

# Service



**NOTE:** Numbers in parenthesis in the text refer to the reference numbers in the figures and in the parts list.

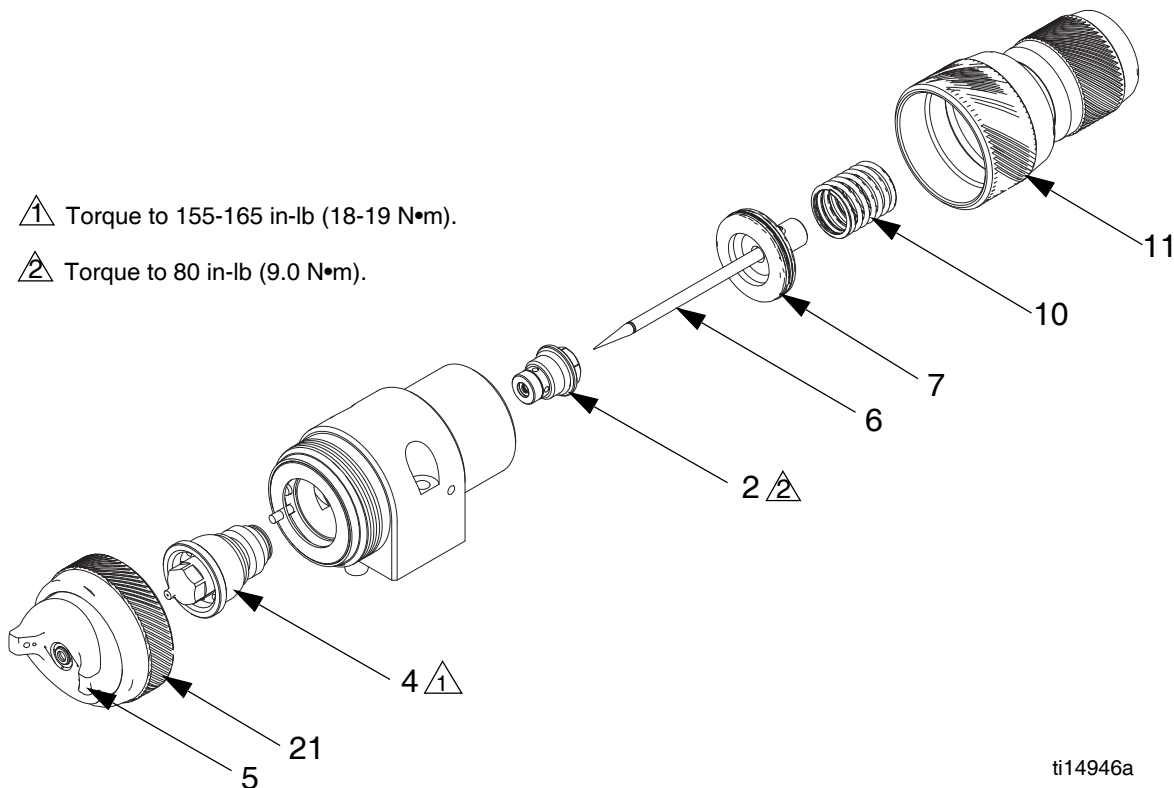
## Disassembly

1. Follow the **Pressure Relief Procedure**, page 20.
2. Remove gun for service:
  - a. **With Manifold:** Use the 4 mm allen wrench supplied to unscrew the two

screws (16) and remove the gun from the manifold.

- b. **Without Manifold:** Disconnect the air and fluid hoses. Remove the gun from the mounting arm.

3. Remove the air cap retaining ring (21) and air cap (5).
4. Remove the fluid adjustment knob (11) and spring (10).
5. Pull the piston (7) and fluid needle (6) out of the back of the gun.



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FIG. 17

6. Use a 1/16 hex wrench to loosen the fluid needle set screw (7a). Remove the needle (6) from the piston (7).
7. Check the fluid needle (6) for damage or excessive wear. Replace the needle if necessary.

#### NOTICE

The needle and tip are permanently bonded. To prevent damage to the needle, do not try to separate.

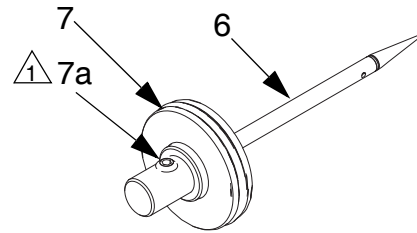
8. Use the 10 mm hex nut driver to remove the fluid packing nut (2).
9. Use the 10 mm wrench to remove the nozzle (4).

## Reassembly

1. Lightly grease the new nozzle (4), which includes o-ring (3). Use the 10 mm wrench to install the nozzle. Torque to 155-165 in-lb (18-19 N•m).
2. Install the new air cap assembly (5, includes air cap, o-ring, washer, and alignment pin) and the retaining ring (21).

**NOTE:** Be sure to move the alignment pin if you want a horizontal spray pattern. See **Position Air Cap**, page 18.

3. Use the 10 mm hex nut driver to install new fluid packing nut (2, includes o-ring). Torque to 80 in-lb (9.0 N•m).
4. Insert the new needle (6) in the piston (7). Apply medium-strength thread sealant to the setscrew (7a). Use the 1/16 hex wrench to torque the setscrew to 4.5 to 5.5 in-lb (0.5 to 0.6 N•m).



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Torque to 4.5 to 5.5 in-lb (0.5 to 0.6 N•m).

FIG. 18

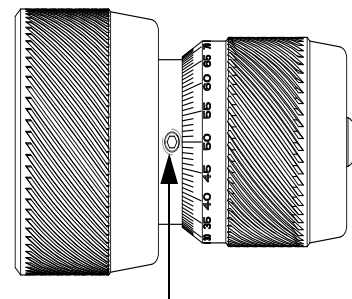
#### NOTICE

To avoid damage, the nozzle (4) must be installed before the needle (6).

To avoid damage to the needle (6) if the nozzle (4) is removed without full gun disassembly, turn the fluid adjustment knob (11) fully counterclockwise to remove pressure from the needle before reassembling the nozzle.

5. Grease the needle shaft and piston o-ring. Push the needle/piston assembly into the gun as far as possible. Insert spring (10).
6. Turn counterclockwise to fully open the fluid adjustment knob (11). Install the knob hand-tight.

**NOTE:** If you have an ultra-precision fluid adjustment knob, loosen the set screw to adjust the position of the hash markings for convenient reading.



ti14947a

Set screw

FIG. 19

**Guns with Manifold**

Exploded view diagram of a gun assembly with manifold. The diagram shows the following components and their assembly sequence:

- 1**: Main gun body.
- 2**: Small connector or plug.
- 3**: Small ring or washer.
- 4**: Small pin or screw.
- 5a**: Ultra-precision knob.
- 5b**: Lock ring and cap.
- 5c**: Indexing knob.
- 5d**: Ultra-precision knob.
- 6**: Long pin or screw.
- 7**: Ultra-precision knob.
- 7a**: Lock ring and cap.
- 7b**: Indexing knob.
- 8**: Small pin or screw.
- 9**: Small pin or screw.
- 10**: Ultra-precision knob.
- 11**: Lock ring and cap.
- 12**: Indexing knob.
- 13**: Ultra-precision knob.
- 14**: Lock ring and cap.
- 15**: Indexing knob.
- 16**: Ultra-precision knob.
- 17**: Lock ring and cap.
- 18**: Indexing knob.
- 19**: Ultra-precision knob.
- 20**: Lock ring and cap.
- 21**: Indexing knob.

Labels for specific components:

- Ultra-precision knob
- Indexing knob
- Lock ring and cap

Part numbers: ti14447b, ti14945a

**Guns without Manifold**

This exploded view diagram illustrates the assembly of a gun without a manifold. The components are labeled as follows:

- 1**: Main gun body
- 2**: Pin
- 3**: Plug
- 4**: O-ring
- 5a**: Plug
- 5b**: O-ring
- 5c**: O-ring
- 5d**: Plug
- 6**: Pin
- 7**: Plug
- 7a**: Plug
- 7b**: Plug
- 10**: Plug
- 11**: Plug
- 14**: Plug
- 15**: Plug
- 21**: Plug

The diagram shows the gun body (1) with various ports and connections. The plug (2) is inserted into the top. The plug (3) is inserted into the side. The plug (4) is inserted into the bottom. The plug (5a) is inserted into the side. The plug (5b) is inserted into the side. The plug (5c) is inserted into the side. The plug (5d) is inserted into the side. The plug (6) is inserted into the top. The plug (7) is inserted into the side. The plug (7a) is inserted into the side. The plug (7b) is inserted into the side. The plug (10) is inserted into the side. The plug (11) is inserted into the side. The plug (14) is inserted into the side. The plug (15) is inserted into the side. The plug (21) is inserted into the side.

### Parts in Common

| Ref. | Part                                                   | Description                                                                                                                                                         | Qty. |
|------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1    | -----                                                  | BODY                                                                                                                                                                | 1    |
| 2    | 24C205                                                 | FLUID PACKING ASSEMBLY                                                                                                                                              | 1    |
| 3    | 119348                                                 | O-RING (included with Part 4)                                                                                                                                       | 1    |
| 4    | See Table                                              | NOZZLE, fluid (includes Part 3)                                                                                                                                     | 1    |
| 5    | See Table                                              | AIR CAP ASSEMBLY (includes Parts 5a-5d)                                                                                                                             |      |
| 5a   | -----                                                  | AIR CAP                                                                                                                                                             | 1    |
| 5b✓  | -----                                                  | O-RING                                                                                                                                                              | 1    |
| 5c✓  | -----                                                  | WASHER, UMHWPE                                                                                                                                                      | 1    |
| 5d   | -----                                                  | PIN, alignment                                                                                                                                                      | 1    |
| 6    | See Table                                              | NEEDLE assembly                                                                                                                                                     | 1    |
| 7    | 24C202                                                 | PISTON, needle stop (includes Parts 7a and 7b)                                                                                                                      | 1    |
| 7a   | -----                                                  | SCREW, set, 6-32 UNC x 1/16 in.                                                                                                                                     | 1    |
| 7b   | 117559                                                 | O-RING                                                                                                                                                              | 1    |
| 10   | 24C207                                                 | SPRING, compression                                                                                                                                                 | 1    |
| 11   | 24D065<br>24R133<br><br>24C204<br>24R134<br><br>24C203 | KNOB, fluid adjustment<br>Ultra-Precision<br>Ultra-Precision (for 24P993 and 24P994 only)<br>Indexing<br>Indexing (for 24P995 and 24P996 only)<br>Lock ring and cap | 1    |
| 14   | 120538                                                 | FITTING, tube, air line, 1/8 npt x 6 mm                                                                                                                             | 3    |
| 15   | 24C213<br>24D046                                       | FITTING, tube, fluid line, 1/8 npt x 6 mm<br>Nylon<br>Stainless steel                                                                                               | 2    |
| 21   | 289079                                                 | RETAINING RING, assembly (includes 5b and 5c)                                                                                                                       | 1    |
| 23   | 114141                                                 | TOOL, wrench, hex, 1/16, not shown                                                                                                                                  | 1    |
| 24   | 107157                                                 | TOOL, wrench, allen, 4 mm, not shown                                                                                                                                | 1    |
| 26   | 101821                                                 | TOOL, wrench, allen, 3/16, not shown (Models without manifold)                                                                                                      | 1    |
| 31   | 24C210                                                 | TOOL, wrench, metric, not shown                                                                                                                                     | 1    |
| 32   | 24C209                                                 | TOOL, nut driver, hex, 10 mm, not shown                                                                                                                             | 1    |
| 33   | 100139                                                 | PLUG, pipe, not shown, shipped loose (Models without manifold)                                                                                                      | 1    |

### Additional Parts for Models with Manifold

| Ref. | Part    | Description                                           | Qty. |
|------|---------|-------------------------------------------------------|------|
| 12   | 24C215  | MANIFOLD, gun (includes Parts 13, 14, 15, 19, and 20) | 1    |
| 13   | 106456† | O-RING, PTFE, white                                   | 2    |
| 16   | 24C206  | SCREW, mounting                                       | 2    |
| 17   | 24C208  | ROD, mounting (includes Part 18)                      | 1    |
| 18   | -----   | SCREW, cap, hex head                                  | 1    |
| 19   | 24C212  | SCREW, set socket, M8                                 | 2    |
| 20   | 112319† | O-RING, FX75, black                                   | 3    |
| 25   | 24C211  | PLUG, manifold, shipped loose                         | 1    |

----- Not sold separately.

✓ Included in Air Cap Seal Kit 289791. See **Repair Kits**, page 30.

† Included in Manifold O-Ring Kit 24D827. See **Repair Kits**, page 30.

# Repair Kits

| Spray Type   | Gun Part Number |                  | Nozzle Orifice Size<br>in. (mm) | Needle/Nozzle Kit<br>(Includes Items 4 and 6) | Item 4 Nozzle<br>(includes o-ring) | Item 6 Needle Assembly<br>(includes tip) | Item 5 Air Cap<br>(Includes seals and alignment pin) |
|--------------|-----------------|------------------|---------------------------------|-----------------------------------------------|------------------------------------|------------------------------------------|------------------------------------------------------|
|              | With Manifold   | Without Manifold |                                 |                                               |                                    |                                          |                                                      |
| Conventional | 24B857          | 24B877           | 0.028 (0.7)                     | 24D177                                        | 24D174                             | 24C191                                   | 24C182                                               |
| Conventional | 24B858          | 24B878           | 0.035 (0.9)                     | 24C198                                        | 24C187                             | 24C192                                   |                                                      |
| Conventional | 24M390*         | 24M392*          | 0.039 (1.0)                     | 24C221                                        | 24C219                             | 24C220                                   |                                                      |
| Conventional | 24B859          | 24B879           | 0.043 (1.1)                     | 24C199                                        | 24C188                             | 24C193                                   |                                                      |
| Conventional | 24B860          | 24B880           | 0.051 (1.3)                     | 24C200                                        | 24C189                             | 24C194                                   |                                                      |
| Conventional | 24B861*         | -----            | 0.059 (1.5)                     | 24D178                                        | 24D175                             | 24C195                                   |                                                      |
| HVLP         | 24B862          | -----            | 0.020 (0.5)                     | 24D302                                        | 24D296                             | 24C190                                   | 24C183                                               |
| HVLP         | 24B863          | 24B881           | 0.028 (0.7)                     | 24D179                                        | 24D176                             | 24C191                                   |                                                      |
| HVLP         | 24B864          | 24B882           | 0.043 (1.1)                     | 24D305                                        | 24D299                             | 24C193                                   |                                                      |
| HVLP         | 24B865          | 24B883           | 0.051 (1.3)                     | 24D306                                        | 24D300                             | 24C194                                   |                                                      |
| HiTEch       | 24B866          | 24B884           | 0.028 (0.7)                     | 24D303                                        | 24D297                             | 24C191                                   | 24D703                                               |
| HiTEch       | 24B867*         | 24B885*          | 0.039 (1.0)                     | 24C221                                        | 24C219                             | 24C220                                   |                                                      |
| HiTEch       | 24B868*         | 24B886*          | 0.059 (1.5)                     | 24C201                                        | 24D275                             | 24C195                                   | 24D704                                               |
| LVMP         | 24B869          | 24B887           | 0.020 (0.5)                     | 24D277                                        | 24D259                             | 24C190                                   | 24C184                                               |
| LVMP         | 24B870          | 24B888           | 0.028 (0.7)                     | 24D278                                        | 24D260                             | 24C191                                   |                                                      |
| LVMP         | 24B871          | 24B889           | 0.035 (0.9)                     | 24D279                                        | 24D261                             | 24C192                                   |                                                      |
| LVMP         | 24M391*         | 24M393*          | 0.039 (1.0)                     | 24C221                                        | 24C219                             | 24C220                                   |                                                      |
| LVMP         | 24P993          | 24P995           | 0.039 (1.0)                     | 24R001                                        | 24P999                             | 24C220                                   |                                                      |
| LVMP         | 24B872          | 24B890           | 0.043 (1.1)                     | 24D280                                        | 24D262                             | 24C193                                   |                                                      |
| LVMP         | 24B873          | 24B891           | 0.051 (1.3)                     | 24D281                                        | 24D263                             | 24C194                                   |                                                      |
| LVMP         | 24P994          | 24P996           | 0.051 (1.3)                     | 24R002                                        | 24R000                             | 24P998                                   |                                                      |
| LVMP         | 24B874*         | -----            | 0.059 (1.5)                     | 24D284                                        | 24D276                             | 24C195                                   |                                                      |
| Air Brush    | 24B875          | 24B892           | 0.028 (0.7)                     | 24C197                                        | 24C186                             | 24C191                                   | 24D705                                               |

\* Needle tip and nozzle exit constructed from tungsten carbide.

## Accessories

### Kit 24C216, Fittings (1/4 inch)

| Part   | Description                                   | Qty. |
|--------|-----------------------------------------------|------|
| 120388 | FITTING, tube, air line,<br>1/8 npt x 1/4 T   | 3    |
| 111157 | FITTING, tube, fluid line,<br>1/8 npt x 1/4 T | 2    |

### Kit 24D143, Robot Adapter Kit Fanuc Paint Mate 200

Compatible with and without manifold.

### Kit 24D008, Inlet Air Needle Valve

Includes needle valve and 6mm tube fittings.

### Kit 24D827, Manifold O-Rings

| Part   | Description         | Qty. |
|--------|---------------------|------|
| 106456 | O-RING, PTFE, white | 2    |
| 112319 | O-RING, FX75, black | 3    |

### HVLP Pressure Verification Kit 24C214

For use in checking air cap atomizing and fan pattern air pressure at various supply air pressures. Not to be used for actual spraying.

Install the kit air cap on the gun. Turn on the air to the gun and read the air pressure on the gauge.

**NOTE:** To be “HVLP compliant,” the atomizing and fan pattern air pressure must not exceed 10 psi (70 kPa, 0.7 bar).