



# **SERVICE DATA**

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## **POWER SPRAYER SHR-150SI**

### **INTRODUCTION**

We are constantly working on technical improvement of our products. For this reason, technical data, equipment and design are subject to change without notice. All specifications and directions in this SERVICE DATA are based on the latest products information available at the time of publication.

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**KIORITZ CORPORATION**Reference No. **30-21C-00****ISSUED: 200304**

## 1 SERVICE INFORMATION

## 1-1 Specifications

|                        |                                 |                                                  |                          |
|------------------------|---------------------------------|--------------------------------------------------|--------------------------|
| Dimensions             | Length*                         | mm(in)                                           | 310 (12.2)               |
|                        | Width*                          | mm(in)                                           | 375 (14.8)               |
|                        | Height*                         | mm(in)                                           | 550 (21.7)               |
| Dry weight*            |                                 | kg(lb)                                           | 5.6 (12.3)               |
| Engine                 | Type                            | KIORITZ, air-cooled, two-stroke, single cylinder |                          |
|                        | Rotation                        | Counterclockwise as viewed from the output end   |                          |
|                        | Displacement                    | cm <sup>3</sup> (in <sup>3</sup> )               | 21.2 (1.29)              |
|                        | Bore                            | mm(in)                                           | 32.2 (1.268)             |
|                        | Stroke                          | mm(in)                                           | 26.0 (1.024)             |
|                        | Compression ratio               | 6.6                                              |                          |
| Carburetor             | Type                            | Diaphragm, horizontal-draft, with primer         |                          |
|                        | Model                           | RB-K69                                           |                          |
| Ignition               | Type                            | CDI (Capacitor discharge ignition) system        |                          |
|                        | Spark plug                      | BPMR7A                                           |                          |
| Starter                | Type                            | i-start                                          |                          |
|                        | Rope diameter x length          | mm(in)                                           | 3.0 x 1300 (0.12 x 51.2) |
| Fuel                   | Type                            | Premixed two-stroke fuel                         |                          |
|                        | Recommended 2-stroke engine oil | ISO-L-EGD (ISO/CD13738)                          |                          |
|                        | Tank capacity                   | L (U.S.fl.oz.)                                   | 0.5 (16.9)               |
| Chemical tank capacity |                                 | L (U.S.gal)                                      | 15.0 (4.0)               |
| Clutch                 | Type                            | Centrifugal, 2-shoe slide                        |                          |
| Pump                   | Type                            | Rotary (Regenerative)                            |                          |
|                        | Impeller diameter               | mm(in)                                           | 58.0 (2.28)              |
|                        | Pressure                        | kgf/cm <sup>2</sup> (psi)                        | 8 - 10 (114 - 142)       |
|                        | Discharge                       | L/min(U.S.gal/min)                               | 8.0 (2.11)               |
|                        | Suction hose inner dia.         | mm(in)                                           | 10.0 (0.39)              |
|                        | Return hose inner dia.          | mm(in)                                           | 7.0 (0.28)               |
|                        | Spraying hose inner dia.        | mm(in)                                           | 7.5 (0.30)               |
|                        | Spraying hose length            | m(ft)                                            | 1.2 (3.94)               |

\* Without spraying hose and nozzle.

**1-2 Technical data**

|                                                |                                  |                                                     |
|------------------------------------------------|----------------------------------|-----------------------------------------------------|
| Engine                                         |                                  |                                                     |
| Idling speed                                   | r/min                            | 2700 - 3300                                         |
| Operating speed                                | r/min                            | 6500 - 7000                                         |
| Engine speed at beginning of clutch engagement | r/min                            | 3400 - 3700                                         |
| Compression pressure                           | Mpa (kgf/cm <sup>2</sup> ) (psi) | 0.8 (8.0) 110                                       |
| Ignition system                                |                                  |                                                     |
| Spark plug gap                                 | mm(in)                           | 0.6 - 0.7 (0.024 - 0.028)                           |
| Minimum secondary voltage at 1500 r/ min       | kV                               | 20.0                                                |
| Secondary coil resistance                      | kΩ                               | 1.4 - 1.9                                           |
| Pole shoe air gaps                             | mm(in)                           | 0.3 - 0.4                                           |
| Ignition timing                                | °BTDC                            |                                                     |
|                                                | at 1000 rpm                      | 17.0                                                |
|                                                | at 7000 rpm                      | 15.0                                                |
| Carburetor                                     |                                  |                                                     |
| Venturi size                                   | mm(in)                           | 9.0 (0.354)                                         |
| Throttle bore                                  | mm(in)                           | 9.0 (0.354)                                         |
| Main jet                                       |                                  | #38                                                 |
| Test Pressure, minimum                         | MPa (kgf/cm <sup>2</sup> ) (psi) | 0.05 (0.5) (7.0)                                    |
| Metering lever height                          | mm(in)                           | 0.1 - 0.25 (0.004 - 0.01) lower than diaphragm seat |

BTDC: Before top dead center.

**1-3 Torque limits**

| Descriptions                 |                         | Size  | kgf•cm    | N•m       | in•lbf    |
|------------------------------|-------------------------|-------|-----------|-----------|-----------|
| Starter system               | Starter pawl assembly   | M 6   | 80 - 100  | 8 - 10    | 70 - 90   |
|                              | Starter case            | M 5** | 25 - 45   | 2.5 - 4.5 | 22 - 40   |
| Ignition system              | Flywheel                | M 6*  | 80 - 100  | 8 - 10    | 70 - 90   |
|                              | Ignition coil           | M 4   | 35 - 50   | 3.5 - 5.0 | 30 - 45   |
|                              | Spark plug              | M 14  | 150 - 170 | 15 - 17   | 130 - 150 |
| Fuel system                  | Carburetor              | M 5   | 25 - 45   | 2.5 - 4.5 | 22 - 40   |
|                              | Intake insulator        | M 5   | 70 - 110  | 7 - 11    | 60 - 95   |
| Engine                       | Crankcase               | M 5*  | 70 - 110  | 7 - 11    | 60 - 95   |
|                              | Cylinder                | M 5   | 70 - 110  | 7 - 11    | 60 - 95   |
|                              | Engine mount            | M 6   | 45 - 75   | 4.5 - 7.5 | 40 - 65   |
|                              | Cylinder cover          | M 5*  | 20 - 30   | 2 - 3     | 17 - 25   |
|                              | Muffler                 | M 6   | 70 - 110  | 7 - 11    | 60 - 95   |
|                              | Muffler cover           | M 5*  | 25 - 45   | 2.5 - 4.5 | 22 - 40   |
| Pump                         | Pump cover              | M 5   | 25 - 45   | 2.5 - 4.5 | 22 - 40   |
|                              | Pump mount              | M 5   | 25 - 45   | 2.5 - 4.5 | 22 - 40   |
| Other                        | Rubber cushion          | M 6*  | 20 - 40   | 2 - 4     | 17 - 35   |
|                              | Nut (Chem. tank bottom) | M 6   | 45 - 75   | 4.5 - 7.5 | 40 - 65   |
|                              | Ignition switch         | M 10  | 15 - 25   | 1.5 - 2.5 | 13 - 22   |
| Regular bolt, nut, and screw |                         | M 3   | 6 - 10    | 0.6 - 1.0 | 5 - 9     |
|                              |                         | M 4   | 15 - 25   | 1.5 - 2.5 | 13 - 22   |
|                              |                         | M 5   | 25 - 45   | 2.5 - 4.5 | 22 - 40   |
|                              |                         | M 6   | 45 - 75   | 4.5 - 7.5 | 40 - 65   |
|                              |                         | M 8   | 110 - 150 | 11 - 15   | 115 - 130 |

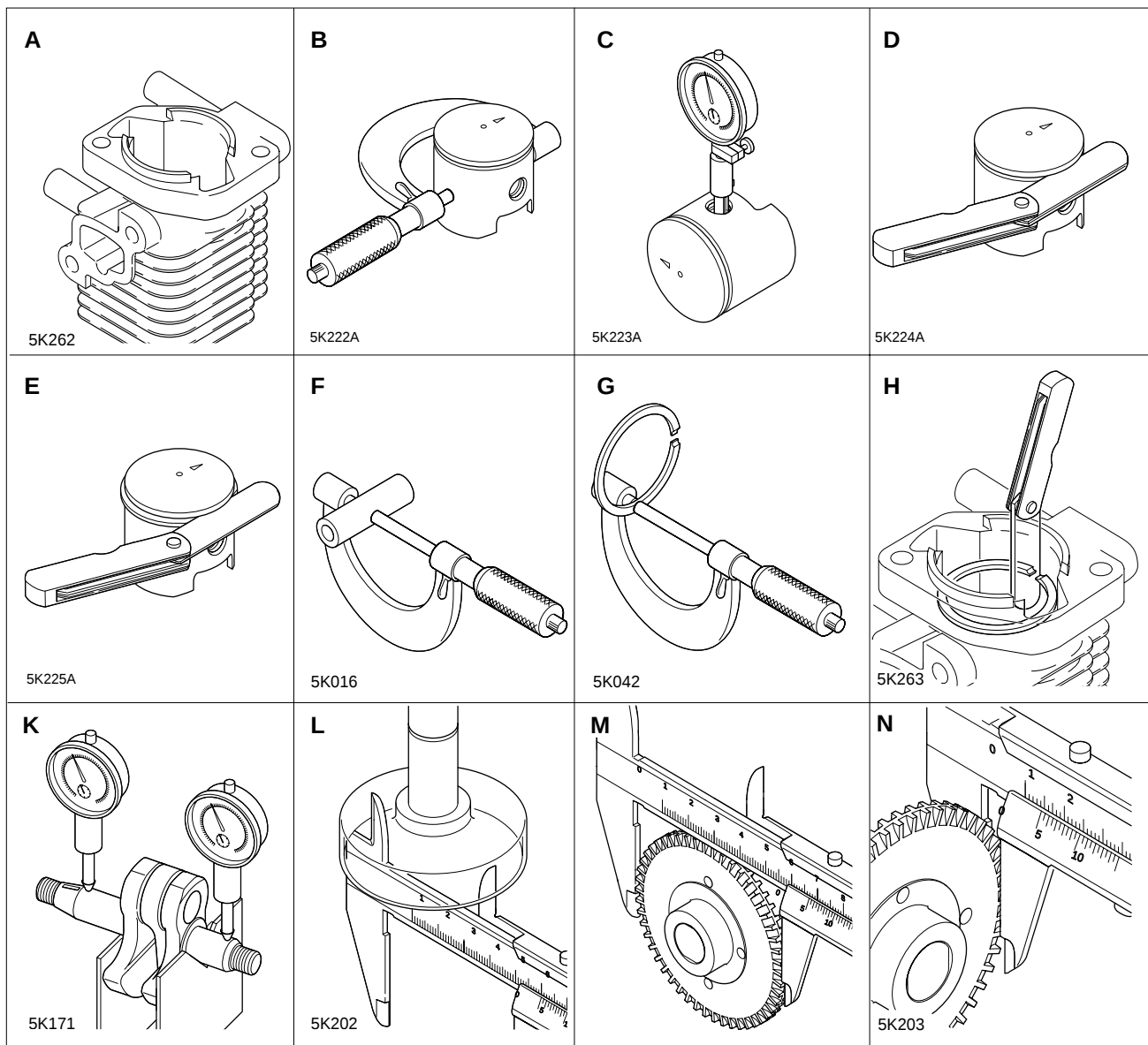
\* Apply thread locking sealant. (See below)

\*\* Tapping screw

**1-4 Special repairing materials**

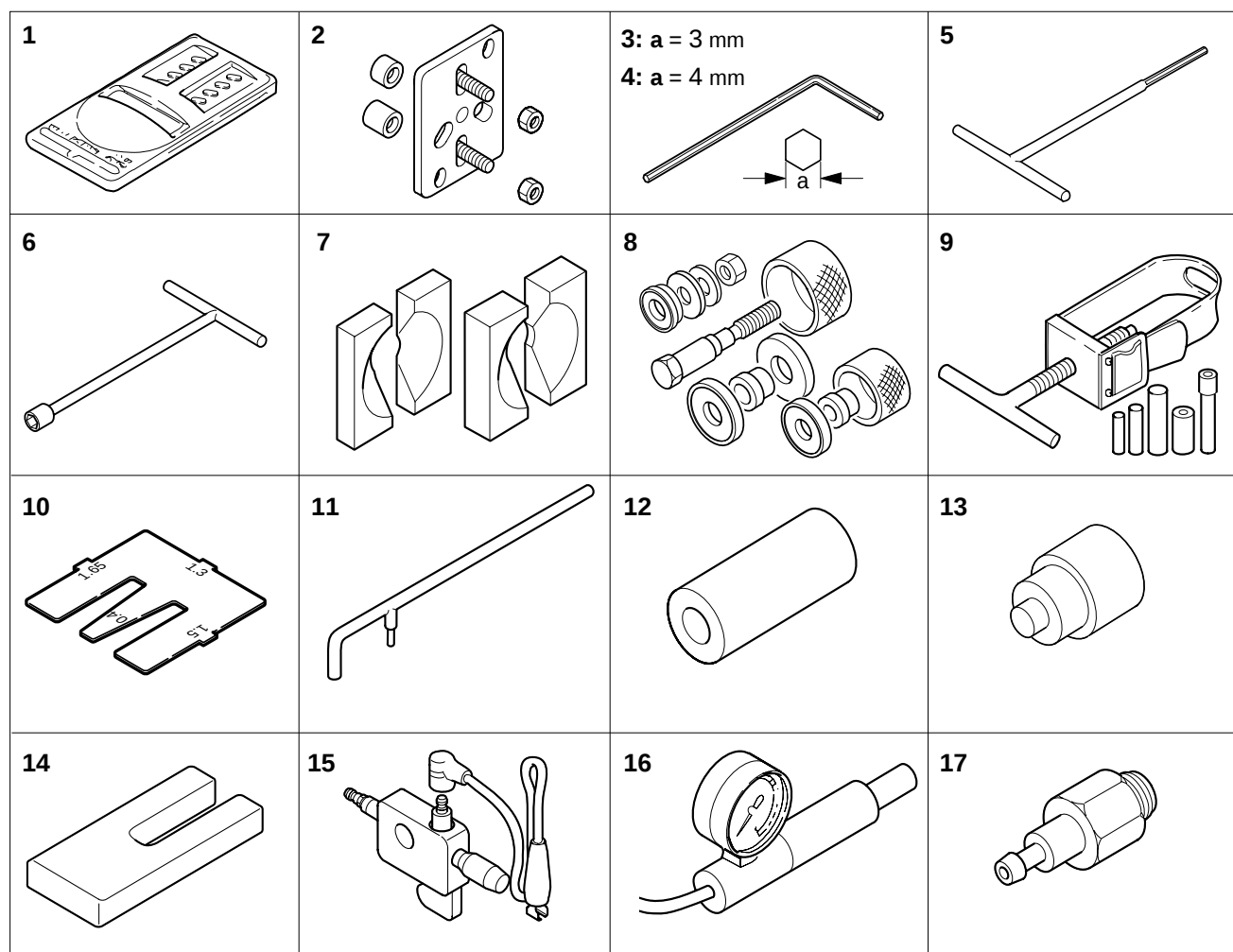
| Material               | Location            | Remarks                                     |
|------------------------|---------------------|---------------------------------------------|
| Grease                 | Rewind spring       | Lithium based grease or ECHO LUBE™          |
|                        | Starter center post |                                             |
|                        | Oil seal inner lips |                                             |
| Thread locking sealant | Flywheel            | Loctite #222, ThreeBond #1342 or equivalent |
|                        | Crankcase           |                                             |
|                        | Cylinder cover      |                                             |
|                        | Muffler cover       |                                             |
|                        | Rubber cushion      |                                             |

## 1-5 Service limits



| Description |                            |      | mm (in)                                       |
|-------------|----------------------------|------|-----------------------------------------------|
| A           | Cylinder bore              |      | When plating is worn and aluminum can be seen |
| B           | Piston outer diameter      | Min. | 32.11 (1.264)                                 |
| C           | Piston pin bore            | Max. | 7.070 (0.278)                                 |
| D           | Piston ring groove         | Max. | 1.6 (0.063)                                   |
| E           | Piston ring side clearance | Max. | 0.1 (0.004)                                   |
| F           | Piston pin outer diameter  | Min. | 6.98 (0.275)                                  |
| G           | Piston ring width          | Min. | 1.45 (0.057)                                  |
| H           | Piston ring end gap        | Max. | 0.5 (0.02)                                    |
| K           | Crankshaft runout          | Max. | 0.05 (0.002)                                  |
| L           | Clutch drum bore           | Max. | 55.5 (2.19)                                   |
| M           | Impeller diameter          | Max. | 56.0 (2.21)                                   |
| N           | Impeller thickness         | Max. | 3.4 (0.134)                                   |

## 1-6 Special tools



| Key | Part Number  | Description           | Used for:                                                 |
|-----|--------------|-----------------------|-----------------------------------------------------------|
| 1   |              | Tachometer            | Measuring engine speed to adjust carburetor               |
| 2   | 897501-03938 | Puller                | Removing magneto rotor                                    |
| 3   | 895612-79920 | L-hex. wrench (3 mm)  | Removing and installing hex. socket bolt (M4)             |
| 4   | 895610-79920 | L-hex. wrench (4 mm)  | Removing and installing hex. socket bolt (M5)             |
| 5   | 897559-02831 | T-hex. wrench (4 mm)  | Removing and installing hex. socket bolt (M5)             |
| 6   | 897558-10230 | T-socket wrench(10mm) | Removing and installing hex. head bolt/nut (M6)           |
| 7   | 897701-06030 | Bearing wedge         | Removing ball bearing on crankshaft                       |
| 8   | 897701-14732 | Bearing tool          | Removing and installing ball bearings on crankcase        |
| 9   | 897702-30131 | Piston pin tool       | Removing and installing piston pin (Use 8mm dia.adapter)  |
| 10  | 897563-19830 | Metering lever gauge  | Measuring metering lever height on carburetor             |
| 11  | 897712-04630 | 2-pin wrench          | Removing and installing pawl carrier                      |
| 12  | 897714-24330 | Oil seal tool         | Installing crankcase oil seals                            |
| 13  | 897741-10510 | Mechanical seal tool  | Removing and installing mechanical seal                   |
| 14  | 897719-02830 | Piston holder         | Making piston steady to remove and install piston / rings |
| 15  | 897800-79931 | Spark tester          | Checking ignition system                                  |
| 16  | 897803-30130 | Pressure tester       | Testing carburetor and crankcase leakage                  |
| 17  | 897835-16131 | Pressure connector    | Testing crankcase and cylinder leakage                    |