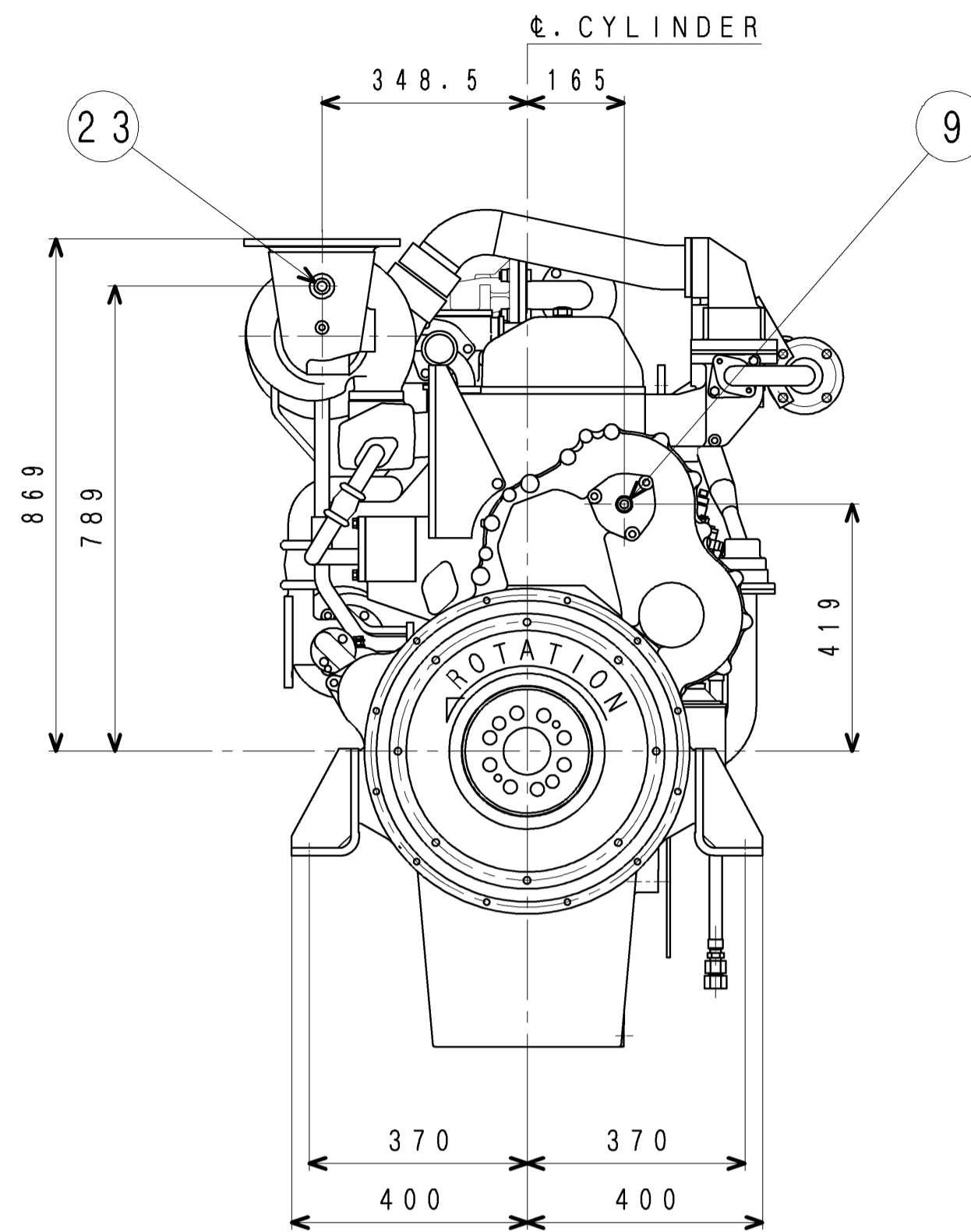
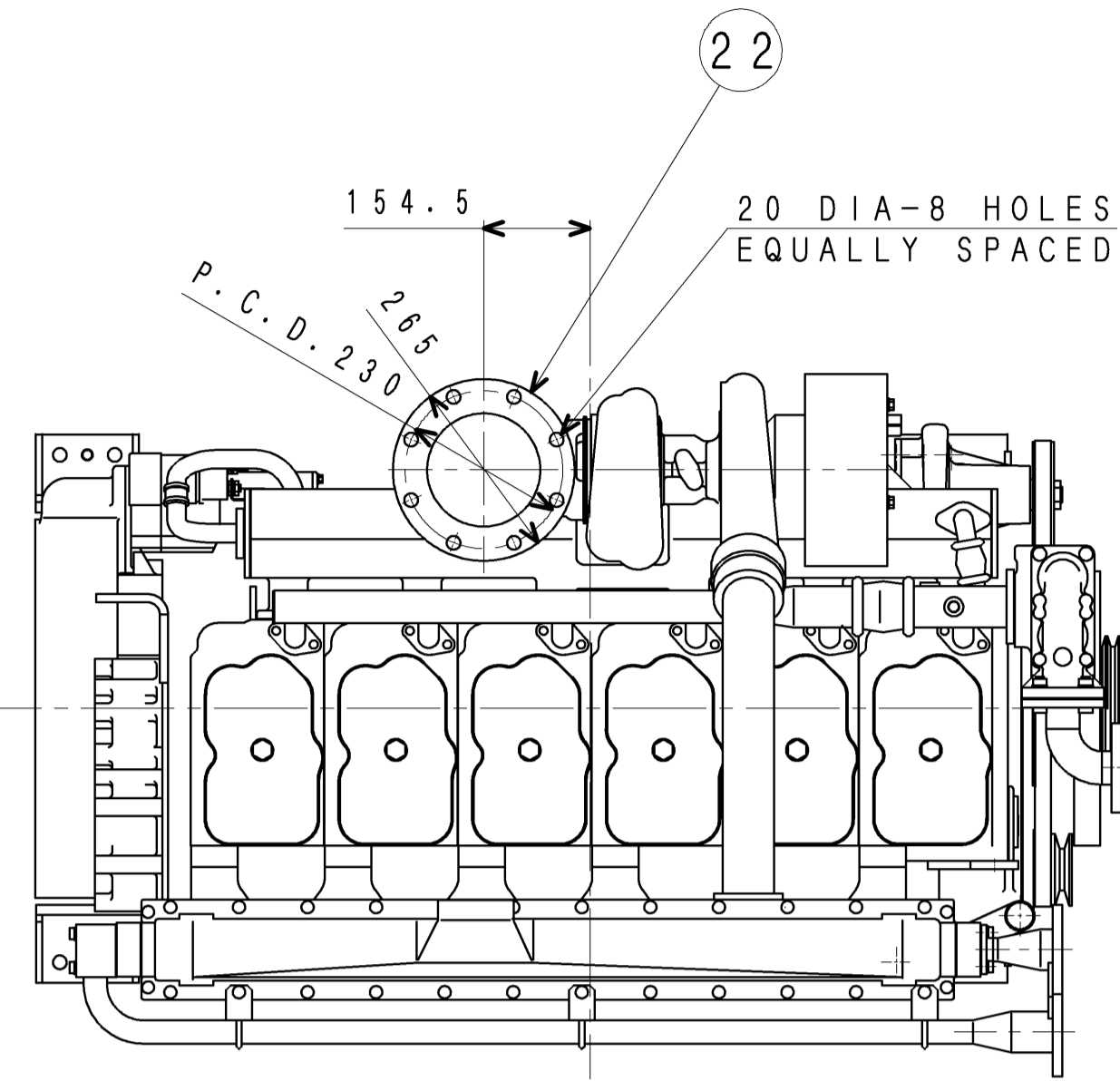


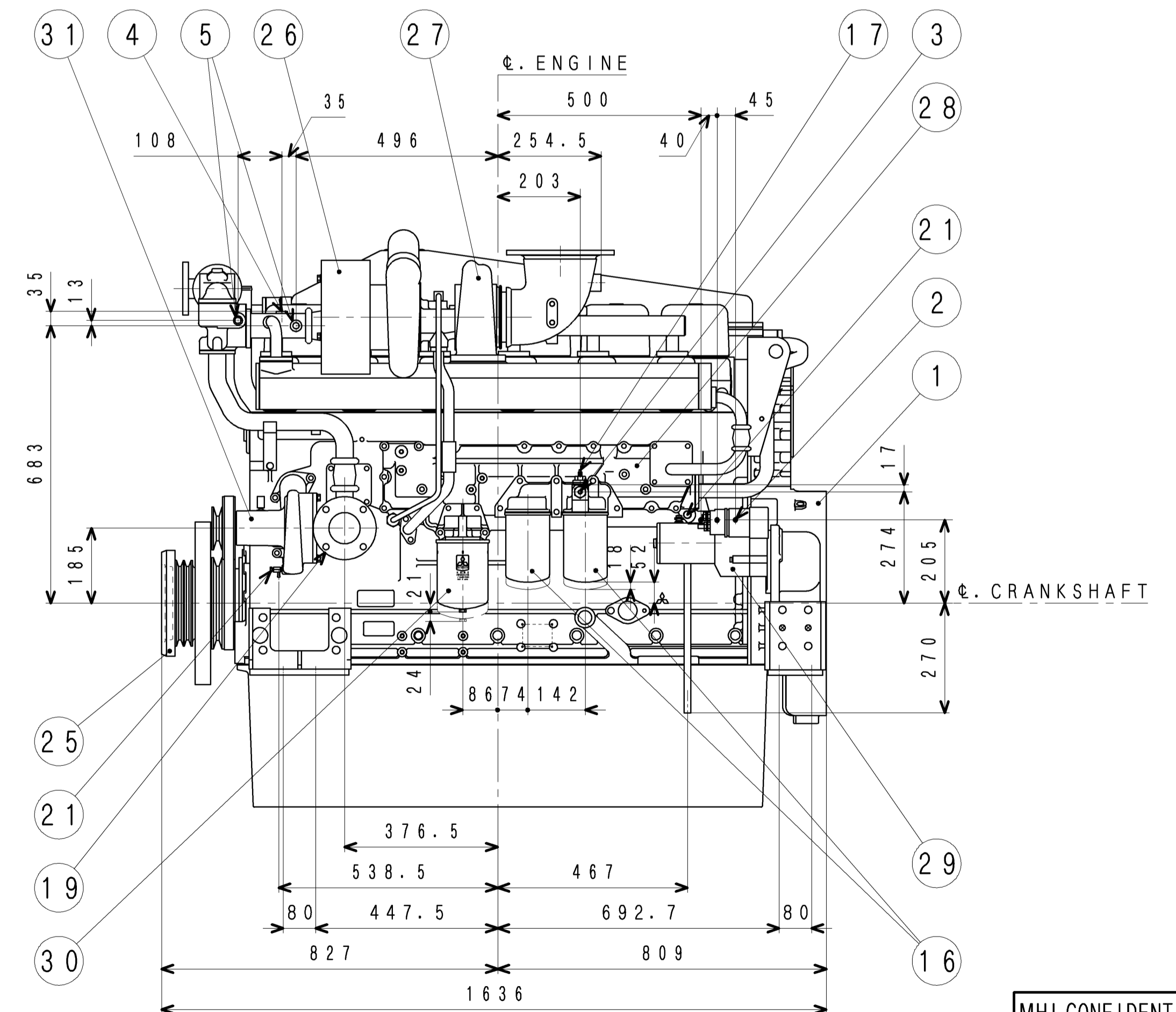
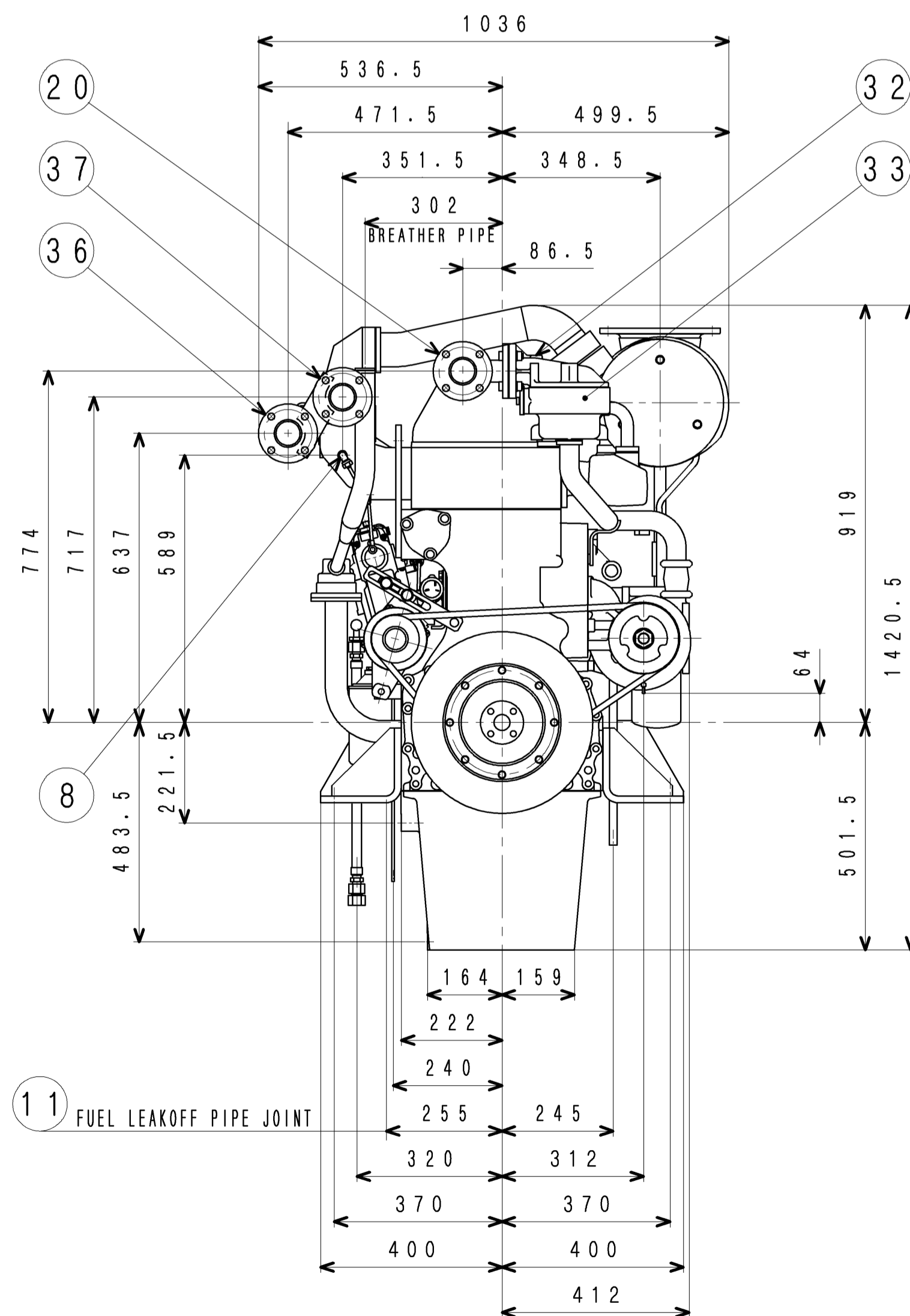
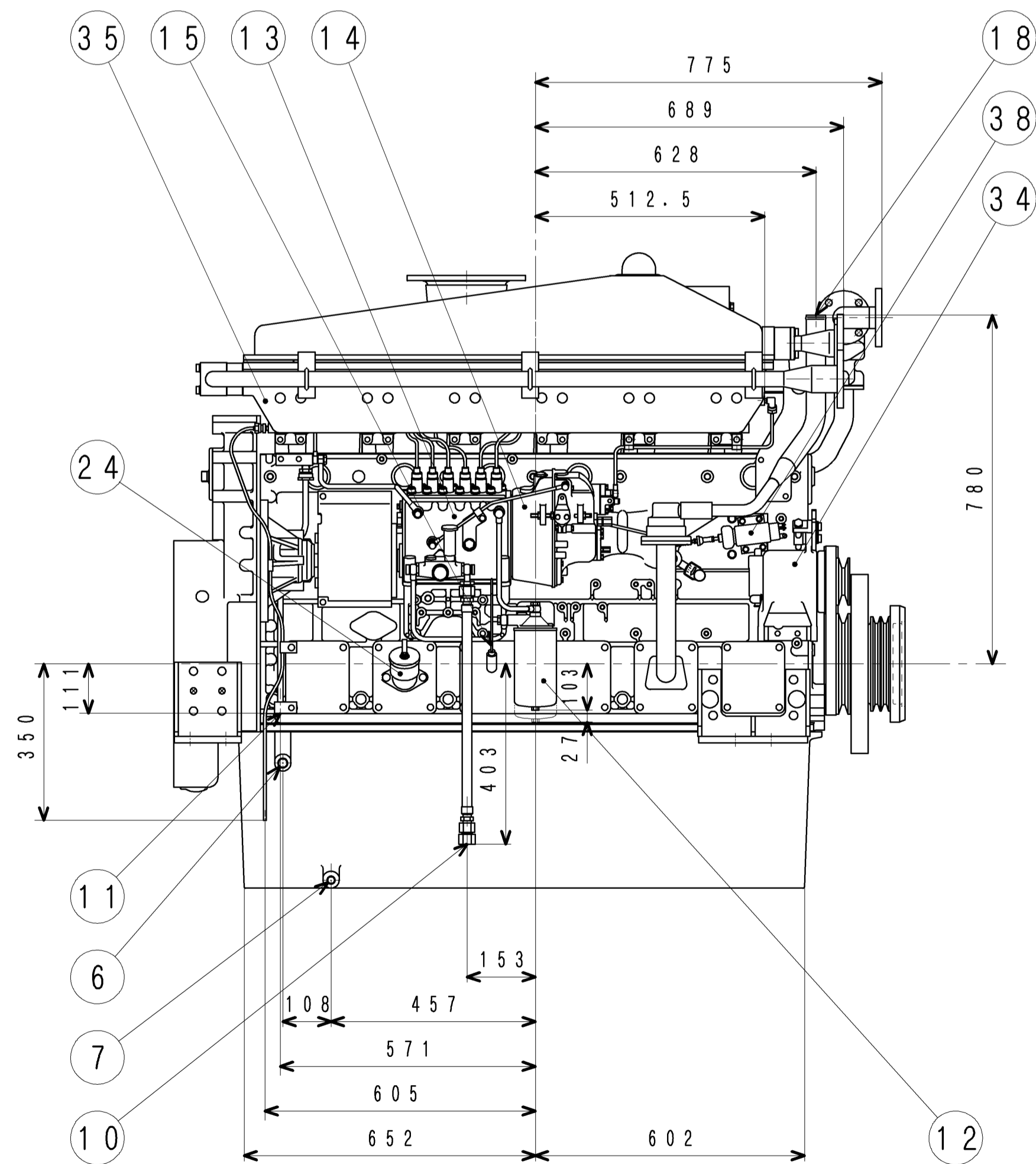
MITSUBISHI S6A3-MPTAW-3

Click on the headlines below to get redirected to the respective sections in this document.

[GA drawing](#)
[Technical data](#)
[Elastic drawing](#)
[Flywheel & housing drawing](#)
[Measure of overhaul](#)
[Connection details](#)
[Performance curves](#)



NO.	PARTS NAME	SIZE	REFERENCE
1	FLYWHEEL & HOUSING		45A96-21000
2	OIL PRESS. GAGE UNIT JOINT	Rc1/8	45A96-01001
3	OIL PRESS. SWITCH JOINT	Rc1/8	↑
4	THERMOSWITCH JOINT	M16x1.5	
5	THERMOMETER UNIT JOINT	Rc1/2	
6	OIL PAN (A) JOINT	M22x1.5	
7	OIL PAN (B) JOINT	M18x1.5	
8	AIR PRESS. GAGE JOINT	Rc1/8	
9	TACHOMETER JOINT		
10	FUEL PIPE JOINT		↓
11	FUEL LEAKOFF PIPE JOINT	Rc3/8	45A96-01001
12	FUEL FILTER		
13	FUEL INJECTION PUMP		
14	GOVERNOR		
15	OIL LEVEL GAGE		
16	OIL FILTER		
17	OIL BY-PASS ALARM SWITCH	M5X0.8	45A96-01001
18	BREATHER	φ42.7	
19	WATER INLET PIPE JOINT	φ76.3	45A96-01001
20	WATER OUTLET PIPE JOINT	φ60.5	45A96-01001
21	WATER DRAIN COCK		
22	EXHAUST FLANGE	φ165.2	
23	THERMOMETER, ex. JOINT	G3/4	45A96-01001
24	OIL FILLER		
25	FRONT P. T. O. PULLEY		45A96-25000
26	INTAKE AIR SILENCER		
27	TURBOCHARGER		
28	OIL COOLER		
29	STARTER		
30	OIL BY-PASS FILTER		
31	WATER PUMP		
32	AIR VENT ADAPTER	Rc1/8	
33	THERMOSTAT		
34	DYNAMO		
35	AIR COOLER		
36	FRESH WATER IN. (AIR COOLER)	φ60.5	45A96-01001
37	FRESH WATER OUT. (AIR COOLER)	φ60.5	45A96-01001
38	SOLENOID		



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S6A3-MPTAW DIESEL ENGINE		3/4 ANGLE PROJECTION	
三菱重工業株式会社 汎用機・特車事業本部		尺庫 SCALE	
MITSUBISHI HEAVY INDUSTRIES, LTD. GENERAL MACHINERY & SPECIAL VEHICLES.		:	
図面番号 DRAWING NO.	45A96-00307	製図 DRN	谷 戸
2013.05.28		橋 口	小 倉
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出図
汎特
2013
7.5

M/C



**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T0204-0009E (1/4)

DATE

July, 2013

Specification Sheets of S6A3-MPTAW Engine

Specification Sheets of S6A3-MPTAW Engine are enclosed herein.

Revision	First Edition : July, 2013	Engine Engineering Department Engine System Designing Section		
		Approved by	Checked by	Drawn by
		T.HASHIGUCHI	T.OGURA	T.O

GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled	
Aspiration	Turbo-Charged, Air Cooler (Fresh Water)	
Cylinder Arrangement	Inline	
No. of Cylinders	6	
Bore mm(in.)	150	(5.91)
Stroke mm(in.)	175	(6.89)
Displacement liter(in ³)	18.56	(1133)
Compression Ratio	14.5:1	
Dry Weight - Engine only - kg(lb)	1900	(4190)
Wet Weight - Engine only - kg(lb)	2030	(4476)

PERFORMANCE DATA

Idling Speed -rpm	600~650	
Maximum Overspeed Capacity - rpm	2195	
Moment of inertia of Rotating Components - kgf·m ² (lbf·ft ²)	18.9	(449)
(Includes 14 inch Flywheel)		

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - N·m(lbf·ft)	1373	(1013)
---	------	--------

AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)- kPa (in.H ₂ O)	3.92	(15.7)
Maximum Allowable Intake Air Temperature - °C(°F)	45	(113)

EXHAUST SYSTEM

Maximum Allowable Back Pressure - kPa (in.H ₂ O)	4.41	(17.7)
---	------	--------

LUBRICATION SYSTEM

Oil Pressure at Idle - MPa(psi)	0.2~0.3 (29~43)	
at Rate Speed - MPa(psi)	0.5~0.6 (71~86)	
Maximum Oil Temperature - °C(°F)	110	(230)
Oil Capacity of Marine Pan High - liter (U.S.gal)	100	(26.4)
Low - liter (U.S.gal)	70	(18.5)
Total System Capacity (Includes Oil Filter) - liter (U.S.gal)	110	(29.1)
Maximum Installation Angle Front Up	16°	
Front Down	11.5°	
Maximum Instantaneous Operating Angle Front Up	25°	
(Engine Level) Front Down	14°	
Side to Side	22.5°	

COOLING SYSTEM

Coolant Capacity of Jacket (Engine Only) - liter (U.S.gal)	36	(9.5)
Coolant Capacity of Air Cooler (Engine Only) - liter (U.S.gal)	4	(1.1)
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)
Standard Thermostat (modulating) Range of Jacket- °C(°F)	71~85	(160~185)
Maximum Coolant Temperature at Engine Outlet- °C(°F)	95	(203)
Recommended Coolant Temperature at Engine Outlet- °C(°F)	80	(176)
Minimum Coolant Expansion Space - % of System Capacity	10	
Maximum Coolant Temperature at Air cooler Inlet, PTAW type- °C(°F)	38	

The specifications are subject to change without notice.

FUEL SYSTEM

Fuel Injection Pump	-----	Bosch S7S Type x 1
Maximum Suction Head of Feed Pump - kPa (in. Hg)	-----	14.7 (4.3)
Maximum Level of Fuel Tank - m	-----	5.0
	Continuous Use	-----
	Stand-by Use	-----
		2.0
Minimum Fuel Oil Supply Pipe Inner Diameter - mm(in.)	-----	16 (0.63)
Minimum Fuel Oil Leak Pipe Inner Diameter - mm(in.)	-----	12 (0.47)

STARTING SYSTEM

Battery Charging Alternator - V-Ah	-----	24-35
Starting Motor Capacity - V -kW	-----	24-6.0
Maximum Allowable Resistance of Cranking Circuit - m Ω	-----	2.5
Recommended Minimum Battery Capacity		
At 5°C(41°F) and above - Ah	-----	200
Below 5°C(41°F) through - 5°C(23°F)	-----	400
Cranking Ampere of Starter at 5°C (41°F) / -5°C (23°F)		
Static Ampere -A		300 / 330
Momentary Ampere -A		525 / 585

ACCESSORY EQUIPMENT

Air Cleaner	Silencer Type
Exhaust Manifold	Water Cooled
Turbocharger	Air cooled
Air Cooler	Fresh Water Cooled
Breather	Conduction Type
Governor	Mechanical RSUV Type
Fuel Injection Pump	
Fuel Feed Pump	
Fuel Injection Pipe	Double walled Type
Fuel Injection Nozzle	
Fuel Filter	Paper Element Type
Lubricating Oil Pump	
Lubricating Oil Cooler	
Lubricating Oil Filter(Full-Flow)	Paper Element Type
Lubricating Oil Filter(By-Pass Flow)	Paper Element Type
Oil Pan	Large Capacity,aluminium
Cooling Water Pump	
Cooling Water Thermostat	
Starter	Earth Float Type
Alternator	Earth Float Type
Stop Solenoid	DC24V-25A-0.5A
Engine Support	Marine Type
Accessory Drive	Front Drive Pulley

ACCESSORY EQUIPMENT(LOOSE SUPPLY)

Relay Safety	For Starter
Jack Bolt	
Companion Flange	
Standard Tools	
Standard Spare Parts	

The specifications are subject to change without notice.

ENGINE RATING

All data represent net performance according to ISO3046 with standard accessories such as fuel injection pump, water pump L.O. pump and charging alternator under the condition of 100kPa(750 mm Hg), barometric pressure 298K(25°C) ambient temperature and 30% relative humidity.

HD: Heavy duty

ITEM	UNIT	Propulsion use			Generator use		
				-MPTAW			
Engine Model				HD			
Engine Speed	rpm			1840			
No. of Cylinders		6					
Bore	mm (in.)	150 (5.91)					
Stroke	mm (in.)	175 (6.89)					
Displacement	liter (in. ³)	18.56 (1133)					
Brake Horse Power	kW (HP)			360 (483)			
Brake Mean Effective Pressure	MPa (psi)			1.27 (184)			
Mean Piston Speed	m/s (ft/min)			10.7 (2106)			
Maximum Regenerative Power Absorption Capacity	kW (HP)			56 (75)			
Intake Air Flow	m ³ /min (CFM)			34 (1201)			
Exhaust Gas Flow	m ³ /min (CFM)			91 (3213)			
Coolant Flow	liter/min (U.S. GPM)			590 (156)			
Coolant(Jacket water) Pressure (water pump outlet)	MPa (psi)			0.14 (21)			
Minimum Coolant Flow to Air Cooler (Max. Flow: 180 liter/min)	liter/min (U.S. GPM)			150 (40)			
Oil Flow	liter/min (U.S. GPM)			255 (67)			
Radiated Heat to Ambient	kJ/hr (BTU/min)			54135 (855)			
Heat Rejection to Coolant (include water cooled manifold)	kJ/hr (BTU/min)			757886 (11975)			
Heat Rejection to Air Cooler	kJ/hr (BTU/min)			396988 (6272)			
Heat Rejection to Exhaust	kJ/hr (BTU/min)			1103097 (17429)			
Noise Level (1 m height & distance) (excludes, Intake,Exhaust)	dB(A)			TBD			
Maximum No Load Governed Speed	rpm			1978			

The specifications are subject to change without notice.

APPLICATION : MARINE

Pub. No. T0204-0009E

4/4



**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T0307-0024E (1/2)

DATE

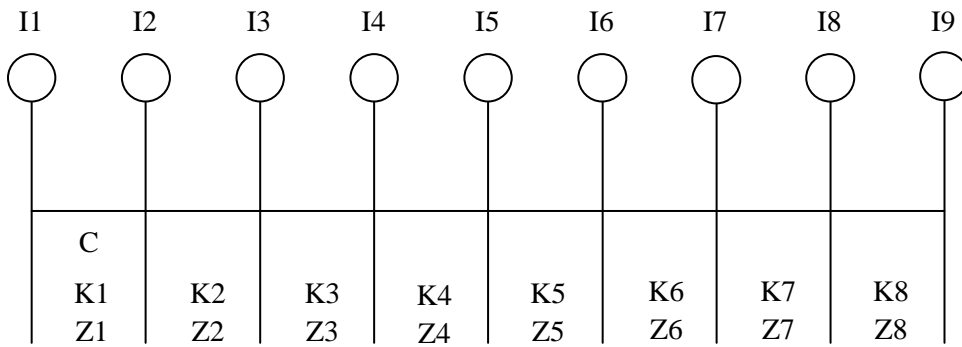
April, 2007

Elastic data of S6A3-M Engine

Elastic data of S6A3-M Engine are enclosed herein.

Revision	First Edition : April, 2007 (Refer to MTD98-0223A)	Engine Engineering Department Large Engine Design Section		
		Approved by	Checked by	Drawn by
		S.MATSUSHITA	T.HASHIGUCHI	T.H.



S6A3-M ELASTIC DATA

	Moment of inertia J kg.m ²	Damping coefficient Nm/rad/s	Spring const. x10 ⁷ Nm/rad	Tensile strength N/mm ²	Section modulus cm ³
I1	DAMPER	0.415	C=392.3	K1=0	Z1 =0.0
I2	PULLEY	0.574	—	K2=0.907	Z2 =209.5
I3	No.1 CRANK	0.331	—	K3=0.505	Z3 =209.5
I4	No.2 CRANK	0.217	—	K4=0.505	Z4 =209.5
I5	No.3 CRANK	0.331	—	K5=0.505	Z5 =209.5
I6	No.4 CRANK	0.331	—	K6=0.505	Z6 =209.5
I7	No.5 CRANK	0.217	—	K7=0.505	Z7 =209.5
I8	No.6 CRANK	0.331	—	K8=0.876	Z8 =209.5
I9	FLYWHEEL	1.99	—	(SAE#14")	
I9	FLYWHEEL	5.93	—	(SAE#18")	

Hysteresis constant:170 No. of Cylinder: 6 Bore:150mm Stroke:175mm

Length of Con-Rod: 290mm Mass of Reciprocating Parts: 8.183 kg

Firing order:1-5-3-6-2-4

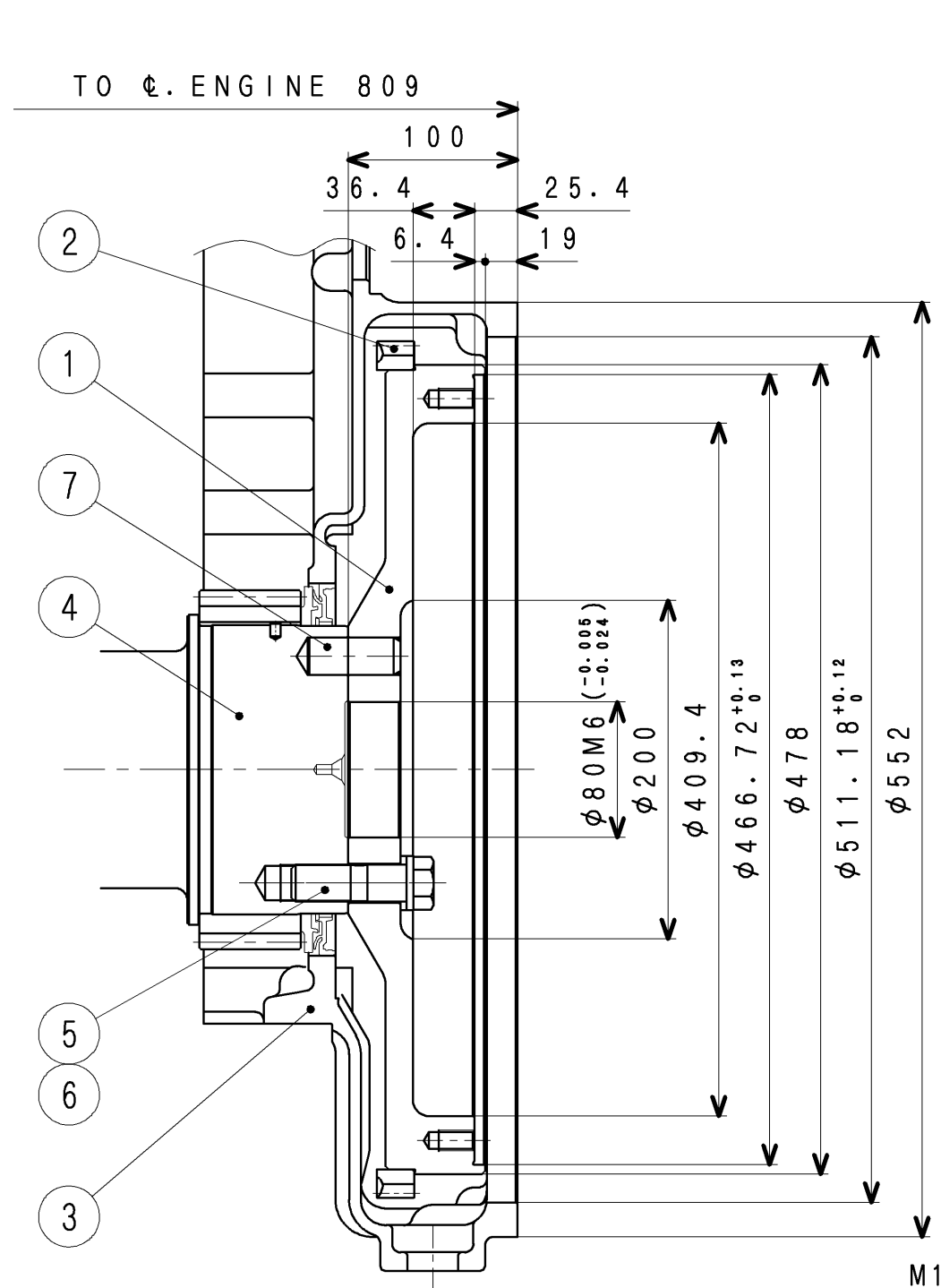
Firing interval:0-120-240-360-480-600

APPLICATION : MARINE USE

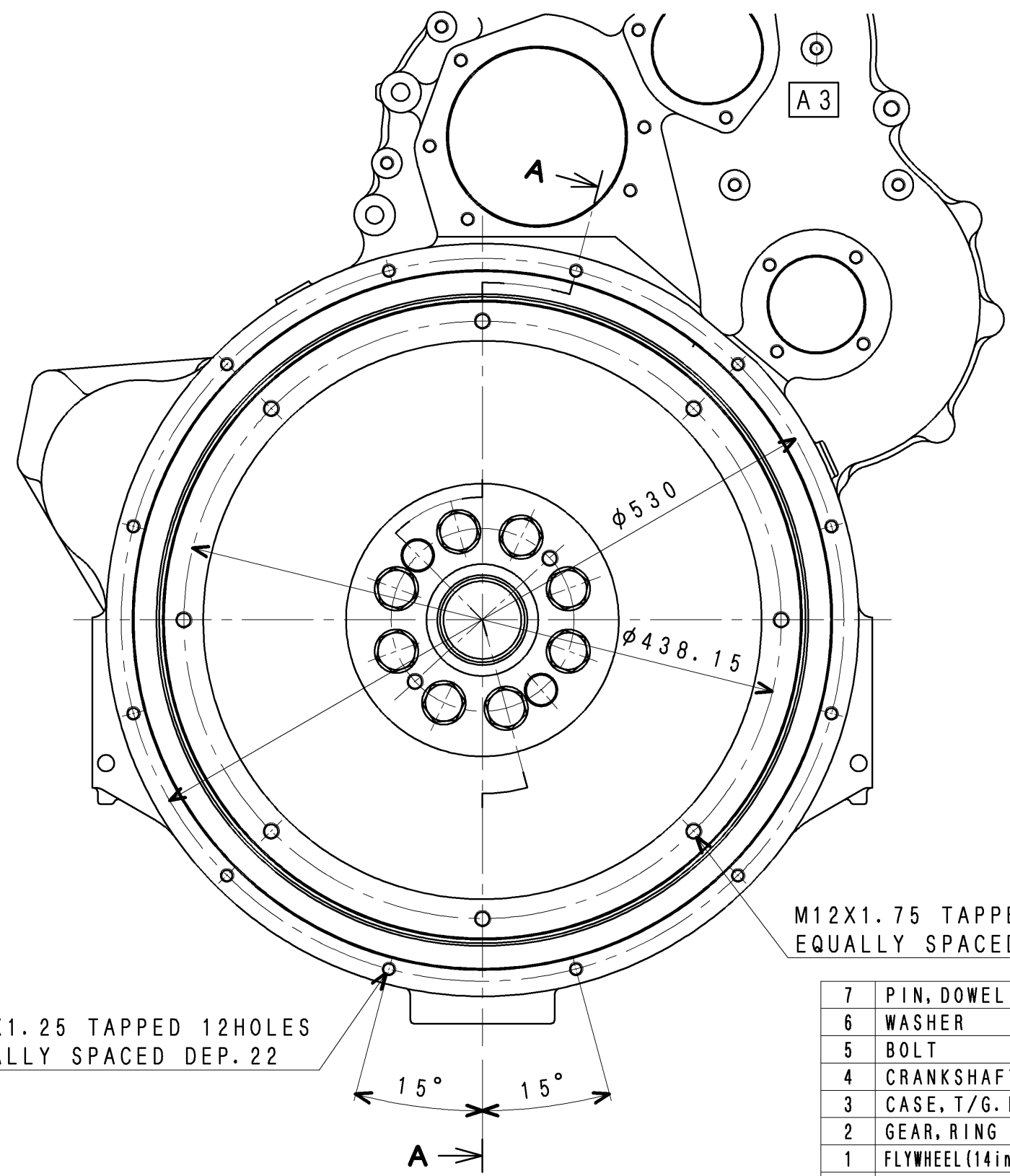
The data is subject to change without notice.



MITSUBISHI HEAVY INDUSTRIES, LTD.
GENERAL MACHINERY & SPECIAL VEHICLE



SECTION A-A



M10X1.25 TAPPED 12HOLES
EQUALLY SPACED DEP. 22

M12X1.75 TAPPED 8HOLES
EQUALLY SPACED DEP. 25.5

7	PIN, DOWEL	2
6	WASHER	8
5	BOLT	8
4	CRANKSHAFT ASSY.	1
3	CASE, T/G. N01-M	1
2	GEAR, RING	1
1	FLYWHEEL (14in)	F/W ASSY. 1
No.	PARTS NAME	Q' TY

MHI CONFIDENTIAL

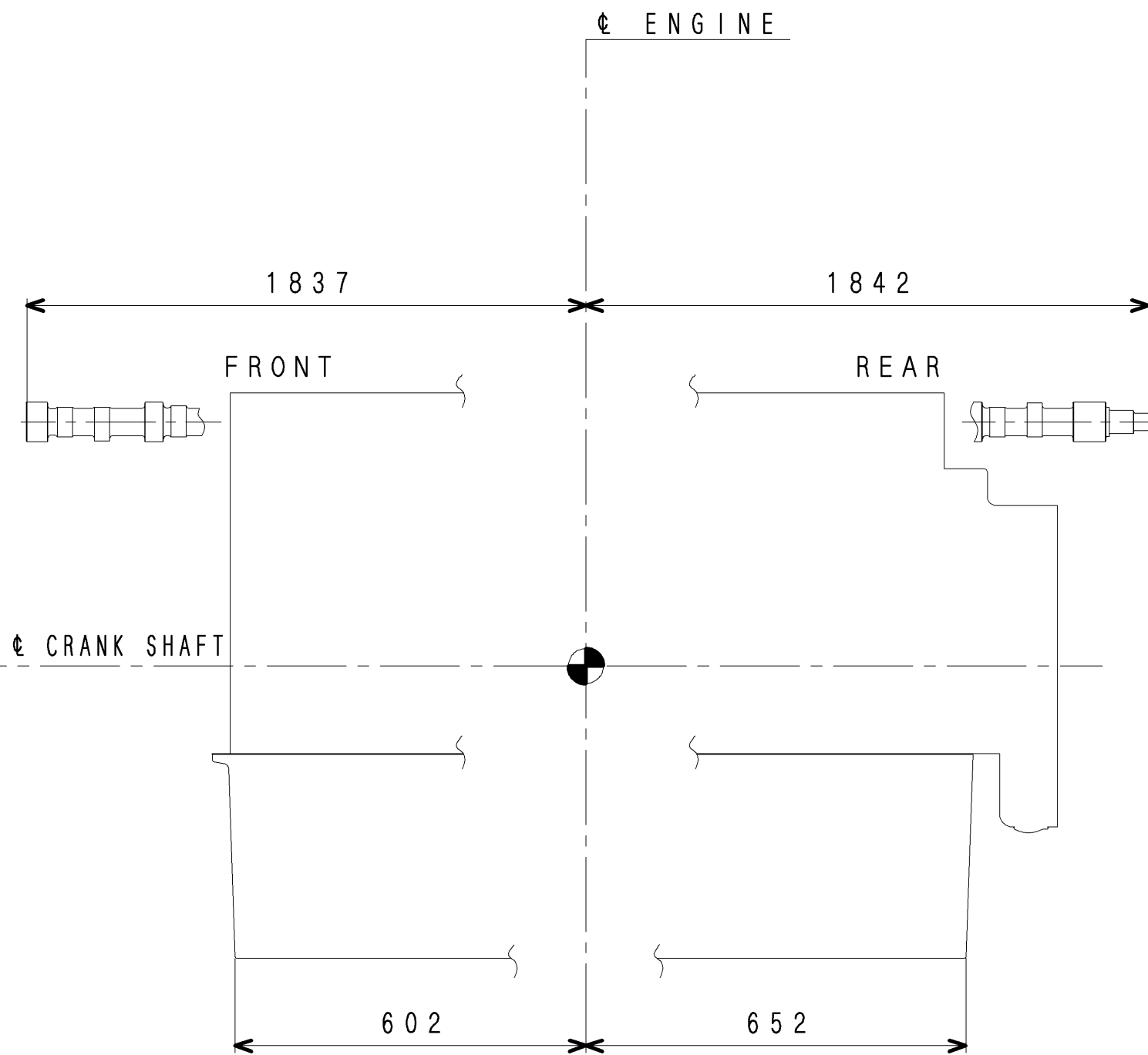
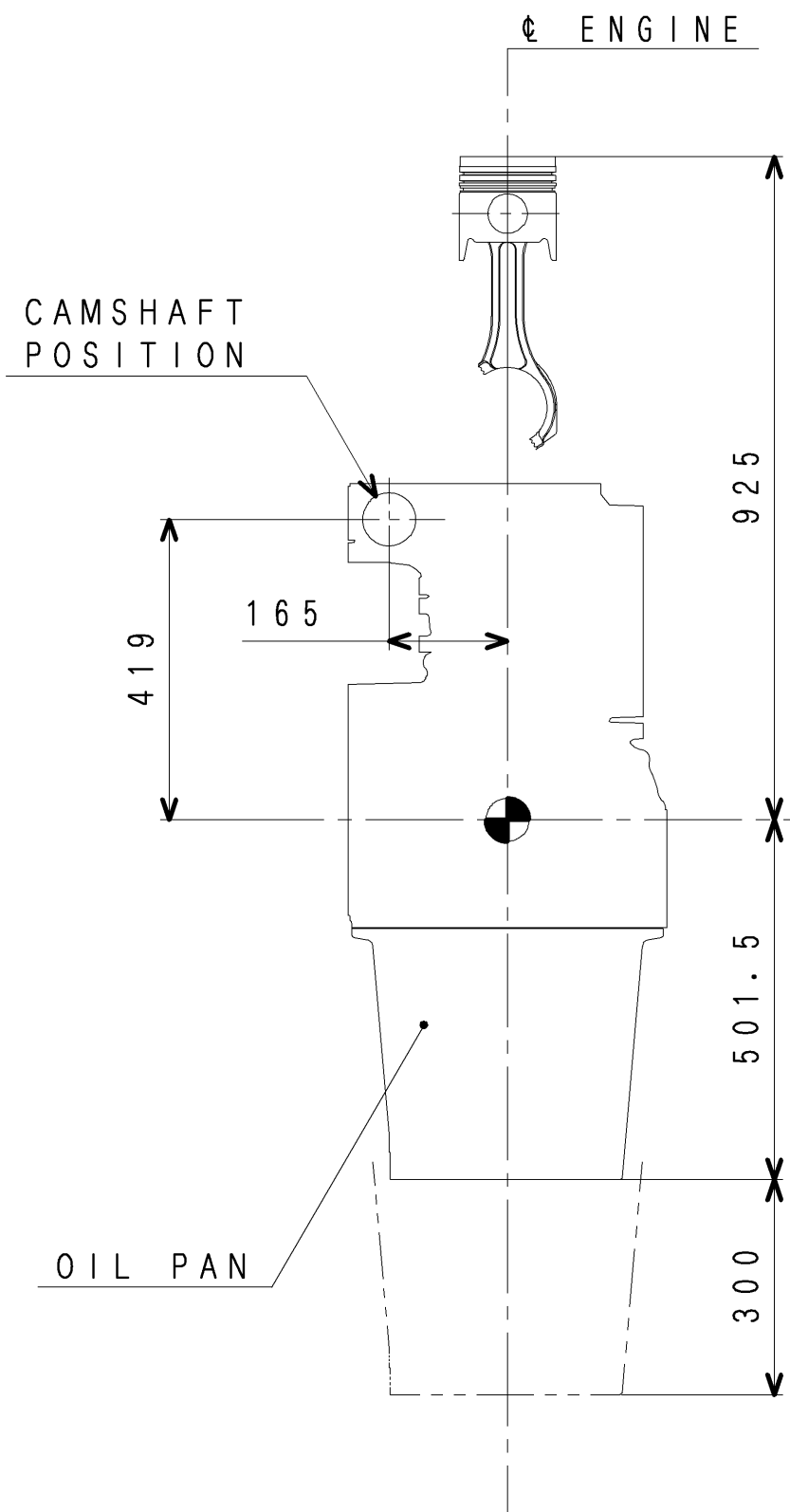
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CHG	ED-NO	DATE	CHK
認可 APPD	橋	検図 CHK	小倉
		製図 DRN	谷戸
		1997. 3. 7	

S6A3
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 45A96-21000
DRAWING No. 45A96-21000

旧引
汎特
2013
7.30

M/C

3 新図 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
④ 旧引図 5 切削品 6 その他(購入品)



MHI CONFIDENTIAL

△				 3rd ANGLE PROJECTION 尺度 SCALE
△				
△				
CHG	ED-NO	DATE	CHK	
認可 APPD	橋口	検図 CHK	小倉 谷戸	製図 DRN 村田
				2013. 6. 13

MEASURE OF OVERHAUL FOR S6A3

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.

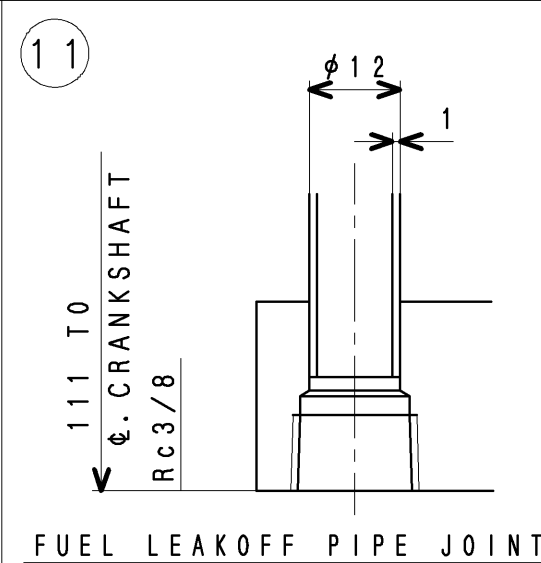
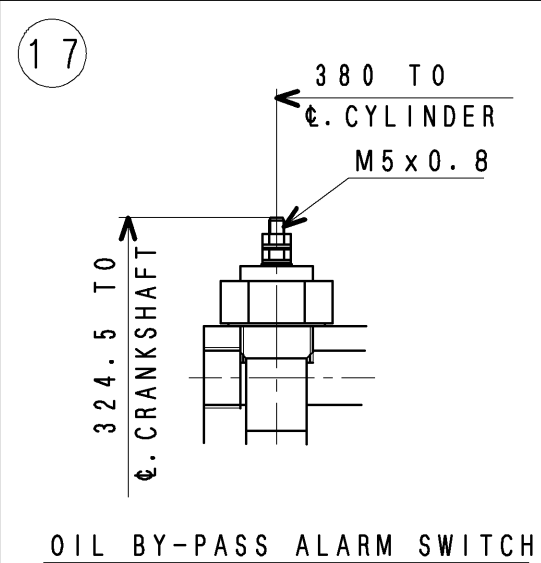
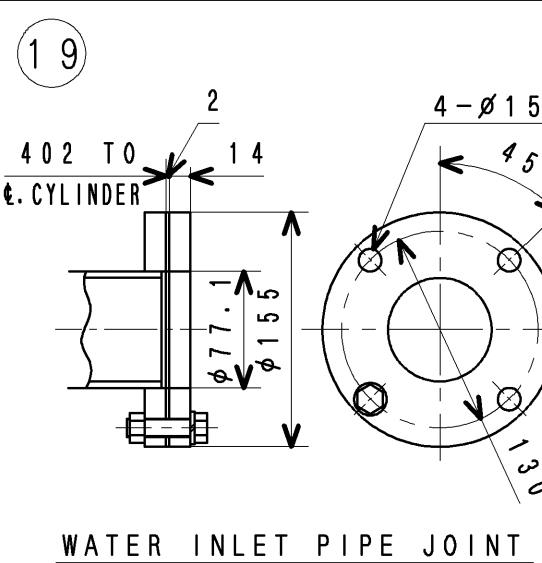
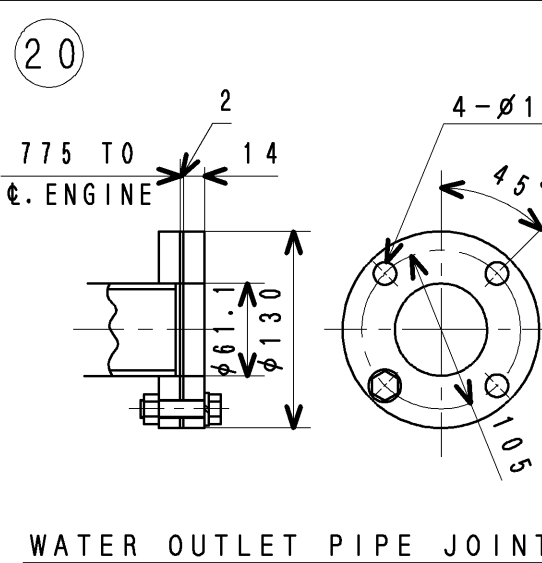
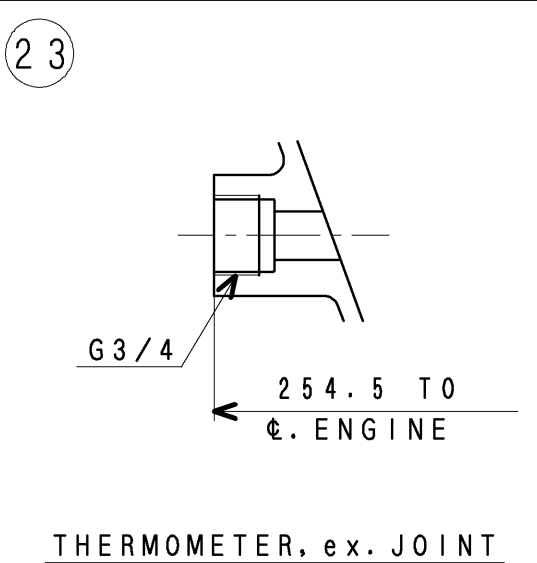
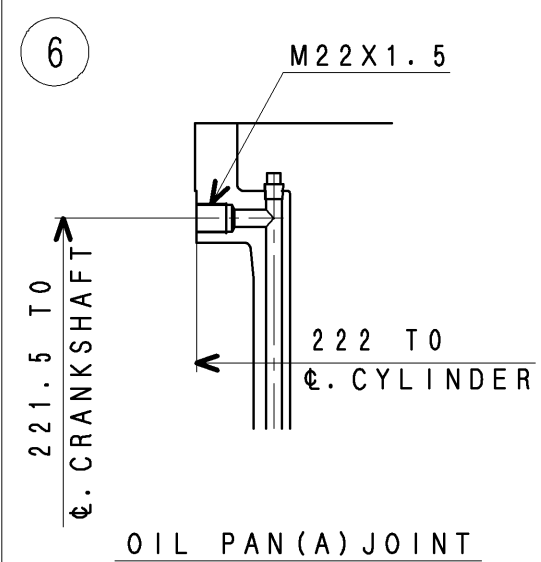
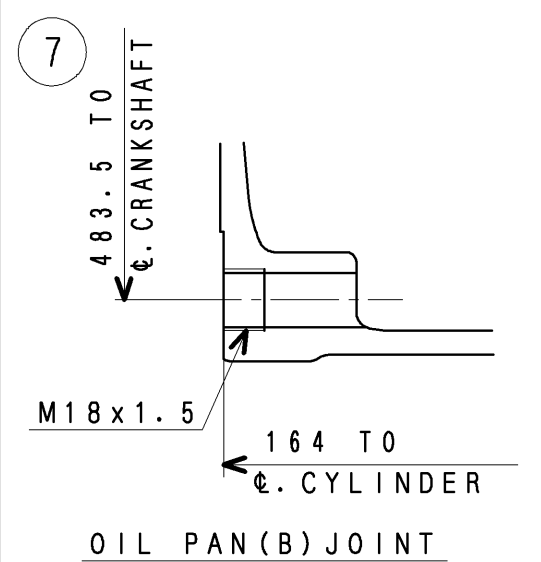
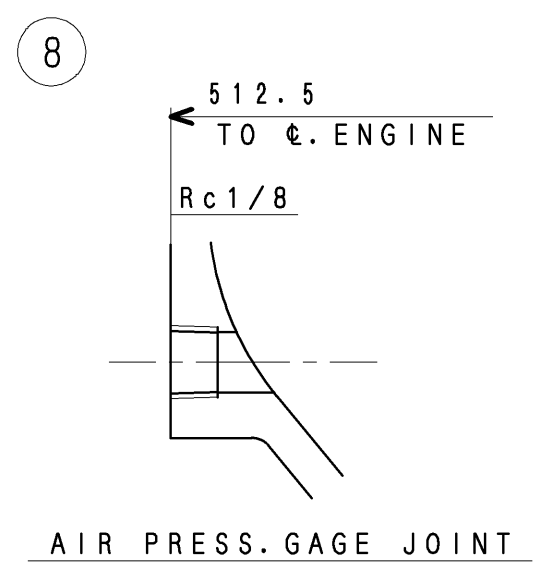
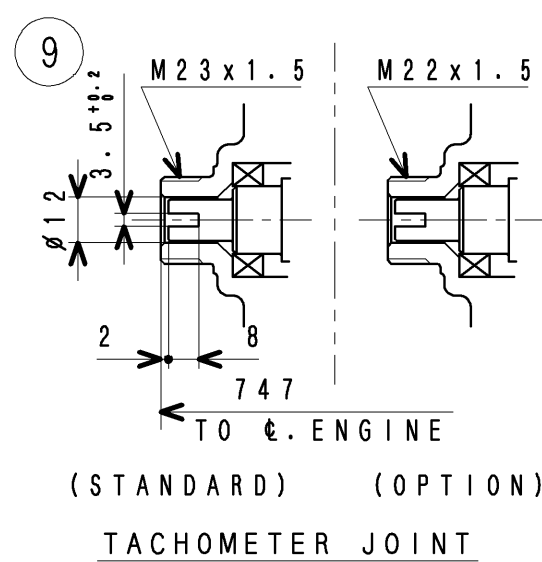
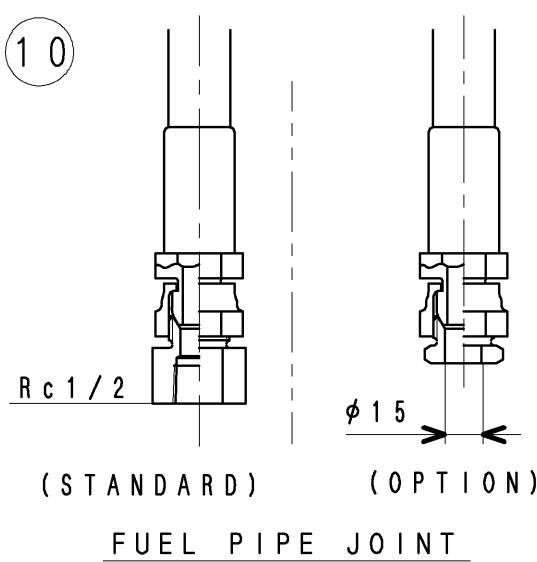
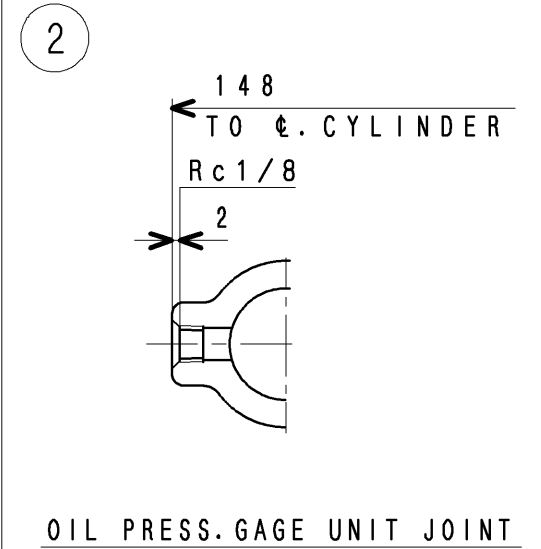
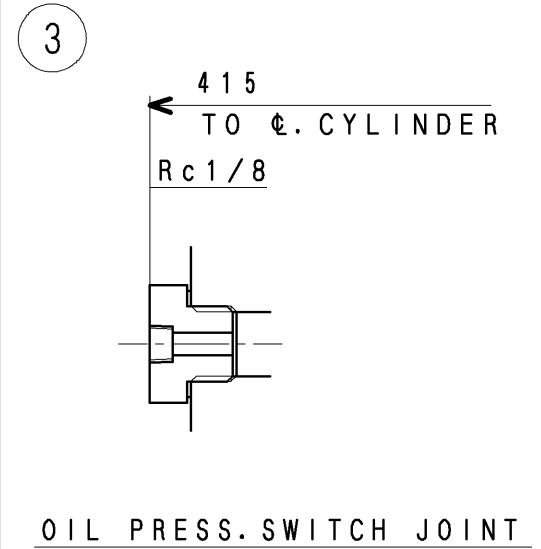
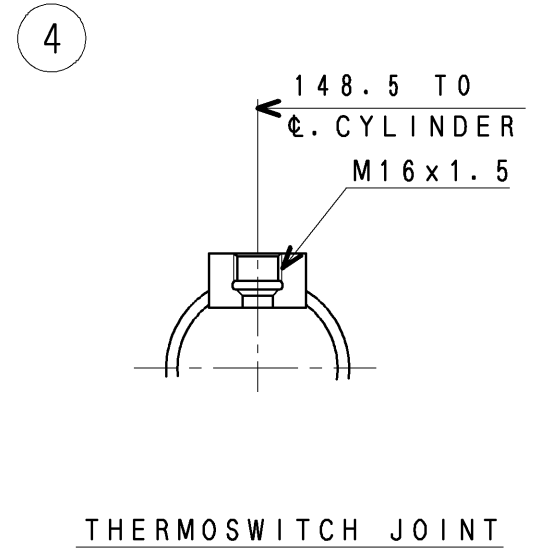
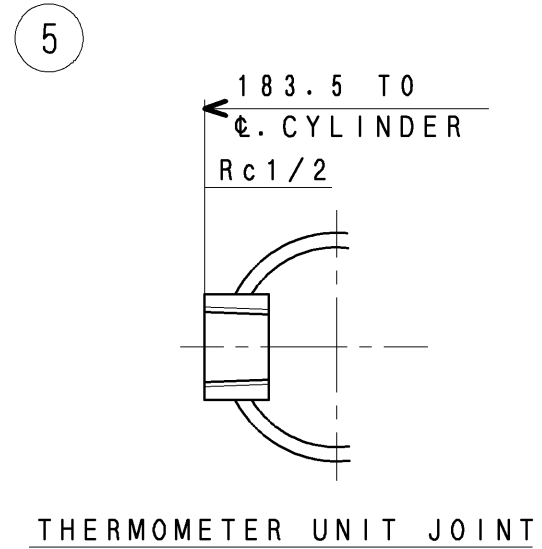
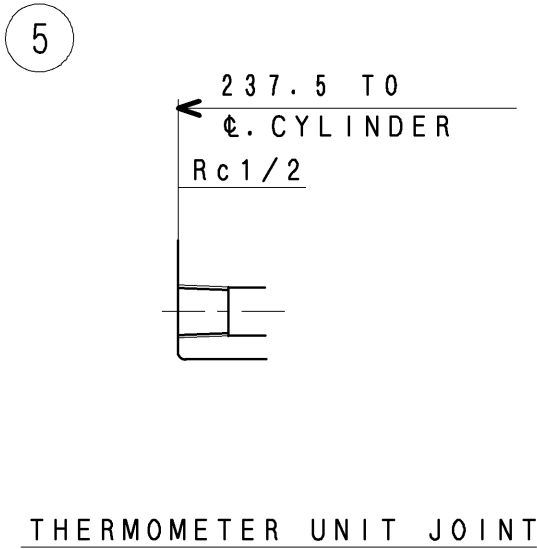
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DRAWING No.

S6A3-090-81A

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- 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)

出図
汎特
2013
8.1

M/C



				3rd ANGLE PROJECTION	
				尺度 SCALE	
CHG	ED-NO	DATE	CHK	:	
認可 APPD	松 下	検図 CHK	橋 福 谷	製図 DRN	斎 藤
			2006.11.20		

S6A3-Y2MPTK
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.

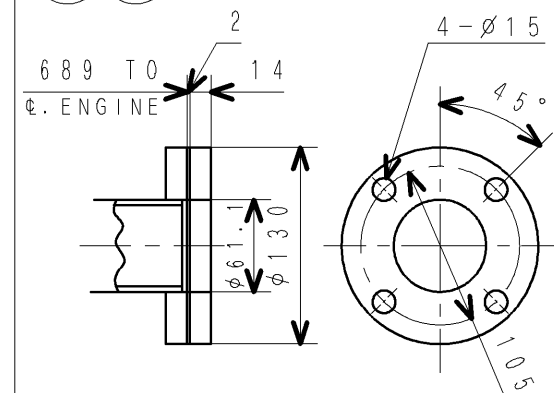
図面番号 45A96-01001 1/2
DRAWING No.

出図
汎特
2006
12.6

FULL-CAD

③ 新図 ④ 組立図 ⑤ 鋳鍛歯車品 ⑥ 板金溶接品 ⑦ 組立品 ⑧ 旧引図 ⑨ サイズ A 3 ⑩ 切削品 ⑪ その他(購入品)

3637

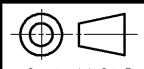



FRESH WATER INLET & OUTLET
(AIR COOLER)

出図

 汎特
 2006
 12.6

FULL-CAD

 3rd ANGLE PROJECTION 尺度 SCALE :				S6A3-Y2MPTK 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 45A96-01001  DRAWING No. 2/2	
認可 APPD	松下	検図 CHK	橋 福 谷 口 田 戸	製図 DRN	斎藤
CHG	ED-NO	DATE	CHK	2006.11.20	

③ 新図 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
 4 旧引図 5 切削品 6 その他(購入品)



**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T0407-0035E (1/2)

DATE

Oct., 2012

Performance Curves of S6A3-MPTAW

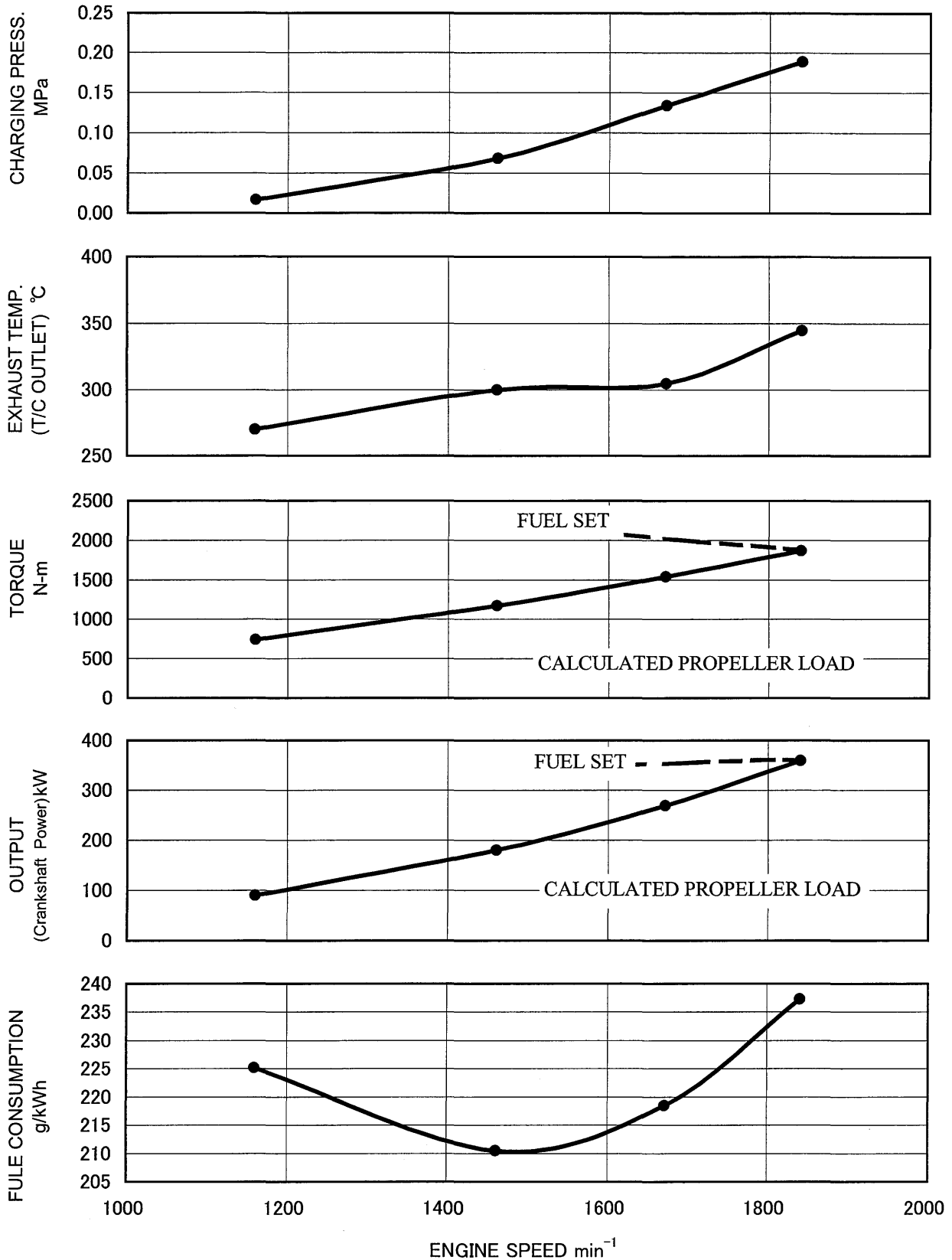
Performance Curves of S6A3-MPTAW Engine are enclosed herein. The data are test bench data and not a guaranteed performance.

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EXCEPT THAT FOR WHICH IT IS LOANED, IS PROHIBITED.

Revision	First Edition : Oct., 2012		Engine Engineering Department Engine System Designing Section		
			Approved by	Checked by	Drawn by
			T.HASHIGUCHI	T.OGURA	T.O

Rating: Heavy Duty

RATED OUTPUT : 360kW/1840min⁻¹ (at FLYWHEEL)



MHI CONFIDENTIAL

Fuel Consumption is based on ISO3046/1 with +5% tolerance at rated power.
The specifications are subject to change without notice.

APPLICATION : MARINE PROPULSION

Pub. No.T0407-0035E 2/2