# SERVICE MANUAL

ESPRESSO ENGINEERS

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# TANGO® UNO

# SOLO

# duo

# CONTENTS

ESPRESSO ENGINEERS

# SERVICE SCHEDULE

ESPRESSO ENGINEERS

| Coffee Consumption Per Week | Coffee Consumption Per Year | Number of Cups Per Day (1 cup = 10g) | Annual Meter Statement |
|---|---|---|---|
| Up to 40 lbs. | Up to 2,000 lbs. | Up to 250 | Up to 100,000 |

| Service Interval | Service Date | Total Cycle Count | Maintenance Level | | | | | Labor |
|---|---|---|---|---|---|---|---|---|
| Cycles or Months | Installed: | | A | B | C | D | E | Min. |
| 25,000 / 3 | | | | | | | | 60 |
| 50,000 / 6 | | | | | | | | 90 |
| 75,000 / 9 | | | | | | | | 60 |
| 100,000 / 12 | | | | | | | | 120 |
| 125,000 / 15 | | | | | | | | 60 |
| 150,000 / 18 | | | | | | | | 90 |
| 175,000 / 21 | | | | | | | | 60 |
| 200,000 / 24 | | | | | | | | 120 |
| 225,000 / 27 | | | | | | | | 60 |
| 250,000 / 30 | | | | | | | | 240 |
| 275,000 / 33 | | | | | | | | 60 |
| 300,000 / 36 | | | | | | | | 120 |
| 325,000 / 39 | | | | | | | | 60 |
| 350,000 / 42 | | | | | | | | 90 |
| 375,000 / 45 | | | | | | | | 60 |
| 400,000 / 48 | | | | | | | | 120 |
| 425,000 / 51 | | | | | | | | 60 |
| 450,000 / 54 | | | | | | | | 90 |
| 475,000 / 57 | | | | | | | | 60 |
| 500,000 / 60 | | | | | | | | OFF SITE |

| | |
|---|---|
| Model and Serial Number | Serial plates mounted to inner drawer panel (behind grounds drawer), and to left side of chassis (remove side panel). |
| Software Version | Power-cycle machine using [0↗1] key on control interface to display software version while booting (*e.g. W_195RLMN-6*). |
| Coffee Cycle Counter | Press [🕐] key to display coffee cycle counters and [+] key to toggle. |
| Unic Tango Cleaning Tablets | Coffee detergent tablets must be proprietary formula specific to Tango line. Use of non-specific Tango coffee detergent is to be discontinued immediately and documented in service notes section. Verify that at least one full container of tablets is on site at the operator's disposal. Request to order tablets (ref. 92025). |
| Auto Control Values | 1. Insert Technician's access card to slot of control interface and press [MENU].<br>2. Repeatedly press [+] key until *PRO. PACKING LEVEL* is displayed.<br>3. Hold [PRO] key for three seconds to gain access to pro packing sub-menu.<br>4. When display shows *LEV1=…*, press [MENU] key twice to return to root of menu and allow Auto Control 1 and 2 to cycle.<br>5. Values will display at the completion of Auto Control 2. Be prepared to quickly record the two separate sets of values, as they are displayed only briefly.<br>6. Review and ensure that the *TT (to)* value falls between 140 and 180 milliseconds.<br><br>*NOTE: Measured TT value must fall between 140 and 180 milliseconds. If value is outside of these parameters, please see TURNTABLE MOBILITY section outlined in Maintenance Level B and TURNTABLE ADJUSTMENT section outlined in Maintenance Level C.* |
| Brew Unit[s] Assessment | 1. Insert Technician's access card to slot of control interface and remain at root of menu.<br>2. Select the single espresso key from the left menu keypad.<br>3. Coffee cycle will begin and display will resemble to the following example:<br>4. *Ax1 IF= IT=*<br>5. Upon completion of packing, display will register values similar to the following, for the previous example:<br>6. *A120 IF=1.5 IT=2.0*<br>7. Record values and repeat procedure for double espresso key on the left menu keypad.<br>8. DUO ONLY: Repeat procedures for single and double espresso keys on the right menu keypad.<br>9. Repeatedly press [MENU] key until the current time is displayed (root of programming menu) and remove Technician's card.<br><br>*NOTE: Measured IF values must be less than 2.3amp and greater than 0.8amp resistance. If values are outside of these parameters, please see BREW UNIT[S] EXCHANGE section outlined in Maintenance Level C.* |
| Coffee Dosing/Group Flow<br><br>*IMPORTANT: calibration is always based on menu item most closely programmed as a double espresso per SCA specification:*<br>• *14-18gram coffee dose (ref. GR and VR in PS PRO. SPECIFIC)*<br>• *50-70mL water dose (ref. DR and DV in PS PRO. SPECIFIC)*<br>• *9-10bar pump pressure (ref. gauge while extraction is in process)*<br>• *Time: NO espresso menu item may take longer than 30sec. to completely extract.* | 1. Identify the red/regular double espresso key from left menu keypad most closely programmed per specification. If necessary, reference menu programming via *PS PRO. SPECIFIC*.<br>2. Purge all retained grounds from red/left grinder two times: select the previously identified double espresso key and allow grinder to complete coffee dosing (grinding) cycle before selecting the same key to cancel.<br>3. Prepare stopwatch and select the double espresso key to begin complete coffee cycle. Measure extraction time based on interval between pump/brew valve cycling on and then off.<br>4. Record initial extraction time.<br>5. Remove coffee grounds drawer from machine and empty.<br>6. Place grounds capturing vessel inside of the drawer after zeroing scale per vessel tare. |

| | |
|---|---|
| Coffee Dosing/Group Flow<br>(continued from previous page)<br>*(ref. TANGO 0040)* | 7. Replace coffee grounds drawer and place empty liquid measuring vessel[s] beneath left (and right for DUO) coffee spout[s].<br>8. Confirm that drawer is empty by holding [+] key for three seconds. Group flow (rinsing) cycle will commence. If group flow is less than 50mL from each unit, please see *FLOW RESTRICTION* section outlined in Maintenance Level C.<br>9. Measure and record group flow water debit results.<br>10. Measure pre-calibration red/regular/left grinder coffee dose: select the previously identified double espresso key and allow grinder to complete coffee dosing (grinding) cycle before selecting the same key to cancel.<br>11. Remove coffee grounds drawer, weight dry grounds in vessel, and record pre-calibration red/regular left grinder coffee dose.<br>12. Repeat steps 6-11 for green/decaf/right grinder, excluding step 9.<br>13. Complete procedures outlined in *Grinder Adjustment and Calibration* – see *TANGO 0040*.<br>14. Repeat steps 3-12 above for post-calibration dose and extraction time, excluding step 9.<br>15. Record post-calibration coffee doses and extraction times.<br>16. Document anomalies in the service notes section. |
| Pump Setting | 1. Access pump and manometer:<br>• UNO/SOLO: remove left and right side panels and cup warmer panels.<br>• DUO: remove right side panel and cup warmer panels.<br>2. Open manometer shut-off valve.<br>3. Select any espresso or Americano from any menu keypad and observe running pump pressure during extraction. The acceptable range is between 8.5bar and 10bar pressure, with no fluctuations while the pump is running.<br>4. Make adjustments/repairs, if necessary, and re-check.<br>5. Record pump setting and document any adjustments/repairs in service notes section.<br>6. *CLOSE MANOMETER SHUT-OFF VALVE PRIOR TO RE-PANELING.* |
| Water Treatment | Document treatment system make, model, and install/last service date. Take measurements of all listed water components post-filter. Record results and document any relatable observations/recommendations in the service notes section. |
| Programmed/Measured Temperatures | 1. Insert Technician's access card to slot of control interface and press [MENU] key.<br>2. Press [+] key three times to display *TEMPERATURES*.<br>3. Hold [PRO] key for three seconds to gain access to temperatures sub-menu.<br>4. Press [+] key to toggle between listed temperatures.<br>5. Record listed programmed temperatures.<br>6. Press [MENU] key two times to return display to the current time (root of programming menu) and remove Technician's card.<br>7. Press [🕐] key, then press [PRO] key to display measured temperatures.<br>8. Record listed measured (actual) temperatures.<br>9. If applicable, select any latte from any menu touchpad to dispense into a paper cup. Measure temperature of venturi heated milk and record results. |
| Drain Slope | Inspect drain line and ensure that it is positioned in a downward slope all the way to point of exit. There must be no 'p-traps' present at any point along the drainage path. Ensure that rear of machine is slightly elevated using factory shims (stacked two high) beneath each of the back legs. Forward leaning angle promotes proper draining within internal drainage manifold. |
| Coffee Hoppers | Close hopper gates and clear throat of grinders by purging two double espresso cycles from each grinder prior to removing hoppers for cleaning. |

| | |
|---|---|
| TURNTABLE MOBILITY | 1. Remove the cup warmer panels to access visual of turntable.<br>2. Ensure position of fork sensors are centered relative to diamond-shaped holes on plates.<br>3. Complete *AUTO-CONTROL VALUES* section of Maintenance Level A.<br><br>*NOTE: If turntable fails to align properly, and within the specified rotational times, please see TURNTABLE ADJUSTMENT section outlined in Maintenance Level C.* |
| BREW UNIT[S] FILTER EXCHANGE<br><br>*IMPORTANT: To avoid injury, remove coffee grounds drawer or drawer safety bypass from machine each time work is being performed on/near turntable.* | 1. With cup warmer panels removed: insert Technician's access card to slot of control interface and press [MENU] key (*MANUAL CONTROLS* will display).<br>2. Hold [PRO] key for three seconds to gain access to manual controls sub-menu (*RED GRINDER* will display flashing).<br>3. Press [-] key once to display *TURNTABLE* in flashing state, then press [PRO] key to access function (flashing will stop).<br>4. Ensure that coffee grounds drawer or drawer safety bypass is installed to machine to allow movement of turntable.<br>5. Using [+] and [-] keys, rotate the turntable port over each brew unit to gain access to filter[s] (ref. 33419) and proceed to exchange.<br>6. When exchange is complete, press [PRO] key to resume *TURNTABLE* to flashing state, then press [MENU] key twice to return to root of menu and remove card. |
| COFFEE DOSING FUNNEL | 1. With power off and cup warmer panels removed: remove coffee dosing funnel and wipe clean of coffee debris.<br>2. Clean coffee debris from turntable cover and inspect for wear prior to replacing dosing funnel. Document need for replacement in service notes section.<br>3. Replace paneling to machine. Do not resume power. |
| CLEANING CAP GASKET | 1. With power off: remove the coffee grounds drawer and cleaning cap.<br>2. Inspect threads of cleaning cap for damage. Document need for replacement in service notes section.<br>3. Lubricate internal seals and threads of cleaning cap using food safe silicon lubricant (e.g. Dow 111).<br>4. Replace cleaning cap and coffee grounds drawer and resume power to machine. |

# MAINTENANCE LEVEL C

UNIC ESPRESSO ENGINEERS

| *IMPORTANT: Complete the following procedures prior to completing procedures listed in Maintenance Level A and accompanying Service Data Form.* | |
|---|---|
| COOLING/DEPRESSURIZATION | 1. Press [0⁄1] key on control interface to put machine into *STOP*/standby mode and remove cup warmer panels, coffee grounds drawer, and internal access panel.<br>2. Unplug thermistor (green connection) from top of service boiler and replace with 300Ω resistor (ref. 44705).<br>3. DUO ONLY: repeat step 2 for coffee boiler.<br>4. Press [0⁄1] key on control interface to resume power and allow Auto Control cycle to complete.<br>5. Insert Technician's access card to slot of control interface and press [MENU] key (*MANUAL CONTROLS* will display).<br>6. Hold [PRO] key for three seconds to gain access to manual controls sub-menu (*RED GRINDER* will display flashing).<br>7. Repeatedly press [+] key to display *EV HOT WATER* in flashing state, then press [PRO] key to access function (flashing will stop).<br>8. Repeatedly hold [+] key to cycle hot water valve (increments of appx. ten seconds) until boiler[s] have <u>completely</u> exhausted and no pressure remains.<br>9. Press [PRO] key to return display to *EV HOT WATER* in flashing state, then repeatedly press [+] key to display *EV WATER ADDING L.* in flashing state.<br>10. Press [PRO] key to access function (flashing will stop), then repeatedly hold [+] key to cycle left unit coffee bypass valve (increments of appx. ten seconds) until water from left spout runs lukewarm.<br>11. DUO ONLY: Press [PRO] key to return display to *EV WATER ADDING L.* in flashing state, then press [+] key once to display *EV WATER ADDING R.* in flashing state and repeat step 10 for right unit cooling.<br>12. Close water supply valve to machine and cycle either Americano bypass valve one final time to relieve pressure.<br>13. Press [PRO] key to resume current bypass to flashing state, then press [MENU] key twice to return to root of menu and remove card.<br>14. Press [0⁄1] key on control interface to put machine into *STOP*/standby mode and switch machine off at main breaker (lower left of drain tray).<br>15. Vent low-pressure valve to release any remaining pressure from service boiler. |
| BREW UNIT[S] EXCHANGE<br>*(ref. Tango 0050)* | 1. With machine cooled/switched off and coffee grounds drawer and internal access panel removed: proceed to exchange brew unit[s] (ref. FR1541 or FR1010) following procedures outlined in *Tango Brewing Piston* – see *Tango 0050*.<br><br>*IMPORTANT: Lubricate o-ring of new/rebuilt brew unit[s] using food safe silicon lubricant (e.g. Dow 111) and ensure that the coffee outlet[s] have a <u>minimum</u> of ¼" clearance from top of unit[s] housing slide channel prior to installation. Clean all sensor connections with dielectric spray.*<br><br>*DUO ONLY: Coffee outlet of right brew unit <u>must</u> be moved to slide channel to right side of down position sensor prior to installation.* |
| LOW-PRESSURE VALVE | With machine cooled/switched off and cup warmer panels removed: proceed to exchange low-pressure valve (ref. 27200). |
| CLEANING SYSTEM | With power off and coffee grounds drawer removed: remove cleaning cap and inspect for tablet remnants. Tablets must <u>completely</u> dissolve during unit[s] cleaning process. Evidence of un-dissolved tablets indicates a problem with the coffee cleaning system. If necessary, replace or clear obstruction from coffee cleaning EV/coffee cleaning check-valve. |
| CLEANING CAP GASKETS EXCHANGE | 1. With power off and coffee grounds drawer and cleaning cap removed: remove the worn flat gasket (ref. 27800) and o-ring (ref. 27907) from inside the cleaning cap. |

| | |
|---|---|
| CLEANING CAP GASKETS EXCHANGE (continued from previous page) | 2. Lubricate replacement flat gasket and o-ring using food safe silicon lubricant (e.g. Dow 111) and place into cleaning cap. Lubricate and inspect threads of cleaning cap for damage. Document need for replacement in service notes section. |
| WATER INLET FILTER | With power and water supply valve to machine off and right side panel removed: remove knurled water inlet filter cap and replace filter (ref. CN96B) and o-ring (ref. 83501). |
| COFFEE DOSING FUNNEL | 1. With power off and cup warmer panels removed: remove coffee dosing funnel and wipe clean of coffee debris.<br>2. Clean coffee debris from turntable cover and inspect for wear prior to replacing dosing funnel. Document need for replacement in service notes section.<br>3. Replace paneling to machine. Do not resume power. |
| *IMPORTANT: REMEMBER TO REPLACE THERMISTOR CONNECTIONS AND RESUME WATER SUPPLY TO MACHINE WHEN SERVICE IS COMPLETE!*<br><br>*Complete the following procedures only <u>if necessary</u>, and following the completion procedures listed in Maintenance Levels A and/or B. Record Service Data Form section values <u>after</u> making the following corrections and document initial results leading to corrective measure in service notes section.* | |
| FLOW RESTRICTION | With machine cooled/switched off and water supply valve to machine off and cup warmer panels removed: proceed to exchange, or clear obstruction from, the respective unit's flow restrictor (ref. 23117) and filter (ref. 25400). |
| TURNTABLE ADJUSTMENT<br>*(ref. also Tango 0060)*<br><br>*IMPORTANT: To avoid injury, remove coffee grounds drawer or drawer safety bypass from machine each time work is being performed on/near turntable.* | 1. With machine powered/fully-heated and cup warmer panels and coffee grounds drawer and internal access panel removed: insert Technician's access card to slot of control interface and press [MENU] key (*MANUAL CONTROLS* will display).<br>2. Hold [PRO] key for three seconds to gain access to manual controls sub-menu (*RED GRINDER* will display flashing).<br>3. Press [-] key once to display *TURNTABLE* in flashing state, then press [PRO] key to access function (flashing will stop).<br>4. Install coffee grounds drawer safety bypass to allow movement of turntable.<br>5. Using [+] and [-] keys, rotate the turntable to allow access to screws of thrust bearing tension-locking clamp.<br>6. Remove coffee grounds drawer safety bypass to disable movement of turntable.<br>7. Loosen clamp screws and make required adjustment to thrust bearing tension nut.<br>8. Retighten clamp screws and install coffee grounds drawer safety bypass to allow movement of turntable.<br>9. Press [PRO] key to resume *TURNTABLE* to flashing state, then press [MENU] key twice to return to root of menu and allow Auto-Control to cycle with Technician's access card installed.<br>10. Review *TT (to)* value, displayed at the completion of Auto Control cycle, and ensure that this value falls between 140 and 180 milliseconds.<br>11. Repeat listed steps in this section until specified values are reached and position of fork sensors are centered relative to diamond-shaped holes on plates.<br><br>*NOTE: Also see Tango Turntable Service for further details, including photo references – see Tango 0060* |

# SERVICE DATA FORM

UNIC ESPRESSO ENGINEERS

| | |
|---|---|
| Site: | Service Company: |
| Site Address: | Service Company Address: |
| | |
| | |
| Site Contact: | Service Technician: |
| Site Contact Signature: | Service Technician Signature: |

| Service Date: | Time Started: | Time Completed: |
|---|---|---|

| |
|---|
| Model: |
| Serial Number: |
| Software Version: |

| Coffee Cycle Counter | | |
|---|---|---|
| Left Unit: | Right Unit: (Duo only) | Total: |

Unic Tango Cleaning Tablets (ref. 25925) on site? [ Y ] [ N ]

| Auto Control Values | | | |
|---|---|---|---|
| L1 | L2 | L3 | L4 |
| amp=<br>imp= | amp=<br>imp= | amp=<br>imp= | amp=<br>imp= |
| TT | (to) | (from) | |
| Tr | (to) | (from) | |

| Brew Unit[s] Assessment | | | | | | | |
|---|---|---|---|---|---|---|---|
| Left Unit | | | | Right Unit (Duo only) | | | |
| 1 Cup | | 2 Cup | | 1 Cup | | 2 Cup | |
| IF: | IT: | IF: | IT: | IF: | IT: | IF: | IT: |

| Coffee Dosing | | | |
|---|---|---|---|
| Left Grinder (Red) | | Right Grinder (Green) | |
| Pre-calibration: grams | Extraction Time: seconds | Pre-calibration: grams | Extraction Time: seconds |
| Post-calibration: grams | Extraction Time: seconds | Post-Calibration: grams | Extraction Time: seconds |

| Group Flow | |
|---|---|
| Left Unit: milliliters | Right Unit: (Duo only) milliliters |

Pump Setting: (bar)

| Water Treatment System: |
|---|
| Date of Install or Date of Last Service: |

| Water Component | Minimum Value | Maximum Value | Measured Value |
|---|---|---|---|
| Total Dissolved Solids | 50ppm | 125ppm | |
| Total Hardness | 3gpg | 5gpg | |
| pH | 6.5 | 7.5 | |
| Free Chlorine | -- | 0.05ppm | |
| Total Chlorine | -- | 0.1ppm | |
| Flow Rate | 1gal/min | -- | |
| Line Pressure | 30psi | 100psi | |

| Programmed Temperatures | | | | |
|---|---|---|---|---|
| TV: | TG: | TC: | TVS: | Venturi: N/A |
| Measured Temperatures | | | | |
| TV: | TG: | TC: | TVS: | Venturi: |

Drain slope verified? [ Y ] [ N ]

Coffee hoppers cleaned? [ Y ] [ N ]

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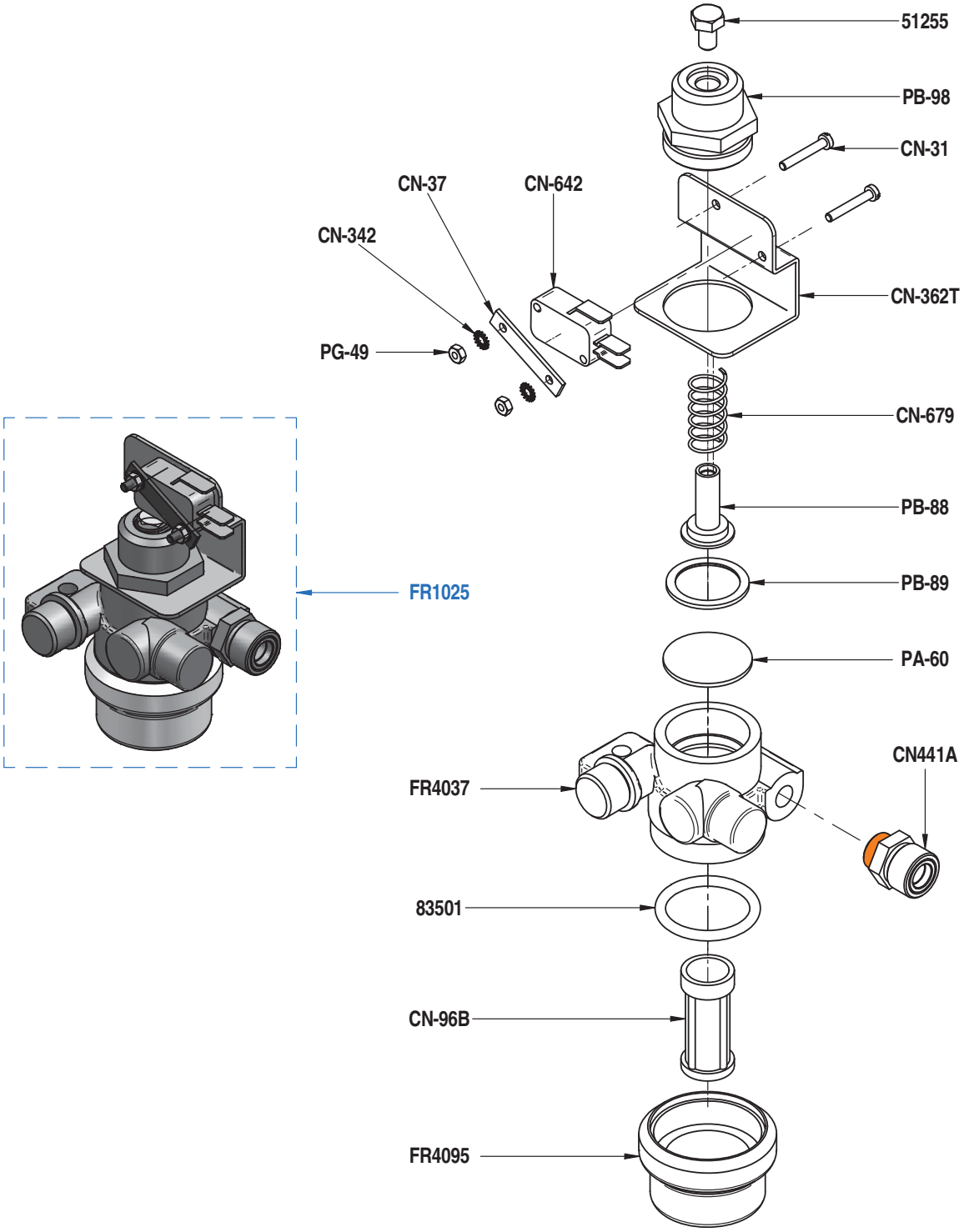
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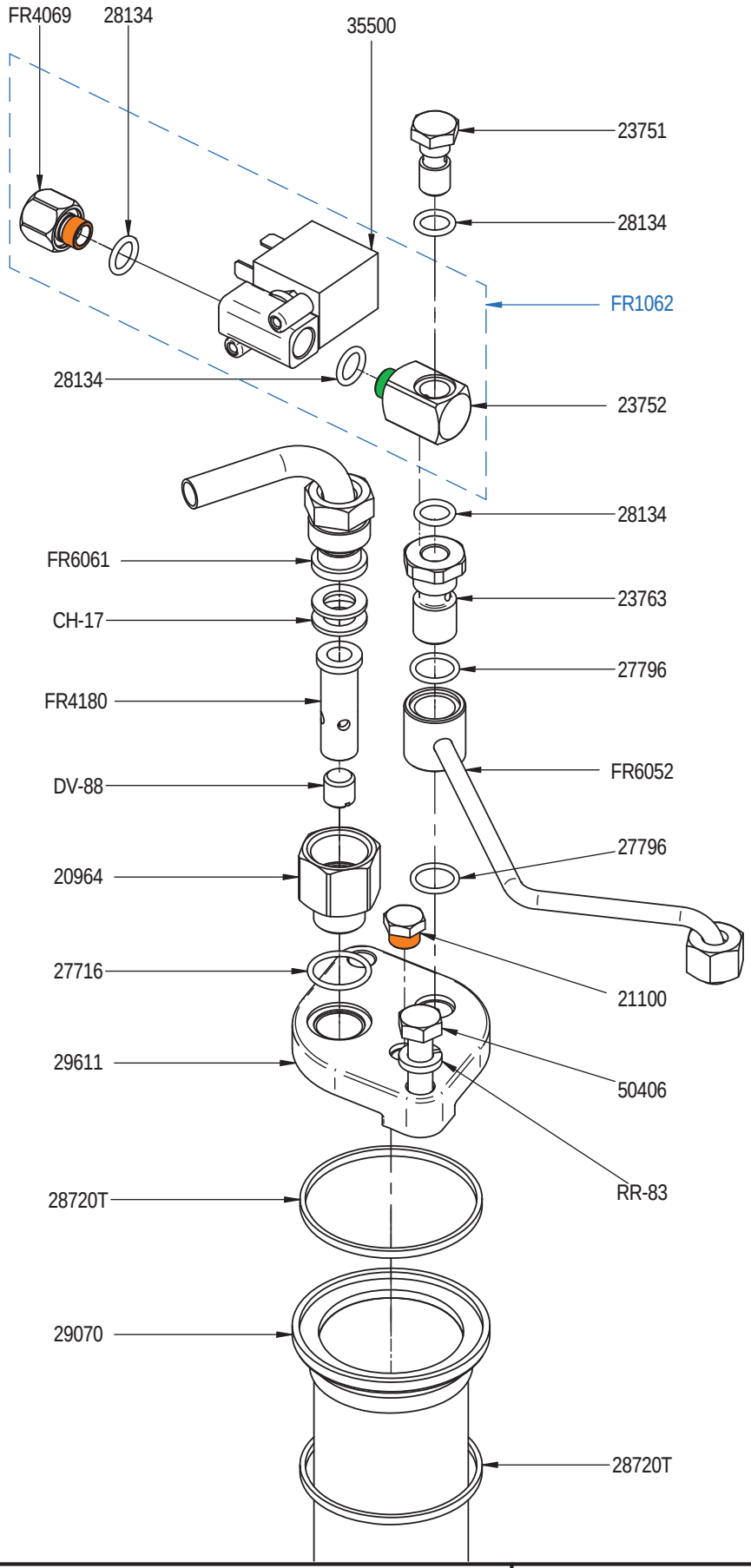
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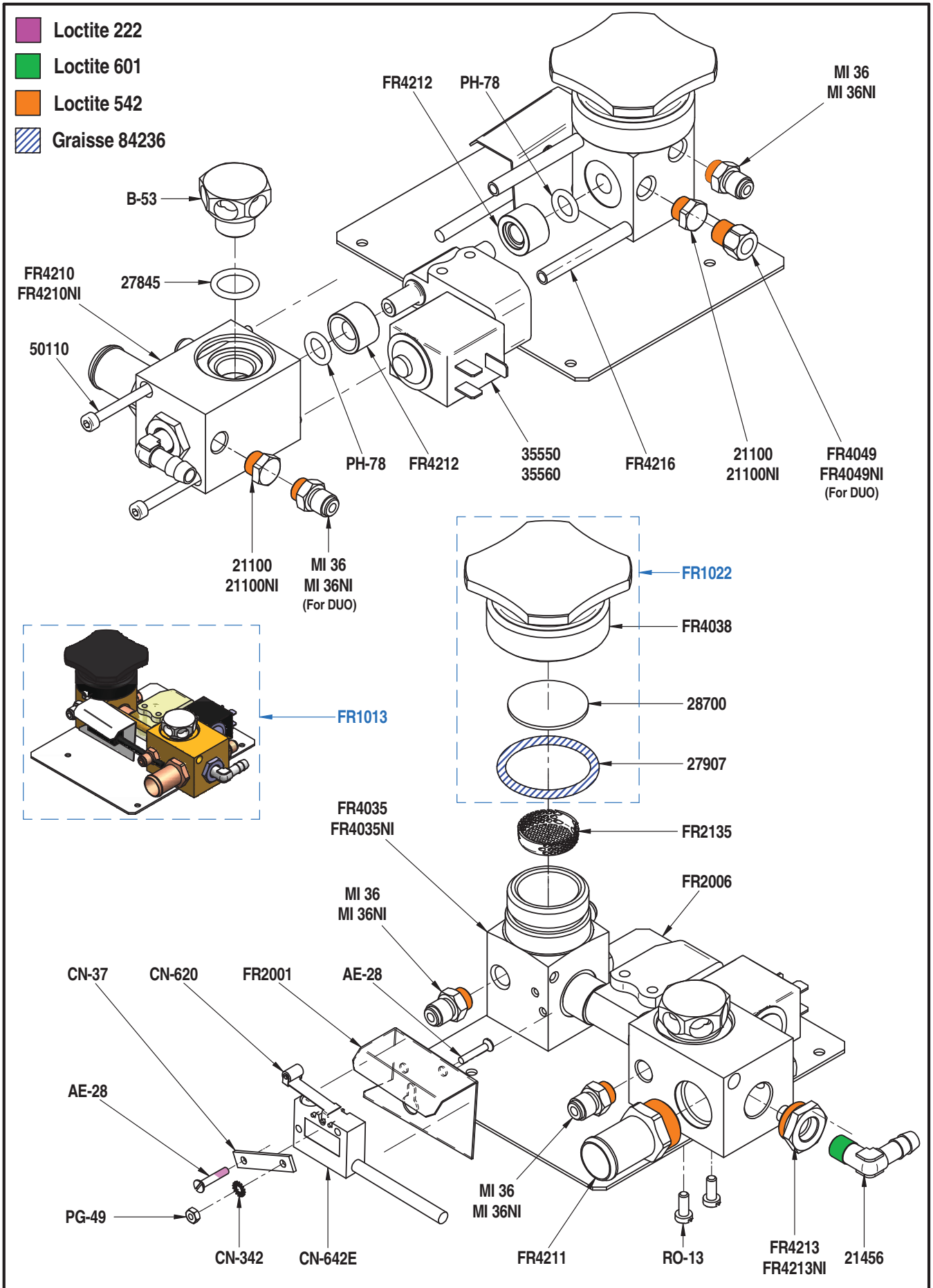
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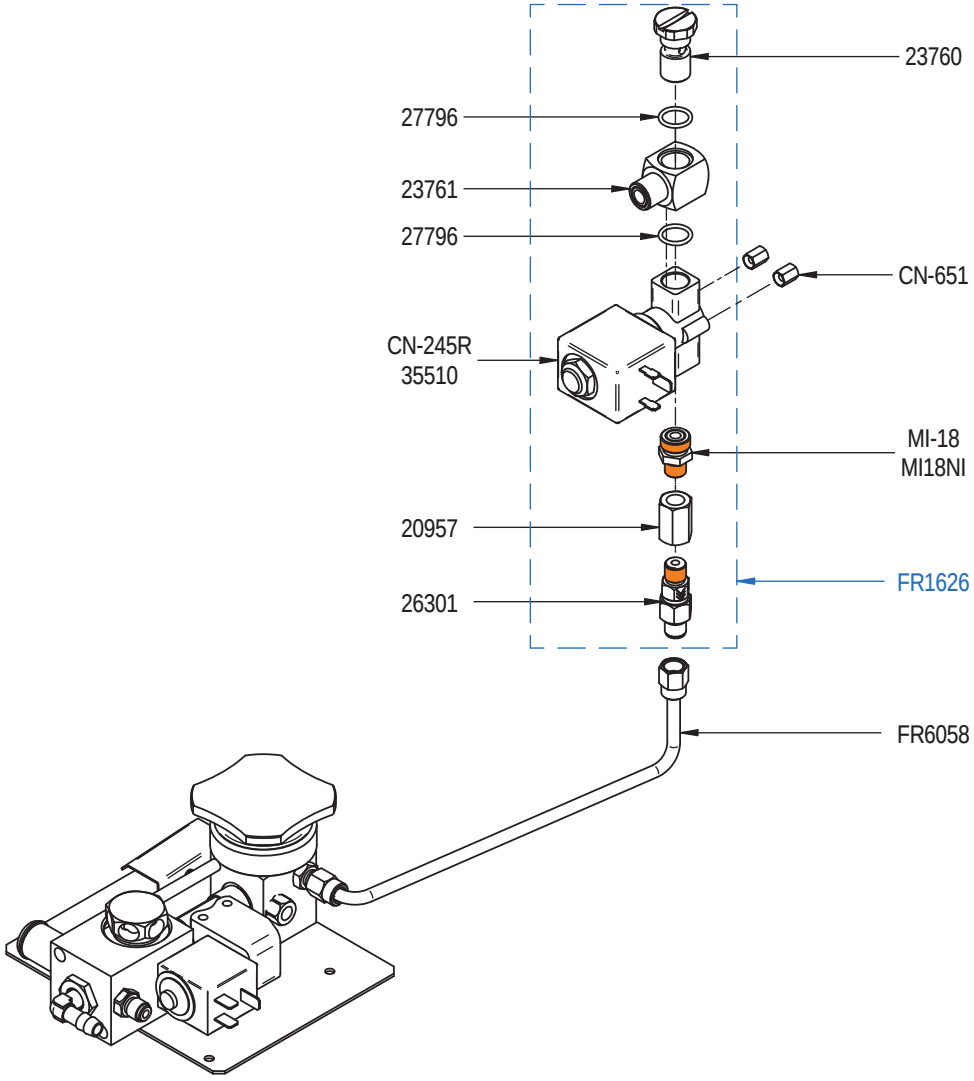
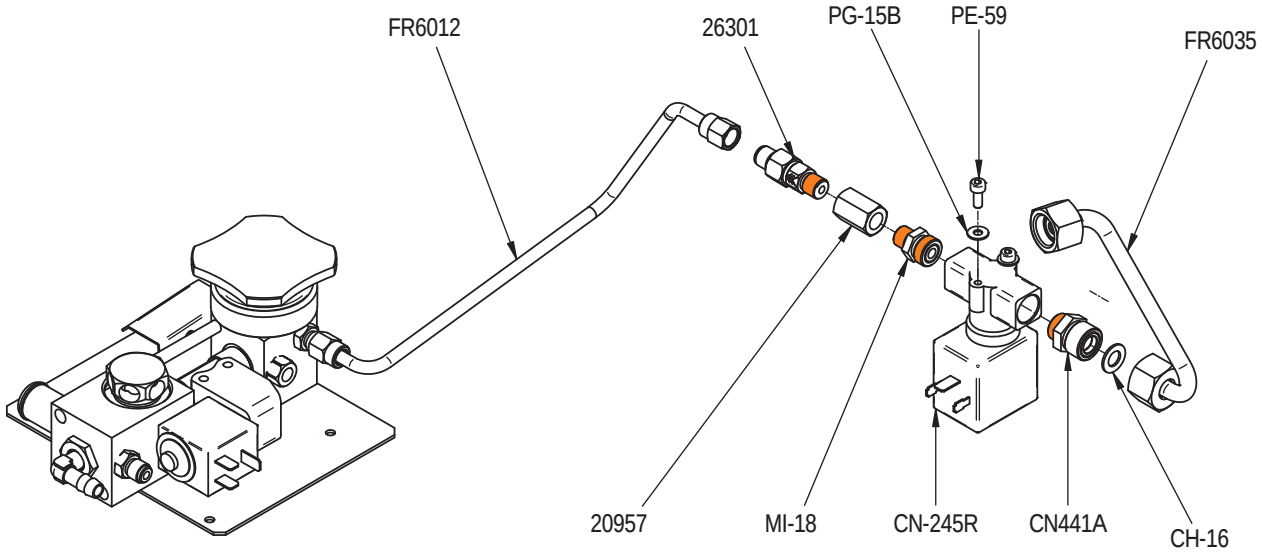



SOLO & UNO

DUO

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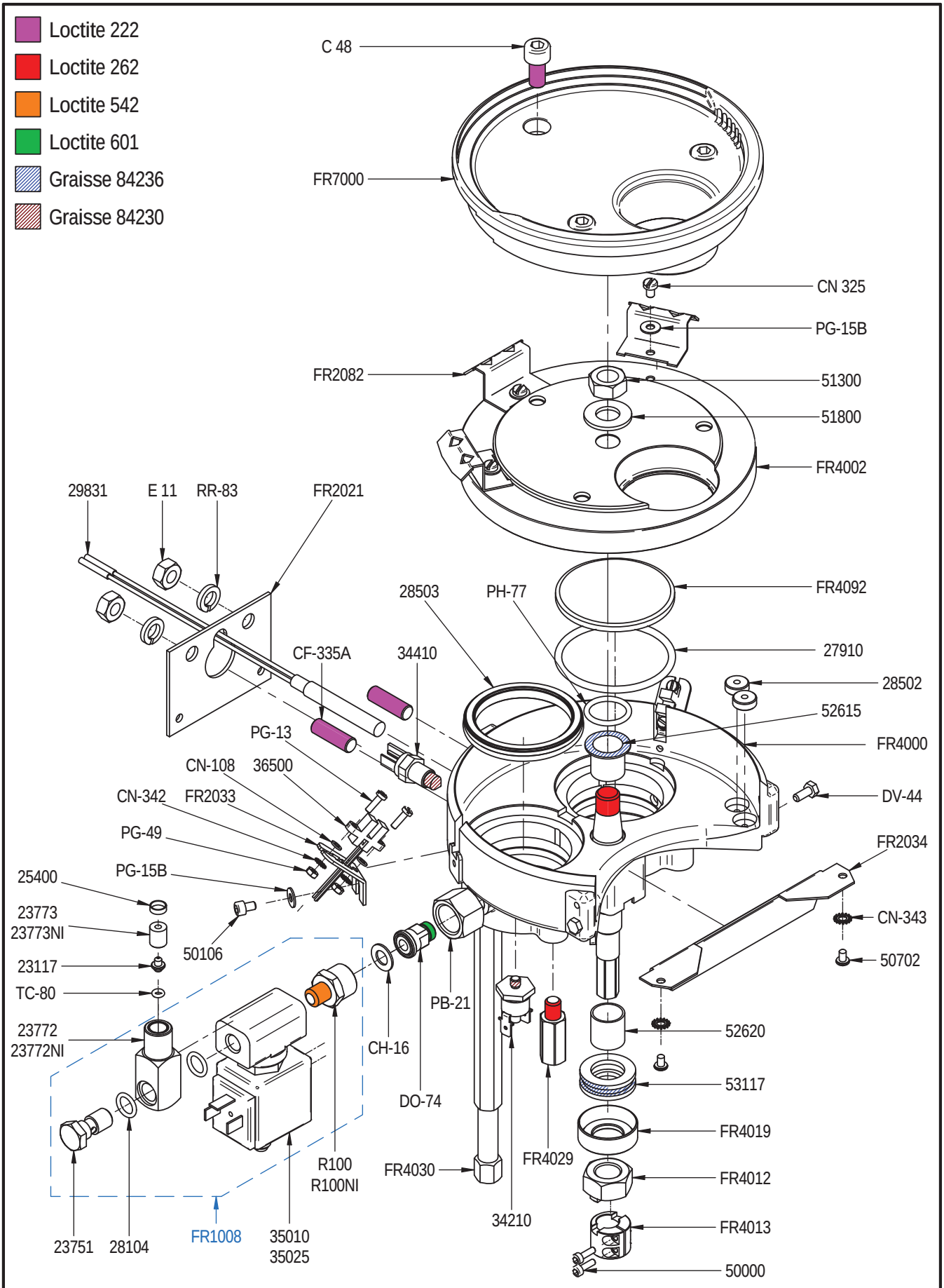
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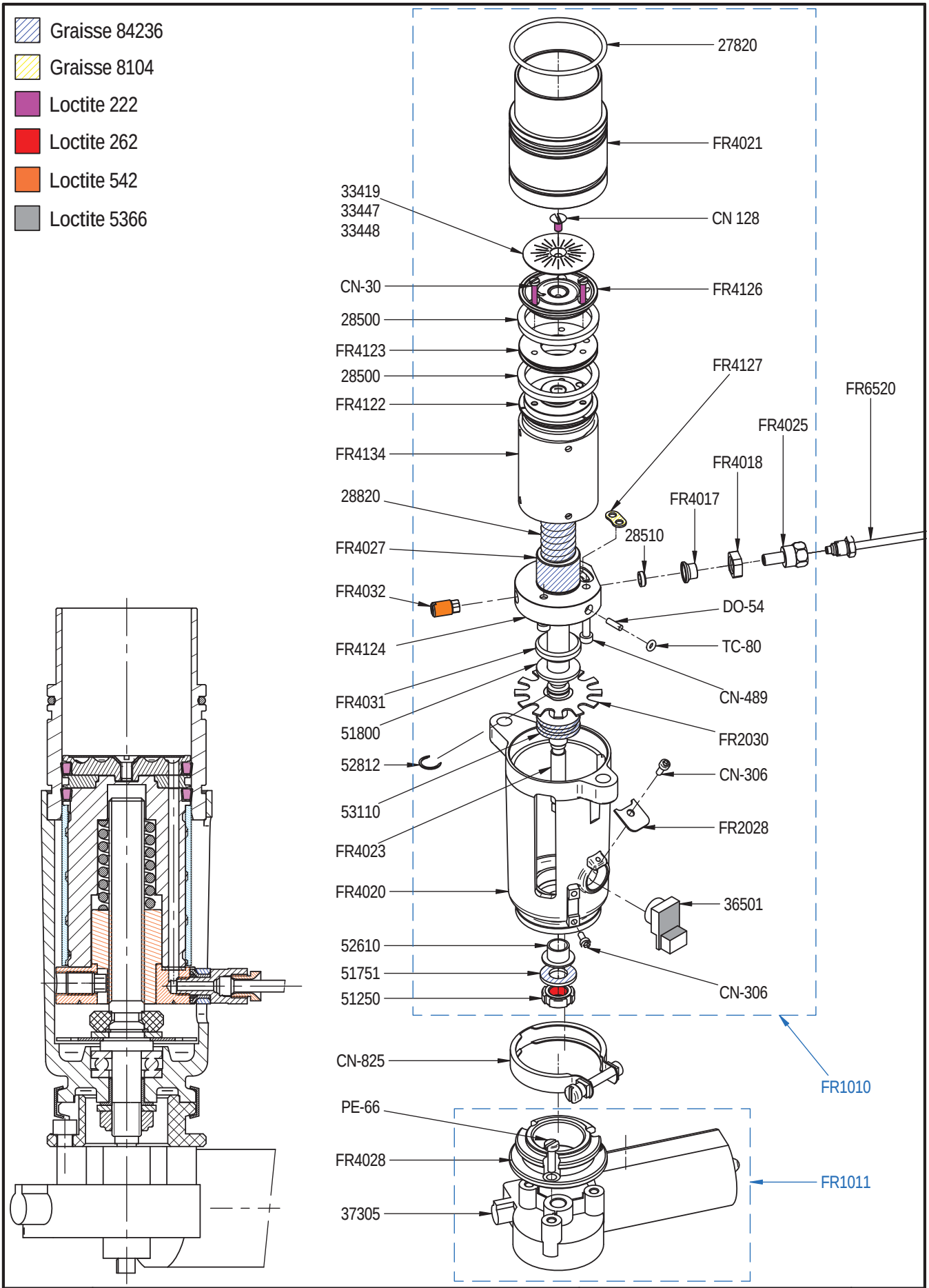
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FR1011
37305

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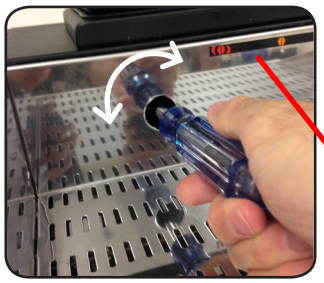
## Grinder Adjustment & Calibration

***Step 1: Adjust the grind fine or coarse for best extraction time.***

***Step 2: Weigh and enter ground coffee amount.***

## **Adjust Grinders for best extraction:** Each PM visit



Adjust the grind coarse or fine for a good extraction time.
(Usually 20-30 seconds for a double shot)

Purge grinder of 2 double espressos after each adjustment.

*Adjustments are opposite for each grinder*

*Turn counter-clockwise for finer left (red) grinder.*

*Turn clockwise for finer right (green) grinder.*

## **Calibrate Grinder Dose:** After <u>each</u> adjustment of the grinders.

Weigh and enter coffee amount of 2 sample cycles during calibration

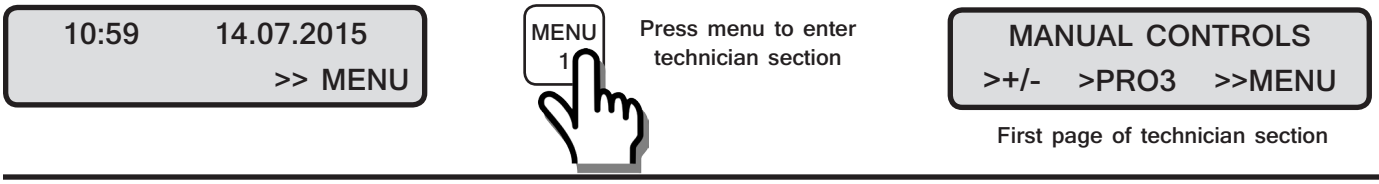
**Tools needed:**
Scale acurate to 0.1 grams
Masking tape
2 Paper cups

| RED GRINDER SETTING |
| --- |
| Control >PRO3 >>MENU |

Compete instructions start on next page:

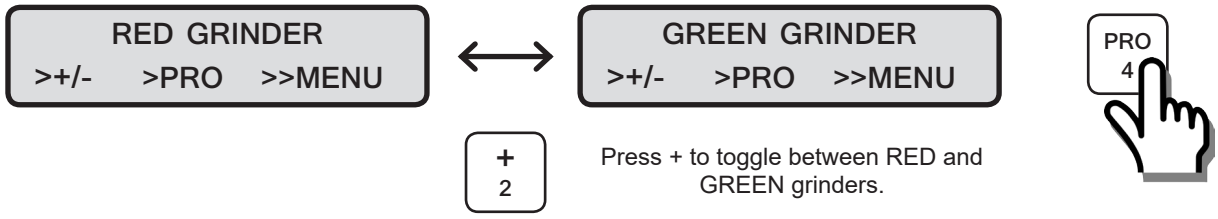
# Weigh and record ground coffee amount

## Insert Technician card and go to Technician Section:

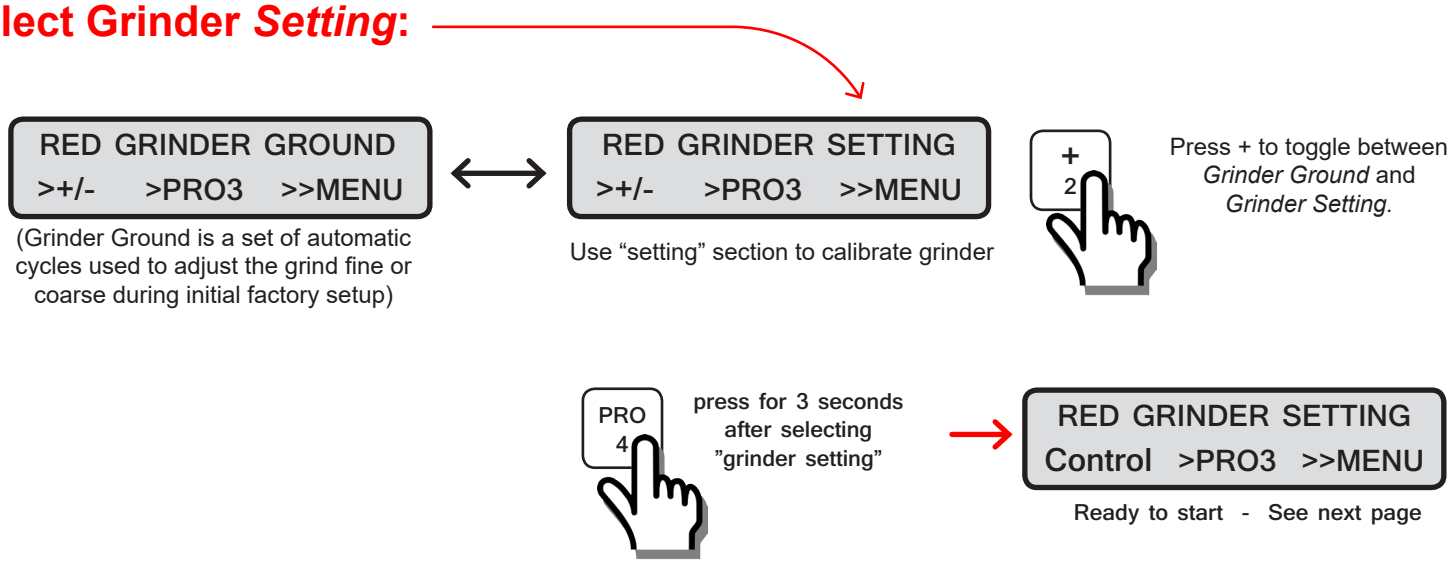



## Scroll to Grinder Setting Section:


## Select RED or GREEN Grinder:




## Select Grinder *Setting*:



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RED GRINDER SETTING
Control >PRO3 >>MENU

Calibration starting screen for the Red grinder

*See previous page for step by step instructions to this starting point*


Tape a cup in the back of the drawer about 1" below the top

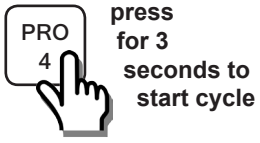

"0" scale with another empty cup


Insert the empty cup into the taped cup


Replace the drawer with both cups in place


Hold the ***pro*** button for 3 seconds to start the test

RED GRINDER SETTING
Control >PRO3 >>MENU




**press for 3 seconds to start cycle**

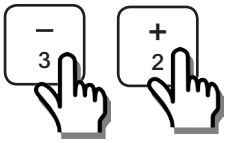
*Turntable will cycle 2 times before grounds fall into cup!*


Remove and weight the cup with grounds

RED GRD. SET.1 M1=1s
H1=4.7 G1=4.4

RED GDR G1=4.4 gr.
WEIGH +/- PRO >>MENU

Wait for 2nd screen
**Enter new grind weight**
with + & - buttons




*Each calibration cycle has 2 samples: one short grind time and one long grind time.*

**Press Pro to go to 2nd test grind**

2nd grind and weigh cycle:

RED GRINDER SETTING 2
Control >PRO3 >>MENU


Empty and replace the measuring cup


Start the 2nd test cycle

PRO 4 press for 3 seconds to start cycle

*Turntable will cycle 2 times before grounds fall into cup!*

Weight the grounds from the 2nd cycle:


RED G.SET.2 M2=30.0
H2= 17.7 G2=12.9

↓ 3 seconds ↓

RED GDR G2=12.4 gr.
WEIGH +/- PRO >>MENU

Wait for 2nd screen
Enter new grind weight with
+ & - buttons

– 3 + 2

PRO 4 Press Pro to confirm and save

RED GRINDER SETTING
NEW SETTING STORED

## Repeat process with the Green (right, decaf ) grinder and reset power to machine when calibration is complete.

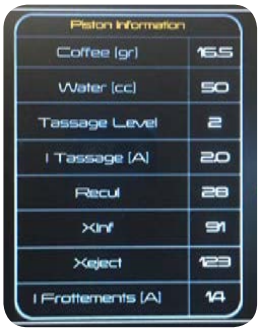
# Piston Evaluation / Piston Exchange

# Tango ACE / STP

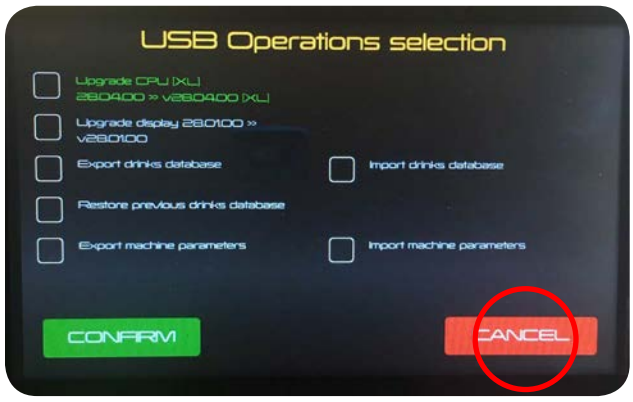
*Piston Amp draw test*

**The piston must be replaced if it draws more than 2.3 amps.**

Insert USB key

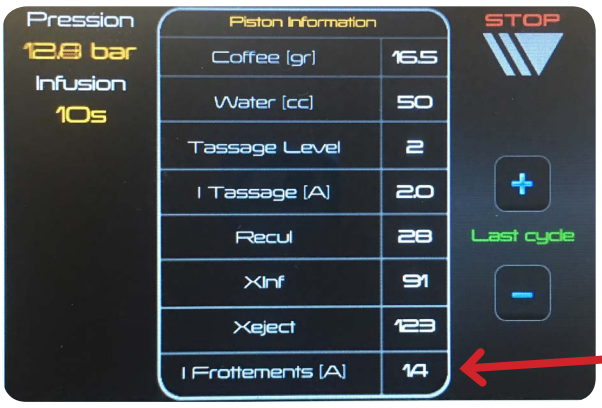



*Piston information is displayed while each drink is pouring with the USB key installed*




Insert USB, Press Cancel


Press Single or Double
to run a test cycle




Piston Information Screen

Free running piston friction
(without coffee)
Range: 0.8Amps - 2.3 Amps

1.4 Amps shown

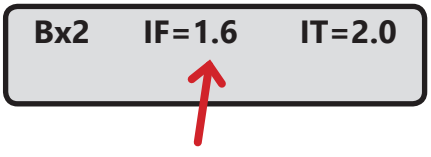
**The piston must be replaced if it draws more than 2.3 amps.**

*Piston information is displayed while each drink is pouring with Technician Card inserted*



Press Single or Double
to run a test cycle

Free running piston friction
(IF - without coffee)
Range: 0.8Amps - 2.3 Amps




1.6 Amps shown

# Tango all versions

*Piston Water flow test*

*Record value on Service Data Form*

**Measure the water flow through the Piston during the spout rinsing cycle.**

***Clean or replace the Piston if flow is restricted.***

Remove and replace grounds drawer to start the rinsing cycle.


Press and Hold YES for 3 seconds to start the rinsing cycle

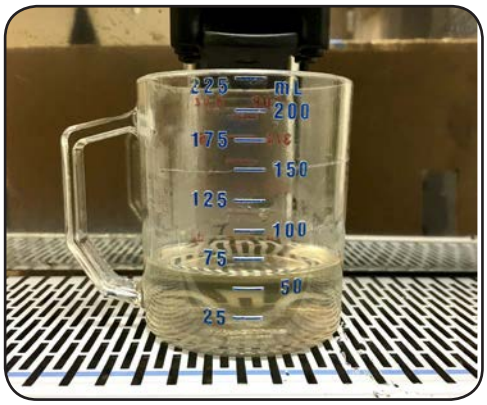

Press and Hold + for 3 seconds to start the rinsing cycle

**Ace / STP:**
**20 Second Flow**
**~225 ml rinse**

←

**UNO / SOLO:**
**7 Second Flow**
**~60 ml rinse**

→




180-250 ml = Normal flow

150-200 ml = Slight restriction, run a cleaning cycle and test again

Less than 150 ml = Piston clogged. Remove piston to clean or replace.

50-70 ml = Normal flow

45-50 ml = Slight restriction, run a cleaning cycle and test again

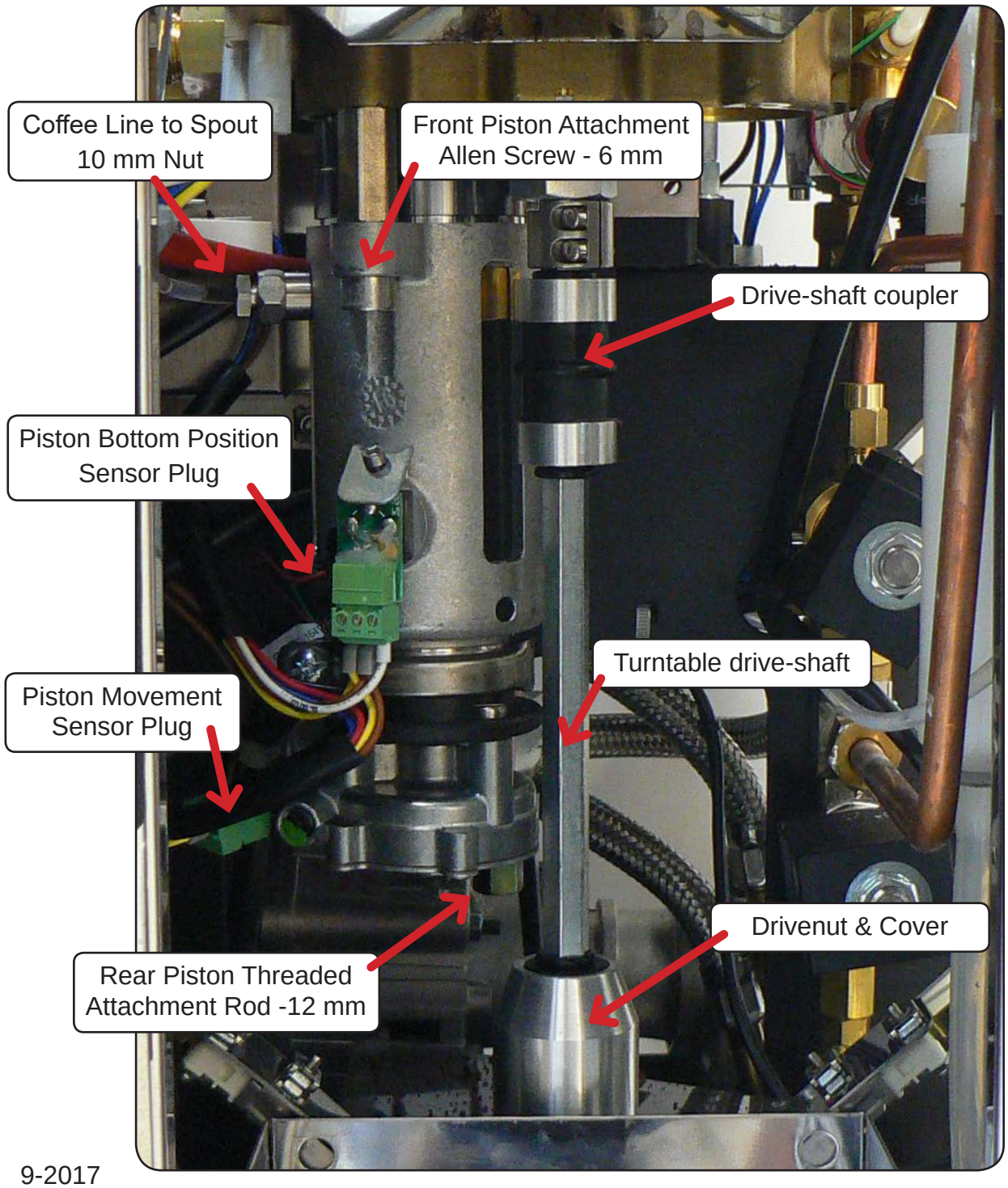
Less than 45 ml = Piston clogged. Remove piston to clean or replace.

# Tango Brewing Piston Exchange

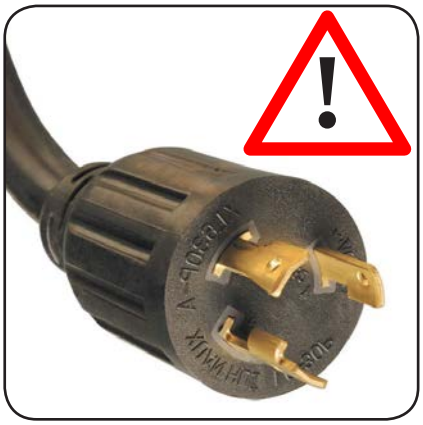
## Tango UNO/SOLO - ACE/ST

Tools needed:

- Flat Blade Screwdriver
- 10 mm wrench
- 12 mm wrench
- 6 mm Allen Wrench



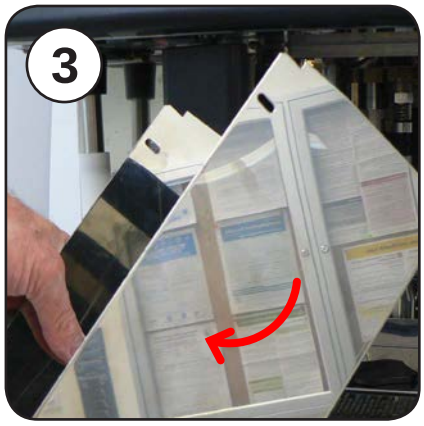
# Tango Brewing Piston Exchange



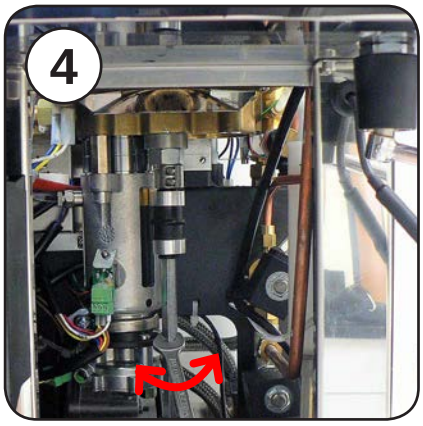
Unplug Machine


Remove Grounds Drawer

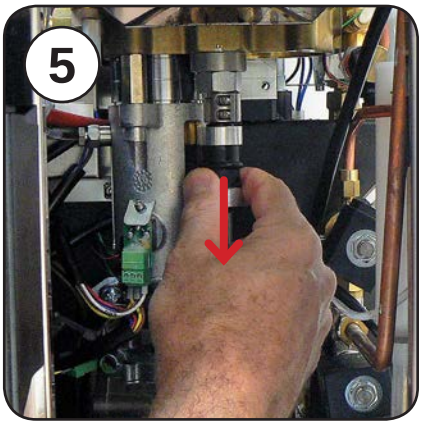

Remove the 4 side screws from the shroud panel



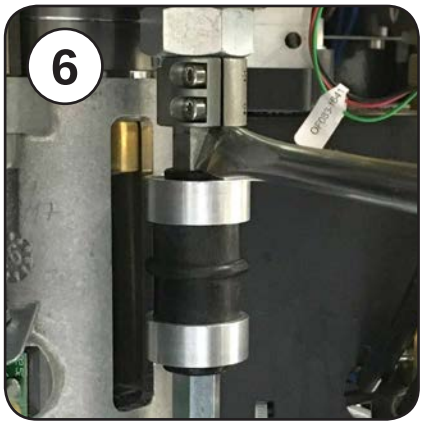

Remove the Shroud Panel



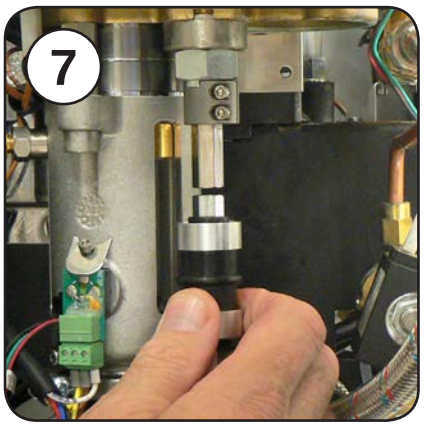

Relieve tension on Turn-table shaft by rocking it with a 10 mm wrench



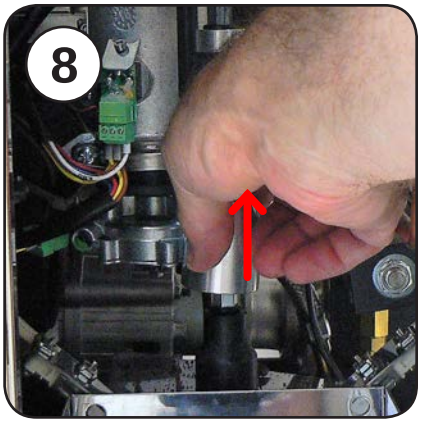

Slide uppercoupling down




Use a flat screwdriver to push coupling down if nec-essary

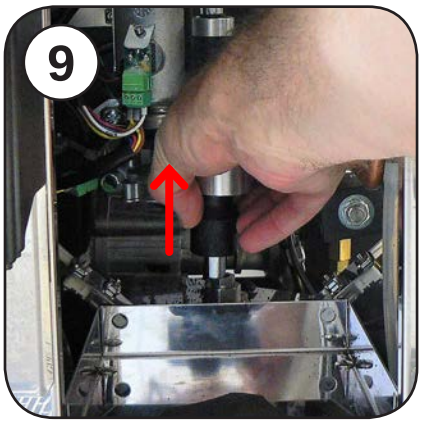



Turntable shaft released



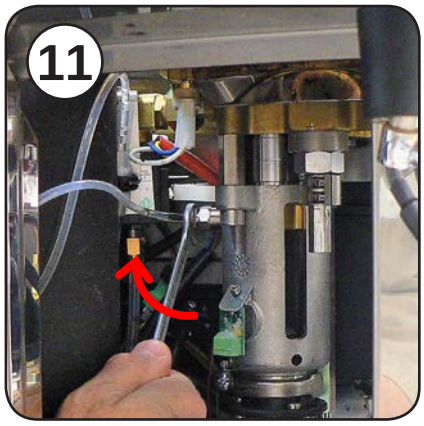

Lift aluminum reinforcement cover from lower coupling

# Tango Brewing Piston Exchange

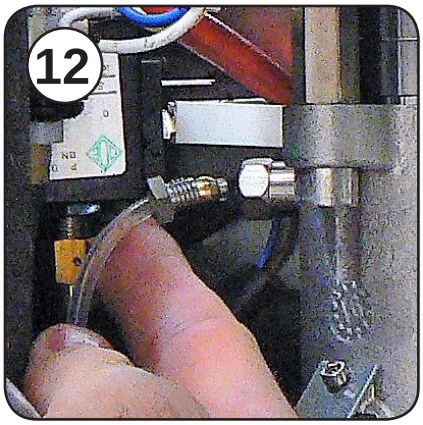



Lift nylon drive nut from lower coupling

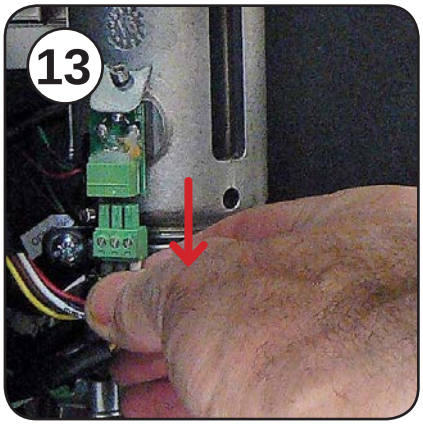

Remove Turntable drive-shaft



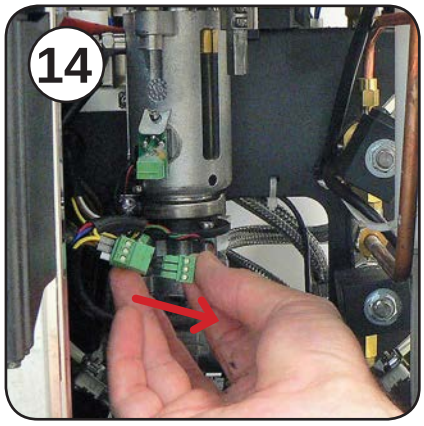

Remove line to spout
*10 mm compression fitting*



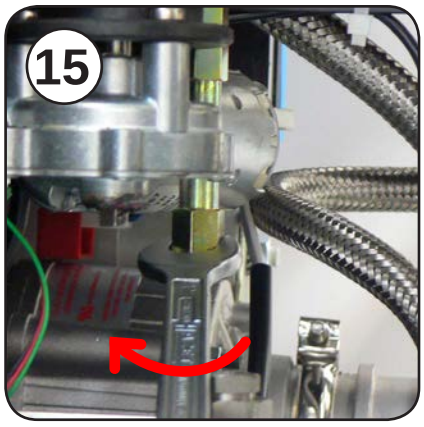

Coffee output line to spout



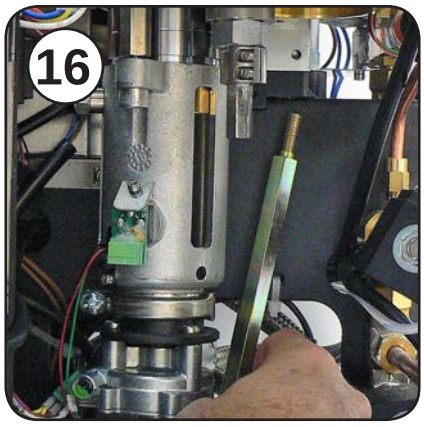

Unplug Piston lower position sensor



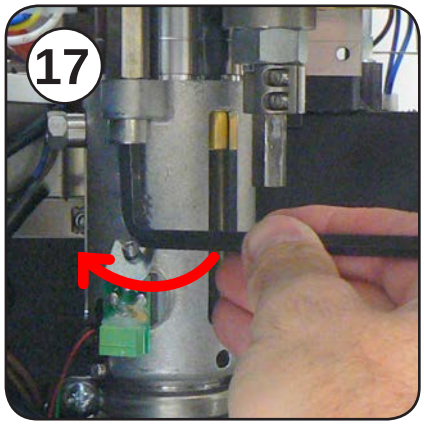

Unplug Piston Movement Sensor Plug




Unscrew rear mounting post - 12 mm wrench

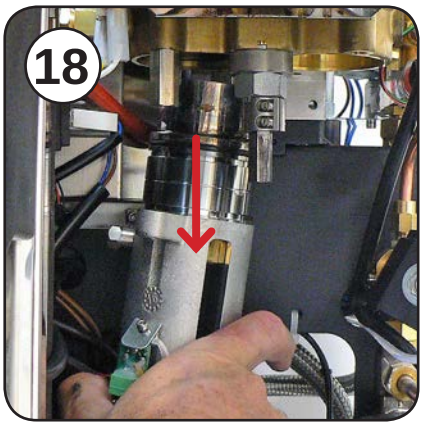



Remove rear mounting post



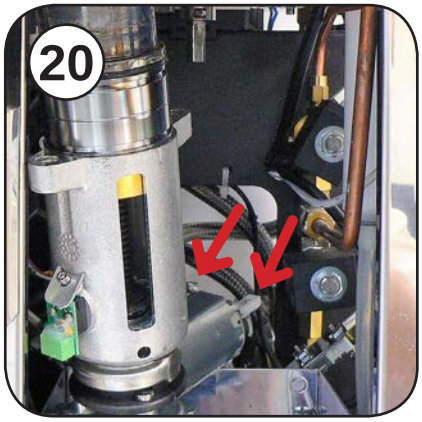

Remove front mounting bolt - 6 mm Allen

# Tango Brewing Piston Exchange

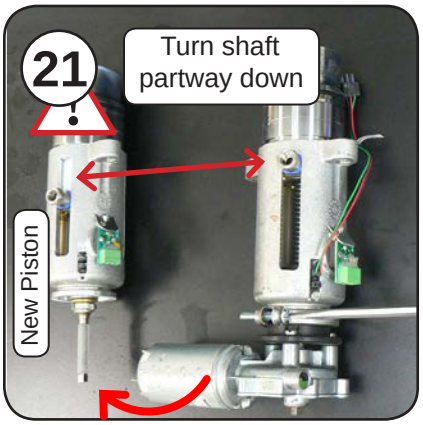



Slide piston down

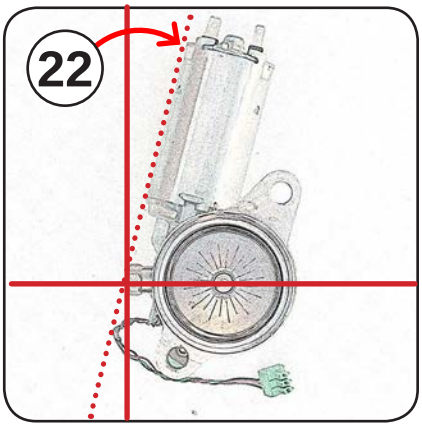

Rotate to the right to remove




Remove piston halfway
Unplug piston motor wires

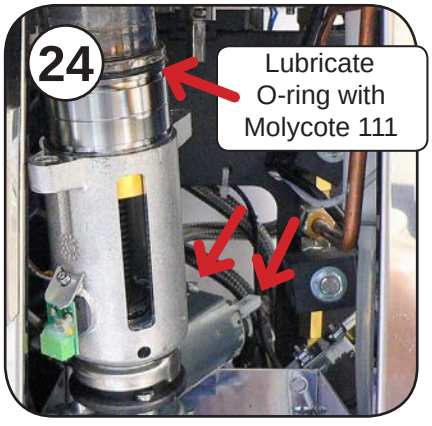



Transfer Motor
*Rotate shaft of new Piston part-way down first!*

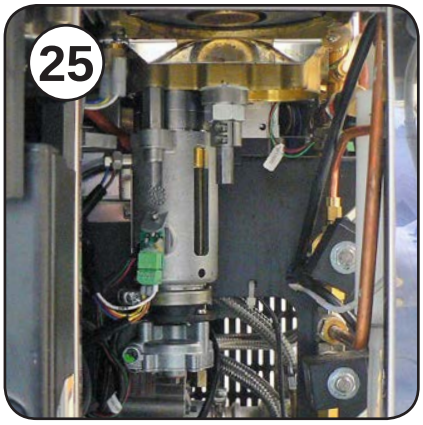



Orient motor at this angle

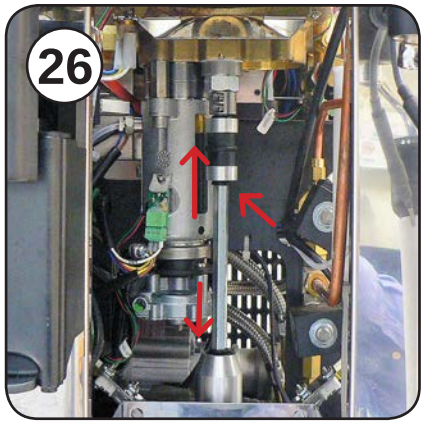

Clamp must be on the left
with the screw facing out
Tighten screw firmly




Reattach motor wires!
*Polarized 1/8' & 1/4" plugs*




Reinstall Piston
Tighten screws, Attach
plugs & Coffee Line




Replace Turntable shaft
Slide coupler up
Slide O-ring up to notch

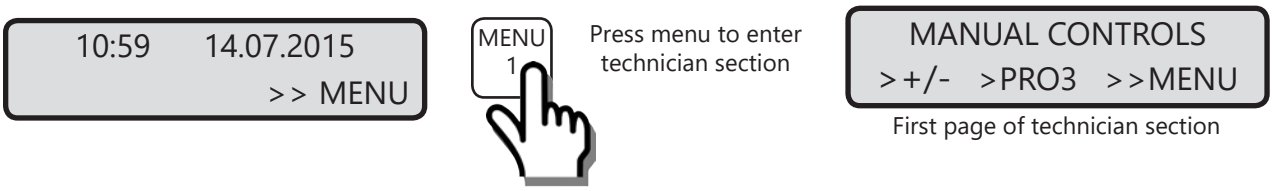
# UNO / SOLO Piston Calibration

*Auto Control 2 (Manual piston calibration)*

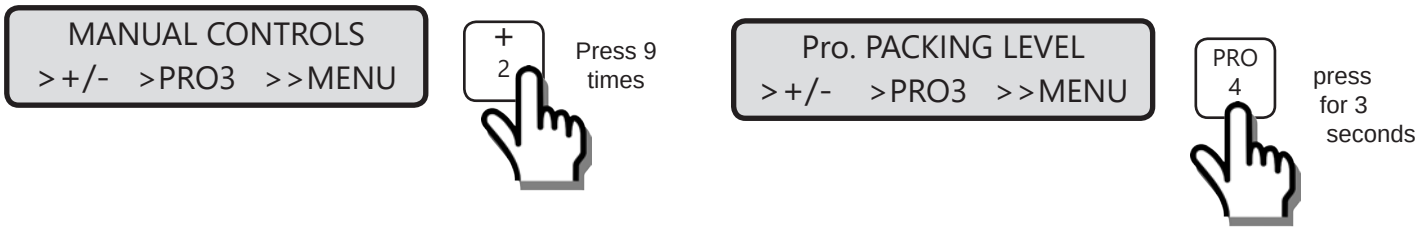
Calibrate after changing piston

Ensures tamping levels are accurate

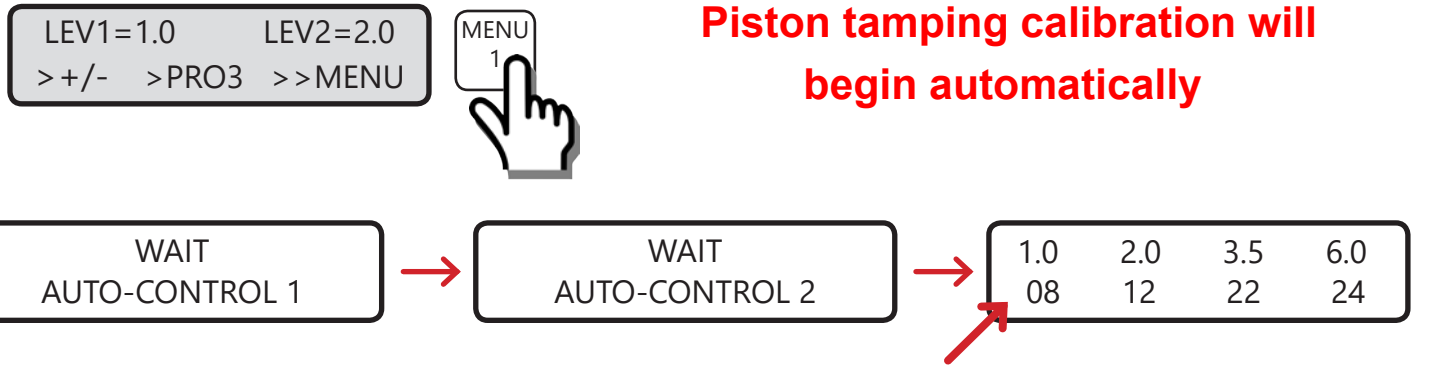
## Insert Technician card and go to Technician Section:




## Scroll to Packing Level screen:




## Press Menu twice to Exit




## Re-Check piston amp draw, run any deink with technician card in place:

# Tango Brewing Piston Exchange
## *ACE / STP Piston Calibration*

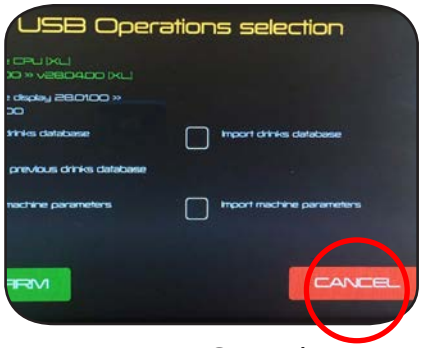
The Tango ACE / STP automatically calibrates the piston tamping pressure after each cleaning cycle.

This adjusts for changes in the piston friction and the motor power.

---

**Manually calibrating the Piston without a cleaning cycle:**
(Must be completed after installing a new piston)

Insert USB key




Press Cancel


Press Menu


Press OK


Press Maintenance


Press Component Test

**Component Test Screen**

Piston Calibration starts automatically as soon as you exit this screen.

Each of the 4 tamping levels is calibrated one-by-one.


Component Test Screen
Press Home to Exit

# Tango Turntable Service

*Every 2 years*

*(Or if leaking from underside of Turntable)*

## Tango UNO/SOLO - ACE/ST

Tools needed:

- Flat Blade Screwdriver
- 7 mm wrench
- 10 mm wrench
- 22 mm wrench
- 6 mm Allen wrench
- 2.5 mm Allen wrench

1. Remove the Brewing Piston
2. Remove the Turntable
3. Clean the Coffee Dosing & Turntable area
4. Install new Seals and Friction Pads under the Turntable
5. Repack the Turntable Bearing Grease
6. Adjust the tension on Turntable Bearing (turntable speed)



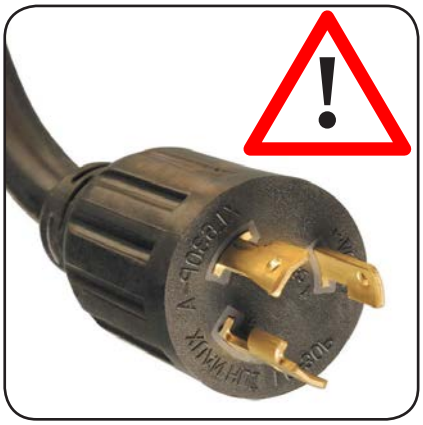
**ACE / ST**

**UNO / SOLO**

**The Turntable speed (TT) should be between 120ms -180ms**

# Tango Turntable Service

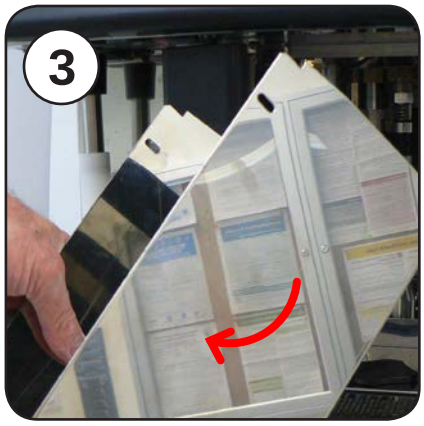
## *Access Turntable*



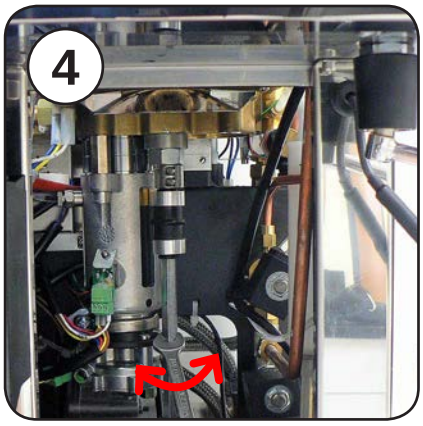
Unplug Machine


Remove Grounds Drawer

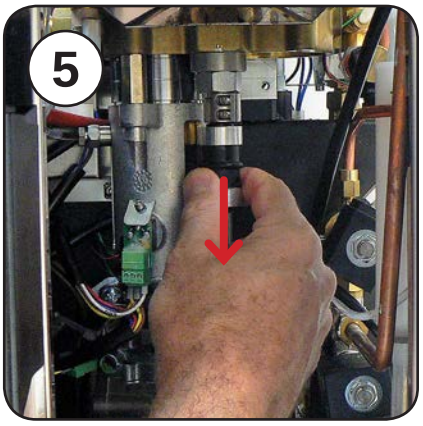

Remove the 4 side screws from the shroud panel



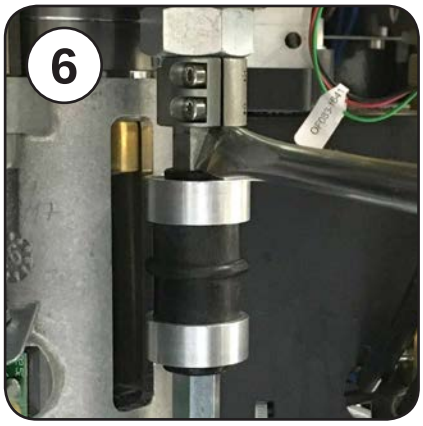

Remove the Shroud Panel



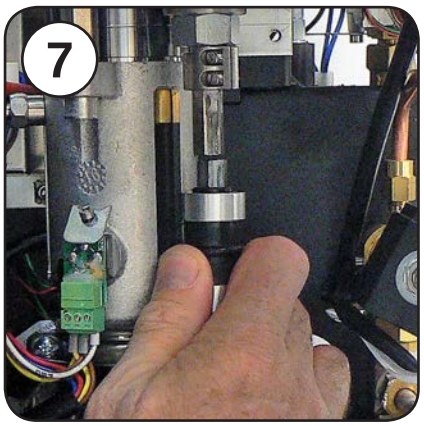

Relieve tension on Turn-table shaft by rocking it with a 10 mm wrench



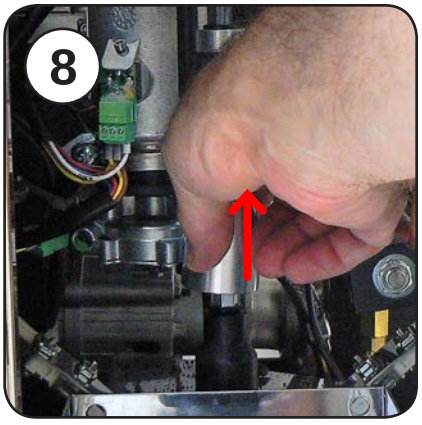

Slide the upper coupling down



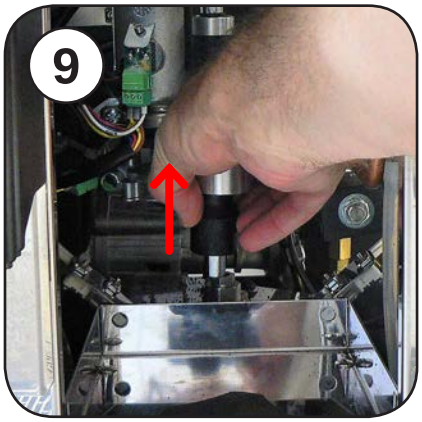

Use a flat screwdriver to push coupling down if nec-essary




Turntable shaft released

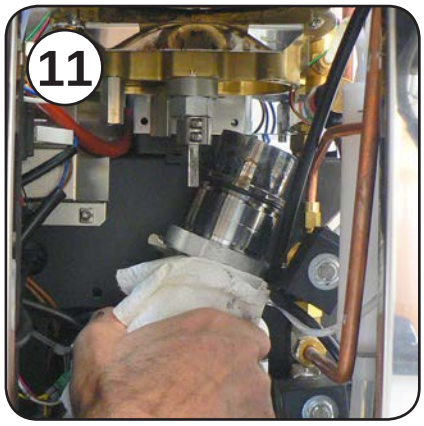



Lift aluminum reinforcement cover from lower coupling



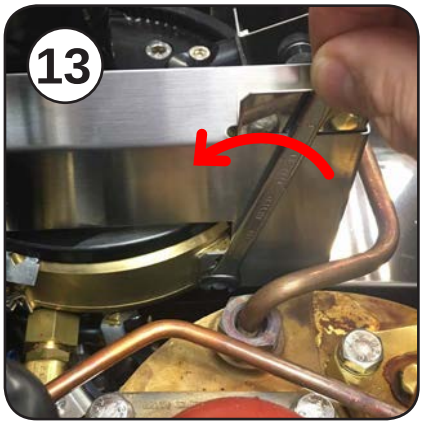

Lift lower coupling from gearbox


Remove Turntable drive-shaft



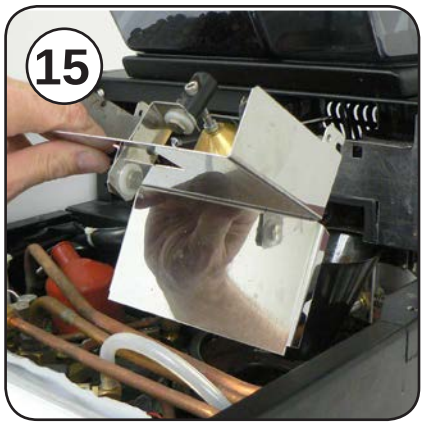

Remove the piston at this time to allow better cleaning if needed.
*See Piston Exchange Instructions*


Remove Coffee Funnel
Press spring latch in while pulling funnel straight out




Remove side shrouds
Loosen 7 mm bolt first
*Do Not remove bolt*


Lift both side shrouds straight up



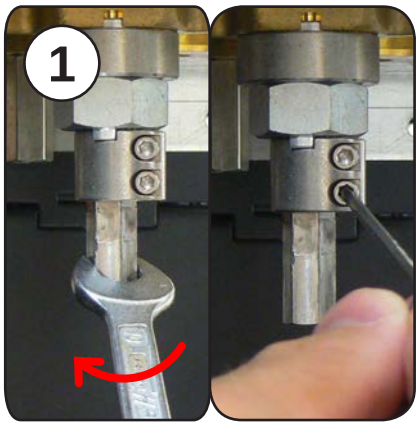

Remove Ejector bell assembly


Remove the three 6 mm Allen screws from the turntable cover

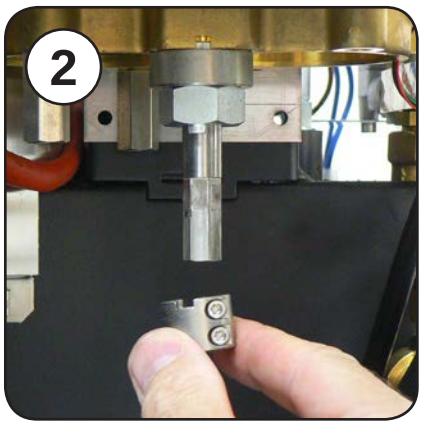

Lift Turntable cover off
*Clean cover with soapy water*

# Tango Turntable Service

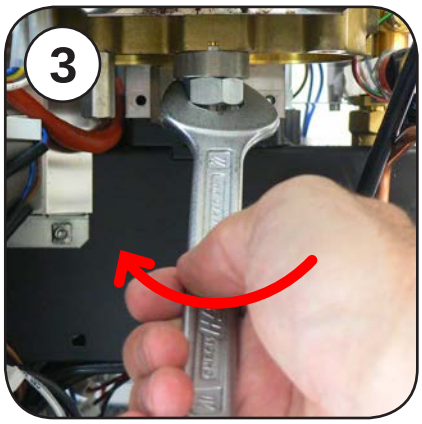
## *Remove Turntable*



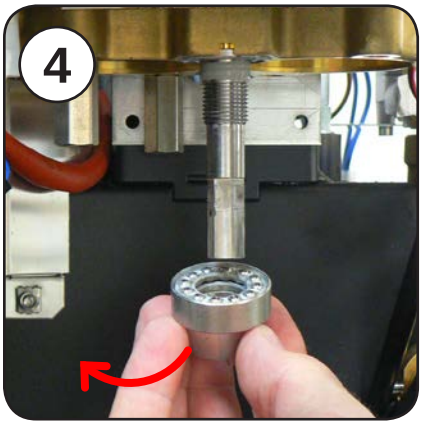

Loosen 2.5 mm turntable lock screws
*(Rotate shaft first if needed)*




Remove locking collar

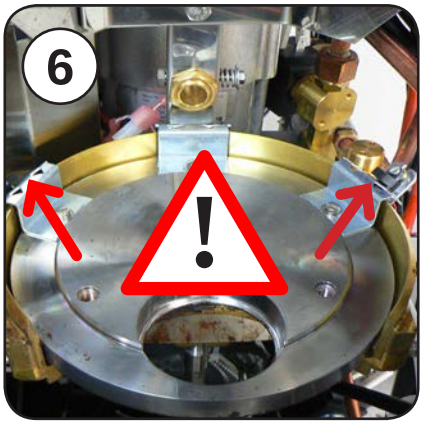



Remove 22 mm adjustment nut

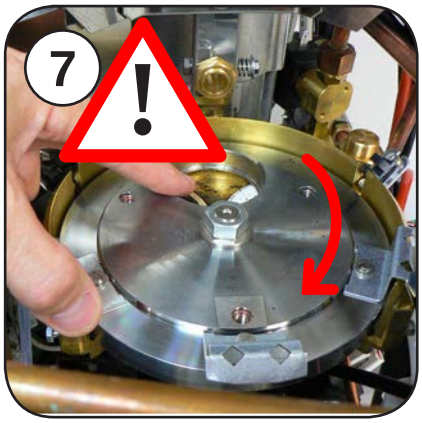



Remove Nut and Bearing assembly


Pry the top bearing race out if it stayed on the shaft




Do not damage position sensors when removing Turntable!

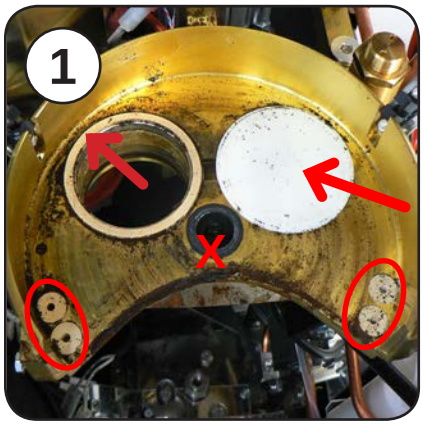



Rotate Turntable so the tabs are not inside the sensor slots


Lift Turntable out
*Caution, it may be hot!*

# Tango Turntable Service

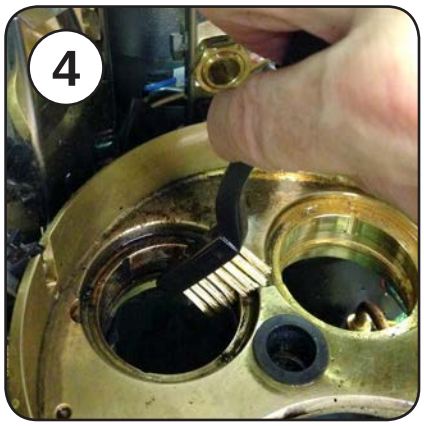
## *Clean Turntable Area*



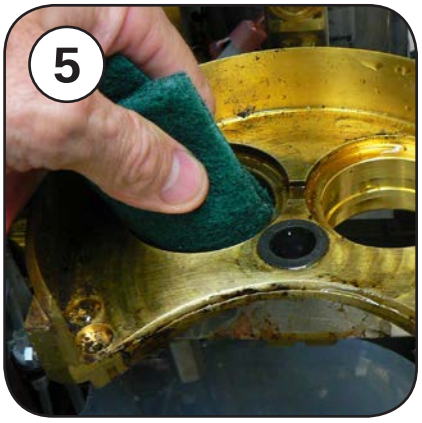

Remove and discard old
Seals, O-rings, and Pads
*Do not remove center Bushing*


Clean the area thoroughly


For deep cleaning, place a
container under the turntable
to catch runoff




A brass or nylon brush
may be necessary




Scrup the base with coffee
cleaner. Rinse thoroughly.


# Tango Turntable Service

## *Install new Seals*

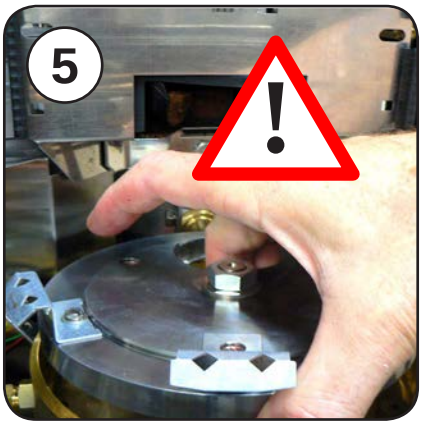
**FR-1551**
**Turntable PM kit**


Install new O-rings with Mollykote 111 grease


Install seal, 4 support pads, and white plug.
*No grease!*


Replace O-ring under Turntable
*Use Molykote 111*

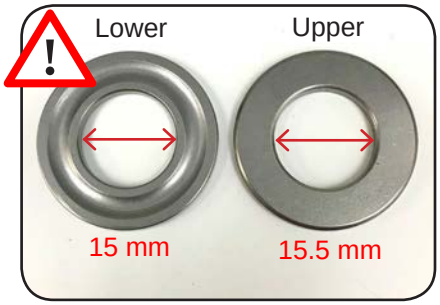

Place a small amount of IKV-Fluor grease on the turntable shaft




Carefully install Turntable with eject hole to the rear.
*Do not damage sensors!*

# Tango Turntable Service

## *Repack and Install bearing*



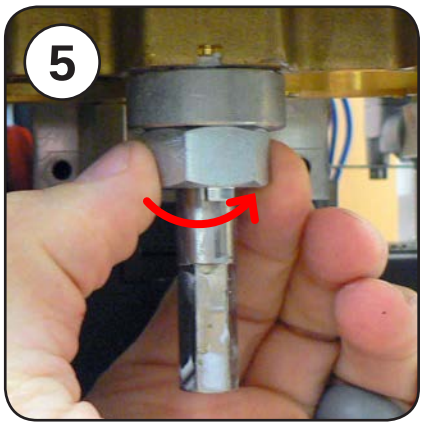

The upper bearing race has a larger hole.
Test fit the upper race first


*Upper race MUST recess into turntable holder.*

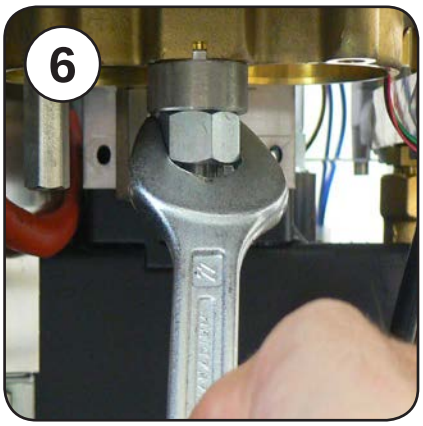

Place the lower race (groove up) in the cup and apply a small amount of grease


Install the bearing open side up. Apply a small amount of IKV-Fluor grease


Place the top race (larger hole) groove down
*Markings may be different than shown!*




Hand tighten bearing and nut onto shaft
(Note top race fits into recess)

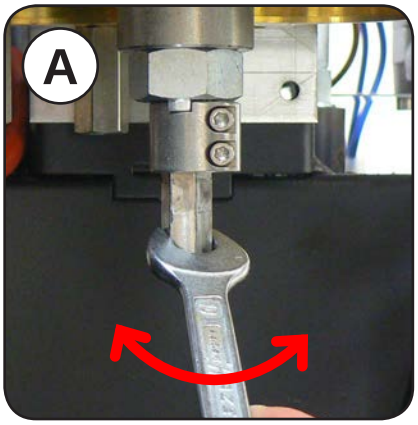



Tighten nut until firm

***See next page for proper bearing tension setting***

# Tango Turntable Service

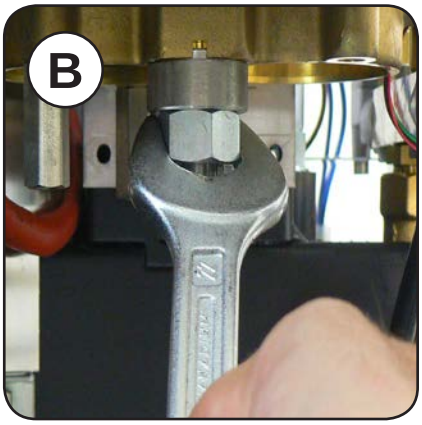
## *Bearing Tension Initial Adjustment*



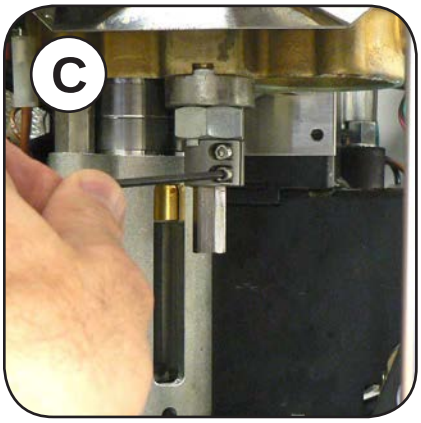

Check tension of Turntable

Check tension
of Turntable
Re-adjust 22mm nut
until tension is very firm

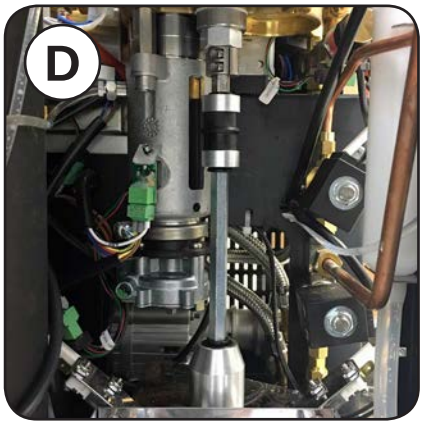
*Can not move by hand,*
*takes some effort to turn*
*with wrench*



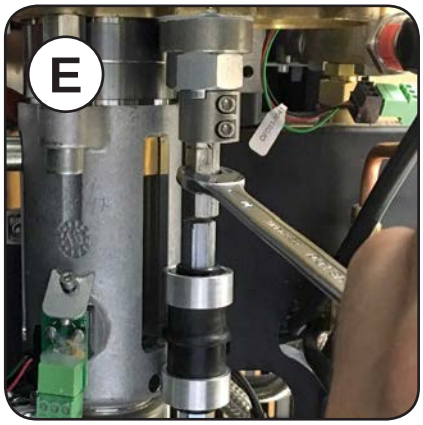

Re-adjust if needed



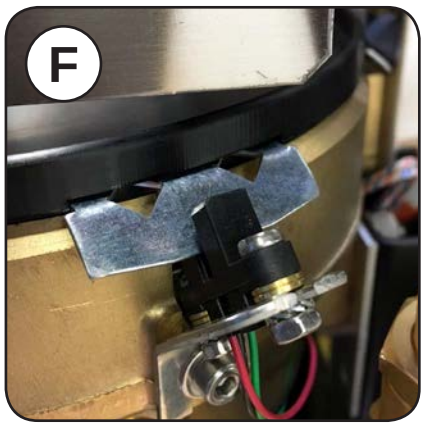

Install locking collar
*Don't over tighten, final tension adjustments are made after machine is ON*




Reinstall Turntable drive-shaft




Rotate Turntable to align shafts before sliding coupler up

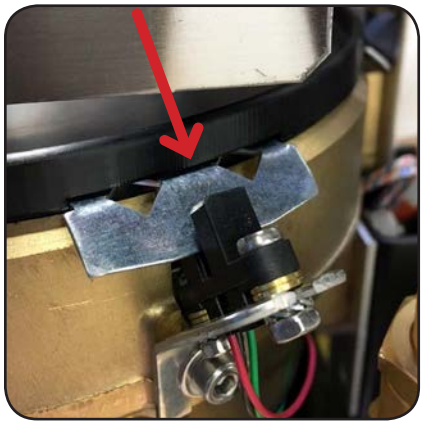



Note: If the Initial tension setting is too tight or loose, final adjustment will not be possible.

The metal tab will not stop inside the sensor when switched ON.
Fault Code 4 will display.
*Re-adjust tension as above if this occurs.*

# Tango Turntable Service

## *Bearing Tension Final Adjustment*



The Position Sensor should stop between the diamond cutouts

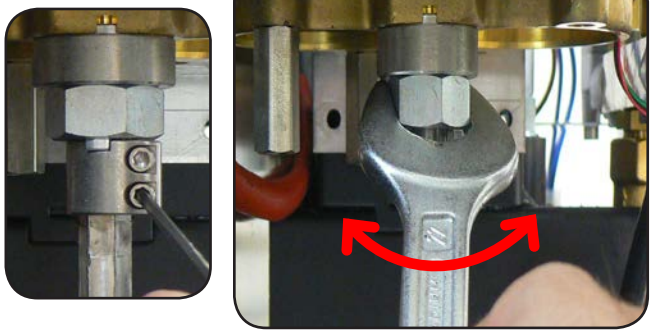

**ACE / ST**

**UNO / SOLO**

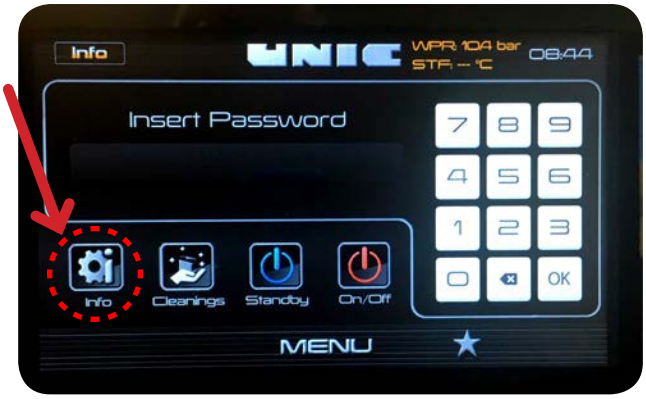
The Turntable speeds (Tt):
2 numbers = left and right rotation
170ms -190ms for newly installed seals
140ms -180ms machine already in use

**Change the speed numbers by adjusting the tension of the Main Bearing**

Loosen 2.5 mm turntable lock screws
*(Rotate shaft first if needed)*



**To display turntable speed:**




ACE / ST
Switch machine OFF and ON with the Technician's USB in place. Then press *Info.*


UNO / SOLO
Switch machine OFF and ON with Technician's Card in place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