

KEY ADVANTAGES

- *All stainless steel (303/304) construction*
- *No oil in the system that can contaminate your cleaning process. All speed reduction accomplished with gear reduction, not oil speed reduction*
- *All seals are teflon-carbide, lubricated with water*
- *Main rotating axes are all stainless steel coated with ceramic for superior wear*
- *All stainless steel, sealed bearings*
- *Low maintenance, easy to access*
 - *No difficult-to-remove, double seals as there is no oil in the system*
 - *No oil to change or monitor*
- *Speed not affected by hot or cold water (except A250 model)*

GENERAL CONSIDERATIONS

- All assemblies require at least 1.9 GPM (7 liters) per nozzle
- All assemblies require a minimum of 700 PSI
- All self-propelled models will lose 10% of pump head pressure due to internal friction
- Ideal cleaning speed is 14 RPM +/- 3 RPM on non high-speed models
- An assembly with 4 nozzles offers better cleaning than a 2 nozzle assembly (less striping)
- Must use 4 nozzles for assemblies used in tanks larger than 6.5 feet (2 meters) in diameter
- Rotating the internal gears every 6 months will prolong gear life

BASE MODELS

- A80-R** Self-propelled unit for a wide variety of cleaning applications.
- A80-R2** Same as the A80, but with only 2 gear reductions for quicker cleaning. Popular for quickly cleaning refuse trucks and containers.
- A80-FR2** Similar to A80-R2, but only cleans one surface directly in front of the assembly. Typical applications include under trucks, wheel cleaning, or tile cleaning on a production line (you must move either the product or the nozzle to clean large areas). Similar in concept to a surface cleaner.
- M163** Self-propelled unit for tanks with small openings such as barrels.
- M63E** Electric-driven (24V) unit is cost-effective solution where electricity is available. May require a transformer to operate.
- M63P** Same as the M63, but with pneumatic drive adapter.
- A250** For exceptionally large tanks and high flow applications such as gasoline trucks. Uses angled nozzles instead of internal injector to adjust speed.

QUESTIONS TO ANSWER WHEN SELECTING AN ASSEMBLY

1. Do you have a pressure washer or pumping unit today?
2. If yes, what is its pressure and flow? If no, size your pump along with the nozzle assembly.
3. What size of opening do you have to access the inside of the tank?
 - Four inches or smaller and you must use the M series of cleaning assemblies.
4. Do you have a time limit in which you must clean?
 - The A80FR2 offers fewer gear reductions, so it spins faster to clean quicker (but somewhat less thoroughly)
5. What material are you cleaning?
6. How clean does the tank need to be (rinsed, clean, or spotless)?
7. What is your tank diameter?
8. What is the total flow of your pumping unit?
9. Divide this flow by 4. If the result is greater than 1.9 GPM (7 liters per minute), you can use four nozzles, which is generally preferred because it cleans better than 2 nozzles. If the result is lower than 7 liters per minute, you must use 2 nozzles, with a minimum flow for the total pumping unit of 3.75 GPM (14 liters per minute).

SIZING EXAMPLE

Situation: 55 gallon barrel; time is less important than ensuring the container is clean; using a 4 GPM, 2,000 PSI pump

1. The barrel has a hole that is only 2" in diameter. Therefore, must use an M-series assembly.
2. No access to electricity or pneumatic power, so must use model MI63 (self-propelled).
3. Container size is relatively small, therefore 2 nozzles is satisfactory.
4. 4 nozzles is not possible because there is not enough flow to support this (4 GPM divided by 4 is only 1 GPM, which is less than the threshold of 1.9 GPM.)
5. 14 RPM +/- 3 RPM is the ideal speed range. Consult Chart 1, right hand scale, on page two of the spec sheet for model MI63 to calculate internal injector size. Following 4 GPM over from the right yields a 2 mm injector at approximately 13 RPM.
6. Locate the 2 mm injector line on the left hand scale of Chart 1 and reference 4 GPM on the scale to the left. This point indicates a pressure loss of approximately 120 PSI due to internal friction.
7. 2,000 PSI less 120 PSI results in a final pump rating of 4 GPM at 1,880 PSI.
8. Consult a standard nozzle sizing chart to identify the correct nozzle size for the outlet nozzles of the assembly. Each nozzle is 2 GPM at 1,880 PSI, yielding a nozzle size of 3.0.
9. Consult Chart 2 to calculate cycle time for thorough cleaning. 13 RPM yields a time of approximately 4.5 minutes per cycle. Thorough cleaning requires 3 complete cycles, or 13.5 minutes.