



Evolution
pressure washers

Electric Pressure Washer



Original Manufacturer Instructions



Introduction

This manual and any other literature supplied must be read fully prior to the initial operation of your machine and be stored for later use or for subsequent owners. Pay particular attention to any instructions relating to operation and safety and maintenance of the unit. Following these instructions will ensure optimum performance, reliability and operator safety. The model and serial number on the cover of this booklet must be quoted should you need to contact the dealer or manufacturer regarding usage, maintenance and warranty queries.

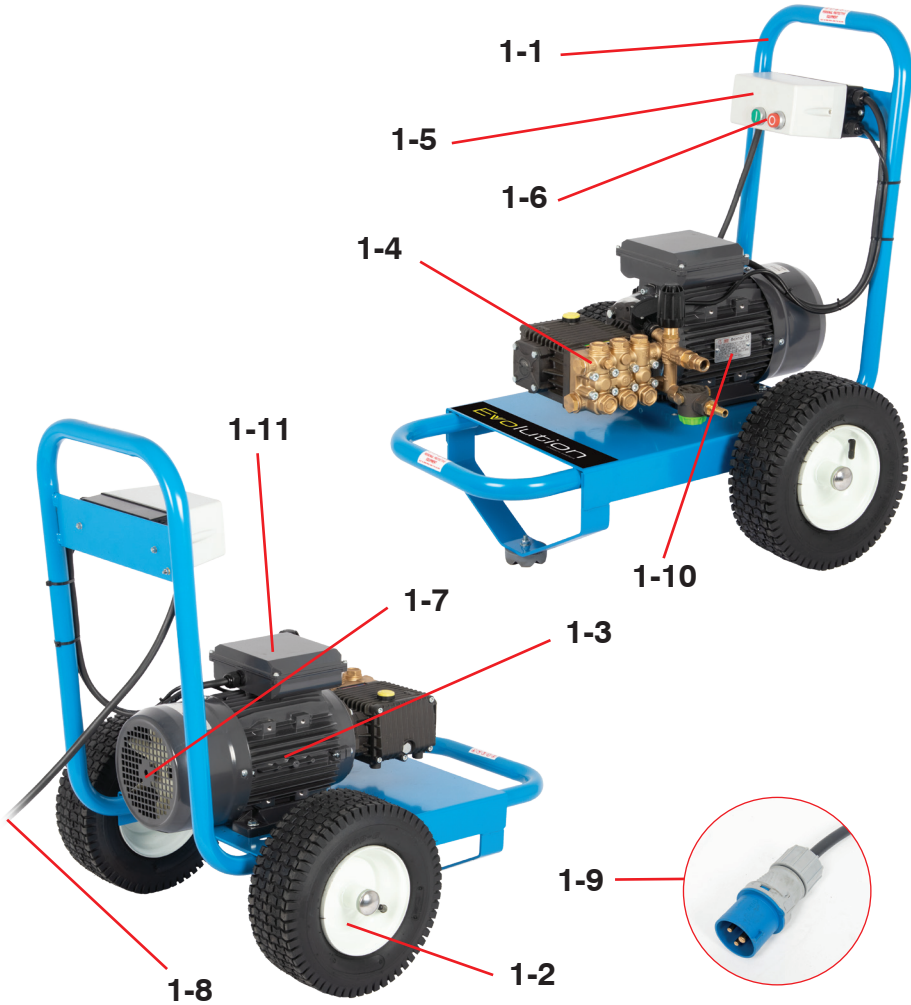
Recommended Safety Standards & Directives

This manual highlights certain safety measures which must be taken in to consideration when using this machine. However, each contractor and operator must make their own risk assessments whilst considering their individual application and environment and ensure the user is properly trained and wearing protective clothing to the required regulatory standards. We recommend visiting the Health and Safety Executive website at www.hse.gov.uk to be properly informed on best practice in the UK.

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1. Component Identification - Main Machine (1)

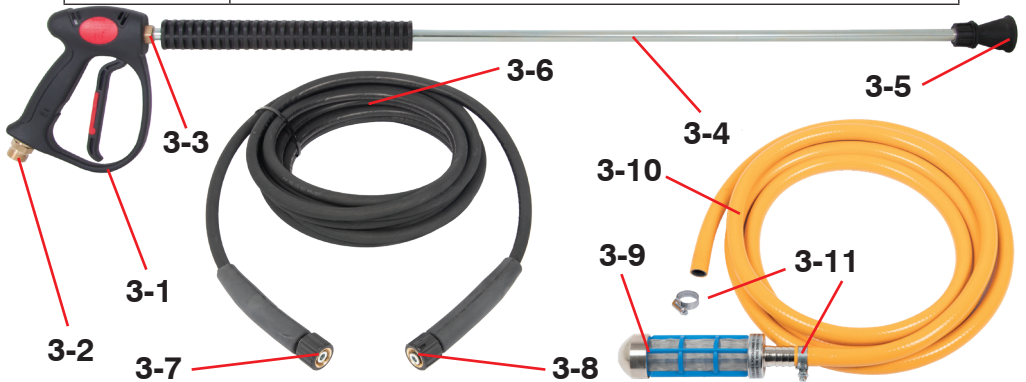


Item No.	Main Machine Photos
1-1	Trolley Frame
1-2	Trolley Wheels & Tyres
1-3	Electric Motor
1-4	High Pressure Pump
1-5	Electrical Box & Starter
1-6	Stop/Start Buttons
1-7	Motor Cooling Fan
1-8	Electrical Cable
1-9	Electrical Plug - 16 Amp (attached to 1-8 Electrical Cable)
1-10	Electric Motor Rating Plate
1-11	Electric Motor Terminal Box

1. Component Identification - Pump Close Up (2) & Accessories (3)



Item No.	Pump Close up
2-1	Unloader Valve with Internal Bypass & Pressure Adjustor Knob
2-2	Oil Breather Dipstick
2-3	Pump Oil Sight Glass
2-4	Suction Hose Inlet
2-5	High Pressure Outlet
2-6	Pressure Switch
2-7	Suction Filter



Item No.	Accessories
3-1	Trigger Gun
3-2	Trigger Gun Inlet
3-3	Trigger Gun Outlet
3-4	900mm Lance
3-5	High Pressure Outlet & Nozzle
3-6	High Pressure Delivery Hose
3-7	M22 F Coupler Port
3-8	M22 F Coupler Port
3-9	Suction Filter
3-10	Suction Hose
3-11	Hose Clips


2. Technical Specification

	Model No.	E1T12100EL-TS
Motor Information	Voltage	230 Volts
	Amps	12.2 Amps
	Cycle	50 Hz
	Power	2.2 kW
	Nominal RPM	1450 Rpm - 4 Pole
	Shaft	28mm Male
	Material	Die cast aluminium housing
	Protection	Thermal
	Power Cable	5m 3 core HO7RNF cable with blue EN60309-1/2 16A plug
Water Connection	Max Feed Temperature	40°C
	Minimum Feed Flow Rate	13 Lpm
	Maximum Feed Pressure	0.3 MPa - 3 Bar - 43.5 psi
	Maximum Suction Depth	3 Metre (9.8 Feet)
High Pressure Performance	Flow Rate	12 Lpm
	Working Pressure	10 Mpa - 100 Bar - 1450 psi
	Nozzle Jet Size	15° fan - 055 jet
	Max. recoil force on Spray Gun	<32 N
Hand-Arm Vibration Value	Hand Spray Gun	<2.5 m/s
	Spray Lance	<2.5 m/s
	Uncertainty K	1
Sound Levels	Uncertainty K	1.5
	SPL LWA dB*	80
	GSPL LWA dB**	94
Oils	Pump Oil Type	SAE 15W/40
Weights & Dimensions	Dimensions	800L x 640W x 840H (mm)
	Weight	53 Kg

*SPL = Sound Power Level on equipment representative of this type

**GSPL = Guaranteed Sound Power Level for this equipment.

3. Intended and Proper Use - Commercial

 This machine is intended for Commercial use and is not suitable for normal housekeeping purposes by private persons whereby there may be a source of danger to the public. The machine must be used solely by professional contractors who are properly trained and wearing protective clothing to the required health & safety, and national legislation regulatory standards.

The intended use of this high pressure cleaner is exclusively for:

- Cleaning of machines, vehicles, buildings, and tools with **clean, soft water**.
- Descaling and clearing of blocked pipes and hydro sandblasting by means of special accessories recommended by the manufacturer.
- Use with accessories rated to the performance of the high pressure cleaner.


The high pressure cleaner **MUST NOT** be used:


- To wash people, animals, live electrical equipment, delicate objects or the high pressure cleaner itself.
- In environments in which explosive or corrosive atmospheres are present.
- By persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or necessary knowledge.

Any other use must be considered improper and the manufacturer cannot be considered responsible for possible damages caused by the improper or incorrect use.

4. Safety Information

 **WARNING - Not following the instructions given below may cause serious injury to persons, harm to the environment and damage to equipment.**

 This machine must only be used in applications covered in section 3, Intended and Proper Use.

 Use the following personal protective equipment (PPE)



Wear protective clothes



Wear protective ear muffs



Wear protective gloves


















Wear a face shield



Wear safety boots

4. Safety Information - *continued*

-  High pressure jets can be dangerous if subject to misuse. The jet must not be directed at persons, animals, live electrical equipment or the machine itself.
-  Do not use the machine within range of persons unless they wear protective clothing.
-  Do not direct the jet against yourself or others in order to clean clothes or footwear.
-  Avoid operating the machine on unbalanced surfaces.
-  Remember that the high pressure water jet causes a recoil effect on the spray gun. The recoil values are indicated in the technical specification table (Page 3).
-  Risk of explosion - Do not spray flammable liquids.
-  High pressure cleaners shall not be used by children or untrained personnel.
-  High pressure hoses, fittings and couplings are important for the safety of the machine. Use only hoses, fittings and couplings recommended by the manufacturer.
-  To ensure machine safety, use only original spare parts from the manufacturer or approved by the manufacturer. **USE OF NON APPROVED PARTS WILL VOID WARRANTY.**
-  Water that has flowed through backflow preventers is considered to be non-potable.
-  Do not use if machine, component part, or any accessory is damaged or worn. Make sure replacement components have at least the same rating as originals.
-  Pressure washers should never be left unattended. Always switch the machine off before breaking from work.
-  Avoid covering the machine during use and operate in a well ventilated area.
-  Do not pull the cord to disconnect the power supply and do not pull on the hoses to move the machine.
-  Protect from, and do not wash down the unit, with a direct water jet.

THE MANUFACTURER CANNOT BE HELD RESPONSIBLE FOR ANY HARM OR DAMAGE CAUSED BY DISREGARDING THE DESIGNATED USES OF THIS MACHINE, ITS INSTRUCTIONS AND WARNINGS INDICATED IN THIS BOOKLET.

4. Safety Information - *continued*



Electricity can cause serious harm.

The unit is intended for installation & use by qualified personnel familiar with health & safety requirements and national legislation. It must be connected to an electricity supply installed by an electrician in accordance with BS7671 (or IEC60364). The motor terminal and control box should only be opened and worked on by a qualified electrician. Do not touch electric parts when the machine is on.



The unit is performance set at factory.

Do not adjust the regulating valves unless qualified to do so. Over loading of the motor and components can lead to equipment failure, personal injury and will void the warranty.



Disconnect or isolate the electric motor before working on the system.

Repairs & maintenance to the electrical components must only be carried out by qualified personnel.



Machine not suitable for connection to the potable water mains.

5. Safety Devices



Safety devices serve to protect the user and machine and must not be rendered in operational or their functions bypassed. Safety devices must not be tampered with by the user as this could result in serious injury and/or damage to the machine.



Unloader or Bypass Valve - Pre-set by the manufacturer, for regulating the working pressure allowing pumped fluid to circulate in the head of the pump when the operator closes the trigger gun. The unloader valve fitted to this pressure washer is a trapped pressure type valve which, when the trigger is closed, maintains pressure in the high pressure line.



Trigger Gun Safety Latch - Safety stop for locking the trigger gun lever in the closed position so it cannot be opened accidentally.



The unit is equipped with a current-thermal overload protector which switches and electrically disconnects the motor in case of overheating. If this should happen, please refer to the Trouble Shooting section on page 12 in this manual.



Electric motor auto reset thermal protection - Device which stops the operation of the pressure washer if the electric motor overheats. In the event of this occurring, press the stop button to rest the motor control box, unplug the unit from the power supply, and wait 10 to 15 minutes for the motor to cool. To restart, follow the start up procedure (page 9).

6. Standard Accessories

The E1T12100EL-TS pressure washer is supplied with the following accessories. Make sure all the items listed are included when unboxing for the first time.

- High pressure lance assembly.
- 10m high pressure hose assembly.
- 3m suction hose assembly with suction filter and hose clamps.
- Miscellaneous accessories and handbooks

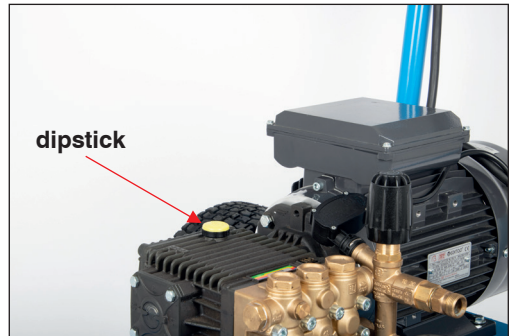
 **In case of transport damage inform vendor immediately. When unpacking the product, make sure that no accessories are missing and that none of the package contents have been damaged.**

7. Pre-Operation Checks and Set Up

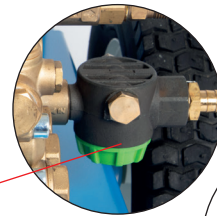
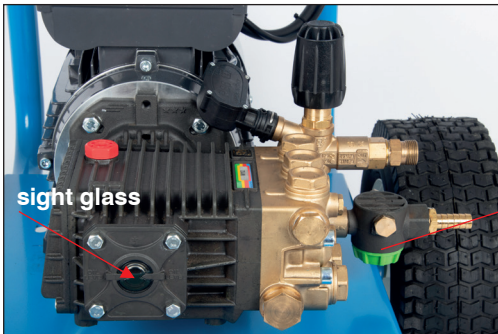
CHECKS

❶ DAMAGE - Before each period of use ensure the machine and all components and accessories are complete and undamaged. Take care to ensure the suction hose is kink-free.

❷ TRAVEL PLUGS - On the pump REMOVE THE RED TRAVEL PLUGS and replace with the appropriate yellow-topped oil dipstick/breather.



❸ OIL LEVELS - Check oil levels on the sight glass of the pump, the oil should be half way up the sight glass - ensure machine is on a level surface.



Check that the pump inlet filter is clean

Also check that the suction hose filter is clean



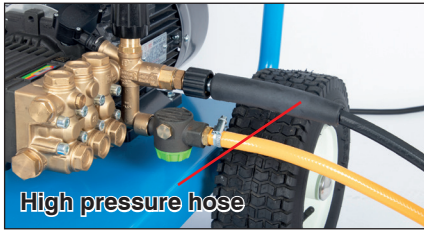
7. Pre-Operation Checks and Set Up

SET UP



1 Suction Hose

Connect the suction filter and hose assembly to the suction filter hose barb with the supplied hose clip. **Ensure all connections are tight and leak free. Air leaks on the suction side will impair the machine performance and damage components.** Place suction filter in water supply tank ensuring it remains under the water level.



2 High Pressure Hose

Connect one end of the high pressure hose assembly to the high pressure outlet of the unloader valve. Ensure the connection is hand tight.



2 Lance Assembly

Connect the trigger gun to the lance extension, then connect the other end of the high pressure hose to the lance assembly inlet. **Ensure the trigger gun safety latch is engaged to prevent accidental operation.**



Safety Latch OFF



Safety Latch ON

8. Connection to Electrical System

- Check that the voltage of the electrical system (mains) is sufficiently rated according to the motor rating plate (Component Identification: 1-10).
- Check that the plug complies with local safety regulations, and that it is provided with ground connection (earth).
- Ensure that the electric supply outlet is suitable.
- Do not connect other appliances simultaneously to the same power outlet.
- Insert the plug only after checking that the machine switch is in the OFF position.
- Un-roll the cable completely to avoid overheating and do not crush the power cable.

8. Connection to Electrical System - *continued*

- Do not use the high pressure cleaner if the electric cable is damaged.
- If the power cable is damaged do not repair, have it replaced by a qualified electrician. Replacement cords should have the same technical specifications as the original.

 **If the power supply is interrupted during use, press the stop button on the motor control box to reset the unit. To restart, follow the start up procedure.**

USE OF EXTENSION CORDS

- If an extension cord is used, make sure that plug and receptacle are water-tight. They must be raised from the ground in order to avoid possible contact with water.
- Only use suitable extension cables with the correct connections and wiring arrangement as the equipment.
- Do not use damaged extension cords. Cables should not be located near sources of heat or sharp edges. Always disconnect the plug from the socket before removing the extension cord from the product. Do not disconnect the cable without switching off the electric supply and do not pull the cable to pull the plug out of the outlet. Do not touch the plug or connections with wet hands.

9. Start Up and Operation

 **Before starting up and using the machine, make sure that it is positioned on the ground and that the resting surface is level or with a minimum slope.**

- 1 - Submerge the suction hose and filter assembly in to a clean water supply
- 2 - Connect the electric plug to appropriate electric source
- 3 - Push the **ON** button
- 4 - Open the gun with nozzle end up and keep in open position to allow air to escape from the hose.
- 5 - Once started, open and close the trigger gun to control the starting and stopping of the high pressure water jet.
- 6 - To prevent the pump from over-heating, the unit is fitted with a “Total Stop” 30s delay stop which turns off the electric motor after a period of 30 seconds of the trigger gun being closed. The unit will restart when the trigger gun is opened.
- 7 - Regulate water pressure by rotating the regulator knob.

10. Stopping Procedure

- 1 - **DRAIN PUMP** - Remove the suction hose from the water supply tank and drain the water from the pump by allowing the machine to run for a few seconds with the trigger gun open until no water is coming from the high pressure jet.
- 2 - **TURN MOTOR OFF** - Push the **OFF** button. **IMPORTANT**, press the off button even if the Total Stop delay stop function stopped the electric motor.
- 3 - **RELEASE RESIDUAL HIGH PRESSURE WATER** - Pull the trigger gun to release any trapped pressure in the delivery line.
- 4 - **TRIGGER GUN SAFETY LATCH** - Ensure the trigger gun safety latch is engaged to prevent accidental operation.
- 5 - **DISCONNECT** - Remove the electric plug from the electric source.
- 6 - **COOL DOWN** - Wait for the machine to cool down before transporting.

11. Start Up (9) & Stopping (10) Labelled Photos













12. Transporting

- ⚠ During transportation the machine must be secured using suitably rated straps and fixings.
- ⚠ The machine must only be lifted and secured by attaching lifting/security equipment to the main frame. No lifting/security straps should come in to contact with the motor, pump, valves or filter.

13. Decommisioning and Storage

- **MOTOR** - Follow the guidelines in the relevant section of motor manufacturer's handbook.
- **HOSES AND ACCESSORIES** - Disconnect hoses and lance assembly. Ensure all water is expelled from hoses and lance, check for damage and store in a manner that will not kink the hose assemblies.
- **PRESSURE WASHER** - Ensure all the water is expelled from the pump.
- **STORAGE** - If storing the unit for any lengths of time it is advisable to flush the system with glycol-based antifreeze before draining the system. Store in a dry, frost-free area.

14. Maintenance Information

-  **Danger – Risk of injury and electric shock**
Inspection, maintenance and repairs should be carried out by qualified personnel. Before carrying out any maintenance isolate the unit from the power supply.
-  **Warning – Danger of Trapped High Pressure Fluid**
Maintenance and repairs should always be performed by trained and authorised personnel. Ensure the pressure in the high pressure delivery line is released before carrying out any maintenance.
-  Unloader Valves must only be adjusted and serviced by suitably trained and qualified technicians.
-  Ensure all steps from the Decommissioning and Storage section have been carried out before starting any work on the machine.
-  Before carrying out any cleaning, maintenance and/or parts replacement, disconnect the machine from the power mains, removing the plug from the power outlet.
-  Proper maintenance will maximise the length of life of the unit and will improve performance.
-  Periodically check the conditions of the washer, pressurised parts (pipe, fittings, lance) and the electrical cable.
-  Check for any water or oil leaks and/or malfunctions. If necessary, replace affected parts. Contact your sales agent in the event of any doubts.
-  Refer to the motor manufacturer’s handbook for specific motor maintenance and service schedules.
-  Refer to the individual component user manuals for recommended maintenance tasks & schedules. Contact your sales agent should any manuals not be included.

15. Pressure Washer Maintenance Schedule

Activity	Each/ First Use	3 months or first 50 Hours	12 months or 250 hours
Inspect / top up oil levels Pump	*		
Change Oil Pump (SAE15W/40 Pump Oil)		*	*
Water Suction Filter Clean water inlet filter on suction hose Clean secondary water filter	*	*	
Inspect high-pressure hose and its connection for tightness and damage	*		
Inspect suction hose and its connections for tightness and damage	*		
High Pressure Jet Inspect Change	*		*

16. Troubleshooting

Symptom	Possible Cause	Remedy
Pump running normally but pressure low.	Pressure Regulator valve Pump sucking air. Lance in low pressure mode. Nozzle worn. Worn piston packing.	Check and adjust. Check water supply and possible air ingress. Check and adjust. Check and/or replace. Seek professional advice.
Fluctuating pressure	Blocked water filter. Pump sucking air.	Check filter, clean or replace if necessary. Check integrity of suction hose and connections.
Pressure low after a long period of normal use.	Nozzle worn.	Check and/or replace.
Pump noisy.	Pump sucking air. Excessive temperature of liquid in pump. Blocked water filter. Worn bearing or valves.	Check integrity of suction hose and connections. Reduce temperature to below 60°C, do not allow pump to idle for long periods. Check filter, clean or replace if necessary. Seek professional advice.
Presence of water in oil.	Ingress through oil breather. Worn oil seals.	Replace oil, do not wash pump. Seek professional advice.
Water dripping from under pump.	Worn piston packing.	Seek professional advice.
Oil leakage	Worn oil seal.	Replace oil seal.
Excessive vibration in lance/delivery line.	Water supply low. Ingress of air into suction line. Irregular functioning of valves. Blocked water filter.	Check adequacy of water supply. Ensure suction filter is below water level. Check integrity of suction hose and connections. Seek professional advice. Check filter, clean or replace if necessary.
The motor hums but does not run when turned on	System voltage is lower to the minimum advised. The pump is stuck or frozen. Extension cord incorrect.	Check that your power source is adequate. Check that your extension cord is adequate if using one.
The motor does not start when switched on	The plug is not well connected. No power supply.	Check plug, cord and switch.
The motor stops	The thermal protector has turned the machine off for overheating.	Turn off and let cool down for a few minutes before turning on again. Check that the voltage is correct.

17. Disposal and Environmental Protection



Old appliances contain valuable materials that can be recycled; these should be sent for recycling. Batteries, oil, and similar substances must not enter the environment. Please dispose of your old appliances using appropriate collection systems.

Please do not release engine oil, fuel oil, diesel and petrol into the environment. Protect the ground and dispose of used oil in an environmentally-clean manner.



The packaging material can be recycled. Please do not throw the packaging material into household waste; please send it for recycling.

18. Warranty Information



For warranty terms refer to Section 7 of our Terms and Conditions at:
www.dualpumps.co.uk/company/legal
or scan the QR code

19. UKCA & EC Declaration of Conformity

Declaration of Conformity

Equipment Type

High pressure cleaner - Engine Driven

Relevant UKCA Directives

Supply of Machinery (Safety) Regulations 2008

Electrical Equipment (Safety) Regulations 2016

Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001

Relevant EU Directives

2006/42/EC - Machinery Directive

2014/30/EU - Electromagnetic Compatibility (EMC) Directive

2000/14/EU - Noise Emissions Directive

Applied Harmonised Standards

EN60335-1-2012-A13-2017

EN60335-2-79-2012

EN1829-1-2010

EN1829-2-2008

EN4871-2009

Manufacturer

Dual Pumps Ltd, Saxby Road Industrial Estate, Melton Mowbray, LE13 1BS. United Kingdom

Person authorised to compile the technical file & declaration

Tom Herridge, Director

Signed –

Date – 12/01/2022

We hereby declare that the machinery described above complies with the relevant basic health and safety requirements of the UKCA & EU Directives, both in its' basic design and construction. This declaration shall cease to be valid if the machine is modified without our prior approval.



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