



**YANMAR CO.,LTD.**

|                          |              |                                       |  |  |  |
|--------------------------|--------------|---------------------------------------|--|--|--|
| <b>Messrs: EP BARRUS</b> | Solution No. |                                       |  |  |  |
|                          | Rev. No.     |                                       |  |  |  |
|                          | Drawing No.  | G2-14320-0710                         |  |  |  |
|                          | Revision     | (24/SEP/09)Registered by YDSL0-09132. |  |  |  |

## Engine Specification

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Model name       | L100N5CA1F1AAS5<br>( Design model ID : 714322W )<br>( Production model ID : 114323Y ) |
| Type             | 4-stroke, vertical-cylinder, air-cooled diesel                                        |
| Use for          | Generator , Starting motor                                                            |
| Dev. Request No. | YI DEVREQ-048-2009                                                                    |

24 SEP. 2009

**YANMAR CO.,LTD.**

|                   |   |
|-------------------|---|
| Sending to        |   |
| YI<br>Engineering | 1 |
|                   |   |
|                   |   |
|                   |   |

|             |  |  |               |  |
|-------------|--|--|---------------|--|
| Rev. No.    |  |  |               |  |
| Drawing No. |  |  | G2-14320-0710 |  |

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|               |          |                                                                          |      |         |
|               |          |                                                                          |      |         |
|               |          |                                                                          |      |         |

Remarks :

|                      |           |           |
|----------------------|-----------|-----------|
| <b>Sebango Code:</b> | <b>MH</b> | <b>PT</b> |
| Assy / B1:           |           |           |
| TB / C1:             |           |           |
| PACK / F1:           |           |           |
| Prod. Eng:           |           |           |
| Date:                |           |           |

|                                                                                     |                                                                                      |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Power System Operations Division Engine Development Dept.                           |                                                                                      |                                                                                       |
| Application Engineering Dept.                                                       |                                                                                      |                                                                                       |
| Manager                                                                             | Checked                                                                              | Drawn                                                                                 |
|  |  |  |

#.ogawa

|             |  |  |               |  |  |
|-------------|--|--|---------------|--|--|
| Rev. No.    |  |  |               |  |  |
| Drawing No. |  |  | G2-14320-0710 |  |  |

## 1. Engine Specification

|                                       |                       |                      |                                       |
|---------------------------------------|-----------------------|----------------------|---------------------------------------|
| Model name                            |                       |                      | L100N5CA1F1AAS5                       |
| Combustion system                     |                       |                      | Direct injection                      |
| No. of cylinder-bore × stroke         |                       | mm                   | 1-φ 86×75                             |
| Displacement                          |                       | liter                | 0.435                                 |
| Output                                | Continuous            | kW/min <sup>-1</sup> | * 5.7 ( 7.7PS, 7.6HP ) / 3000         |
|                                       | Maximum               | kW/min <sup>-1</sup> | * 6.5 ( 8.8PS, 8.7HP ) / 3000         |
| PTO Shaft                             | PTO position          |                      | Crankshaft                            |
|                                       | Direction of rotation |                      | Counterclockwise viewed from PTO side |
| Injection Timing (FIC-air)            |                       | deg.                 | 12.0±1.0 bTDC                         |
| Fuel                                  | Oil selection         |                      | Diesel fuel                           |
|                                       | Tank capacity         | liter                | 5.4                                   |
| Lubricating system                    |                       |                      | Forced lubricating system             |
| Lubricating                           | Oil capacity          | liter                | 1.6 (effective, 0.6)                  |
|                                       | Oil selection         |                      | SAE 10W30, API grade CD or higher     |
| Cooling system                        |                       |                      | Forced air cooling by flywheel fan    |
| Starting system                       |                       |                      | Starter motor with recoil starter     |
| Governor                              |                       |                      | All speed type, mechanical            |
| Balancer shaft                        |                       |                      | Single balancer shaft                 |
| Air cleaner                           |                       |                      | Dry type paper element filter         |
| Exhaust silencer                      |                       |                      | Expansion silencer with cover         |
| Generator (at 3600min <sup>-1</sup> ) |                       |                      | Flywheel dynamo : 12V-15A             |
| Dimensions                            |                       | mm                   | Indication in outline drawing         |
| Dry weight                            |                       | kg                   | Approx. 53.5                          |

\* Output is given for normal atmosphere conditions and specs, which are defined as follows:

- Atmospheric pressure : 100kPa (750mmHg)
- Atmospheric temperature : 25°C (298K)
- Relative humidity : 30%

[Notice] Spec of air cleaner is without pre-cleaner and pipe.

## 2. Engine Performance

|                                                                     |                                |                   |              |                                                                                         |
|---------------------------------------------------------------------|--------------------------------|-------------------|--------------|-----------------------------------------------------------------------------------------|
| Speed at no load                                                    | Minimum                        | min <sup>-1</sup> | 1200 or more | PTO Shaft<br>(Without minimum idling speed adjust bolt. Adjustable figure by your end.) |
|                                                                     | Maximum                        |                   | 3175±30      |                                                                                         |
| Governor regulation                                                 | Instantaneous speed difference | %                 | 8 or less    | at continuous output                                                                    |
|                                                                     | Permanent speed change         |                   | 5 or less    |                                                                                         |
|                                                                     | Recovery time                  | sec.              | 5 or less    |                                                                                         |
|                                                                     | Speed fluctuation              | min <sup>-1</sup> | 30 or less   |                                                                                         |
| Permissible angle of inclination                                    | Continuous                     | deg.              | 20           | Operation of up to 3 minutes                                                            |
|                                                                     | Intermittent                   |                   | 30           |                                                                                         |
| Lowest start temperature                                            | Re-coil starting               | °C                | 0            | Without starting aid agent                                                              |
|                                                                     | Electric starting              |                   | -10          |                                                                                         |
| Noise level at continuous rating output<br>(Mean of five direction) |                                | dB(A)             | 92.5         | at continuous output<br>distance : 1m<br>height : 0.5m<br>with STD silencer on          |

|             |  |  |               |  |  |
|-------------|--|--|---------------|--|--|
| Rev. No.    |  |  |               |  |  |
| Drawing No. |  |  | G2-14320-0710 |  |  |

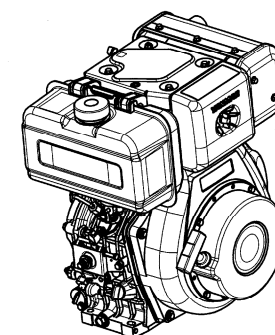
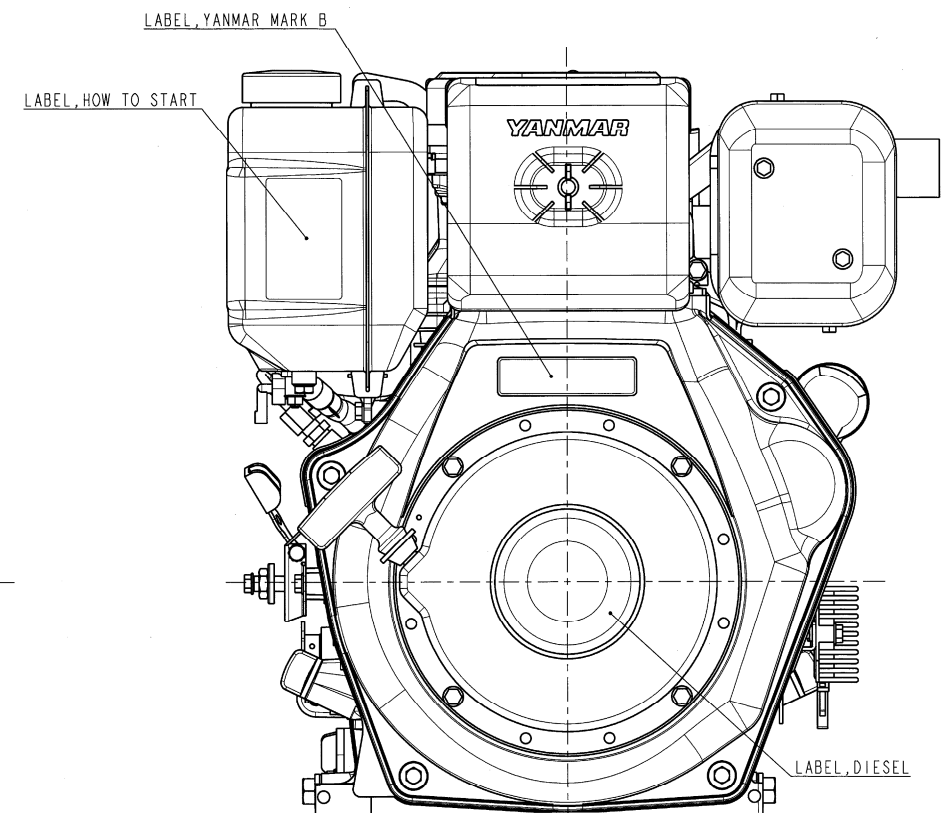
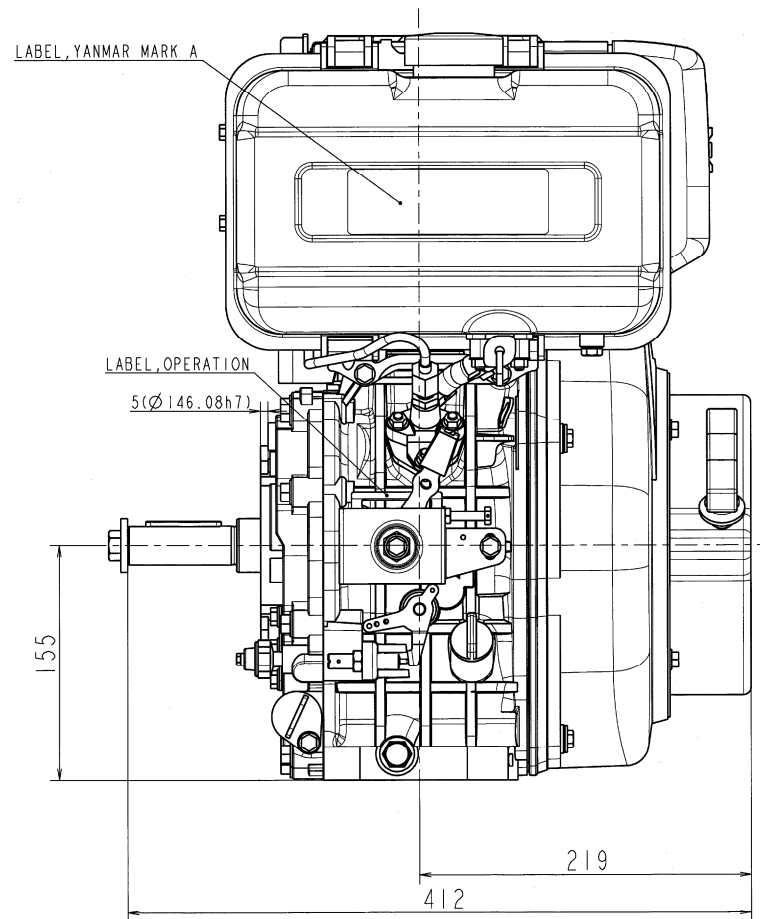
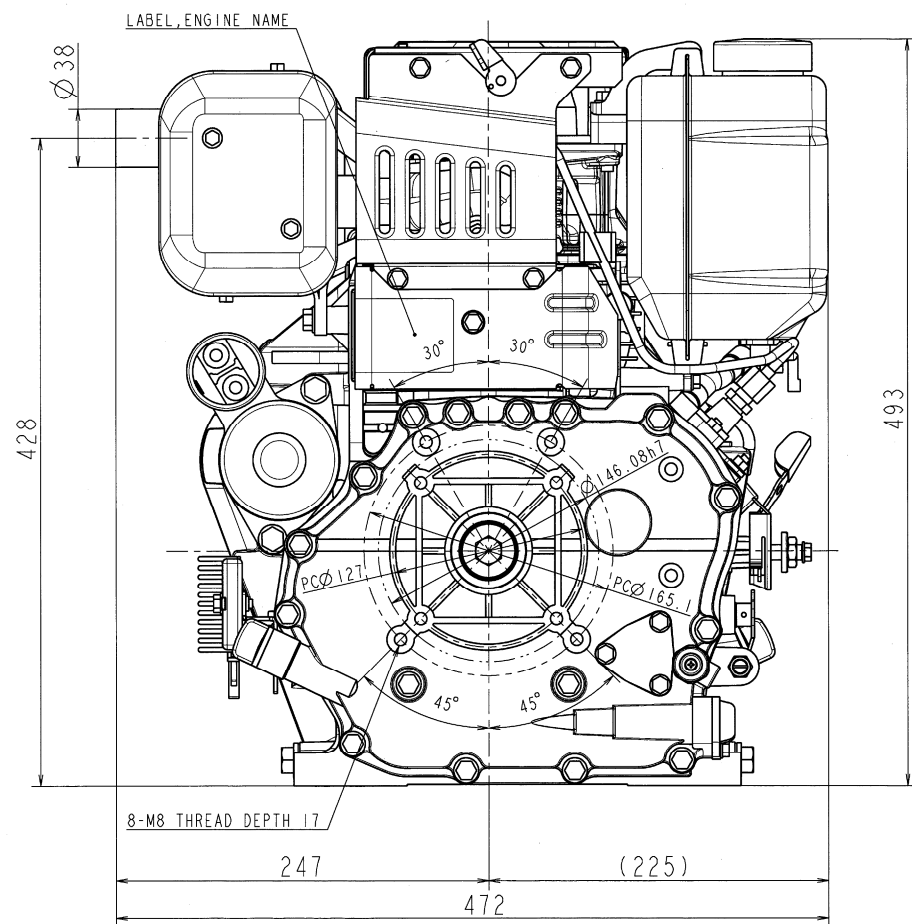
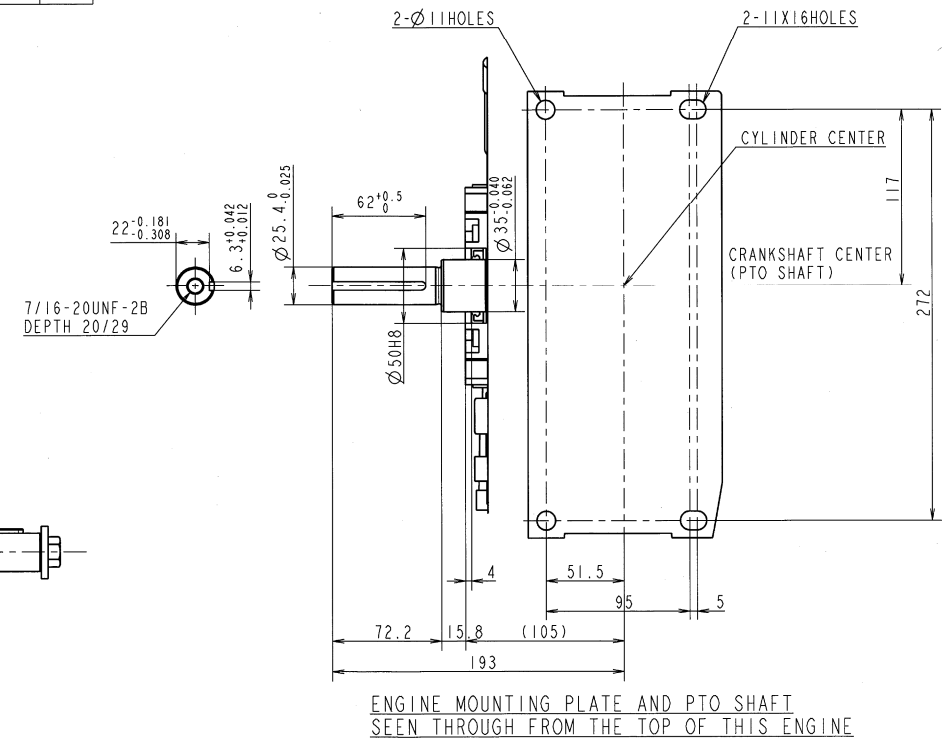
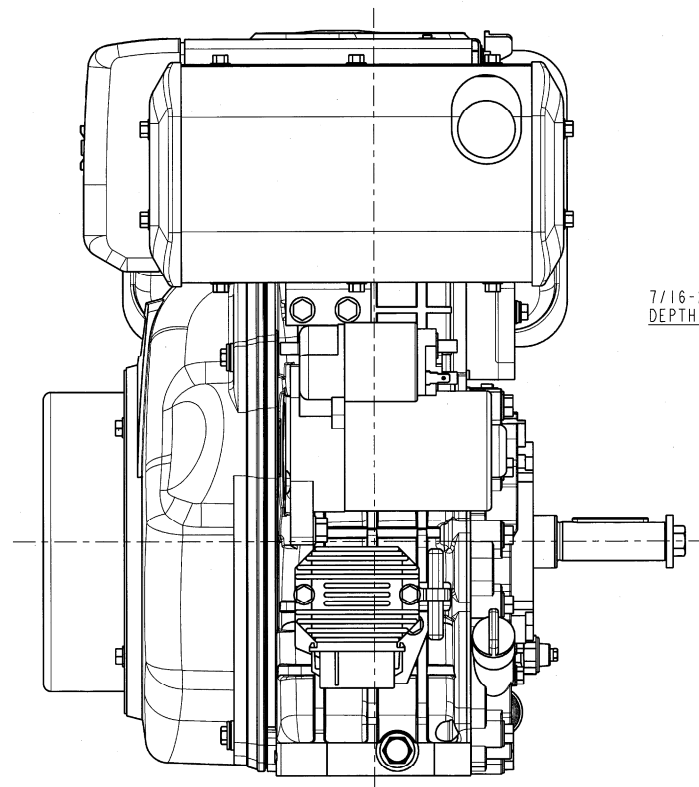
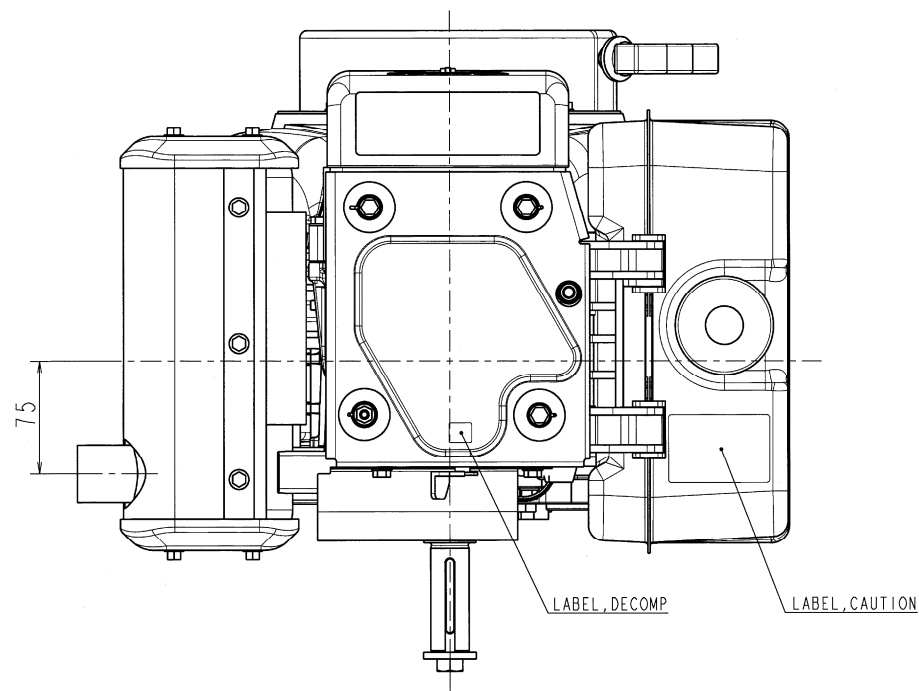
### 3. Details of specifications **Base model : L100N6CA1T1AA**

| System                    | Part Name                    | STD Spec.      | Specification | Remarks                                                  |
|---------------------------|------------------------------|----------------|---------------|----------------------------------------------------------|
| Fuel System               | Pump, Fuel Injection         | 714339-51200   | 714339-51210  | 1NX, Left40° (Made in Yanmar FIE), 3000min <sup>-1</sup> |
|                           | Nozzle, Fuel Injection       | 714339-53200   | ←             | Made in Yanmar FIE                                       |
|                           | Fuel oil tank                | 114310-55010   | ←             | (Bm-a-1) 5.4L, Color:Yanmar Black                        |
|                           | Tank stay (A)                | 114210-55210   | ←             |                                                          |
|                           | Tank stay (B)                | 114310-55230   | ←             |                                                          |
|                           | Fuel oil filter              | NA             | ←             |                                                          |
|                           | Fuel oil pipe, Return        | 114339-59300   | ←             | For Yanmar FIE                                           |
|                           | Fuel oil pipe, Pump          | 114780-59010   | ←             |                                                          |
|                           | Fuel injection pipe          | 114310-59800   | ←             |                                                          |
|                           | Cut-valve, Fuel oil          | NA             | ←             |                                                          |
| Lubricating System        | Cap Assy., Lo supply         | 114699-01760   | ←             | Cap assy. X2                                             |
|                           | Cover, Lub. Oil pump         | 114299-32070   | ←             |                                                          |
|                           | Filter, Lub. Oil             | 114299-35110   | ←             |                                                          |
|                           | Oil pressure switch          | NA             | 121252-39450  | (Cm-a-3)0.5kg/cm <sup>2</sup>                            |
| Cooling System            | Flywheel                     | 114699-21600   | ←             | (Dm-a-3)STD (DE type)                                    |
|                           | Engine cover                 | 114310-45300   | ←             | (Dm-c-1)Full cover type                                  |
|                           | Case, Cooling Fan            | 114310-45100   | ←             | (Dm-b-3)STD, Color:Yanmar Italian gray                   |
| Electric System           | Electric Regulator & Harness | 114399-77560   | ←             | For 12V-15A dynamo                                       |
|                           | Air heater                   | NA             | ←             |                                                          |
|                           | Dynamo Assy.                 | 114399-78280   | ←             | Output : 12V-15A                                         |
| PTO & Flange              | Crankcase cover              | 114310-01450   | ←             | STD                                                      |
|                           | Crank shaft                  | 114310-21030   | ←             | (Fm-a-1)E-D type                                         |
|                           | Key, Crank shaft             | 160842-21150   | ←             | For E-D type, 6.3X50                                     |
| Intake and Exhaust System | Air cleaner                  | 114310-12511   | ←             | (Gm-a-1)STD                                              |
|                           | Pre cleaner                  | NA             | ←             |                                                          |
|                           | Intake bend                  | NA             | ←             |                                                          |
|                           | Muffler                      | 11431C-13550   | ←             | (Gm-c-1)STD                                              |
| Starting System           | Recoil starter Assy.         | 114699-76073   | ←             | (Hm-a-1)STD, Recoil angle:R5                             |
|                           | Plunger, Starting            | NA             | ←             |                                                          |
|                           | Starting motor               | 114362-77011   | ←             | (Hm-b-1)STD, 12V-0.8kW                                   |
| Speed Control System      | Governor lever Assy.         | 114311-61500   | ←             | 2 lever type                                             |
|                           | Control device Assy.         | 714210-66100   | 114210-66550  | (Im-a-3)Friction plate type                              |
|                           | Spring, Regulator            | 114320-66010   | ←             | SP : 0-C , Paint mark : Red                              |
|                           | Fuel limiter Assy.           | 114320-66600   | 114211-66600  | For 3000/3600min <sup>-1</sup>                           |
| Decomp. System            | Remote decomp.               | NA             | ←             |                                                          |
|                           | Bonnet                       | 114310-11950   | ←             | (Lm-a-1)STD                                              |
| Others                    | Cylinder block               | 114310-01020   | ←             |                                                          |
|                           | Cam shaft                    | 114320-14010   | ←             |                                                          |
|                           | Balancer shaft               | 114310-28010   | ←             |                                                          |
|                           | Flange                       | NA             | ←             |                                                          |
|                           | Cover, Tiller                | NA             | ←             |                                                          |
| Standard Loose Parts      | Key switch panel Assy.       | 114351-77500   | ←             | (Hm-c-1)                                                 |
|                           | Connector                    | NA             | ←             |                                                          |
|                           | Deflector                    | 114699-13800   | ←             |                                                          |
|                           | Orifice                      | NA             | ←             |                                                          |
|                           | Tools                        | 114299-92590   | ←             |                                                          |
|                           | Operation manual             | 0ALN0-G00100   | ←             | English                                                  |
| Remarks                   | Fuel oil limiter             | Locked by wire |               |                                                          |
|                           | High idle adjust bolt        | Locked by wire |               |                                                          |
|                           | Lubricating oil              | Not provided   |               |                                                          |
|                           | Delivery style               | Cardboard box  |               |                                                          |

| NEED      | O    | PURCHASING SPECIFICATION |        | REQUEST FOR APPROVAL    |          | DELIVERY DRAWING |      | INSPECTING STANDARD |       | QC-PROCESS |        |
|-----------|------|--------------------------|--------|-------------------------|----------|------------------|------|---------------------|-------|------------|--------|
|           |      | OUTSIDE                  | INSIDE | CAST WALL THICK<br>模造壁厚 | APPROVAL | APPROVAL         | 5 TO | 10 TO               | 18 TO | 30 TO      | L-CAST |
|           |      |                          |        |                         | DIVISION | 5 MAX            | = 10 | = 18                | = 30  | = 50       |        |
|           |      |                          |        |                         | SANDMOLD | ±1.0             | ±1.5 | ±2.0                | ±3.0  | ±3.5       |        |
| GEN. TOL. | 一般公差 | DRAFT ANG.               | 2/100  | 3/100                   | SHELL    | ±0.8             | ±1.0 | ±1.5                | ±2.0  | ±2.0       |        |
|           |      |                          | 3/100  |                         |          |                  |      |                     |       |            |        |

[illegible]

|                      |          |
|----------------------|----------|
| 3RD ANGLE PROJECTION |          |
| FIGURE<br>DIMENSION  | GT. CODE |
| ○ AND ⌀ : RADIAL     |          |
| C A R E E R          |          |



|                                                |  |            |    |               |                |      |                |                 |                |         |
|------------------------------------------------|--|------------|----|---------------|----------------|------|----------------|-----------------|----------------|---------|
| WEIGHT (RAW)                                   |  | (± %)      | kg |               | 形工<br>工間<br>発部 |      | 形工<br>工間<br>発部 |                 | 形工<br>工間<br>発部 |         |
| WEIGHT (CALC.)                                 |  | (± %)      | kg |               |                |      |                |                 | R. Sato        |         |
| S. ENGINEER                                    |  | MANAGER    |    | MODEL         |                |      |                | SCALE           |                | FREE    |
| CHECKED                                        |  | SPECIALIST |    | QTY           |                |      |                | MATERIAL        |                |         |
| DESIGNED                                       |  | DRAWN      |    | DATE: Y. M. D |                | NAME |                | L100N5CAIFIAAS5 |                | OUTLINE |
| 14. Sato                                       |  | 14. Ogawa  |    | 24. SEP. 2009 |                |      |                |                 |                |         |
| POWER SYSTEM OPERATIONS DIV., YANMAR CO., LTD. |  |            |    |               |                | CODE |                | B2-14320-0710   |                | AI      |

|                                                                                                                                                                                                                              |                                       |                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| With respect to the use of environmentally hazardous substances for the parts, the substances in use shall conform to the requirement specified in JIS V-0001. *Restrictions of use for Environmentally Hazardous Substances |                                       | 本製品の環境有害物質の採用については、<br>JIS V-0001に規定された物質の使用が<br>必要かつ制限される。                                                         |
| <b>3D-CAD</b>                                                                                                                                                                                                                |                                       |                                                                                                                     |
| NOTICE                                                                                                                                                                                                                       |                                       |                                                                                                                     |
| FORM                                                                                                                                                                                                                         | GEOMETRICAL TOLERANCE                 | <input checked="" type="checkbox"/> YES                                                                             |
|                                                                                                                                                                                                                              | KIND OF TOLERANCE                     | <input type="checkbox"/> STRAIGHTNESS<br><input type="checkbox"/> CIRCULARITY<br><input type="checkbox"/> TOLERANCE |
|                                                                                                                                                                                                                              | PROFILE OF SURFACE TOLERANCE          | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | PLATNESS TOLERANCE                    | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | CIRCULARITY TOLERANCE                 | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | WAVE TOLERANCE OF SURFACE             | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | PARALLELISM TOLERANCE                 | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | PERPENDICULARITY TOLERANCE            | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | IRREGULARITY TOLERANCE                | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | POSITIONAL TOLERANCE                  | <input type="checkbox"/> C                                                                                          |
| LOCATION                                                                                                                                                                                                                     | COAXIALITY OR CONCENTRICITY TOLERANCE | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | STRAIGHTNESS TOLERANCE                | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | CIRCULARITY TOLERANCE                 | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | RUN-OUT TOLERANCE                     | <input type="checkbox"/> C                                                                                          |
|                                                                                                                                                                                                                              | TOTAL RUN-OUT TOLERANCE               | <input type="checkbox"/> C                                                                                          |

# LABELS

G2-14220-2030

| No. | L A B E L S           | P L A C E            | C O N T E N T S       |
|-----|-----------------------|----------------------|-----------------------|
| 1   | LABEL, ENGINE NAME    | COVER (CYLINDER      | _____                 |
| 2   | LABEL, YANMAR MARK (A | F. O. TANK           | THE FOLLOWING DETAILS |
| 3   | LABEL, CAUTION        | F. O. TANK           | //                    |
| 4   | LABEL, HOW TO START   | F. O. TANK           | //                    |
| 5   | LABEL, YANMAR MARK (B | FANCASE, COOLING     | //                    |
| 6   | LABEL, DIESEL         | RECOIL STARTER       | //                    |
| 7   | LABEL, DECOMP         | COVER, TOP           | //                    |
| 8   | LABEL, OPERATION      | SPEED CONTROL DEVICE | //                    |

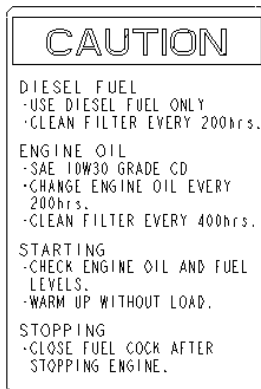
②LABEL, YANMAR MARK (A



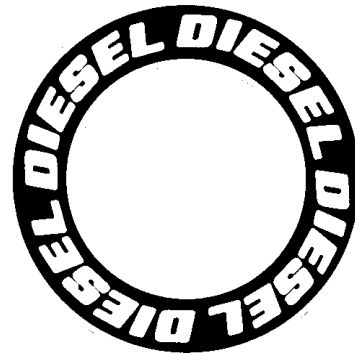
⑤LABEL, YANMAR MARK (B



③LABEL, CAUTION



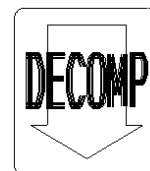
⑥LABEL, DIESEL



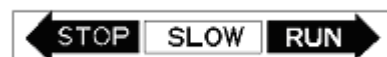
④LABEL, HOW TO START



⑦LABEL, DECOMP

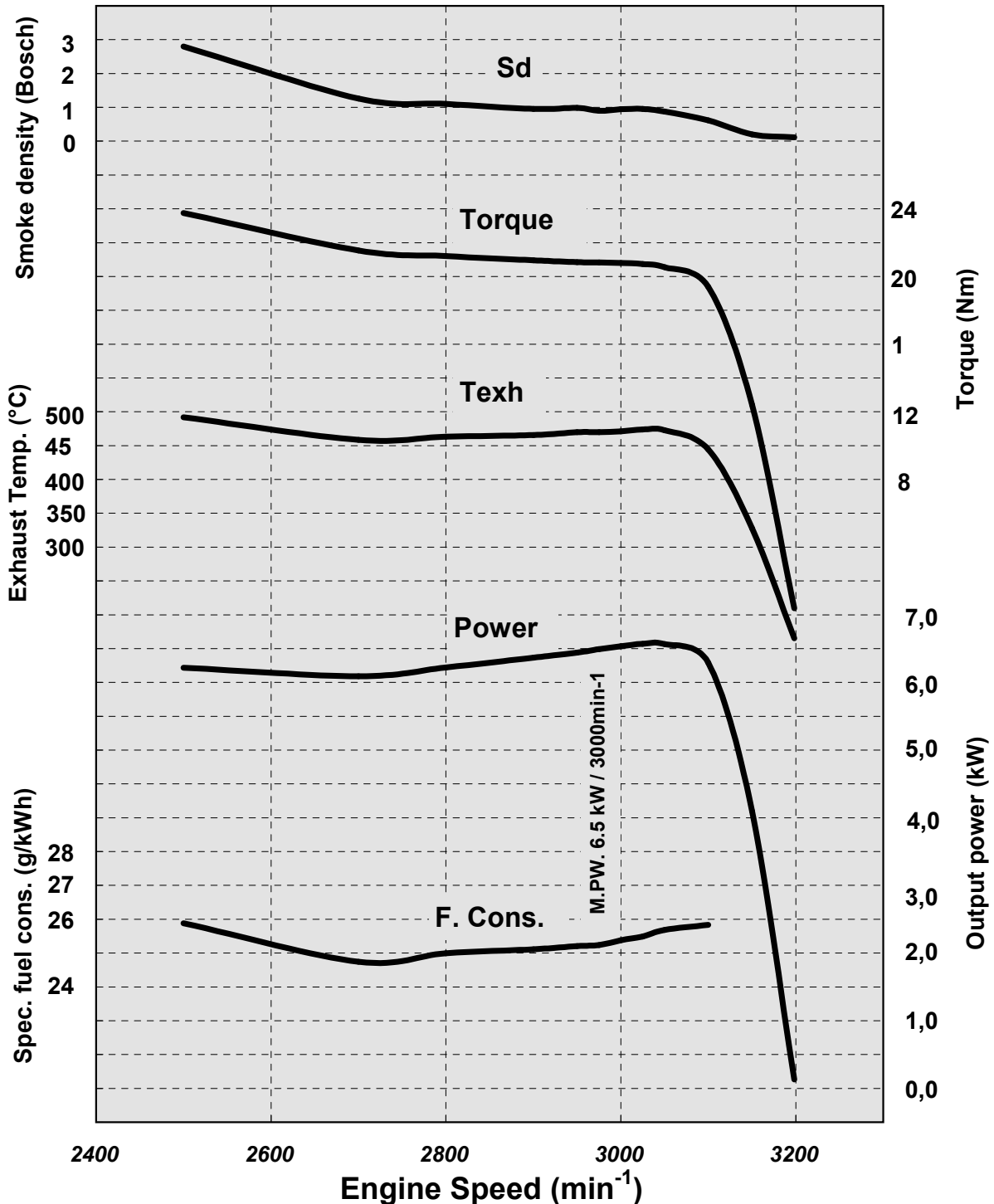


⑧LABEL, OPERATION



## L100N5 Model – Full Load Graph

(for reference only)



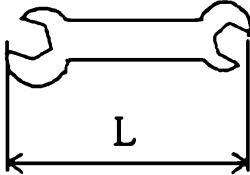
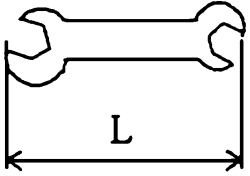
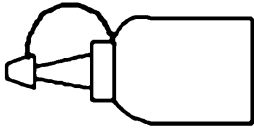
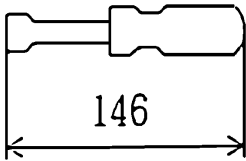
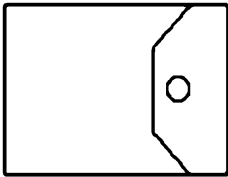
Notes : This performance is under the following condition.

After 30hrs. initial running

Atmospheric conditions : Temperature 298K (25°C)  
 Pressure 100kPa (750mmHg)  
 Humidity 30%

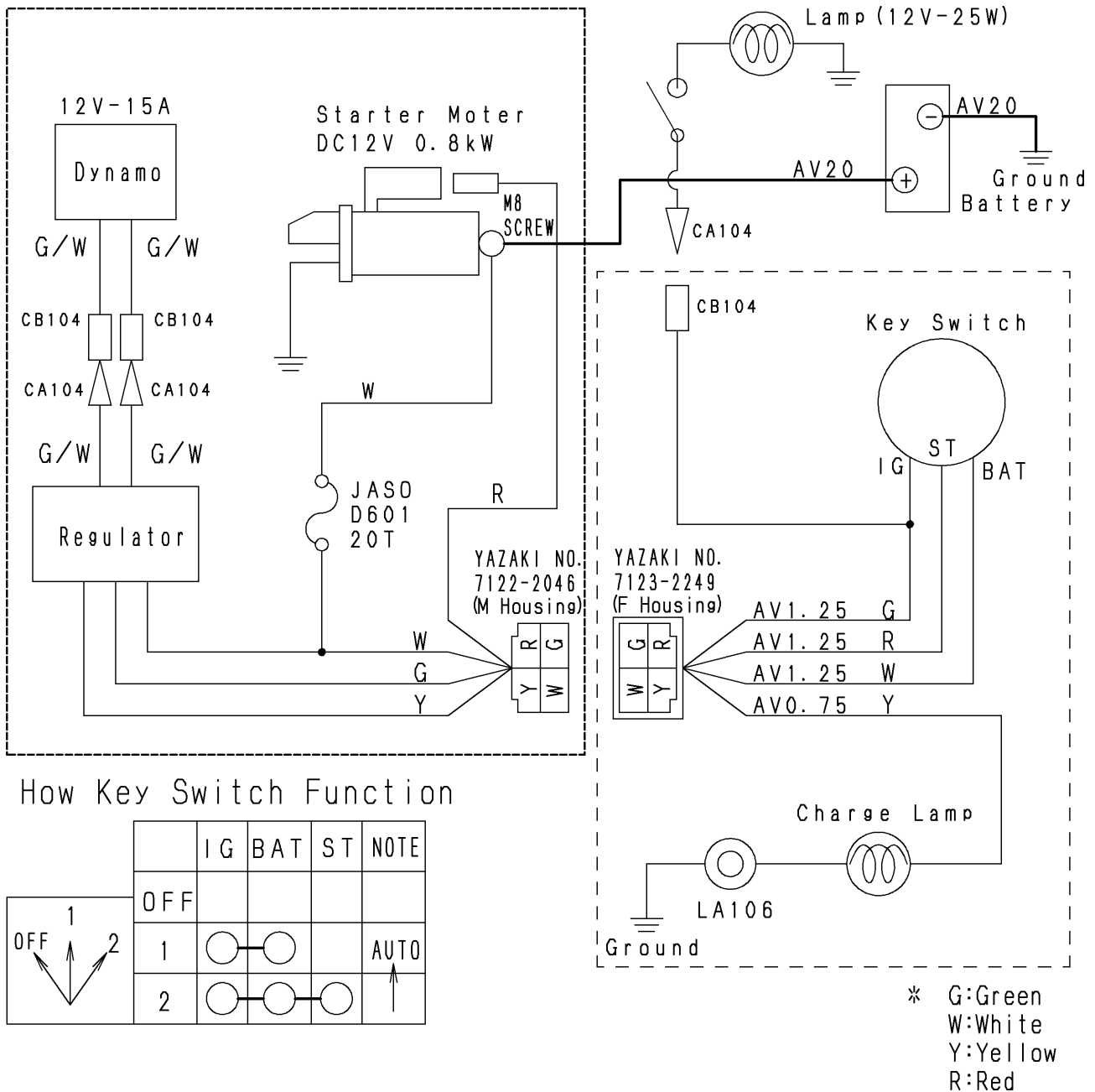
## 標準工具 TOOLS

C2-14110-0010

| 区分<br>ITEM         | 名称<br>DESCRIPTION                     | 部品コード及び略図<br>PART NUMBER                                                                            | 材質<br>MATERIAL                               | 個数<br>Q'ty | 備考<br>NOTES |
|--------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------|------------|-------------|
| 工<br><br><br><br>具 | 1<br><br>両口スパナ<br>WRENCH<br>1 4 × 1 7 | 114299-92720<br>   | UNI EN<br>10083/1<br>C40                     | 1          | L=163       |
|                    | 2<br><br>両口スパナ<br>WRENCH<br>1 0 × 1 2 | 114299-92710<br>   | UNI EN<br>10083/1<br>C40                     | 1          | L=128       |
|                    | 3<br><br>油さし<br>FEEDER, OIL           | 114299-92740<br> | 合成樹脂<br>POLYETHYRENE                         | 1          |             |
|                    | 4<br><br>＋－ねじまわし<br>SCREWDRIVER       | 114299-92730<br> | UNI EN<br>10083/1<br>C40<br>&<br>合成樹脂<br>PVC | 1          |             |
|                    | 5<br><br>工具袋<br>BAG, TOOL             | 114299-92600<br> | 黒色ビニール<br>PVC                                | 1          |             |



E2-14110-0010



#### NOTE:

1. Be sure to ground both engine and engine-driven machine
2. Section enclosed with dotted square is pre-wired at Yanmar factory.  
Section enclosed with alternate long and short dash line is the section included in engine packing.  
For this section, purchaser is expected to:
  - 1) connect 4P coupler.
  - 2) secure charge lamp ground (LA106) with bolt (M6)
  - 3) Receptacle of pin-type terminal (CB104) outputs up to 12V/25W.
3. Locally procure
  - 1 battery (24Ah-36Ah)
  - 2 battery cable (AV20)
  - 3 lamp (12V-25W), switch and cable (AV1.25)