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# USER MANUAL

## QT830 Airless Sprayer

[www.QTechSpray.com](http://www.QTechSpray.com)

 [@QTechSpray](https://www.instagram.com/QTechSpray)

**CAUTION**

This manual contains important warnings and information

**PLEASE READ & KEEP FOR FUTURE REFERENCE**

VERSION **QT830-03-0223**



**Aristospray Ltd**

2b Stephenstown Industrial Park, Balbriggan, County Dublin, Ireland

# Quick check

The information on this page is intended only as a quick guide. It is no way intended as a substitute to the information on the pages following, which the user should be fully acquainted with before using an engine drive airless sprayer.

<b>Problem: Engine is running, but pump will not operate</b>	
<b>Check</b>	<b>Solution</b>
Clutch slipping	Repair or replace clutch
Clutch not engaging	Check clutch electrical connections
<b>Problem: Pump loses prime or will not prime</b>	
<b>Check</b>	<b>Solution</b>
Low paint	Refill
Clogged inlet strainer	Clean
Loose suction pipe	Tighten connection
Intake ball not seating	Clean or replace
<b>Problem: Engine cannot turn pump</b>	
<b>Check</b>	<b>Solution</b>
Paint hardened in pump	Replace packings and clean all pump and filter parts
Paint frozen in pump	Thaw pump and hoses
<b>Problem: Pressure problems</b>	
<b>Check</b>	<b>Solution</b>
Clogged tip or filters	Relieve pressure and clean
<b>Problem: Pump cannot maintain pressure</b>	
<b>Check</b>	<b>Solution</b>
Oversized tip	Use correct maximum tip for sprayer
Tip so worn as to become oversize	Relieve pressure and replace tip
<b>Problem: Low output</b>	
<b>Check</b>	<b>Solution</b>
Worn tip	Relieve pressure and replace tip
Worn packings	Replace packings
Filter clogged	Relieve pressure and clean filter
Priming valve leaking	Relieve pressure and repair valve
Suction pipe leaking or kinked	Correct kink, or tighten as needed
Pump runs on when trigger is released	Service pump or tighten packing nut
<b>Problem: Pump runs intermittently</b>	
<b>Check</b>	<b>Solution</b>
Pressure set too high for the tip size	Adjust to the correct pressure
<b>Problem: Engine straining</b>	
<b>Check</b>	<b>Solution</b>
Packings too tight	Loosen and adjust correctly

# QTech QT830

## USE TO SPRAY

Virtually any water or solvent based coatings including those with a high solid content Intumescent

## PERFORMANCE

Flow	8.3 ltr/min
Max tip	1-gun 0.048"
	2-guns 0.035"
	3-guns 0.027"
	4-guns 0.023"
MWP	227 bar   3300 psi

## SPECIFICATION

Motor	Honda GX200
	196 cc   6.5 hp
Weight	74.5 kg
Max hose	100 m
Warranty	2 years

## SUPPLIED COMPLETE WITH

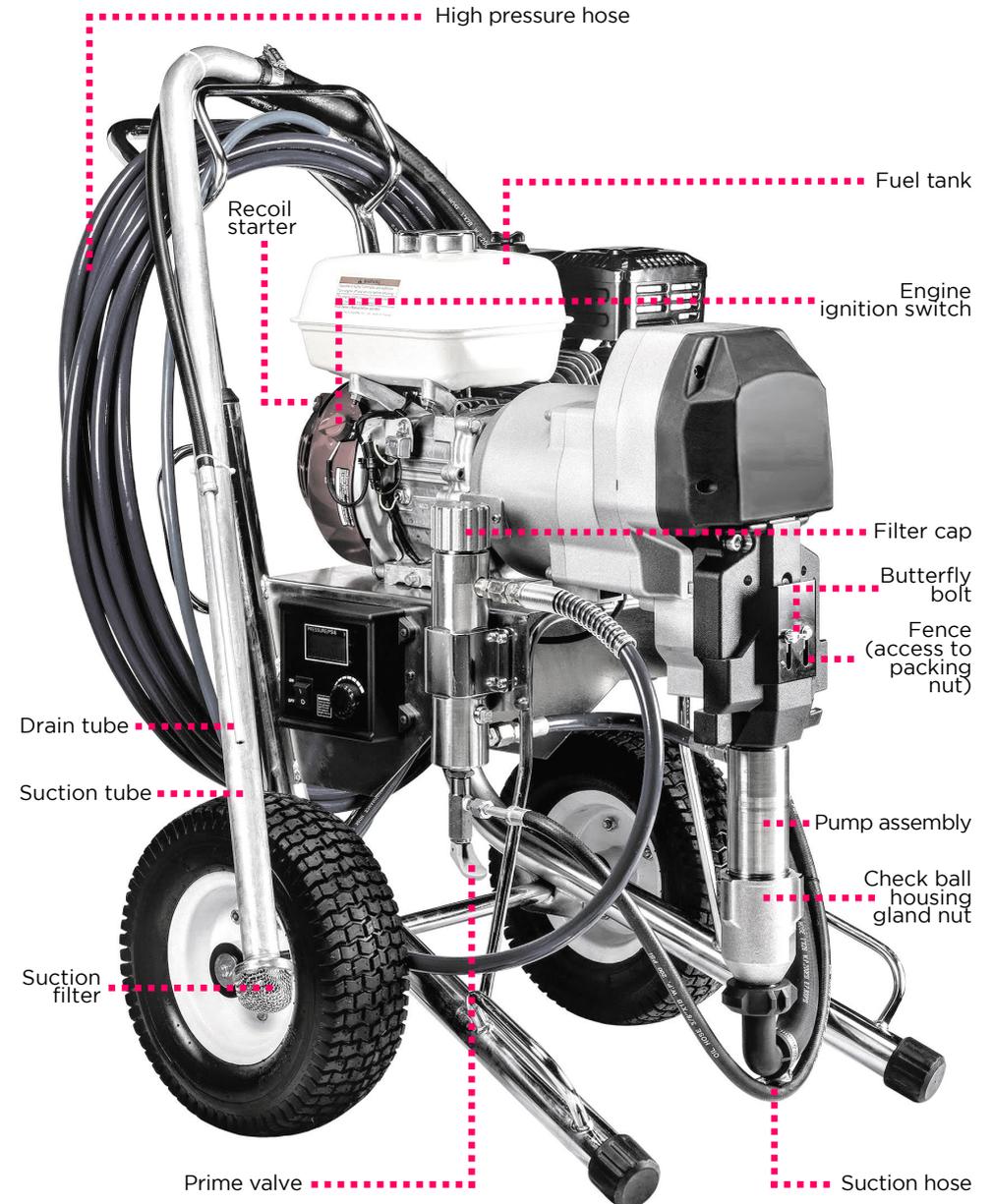
TriTech T360 airless spray gun  
 TriTech Contractor 517  
 airless tip & guard  
 3/8" x 15m textile braided  
 hose assembly  
 1/4" x 1m textile braided  
 whip hose

## PRODUCT CODE

QT830



Honda GX200 motor



## Please read these instructions carefully before using the equipment

### GENERAL SAFETY

**WARNING!** Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire and / or serious personal injury. The term **airless sprayer** in all of the warnings listed below refers to your **engine-driven airless sprayer**.

### WORK AREA

- + Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents.
- + Do not operate airless sprayers in explosive atmospheres, such as in the presence of flammable liquid, gases, or dust. Airless sprayers create sparks which may ignite the dust or fumes.
- + Keep bystanders, children, and visitors away while operating a airless sprayer. Distractions can cause you to lose control.

### PERSONAL SAFETY

- + Stay alert, watch what you are doing and use common sense when operating an airless sprayer. Do not use while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating airless sprayers may result in serious personal injury.
- + Use safety equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- + Do not overreach. Keep a proper footing and balance at all times. This enables better control of the airless sprayer in unexpected situations.
- + Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.

### SERVICE

- + **Have your airless sprayer serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the airless sprayer is maintained.

### PRESSURE RELIEF PROCEDURE

**IMPORTANT! To avoid possible serious body injury, always follow this procedure whenever the sprayer is shut off, when checking it, when installing, changing or cleaning tips and whenever you stop spraying.**

- 1 Engage the gun safety latch.
- 2 Turn the unit off.
- 3 Disengage the gun safety latch and trigger the gun to relieve residual fluid pressure. Hold metal part of the gun in contact with grounded metal pail.
- 4 Turn the Priming Valve to the open (priming) position to relieve residual fluid pressure.
- 5 Re-engage gun safety latch and close Priming Valve. **If the SPRAY TIP OR HOSE IS CLOGGED, follow Step 1 through 5 above. Expect paint splashing into the bucket while relieving pressure during Step 4.**

## SPECIFIC SAFETY RULES

**WARNING:** Do not use guns for spraying flammable materials.

**WARNING:** Be aware of any hazards presented by the material being sprayed, and consult the markings on the material container or the information supplied by the manufacturer of the material to be sprayed.

**WARNING:** Do not spray any material where the hazard is not known.

**WARNING:** Do not clean guns with flammable solvents with a flash-point below 55°C.

**NOTE:** A non-flammable solvent is here defined as one which has a flash point above 55°C.

**WARNING:** This appliance cannot be used by children under 18 years old or persons with reduced physical, sensory or mental capabilities or lack of experience or knowledge of the safe operation of the appliance.

### **WARNING: HIGH PRESSURE**

Never leave pressurized system unattended. Always follow the **PRESSURE RELIEF PROCEDURE**. Take precautions to avoid high pressure component rupture.

### **DANGER: INJECTION INJURY**

Skin injection by high pressure paint is not a simple cut. It must be treated surgically immediately.

### **WARNING: FIRE AND EXPLOSION HAZARD**

Take all precautions to avoid sources of sparks and ignition when spraying. Keep the machine at least 6 meters away from the spraying operation.

### **WEAR PROTECTIVE EQUIPMENT AT ALL TIMES**

Always use a respirator, eye protection and protective clothing. Keep clear of moving parts when starting or operating the sprayer. Do not put your fingers into any openings to avoid amputation by moving parts or burns on hot parts. When starting the motor, maintain a safe distance from moving parts of the equipment. Before adjusting or servicing any mechanical part of the sprayer, follow the **PRESSURE RELIEF PROCEDURE**.

### **EXPLOSION RISK FROM HALOGENATED HYDROCARBON SOLVENTS**

Never use halogenated hydrocarbon solvents in this machine.

Contact with aluminum parts may cause an explosion.

Some of the most common of these solvents are:

Carbon tetrachloride

Chlorobenzene

Dichloroethane

Dichloroethyl Ether

Ethyl Bromide

Ethyl Chloride

Tetrachloroethane

## PREVENT STATIC SPARKING FIRE/EXPLOSIONS

Vapors created when spraying can be ignited by sparks.

To reduce the risk of fire, always locate the sprayer at least 20 feet (6 m.) away from spray area. Do not plug in or unplug any electrical cords in the spray area. Doing so can cause sparks which can ignite any vapors still in the air. Follow the coating & solvent manufacturers safety warnings and precautions.

## MEDICAL ALERT INJECTION INJURIES

If any fluid appears to penetrate your skin, **GET EMERGENCY MEDICAL CARE AT ONCE. DO NOT TREAT AS AN ORDINARY CUT.** High pressure fluids from spray or leaks are powerful enough to easily penetrate the skin and cause extremely serious injection injury, leading to the possible need for amputation.

- + **NEVER** point the spray gun at anyone or any part of the body.
- + **NEVER** put your hand or fingers over the spray tip. Do not use a rag or any other materials over your fingers. Paint will penetrate through these materials and into the hand.
- + **NEVER** try to stop or deflect leaks with your hand or body.
- + **ALWAYS** have the tip guard in place when spraying.
- + **ALWAYS** lock the gun trigger when you stop spraying.
- + **ALWAYS** remove tip from the gun to clean it.
- + **NEVER** try to "blow back" paint, this is not an air powered sprayer.
- + **ALWAYS** follow the **PRESSURE RELIEF PROCEDURE** before cleaning or removing the spray tip or servicing any system equipment.
- + Be sure the equipment safety devices are operating properly before each use.
- + Tighten all of the fluid connections before each use.
- + **NEVER** alter equipment in any manner.
- + **NEVER** smoke while in spraying area.
- + **NEVER** spray highly flammable materials.
- + **NEVER** use around children.
- + **NEVER** allow another person to use sprayer unless he is thoroughly instructed on its safe use and given this operator's manual to read.
- + **ALWAYS** wear a spray mask, gloves and protective eye wear while spraying.
- + **ALWAYS** ensure fire extinguishing equipment is readily available and properly maintained.

**NEVER LEAVE SPRAYER UNATTENDED WITH PRESSURE IN THE SYSTEM. FOLLOW PRESSURE RELIEF PROCEDURES AT ALL TIMES.**

## ALWAYS INSPECT SPRAYING AREA

- + Keep the spraying area free from obstructions.
- + Make sure the spraying area has good ventilation to safely remove vapors and mists.
- + **NEVER** keep flammable material in spraying area.
- + **NEVER** spray in vicinity of open flame or other sources of ignition.
- + The spraying area must be at least 6 metres away from spray unit.

## SPRAY GUN SAFETY

- + **ALWAYS** set gun safety lock in the "LOCKED" position when not in use and before servicing or cleaning.
- + **NEVER** remove or modify any part of the gun.
- + **ALWAYS REMOVE THE SPRAY TIP** when cleaning. Flush unit at the **LOWEST POSSIBLE PRESSURE.**
- + **ALWAYS** check operation of all gun safety devices before each use.
- + Be very careful when removing the spray tip or hose from the gun. A plugged line will contain fluid under pressure. If the tip or line is plugged, follow the **PRESSURE RELIEF PROCEDURE.**

## TIP GUARD

- + **ALWAYS** have the tip guard in place on the spray gun while spraying. The tip guard alerts you to the injection hazard and helps prevent accidentally placing your fingers or any part of your body close to the spray tip.

## SPRAY TIP SAFETY

- + Use extreme caution when cleaning or changing spray tips. If the spray tip clogs while spraying, engage the gun safety latch immediately. **ALWAYS** follow the **PRESSURE RELIEF PROCEDURE** and then remove the spray tip to clean it.
- + **NEVER** wipe off build up around the spray tip.

## TOXIC FLUID HAZARD

- + **ALWAYS** remove tip guard & tip to clean **AFTER** pump is turned off and the pressure is relieved by following the **PRESSURE RELIEF PROCEDURE**.
- + Hazardous fluid or toxic fumes can cause serious injury or death if splashed in eyes or on skin, inhaled or swallowed. Know the hazards of the fluid you are using. Store and dispose of hazardous fluid according to manufacturer, local, state and national guidelines.
- + **ALWAYS** wear protective eyewear, gloves, clothing and respirator as recommended by fluid manufacturer.

## HOSES

- + Tighten all of the fluid connections securely before each use. High pressure fluid can dislodge a loose coupling or allow high pressure spray to be emitted from the coupling and result in an injection injury or serious bodily injury.
- + Only use hoses with a spring guard. The spring guard helps protect the hose from kinks or other damage which could result in hose rupture and cause an injection injury. Do not allow kinking or crushing of hoses or allow it to vibrate against rough, sharp or hot surfaces.
- + Use only conductive fluid hoses for airless applications. Be sure the gun is grounded through the hose connections. Use only high pressure airless hoses with static wire which are approved for 3000 psi.
- + **NEVER** use a damaged hose, which can result in hose failure or rupture and cause an injection injury or other serious bodily injury or property damage. Before each use, check entire hose for cuts, leaks, abrasions, bulging of the cover, or damage or movement of couplings. If any of these conditions exist, replace the hose immediately.
- + **NEVER** use tape or any device to try to mend the hose as it cannot contain the high pressure fluid. **NEVER ATTEMPT TO RECOUPLE THE HOSE.** It is not possible to recouple a high pressure hose .

## GROUNDING

- + Ground the sprayer and other components in the system to reduce the risk of static sparking, fire or explosion which can result in serious bodily injury and property damage. For detailed instructions on how to ground, check your local electrical code.

### **Always ground all of these components:**

- 1 Fluid hose:** use only grounded hoses.
- 2 Spray gun** or dispensing valve: grounding is obtained through connection to a properly grounded fluid hose and pump.
- 3 All solvent pails must be conductive metal material and properly grounded. Do not place on a non conductive insulating surface unless a ground wire is added to a true earth such as a metal water pipe. ALWAYS** ensure fire extinguishing equipment is readily available and properly maintained.

## FLUSHING SAFETY

### **WHEN SPRAYING & CLEANING WITH FLAMMABLE PAINTS AND THINNERS**

- 1** When spraying with flammable liquids, the unit must be located a minimum of 25 feet away from the spraying area in a well ventilated area. Ventilation must be sufficient enough to prevent the accumulation of vapors.
- 2** To eliminate electrostatic discharge, ground the spray unit, paint bucket and spraying object. See **GROUNDING**. Use only high pressure airless hoses approved for 3000 psi which is conductive.
- 3** Remove the spray tip before flushing. Hold the metal part of the gun firmly to the side of a metal pail & use the lowest possible fluid pressure during flushing.
- 4** Never use high pressure in the cleaning process. **USE MINIMUM PRESSURE.**
- 5** Do not smoke in spraying/cleaning area.

**NEVER** use cleaning solvents with flash points below 60°C/140°F.

Examples of these are:

acetone, benzene, ether, gasoline, naphtha.

Consult your supplier if in doubt.

## ASSEMBLY

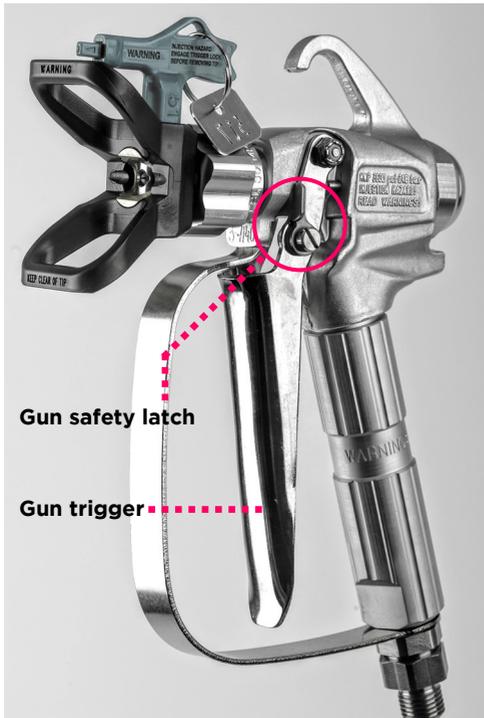
- 1 Attach the hose to the pump and tighten with a wrench.
- 2 Attach the hose to the gun and tighten with two wrenches.

## OPERATION

**Before starting always check and tighten all fittings securely.**

**WARNING:** A loose connection could burst loose under pressure causing a hazardous condition. Ensure that all connections are tight. This includes both ends of the hose, the gun filter, the tip guard, the manifold filter and the suction tube gland nut.

**WARNING:** Always ensure that the gun safety latch is in the locked position. The gun safety latch should always be set. The only time the trigger should be unlocked is when the gun is actually being triggered.



Leave the tip out of the gun when priming, flushing and cleaning.

### LUBRICATE THE PACKINGS

Fill the packing nut/wet cup with about 2-3 drops of QTech QLube lubricating oil.

Gun safety latch

Gun trigger

## THE ENGINE

For more detailed information about the engine, its operation and maintenance, refer to the engine owner's annual, which is included separately with this machine. The engine supplies the mechanical power to run the pump. It couples to the pump through a clutch. To maintain, the required pump operating pressure, the clutch is engaged and disengaged electromagnetically by the pressure control system. The electrical power for this is supplied by the engine's charging system.

## STARTING THE ENGINE (see illustration over page)

- + Ensure that there is the correct type and amount of motor oil in the sump. The recommended type is 10W-30, four stroke automotive detergent motor oil of API service category SJ or equivalent. Use the oil filler cap/dipstick to check the level.
- + Add the correct type of fuel. The recommended fuel is unleaded petrol (gasoline) octane 91 or higher. Do not overfill.
- + Move the fuel valve lever to the ON position.
- + Set the throttle lever to about 1/3.
- + If the engine is cold, move the choke lever to the CLOSED position. (If the engine is warm, leave the choke in the OPEN position).
- + Turn the engine ignition switch clockwise to the ON position.
- + Pull the recoil starter grip lightly until compression is felt, then pull briskly and deliberately to start the engine (do not allow the grip to snap back under its own spring tension; but rather gently return it to its rest position).
- + As soon as the engine starts, gradually move the choke lever to the OPEN position as the engine warms up.

## SETTING THE THROTTLE

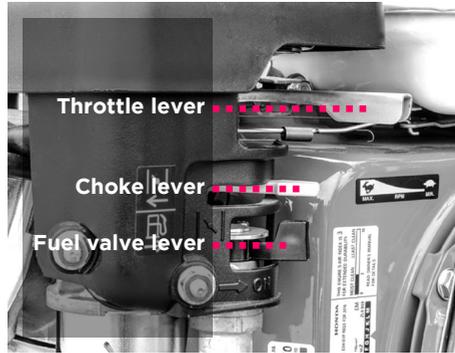
- + For spraying, set the throttle lever to about 2/3 as a starting point. Increase or decrease the throttle as required.
- + Generally, larger tips and/or multiple guns will require a higher throttle setting. Smaller tips with a single gun may only need 2/3 throttle or less.

**NOTE:** If the throttle is set too low, the engine's charging system will not have enough voltage to run the pump control system and you may see an error code. In this case increase the throttle setting higher.

**CAUTION:** The throttle should not be set any higher than is necessary to maintain, the set pressure. If the throttle is set too high, the clutch will be forced to cycle on and off in rapid succession which will lead to premature clutch wear and failure.

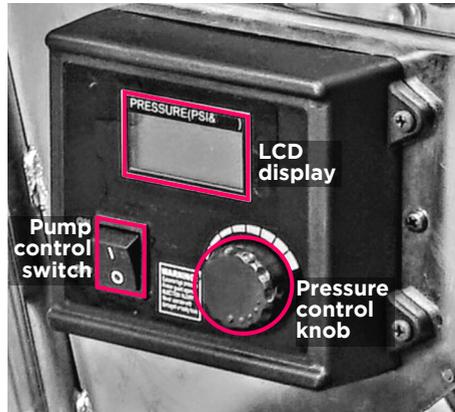
## SHUTTING OFF THE ENGINE

- + Move the throttle lever to the MIN position.
- + Turn the engine ignition switch anti-clockwise to the OFF position.
- + Move the fuel valve lever to the OFF position.



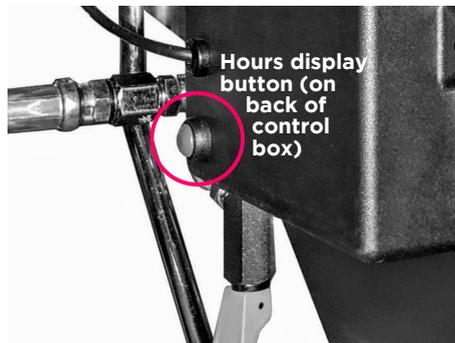
## OPERATING THE PUMP CONTROL SYSTEM

- + First start the engine. The engine needs to be running to provide electrical power to the pump control system.
- + Turn pressure control knob counter clockwise to the minimum setting.
- + Turn on the pump control switch.
- + Viewing the LCD display, adjust the pressure control knob to the desired pressure. The pump control system will now automatically engage and disengage the clutch as needed to maintain the desired pressure.



## VIEWING THE ELAPSED HOURS DISPLAY

- + First start the engine and leave the pump control switch OFF.
- + Reach behind the control box, press the hours display button and hold for 3 seconds.
- + The total elapsed hours will appear in the LCD display.
- + Turn the pump control switch ON and continue normally.



## FLUSHING

### WHEN TO FLUSH

- 1 When cleaning pump** (for further detail turn to page 22).
  - 2 When changing from oil-base to water-base paint.** Flush with pump conditioner, followed by soapy water, then a clean water flush.
  - 3 Storage.** Always relieve pressure (see **PRESSURE RELIEF PROCEDURE** page 8) prior to storage or when machine is unattended.
    - Oil-base paint:** Flush with pump conditioner. Ensure that there is no pressure in the unit, then close the priming valve.
    - Water-base paint:** Flush with water, and then pump conditioner.
- If pump is to be left for more than a day in storage ensure flushing procedure has been followed and leave filled with pump conditioner.** Always ensure that there is no pressure in the unit, and close the prime/pressure relief valve for storage.
- 4 Start-up after storage.** Before using water-base paint, flush with soapy water and then with clean water. When using oil-base paint, flush out the pump conditioner with the material to be sprayed.

### HOW TO FLUSH

- 1** Place the suction tube in a flushing bucket filled with pump conditioner (for oil-based paints), water (for water-based paints) or warm soapy water (when converting from oil-based to water-based paints).
  - 2** Separate the drain tube from the suction tube and place it in an empty waste bucket.
  - 3** Open the priming valve.
  - 4** Ensure that the pump control is switched off and the pressure control knob is at the minimum (anticlockwise) setting.
  - 5** Start the engine, set the throttle to about 2/3, and switch on the pump control.
  - 6** Turn the pressure control knob clockwise to increase the pressure just enough to let the pump run.
  - 7** Allow the pump to run and watch the fluid discharging from the drain tube. Allow the fluid to discharge until completely clean flushing fluid is coming out. The hose and gun also need to be flushed when changing colours or when switching between different types of paints.
- (If the hose and gun do not need flushing, **proceed to step 11**, over page).

## FLUSHING (continued)

- 8 With the tip and guard removed from the gun, point the gun into the waste bucket and hold the trigger open.  
**WARNING: Risk of static sparking, fire or explosion.** Hold the metal part of the gun firmly to the side of a metal pail. All solvent pails must be conductive metal material and properly grounded. Do not place on a non-conductive insulating surface unless a ground wire is added to a true earth such as a metal water pipe.
- 9 Close the priming valve.
- 10 Allow the pump to run and watch the fluid discharging from the gun. Allow the fluid to discharge until completely clean flushing fluid is coming out.  
**WARNING: Do not release the gun trigger during this process.** If the trigger is released, pressure will build in the line and when the trigger is re-squeezed it may result in a splash back hazard.
- 11 Switch the pump control off and turn the pressure control knob anticlockwise to the minimum setting. The pump is now clean and ready to be primed with material.

## PRIMING

This is a high pressure pump and all air and unwanted fluids must be bled out of the pump and lines before spraying can begin. Ensure that the tip and guard are removed from the gun and the trigger is locked.

### TO PRIME

- 1 Place the suction tube in the paint bucket.
- 2 Place the drain tube in a waste bucket and open the priming valve.
- 3 Ensure that the pressure control knob is in the minimum position and the unit is switched off. Start the engine, set the throttle to about 2/3, and switch on the pump control.
- 4 Slowly turn the pressure control knob clockwise to increase the pressure just enough to let the pump run.
- 5 Allow the pump to run and watch the fluid discharging from the drain tube. Allow the fluid to discharge until pure material is flowing.
- 6 Point the gun into the waste bucket, unlock the trigger and hold the trigger open. Then close the priming valve.
- 7 Keep the trigger held open and allow the pump to run and watch the fluid discharging from the gun. Allow the fluid to discharge until pure material is flowing. Turn the pump control off.
- 8 To further bleed out any air, point the gun into the material bucket or hopper and hold the trigger open. Turn the pump control on and allow clean material to recirculate. Watch the material to make sure there are no air bubbles.
- 9 Turn off the pump control and lock the trigger. The drain tube may now be rejoined to the suction tube in the material bucket.

**The unit is now primed and ready to install the tip and tip guard.**

## SPRAY GUN

Attach spray gun to airless unit and tighten fittings securely. Set the gun safety latch. The gun safety latch should always be set when the gun is not being triggered. Read all warnings and safety precautions supplied with the spray gun and in product manual.

## SPRAY TIP ASSEMBLY

- 1 Be sure **PRESSURE RELIEF PROCEDURE** is followed before assembling tip and housing to the gun.
- 2 Lock gun safety latch.
- 3 Insert Tip into the guard housing assembly. Rotate the tip to the forward position (the arrow on the tip handle will point forward).
- 4 Guide metal seat into guard housing assembly through retaining nut and turn until it seats against the cylinder.
- 5 Insert O-Ring gasket on metal seat so it fits in the grooves.
- 6 Finger tighten guard housing retaining nut onto the gun.
- 7 Turn guard to the desired position.
- 8 Completely tighten the retaining nut by hand only.



### TO REMOVE CLOGS FROM SPRAY TIP

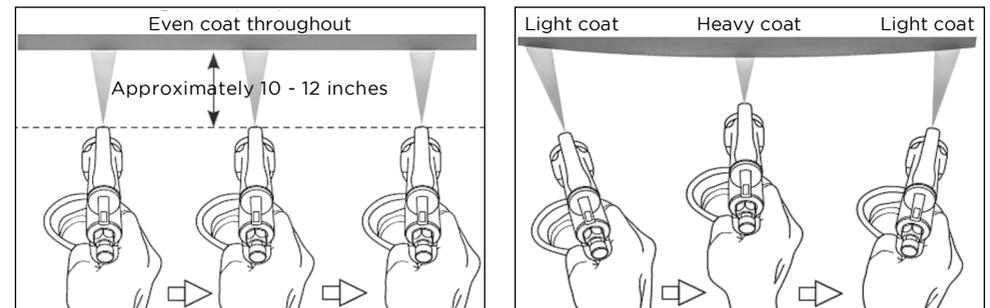
- 1 Lock gun safety latch.
- 2 Turn tip handle 180 degrees.
- 3 Disengage trigger lock & trigger gun into pail.
- 4 If the tip handle appears locked loosen the retaining nut. The handle will now turn easily.
- 5 Engage gun safety latch and return handle to the spray position.

**WARNING:** Never attempt to spray with the tip in any position in-between either fully forward or fully reversed. It could cause a high pressure hazard.

## SPRAYING

Check the quality of the spray pattern on a piece of scrap material, such as cardboard. Turn the pressure control knob clockwise to increase pressure and counterclockwise to decrease pressure. Start with a low spray pressure and slowly increase the pressure until a good spray pattern is achieved. If the pressure is too low, the pattern will have “tails”, which is a pattern with heavy, uneven edges. Keep testing and increasing pressure until a smooth, regular pattern is achieved. If the pressure is at maximum and the pattern is still not ideal, either go to a smaller orifice tip or thin the material. Do not raise the pressure any higher than is necessary. Operating the sprayer at a higher than necessary pressure wastes material, causes early tip wear, and shortens sprayer life. Excessive pressure can also result in bounce-back of the material and a rough finish. (Running with the pressure at the absolute maximum setting will also make the pump run on and off in an irregular way).

**NOTE: Do not rely only on the readout to set the pressure.** The preferred method of setting the pressure is to test spray on scrap materials and observe the spray pattern. While spraying, hold the gun perpendicular about 25-30 cm (10-12 inches) away from the surface. Do not swing or tilt the gun.



**Correct** | Gun held perpendicular

**Incorrect** | Wrist being flexed

Trigger the gun before moving and release the trigger after each stroke. Overlap each previous stroke by half. Do this by aiming the tip to the edge of the previous stroke. Work in sections within your reach. When painting corners, point the gun parallel to the corner. Cut in edges and corners first. Then paint flat areas. Do not allow the paint to run out. **Remember to follow the PRESSURE RELIEF PROCEDURE before refilling material.** If the paint does run out, the pump will suck in air. This air must be bled out, follow the instructions for PRIMING.

## SPRAY TIP SELECTION

Spray tip selection is based on paint viscosity, paint type and job requirements. There are two variables that need to be identified - the tip orifice size and the fan pattern width.

The main variable is the tip orifice. Generally use a smaller orifice tip for light viscosities (thin coatings such as varnish) and a larger orifice tip for heavier viscosities (thicker materials such as masonry, intumescent etc). Spray tip orifice size is based around how many gallons of paint per minute can be sprayed through the tip. At no time should a tip that can accommodate a flow rate larger than the maximum of the pump be used.

The other variable is the fan pattern width. Two tips having the same orifice tip size, but different fan widths will deliver the same amount of paint over a different area (width of strip). A spray tip with a narrower fan width makes it easier to spray in tight places. The thickness of the coat of paint per stroke is determined by spray tip fan width, rate of the spray gun movement and the distance to the surface.

The numbers that a tip is identified by indicate the fan width and the orifice size. The first number is half the fan width in inches. The second two numbers identify the orifice size in thousandths of an inch. For example, a 517 tip would have a 10" fan width with a 0.017" orifice.

### ATOMIZATION PRESSURE

The atomization pressure is the pressure at the gun. This will always be lower than the pressure at the pump due to the viscosity of the paint - other variables that will cause a pressure drop are the gun, the length and diameter of the hose, the temperature and the humidity.

With these variables in mind, the operator will need to fine tune the pressure to suit the actual conditions of the situation.

## SPRAY TIP REPLACEMENT

During use, especially with latex paint, grit and impurities in the paint under high pressure will cause the orifice to grow larger from wear and for the fan pattern width to degrade.

It is easy to determine the state of wear of the tip by observing the fan pattern. As the tip wears, the fan width will become narrower. A new tip will have a pattern shaped like a narrow long rounded-corner rectangle. As it wears it will turn into an oval shape. When it is completely worn out it sprays a circle. Once the fan width has decreased to about 2/3 of its original size, it should be considered worn out.

**NOTE:** To minimize wear to the tip, piston, packings and seats, it is best to always strain paint before use with a paint strainer bag and regularly clean all filters and strainers.

Replace tips before they become excessively worn. Worn tips waste paint, cause overspray, make cutting-in difficult, and decrease sprayer performance. If the tip is the maximum rated size for your sprayer, when it wears, the flow rate capacity will exceed that of the machine. If when using the maximum capacity tip size the pump cannot keep up, then you know that the tip is worn beyond capacity.

## CLEANUP

At the end of the day, the material in the line should be recovered and the machine thoroughly cleaned. This will avoid material drying in the pump or hose.

**CAUTION:** Under no circumstances allow material to dry in the pump. If material dries in the pump and hose, the pump will need to be completely disassembled and rebuilt and the hose will need to be discarded and replaced.

- 1 Relieve pressure in the system according to the Pressure Relief Procedure.
- 2 Remove the tip and tip guard and soak in the appropriate solvent for the material being used.
- 3 Rinse off the suction tube and place in a bucket of the appropriate flushing solvent fluid. Usually this will be water (for water-based materials), conditioner (for oil-based materials) or lacquer thinner (for lacquers). Special flushing fluids may be required for component materials or epoxies, etc.
- 4 To reclaim the material in the pump, place the drain tube in the original material bucket. With the priming valve still in the open position, turn the pump control on and turn the pressure control knob clockwise just enough to run the pump. Watch the material discharging from the drain tube until the material begins to thin. This indicates that the flushing fluid is beginning to pump out. Now transfer the drain tube to the waste bucket and continue to flush until clear flushing fluid flows out.
- 5 Shut off the pump control and back off the pressure control knob to minimum. Close the priming valve.
- 6 To reclaim the material in the line, with the tip and guard removed, point the gun into the material bucket and hold the trigger open.
- 7 Place the waste bucket right next to the material bucket.
- 8 Ensure that the pressure knob is in the minimum position and turn the pump control on.
- 9 With the trigger held open, slowly turn the pressure knob clockwise to increase the pressure just enough to let the pump run.
- 10 Allow the pump to run and watch the material discharging from the gun. Allow the material to discharge until the material begins to thin. This indicates that the flushing fluid is coming up the hose.
- 11 Without releasing the trigger, quickly transfer the gun from the material bucket to the waste bucket next to it.

**WARNING: Do not release the gun trigger during this process. If you release the trigger, pressure will build in the line and when you re-squeeze the trigger there will be a splash back hazard.**

- 12 Keep the trigger held open and allow the pump to run and watch the fluid discharging from the gun. Allow the fluid to discharge until all traces of material are gone and pure flushing fluid is coming out.
- 13 Without releasing the trigger, transfer the gun to the flushing bucket and allow the flushing fluid to recirculate for 2-3 minutes to make sure that all traces of the material are cleaned out.
- 14 Turn off the pump control and shut off the engine. Open the priming valve to relieve residual pressure.
- 15 Remove the suction tube out of the flushing fluid.
- 16 Clean the inlet strainer or hopper strainer. Remove and clean it with a soft brush in the appropriate solvent and replace.
- 17 Clean the pump filter. Using the supplied wrench, remove the pump filter and clean it with a soft brush in the appropriate solvent. Then replace and tighten.
- 18 Clean the gun, tip, and gun filter. Unclip the hand guard and rotate it out of the way. Then, using a wrench loosen the nut on the bottom of the handle and remove the handle to remove the gun filter. Clean the tip and filter with a soft brush in the appropriate solvent. Apply a small amount of light oil such as WD-40 to the inside of the spray gun housing. Place the filter in the spray gun and reassemble the unit by tightening the nut with the wrench.
- 19 Clean the exterior of the sprayer with a rag soaked in the appropriate solvent.
- 20 If flushing was with water, flush again with mineral spirits to prevent corrosion inside the pump.

**CAUTION:** Never leave water in the pump for any length of time as corrosion will result

**LONG TERM STORAGE:** For long- term storage, fill the pump with conditioner. To fill the pump:

- 1 Place both the suction tube and drain tube in a small quantity of storage solution.
- 2 With the priming valve in the open position, turn the machine on and turn the pressure control knob just enough for the pump to run.
- 3 Watch the drain tube and as soon as the storage solution appears in the tube, shut the machine off and close the priming valve. This will trap the storage solution inside the pump to protect it.

## MAINTENANCE

**CAUTION:** Never lay the pump on its back. Paint could flow backward and damage the electronics or the engine.

### WEEKLY MAINTENANCE

- 1 Ensure the displacement pump packing nut is lubricated with piston lubricant at all times.** This helps to protect the piston, rod and packings. In normal usage five drops once a week should be sufficient.
- 2 Inspect the packing nut.** If either of the following conditions exist the packing nut should be tightened
  - a** Seepage of material past the packing is found.
  - b** While the system is pressurized during the intervals when the motor is not running the piston is not holding its position but rather tends to slip downward.

**To tighten the packing nut:** First loosen the butterfly bolt 26 and raise the fence 28. Now reach the tommy bar through the opening and tighten the packing nut a small amount. When finished, reclose the fence.

**CAUTION:** The packing nut should be tightened just enough to stop leakage only, but not any tighter. Overtightening will damage the packings and reduce packing life.

- 3** Clean the intake ball and seat.
  - a** Remove the suction assembly and check ball housing.
  - b** Remove the check ball and ball guide and clean all related parts.
  - c** Replace in reverse and tighten.

### ENGINE MAINTENANCE

Maintain the engine according to the instructions in the engine instruction manual.

- 1** Check the engine oil level at least once a week.
- 2** The engine oil should be changed after the first 20 hours of operation (break-in period). Thereafter, it should be changed every 100 hours.

**NOTE:** All engine repairs should be entrusted to an authorised service centre.

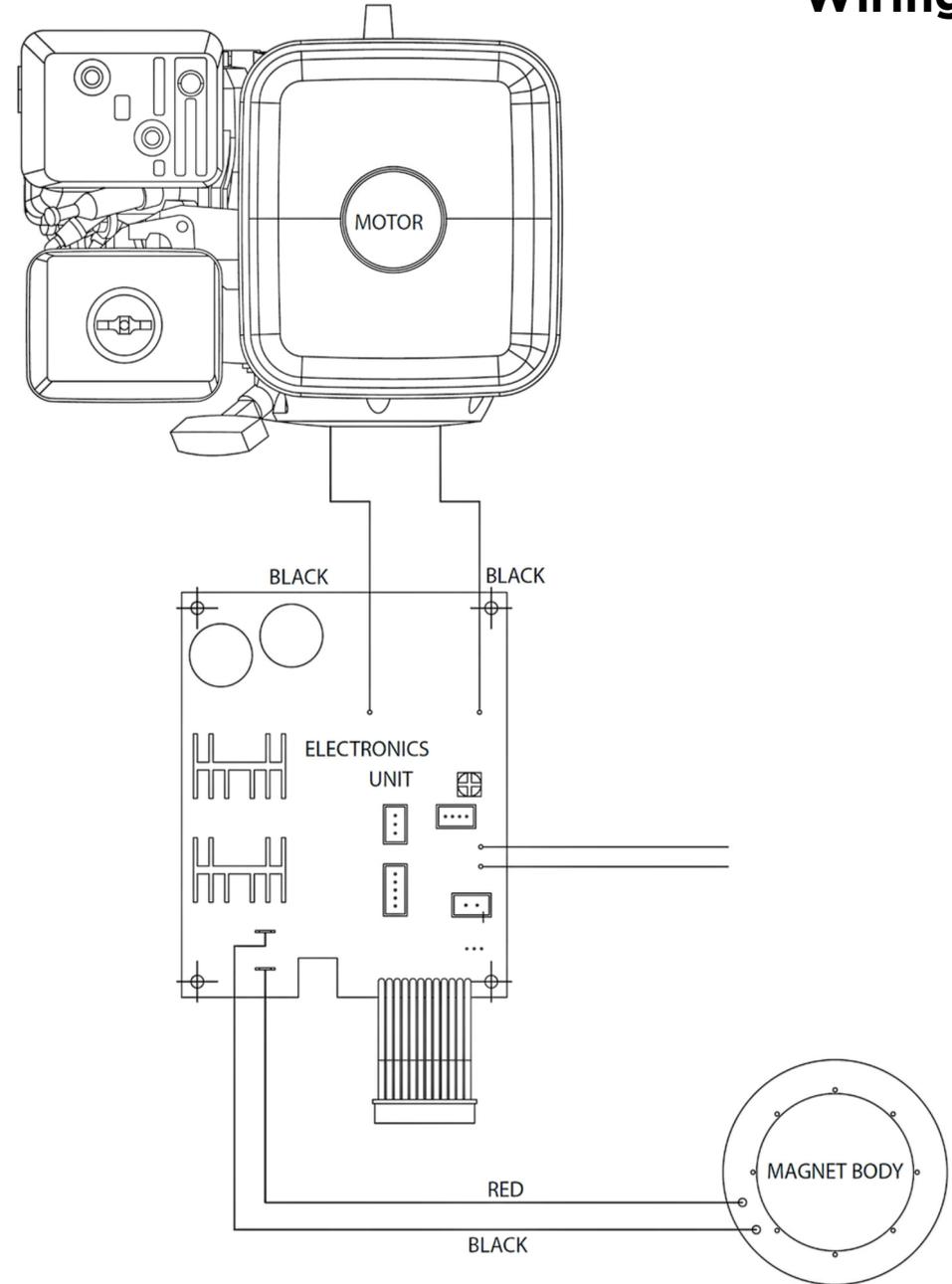
## PACKINGS

The packings are a wearing part. If the pump can no longer maintain pressure, has difficulty priming and paint seeps into the throat of the pump, and tightening the packing nut no longer helps, **then the packings will require replacement. This is best entrusted to a qualified repair technician.**

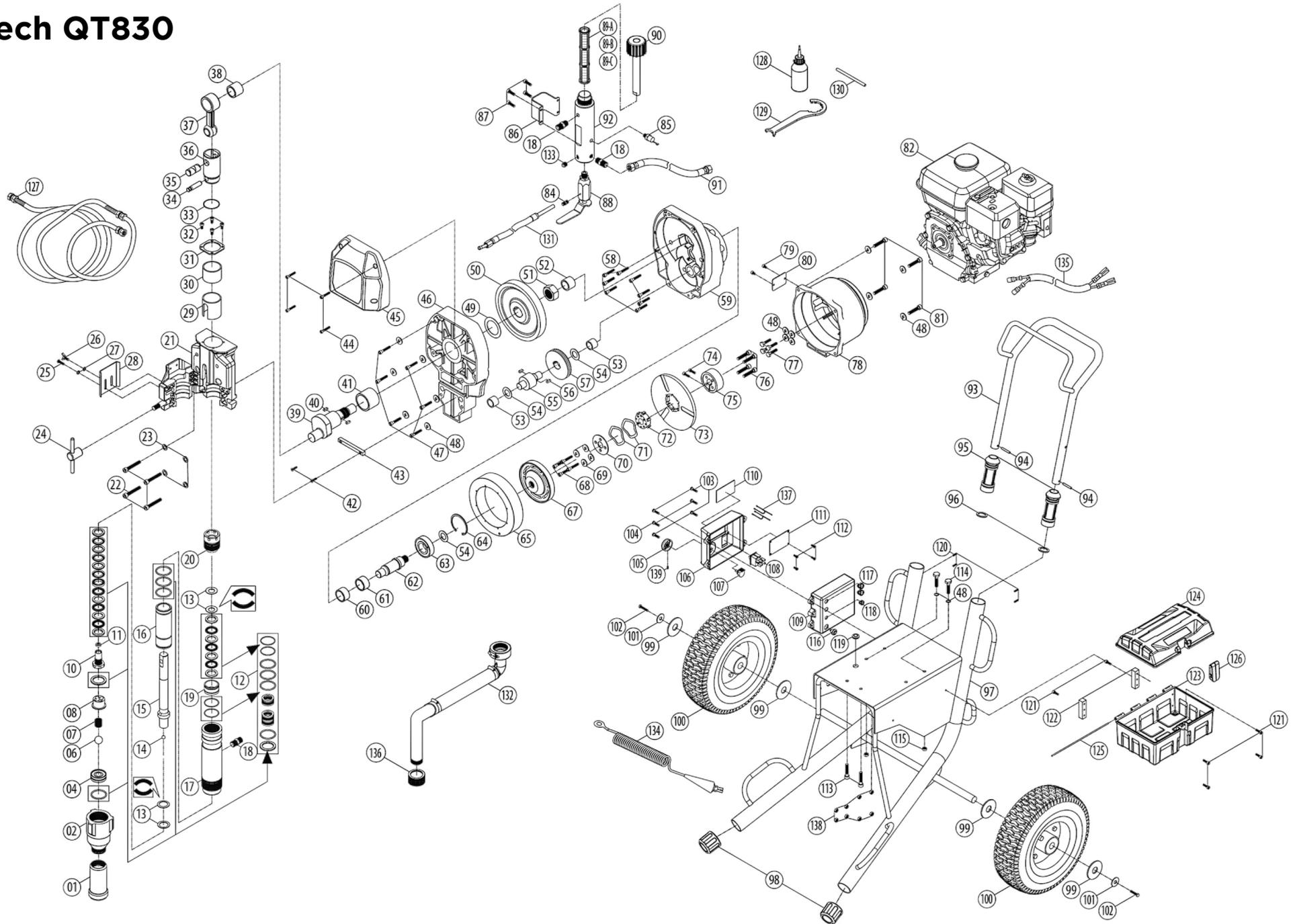
# LCD screen error codes

Error Code	Cause	Effect	How to return to operation	Solution
E03	Excess voltage from the engine's charging system to the pressure control system	Clutch will disengage and pressure control system will shut off	When voltage is normal, will automatically return to operation	Check the engine's charging system
E05	Pressure sensing abnormality or no signal from sensor	Clutch will disengage	When pressure signal is normal, will automatically return to operation	Check pressure transducer and check for bad connections with transducer, LCD or PC board
E07	Engine was started with the pressure control switch in the ON position	Clutch will not engage	Switch the pressure control OFF and then ON again to reset	No further action required
E08	Paint has run out	Clutch will disengage	Refill the paint, then switch the pressure control OFF and then back ON again to reset	No further action required
E09	Maximum pressure exceeded	Clutch will disengage	When pressure signal is normal, will automatically return to operation	No further action required

# Wiring



# QTech QT830



ITEM	PRODUCT CODE	DESCRIPTION	QTY
1		INLET STRAINER (4MESH-105L)	1
2		GLAND NUT	1
4		INTAKE DISC	1
6		CHECK BALL (3/4")	1
7		SPRING (Ø0.6xØ12.3xØ13.5x5Tx20L)	1
8		BALL GUIDE	1
10		INTAKE DISC SEAT	1
11		BALL SEAT (Ø11xØ17x3)	1
12		PISTON PACKING	1
13		DISC SPRING (Ø25xØ34.7x1)	4
14		CHECK BALL (Ø12.7)	1
15		DISPLACEMENT PISTON (260.3L)	1
16		PACKING SET HOLDER	1
17		PUMP HOUSING (218.7L)	1
18		OUTPUT NIPPLE (PT 3/8" x 3/8"-19PF)	3
19		PACKING SET SEAT (Ø41.5 x 25)	1
20		PACKING NUT (M45xP2.0)	1
21		PUMP CARRIER CLAMP	1
22		SOCKET CAP SCREW (M10x50xP1.5)	4
23		SPRING WASHER (M10)	4
24		T-HANDLE BOLT	1
25		PANHEAD MACHINE SCREW (M6x10xP1.0)	1
26		BUTTERFLY SCREW (M6x10xP1.0)	1
27		FLAT WASHER (Ø6.5xØ13x1)	2
28		FENCE	1
29		BUSHING (Ø48xØ54x43)	1
30		BUSHING (Ø48xØ54x43)	1
31		GUIDE CYLINDER PLATE	1
32		TRUSS HEAD MACHINE SCREW (M5x8xP0.8)	4
33		RETAINING RING (Ø1.5xØ44xØ47)	1
34		PUMP WRIST PIN (Ø12x52)	1
35		PUMP WRIST PIN (Ø20x42)	1
36		DRIVE PISTON	1
37		CONNECTING ROD	1
38		NEEDLE BEARING (TA2830)	1
39		SPINDLE	1
40		PARALLEL KEY (6x6x20)	2
41		NEEDLE BEARING (TA4540)	1
42		FLAT HEAD MACHINE SCREW (M5x12xP0.8)	2
43		MOUNTING TENON (10x10x100)	1

ITEM	PRODUCT CODE	DESCRIPTION	QTY
44		SOCKET CAP SCREW (M5x25xP0.8)	4
45		GEAR CAP	1
46		GEAR HOUSING	1
47		SOCKET CAP SCREW (M8x50xP1.25)	6
48		SPRING WASHER (M8)	16
49		CLUTCH BRASS DISC (Ø46xØ63x2)	1
50		OUTPUT GEAR (M2.5x72T)	1
51		CLUTCH NUT (M30xP2.0)	1
52		NEEDLE BEARING (TA2525)	1
53		NEEDLE BEARING (TA2020)	2
54		THRUST RING (Ø20.5xØ32x1)	3
55		INPUT SHAFT (M2.5x14T)	1
56		PARALLEL KEY (5x5x12)	2
57		INPUT GEAR (M1.5x59T)	1
58		SOCKET CAP SCREW (M4x20xP0.7)	8
59		GEAR PLATE	1
60		NEEDLE BEARING (HK 3020)	1
61		NEEDLE BEARING (HF 3020)	1
62		SPINDLE	1
63		BALL BEARING (6206)	1
64		INTERNAL CIRCLIP (R-62)	1
65		MAGNET BODY	1
67		FRICTION DISC	1
68		SOCKET CAP SCREW (M4x12xP0.7)	4
69		SPRING WASHER (M4)	4
70		PRESSURE PLATE	1
71		WAVE SPRING WASHER (Ø47xØ60.2)	2
72		HUB	1
73		DRIVE DISC	1
74		SOCKET CAP SCREW (M6x25xP1.0)	2
75		ENGINE COUPLING	1
76		SOCKET CAP SCREW (M6x20xP1.0)	4
77		HEX BOLT (5/16"x1-1/2"-24T)	4
78		CLUTCH HOUSING	1
79		SOCKET CAP SCREW (M5x8xP0.8)	2
80		COVER PLATE	1
81		SOCKET CAP SCREW (M8x35xP1.25)	2
82		ENGINE	1
84		FITTING (PT1/4" x 9/16"-18)	1
85		PRESSURE TRANSDUCER (110V&220V)	1

ITEM	PRODUCT CODE	DESCRIPTION	QTY
86		BRACKET	1
87		SOCKET CAP SCREW (M5x16xP0.8)	4
88		PRIMING VALVE	1
89A		PUMP FILTER (30MESH)	1
89B		PUMP FILTER (60MESH)	1
89C		PUMP FILTER (100MESH)	1
90		FILTER CAP	1
91		HIGH PRESSURE HOSE (3/8"-19PF)	1
92		FILTER HOUSING	1
93		HANDLE	1
94		ROLL PIN (Ø5x30)	2
95		HANDLE MOUNT	2
96		FLAT WASHER (Ø22.5xØ30x2)	2
97		FRAME	1
98		END CAP	2
99		FLAT WASHER	4
100		WHEEL	2
101		M5x20	2
102		HEX BOLT (M6x16xP1.0)	2
103		SOCKET CAP SCREW (M5x20xP0.8)	4
104		PANHEAD TAPPING SCREW-B (M5x16)	2
105		CONTROL DIAL	1
106		CONTROL BOX COVER	1
107		RHEOSTAT	1
108		SWITCH	1
109		ELECTRONICS UNIT	1
110		WINDOW (76x42x2)	1
111		LCD DISPLAY	1
112		PANHEAD TAPPING SCREW (M4x8)	4
113		SOCKET CAP SCREW (M8x16xP1.25)	2
114		HEX BOLT (M8x35xP1.25)	2
115		NYLOCK NUT (M8xP1.25)	2
116		PUSH BUTTON SWITCH	1
117		CABLE GLAND (SB5F-3)	2
118		CABLE GLAND (SB5M-1)	1
119		GROMMET	1
120		SOCKET CAP SCREW (M4x6xP0.7)	4
121		SOCKET CAP SCREW (M5x12xP0.8)	6
122		MOUNTING BRACKET	2
123		TOOL BOX	1

ITEM	PRODUCT CODE	DESCRIPTION	QTY
124		TOOL BOX LID	1
125		HINGE PIN (Ø3x230)	1
126		TOOL BOX LOCK	1
127		HIGH PRESSURE HOSE	1
128		LUBRICATING OIL TANK	1
129		DUAL PURPOSE WRENCH	1
130		PACKING NUT TOMMY BAR	1
131		DRAIN TUBE	1
132		SUCTION HOSE SET	1
133		BOLT (PT 3/8")	1
134		EARTH WIRE	1
135		CONNECTION CABLE	1
136		INLET STRAINER (8MESH)	1
137		SWITCH WIRES	2
138		NYLOCK NUT (M5xP0.8)	8
139		SOCKET SET SCREW (M4x8xP0.7)	1