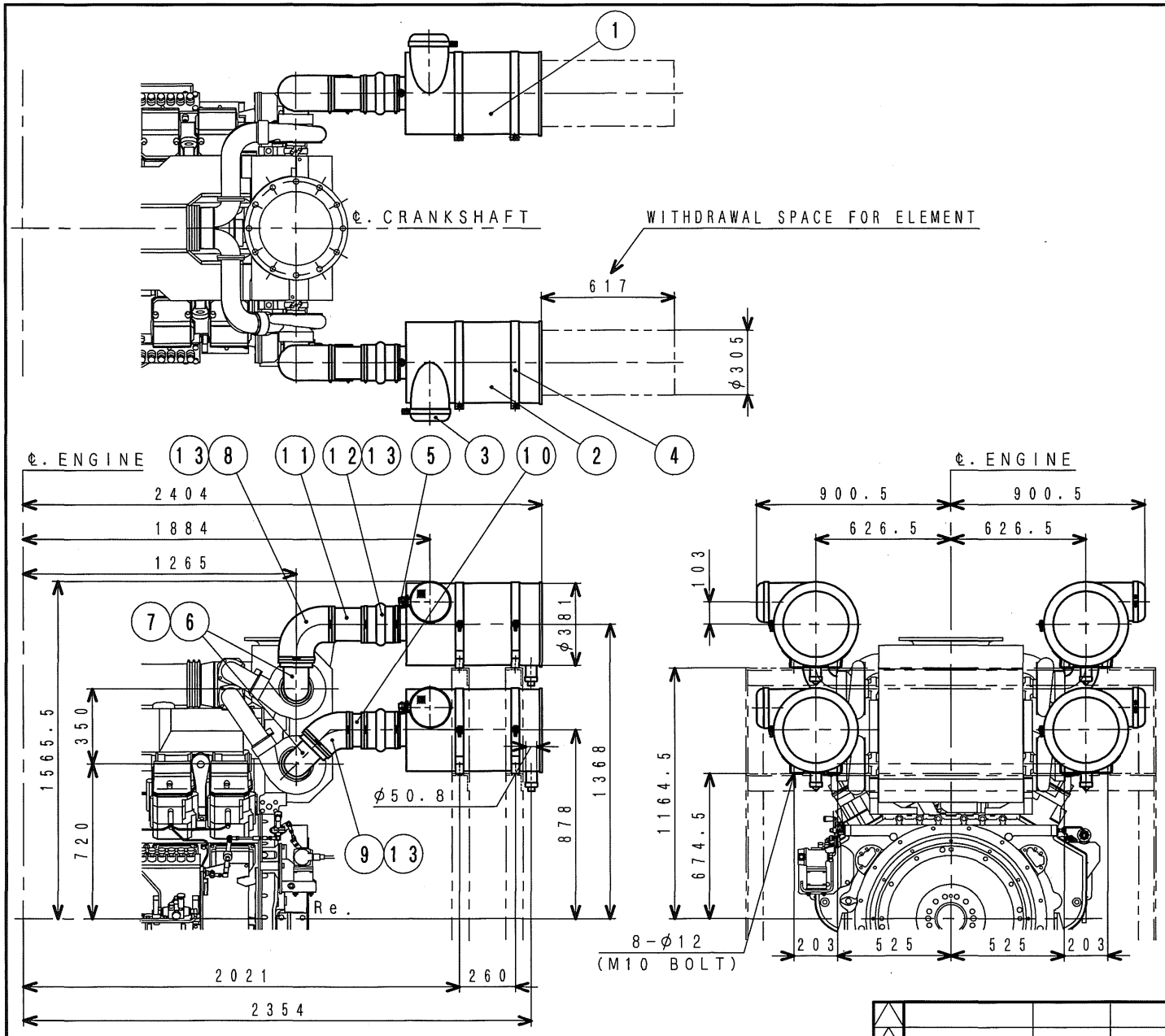
図面番号 DRAWING No. 37896-21001 ③

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。

3 新図 ④ 旧引図 | サイズ A3 | ① 組立図 | 2 鋳鍛鋼単品 3 板金溶接品 4 組立品 5 切削品 6 その他(購入品)

旧引 三菱 汎特 2011 12.12

FULL-CAD



	No.	PARTS NO.	PARTS NAME	Q'TY
☆	13	05317-51801	CLAMP	16
☆	12	47220-30500	HOSE, RUBBER	4
☆	11	47520-71800	PIPE, AIR	2
☆	10	47520-71700	PIPE, AIR	2
☆	9	47220-31400	ELBOW, HOSE(45°)	2
☆	8	47220-30400	ELBOW	2
☆	7	32330-09400	O-RING	8
☆	6	45686-76402	PIPE AIR(Fr)	4
☆	5	47220-34401	INDICATOR	4
☆	4	38G30-08301	BAND ASSY, D387	8
☆	3	38G30-02201	CAP, AIR CLEANER	4
☆	2	38G30-05301	AIR CLEANER ASSY	2
☆	1	38G30-03101	AIR CLEANER ASSY	2

M/C

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

MHI CONFIDENTIAL

CHG	EO-NO	DATE	CHK

3rd ANGLE PROJECTION
尺度 SCALE :

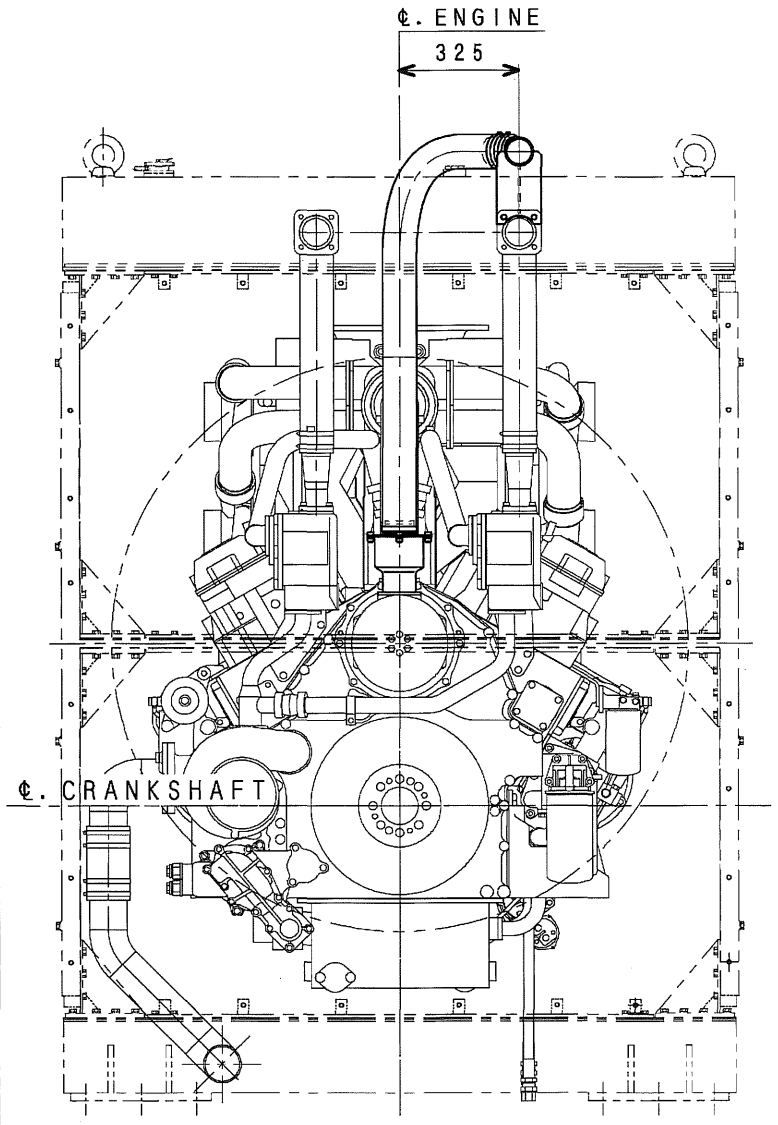
認可 APPD	検図 CHK	製図 DRN
橋口	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI 2016. 3. 25

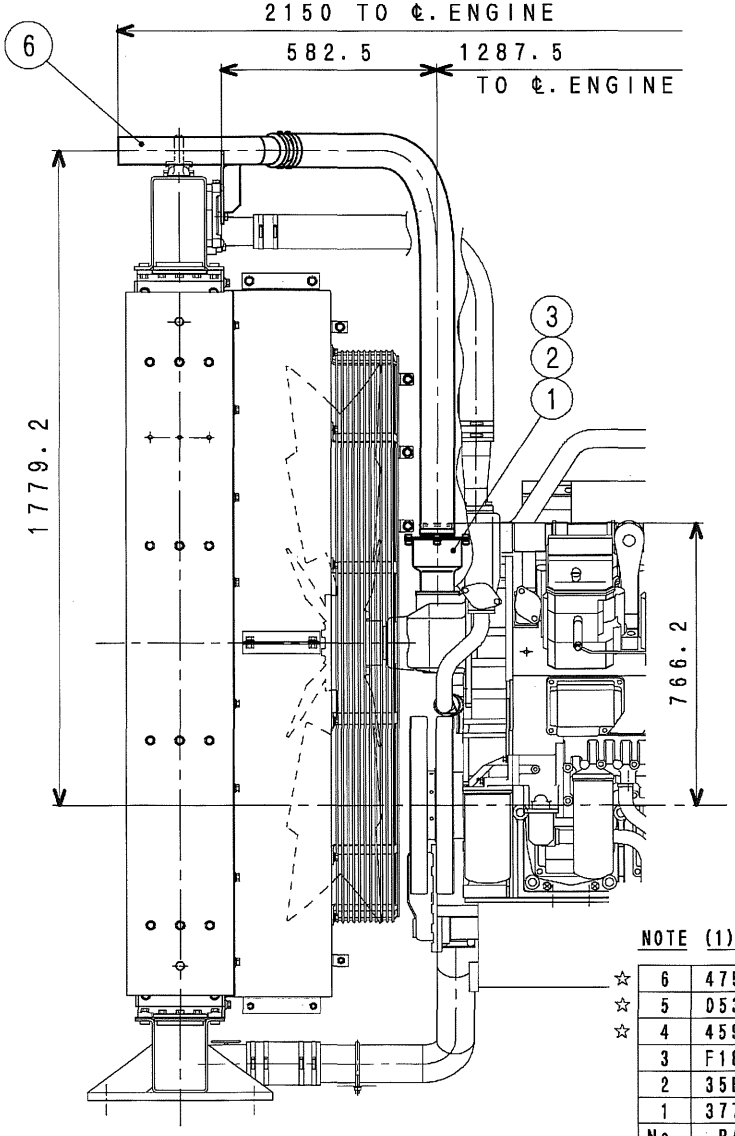
S16R-PTA
AIR CLEANER

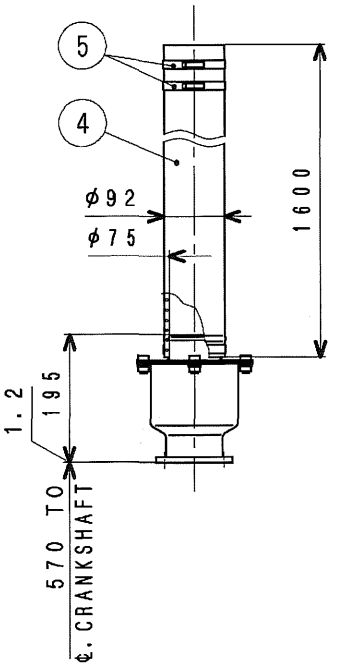
三菱重工業株式会社
MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号 DRAWING No. 38F96-30351

③新図 4旧引図	サイズ A3	①組立図	2 鋳鍛鋼単品 3 板金溶接品 4 組立品 5 切削品 8 その他(購入品)







DETAIL OF BREATHER

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

出図
三菱 汎特
2013
2.8

M/C

MHI CONFIDENTIAL

注記 (1) 本図は、オイルフィ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	検図 CHK	製図 DRN
橋口	塚本 中村	谷戸
		2012.11.28

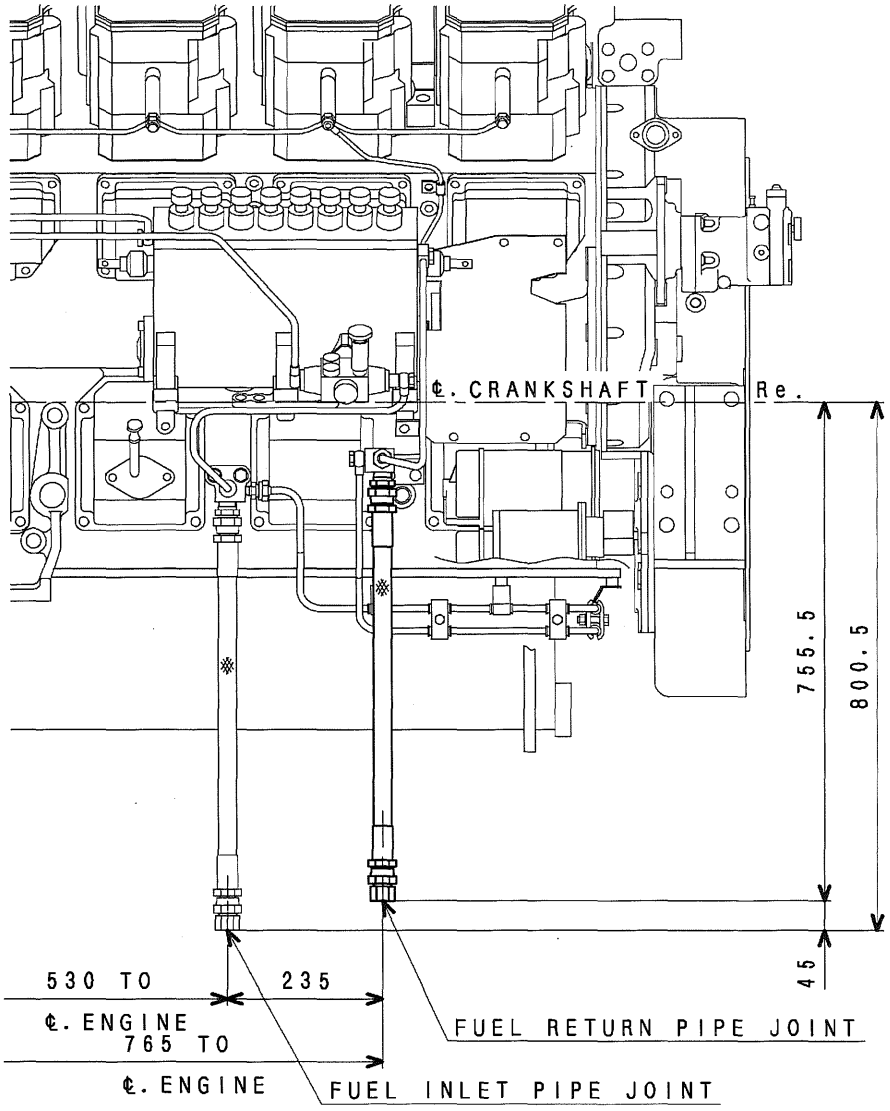
S16R

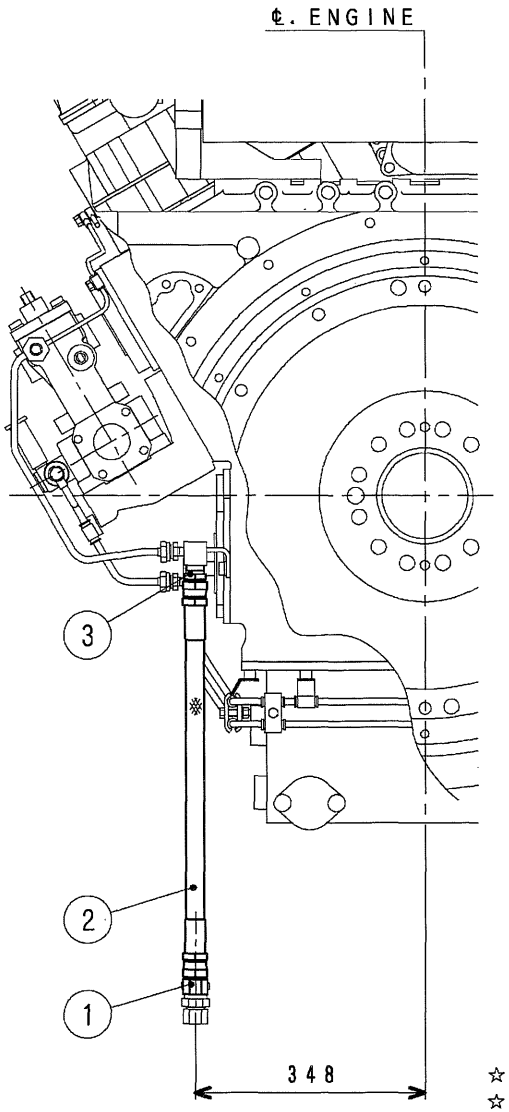
BREATHER

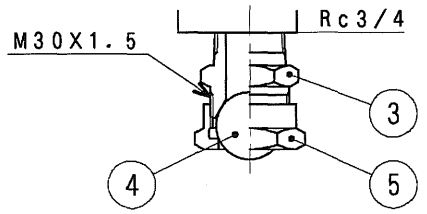
三菱重工業株式会社 汎用機・特車事業本部
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.

図面番号 DRAWING No. 37896-43013 △

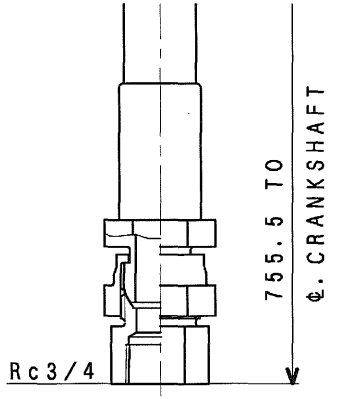
③新図 4旧引図 | サイズ A3 | ①組立図 2鋳鍛歯車品 3板金溶接品 4組立品 5切削品 6その他(購入品)







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

出図
汎特
2008
12.12

FULL-CAD

MHI CONFIDENTIAL

CHG	EO-NO	DATE	CHK

3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	三谷 上戸	浅沼 2008.12.10

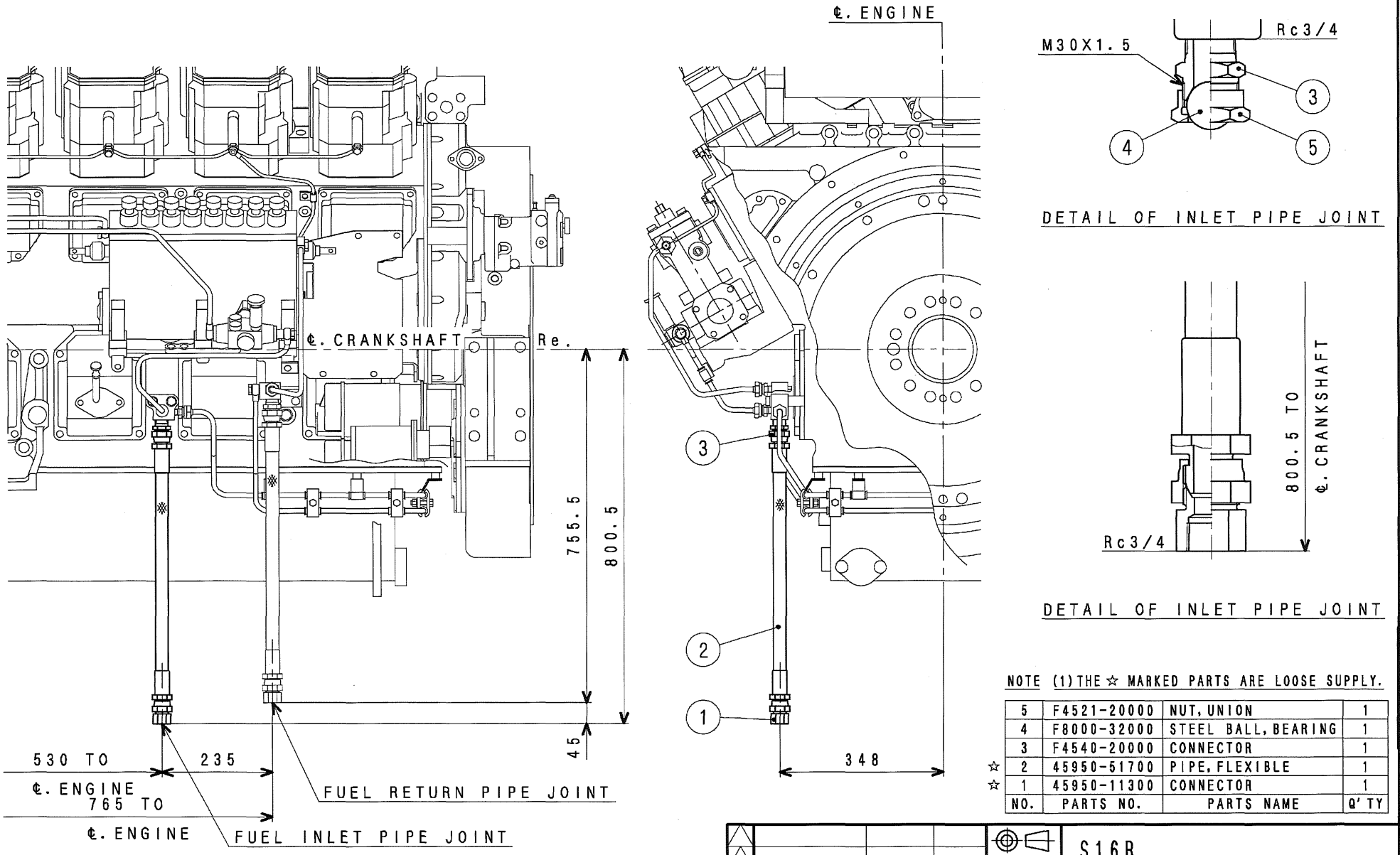
S16R
FUEL RETURN PIPING

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 △

③ 新図 4 旧引図	サイズ A3	① 組立図	2 鋼鉄圧車品 3 板金溶接品 4 組立品 5 切削品 6 その他（購入品）

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。
(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）



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

出図
三菱
汎特
2008
12.12

FULL-CAD

MHI CONFIDENTIAL

CHG	ED-NO	DATE	CHK

3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	三谷 上戸	浅沼
		2008.12.10

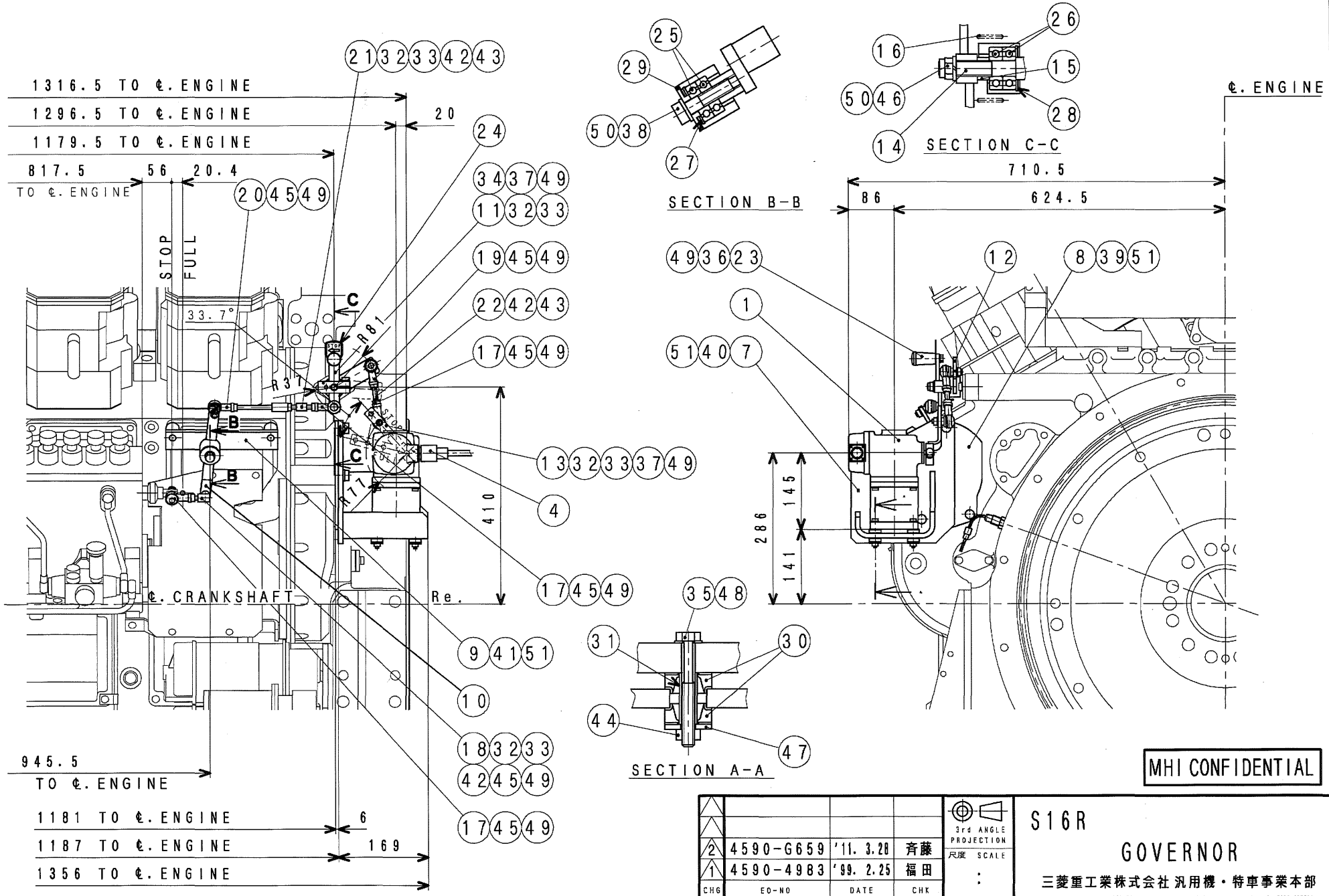
S16R
FUEL INLET PIPING

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 △

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 ④⑤ は、燃料入口盲栓である。(エンジン出荷状態)

③新図 4旧引図	サイズ A3	①組立図	2 鋼鉄鋳造品 3 板金溶接品 4 組立品 5 切削品 6 その他(購入品)



(2) 整定周波数範囲：3575～5790Hz、エンジン回転数：1500/1800rpm共用

注記 (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。

CHG	EO-NO	DATE	CHK
2	4590-G659	'11. 3.28	斉藤
1	4590-4983	'99. 2.25	福田

3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	竹谷 福田	谷戸 鍋島
		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 2

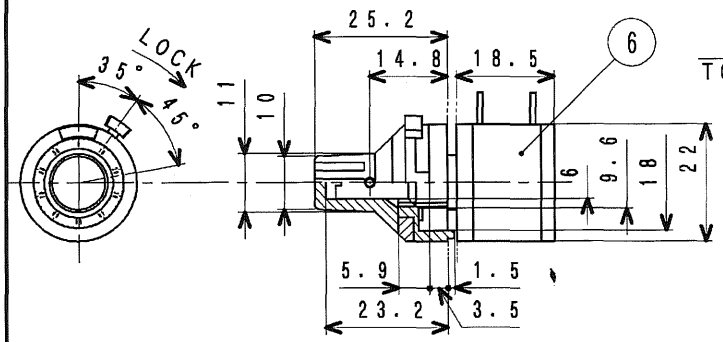
1/2

3 新図 ④ 旧引図 | サイズ A 3 | ① 組立図 | 2 鋳鍛歯車品 3 板金溶接品 4 組立品 5 切削品 6 その他（購入品）

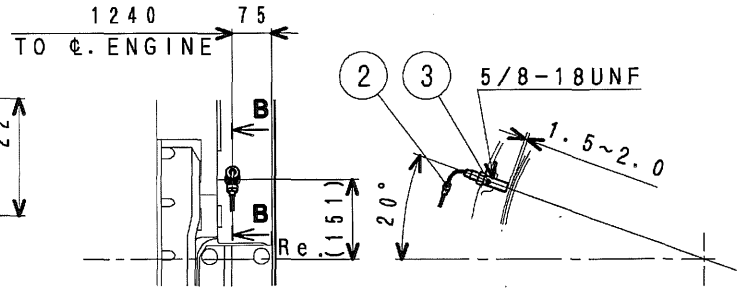
旧引 三菱 汎特 2011 12.12

MHI CONFIDENTIAL

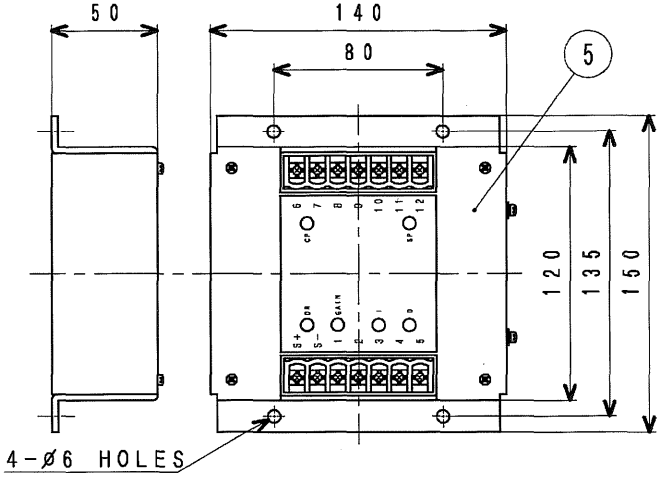
FULL-CAD



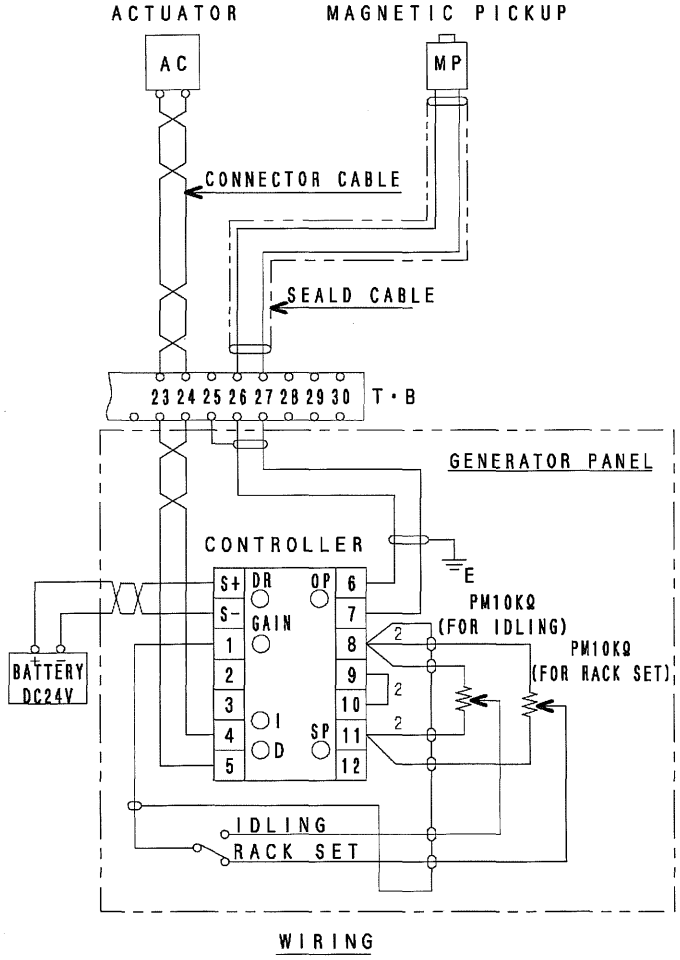
POTENTIOMETER



DETAIL OF PICK UP　　SECTION A-A



CONTROLLER



WIRING

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
No.	PARTS NO.	PARTS NAME	Q'TY

旧引
三菱 汎特
2011
12.12

FULL-CAD

MHI CONFIDENTIAL

CHG	EO-NO	DATE	CHK
2	4590-G659	'11. 3.28	斉藤
1	4590-4983	'99. 2.25	福田

3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	竹谷 福田	谷戸 鍋島
		1998. 3. 9

S16R

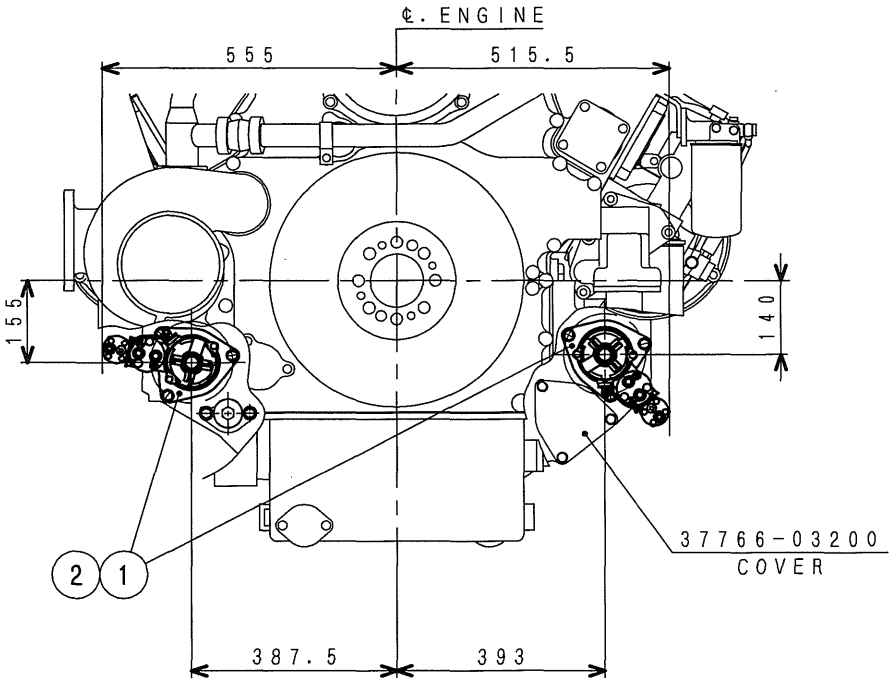
GOVERNOR

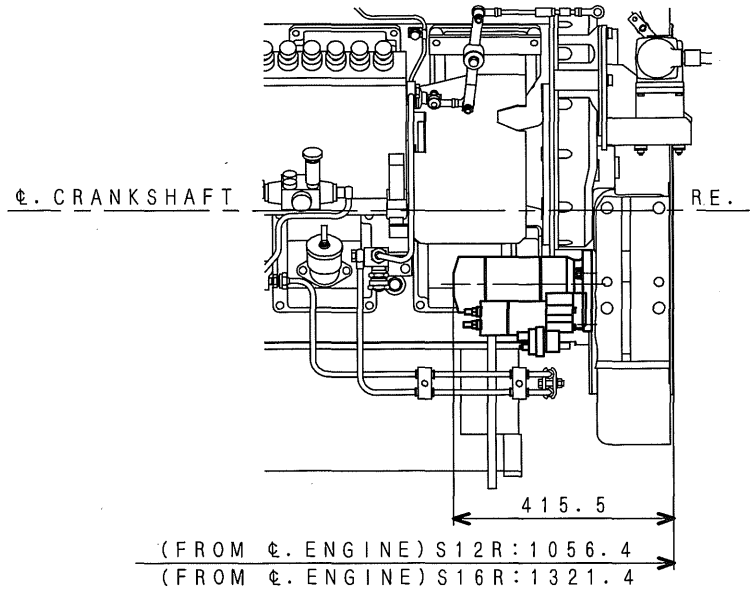
三菱重工業株式会社 汎用機・特車事業本部
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.

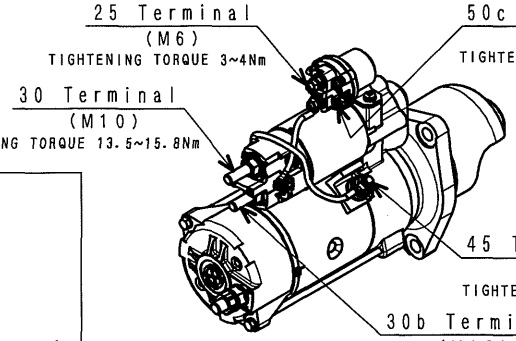
図面番号 DRAWING No. 37896-63005 ②

2/2

3 新図 ④ 旧引図 | サイズ A3 | ① 組立図 2 鋳鍛歯車品 3 板金溶接品 4 組立品 5 切削品 6 その他（購入品）

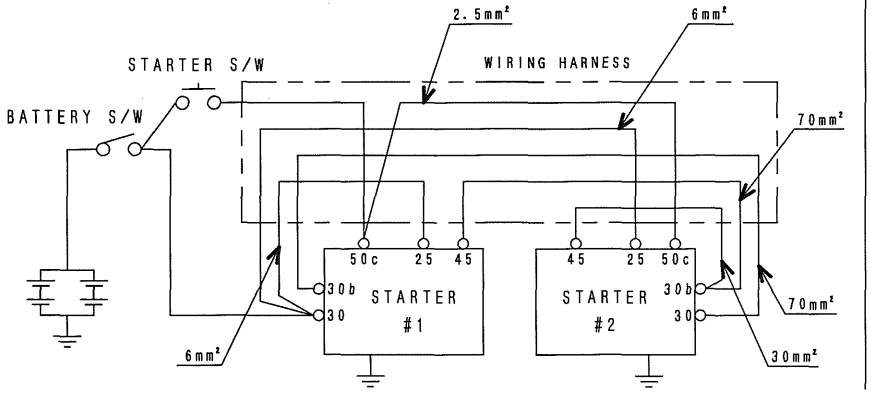






※THIS VIEW DOES NOT SHOW THE INSTALLATION ATTITUDE.

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



MHI CONFIDENTIAL

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

M/C

CHG	EO-NO	DATE	CHK

3rd ANGLE PROJECTION

尺度 SCALE :

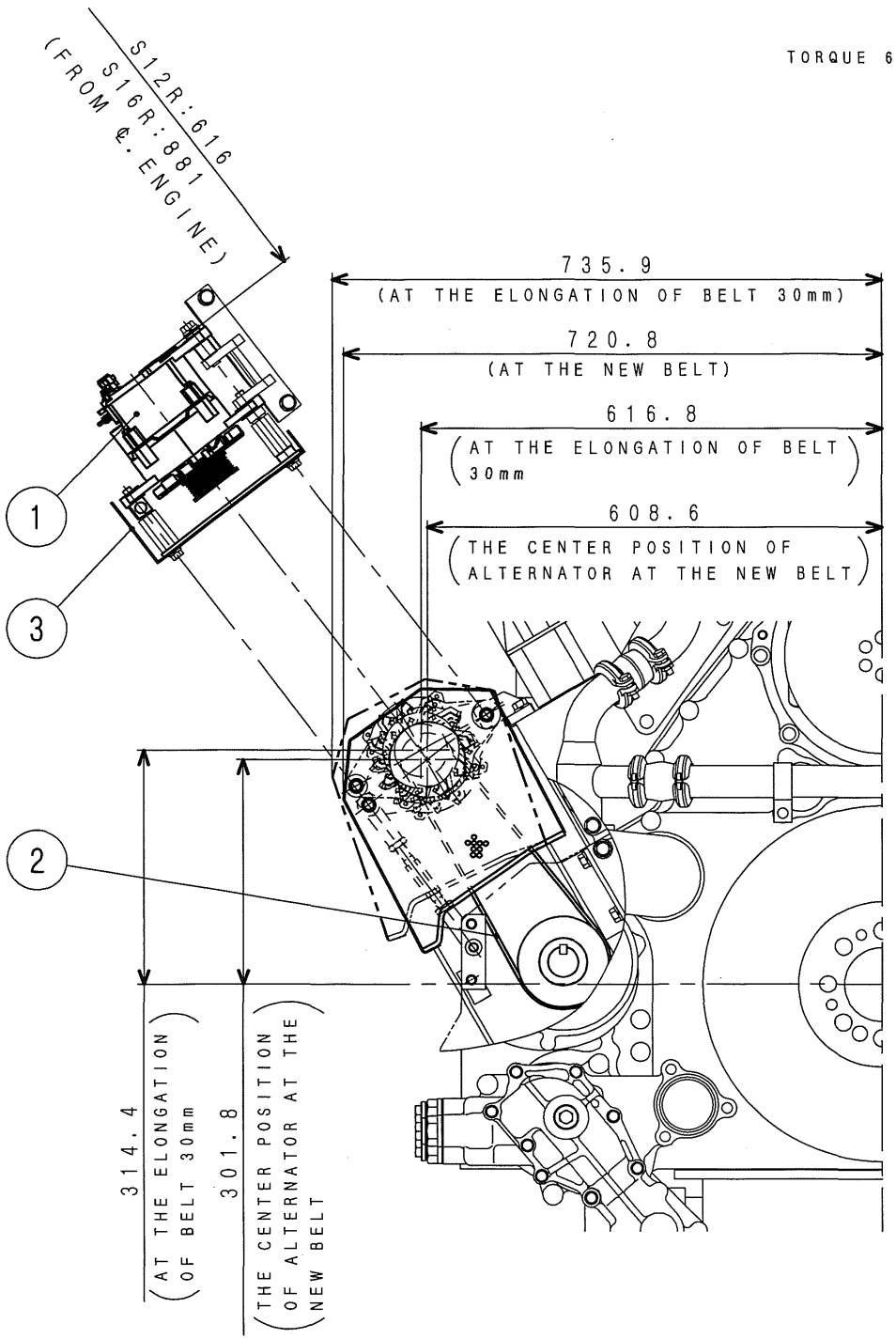
認可 APPD	検図 CHK	製図 DRN
橋口	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI 2016. 3. 25

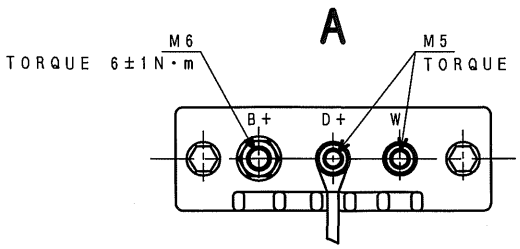
S12R, S16R STARTING MOTOR

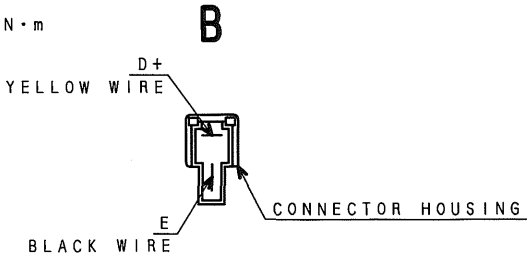
三菱重工業株式会社
MITSUBISHI HEAVY INDUSTRIES, LTD.

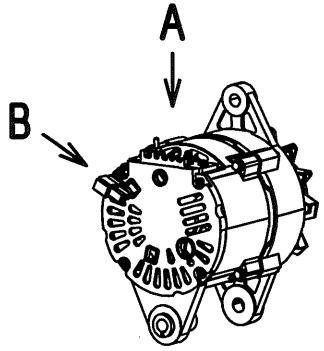
図面番号 DRAWING No. 38E96-66051 △

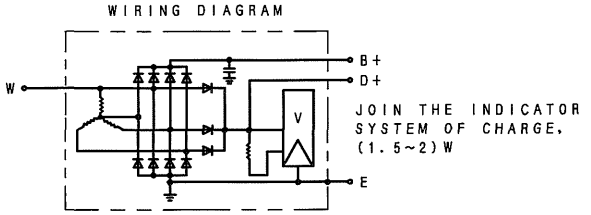
③新 図 4旧引図 | サイズ A3 | ①組立図 | 2鋳鍛鋳軍品 3板金溶接品 4組立品 5切削品 6その他（購入品）



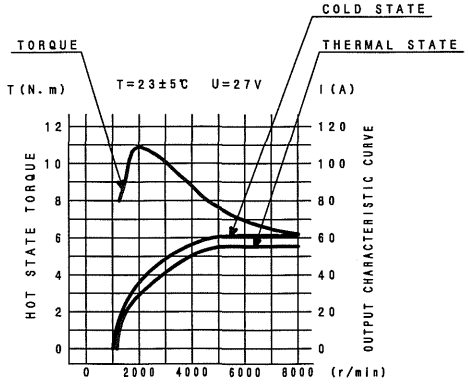








SPECS	28V 55A
PAIRSOFCLAWS	6
WORKING TEMPERATURE	-40℃~105℃
RATED SPEED	6000r/min
MAXIMUM SPEED	12000r/min
STARTING GENERATE SPEED	≤1200r/min (COLD)
POLARITY	CONTINUOS
VOLTAGE REGULATED VALUE	n=6000r/min I=27.5A U=28.5±0.3V
SPEED CHARACTERISTIC	n=2000~10000r/min I=5.5A I△UI≤0.3V
LOAD CHARACTERISTIC	n=6000r/min I=5.5~49.5A I△UI≤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

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

M/C

MHI CONFIDENTIAL

CHG	ED-ND	DATE	CHK

3rd ANGLE PROJECTION

尺度 SCALE :

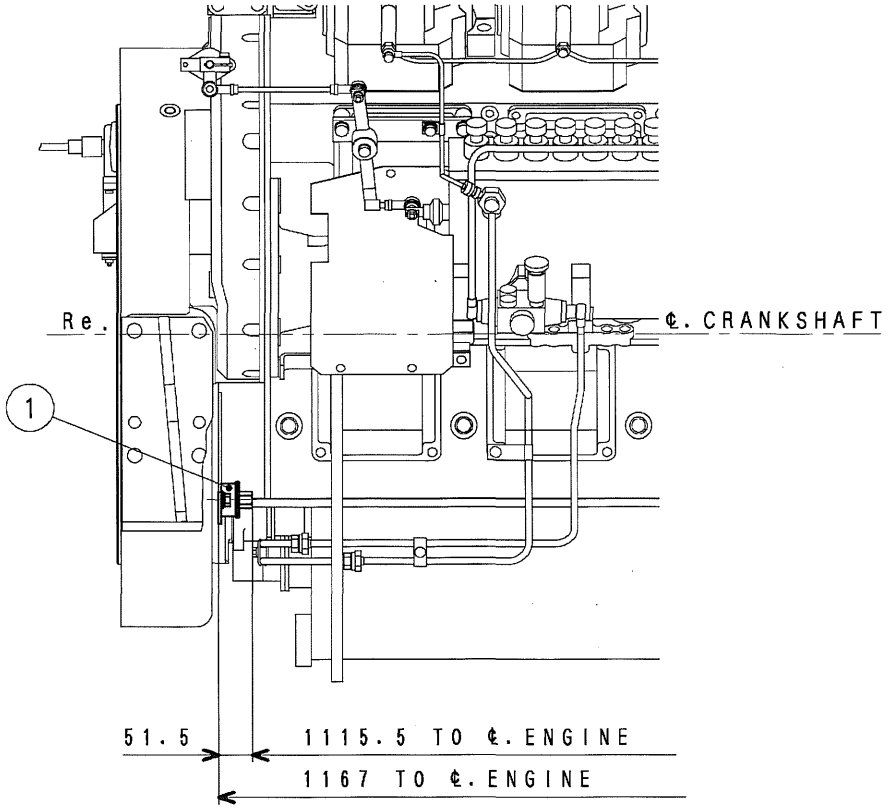
認可 APPD	検図 CHK	製図 DRN
橋口	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI 2016. 3.25

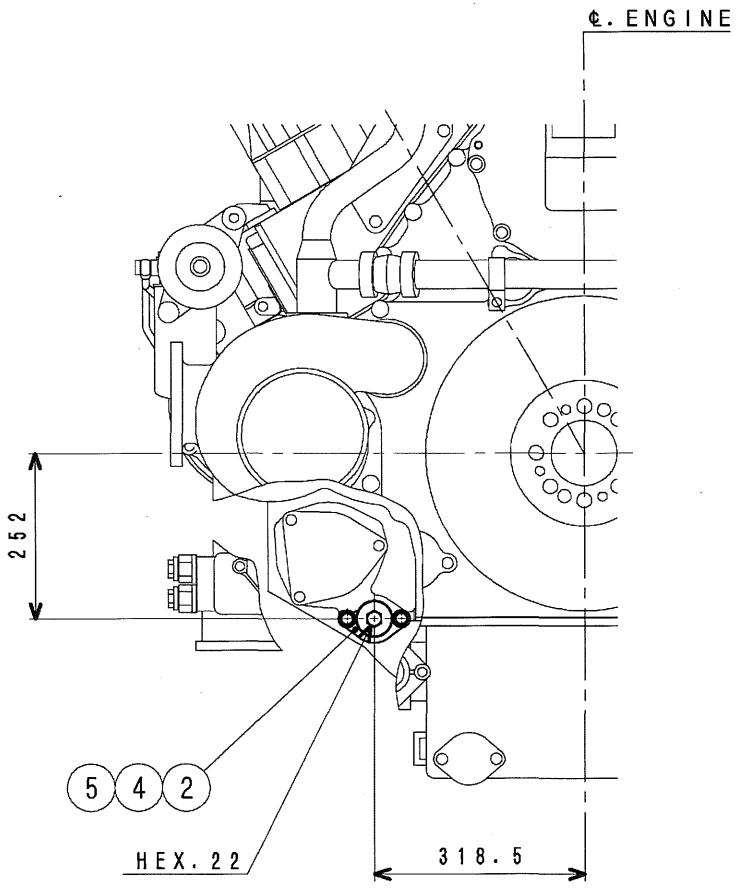
S12R, S16R
DYNAMO

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

図面番号 DRAWING No. 38E96-68051

③新 図 4旧引図 | サイズ A3 | ①組立図 | 2 歯車類単品 3 板金溶接品 4 組立品 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
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

旧引
三菱
汎特
2011
12.12

FULL-CAD

MHI CONFIDENTIAL

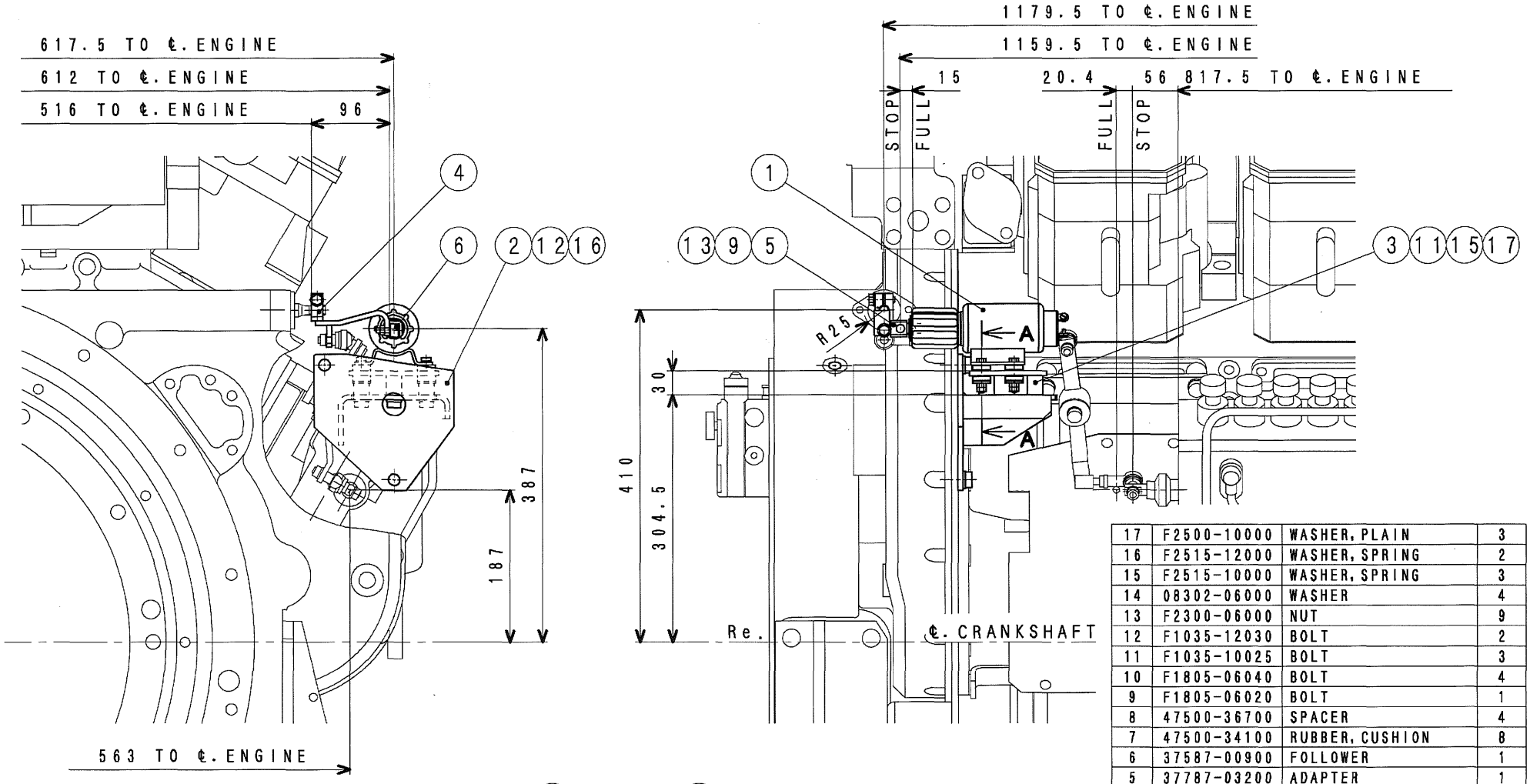
CHG	EO-NO	DATE	CHK
1	4590-G661	'11. 3.29	斉藤

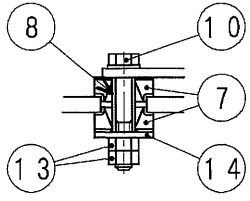
3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	竹谷 福田	谷戸
		1997. 8. 8

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 DRAWING No. 37896-71001 △1

3 新図 ④旧引図 | サイズ A3 | ①組立図 | 2 鋳鍛歯車品 3 板金溶接品 4 組立品 5 切削品 6 その他(購入品)





SECTION A-A

No.	PARTS NO.	PARTS NAME	Q'TY
17	F2500-10000	WASHER, PLAIN	3
16	F2515-12000	WASHER, SPRING	2
15	F2515-10000	WASHER, SPRING	3
14	08302-06000	WASHER	4
13	F2300-06000	NUT	9
12	F1035-12030	BOLT	2
11	F1035-10025	BOLT	3
10	F1805-06040	BOLT	4
9	F1805-06020	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

旧引
汎特
2013
2.8

M/C

MHI CONFIDENTIAL

CHG	EO-NO	DATE	CHK
4	4590-H424	'12.11.19	谷戸
3	4590-G662	'11. 3.28	斉藤
2	4590-D687	'07.10. 4	斉藤
1	4590-7908	'01. 6.20	福田

3rd ANGLE PROJECTION
尺度 SCALE
:

認可 APPD	検図 CHK	製図 DRN
橋口	竹谷 福田	谷戸 鍋島
		1997.10.31

S16R

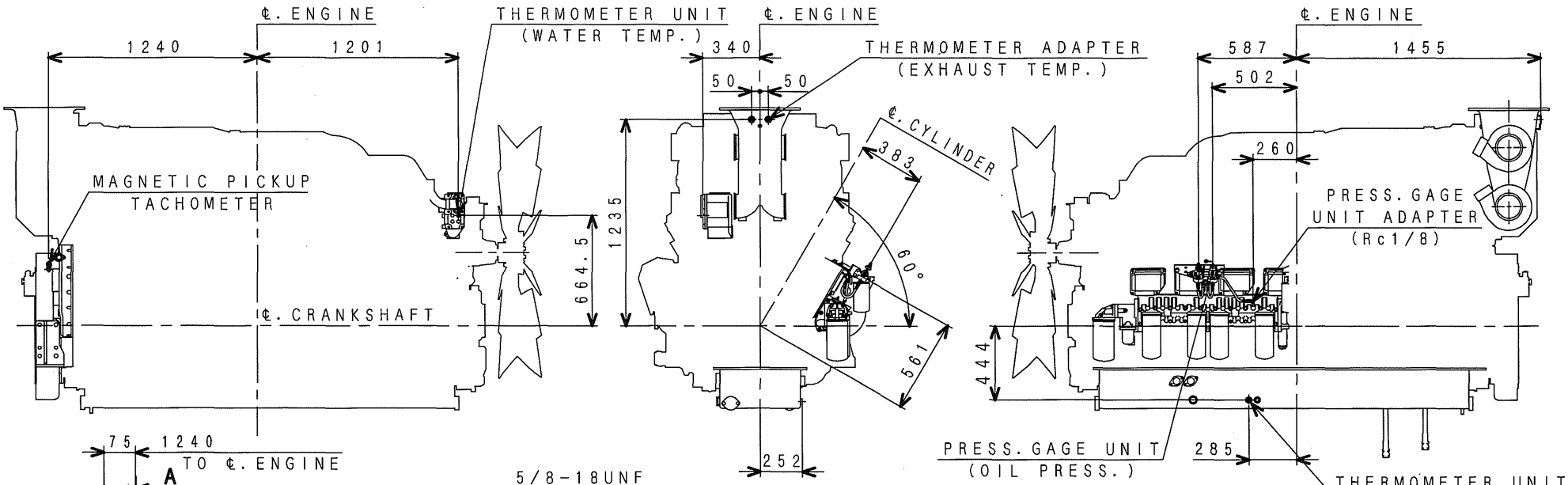
STOP SOLENOID

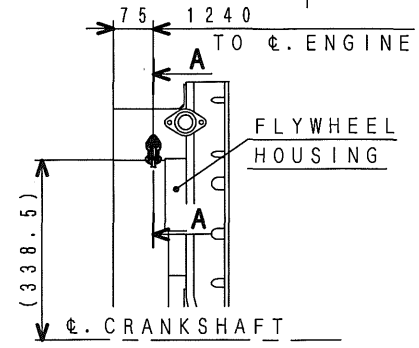
三菱重工業株式会社 汎用機・特車事業本部
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS.

図面番号 DRAWING No. 37896-87502 ④

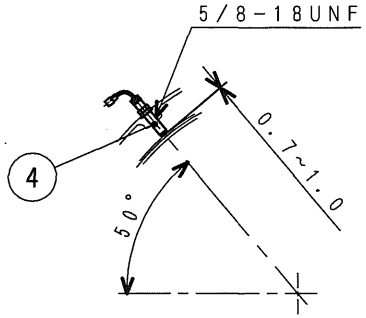
注記 (1) 本図のソレノイドは，シンクロスタート製である。

3 新図 ④ 旧引図	サイズ A3	① 組立図	2 鋼鉄鋳造品 3 板金溶接品 4 組立品 5 切削品 6 その他（購入品）

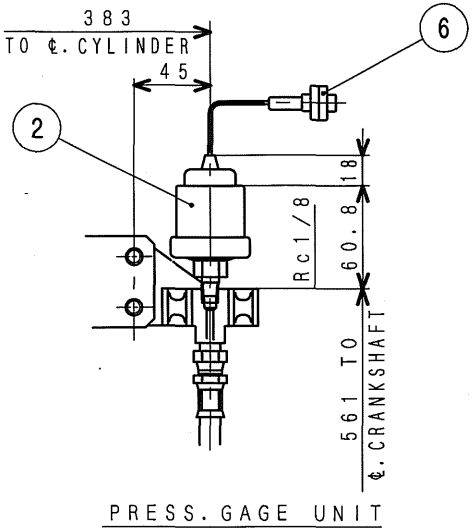




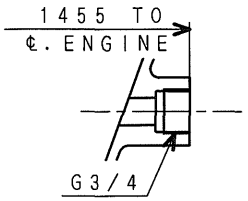
TACHOMETER PICKUP



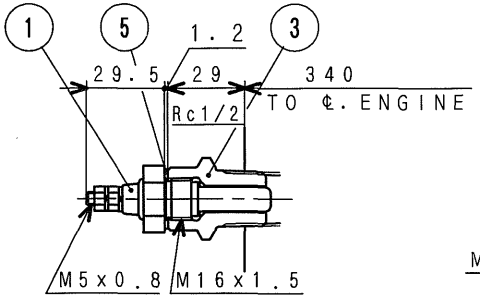
SECTION A-A



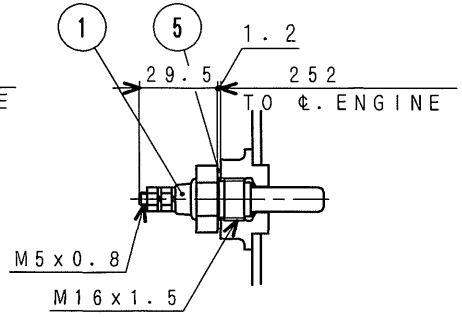
PRESS. GAGE UNIT



ADAPTER



THERMOMETER UNIT
WATER TEMP.



THERMOMETER UNIT
OIL TEMP.

MHI CONFIDENTIAL

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

	No.	PARTS NO.	PARTS NAME	Q'TY
☆	6	MH052231	CONNECTOR	1
	5	05946-01601	WASHER, SEALING	2
	4	04410-43410	PICKUP, MAGNETIC	1
	3	45600-42902	CONNECTOR	1
	2	04541-86200	UNIT, GAGE	1
	1	04524-02230	UNIT, THERMO	2

M/C

CHG	EO-NO	DATE	CHK

3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPO
検図 CHK T. HASEGAWA K. SAKAMOTO
製図 DRN N. YAMAGUCHI 2016. 3. 25

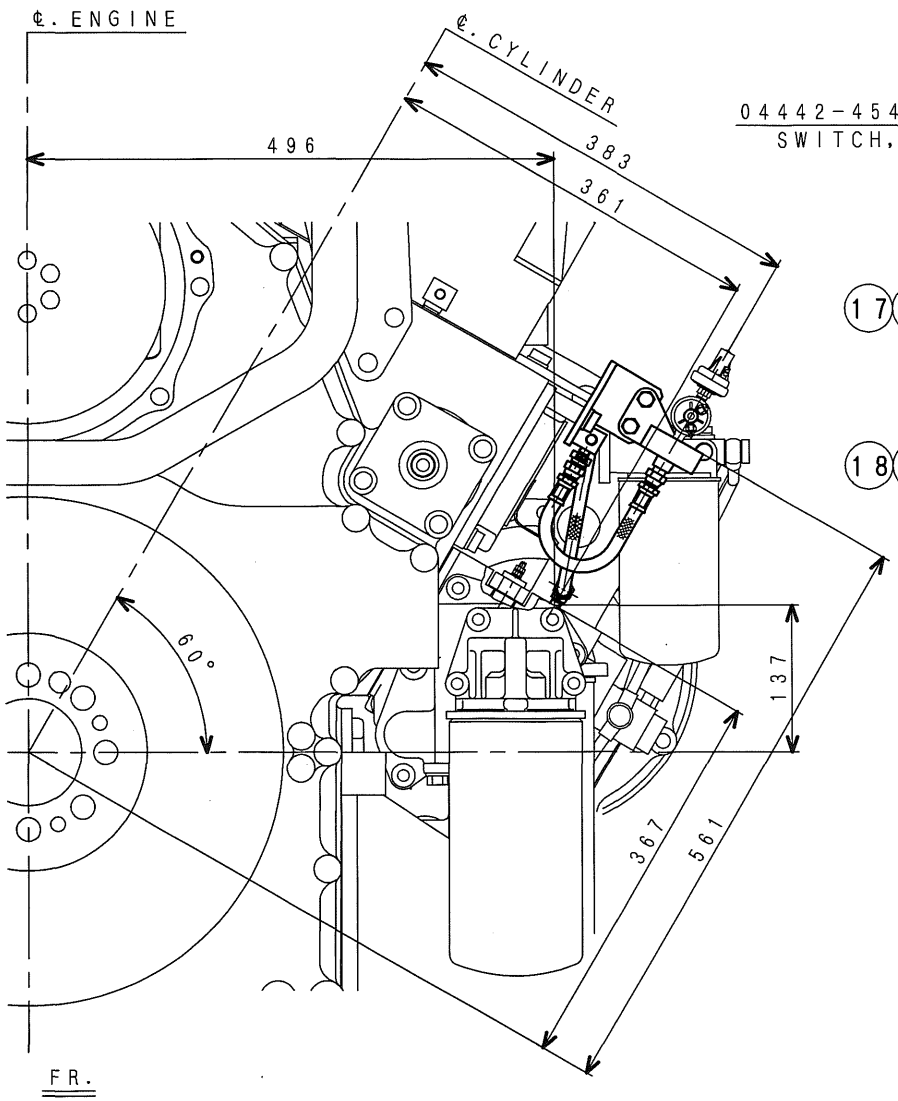
S16R-PTA, -PTA2
METER & SENSOR

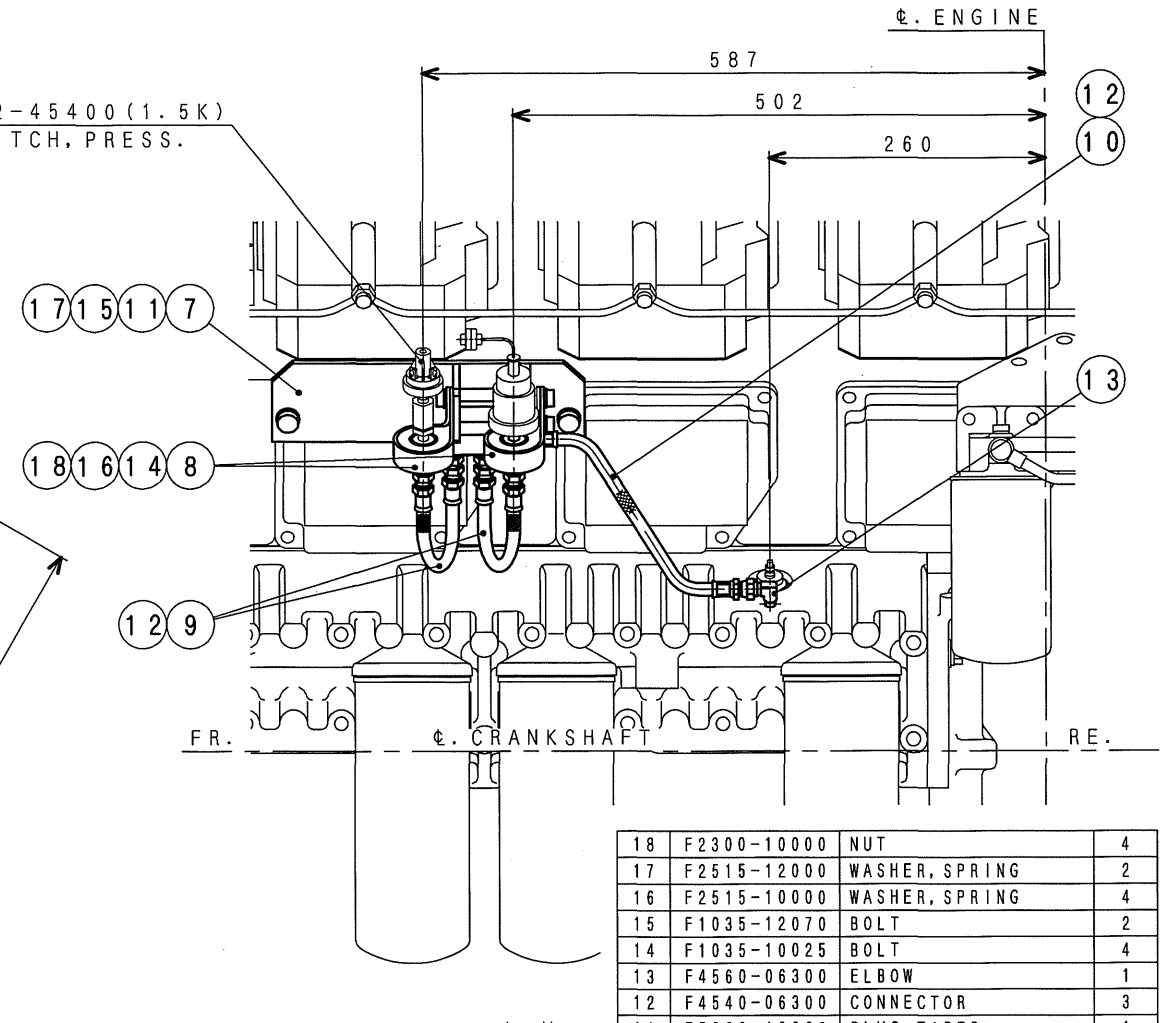
三菱重工業株式会社
MITSUBISHI HEAVY INDUSTRIES, LTD.

図面番号 DRAWING No. 38F96-90152 △

1/2

③新図 ④旧引図 | サイズ A3 | ①組立図 | 2 鋳鋼歯車品 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
18	F2300-10000	NUT	4
17	F2515-12000	WASHER, SPRING	2
16	F2515-10000	WASHER, SPRING	4
15	F1035-12070	BOLT	2
14	F1035-10025	BOLT	4
13	F4560-06300	ELBOW	1
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

MHI CONFIDENTIAL

M/C

CHG	EO-NO	DATE	CHK

3rd ANGLE PROJECTION

尺度 SCALE :

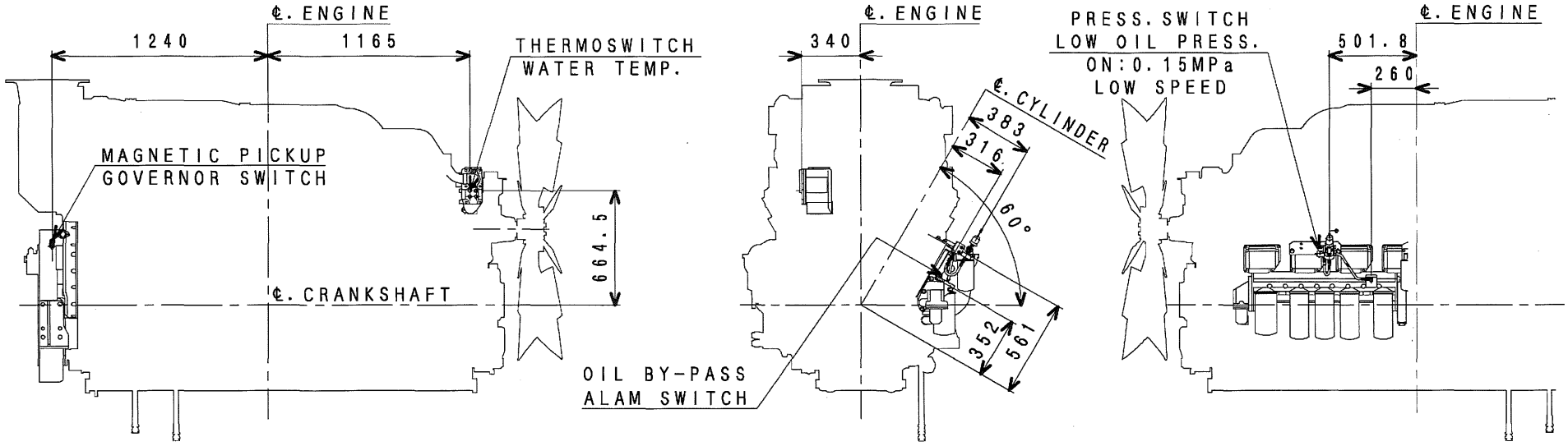
認可 APPD	検図 CHK	製図 DRN
樋口	T. HASEGAWA K. SAKAMOTO	N. YAMAGUCHI 2016. 3. 25

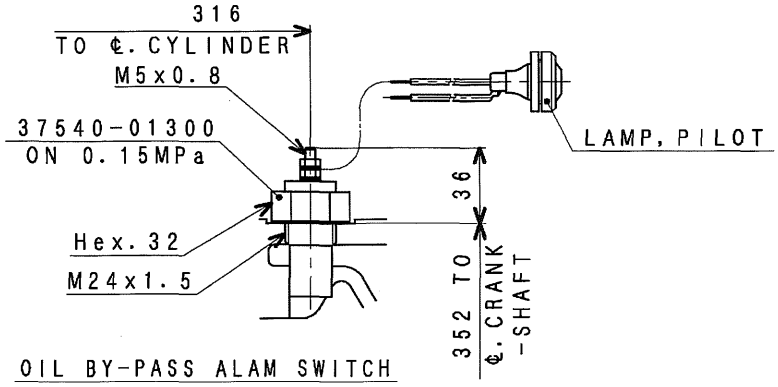
S16R-PTA, -PTA2
METER & SENSOR

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

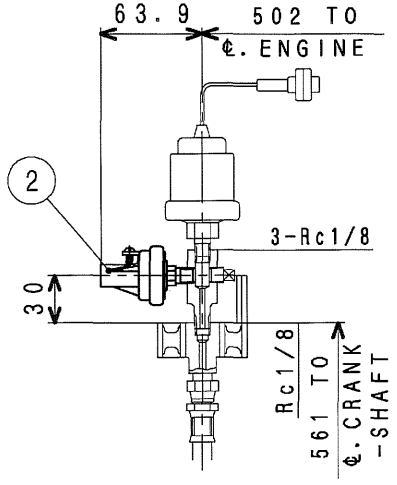
図面番号 DRAWING No. 38F96-90152 △ 2/2

③新 図 4旧引図	サイズ A3	①組立図	2鋳鍛造部品 3板金溶接品 4組立品 5切削品 6その他(購入品)

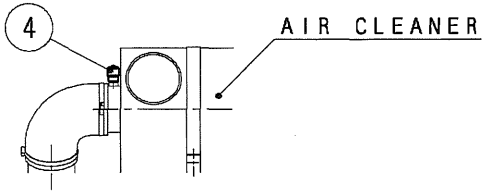




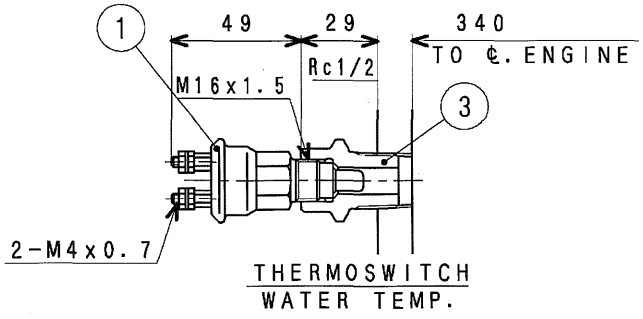
OIL BY-PASS ALAM SWITCH



PRESS. SWITCH
OIL PRESS.



AIR PRESS. INDICATOR



THERMOSWITCH
WATER TEMP.

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

	No.	PARTS NO.	PARTS NAME		Q'TY
☆	4	47220-34401	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℃ ON	1

CHG	EO-NO	DATE	CHK
3	4590-G664	'11. 3.29	斉藤
2	4590-7910	'01. 6.20	福田
1	4590-4698	'98.10.27	福田

3rd ANGLE PROJECTION
尺度 SCALE :

認可 APPD	検図 CHK	製図 DRN
橋口	仁尾 福田	斉藤
		1998. 8.20

S16R

ALARM SWITCH

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. 37896-90207 ③

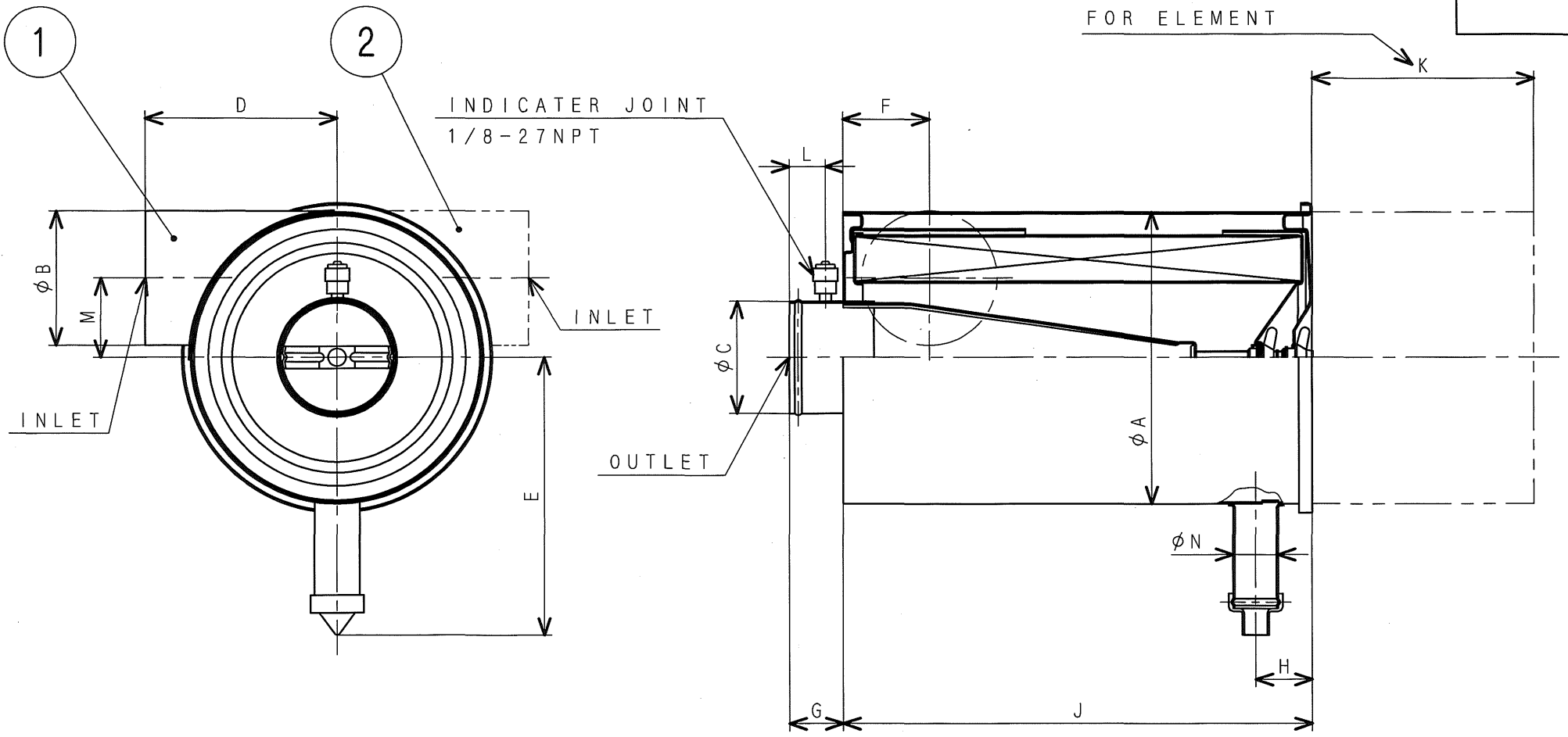
MHI CONFIDENTIAL

旧引 汎特 2011 12.12

FULL-CAD

3 新図 ④ 旧引図	サイズ A3	① 組立図	2 鋳鍛歯車品 3 板金溶接品 4 組立品 5 切削品 6 その他（購入品）

CHECKED BY



2	38G30-05301		RIGHT	386	177.8	152.4	241.3	283	109.7	60.5	50	629.4	617	40.6	105	48	22.5	38G30-06412
1	38G30-03101		LEFT	386	177.8	152.4	241.3	283	109.7	60.5	50	629.4	617	40.6	105	48	22.5	
NO.	PARTS NO.	TYPE / MEASURE	INLET	A	B	C	D	E	F	G	H	J	K	L	M	N	WEIGHT kg	ELEMENT ASSY. PARTS NO.

MHI CONFIDENTIAL

REV.	DATE

AIR CLEANER ASSY.

DWG. NO. S35-5030

MITSUBISHI HEAVY INDUSTRIES, LTD.

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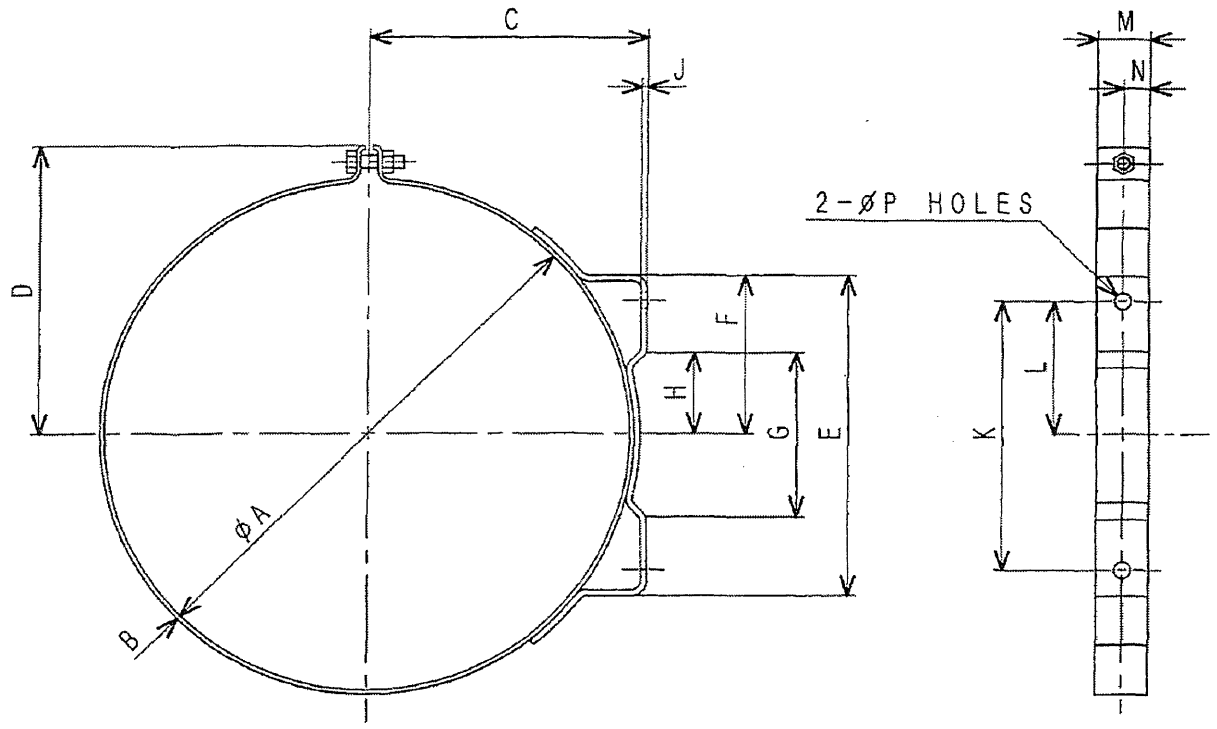

PARTS NO.	TYPE / MEASURE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	REMARKS
38G30-08301	15″(ϕ387.0)	387	2.0	201	230	241.4	120.7			5	203.2	101.6	40	20	2-ϕ12	
38G30-09301	13″(ϕ330.2)	330.2	2.0	185.2	200	185	162.5	53.8	26.9	5	152	76	38	19	2-ϕ10.3	

MHI CONFIDENTIAL

REV.	DATE

BAND

DWG. NO. S35-5110

MITSUBISHI HEAVY INDUSTRIES, LTD.

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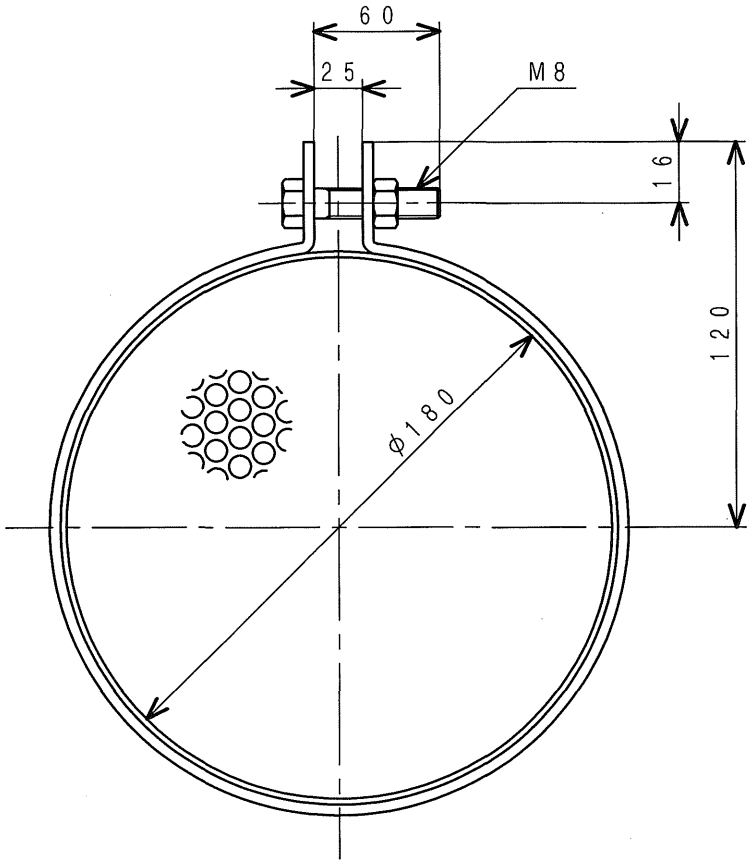
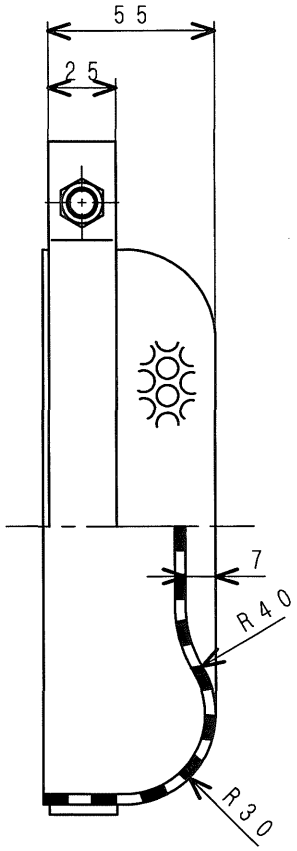




MHI CONFIDENTIAL

REV.	DATE

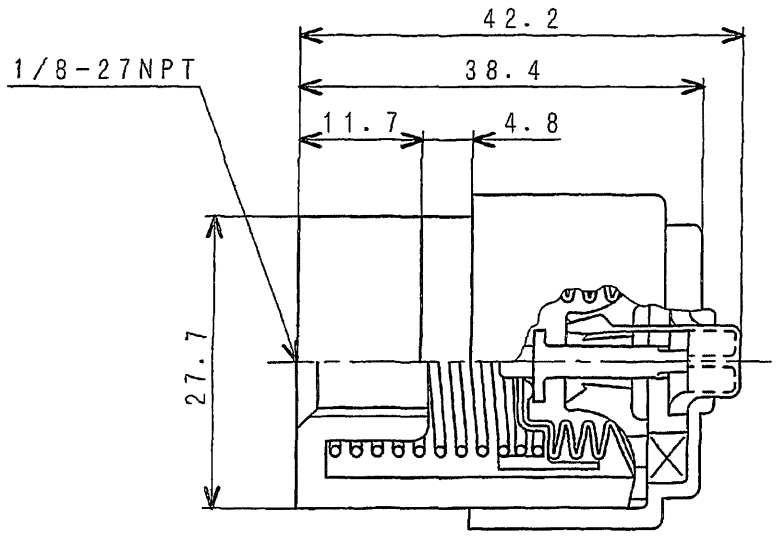
CAP, INLET

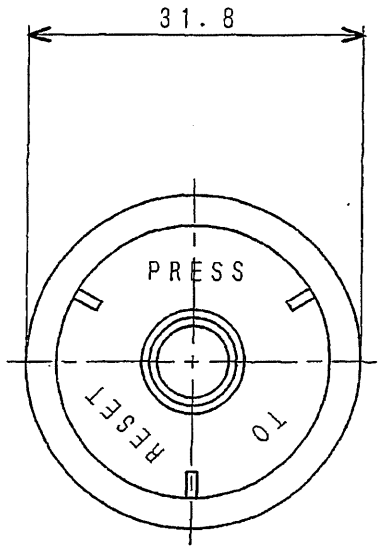
PART NO. 38G30-02201

DWG. NO. S35-5230

MITSUBISHI HEAVY INDUSTRIES, LTD.

CHECKED BY
Y. FUKUDA





PARTS NO.	RESTRICTION (mmH2O)
47220-30701	762±58
47220-34301	508±48
47220-34401	635±58

MHI CONFIDENTIAL

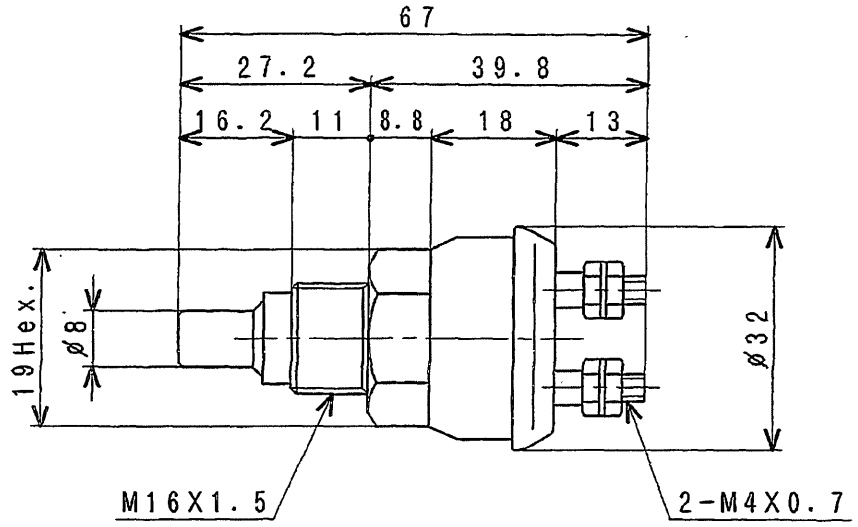
REV.	DATE
1	'93 2/18

INDICATOR

DWG. NO. S11-0920

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

CHECKED BY
NAKAMURA



CONNECTING TYPE	PARTS NO.	SET TEMP. (℃)		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^{0}_{-2}	94±2		

MHI CONFIDENTIAL

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

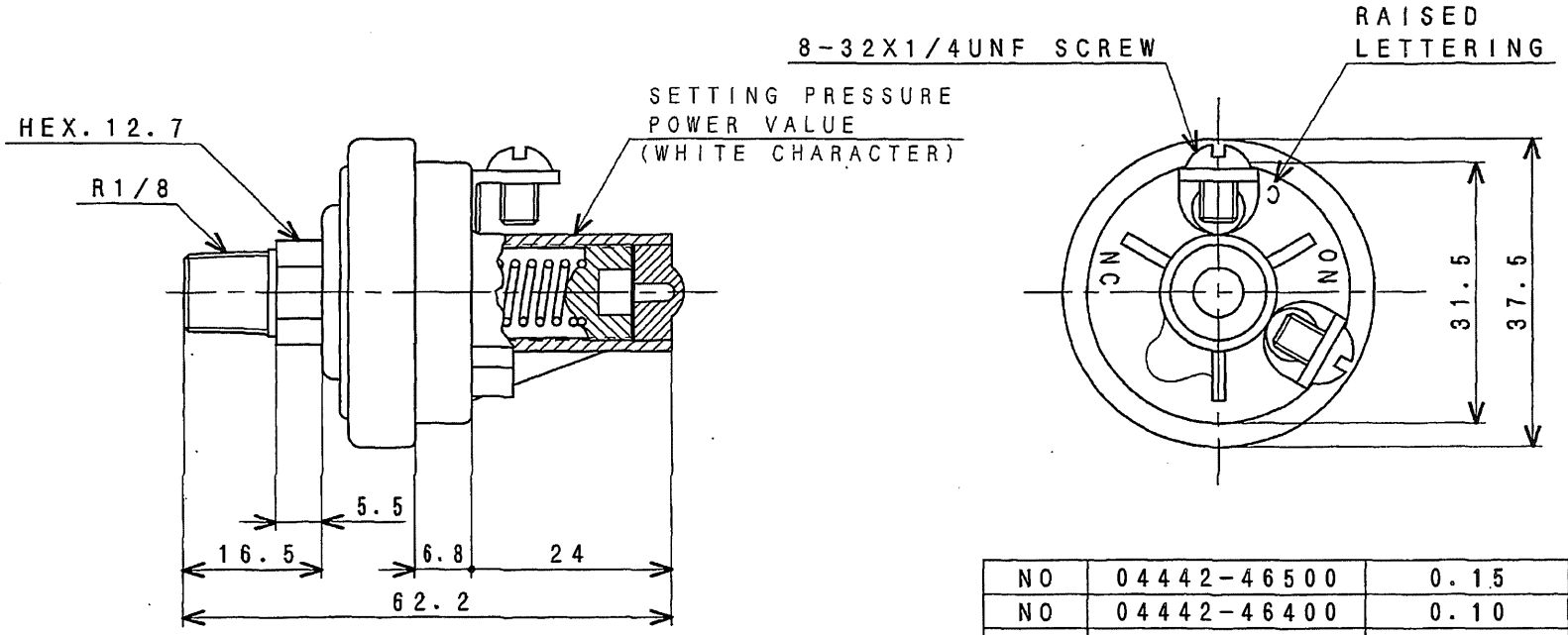
THERMO SWITCH

DWG. NO. S11-0551

MITSUBISHI HEAVY INDUSTRIES, LTD.

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY
K. YATO



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	

5. ON-OFF DIFFERECE : WITHIN 5%
4. POINT OF CONTACT : (NO) (NC)
3. USE TEMP. : -40.0℃~+120.0℃
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)

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

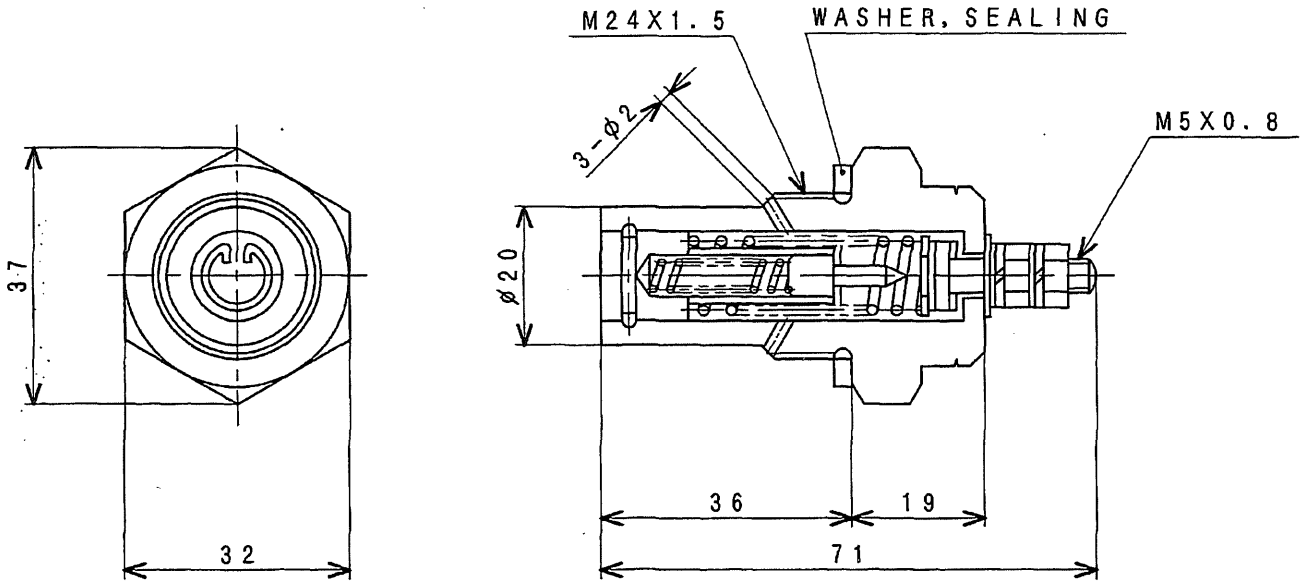
SWITCH, PRESS

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。
3価クロメート処理　←　6価クロメート処理

SET PRESS. 0.15MPa

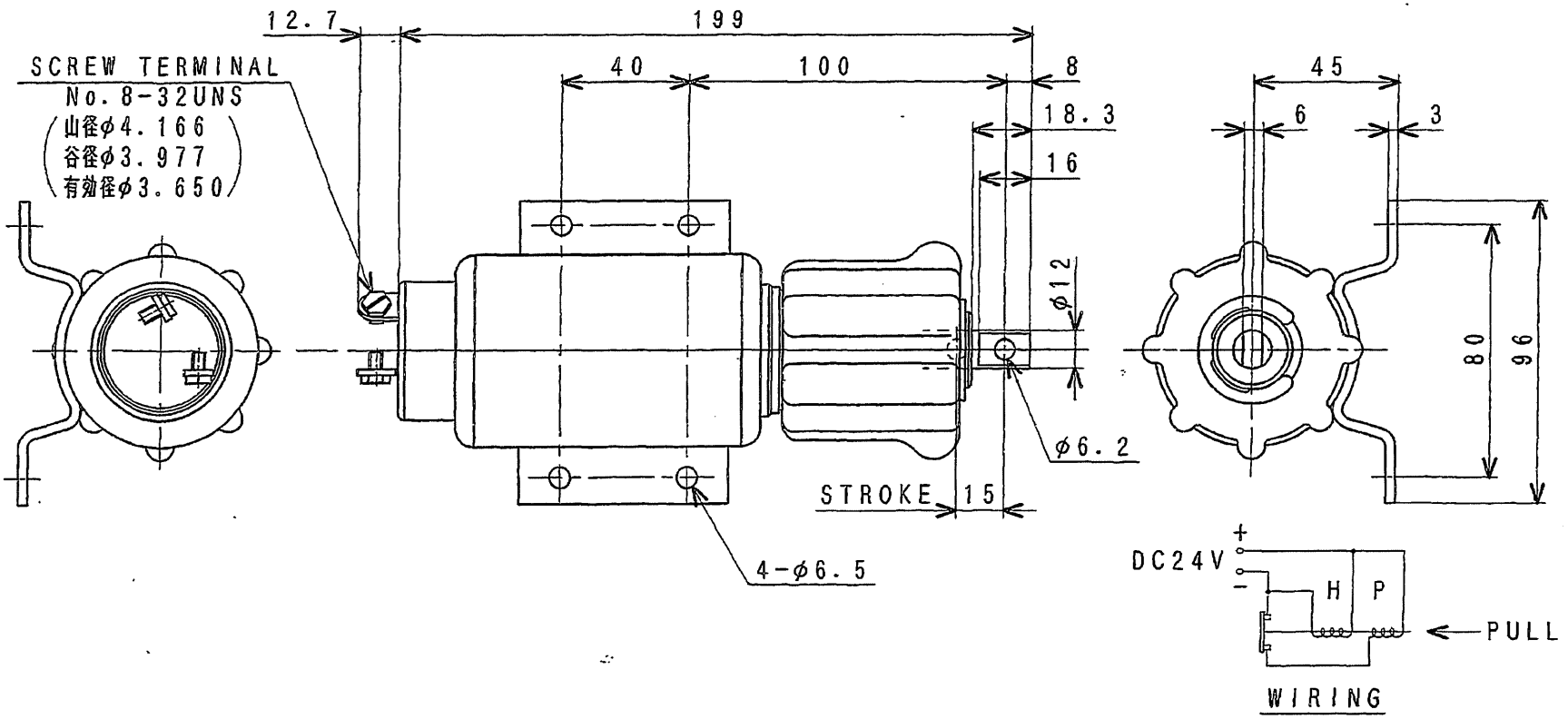
MHI CONFIDENTIAL

REV.	DATE

ALARM, OIL FILTER
PART NO. 37540-01301

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

CHECKED BY
Y. FUKUDA



WIRING

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

MHI CONFIDENTIAL

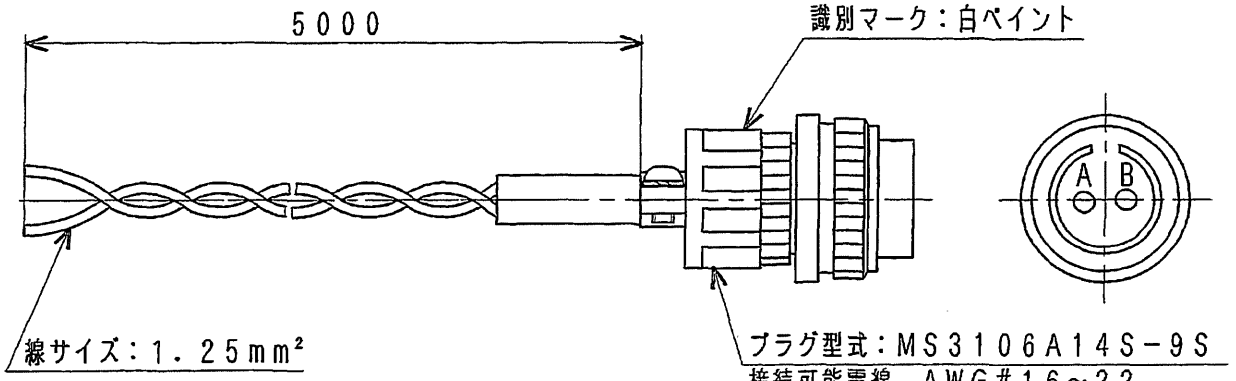
REV.	DATE

SOLENOID

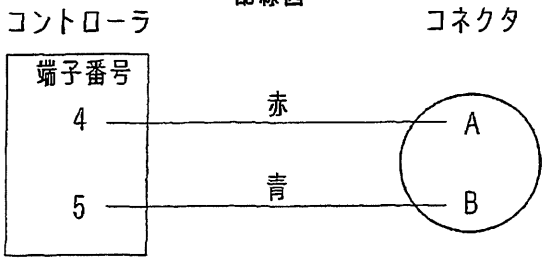
DWG. NO. S13-0282

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

CHECKED BY
Y. FUKUDA



配線図



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

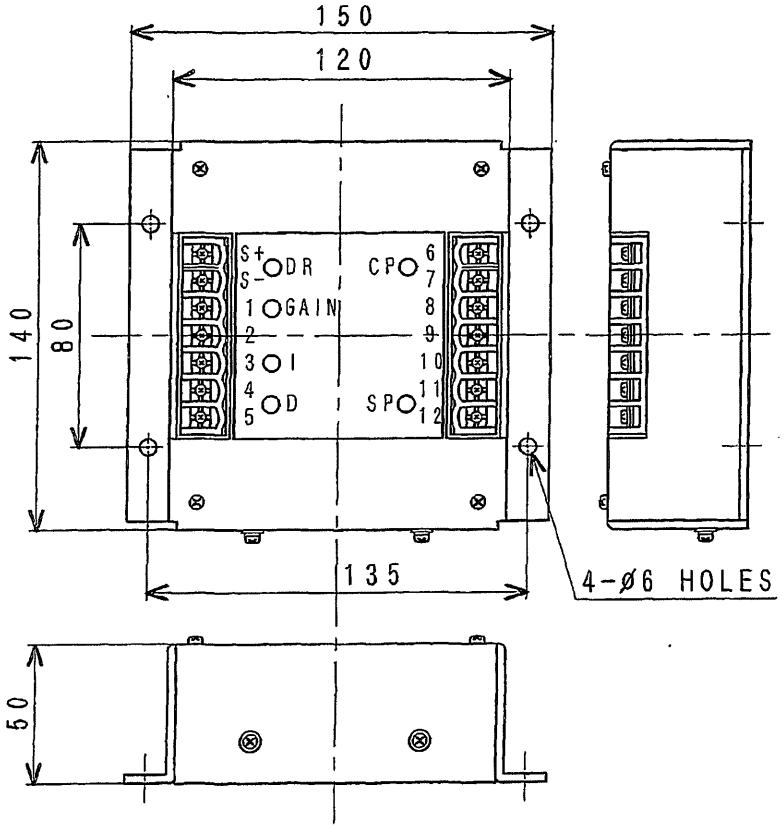
PART NO. 04410-32902

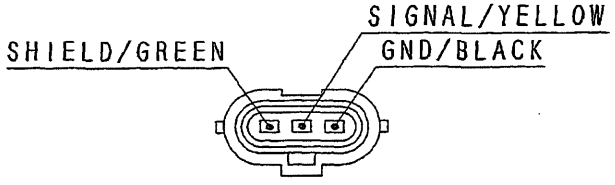
DWG. NO. S13-1022

MITSUBISHI HEAVY INDUSTRIES, LTD.

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY
Y. FUKUDA

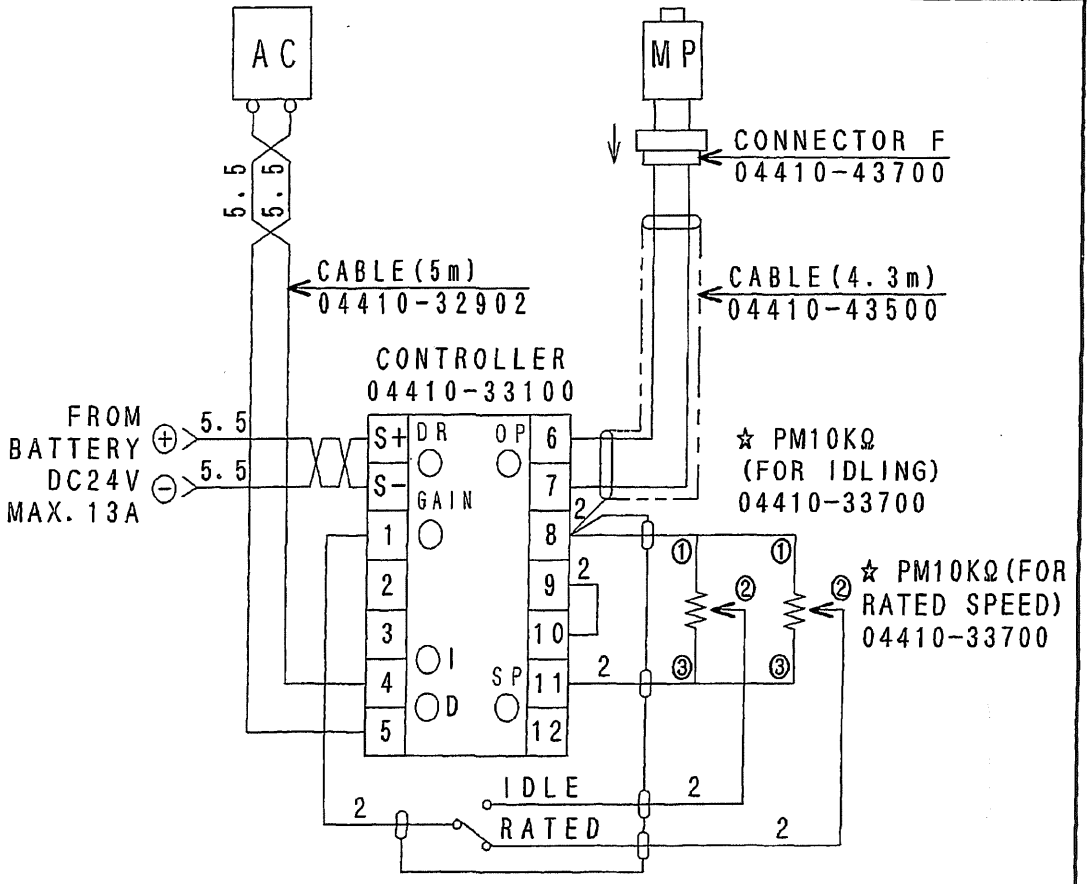




CONNECTOR F
04410-43700

ACTUATOR
04410-32011
04410-37081(S12H)

MAGNETIC PICKUP
04410-43410



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

WIRING

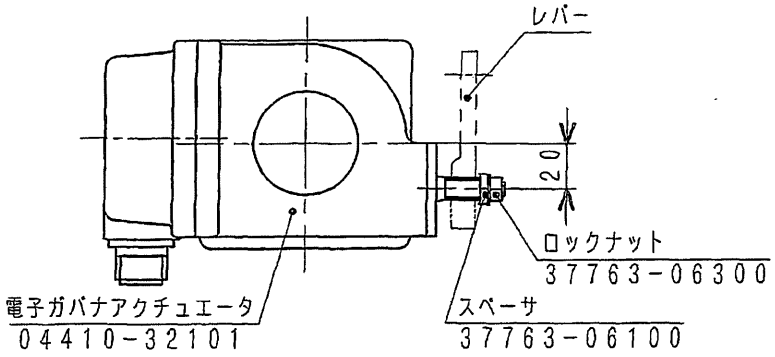
MHI CONFIDENTIAL

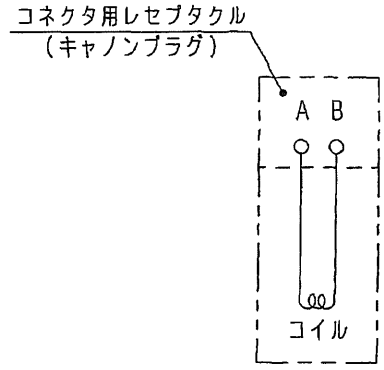
REV.	DATE
2	'11.4.20
1	'01.6.29

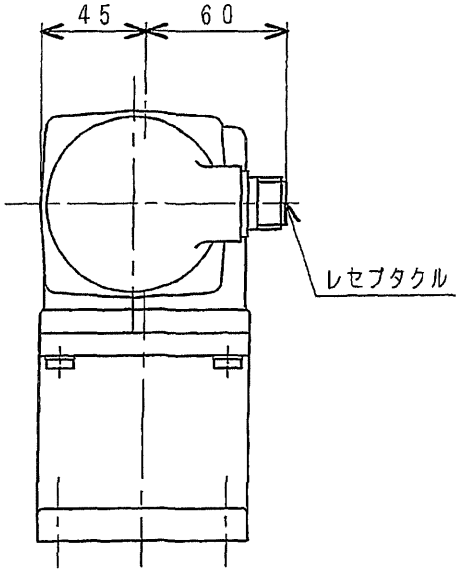
CONTROLLER SPEED
PART NO. 04410-33100

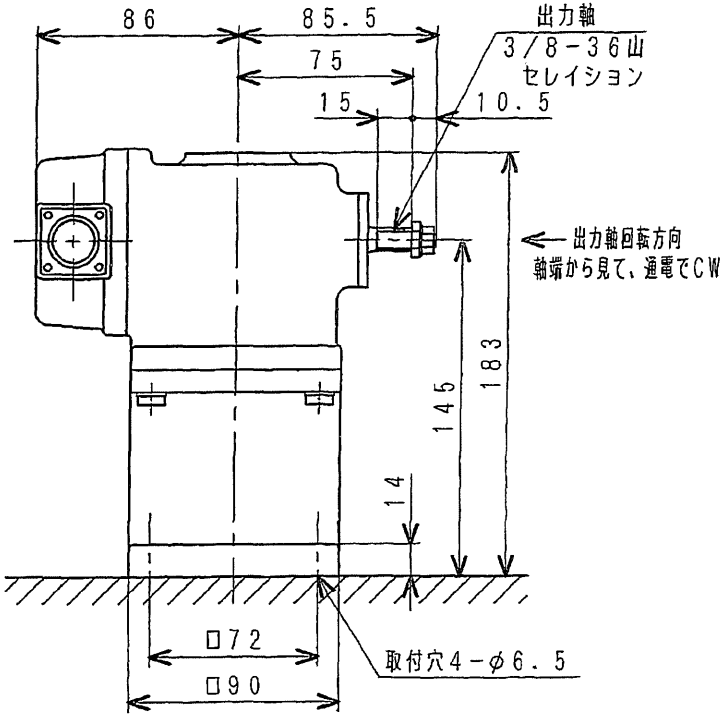
DWG. NO. S13-1042
MITSUBISHI HEAVY INDUSTRIES, LTD.
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY
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。

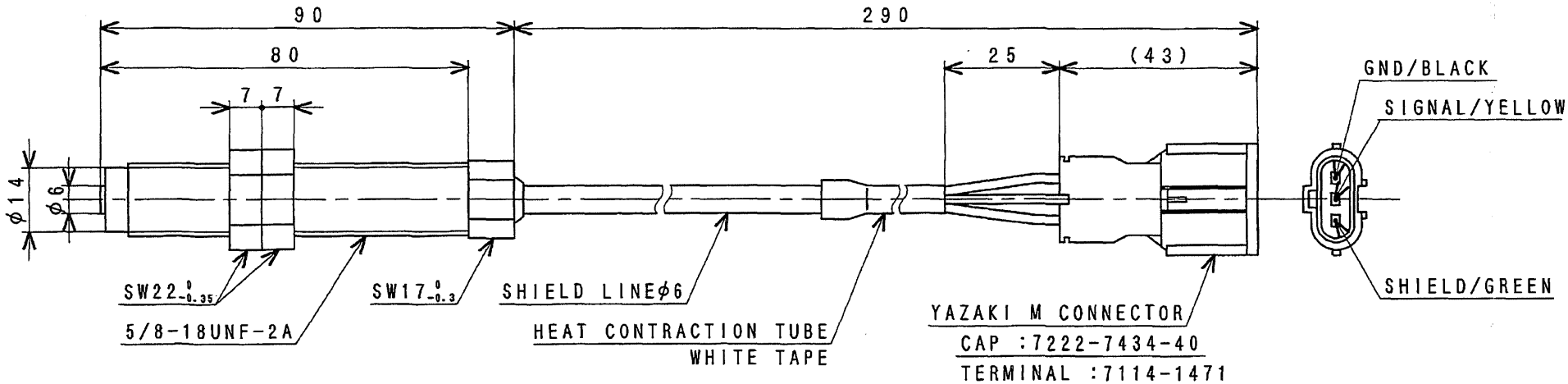
注記 (1) 本部品は、2線式アクチュエータである。

REV.	DATE

ACTUATOR/SG4017BR
PART NO. 04410-32011

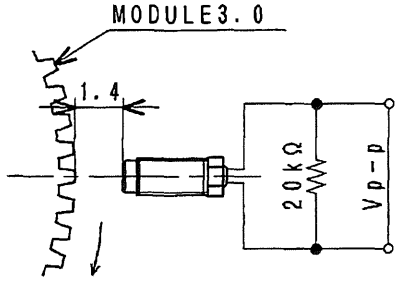
DWG. NO. S13-1761
MITSUBISHI HEAVY INDUSTRIES, LTD.
GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY
T. HASHIGUCHI



SPECIFICATION

1. ELECTRIC MACHINE CHARACTERISTIC
   - OUTPUT VOLTAGE :FIGURE1. MEASUREMENT CONDITION
     4.0Vp-pMORE(at700Hz)
     7.0Vp-pMORE(at6700Hz)
   - DIRECT CURRENT RESISTANCE :1.3kΩ~1.6kΩ(at+25℃)
   - INSULATION RESISTANCE :1MΩ以上 atDC500V (CONNECTOR TERMINAL-HOUSING)
   - ELECTRIC STRENGTH :50/60Hz AC500V 1MINUTE (CONNECTOR TERMINAL-HOUSING)
2. MECHANICAL CHARACTERISTIC
   - CONNECTOR PULL OMISSION POWER:49N MORE
   - TIGHTENING DESTRUCTION TORQUE:49N·m MORE
3. OPERATING TEMPERATURE LIMIT
   -40℃~+120℃



COGWHEEL ROTATIONAL SPEED 700Hz~6700Hz

FIGURE1. OUTPUT CONDITION

MHI CONFIDENTIAL

REV.	DATE
2	'11.10.28
1	'06.6.9

PICKUP, MAGNETIC

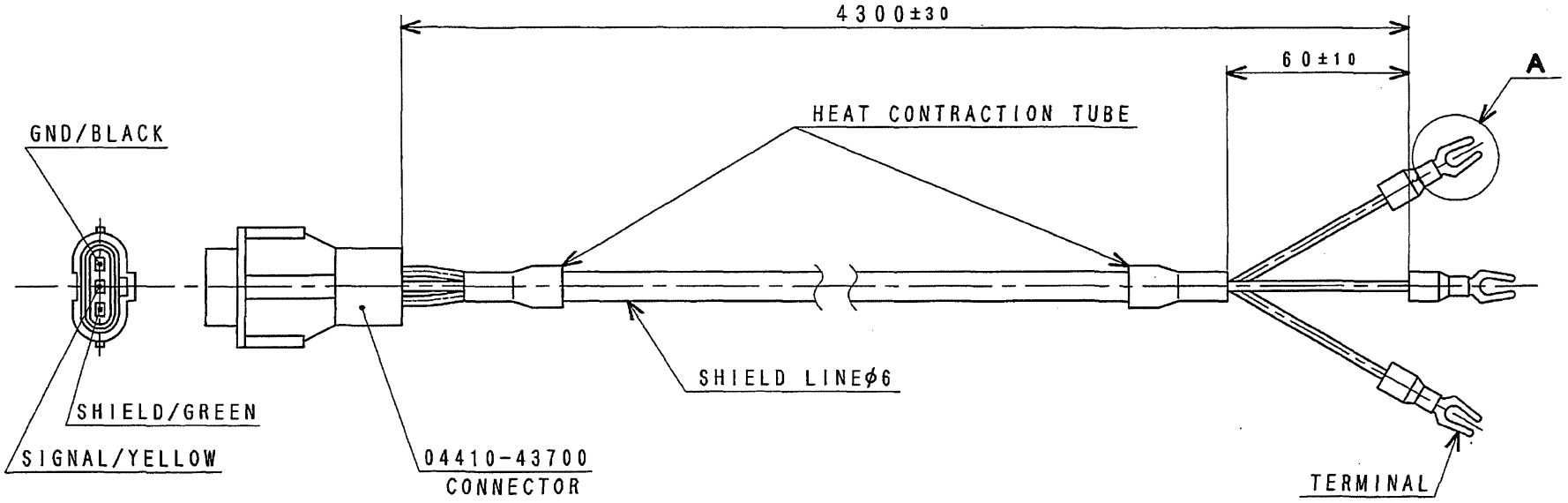
PART NO. 04410-43410

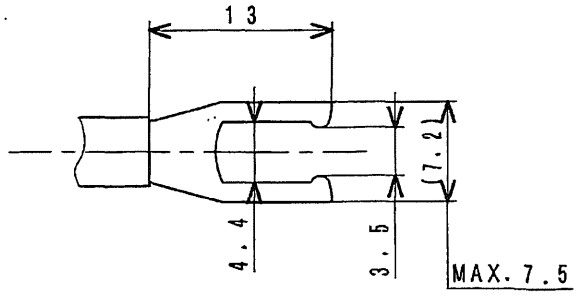
DWG. NO. S13-2011

MITSUBISHI HEAVY INDUSTRIES, LTD.

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY
T. HASHIGUCHI





DETAIL A

MHI CONFIDENTIAL

REV.	DATE
1	'09.12.6

CABLE, PICKUP

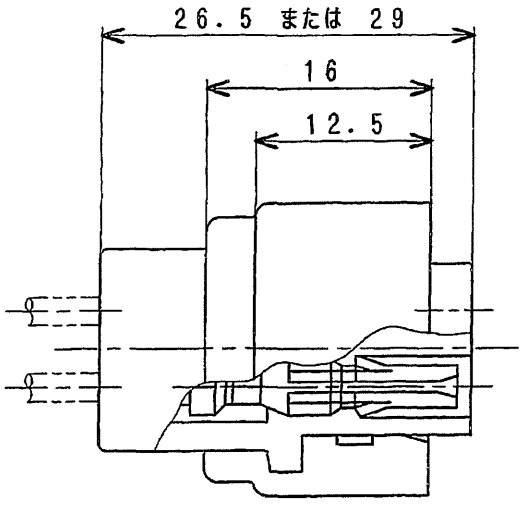
PART NO. 04410-43500

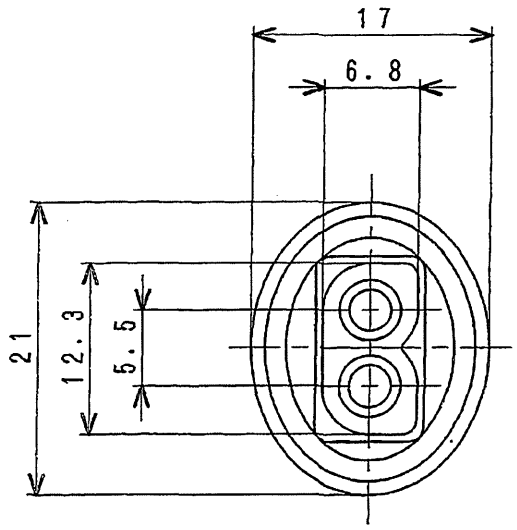
DWG. NO. S13-2020

MITSUBISHI HEAVY INDUSTRIES, LTD.

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY
Y. FUKUDA





MHI CONFIDENTIAL

REV.	DATE
2	'04.3.12
1	'93.8. 4

CONNECTOR

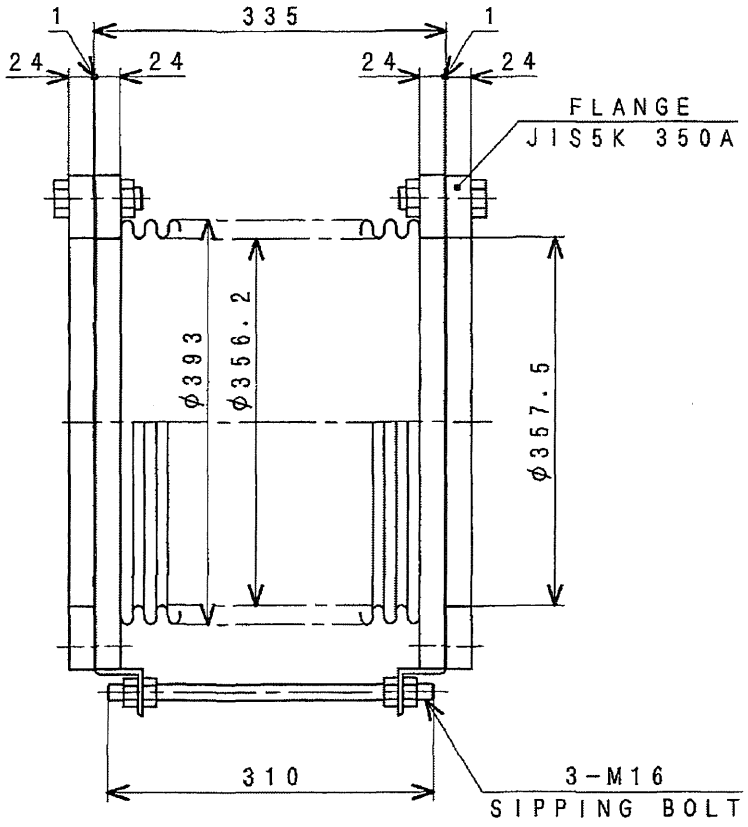
PART NO. MH052231

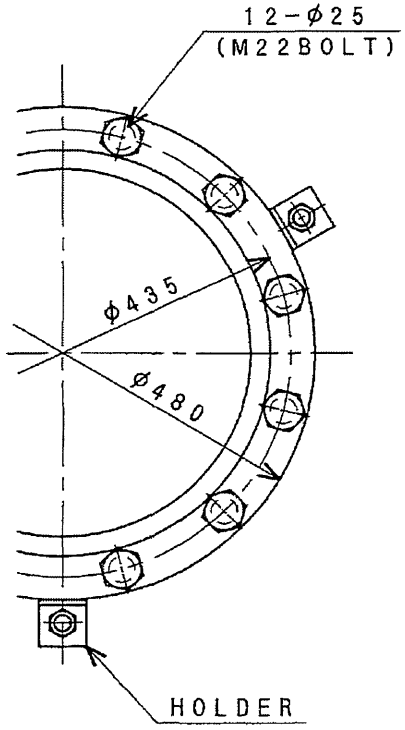
DWG. NO. S14-0330

MITSUBISHI HEAVY INDUSTRIES, LTD.

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY





MHI CONFIDENTIAL

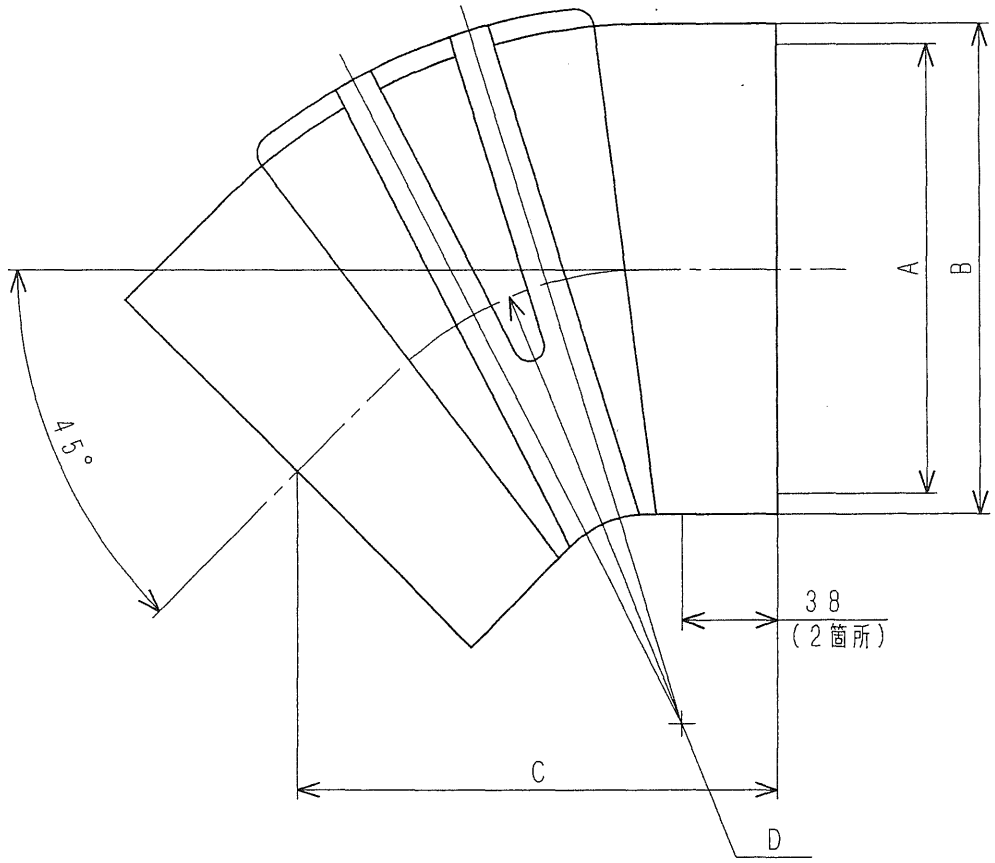
REV.	DATE

PIPE, FLEXIBLE
PART NO. 47920-12400

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

Same with 38G32-02400

CHECKED BY
Y. FUKUDA



PARTS NO.	SIZE / MEASURE	A	B	C	D
47220-31500	7" (ø177.8)	177.8	194.1	190.5	141.2
47220-31400	6" (ø152.4)	152.4	168.4	145.8	152.4

MHI CONFIDENTIAL

REV.	DATE

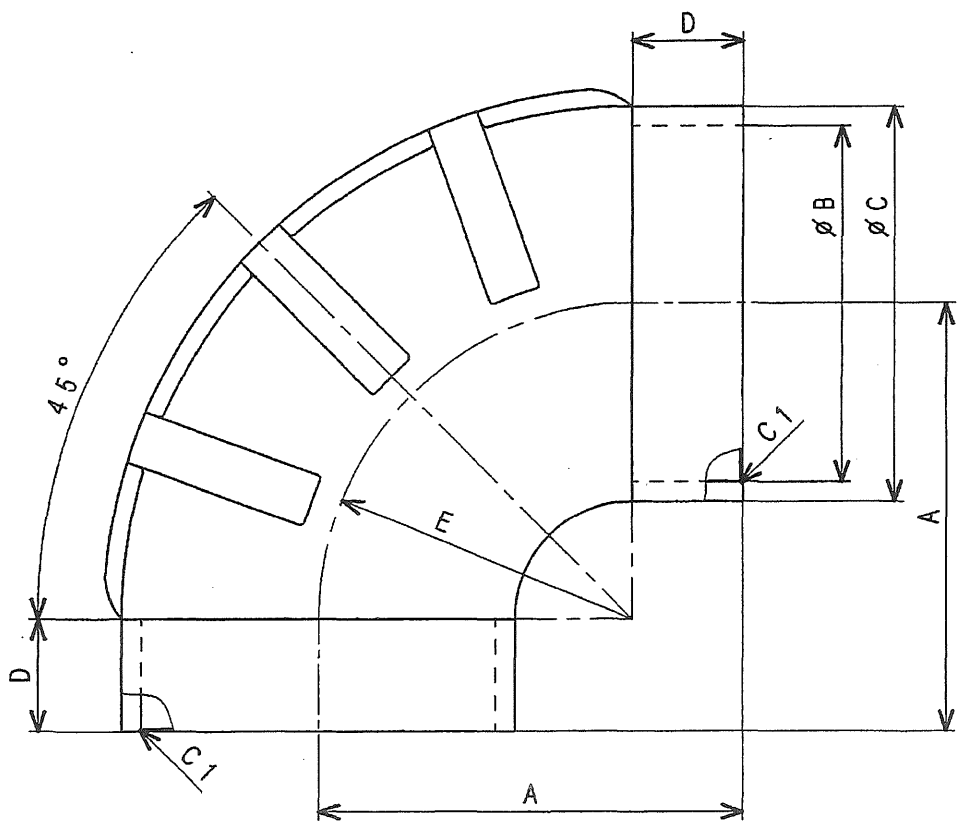
ELBOW/45°

DWG. NO. S35-0720

MITSUBISHI HEAVY INDUSTRIES, LTD.

SAGAMIHARA MACHINERY WORKS

CHECKED BY
T. HASHIGUCHI



47220-47600	ø160	145	160	176	40	100
47220-32600	7" (ø177.8)	184.2	177.8	194.6	50.8	133.4
47220-30400	6" (ø152.4)	177.8	152.4	166.4	50.8	127
47220-12100	5" (ø127.0)	152.4	127	141	40	112.4
PARTS NO.	TYPE / MEASURE	A	B	C	D	E

MHI CONFIDENTIAL

REV.	DATE

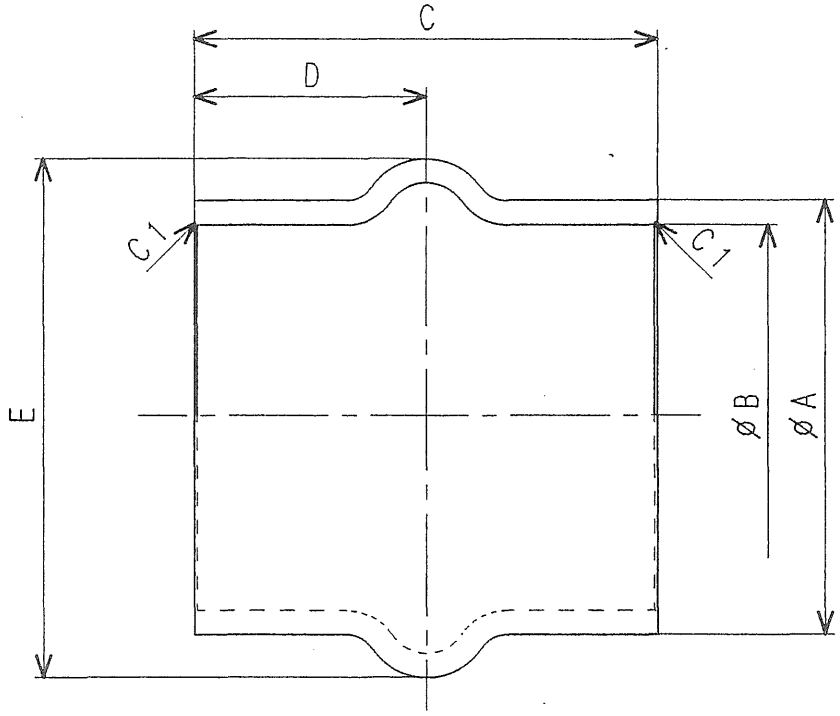
HOSE, RUBBER

DWG. NO. S35-0701

MITSUBISHI HEAVY INDUSTRIES, LTD.

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

CHECKED BY



PARTS NO.	TYPE / MEASURE	A	B	C	D	E
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

MHI CONFIDENTIAL

REV.	DATE

HOSE, RUBBER

DWG. NO. S35-0711

MITSUBISHI HEAVY INDUSTRIES, LTD.

SAGAMIHARA MACHINERY WORKS

MITSUBISHI DIESEL ENGINE TECHNICAL INFORMATION	ITEM NO.	T0233-0001E (1/4)
	DATE	April, 2016

Specification Sheets of S16R-PTA Engine

Specification Sheets of S16R-PTA Engine are enclosed herein.

Revision	First Edition : September, 2007 (T13-0311-E Jun.99)	Engine Engineering Department Engine System Designing Section		
		Approved by	Checked by	Drawn by
		T.HASHIGUCHI	T.HASEGAWA K.SAKAMOTO	N.Y

GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled	
Aspiration	Turbo-Charged, After Cooler (Jacket water to Cooler)	
Cylinder Arragement	60°V	
No.of Cylinders	16	
Bore mm(in.)	170	(6.69)
Stroke mm(in.)	180	(7.09)
Displacement liter(in^3)	65.37	(3989)
Compression Ratio	14.0:1	
Dry Weight - Engine only - kg(lb)	6750	(14884)
Wet Weight - Engine only - kg(lb)	7127	(15715)

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^2(lbf·ft^2) (Includes Std.Flywheel)	793	(1918)
Cyclic Speed Variation with Flywheel at 1800rpm	1/283	
1500rpm	1/188	
1200rpm	1/131	

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - N·m(lbf·ft)	4413	(3256)

AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)		
With Clean Filter Element - mm H_2O (in.H_2O)	400	(15.7)
With Dirty Filter Element - mm H2O (in.H2O)	635	(25.0)

EXHAUST SYSTEM

Maximum Allowable Back Pressure - mm H_2O (in.H_2O)	600	(23.6)

LUBRICATION SYSTEM

Oil Pressure at ldle - 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)	200	(52.8)
Low - liter (U.S.gal)	140	(37.0)
Total System Capacity (lncludes Oil Filter) - liter (U.S.gal)	230	(60.8)
Maximum Angle of lnstallation (Std. Pan) Front Down	5°	
(Engine Only) Front Up	5°	
Side to Side	22.5°	

COOLING SYSTEM

Coolant Capactiy (Engine only) - liter (U.S.gal)	170	(44.9)
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 lnlet, TK type- °C(°F)	-	
Maximum Air Restriction on Discharge Side of Radiator and Fan-mm H_2O(in.H_2O)	10	(0.4)

FUEL SYSTEM

Fuel Injector	Mitsubishi PS8 × 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

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		16							
Bore	mm (in.)	170 (6.69)							
Stroke	mm (in.)	180 (7.09)							
Displacement	liter ($in.^3$)	65.37 (3989)							
Brake Horse power without Fan	kW (HP)	1750 (2346)	1620 (2172)	1120 (1501)	1590 (2131)	1480 (1984)	1020 (1367)	1330 (1783)	1180 (1582)
Brake Mean Effective Pressure without Fan	MPa (psi)	1.8 (258)	2.0 (287)	1.7 (248)	1.6 (235)	1.8 (262)	1.6 (226)	1.6 (236)	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)	192 (258)	140 (188)	96 (129)	192 (258)	140 (188)	96 (129)	140 (188)	140 (188)
Intake Air flow	m^3/min (CFM)	141 (4979)	128 (4520)	90 (3178)	127 (4484)	117 (4131)	82 (2895)	107 (3778)	96 (3390)
Exhaust Gas Flow	m^3/min (CFM)	373 (13171)	339 (11970)	237 (8368)	337 (11899)	309 (10911)	216 (7627)	284 (10028)	253 (8933)
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^3/min (CFM)	1950 (68855)	1950 (68855)	1560 (55084)	1950 (68855)	1950 (68855)	1560 (55084)	1950 (68855)	1950 (68855)
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)	444750 (7027)	403417 (6374)	282634 (4466)	401261 (6340)	368498 (5822)	257402 (4067)	338017 (5341)	301939 (4771)
Heat Rejection to Coolant	kJ/hr (BTU/min)	3706247 (58558)	3361804 (53116)	2355280 (37213)	3343839 (52832)	3070819 (48518)	2145016 (33891)	2816811 (44505)	2516155 (39755)
Heat Rejection to Inter Cooler (TK Version)	kJ/hr (BTU/min)	—	—	—	—	—	—	—	—
Heat Rejection to Exhaust	kJ/hr (BTU/min)	4374807 (69121)	3850015 (60829)	2752910 (43495)	3908364 (61751)	3516772 (55564)	2507147 (39612)	3324929 (52533)	2998740 (47379)
Noise Level (1 m height & distance) (excludes, Intake,Exhaust & Fan)	dB(A)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD