

# ***EZ-Ject***<sup>™</sup> ***HERBICIDE SYSTEM***

## ***Instruction Guide***

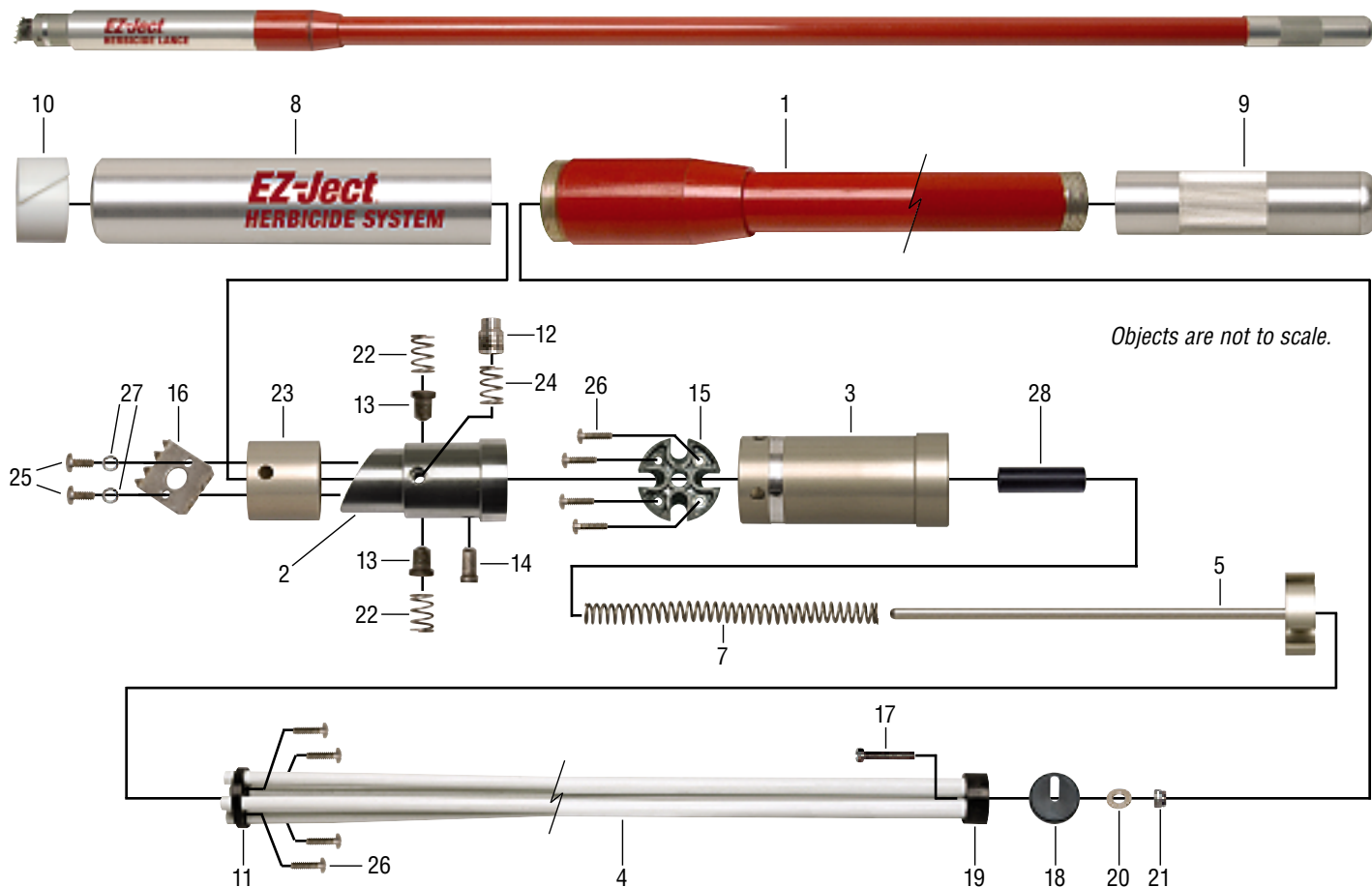


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**Tree Injection Solutions**

# EZ-Ject™ Herbicide Lance Parts Chart



DRAWING #	PART #	DESCRIPTION	DRAWING #	PART #	DESCRIPTION
1	1001a	* Handle Assembly —standard length 47.5" (120 cm)	13	1013	Shell Gate
1	1001b	* Handle Assembly —short length 25.25" (64 cm)	14	1014	Interlock Pin
2	1002	Injector Nose	15	1015	* Head Insert
3	1003	Injector Head	16	1016	Gripper Teeth
4	1004a	* Shell Chamber Assembly —standard length 55" (140 cm)	17	1017	* End Cap Pin
4	1004b	* Shell Chamber Assembly —short length 32.5" (83 cm)	18	1018	* Shell Chamber Lid
5	1005	Injector Rod and Holder	19	1019	* Shell Chamber Cap
7	1007	Injector Spring	20	1020	* Rod Bushing
8	1008	Head Sleeve	21	1021	* End Cap Nyloc Nut
9	1009	End Cap	22	1022	Shell Gate Spring
10	1010	Sleeve Bearing	23	1023	Retainer Sleeve
11	1011	* Shell Chamber Retainer	24	1024	Index Button Spring
12	1012	Index Button	25	1025	Gripper Teeth Screws
			26	1026	Shell Chamber Retainer and Injector Head Screws
			27	1027	Gripper Teeth Lock Washers
			28	1028	Injector Head Bushing

\* Not available as replacement parts.

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## Filling The EZ-Ject™ Lance

1. Stand the lance in an upright position with the injector head (#3) downward.
2. Unscrew the end cap (#9) counter-clockwise to expose the shell chamber lid (#18).
3. Slide the lid over to one side to expose the shell chamber openings.
4. Each end of a tube of herbicide shells has a cap. The black cap is the bottom; the colored cap is the top. Remove the colored cap from the top of one tube of EZ-Ject Herbicide Shells. Place the open end of the tube onto one of the four shell chamber openings. Tilt the tube to empty the herbicide shells into the chamber. **Ensure shells are loaded open end first.** If shells are loaded backwards, they can jam the lance. Each shell chamber in the standard size EZ-Ject Lance will hold approximately four full tubes of shells.



- The standard EZ-Ject Lance has a capacity of 400 shells, 100 in each of four shell chambers.
- The short EZ-Ject Lance holds 228 shells, 57 in each shell chamber.

5. When filling each shell chamber, notice that the openings are numbered one through four. These correspond with numbers of each index hole on the injector head (#3). When the index button (#12) is engaged in any one hole, that number corresponds to the chamber from which shells will be dispensed.
6. When all four chambers are full, simply slide the lid over to cover the openings, replace and tighten the end cap.
7. The lance is now ready for use.
8. As the shells are emptied from each shell chamber, depress the index button (#12) to select the next full chamber.
9. Remove shells from lance after use. **Do not store the lance for more than six hours with herbicide shells in the chambers.** If the lance must be stored briefly with shells loaded, **always store with the injector nose upward.** This orientation minimizes the possibility for herbicide to seep from the shells.

### Timing of injections

Use year-around, unless bark is frozen to the point of preventing shell penetration. Use in all weather conditions, including rain.

## Operating The EZ-Ject™ Lance

1. Due to the fact that the lance is gravity fed, it should be used angled downward at 30 to 45 degrees from the horizontal position. The shells will only gravity feed into the head when the lance is tilted downward 30 to 45 degrees.
2. Ensure that the index button (#12) on the head (#3) is pointing in an upward position. If the index button is not in an upward position, the lance can jam.
3. The most comfortable position for holding the lance is usually gripping the rounded end cap (#9) with the right hand, and the left hand supporting the lance, approximately 18" down the handle (#1). (Reverse for a left-handed person).



4. To inject a shell, position the lance nose piece onto the tree trunk so that the gripper teeth (#16) penetrate the bark and prevent the lance from sliding down the vertical surface. Then firmly push the lance on the tree. The pushing action will compress the lance and inject a herbicide shell into the tree. Ensure the shell has penetrated into the tree cambium. Generally, at least 1/2 of the shell should be embedded into the tree.
5. Implant the recommended number of EZ-Ject shells so that they are placed evenly around the circumference of the trunk. This will ensure that the herbicide is well distributed in the target tree to provide the best possible control. Do not implant directly above one another.
6. In the event that the lance does not fully compress, check that the index button (#12) is upward. An interlock pin (#14), built into the injector nose (#2), prevents injection when the index button is not upward or when the lance is not correctly angled to gravity feed the shells.

Do not continue to apply excessive force on the interlock pin if the lance is improperly oriented, as this will bend the pin and prevent proper functioning of the lance.

**Application rate** — Please refer to chemical label.

## Storage and Maintenance

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**Storage:** *Do not store* the lance for more than six hours with herbicide shells in the shell chambers. If the lance must be stored briefly with shells loaded, *always store with the injector nose upward*. This orientation minimizes the possibility for herbicide to seep from the shells.

**Maintenance:** All components are made of corrosive-resistant materials that require minimal maintenance. However, it is recommended that the lance be thoroughly cleaned after each use to ensure efficient operation.

On a regular basis, clean the lance by submerging the injector head (#3) down in a pail of warm water, one to two hours. This will dissolve any deposits that may be present on the interior surfaces of the head.

The shell chambers (#4) may be flushed out after prolonged use. This is done by placing the head into an empty water pail, removing the end cap (#9) and flushing out each shell chamber with a water hose. To ensure each chamber is completely flushed, rotate the injector nose (#2) through its four positions. If it is necessary to dismantle the lance, refer to the EZ-Ject Parts Chart and the following instructions:

1. To remove the injector nose (#2), depress the index button (#12) and retract it from the head (#3). This procedure may also be used in the event of a jam. Pushing a screwdriver through the center hole from either end can then clear the nose.
2. To clean the injector nose (#2), swish in a pail of warm water to dissolve any residues that may be present on the interior surface of the center profiled hole. Ensure that the shell gates (#13) are opening consistently by pushing a 1/4" diameter rod through the hole. Considerable resistance should be felt when the gates are operating properly.
3. Gripper teeth (#16) are fastened to the injector nose. These can be replaced when necessary by removing the two screws and replacing with new teeth.

## Service and Parts

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EZ-Ject has been designed with a minimum of parts to allow for ease of maintenance and repair.

Most of the service and repair functions required, including parts replacement, may be very simply performed by you.

However, if you require service assistance or wish to order a part, please contact your distributor.

## Trouble Shooting

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**Jamming:** May occur when the lance will not complete a full stroke, or return to its extended position. Here are some instances when the lance could jam:

- A shell may fall only partly into the injector nose, possibly when the gripper teeth (#16) slip off the tree surface. This may result in only half a stroke and could cause the lance to jam. To clear a jam, use the procedure described in Step 1 of the Storage and Maintenance section.
- The lance may seem jammed if improperly oriented during operation. Ensure that the lance is correctly oriented with the index button upward. The interlock pin will prevent injection if the lance is operated with the index button downward. Do not operate in the improper orientation as this can bend the interlock pin.

**Misfire:** Occurs when the lance completes a full stroke but no shell is ejected. Use these suggestions to avoid a misfire:

- Ensure the injector nose (#2) is not aligned with an empty shell chamber (#4). If this is found to be the problem, rotate the nose to the next loaded chamber.
- Ensure the herbicide shells are not sticking in the injector nose (#2) due to excessive deposits on the interior walls. Wash the injector nose in a pail of warm water if this is the problem.
- Ensure there are sufficient shells in the lance and that the lance is correctly oriented when operating.

***For additional service assistance,  
contact your distributor or call us toll free at:***

**1-888-395-6732**

**[www.ezject.com](http://www.ezject.com)**

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