G3-19747-0010

Messrs : YASC

3TNV76-GGEA

for Generator

SPECIFICATIONS&DRAWINGS FOR MASS PRODUCTION

16.Dec.2014

YANMAR CO.,LTD.

★

Contents

G3-19747-0010

Drawing No.	Part No.	Name	Qty.	Remarks
B3-19747-0080		Out line		
E3-19746-0010		Wiring Diagram		
Z3-19746-0010		Detail of Flywheel		
	129423-77200	ALTERNATOR	1	
	119717-77010	STARTER	1	
	119717-77801	GLOW PLUG	3	
	114250-39450	SW, OIL PRESSURE	1	
	121250-44901	SW, COOLANT TEMP.	1	
	124250-49351	SENDER, COOLANT TEMP.	1	
	119653-77950	SOLENOID	1	

Note:

①Since the durability of electric parts basically apply to R2 level of JIS D0203,please inform the customer not to clean with steam or high pressure water.

②Electric parts should not mounted on the engine directly (relay, timer etc.) must be kept free from wet & high humidity and be kept with good air ventilation. Regarding the vibration of the electrical components, these vibration level must be kept less than 4G.

③The engine with EGR valve has the possibility of corrosion problem on engine cylinder liner or other parts by high sulfur fuel, therefore, please do not sell and use the engine with EGR valve in other than the emission regulated area where it meets the following requirement.

(There is a fuel regulations that the sulfur content of the fuel is provided for 1000ppm or less, and the fuel must be used. The areas that we could confirm at present are Japan, U.S.A., Europe (EU), China, Korea, Australia, New zealand, Israel and Turkey.)

	For Conference	For Apporval	For Installation	Final Drawing
Customer				
Branch				
Exp.Dept.				
Copy				
Total				

Engine Development Dept.

Manager

Sec.Manager

Checked	Drawn
H. Kusaka	I. Taguchi

Messrs : YASC	W.No.	3TNV76-GGEA

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Contents

G3-19747-0010

Drawing No.	Part No.	Name	Qty.	Remarks
		LOOSE PARTS		
	114110-07761	LABEL, FUEL OIL CAUTION	1	
	119515-13200	GASKET, SILENCER	1	
	171375-39601	DAMPER(1/8	1	
	119802-44500	RADIATOR ASSY	1	
	124450-44510	TANK ASSY, SUB	1	
	124450-44550	CLAMP, SUB TANK	1	
	119802-44560	GUARD, FAN	1	
	121256-44600	BRACKET, SUB TANK	1	
	119255-44660	RUBBER, RADIATOR	2	
	119802-49010	CW-T (A	1	
	119802-49020	CW-T (B	1	
	129335-55750	SEPARATOR ASSY,WATER	1	
	119643-66900	DIODE	1	
	119650-77911	RELAY ASSY, GLOW	1	
	129211-77920	TIMER, SECTION 1	1	
	119773-91501	SENDER, UNIT 12/24V	1	
	23000-035000	CLAMP, 35	4	
	0ATNV-EN0014	OPERATION MANUAL	1	

Messrs : YASC	W.No.	3TNV76-GGEA

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ENGINE SPECIFICATIONS

G3-19747-0010

No	Model name			3TNV76-GGEA		Remarks
1	Type			4 cycle, Inline,Water-cooled Diesel		
2	No.of cylinders-Bore×stroke			mm	3-φ76×82	
3	Combustion system				Indirect Injection	
4	Compression ratio				23.5	
5	Displacement			cc	1,116	
6	Rated output			kW	9/10.7	
				min^{-1}	1500/1800	
7	Continuous rating			kW	8.2/9.8	
				min^{-1}	1500/1800	
8	Max.torque			N・m	～	
				min^{-1}	(+ /)	
9	Specific fuel consumption			g/kW-h	260/260	at rated output
10	Ambient condition				25℃、750mmHg、30%	
11	Engine speed at no load		Max.	min^{-1}	1900	+25/-25
			Min.	min^{-1}	1500	+25/-25
12	Governorbility	Governor type			centrifugal-all speed governor	
		Temporary		%	max.8	load 100% ↓ 0%
		Permanent		%	max.4	
		Recovery time		sec	max.6	
		Stability		min^{-1}	max.15	
13	Gradients	Longitudinal		deg	30(25)	intermitted
		Lateral		deg	30(25)	( ) : continuous
14	Firing order				1-3-2-1	order from F.W.
15	Direction of rotation				counterclockwise	viewed from F.W.
16	Engine dry weight			kg	approx.150	
17	Fuel injection timing			deg	FID15(+1/-1)	FIT b.T.D.C
18	Fuel system	Fuel type			Diesel Fuel	
		Fuel injection pump			In-line(Yanmar ML)	
		Fuel injection nozzle			hole type	
		Fuel filter			paper element	
19	Lubrication system	System			forced feed	
		Oil grade			API class CD, SAE grade 10W30	
		Oil pump			trochoid pump	
		Oil filter			paper element	
		Oil capacity		liter	3.5	max.
				liter	1.6	effective.
		Oil pressure		MPa	0.34	at rated output
20	Cooling system	Heat exchanger		kW	23.5	
		Pressure cap		kPa	88	
		Fan			6-φ335	
		Coolant capacity		liter	0.9	

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ENGINE SPECIFICATIONS

G3-19747-0010

No	Model name			**3TNV76-GGEA**	Remarks
21	Air cleaner			install	
22	Breather system			closed	
23	Muffler			none	
24	Starting system	Starter		12V-1.1kW	
		Battery		46B24	
		Starting aid		glow plug(super quick glow)	
25	Generator			12V-40A	
26	Engine color			Silver	
27	Applied regulation			Chinese reg Stage 2	

＜Career＞

(2014.12.16) NEW RELEASE

Messrs : YASC	W.No.	3TNV76-GGEA

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SCOPE OF SUPPLY

G3-19747-0010

No	ENGEN MODEL	3TNV76-GGEA	Parts number	Remarks
FUEL SYSTEM				
1	Fuel Injection Pump	installed	719746-51350	Mark"HR14"
2	Fuel Injection Nozzle	installed	119717-53001	Mark"A"
3	Fuel Transfer Pump	installed	129100-52000	
4	Fuel Filter	installed	119833-55630	8μ、500cm^2
5	Fuel Filter Bracket	installed	119717-55650	
6	Fuel Injection Line	installed	119717-59800	
7	Fuel Line(Filter to Pump)	installed	129210-59080	L=270
8	Fuel Pipe (Pump to Filter)	installed	129210-59170	L=440
9	Water Separator	provided	129335-55750	As loose parts
10	Throttle Lever	installed	119746-61440	
LUB,OIL SYSTEM				
11	Oil Pan	installed	119717-01770	SHALLOW
12	Oil filler Extension pipe	installed	124160-01751	
13	Breather Pipe	not provided	none	
14	Switch ,lub .oil pressure	installed	114250-39450	PIN TYPE, 0.5kg/cm^2 (CA104)
15	LO pressure sender	provided	119773-91501	As loose parts
16	Dipstick	installed	119717-34801	
17	Guide ,dipstick	installed	121520-34810	
18	Oil filter	installed	119305-35160	
19	Oil Cooler	not provided	none	
COOLING SYSTEM				
20	Radiator	provided	119802-44500	As loose parts
21	Rubber Isolaters	provided	119255-44660	As loose parts
22	Pipe A,radiator	provided	119802-49010	As loose parts
23	Pipe B,radiator	provided	119802-49020	As loose parts
24	Sub tank(radiator)	provided	124450-44510	As loose parts
25	Water Pump	installed	119E10-42000	
26	Cooling Fan	installed	171340-44740	D335push(NF)
27	Spacer ,fan	installed	129457-44760	t=30mm
28	Guide ,fan	provided	119802-44560	As loose parts
29	Pully ,fan	installed	119717-42350	D=100mm
30	V-Belt	installed	25132-003600	A36inch
31	Switch, water temp.	installed	121250-44901	110℃
32	Sender, water temp.	installed	124250-49351	
33	Thermostat	installed	119717-49800	71deg
34	Thermostat Cover	installed	129350-49530	
35	Water Drain Fitting	installed	171056-49120	PLUG
36	3-Way Plug ,cooling water	not provided	none	
ELECTRIC SYSTEM				
37	Starter	installed	119717-77010	12V-1.1kW(DENSO)
38	Alternator	installed	129423-77200	12V-40A(DENSO)
39	Relay ,solenoid	provided	119650-77911	As loose parts
40	Timer ,solenoid	provided	129211-77920	As loose parts, 1S
41	Engine Shut Off	installed	119653-77950	
42	Starting Aid	installed	119717-77801	GLOW 11V
43	Diode ,solenoid relay	provided	119643-66900	As loose parts
44	Timer, air heater (glow)	not provided	none	
45	Relay, air heater (glow)	not provided	none	
46	Current Limiter	not provided	none	
47	Safety relay, starter	not provided	none	

SCOPE OF SUPPLY

G3-19747-0010

No	ENGEN MODEL	3TNV76-GGEA	Parts number	Remarks
PTO SYSTEM				
48	Flywheel Housing or Back plate	installed	119717-01611	
49	Flywheel	installed	119746-21570	
50	Bearing ,retainer	not provided	none	
51	Pully ,crankshaft	installed	119717-21650	D=110mm
52	Gear case	installed	119717-01501	
53	Hydraulic Pump	not provided	none	
54	Device ,hydraulic pump	not provided	none	
INTAKE/EXHAUST SYSTEM				
55	Air Cleaner	installed	119515-12530	
56	Bracket ,air cleaner	installed	119761-12540	
57	Manifold ,intake	not provided	none	
58	Joint	installed	119761-12020	
59	Muffler	not provided	none	
60	Gasket ,muffler	provided	119515-13200	As loose parts
61	Manifold ,exhaust	installed	119717-13109	
62	Bend ,exhaust	not provided	none	
63	EGR Pipe	NotProvided	none	
64	EGR Valve	NotProvided	none	
65	EGR Cooler	NotProvided	none	
66	Turbine	not provided	none	
ELECTRIC CONTROLL SYSTEM				
67	ECU	NotProvided	none	
68	Main Relay	NotProvided	none	
69	Lack Actuator Relay	NotProvided	none	
70	Starter Relay	NotProvided	none	
GAUGE				
71	Drive Unit ,tachometer	NotProvided	none	
72	Cable ,tachometer	NotProvided	none	
73	Tachometer	NotProvided	none	
74	Key Switch	NotProvided	none	
75	Cover ,terminals	NotProvided	none	
76	Pilot lamp	NotProvided	none	
77	Gauge ,oil/water temp	NotProvided	none	
78	Gauge ,oil pressure	NotProvided	none	
OTHERS				
79	Filter Wrench ,lub .oil	NotProvided	none	
80	Filter Wrench ,fuel .oil	NotProvided	none	

NEED	○	·	PURCHASING SPECIFICATION	·	REQUEST FOR APPROVAL	·	DELIVERY DRAWING	·	INSPECTING STANDARD	·	QC-PROCESS

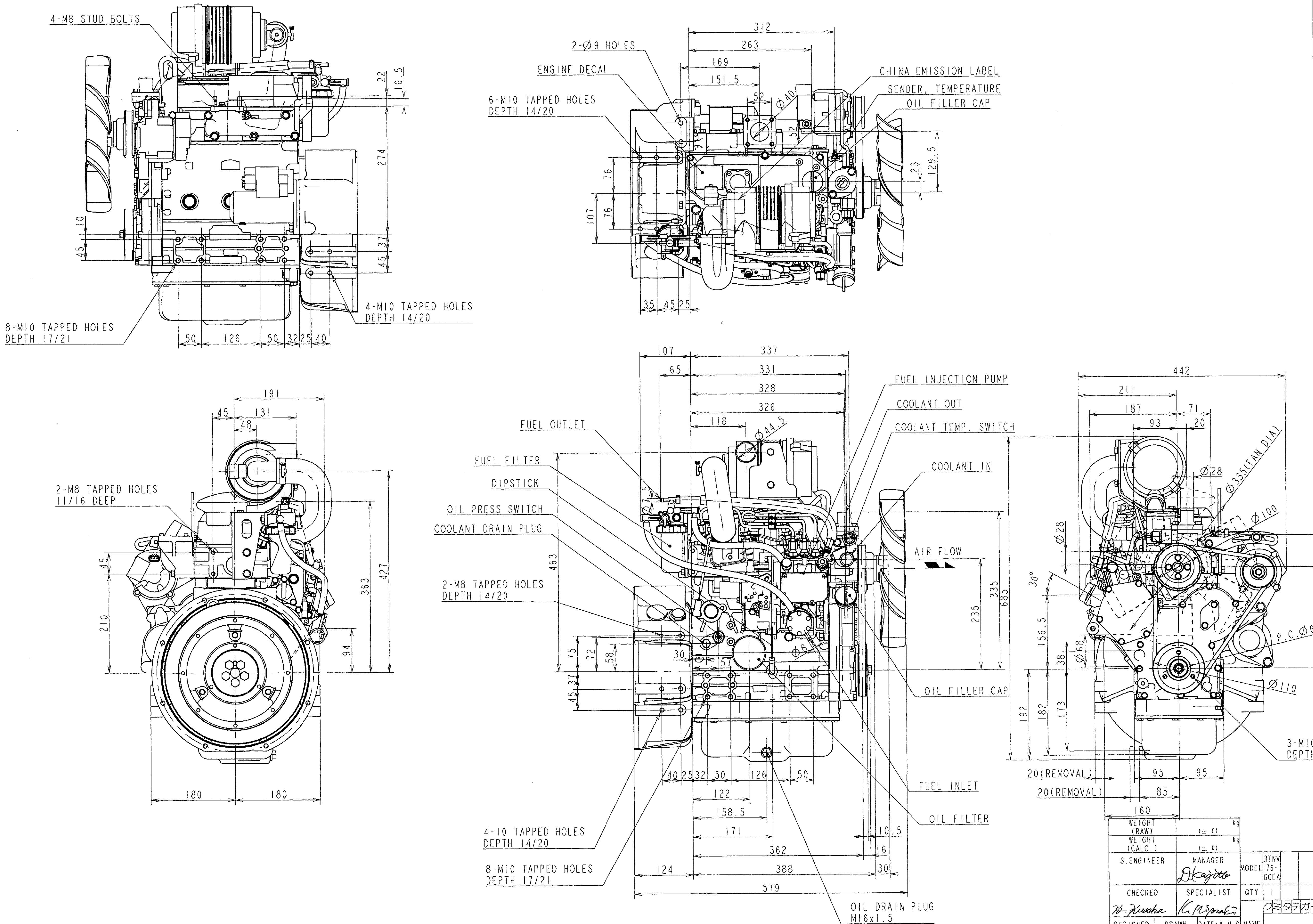
FILE NAME:3TNV76-GGEA.DRW

3RD ANGLE PROJECTION

FIGURE DIMENSION | GT.CODE | ○ AND ⌭ :RADIAL

CAREER

Rev.1(2013.4.5) CHANGE CHINA EMISSION LABEL POSITION. (YDSTX-13012)
Rev.2(2014.12.17)UPDATE TO THE LATEST (YDSTX-14093)



REMARKS
FOR THE DETAIL DIMENSIONS OF COUPLING, PLEASE REFER TO THE DRAWING THE CODE OF WHICH IS Z3-19746-0010.

With respect to the use of environmentally hazardous substances for the parts, the substances in use shall conform to the requirement specified in YIS V-0001J, "Restrictions of use for Environmentally Hazardous Substances".

3D-CAD

WEIGHT (RAW)	(± %) kg
WEIGHT (CALC.)	(± %) kg

S.ENGINEER	MANAGER	MODEL	3TNV76-GGEA
CHECKED	SPECIALIST	QTY	1
DESIGNED	DRAWN	DATE:Y.M.D 2011. 8.17	NAME: OUTLINE

SCALE 1:4
MATERIAL —

YANMAR
POWER SYSTEM OPERATIONS DIV., YANMAR CO., LTD.

CODE B3-19747-0080 | Rev.1 Rev.2 | DRAW SIZE A1

要	○	購買仕様書			検査基準書	品質管理工程図	特別管理部品	量産初期安定管理部品

三　角　法
3RD ANGLE PROJECTION

形状寸法コード　G.T.CODE

真円度・円筒度ハ、半径法

図 面 来 歴
CAREER

REV. 1 (2010. 2. 17) ADD THE ALTERNATOR (YDSTX-10019)

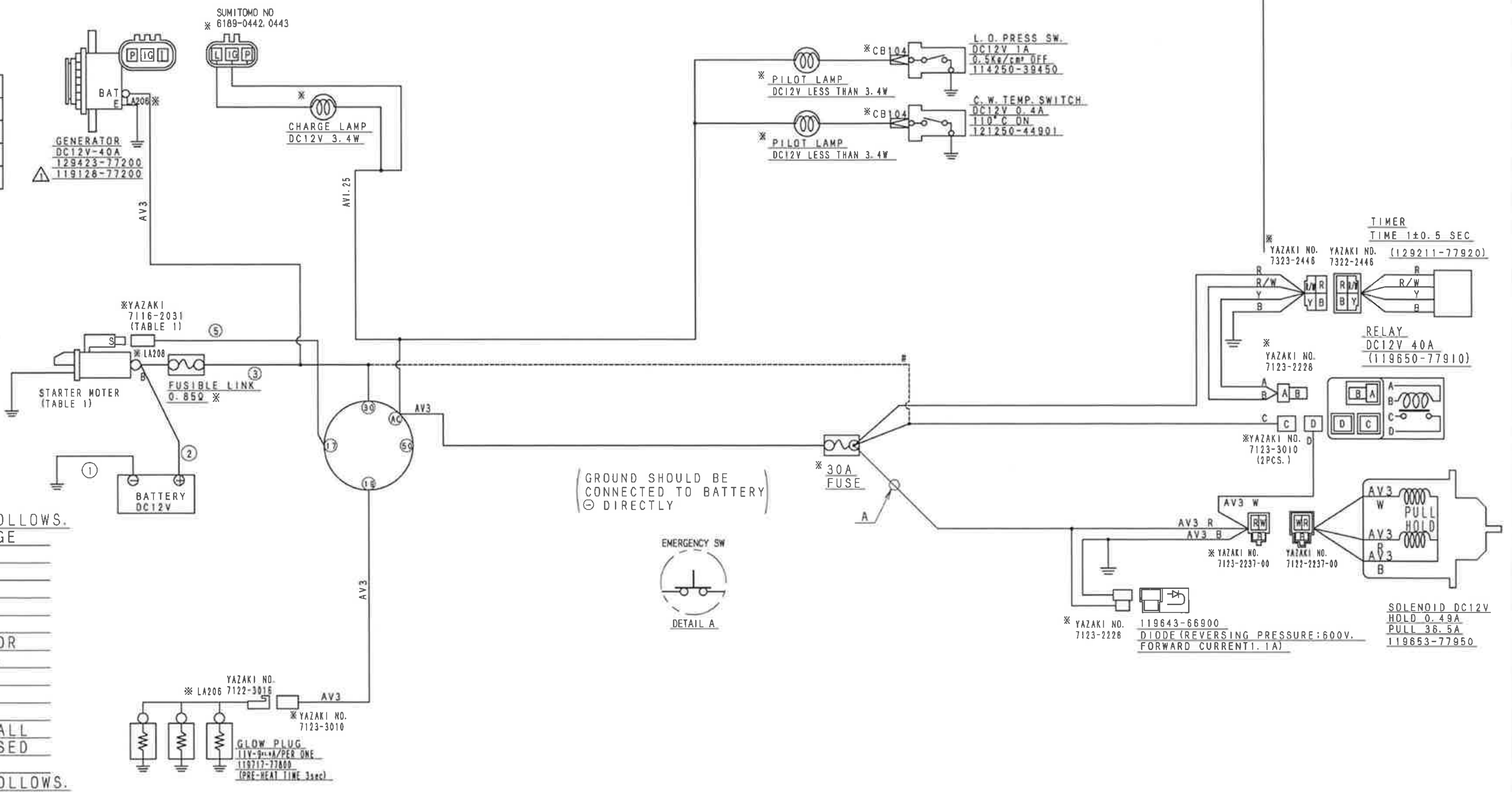
MARK	COLOR
B	Black
W	White
R	Red
L	Blue
G	Green
Y	Yellow
Br	Brown
Lg	Light Green
Sb	Sky blue
O	Orange
P	Pink
Gr	Gray
R/W	Red/White

	19	30	17	50	AC
PRE-HEATING	○	○			○
OFF		○			
ON		○			○
START		○	○	○	○

KEY SW. DIAGRAM

TABLE 1

MODEL	STARTER
3TNV70-HB	DC12V-1.0kW 119515-77010
3TNV76-GA, GB -HB -CS	DC12V-1.1kW 119717-77010



NOTES

1. WIRING OF STARTER MUST BE OBSERVED AS FOLLOWS. OTHERWISE IT CAUSES MIS-STARTING OR DAMAGE OF STARTER MOTOR.

1-1. TOTAL ELECTRIC RESISTANCE OF BATTERY CABLE (①+②) SHOULD BE LESS THAN 2/1000Ω.
REFERENCE: AV15: ≦1.4m, AV20: ≦2.2m
AV30: ≦3.8m, AV40: ≦4.6m

1-2. TOTAL ELECTRIC RESISTANCE OF WIRING FOR STARTER (③~⑤) SHOULD BE LESS THAN 5/100Ω.
REFERENCE OF TERMINAL RESISTANCE
: 15/1000Ω PER COUPLER
0Ω PER SCREW SETTIG

1-3. BATTERY EARTH CABLE (①) CONNECTION SHALL BE ENSURED. PAINTED SURFACE MAY NOT BE USED (FOR EARTHING) AVOIDING THE MISS CONTACT.

2. BATTERY TREATMENT MUST BE OBSERVED AS FOLLOWS. OTHERWISE IT MAY CAUSE BURNING OF ELECTRIC EQUIPMENTS OR COMPONENTS. ALTERNATOR (DIODES) BURNING CAUSED BY BATTERY CABLE CONNECTION REVERSELY IS NOT WARRANTED.

2-1. BATTERY SHOULD BE FIXED BY FITTING. (NOT TO MOVE)

2-2. BATTERY CABLE LENGTH SHOULD BE ADJUSTED PROPERLY AND CLAMPED NOT TO BE CONNECTED REVERSELY.

2-3. NOT LOOSE THE BATTERY CABLE TERMINAL, NOR TURN THE BATTERY SWITCH OFF DURING THE ENGINE RUNNING.

3. ONLY THE SPECIFIED LOAD SHOULD BE APPLIED ON THE ALTERNATOR "L" AND "P" LINE. IT IS NOT ALLOWED TO CONNECT ANY LOAD UNSPECIFIED WITHOUT YANMAR APPROVAL.

4. CHECK ANY SURGE CURRENT OR VOLTAGE OCCURED UNDER NORMAL OPERATIONS AND EXPECTIVE ERRONEOUS OPERATIONS, AND CONFIRM THE CIRCUIT NO SURGE OCCURS. ESPECIALLY PROVIDE THE FLYWHEEL DIODE FOR "C-LOAD" AND DIODE FOR "L-LOAD".

REMARKS

1. ※ MARKED PARTS ARE NOT PROVIDED BY YANMAR.

NOTES FOR ENGINE STOP SOLENOID

1. PERMISSIBLE RESISTANCE OF SOLENOID CIRCUIT SHOULD BE LESS THAN 0.07Ω TO GUARANTEE PERMISSIBLE LOWEST VOLTAGE 9V TO WORK SOLENOID (PULL COIL).
(TERMINAL RESISTANCE : 15/1000Ω PER COUPLER.
0Ω PER SCREW SETTING.
COUPLER RESISTANCE OF SOLENOID DOESN'T NEED TO BE COUNTED)
REFERENCE : AV2 (0.0088Ω/m) : ≦8.0m···WITHOUT TERMINAL RESISTANCE
AV3 (0.0056Ω/m) : ≦12.5m···SAME AS ABOVE
WHEN YOU EXCEED PERMISSIBLE RESISTANCE, ADOPT THE CIRCUIT IMPRESSED FROM THE POWER SUPPLY TO THE SOLENOID DIRECTLY USING A RELAY ···REFER TO #

2. HIGH TEMPERATURE PARTS, SUCH AS AN EXHAUST PIPE, SHOULD NOT APPROACH FOR THE PULL POWER FALL OF SOLENOID, AND HEATING PREVENTION OF INNER COIL TEMPERATURE. (PERMISSIBLE AMBIENT TEMPERATURE: -30~100℃)

3. INSTALL FUSE TO PROTECT THE HARNESS AGAINST TROUBLES SUCH AS SHORT CIRCUIT OR CONTINUOUS DRIVE OF PULL-COIL.

4. THE POWER SUPPLY OF SOLENOID MAY NOT BE COMMON WITH THE LINE OF ALTERNATOR INITIAL EXCITATOR AS SHOWN IN THIS DRAWING. (OTHERWISE, SOLENOID MAY LOOSE STOP FUNCTION DUE TO THE POWER SUPPLY FROM ALTERNATOR "L" TERMINAL.)

5. IN CASE OF WATERPROOF CONNECT OR APPLICATION, CONNECTOR SHOULD BE FIXED BY FITTING TO PREVENT LEAD WIRE BREAK.

6. IN CASE OF EMERGENCY STOP OF MACHINE FOR SAFETY WILL BE APPLIED, SWITCH LOCATION SHOULD BE SHOWN AS A.

7. IN CASE OF THE SOLENOID CIRCUIT RESISTANCE WOULD BE LIMIT, # WIRING IS APPLICABLE.

With respect to the use of environmentally hazardous substances for the parts, the substances in use shall conform to the requirement specified in YIS V-0001J, "Restrictions of use for Environmentally Hazardous Substances".

本部品への環境負荷物質の使用に関しては、YIS V-0001J (環境負荷物質の使用規制) の規定を満足すること。

素材質量 WEIGHT (RAW)	(± %)	水圧試験 HYDRAULIC TEST	(MPa kg/cm²)	小形工関発部	部長 G. MANAGER	技部長 MANAGER
完成質量 WEIGHT (精度%)	(± %)	空圧試験 PNEUMATIC TEST	(MPa kg/cm²)			T. Mukai
主席	長 SEC. MANAGER K. Kawasaki	機種 MODEL	3TNV70-HB / 3TNV76-HB / 3TNV76-GA, GB / 3TNV76-CS	尺度 SCALE	SCALE OUT	
検図 CHECKED H. Tahari	機能担当者 SPECIALIST Y. Nomura	個数 QTY.	1 / 1 / 1 / 1	材質 MATERIAL		
設計 DESIGNED M. Sakamoto	製図 DRAWN I. Kondo	年月日 DATE 2006 3.10	名称 NAME	ケッセンズ / WIRING DIAGRAM / WIRING DIAGRAM		

YANMAR CO., LTD.
POWER SYSTEM OPERATIONS DIV.

REV. 1
コード CODE E3-19746-0010
図面サイズ A2 (C)

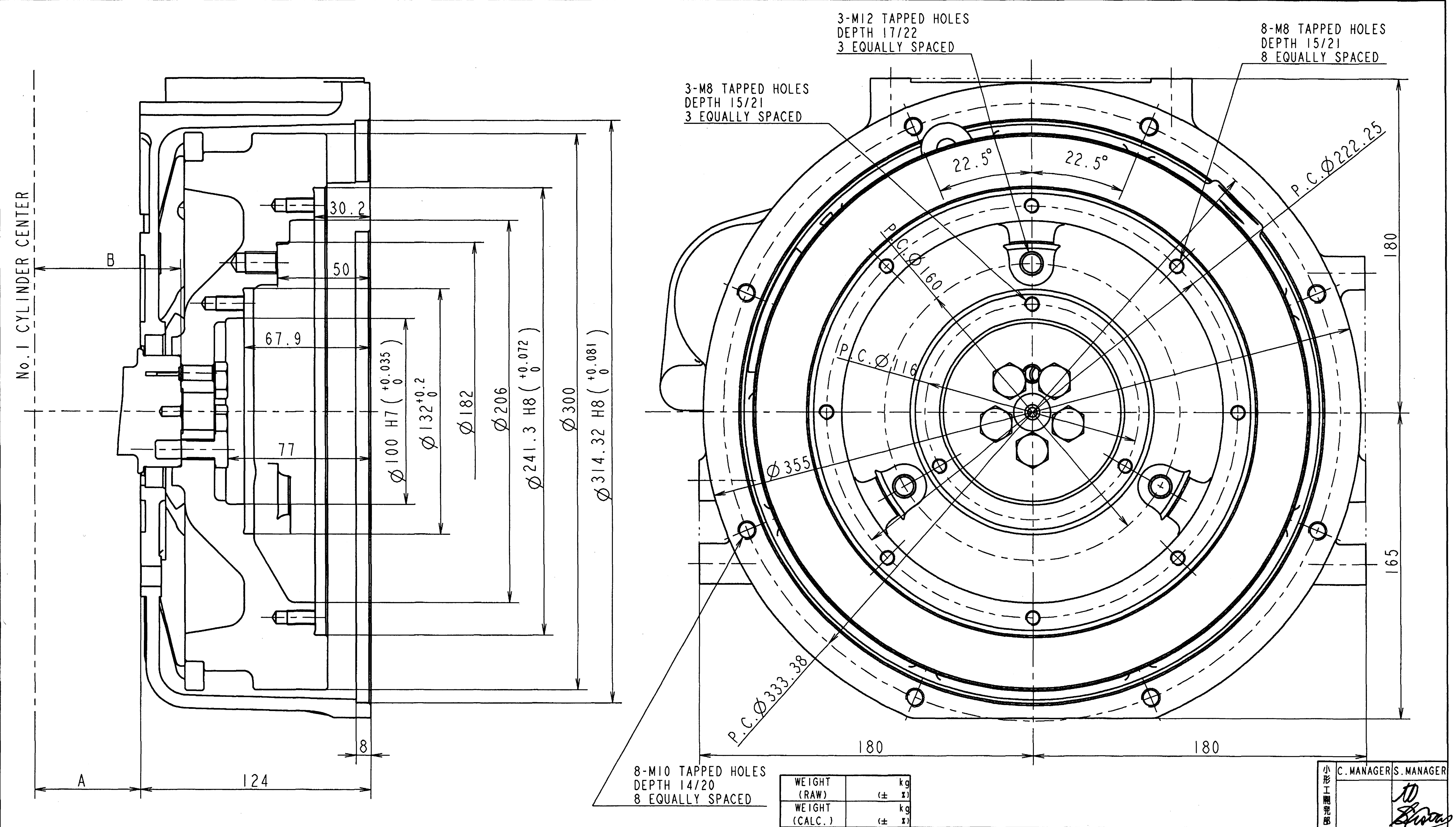
NEED ○	PURCHASING SPECIFICATION	·	REQUEST FOR APPROVAL	·	DELIVERY DRAWING	·	INSPECTING STANDARD	·	QC-PROCESS

FILE NAME:Z3-19746-0010.DRW

3RD ANGLE PROJECTION

With respect to the use of environmentally hazardous substances for the parts, the substances in use shall conform to the requirement specified in YIS V-0001J, "Restrictions of use for Environmentally Hazardous Substances".

本部品への環境負荷物質の使用に関しては、YIS V-0001J（環境負荷物質の使用規制）の規格を満足すること。



	MODEL	DIMENSION A	DIMENSION B	FLYWHEEL HOUSING	FLYWHEEL CMP	FLYWHEEL
	3TNV70	54	76	① 119717-01611	119746-21570	119746-21410
	3TNV76	57	79	↑	↑	↑
②	3TNV74F	54	76	↑	119E17-21570	119E17-21400
②	3TNV80F	57	79	↑	↑	↑

3D-CAD

NOTICE

GEOMETRICAL TOLERANCE		
KIND OF TOLERANCE		SYMBOL
FORM	STRAIGHTNESS TOLERANCE	—
	CIRCULARITY TOLERANCE	○
	PROFILE OF LINE TOLERANCE	⌒
	FLATNESS TOLERANCE	▱
	CYLINDRICITY TOLERANCE	⌭
	PROFILE TOLERANCE OF SURFACE	⌓
ORIENTATION	PARALLELISM TOLERANCE	//
	PERPENDICULARITY TOLERANCE	⊥
	ANGULARITY TOLERANCE	∠
LOCATION	POSITIONAL TOLERANCE	⌖
	COAXIALITY OR CONCENTRICITY TOLERANCE	◎
	SYMMETRY TOLERANCE	⌯
RUN-OUT	CIRCULAR RUN-OUT TOLERANCE	↗
	TOTAL RUN-OUT TOLERANCE	⌰

WEIGHT (RAW)	kg (± %)
WEIGHT (CALC.)	kg (± %)

S.ENGINEER	MANAGER	CAREER
	H. Imai	Rev.1(2007.2.2)Renew the number of Flywhhl Housing. (YDSTX-07009)
CHECKED	SPECIALIST	Rev.2(2013.4.25)Add 3TNV74F 3TNV80F (YDSTX-13014)
D.Kajita		
DESIGNED	DRAWN	
J.Taguchi	E.Adachi	

MODEL	3TNV70	3TNV76	3TNV74F	3TNV80F
QTY	1	1	1	1

小形工開発部	C.MANAGER	S.MANAGER
	TO	Shiota

SCALE 1:2

MATERIAL

NAME: チョッケツフ゛ショウサイス゛

COUPLING SAE #5

DATE:Y.M.D 2003.11.27

YANMAR

POWER SYSTEM OPERATIONS DIV., YANMAR CO., LTD.

CODE Z3-19746-0010 Rev.1 Rev.2

DRAW SIZE A3

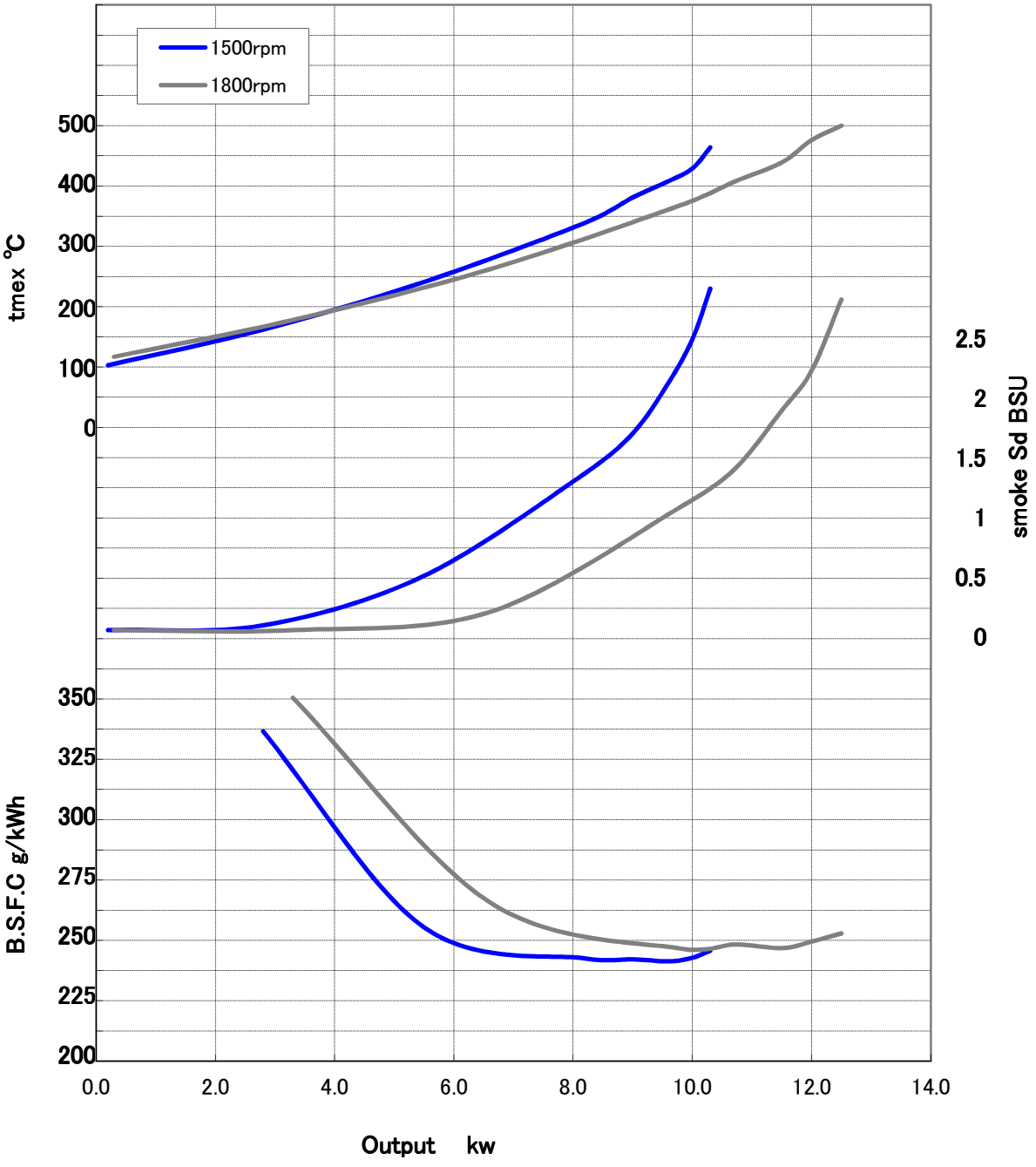
Fig.　3TNV76 Engine performance curve

n-BxS : 3-76x82

Displacement : 1,116cc

Silencer	129004-13500
Air cleaner	5inch
CW fan	171340-44740

Crank pulley	D=110
Fan puley	D=100
φ335	PushF



The engine operating environment and driven machine conditions must be studied carefully when selecting an engine in order to make the most of the engine performance, extend the service life and improve the machine capacity.

This manual describes the items that must be considered when selecting an engine and determining the specifications to ensure that the engine is not used beyond its capacity.

APPLICATION STANDARD

<table>
<tr><th>No.</th><th>Item</th><th colspan="4">Application Standard</th><th>Remarks</th></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Engine type</td><td colspan="3">Special swirl combustion chamber system engines (IDI engines)</td><td>Engines with cylinder bore of 76 mm or less</td><td rowspan="2">TNV series</td></tr>
<tr><td colspan="3">Direct injection system engines (DI engines)</td><td>Engines with cylinder bore of 82 mm or more</td></tr>
<tr><td rowspan="5">2</td><td rowspan="5">Output/rpm</td><td colspan="3">Output rpm</td><td>See Specifications on page 3-5.
Engine Specifications</td><td></td></tr>
<tr><td rowspan="3">Output Setting conditions</td><td>Ambient temperature</td><td>25°C (77°F)</td><td rowspan="3">Same as in JIS and ISO</td></tr>
<tr><td>Atmospheric pressure</td><td>100 kPa (750 mmHg)</td></tr>
<tr><td>Relative humidity</td><td>30%</td></tr>
<tr><td colspan="3">Output power correction</td><td>See Power Corrections on page 4-3.</td></tr>
<tr><td rowspan="5">3</td><td rowspan="5">Special operating environment</td><td colspan="3">Precautions against sand dust</td><td rowspan="5">See Special Operating Environment on page 1-5.</td><td rowspan="5"></td></tr>
<tr><td colspan="3">Precautions for outdoor installation</td></tr>
<tr><td colspan="3">Precautions against sea air and snow melting agents</td></tr>
<tr><td colspan="3">Precautions against cold environment</td></tr>
<tr><td colspan="3">Precautions against hot environment</td></tr>
<tr><td rowspan="8">4</td><td rowspan="8">Fuel oil</td><td colspan="2">Fuel oil</td><td>Ambient temperature °C (°F)</td><td>Equivalent fuel</td><td rowspan="8">See Standard Diesel Fuel Line Layout on page 10-7 for the fuel specifications in each country.</td></tr>
<tr><td rowspan="3">Diesel fuel</td><td>≥ -5 (23)</td><td>JIS No. 2</td></tr>
<tr><td>15 to -20 (59 to -4)</td><td>JIS No. 3</td></tr>
<tr><td><-20 (<-4)</td><td>JIS special No. 3</td></tr>
<tr><td colspan="2">Kerosene</td><td colspan="2">Not allowed</td></tr>
<tr><td colspan="2">Heavy oil</td><td colspan="2">Not allowed</td></tr>
<tr><td colspan="2">JP-4</td><td colspan="2">Not allowed</td></tr>
<tr><td colspan="2">JP-8, JP-5</td><td colspan="2">Contact Yanmar for consideration</td></tr>
<tr><td rowspan="4">5</td><td rowspan="4">Engine oil</td><td colspan="4">See Engine oil on page 11-5.</td><td rowspan="3">The initial replacement of the lubricating oil and lubricating oil filter should be done at 50 hours of service.</td></tr>
<tr><td colspan="2">Lubricating oil class</td><td>Lubricating oil replacement interval (hr)</td><td>Lubricating oil filter replacement interval (hr)</td></tr>
<tr><td colspan="2">CD, CF, CF-4, CI-4
E-3, E-4, E-5, DH-1</td><td>Every 250</td><td>Every 250</td></tr>
<tr><td colspan="3">Allowable maximum engine oil temperature</td><td colspan="2">≤120°C (248°F)</td><td>At the specified maximum ambient temperature.</td></tr>
<tr><td rowspan="5">6</td><td rowspan="5">Engine coolant</td><td colspan="3">Allowable cooling water temperature at engine outlet</td><td>≤105°C (221°F)</td><td>See Cooling System on page 9-1.</td></tr>
<tr><td colspan="3">Water quality</td><td colspan="2">Soft water</td><td>See Engine Coolant on page 9-4.</td></tr>
<tr><td colspan="3">Antifreeze mixing ratio%</td><td colspan="2">Atmospheric temperature °C (°F)</td><td rowspan="4">See Radiator on page 9-8.</td></tr>
<tr><td colspan="3">30</td><td colspan="2">0 to -15 (32 to 5)</td></tr>
<tr><td colspan="3">40</td><td colspan="2">-15 to -25 (5 to -13)</td></tr>
<tr><td colspan="3">50</td><td colspan="2">-25 to -40 (-3 to -40)</td></tr>
</table>

<table>
<tr><th>No.</th><th>Item</th><th colspan="4">Application Standard</th><th>Remarks</th></tr>
<tr><td>7</td><td>Power take-off (PTO)</td><td colspan="4">See P.T.O. Systems on page 15-1.</td><td></td></tr>
<tr><td>8</td><td>Low-temperature startability</td><td colspan="4">See Low-temperature startability on page 1-7.</td><td></td></tr>
<tr><td rowspan="4">9</td><td rowspan="4">Allowable inclination angle</td><td rowspan="2">Continuous operation</td><td rowspan="2">All directions</td><td>IDI</td><td>≤25°</td><td rowspan="4">See Crankcase Breather System on page 11-18.</td></tr>
<tr><td>DI</td><td>≤30°</td></tr>
<tr><td rowspan="2">Instantaneous operation (within 3 minutes)</td><td rowspan="2">All directions</td><td>IDI</td><td>≤30°</td></tr>
<tr><td>DI</td><td>≤35°</td></tr>
<tr><td>10</td><td>Allowable exhaust back pressure</td><td colspan="4" rowspan="2">See Allowable Air Intake Restriction and Exhaust Back Pressures on page 1-30.</td><td></td></tr>
<tr><td>11</td><td>Allowable air restriction at intake manifold</td><td></td></tr>
</table>

SPECIAL OPERATING ENVIRONMENT

The engine performance depends greatly on the operating and environmental conditions.

Please consult with Yanmar when unusual operating conditions exist.

Precautions Against Dusty Conditions

Condition	Part	Countermeasure
Wear due to dusty or sandy condition	Air cleaner	The following measures and cleaning are necessary to prevent dust from entering the engine: Use double element (safety element) Use evacuator valve Use dust indicator
	Alternator	Dust-proof type may be required for preventing entry of sand and dust.
	Starting motor	
	Breather air reservoir (for turbocharged engine only)	Since dust can enter from the breather pipe while the engine is stopped, an air reservoir may be installed at the end of the breather pipe.
	Cooling fan	to improve the wear resistance, a fan made of nylon 6 (reinforced with glass fiber) or steel may be required.
	V pulley	To improve the wear resistance, a hardened pulley may be required.
	V-belt	To counteract belt wear, a larger type V-belt may be required.
	Radiator	Changing the core type and fin material may be required. Heat balance check after the modification is required.

Precautions for Outdoor Installation

Condition	Part	Countermeasure
Rain, snow, etc.	Rain cap (for both air cleaner and exhaust silencer)	Entry of rainwater, snow, etc. must be prevented.
	Electrical parts	Since electrical parts correspond to level R2(*) in JIS D 0203, either install them where they will not be splashed with water, or provide covers.
Location	----------	Flat, well-ventilated place

(*) Level R2: A water spraying test level for checking the performance of the portion subject to indirect exposure to rainwater or splashing water.

Precautions Against Salty Conditions (Air, Sea Water, Road Salt)

Condition	Part	Countermeasure
Location exposed to salt air or road salt	Electrical parts	Since corrosion may occur, careful maintenance is necessary.
	Speed control lever shaft	
	Stop lever shaft	
	Exhaust manifold bolts	
	Stop lever return spring	
	Radiator	
Location where salt water may splash directly onto the engine	----------	Do not install engine where it can be splashed with salt water.

Precautions Against Cold Environment

Environmental temperature	Part	Countermeasure	Remarks
-30°C (-22°F) or above	Battery (high CCA)	Specification must be changed.	See *Low-temperature startability on page 1-7* for startability.
	Starting motor		
-30°C to -40°C (-22°F to -40°F)	Cooling water hose	Special rubber may be required to prevent rubber parts from being damaged by hardening. Choose components that will maintain flexibility at this temperature range.	
	Intake air hose		
	O-rings		
	Oil seal		
	Fuel hose		
	Fuel feed pump	An electric feed pump is required.	
	Starting aid	A block heater should be used.	
-40°C (-40°F) or below		Not recommended.	

Precautions Against Hot Environment

Environmental temperature	Part	Countermeasure
Below 40°C (104°F)	Electrical parts	The temperature inside the engine hood must be kept below 80°C (176°F) to protect the electrical parts. Provide ventilation around electrical parts.
Above 40°C (104°F)	Radiator	A large capacity radiator and fan must be used to prevent the cooling water and lubricating oil temperatures from getting too hot.
	Cooling fan	
	Oil cooler	Increase capacity or install as standard equipment.
	Electrical parts	The temperature inside the engine hood must be kept below 80°C (176°F) to protect the electrical parts. Provide ventilation around electrical parts.

Others

Condition	Part	Countermeasure
Location where explosive, flammable or toxic gas exists	----------	Engine is not designed for installation where explosive, flammable or toxic gas exists.

STANDARD DIESEL FUEL LINE LAYOUT

There are two typical diesel fuel line layouts for TNV engines. Fuel line layout shown in **(Figure 10-4)** is for IDI engines and **(Figure 10-5)** is for DI engines.

Layout for IDI Engines with ML Type Diesel Fuel Injection Pump

Diesel Fuel Line Layout for IDI Engines

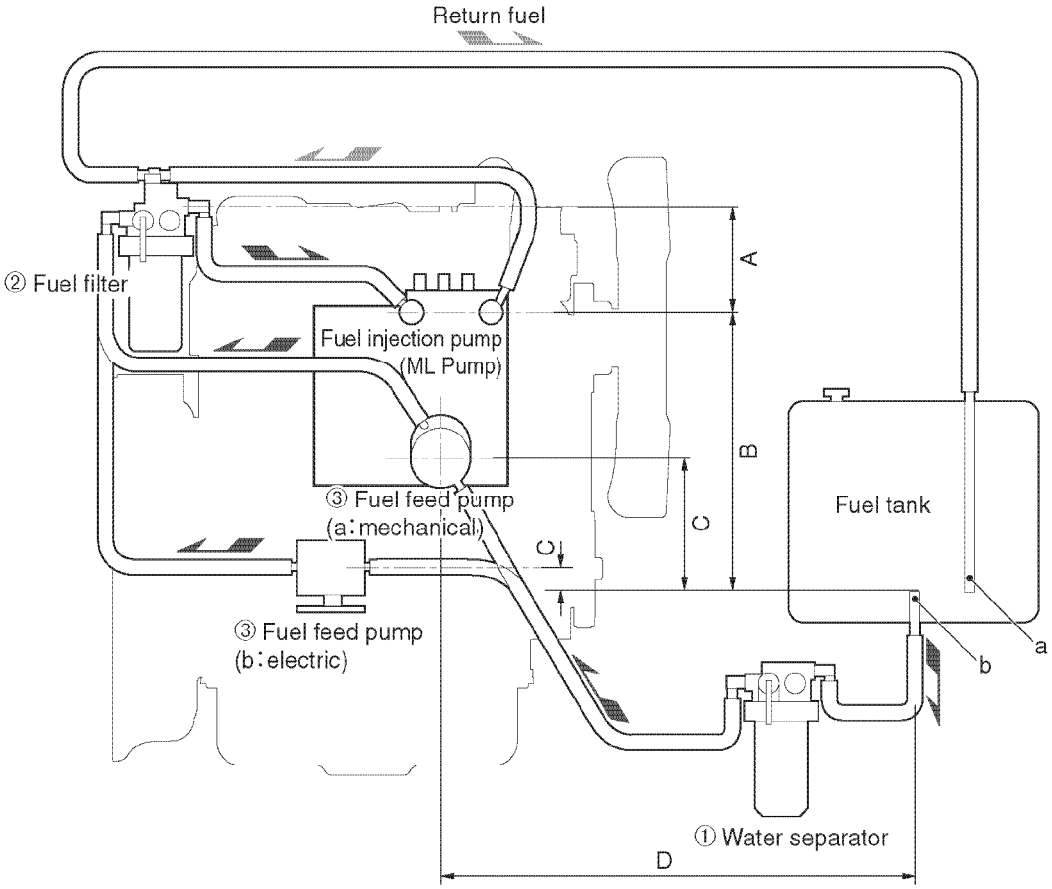


Figure 10-4

Note: Keep return line (a) away from diesel fuel outlet (b) to prevent the diesel fuel line from drawing in air and / or hot diesel fuel. NEVER connect return line (a) to the inlet line.

Diesel Fuel System Part Names and Functions for IDI Engines

No.	Part name	Function
(1)	Diesel fuel prefilter / water separator	A diesel fuel filter / water separator is mandatory for TNV engines to separate water from diesel fuel with a 100 mesh element and to prevent water from getting into the fuel injection pump and causing damage. 100 mesh or 25 to 50 μm is required for the element. When replacing or cleaning the diesel fuel filter / water separator element or diesel fuel filter, use the valve on the diesel fuel filter / water separator to shut off the fuel supply. (same as TNE engine)
(2)	Diesel fuel final filter	Has 8 μm mesh paper element inside. (same as TNE engine) There is a valve on the inlet of the diesel fuel filter for air bleeding
(3)	Diesel fuel pump	Sends diesel fuel to the diesel fuel injection pump from the fuel tank. Diesel fuel pumps are either mechanical or electrical.
	(a) Mechanical	Has a diaphragm and is installed on the diesel fuel injection pump. (same as TNE engine)
	(b) Electric	Has a solenoid and is installed outside the engine. (same as TNE engine)

Layout Dimension for IDI Engines

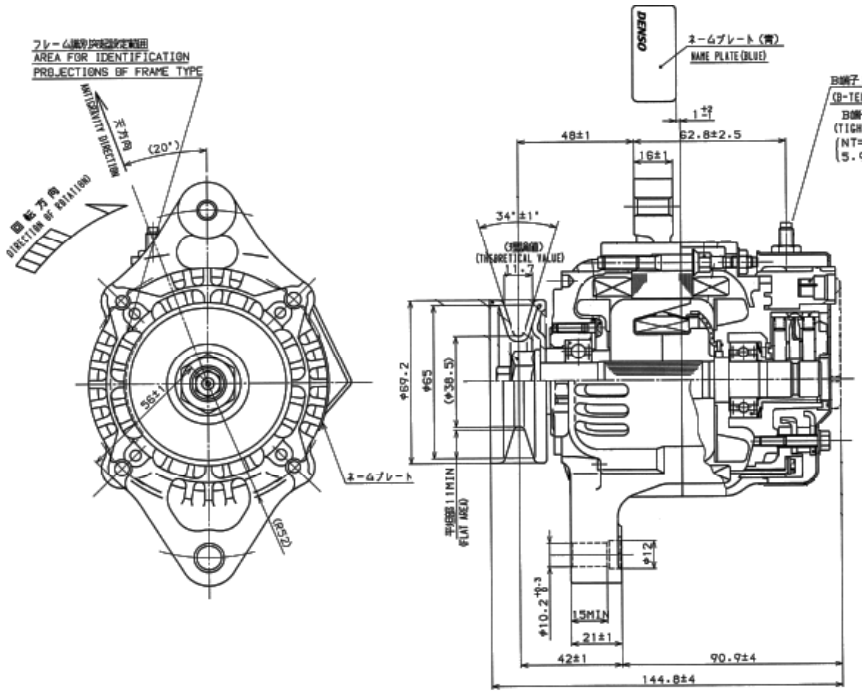
Position	Standard value	Content
A	50 ~ 150 mm	From diesel fuel filter outlet to diesel fuel injection pump inlet For air bleeding, diesel fuel filter outlet position should be higher than the diesel fuel injection pump inlet position.
B	≤1000 mm	Total head of diesel fuel pump (from fuel tank outlet to injection pump inlet)
C	(a) Mechanical feed pump: ≤500 mm (b) Electric feed pump: ≤400 mm	Suction head in dry condition (from fuel outlet of tank to feed pump inlet)
D	≤2000 mm	Suppression of the suction side resistance of the fuel feed pump (from diesel fuel tank outlet to diesel feed pump inlet)

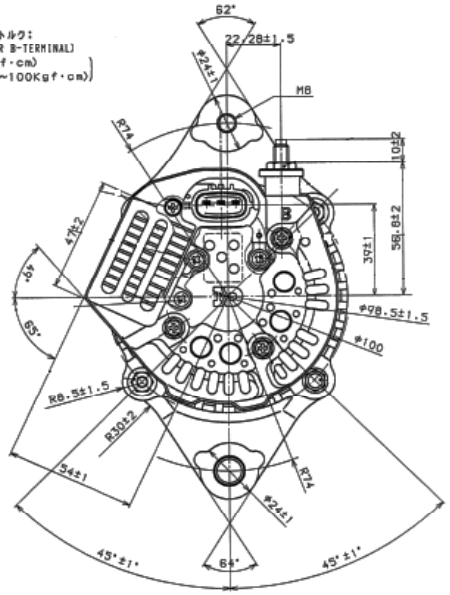
Parts Specification for IDI Engines

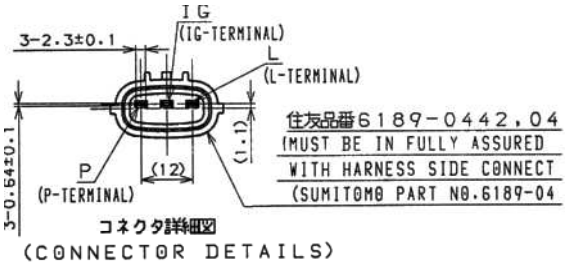
Engine model	2TNV70 ~ 3TNV76	
Diesel fuel pump	(a) Mechanical type	:129100-52100
	(b) Electric type	:119225-52102 (standard) 129612-52100 (with water proof coupler)
Diesel fuel / water separator	129335-55700 (diesel fuel inlet downward) 121257-55700 (diesel fuel inlet upward) Filter mesh: 100 mesh (with valve)	

Fuel Filter for IDI Engines

Filter body:	119833-55620 (diesel fuel outlet downward) 119740-55600 (diesel fuel outlet sideways)
Filter element :	119810-55650
Filter mesh :	8 μm
Filtration size:	432 cm^2
For poor quality fuel :	Filter mesh: 5 μm
Contact Yanmar with questions	



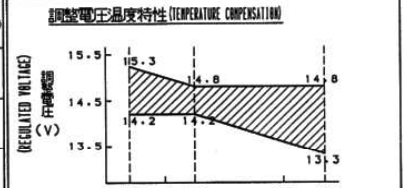




仕様 (SPECIFICATIONS)

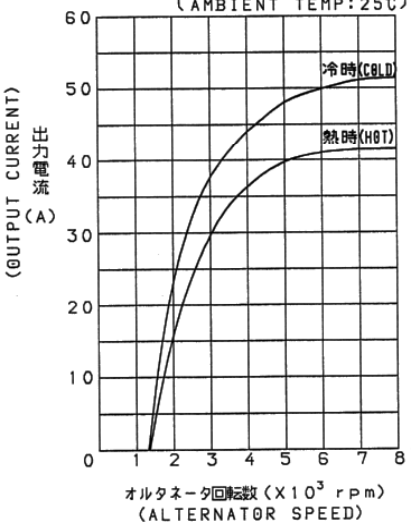
公称電圧 (RATED VOLTAGE)	12V
公称出力(13.5V熱時) (RATED OUTPUT (13.5V AT HOT))	40A(5000rpm)
立上り回転数(13.5V熱時) (NO LOAD SPEED(13.5V AT HOT))	1350rpm
許容最高回転数 (PERMISSIBLE MAXIMUM SPEED)	18000rpm
許容使用周囲温度 (PERMISSIBLE AMBIENT TEMP.)	−30~+90°C
回転方向 (DIRECTION OF ROTATION)	右(プーリ側より見て) (CLOCKWISE(VIEWED FROM PULLEY SIDE))
極性 (POLARITY)	⊖側接地 (NEGATIVE GROUNDING)
質量 (MASS)	約2.8kg (ABOUT 2.8kg)
初期励磁機能 (INITIAL EXCITING FUNCTION)	全励磁 (FULL EXCITATION)
ランプ駆動方式 (TOTAL WATTAGE OF LAMPS)	駆動ランプ数3.4W×6個 (NOT MORE THAN 3.4W X 6LAMPS)
ベルトテンション(A型) (BELT TENSION (TYPE:A))	270~444N (60~100lbf)

レギュレータ調整電圧 (REGULATED VOLTAGE)		14.2~14.8V/ 5000rpm 10A,25℃
調整電圧温度特性(TEMPERATURE COMPENSATION)		
警報機能:ロータコイル断線 WARNING FUNCTION: ROTOR COIL DISCONNECTED		チャージランプ点灯 CHARGE LAMP ON
P端子仕様 P-TERMINAL SPECIFICATION	出力電流 OUTPUT CURRENT	平均電流 0.5A以下 MEAN OUTPUT CURRENT ≦ 0.5A
	出力電圧波形 OUTPUT VOLTAGE	6.5V≦Vm≦SB端子電圧+2.0V −2.0V≦Vn≦0V 1/T(HZ)=オルタネータ回転数(rpm)/10 デューティ(T1/T)=約50% 6.5V≦Vm≦B-TERMINAL VOLTAGE+2.0V −2.0V≦Vn≦0V 1/T(HZ)=ALTERNATOR SPEED(RPM)/10 DUTY(T1/T)= ABOUT 50%

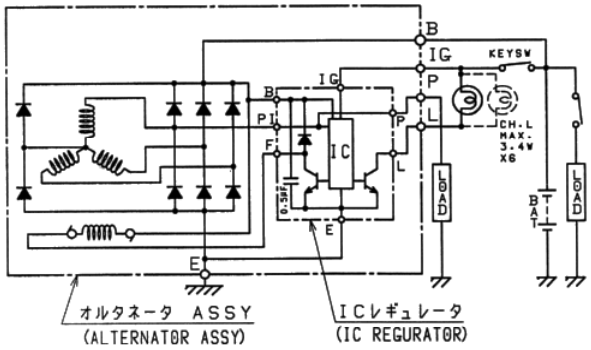


標準特性 (STANDARD CHARACTERISTICS)

13.5V一定, 周温25℃
{13.5V CONSTANT AMBIENT TEMP:25℃}

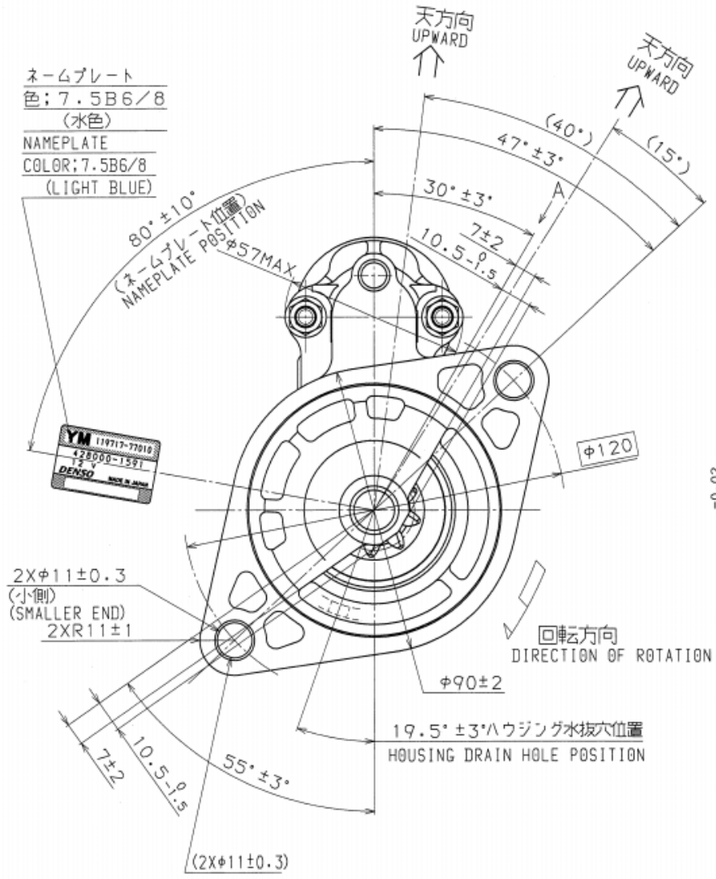


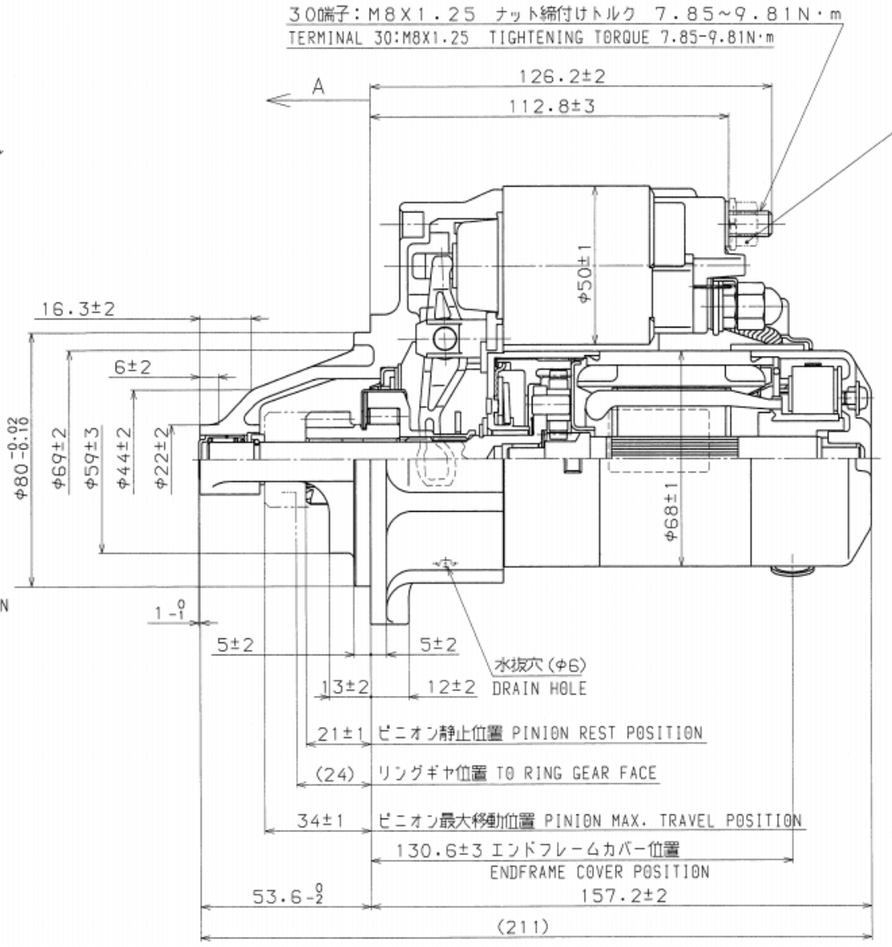
結線図 (WIRING DIAGRAM)

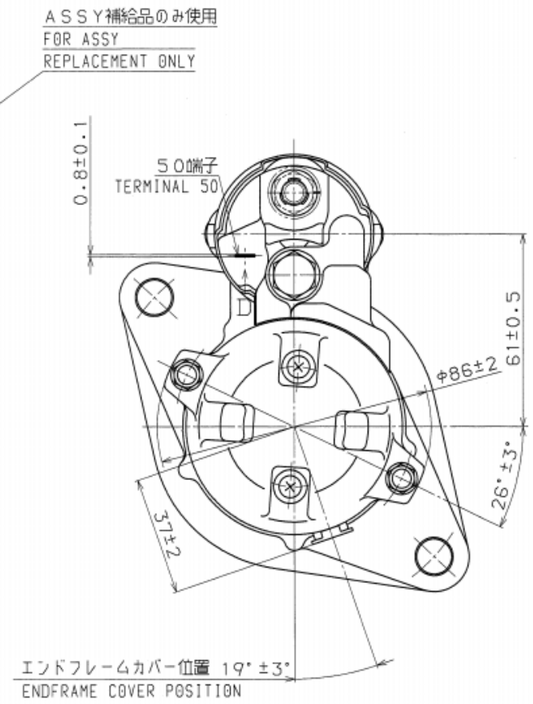


YANMAR
ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

MODEL	TN SERIES
NAME	GENERATOR
PART No.	129423-77200

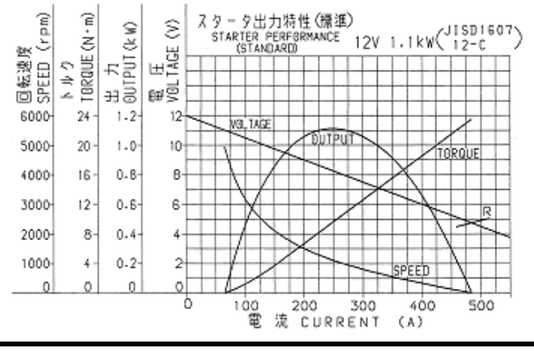






スタータ性能 (20℃)		
無負荷	電圧11.5Vにて 電流90A以下	回転速度3000rpm以上
負荷	電圧8.7V 回転速度1130rpm以上 トルク6.86N·m以上 電流230Aにて	
拘束	電圧2.5Vにて 電流325A以下	トルク8.24N·m 以上
作動電圧	リングギヤ位置にて	8V 以下

STARTER PERFORMANCE (20℃)			
NO LOAD	AT 11.5 V	CURRENT : 90A MAX. SPEED : 3000rpm MIN.	
LOAD	AT 8.7 V 230 A	SPEED : 1130rpm MIN. TORQUE : 6.86N·m MIN.	
STALL	AT 2.5 V	CURRENT : 325A MAX. TORQUE : 8.24N·m MIN.	
OPERATING VOLTAGE	AT RING GEAR FACE	8V MAX.	

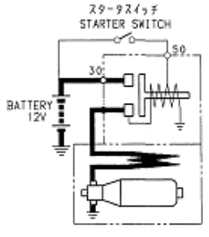


スイッチ仕様 (11V/20℃にて)	
吸引電流	42A以下
保持電流	12A以下
SWITCH SPECIFICATIONS (at 11V/20℃)	
PULL-IN CURRENT	42A MAX.
HOLDING CURRENT	12A MAX.

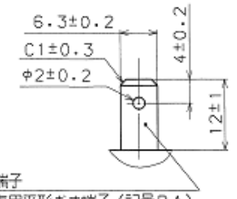
スタータ仕様	
定格電圧	12V
定格出力	1.1kW (JIS D 1607 12-C)
定格時間	30s
質量	約3000g
回転方向	右(ピニオン側より見て)
STARTER SPECIFICATIONS	
RATED VOLTAGE	12V
RATED OUTPUT	1.1kW (JIS D 1607 12-C)
RATED TIME	30s
MASS	APPROX. 3000g
DIRECTION OF ROTATION	CLOCKWISE VIEWED FROM PINION END

ピニオン仕様	
モジュール	2.54
歯数	9
圧力角	20°
ピッチ円径	φ22.86
外径	φ29.64 0 -0.21
歯底径	φ20.02 +0.15 -0.30
転位係数	(0.51)
2枚またぎ歯厚	12.45 0 -0.08
硬度	HRC57~65
PINION SPECIFICATIONS	
MODULE	2.54
NUMBER OF TEETH	9
PRESSURE ANGLE	20°
PITCH DIA.	φ22.86
OUTSIDE DIA.	φ29.64 0 -0.21
ROOT DIA.	φ20.02 +0.15 -0.30
ADDENDUM MODIFICATION COFFICIENT	(0.51)
TOOTH THICKNESS OVER 2 TEETH	12.45 0 -0.08
SURFACE HARDNESS	HRC57-65

スタータ結線図
CONNECTING DIAGRAM

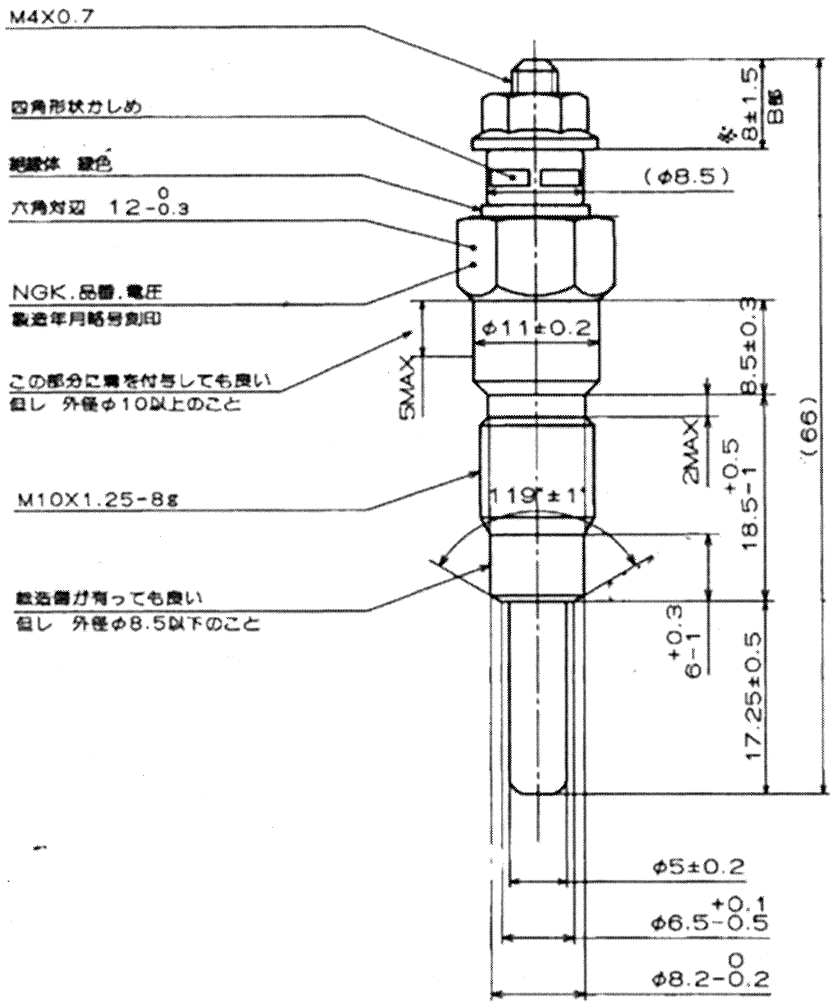


D (2:1)
50端子詳細
DETAIL OF TERMINAL 50



50端子
自動車用平形あす端子(記号PA)
TERMINAL 50
PA CABLE TERMINAL FOR
AUTOMOBILE (JIS D 5403)

YANMAR CO., LTD.	
部品コード PART CODE	119717-77010
部品名称 PART NAME	スタータ STARTER



[仕様]
1. 定格電圧: DC12.5V
2. 温度上昇: 定格電圧印加800℃ニ到達スル時間ハ25秒以内
3. 締付トルク: 本体 (M10 x 1.25) 15～20 N･m
端子ナット (M4 x 0.7) 1～1.5 N･m

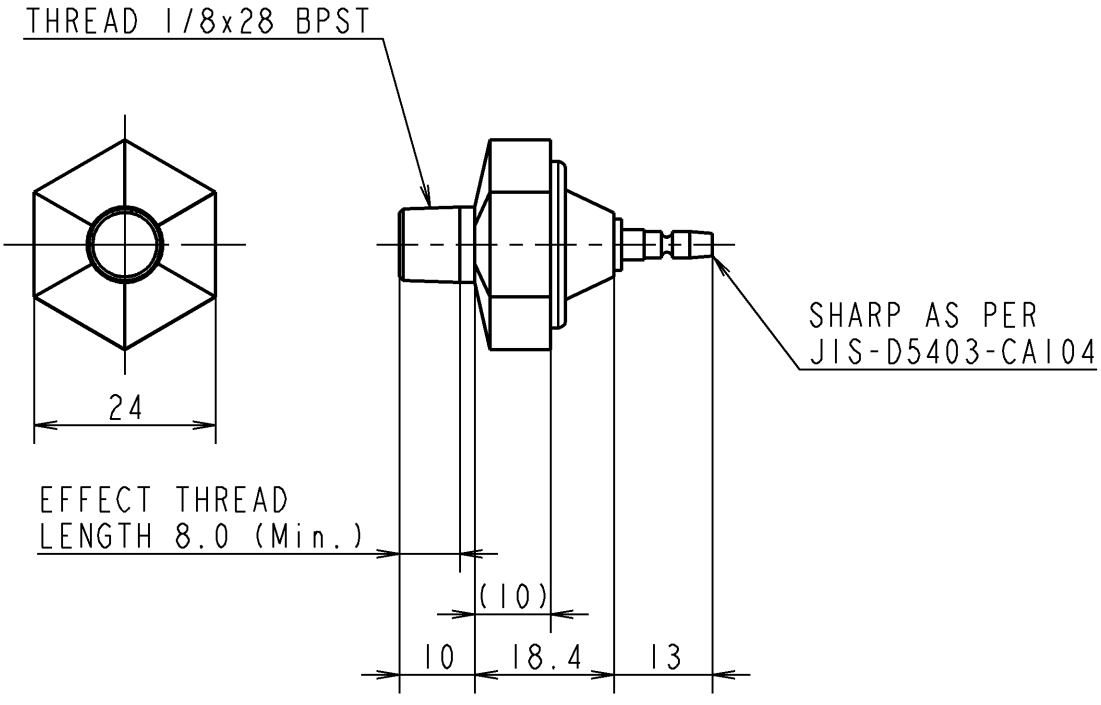
[SPECIFICATION]
1. Rated voltage: DC12.5V
2. Temp. rise: The time that reaches the ratings voltage impression 800℃ is within 25 sec.
3. Tightening torque: Body (M10 x 1.25) 15 ~ 20 N·m
Terminal nut (M4 x 0.7) 1 ~ 1.5 N·m

YANMAR CO., LTD.	
部品コード PART CODE	119718-77801
部品名称 PART NAME	PLUG, GLOW

FILE NAME:114250-39450.DRW

3RD ANGLE PROJECTION

3D-CAD



性　能	
1. RATED VOLTAGE （定格電圧）	DC 12V
2. RATED LOAD （定格負荷）	5W (LAMP LOAD) （ランプ負荷）
3. OPERATING PRESSURE （作動圧力）	0.5 kgf/cm^2

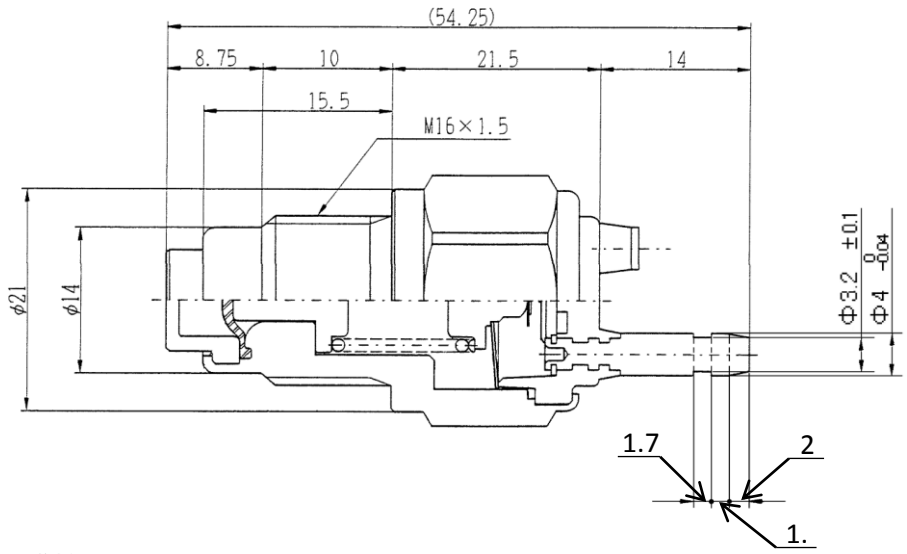
SWITCH,OIL_PURESSURE

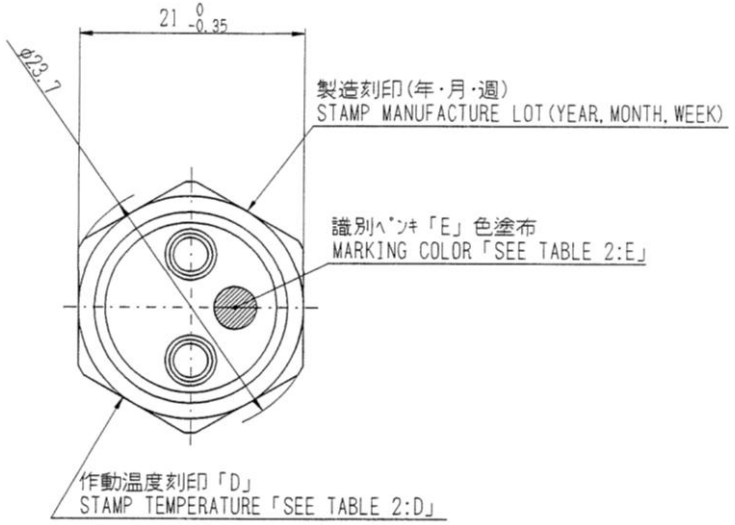
油圧スイッチ(0.5kg

YANMAR

ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

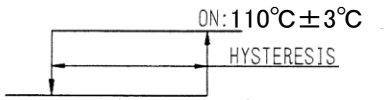
ENG.MODEL	L Series	CODE	114250-39450





仕様
SPECIFICATIONS

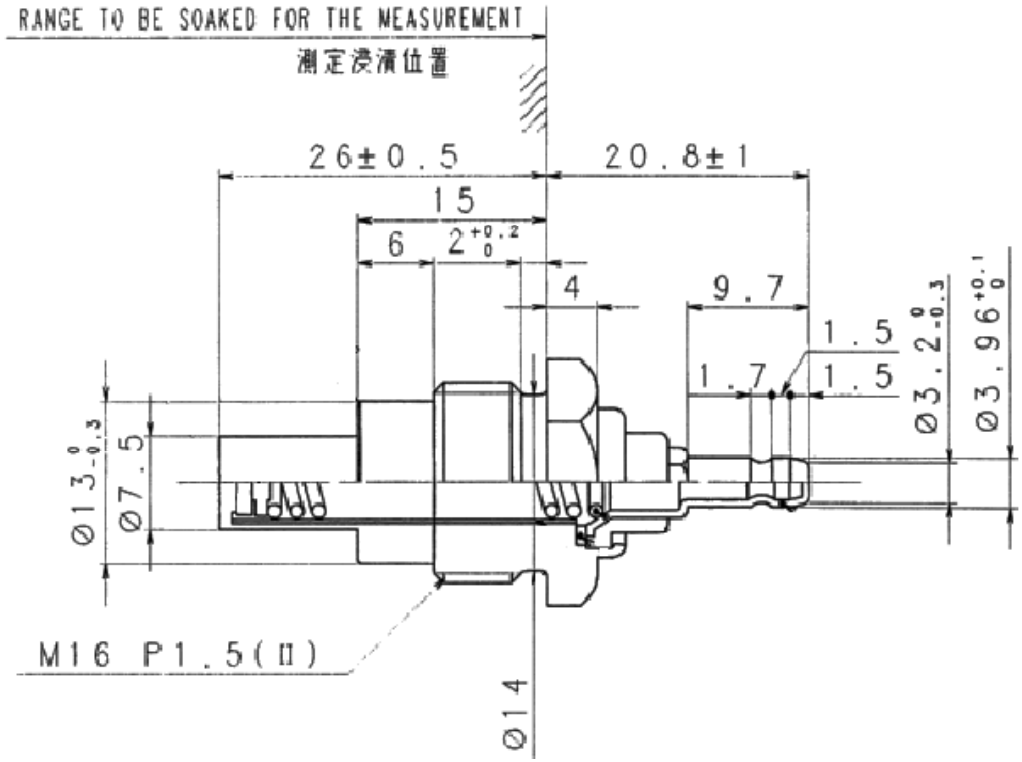
1. 作動温度
OPERATING TEMP

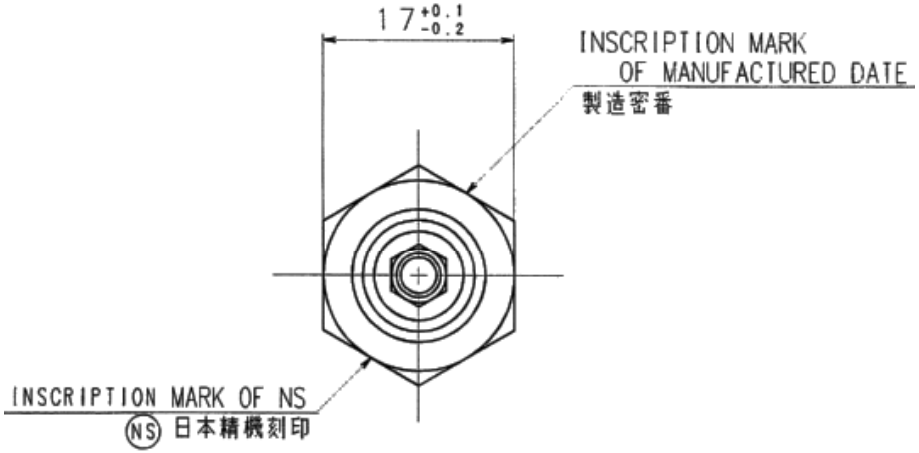


2. 電気容量 CURRENT CAPACITY	DC12V・1A or DC24V・0.5A DC12V・1A or DC24V・0.5A
3. 絶縁抵抗 INSULATION RESISTANCE	初期100MΩ以上　耐久後10MΩ以上(500Vﾒｶﾞ計にて) 100MΩ MIN IN INTIAL AND 10MΩ MIN AFTER DURABILITY TEST(500V MEGGER)
4. 電圧降下 VOLTAGE DROP	0.5V以下(12V・1A) 0.5V MIN(12V・1A)
5. 耐振性 VIBRATION RESISTANCE	JIS D 1601 にて異常なきこと。(196.1m/s² {20G}) NO IRREGULARITY TO BE ALLOWED UNDER JIS D 1601 STANDARDS. (196.1m/s² {20G})
6. 耐熱性 HEAT RESISTANCE	130℃、100時間にて異常なきこと。 NO IRREGULARITY ALLOWED AFTER 130℃ 100HR.
7. 耐久性 OPERATION DURABILITY	5万回動作後異常なきこと。 NO IRREGULARITY ALLOWED AFTER 50,000
8. 締付ﾄﾙｸ TIGHTENING TORQUE	27.46±3.92N・m {280±40kgf・cm} 27.46±3.92N・m {280±40kgf・cm}
	(限界ﾄﾙｸ:49.03N・m{500kgf・cm} (MAX TORUQUE:49.03N・m{500kgf・cm}
9. 使用温度範囲 OPERATING TEMPERATURE RANGE	-40℃～+130℃ -40℃～+130℃
10. 耐圧性 PRESSURE TIGHTNESS	130℃、294.20kPa{3kgf/㎠}にて異常なきこと。 NO IRREGULARITY TO BE ALLOWED UNDER 130℃, 294.20kPa{3kgf/㎠}

備考
REMARKS
1.質量:59g
1.WEUGHT:59g

YANMAR CO., LTD.	
部品コード PART CODE	121250-44901
部品名称 PART NAME	サーモスイツチ(110C SWITCH, THERMO 110





抵抗値　：下図の測定条件にて下表の性能を有すること。

温　度(℃)	35±0.2	50±0.2	80±0.2	100±0.3	105±0.3	115±0.3	120±0.3	140±0.3
抵抗値(Ω)	(670)	(350)	118±6	(63.5)	(54.5)	42±2.5	(36.2)	(22.0)

但し、測定液はエチレングリコール９０％以上の水溶液、またはシリコンオイルとし
右図に示す位置まで浸漬して測定する。管理ポイントは８０、１１５℃とする。
(　)内抵抗値は参考値とする。

RESISTANCE VALUE

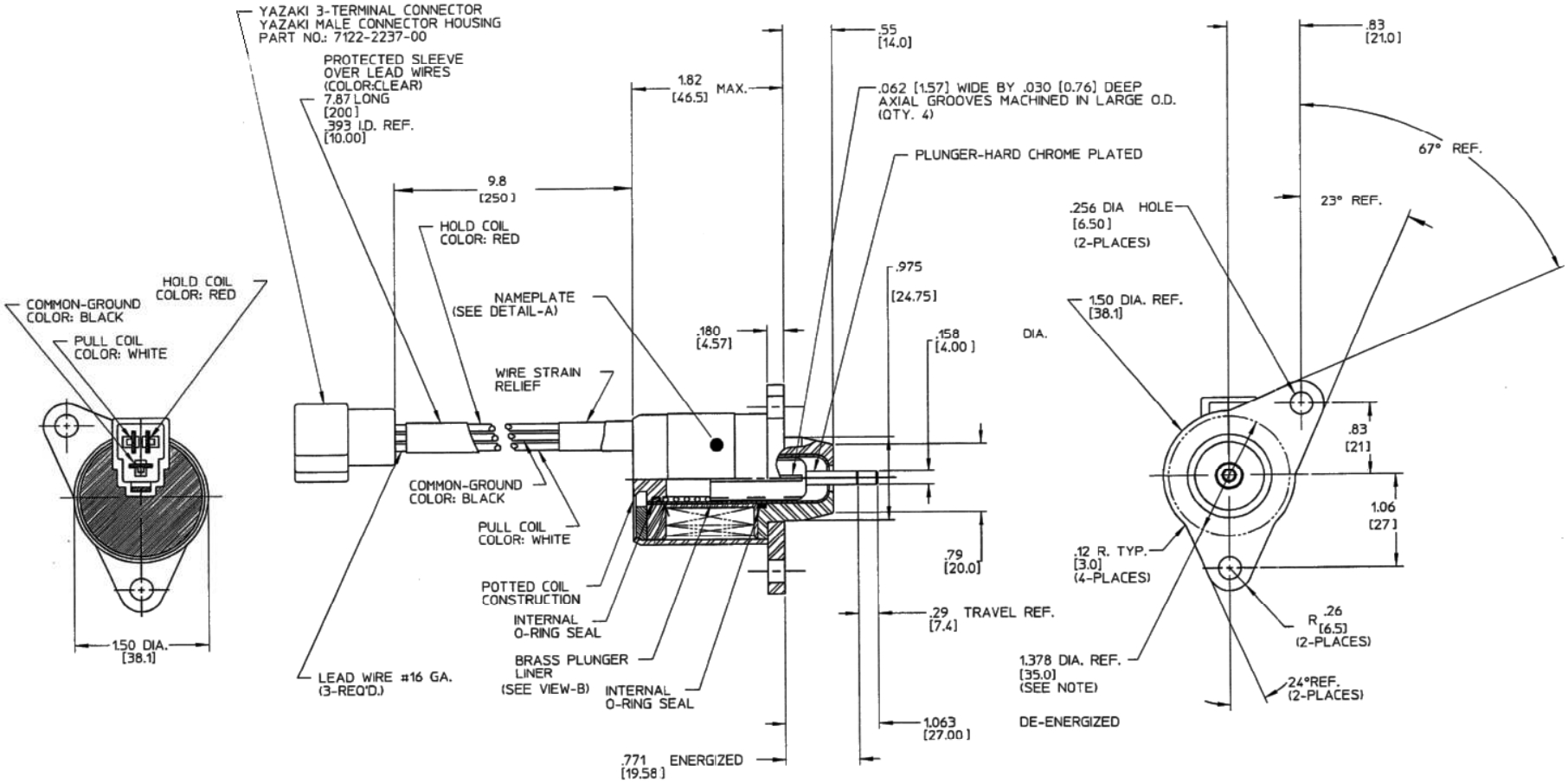
TEMPERATURE(℃)	35±0.2	50±0.2	80±0.2	100±0.3	105±0.3	115±0.3	120±0.3	140±0.3
RESISTANCE(Ω)	(670)	(350)	118±6	(63.5)	(54.5)	42±2.5	(36.2)	(22.0)

(): REFERENCE ONLY

IN MESUREMENT, SOLUTION OF ETHYLENE GLYCOL 90% OR MORE, OR SILICON OIL SHALL BE USED, AND HEIGHT OF LUIQUID SURFACE SHALL BE SHOWN IN DRAWING. INSPECTION POINT TO BE 80℃ AND 115℃.

YANMAR
ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

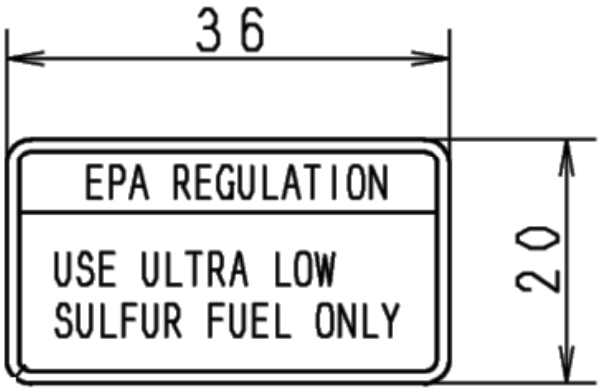
MODEL	TN SERIES
NAME	SENDER,TEMPERATURE
PART No.	124250-49351



SPECIFICATION FOR REFERENCE ONLY:
1. RATED VOLTAGE; 12-VDC
2. RATED CURRENT; PULL COIL; 36.5 AMPS
   HOLD COIL; .49 AMPS
3. TEMPERATURE RANGE; -30°C TO 121°C
4. PULL FORCE: MUST PULL-IN AGAINST RETURN SPRING AT 9-VDC AND 121°C.
5. HOLD FORCE: MUST HOLD-IN AGAINST RETURN SPRING AT 8-VDC AND 121°C.

仕 様
1. 定格電圧： 12VDC
2. 定格電流： 吸引コイル：36.5Amps
   保持コイル：0.49Amps
3. 使用周囲温度：-30℃~+121℃
4. 吸 引 力： 電圧9VDC，周囲温度121℃ニ於イテ保持出来ル
5. 保 持 力： 電圧8VDC，周囲温度121℃及ビ
   電圧6VDC，周囲温度80℃ニオイテ保持出来ル

YANMAR ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.	
MODEL	TN SERIES
NAME	ストップソレノイド
	SOLENOID
PART No.	119653-77950



t=0.05

字体寸法及ビ色

字　体	ブロックレター(sans serif, upper-case)トスル
大キサ	上図ヲ参照ノコト
色	文字ハ黒、下地ハ白トスル

LETTER SIZE AND COLOR

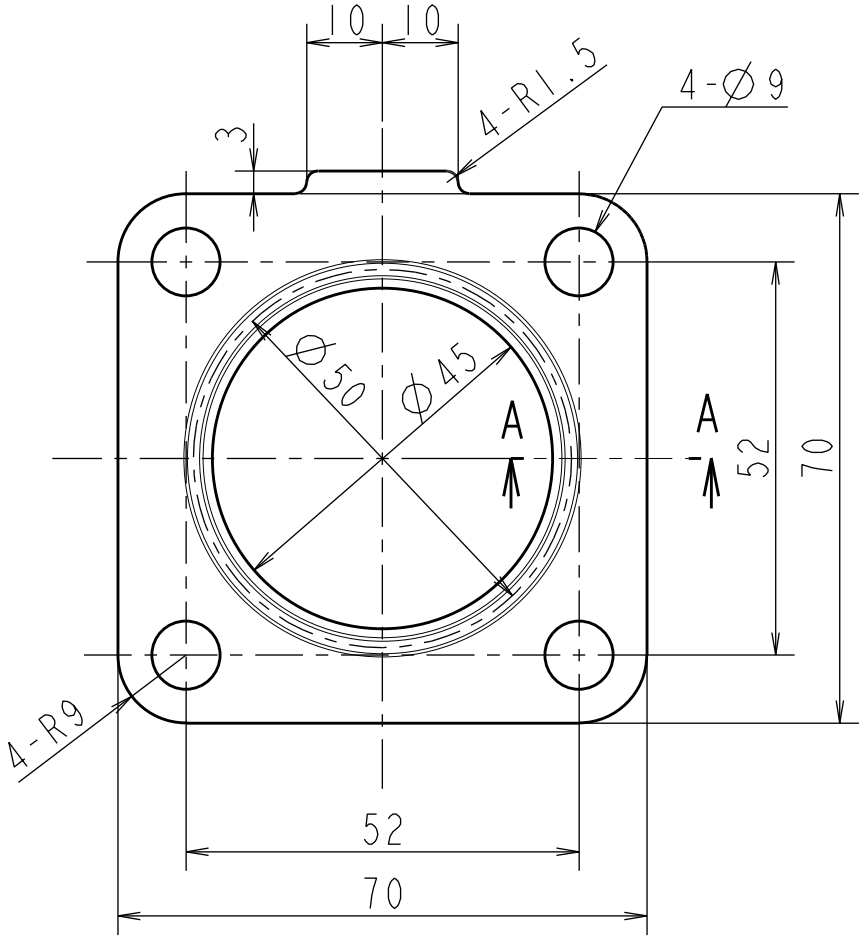
TYPE	BLOCK LETTER (sans serif, upper-case)
SIZE	REFER TO UPPER FIGURE
COLOR	LETTER: BLACK　OTHERS: WHITE

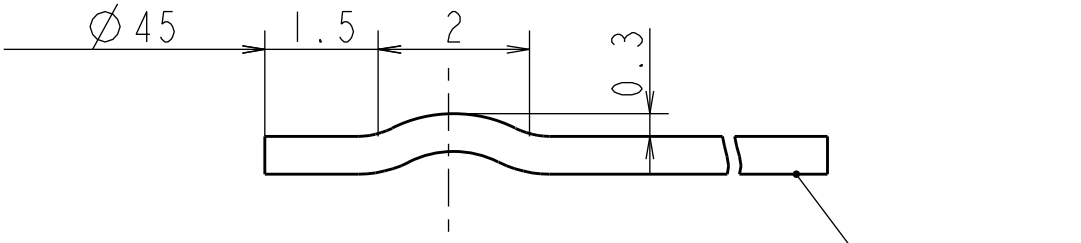
YANMAR ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.	
MODEL	TN SERIES
NAME	LABEL
PART No.	114110-07761

FILE NAME:119515-13200-AB-COPY.DRW

3RD ANGLE PROJECTION

3D-CAD





SECTION A-A
SCALE 10:1

GASKET, SILENCER

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YANMAR

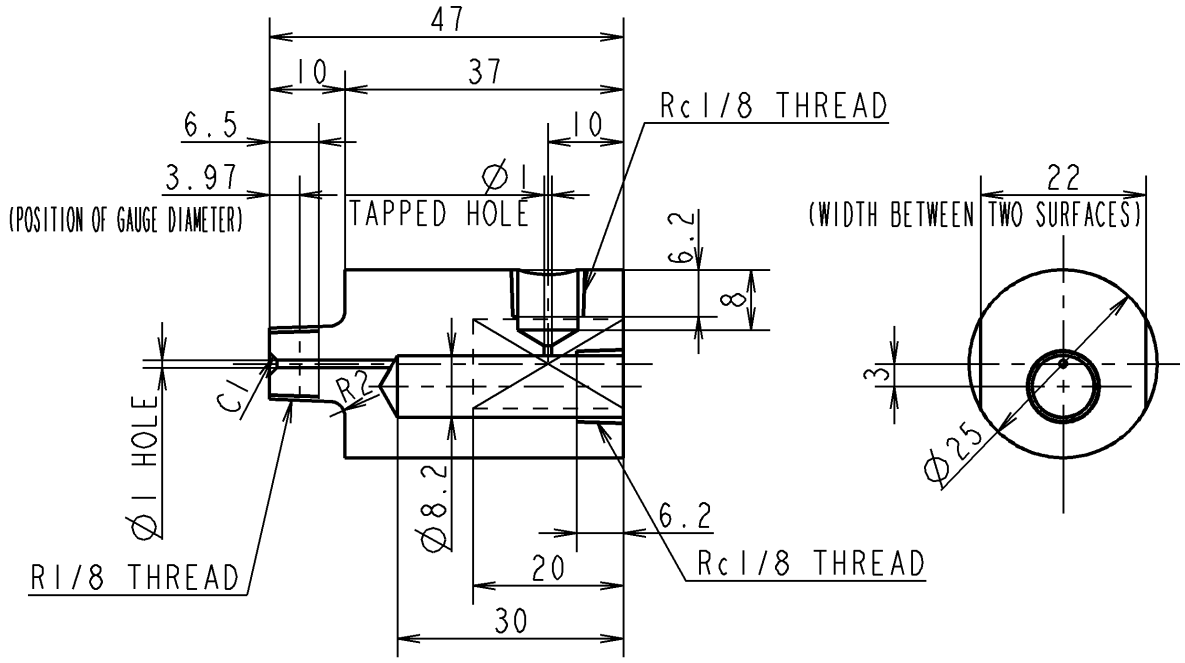
ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

CODE 119515-13200

FILE NAME:171375-39601-KYAKUSAKI.DRW

3RD ANGLE PROJECTION

3D-CAD



NOTE

1. NO BURRS, FLASH OR SHAVING ALLOWED
2. NO RUST ALLOWED
3. USING SEALTAPE AND LIQUID PACKING NOT ALLOWED TO PREVENT Ø1 HOLE FROM CLOGGING UP
4. APPLY ZINC COATING Ep-Fe/Zn 5 WITH CHROMIMU 3^{+} FOR AFTER TREATMENT(WHITE COLOR)

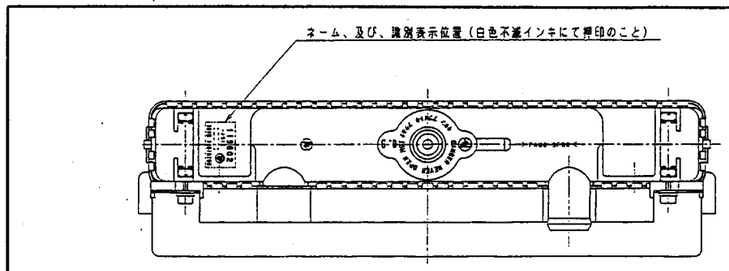
DAMPER(1/8

YANMAR

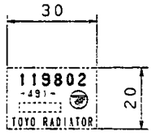
ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

CODE 171375-39601

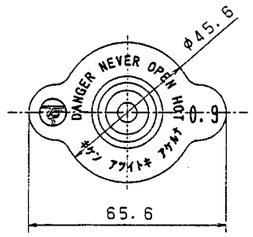
ENG.MODEL

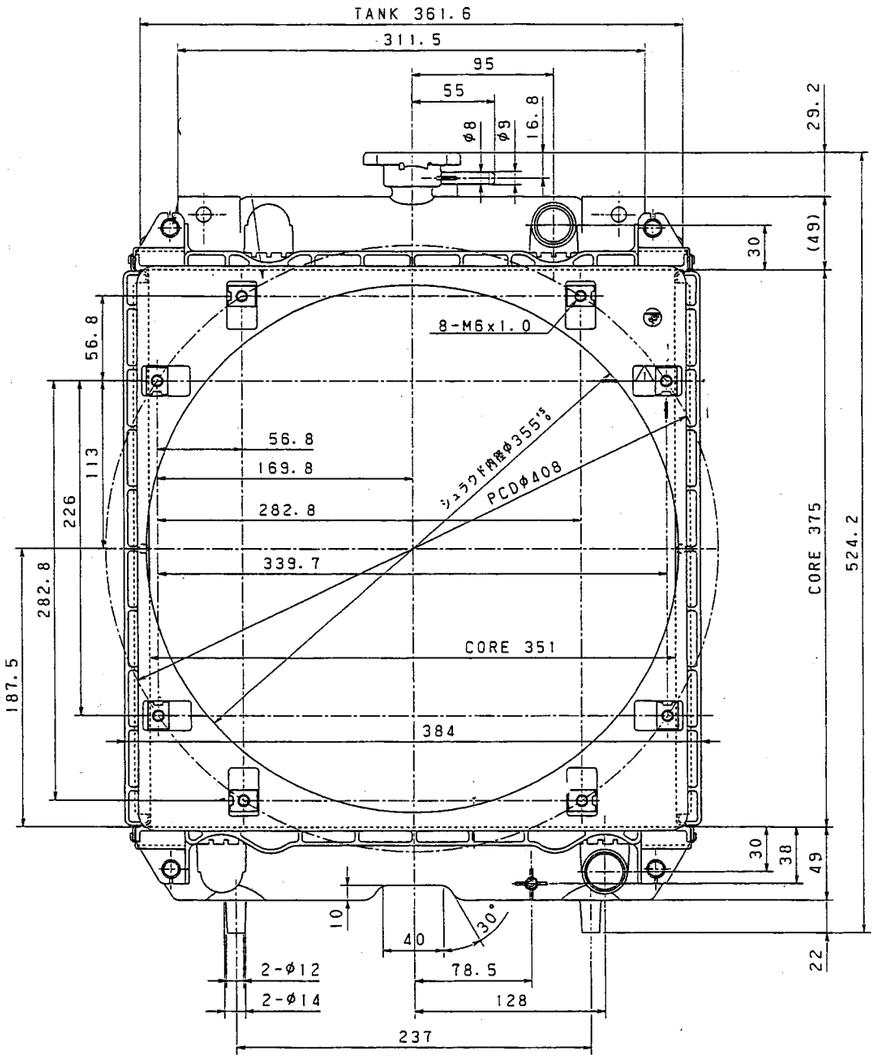


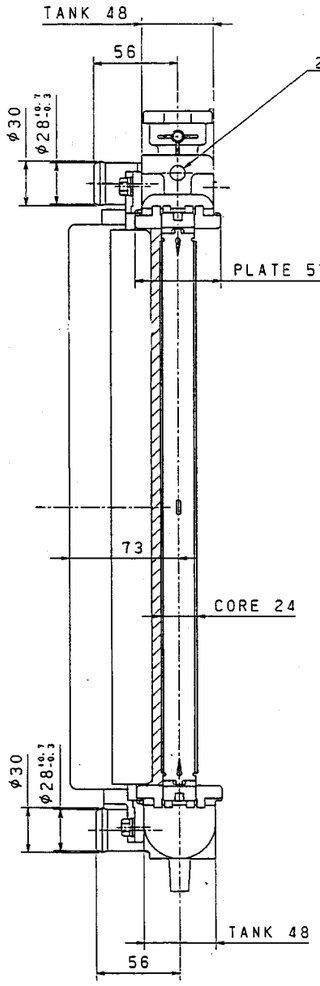
スタンプ詳細（1：1）

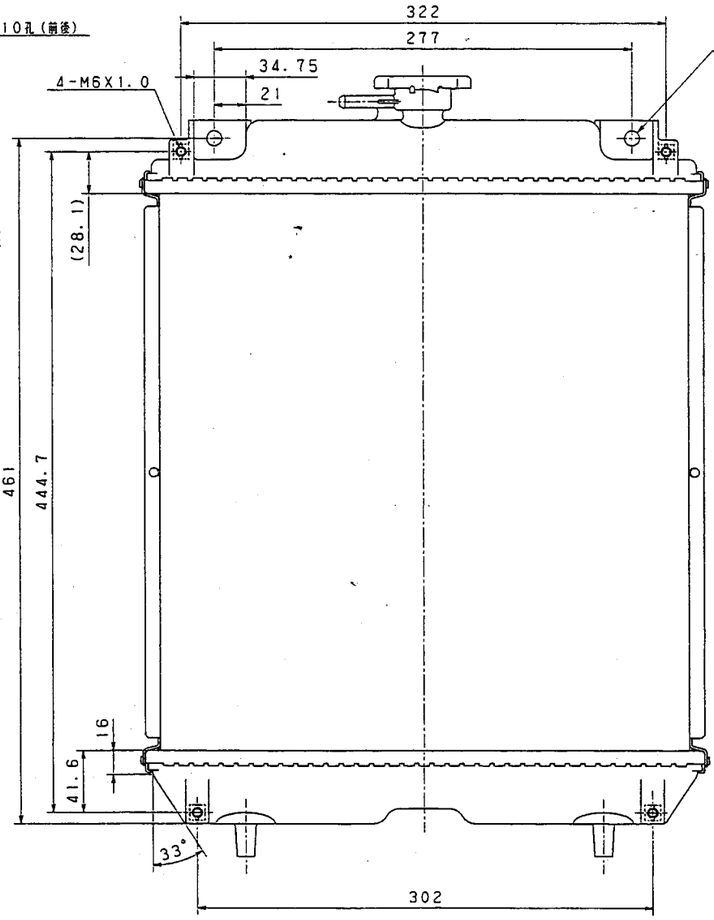


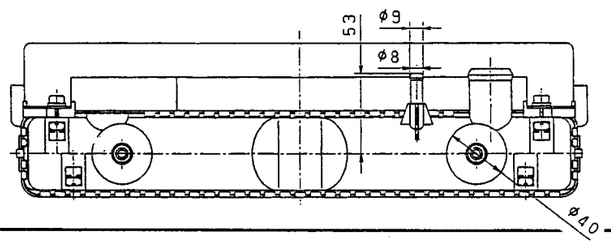
キャップ詳細（1：1）











ラジエータ RADIATOR

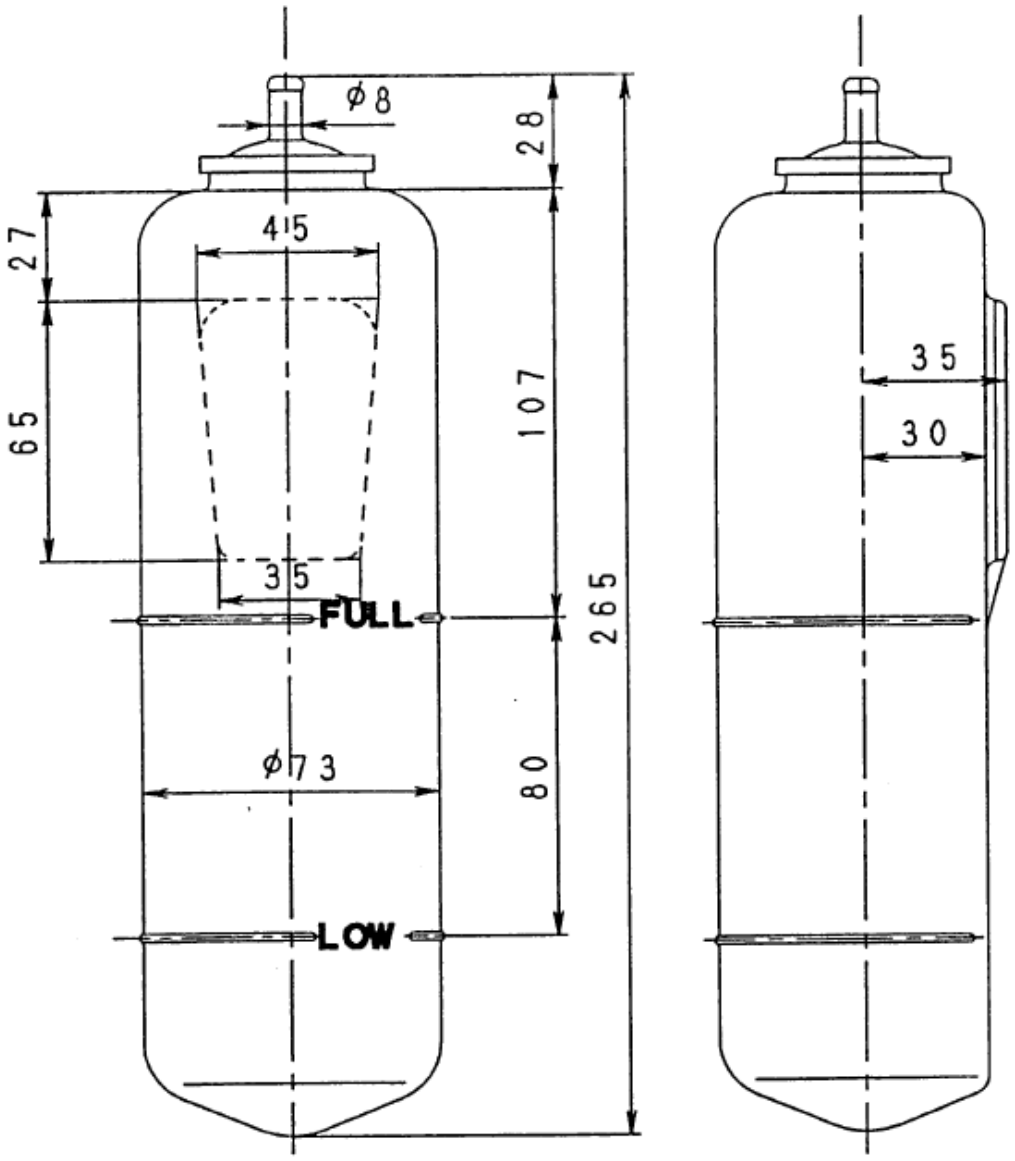
区分 DIV		項目 HEADING	単位 UNIT	
性能 PERFORMANCE	冷却条件 COOLING CONDITION	前面風速 AIR FLOW	m/s	8
		水量 WATER FLOW	L/min	40
		入口温度差 TEMP DIFFERENCE	℃	50
		放熱量 RADIATOR CAPACITY	kW	23.5 ±10%
		空気抵抗力損失 AIR RESISTANCE	Pa	167 +20% Max
		水損 圧力損失 WATER RESISTANCE	kPa	+20% Max
	開弁圧力 VALVE OPENING PRESSURE	圧力弁 PRESS	kPa	88±14.7
		負圧弁 VACUUM	kPa	4.9
	試験圧力 TEST PRESSURE		kPa	177
	耐振性 VIBRATION DURABILITY	振動加速度 ACCELERATION		58.8 m/s²
		振動方向 DIRECT		上下
		振動数 FREQUENCY		22.3 Hz
		振動回数 CYCLE		10^6 回
構造 STRUCTURE	コア型式 CORE TYPE			CF24-1
	コア寸法 CORE SIZE	幅 WIDTH	mm	351
		高さ HEIGHT	mm	375
		厚さ THICKNESS	mm	24
	フィンピッチ FIN PITCH		mm	3.5/2
	放熱面積 RADIATION AREA	フィン FIN	m²	3.18
		チューブ TUBE	m²	0.60
		計 TOTAL	m²	3.79
	前面面積 FRONT AREA		m²	0.132
	通水断面積 WATER PASSAGE AREA		cm²	8.88
	水容量 WATER QUANTITY		L	1.1
	乾燥質量 DRY MASS		kg	(2.7)
	表面処理 SURFACE TREATMENT			無塗装
記事 REMARKS				

ヤンマー株式会社

適用名称

適用機種	3TNV76、3TNV82A
部品名称	ラジエータ
部品コード	119802-44500

YANMAR CO., LTD.



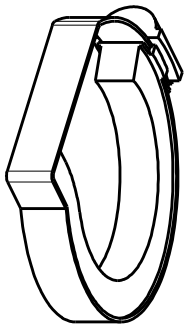
タンク容量:全量　約 847cc、 上限　約 450cc、 下限　約 150cc
TANK CAPACITY　TOTAL:APPROX.847cc
LEVEL"FULL":APPROX.450cc, LABEL"LOW":APPROX.150cc

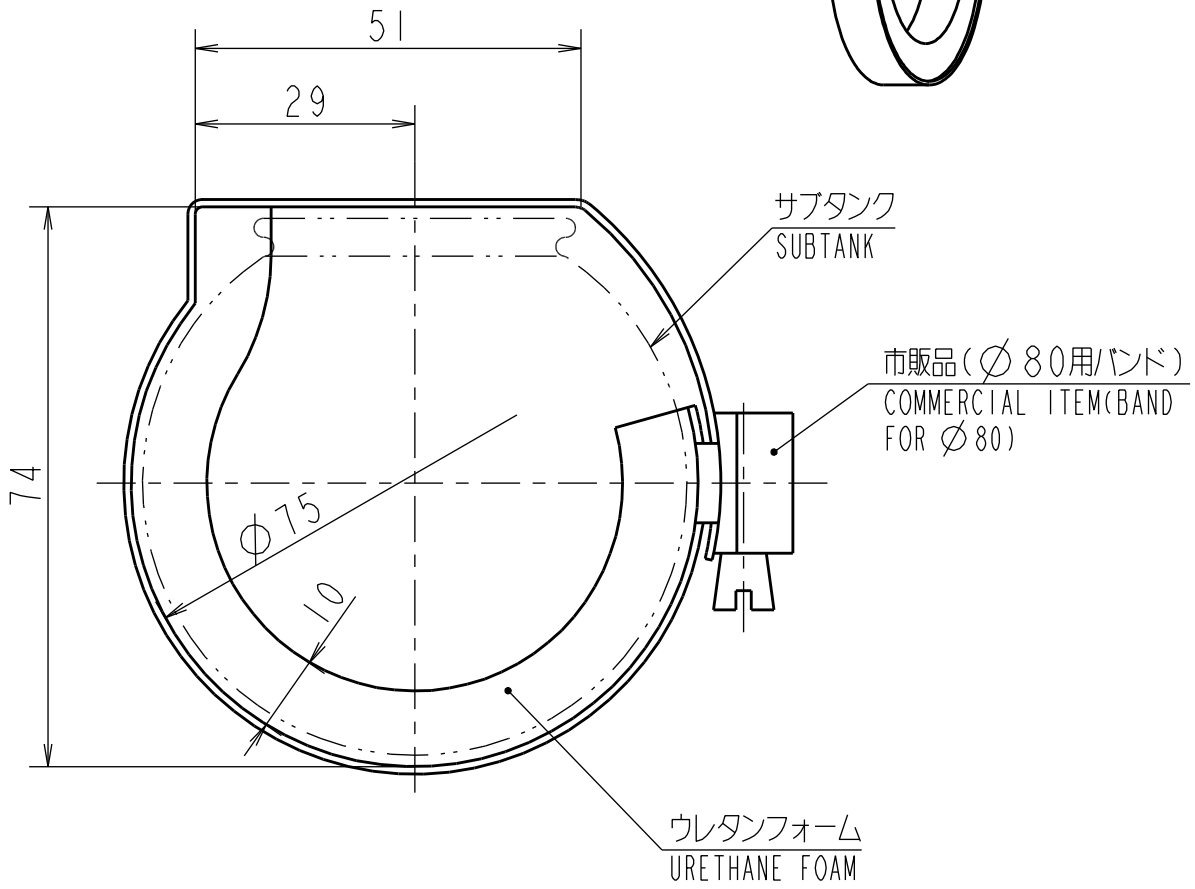
YANMAR CO.,LTD	
部品名称 PART NAME	サブタンク SUB TANK
PART No.	124450-44510

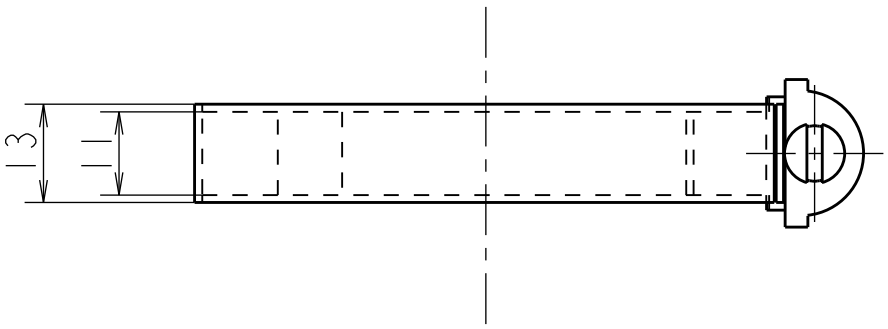
FILE NAME:124450-44550-AB.DRW

3RD ANGLE PROJECTION

3D-CAD







CLAMP, SUB TANK

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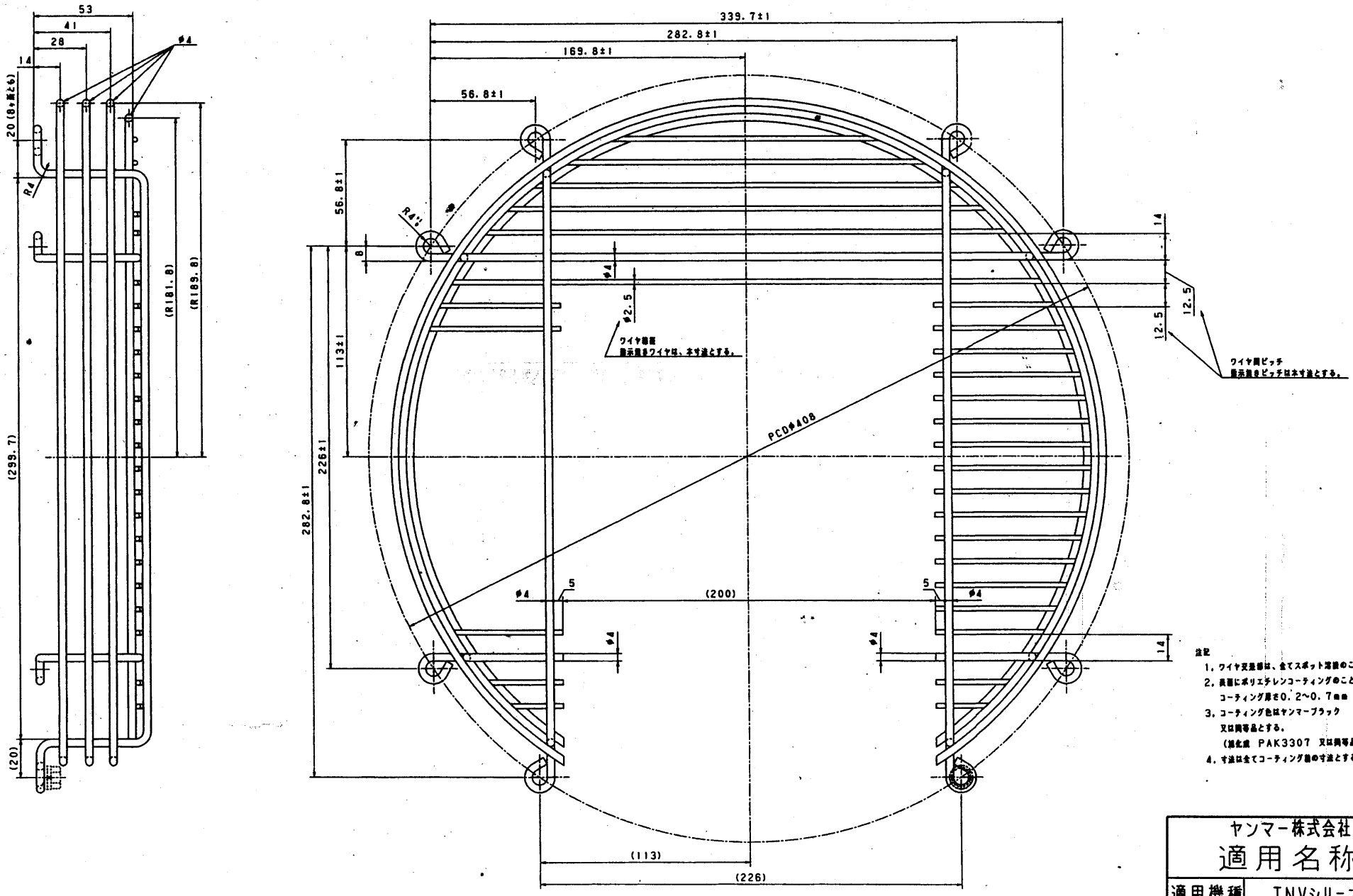
YANMAR

ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

CODE 124450-44550

ENG.MODEL



注記

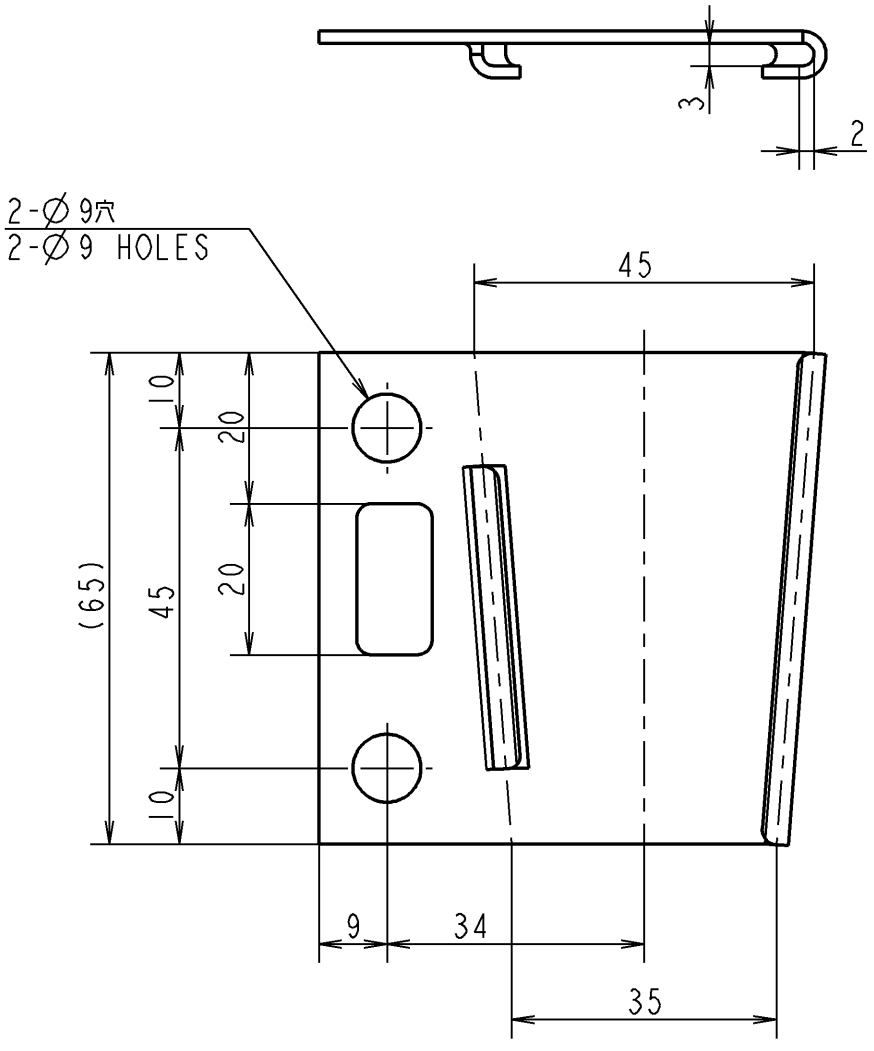
1. ワイヤ交差部は、全てスポット溶接のこと。
2. 表面にポリエチレンコーティングのこと。
   コーティング厚さ0.2~0.7mm
3. コーティング色はヤンマーブラック
   又は同等品とする。
   (塩化度 PAK3307 又は同等品)
4. 寸法は全てコーティング後の寸法とする。

ヤンマー株式会社 適用名称	
適用機種	TNVシリーズ
部品名称	ファンガード
部品コード	119802-44560

FILE NAME:121256-44600.DRW

3RD ANGLE PROJECTION

3D-CAD



t=1.6

表面処理：Ep-Fe/Zn 5 メッキの後処理はCM2相当の3価クロメート処理（白）を実施のこと

APPLY ZINC COATING "Ep-Fe/Zn 5" WITH TRIVALENT CHROMIUM REQUIRED CM2 GRADE FOR AFTER TREATMENT. (WHITE COLOR)

BRACKET, SUB TANK

ブラケット（サブタンク

YANMAR

ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

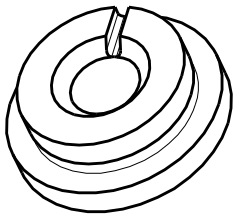
CODE 121256-44600

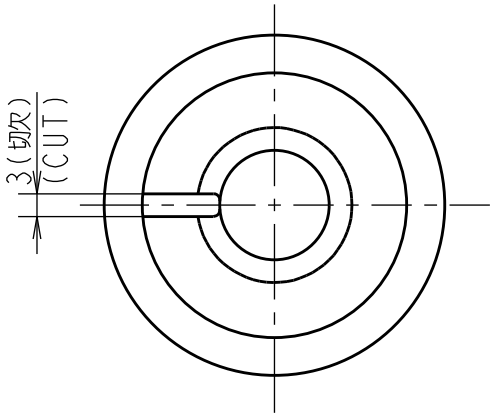
ENG.MODEL

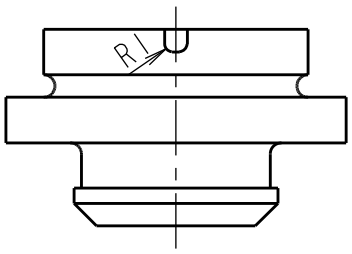
FILE NAME:119255-44660-AB.DRW

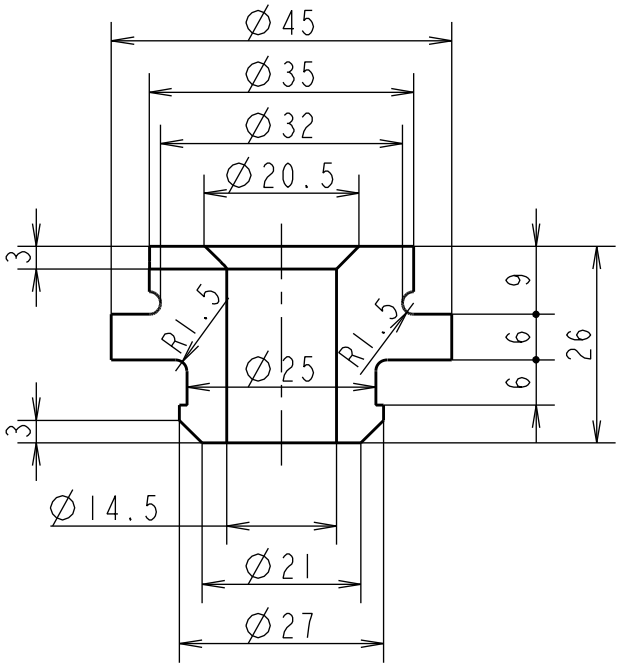
3RD ANGLE PROJECTION

3D-CAD









備考

材質：CR，ゴム硬度70° ±5°

REMARK

MATERIAL:CR

RUBBER HARDNESS:70° ±5°

RUBBER, RADIATOR

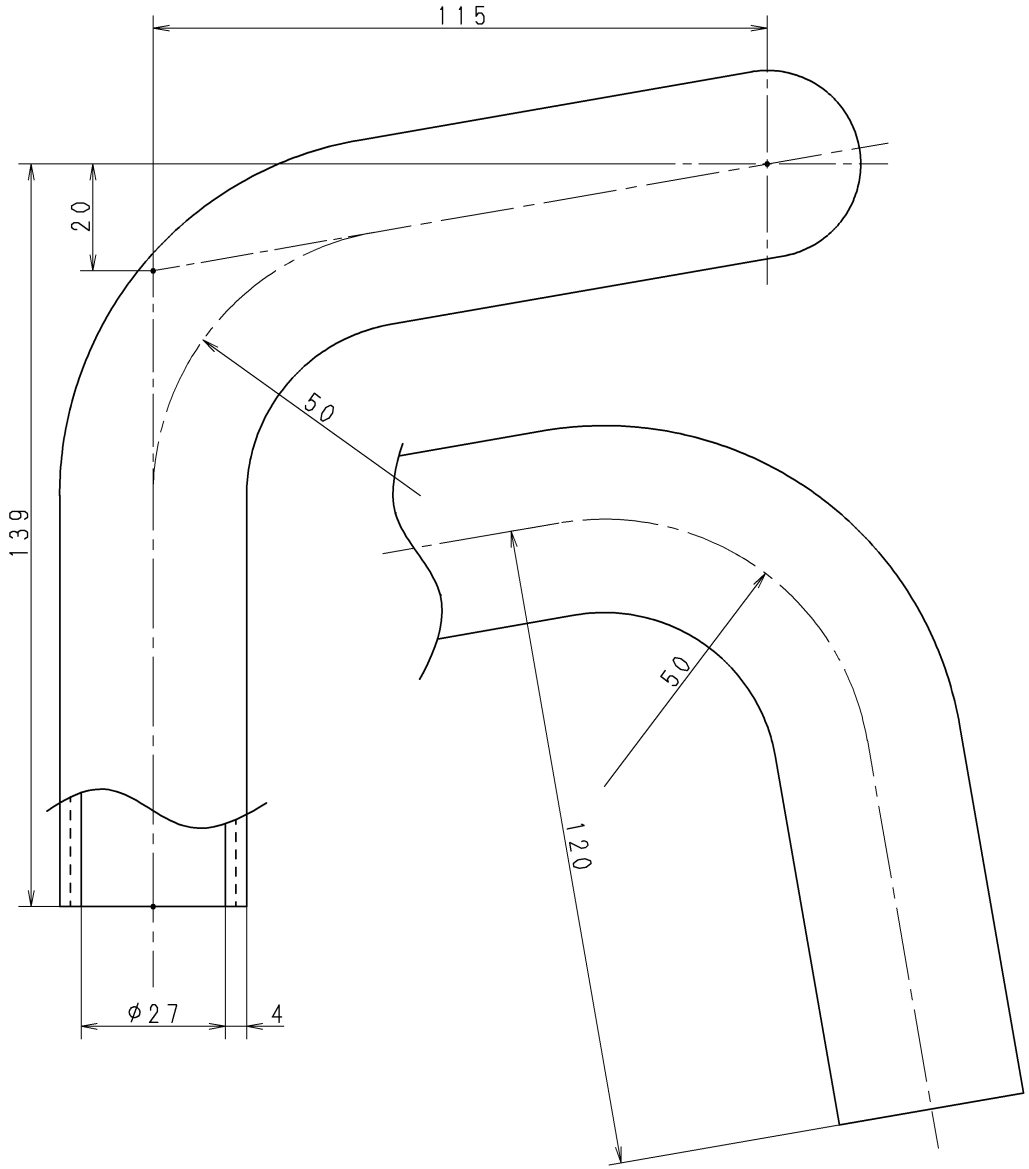
ホ゛ウシンコ゛ム(ラシ゛エタ

YANMAR

ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

CODE 119255-44660

ENG.MODEL

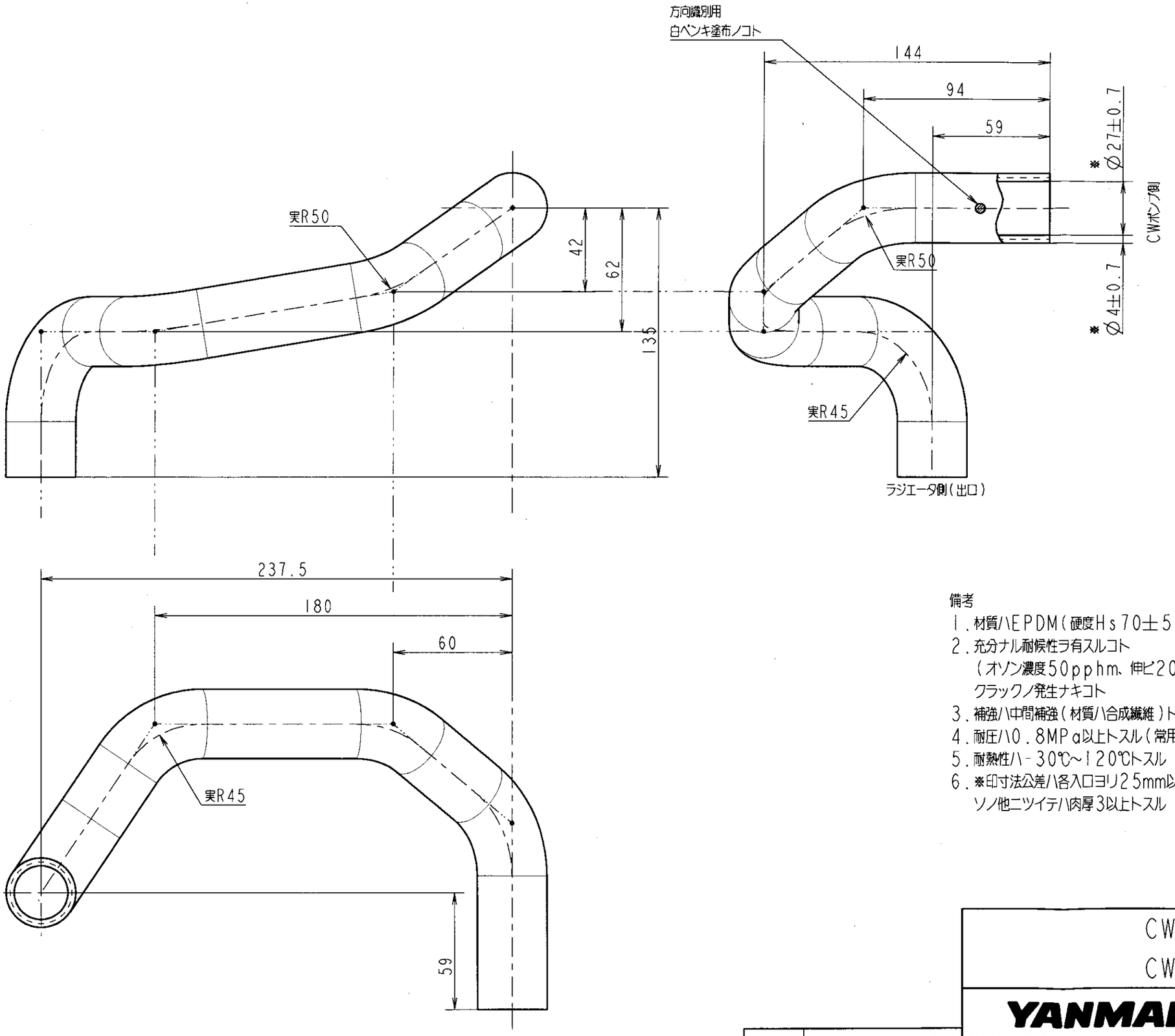


備考

1．材質ハＥＰＤＭ（硬度Ｈｓ７０±５）トスル．
2．充分ナル耐候性ヲ有スルコト．
　（オゾン濃度５０ｐｐｈｍ，伸ビ２０％，温度４０℃）ｘ７２ｈｒニテ，
　クラックノ発生ナキコト．
3．補強ハ中間補強（材質ハレーヨン）トスル．
4．耐圧ハ８ｋｇ／ｃｍ²以上トスル．（常用圧力０．９ｋｇ／ｃｍ²以下）
5．耐熱性ハ－３０℃～１２０℃トスル．
6．※印寸法公差ハ各入口ヨリ２５ｍｍ以上トシ
　ソノ他ニツイテハ肉厚３以上トスル．

ヤンマー株式会社 適用名称	
適用機種	
部品名称	ＣＷホース（Ａ
部品コード	119802-49010

3D-CAD



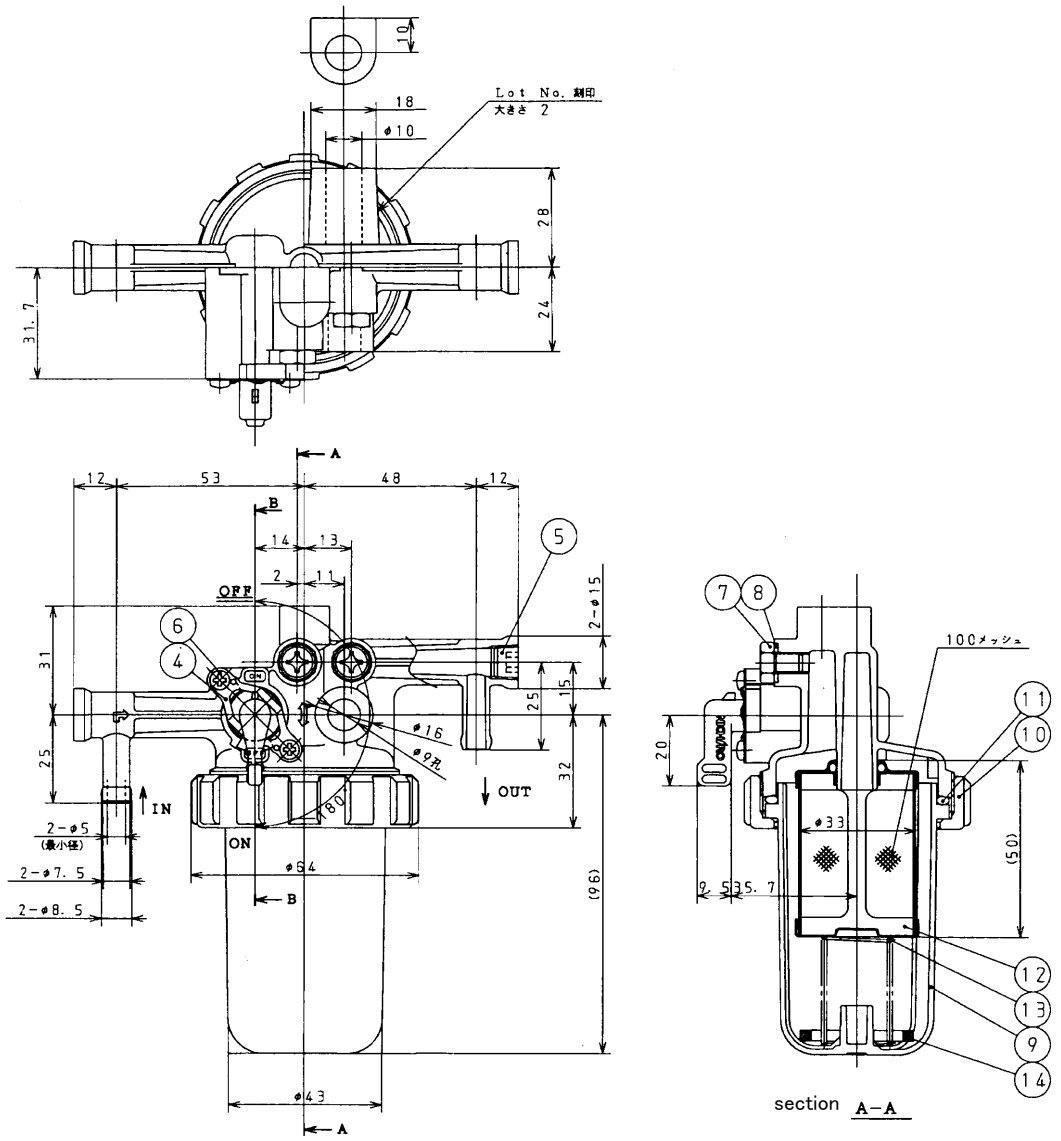
備考

1．材質ハEPDM(硬度Hs70±5)トスル
2．充分ナル耐候性ヲ有スルコト
(オゾン濃度50pphm、伸ビ20%、温度40℃)x72hrニテ、
クラックノ発生ナキコト
3．補強ハ中間補強(材質ハ合成繊維)トスル
4．耐圧ハ0.8MPa以上トスル(常用圧力0.09MPa以下)
5．耐熱性ハ-30℃~120℃トスル
6．※印寸法公差ハ各入口ヨリ25mm以上トシ
ソノ他ニツイテハ肉厚3以上トスル

CW-T (B
CW-T (B

YANMAR
ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

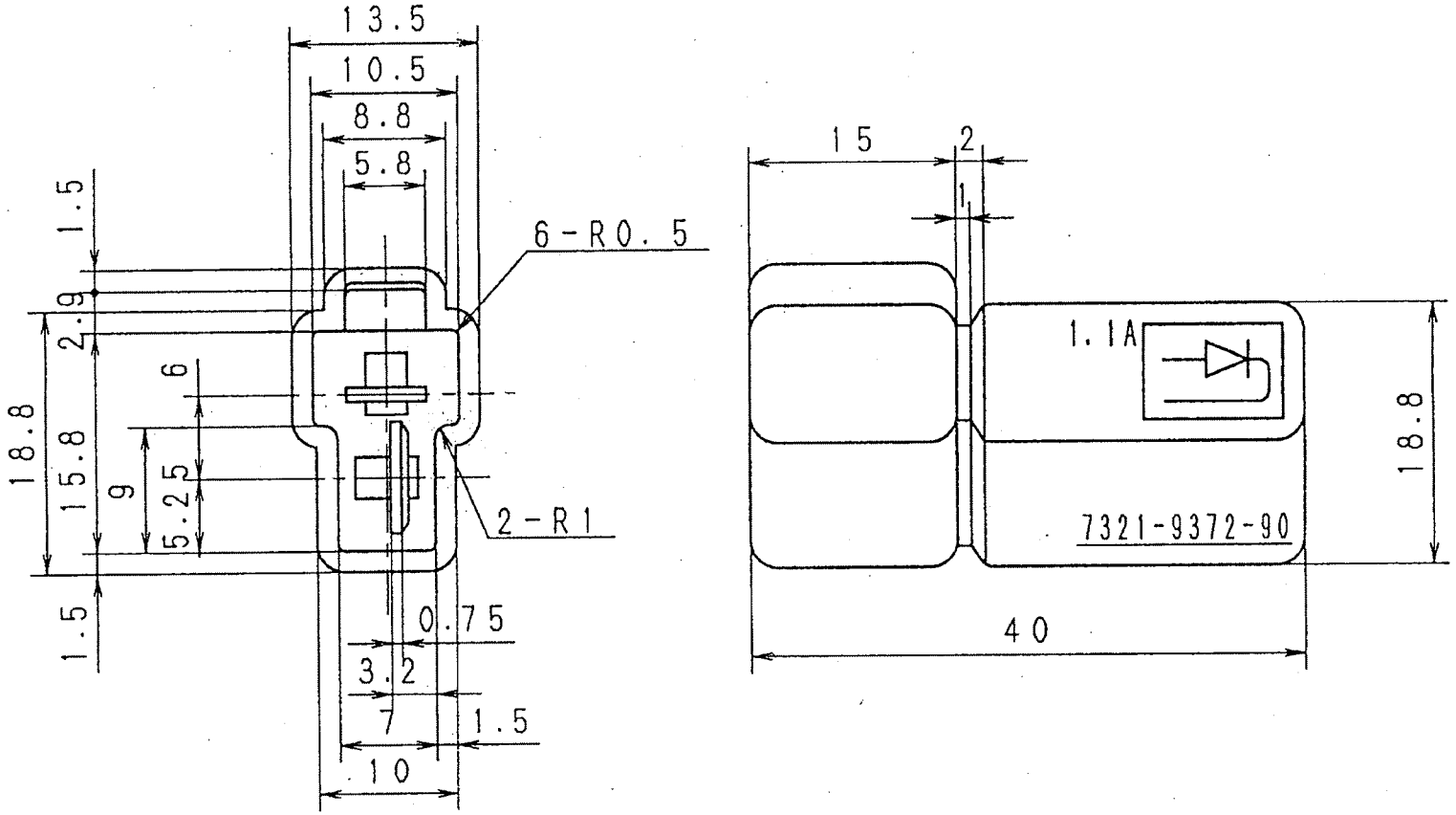
ENG.MODEL	3TNV70, 3TNV76	CODE	119802-49020



YANMAR CO., LTD.	
部品コード PART CODE	129335-55750
部品名称 PART NAME	ウォータセパレータ Water Separator

3RD ANGLE PROJECTION

3D-CAD



Mate coupler : 7123-2228

Mate terminal : 7116-2090

DIODE

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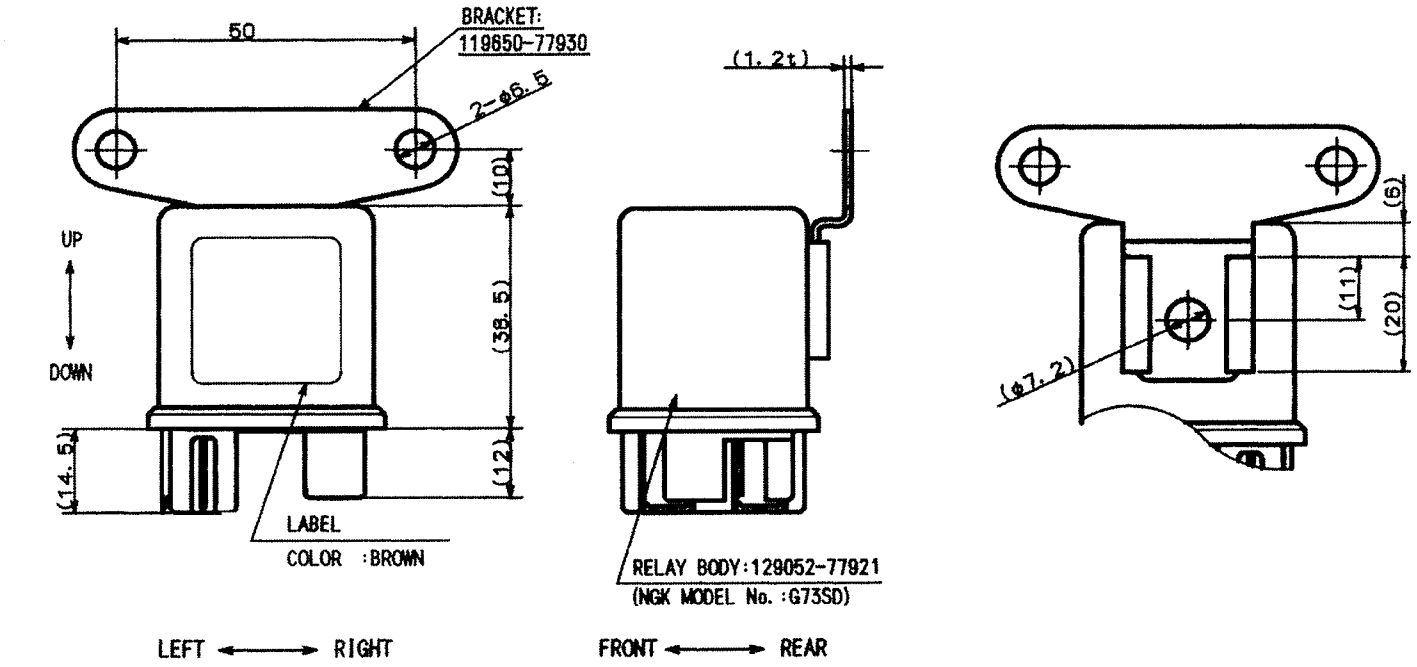
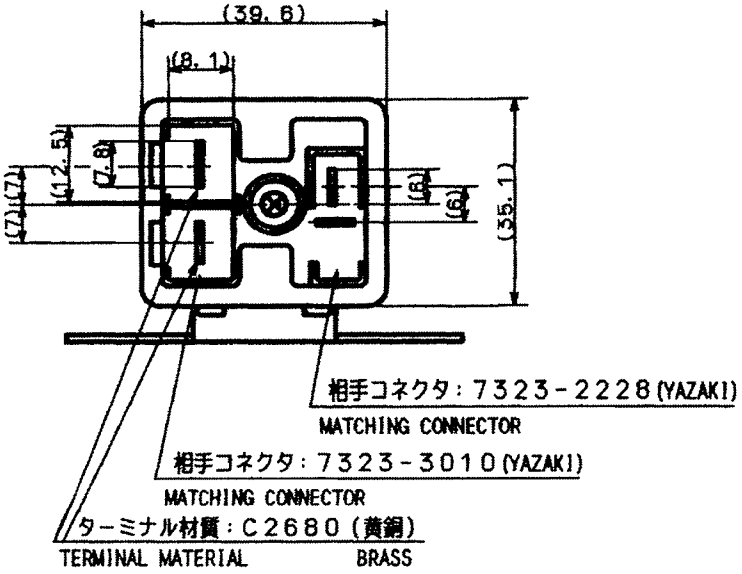
YANMAR

ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

CODE 119643-66900





定格電圧 RATED VOLTAGE	DC 12 V
連続定格 CONTINUOUS RATED	10 MIN
コイル抵抗値 COIL RESISTANCE	37Ω
インダクタンス INDUCTANCE	66mH (at1kHz)

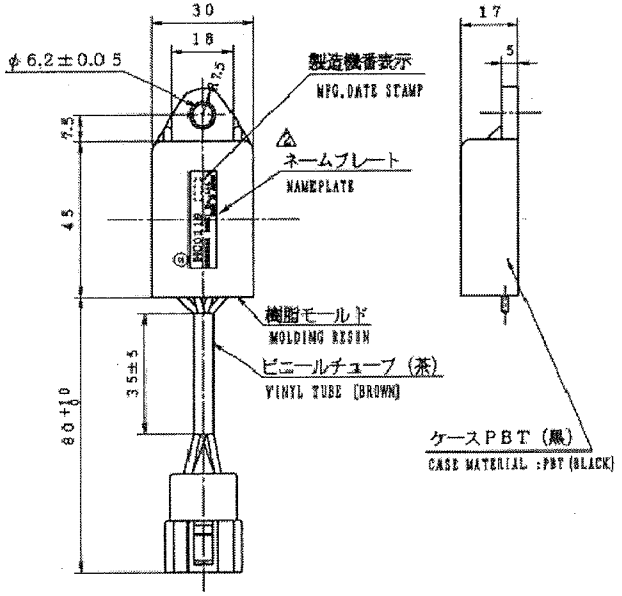
ロットNo．表示方法
METHOD OF LOT NUMBER MARKING

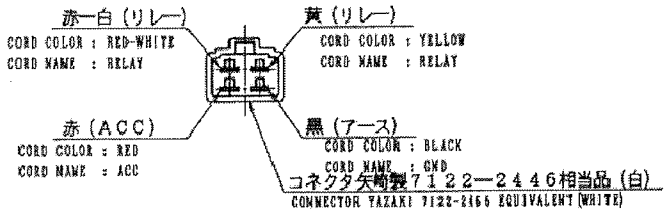
0 5 A

- 製造順 (A, B, C・・・, X, Y, Z) PRODUCTION NUMBER
- 製造月 (1, 2, ・・・, 9, X, Y, Z) PRODUCTION MONTH
- 製造年 (西暦末尾) PRODUCTION YEAR (END OF A.D)

YANMAR
ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD.

MODEL	TN SERIES
NAME	グローリレーCMP
	RELAY ASSY,GLOW
PART No.	119650-77911





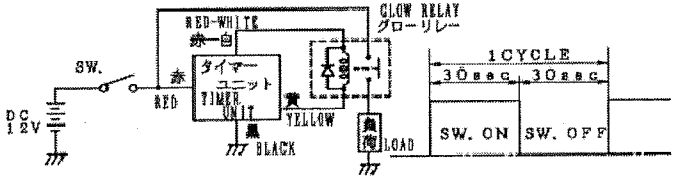


図4
FIG.4

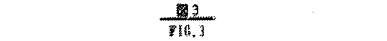


図5
FIG.5

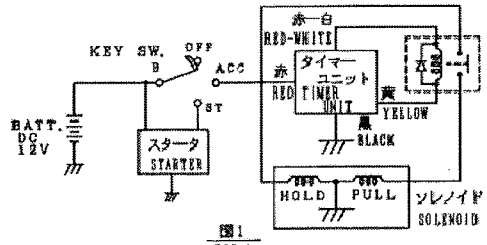


図1
FIG.1

工程 PROCESS	B	ACC	ST
OFF			
ON	●	●	
ST	●		●

図2
FIG.2

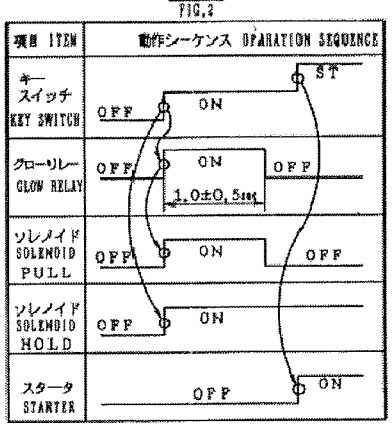


図3
FIG.3

仕 様
SPECIFICATION

1. 名称 タイマーユニット
1.NAME TIMER UNIT
2. 型式 HC0119
2.TYPE HC0119
3. 結線図 図1に示す
3.DIAGRAM REFER TO FIG.1
4. キースイッチ，バッテリ 及び リレー
4.KEY SWITCH,BATTERY AND RELAY

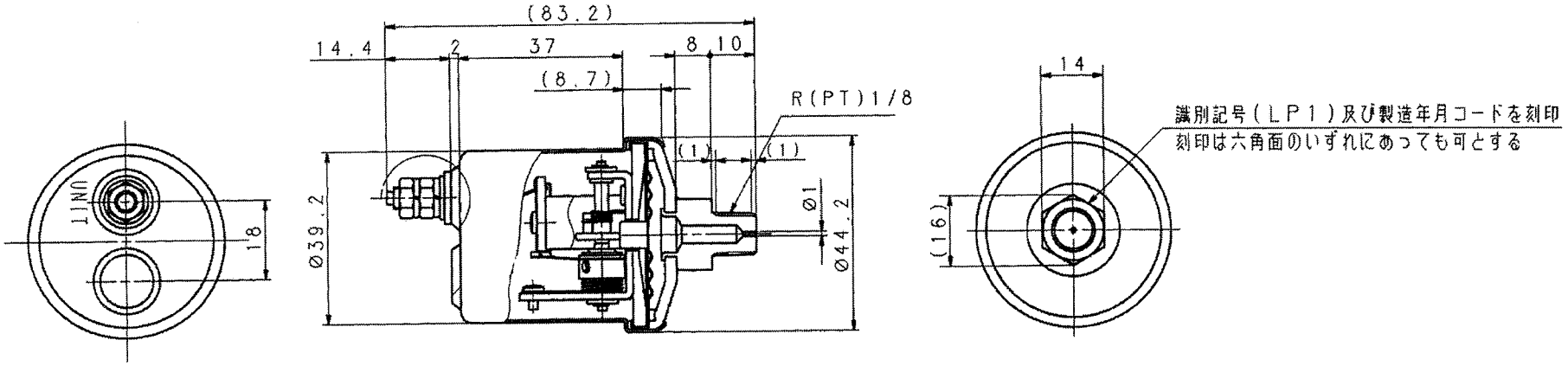
	貴社品番 PARTS NO.	定格 RATING	
キースイッチ KEY SWITCH	933110-00200		
バッテリ BATTERY		12V	
リレー RELAY	119650-79910	12V	巻き線抵抗７２Ω RESISTANCE

注．キースイッチ回路は図2に示す通りである．
NOTE FIG.2 SHOWS KEY SWITCH DIAGRAM.

5. 動作シーケンス 図3に示す
5.OPERATION SEQUENCE REFER TO FIG.3
6. リレーON時間 1.0±0.5(sec)
6.TURN-ON TIME OF RELAY
7. 使用温度範囲 −25〜+80 (℃)
7.OPERATING TEMPERATURE RANGE
8. 保存温度範囲 −25〜+80 (℃)
8.STORING TEMPERATURE RANGE
9. 使用電源電圧範囲 6〜15 (V)
9.OPERATING POWER SUPPLY VOLTAGE RANGE
10. 適用リレー仕様 12(V) 励磁電流 1(A)以下
10.APPLICATION RELAY SPECIFICATION EXCITING CURRENT 0.6A MAX AT 12V
11. バッテリ逆接続保護対策有り
11.WITH BATTERY REVERSE-CONNECTION PROTECTION FUNCTION
12. ユニット質量 約40g
12.MASS APPROX.40g
13. 耐水性 清水中10cmの所に24時間保持した後水分を拭き取り自然乾燥後、性能に異常なきこと．但し、カプラ及びコネクタ部分は浸水が無いように行なうこと．
13.WATER RESISTANCE TO BE PLACED AT 10cm BELOW WATER LEVEL AT ROOM TEMPERATURE FOR 24 HOURS, THEN REMOVED DRIED NATURALLY AND OPERATE IT.NO TROUBLES SHALL BE DETECTED.(THE CONNECTORS SHOULD NOT BE IMMERSED.)
14. 耐振性 20G一定にて100〜1000Hz，60secスイープにてX，Y，Z方向を2Hr振動を与え性能に異常なきこと．但しワイヤハーネスは共振なきよう取り付けること．
14.VIBRATION RESISTANCE 196m/s²100 TO 1000Hz ,60 sec SWEEP IN DIRECTIONS OF X,YAZ FOR EACH 2 HOURS,NO TROUBLE SHALL BE DETECTED IN PERFORMANCE.WIRE HARNESS SHALL BE FIRMLY FIXED IN ORDER TO AVOID ITS RESONANCE.
15. 耐久性 常温時図4の回路で図5パターンサイクルで、30000サイクル動作させた後性能に異常なきこと．
15.ENDURANCE CARRY OUT 30000 CYCLES.OPERATING CONDITION AS PER FIG.5 TEST PATTERN AND FIG.4 DIAGRAM AT NORMAL AMBIENT TEMPERATURE.NO TROUBLE SHALL BE DETECTED IN PERFORMANCE.
16. 遮断特性 リレー（P&B製：VF7−41F11）との組合によるリレー励磁電流の遮断時間は5msec以下とする．
16.CUTOFF CHARACTERISTICS CUTOFF TIME OF RELAY EXCITING CURRENT WITH RELAY(P&B:VF7-41F11) :MAX 5msec.
17. サージ耐量 下記パルスを印加後、性能に異常なきこと．
パルス幅：100μS（単発）
パルス波高値：60V（黄，黒端子間測定）
17.SURGE CAPACITY AFTER THE FOLLOWING PULSE IMPRESS,NO TROUBLE SHALL BE DETECTED IN PERFORMANCE.
WIDTH OF PULSE:100μs(SINGLE PULSE)
CREST VALUE OF PULSE:60V(MEASURE BETWEEN YELLOW AND BLACK)
18. 備考 本品は119632−77922に対し，バッテリー接外れ時のグローリレー誤動作対策及び識別用ビニールチューブの色を変更したもの．
18.REMARKS THIS TIMER UNIT IS AN IMPROVEMENT OF 119632-77922.

素材質量 WEIGHT (RAW)		(± %)
完成質量 WEIGHT (MASS)	40g	(± %)

YANMAR CO.,LTD	
部品名称 PART NAME	タイマー(1sec TIMER,SECTION 1
PART No.	129211-77920



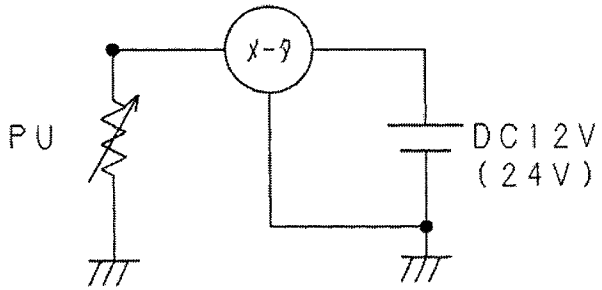
仕　様

指示方式：抵抗式（ボディアースタイプ）

定格電圧：ＤＣ１２Ｖ（ｏｒ２４Ｖ）　回路図参照

試験電圧：１３Ｖ（定格１２Ｖ仕様）

２６Ｖ（定格２４Ｖ仕様）



回路図

抵抗値規格

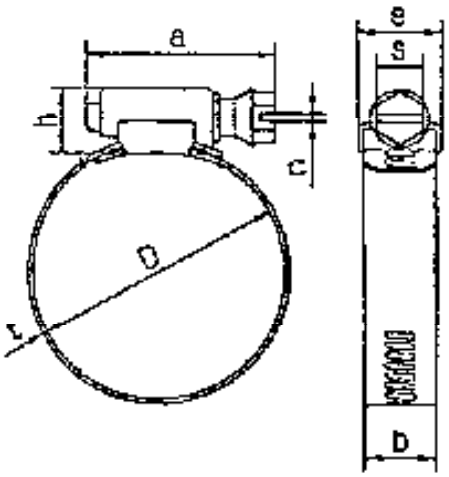
圧　力　kPa	0	392	(784)
標準抵抗値　Ω	83	43	(12)
許容誤差　Ω	±5	±4	――

（）内は、参考値とする

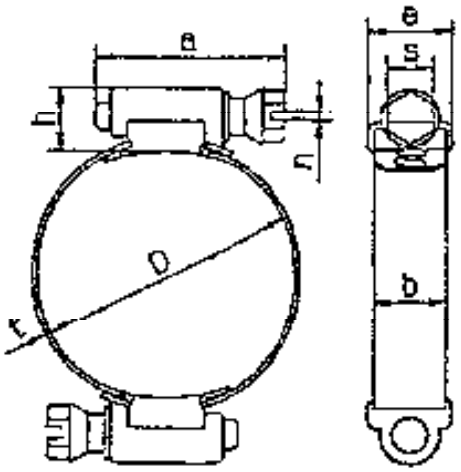
検査は（７８４）→３９２→０ｋＰａの順で行う

YANMAR ENGINE PRODUCT OPERATIONS DIV., YANMAR CO., LTD	
MODEL	TN SERIES
NAME	センダユニット(圧力12/24V
	SENDER,UNIT 12/24V
PART No.	119773-91501

タイプ　A



タイプ　B



呼びコード	呼び径	使用範囲 D(mm)		a (mm)	h (mm)	e (mm)	b (mm)	t (mm)	s (mm)	n (mm)	推奨締付トルク N·m (kgf·cm)	タイプ
		最大	最小									
022	22	25	11	30.0	11.4	15.2	12.7	0.56	8	1.8	2.5～3.4 (25～35)	A
041	41	44	19									
054	54	57	34									
060	60	64	40									
070	70	70	23									
080	80	82	34									
090	90	90	42									
102	102	108	83									
115	115	114	67									

ヤンマー株式会社	
適用機種	
部品名称	ホースクリップ
部品コード	23000-図中