Float vent
Hand pump handle
Lid, washers, air vent
Line filters
Nozzle and nozzle filter
Pistol grip, lock on/off
Pressure regulator
Pressurized tank
Pump and pump reservoir
Pump handle
Reservoir tank
Shoulder straps
Tank filter
Wand

Identify the parts of a typical backpack sprayer

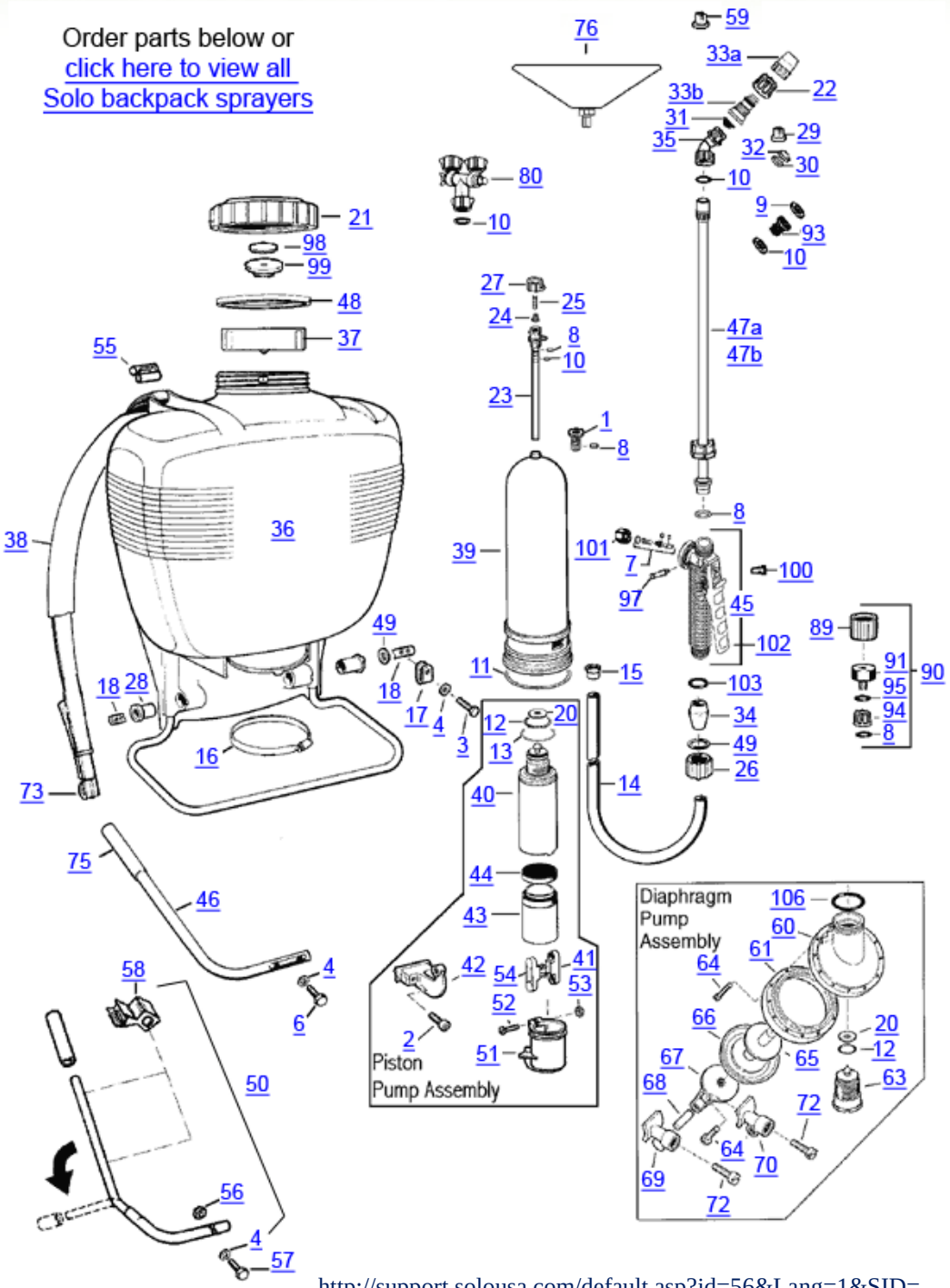
- Note: hollow cones nozzles are commonly used for insecticides or fungicides

- Note: fan-type nozzles are commonly used for herbicides

Identify which nozzle parts are appropriate for herbicides and for insecticides or fungicides

- Shoulder straps
- Lid and washers and air vent
- Filler filter
- Hand pump handle
- Hoses, nozzles, line filters, and pistol grip
- Hollow cone and fan type nozzles
- Tank with pressure regulator
- Pump, and pump reservoir

Inspect a backpack sprayer before use



Go to

http://www.solousa.com/

For specific part information

All parts

Backpack Sprayer

http://support.solousa.com/default.asp?id=56&Lang=1&SID=

- Fill with water , add a pinch of blue food colouring or Turf Mark dye to the 5 L mark on sprayer tank
- Select wand best suited for crop and chemical being applied
- Adjust fit of backpack for best ergonomics
- Pump 1-3 times for low (herbicides) and 6-8 times for highly pressurized tank to get smaller droplets (best for insecticides or fungicides)
- Pump continuously while spraying

Calibrate a backpack sprayer to determine the output and your delivery rate

Backpack Sprayer

- Apply “pesticide” to runoff (85% may up on the ground!)
- Apply “herbicide” to glisten (not runoff)
- Use the hollow cone nozzle for insecticides and fungicides to deliver small droplets on both leaf surfaces for good coverage
- A good test area should be typical of the crop, and large enough to get a good spray rhythm

Calibrate a backpack sprayer to determine the output and your delivery rate

- Determine your output in ml per minute. Output units are always amount/unit time.
- If sprayed 2L for 3 plants then your output rate is .67 L per plant then it should take .67 x 24 = 18 L for the whole row 0.67 L per plant is delivery rate.
- Mix chemicals in separate container as per label recommended rate, add to tank and make up to volume with additional water

Calibrate a backpack sprayer to determine the output and your delivery rate

Backpack Sprayer

- Fill with water and food colouring to check nozzles and application rate
- Herbicides apply to glisten (test on window)
- Fungicides and insecticides apply to 85% run-off

- Do not spray on breezy days, especially with herbicides in gardens

Calibrate a backpack sprayer to determine the output and your delivery rate

- Look forward, not down

- Walk straight lines and only forward, never backward

- Pump about once every step
- Spray height <30 cm above ground

Apply pesticides safely and effectively using a backpack sprayer

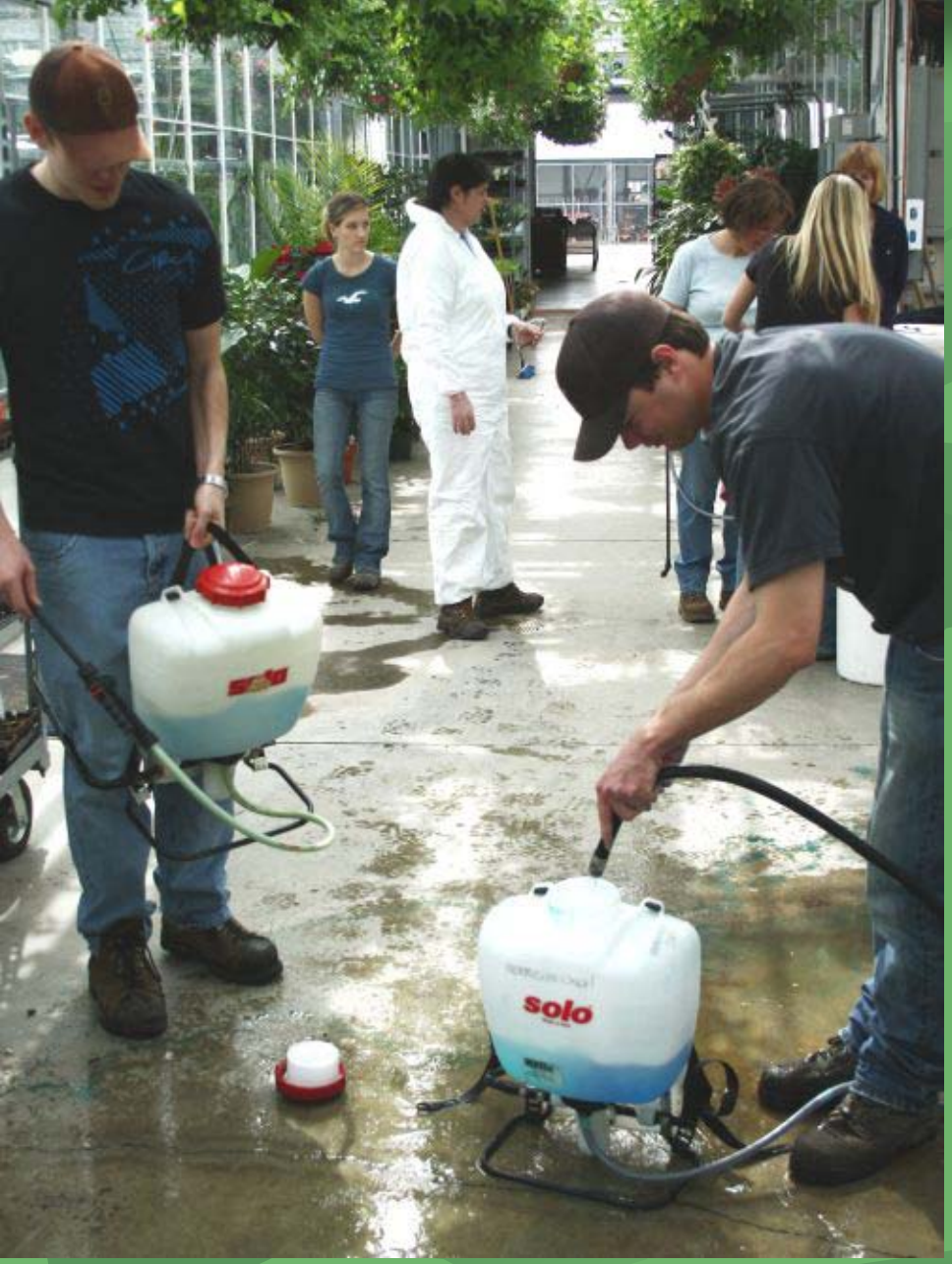
- Keep nozzle to side so boots do not get wet

- Keep walking past last plant at same speed and then release the pistil grip
- Keep the nozzle close to ground for herbicides

Apply pesticides safely and effectively using a backpack sprayer

- Put on coveralls, goggles, gloves, and/ or respirator according to product label

Apply pesticides safely and effectively using a backpack sprayer



- Apply all chemical to crop
- Depressurize
- Triple rinse inside of tank and wand when done
- No pesticides down drain
- Can use cleaners (e.g. Nutrasol) but realize it might not get rid of all herbicide residue – best to have separate herbicide and pesticide sprayers
- Lubricate O-rings with silicon spray or vegetable oil
- Hang up-side-down with lid off
- Cap tank when dry inside

Outline the steps to clean and store a backpack sprayer

1. Distinguish herbicide, fungicide/insecticide, and growth regulator nozzles.
2. Define output in correct units.
3. Define delivery rate in correct units.
4. Explain relationship between pressure and output.
5. Explain relationship between pressure and droplet size.
6. Explain effects of droplet size on coverage and drift.
7. (Spray to) run-off and glisten: what are they and when used?
8. How to evaluate if the nozzle is okay?
9. Why is it important to have an accurate delivery rate?
10. What should be done with any excess mixed pesticide?
11. How should you clean, empty and store a backpack sprayer?

Review Questions

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