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COMMERCIAL POOL EQUIPMENT GUIDE

How to select, maintain & upgrade commercial pool systems.

A PRACTICAL GUIDE FOR

Facility managers

Schools

Municipalities

Hotels

Aquatic centers

Contractors

Commercial pool operators

Commercial pools place greater demands on circulation, filtration, heating, and chemical-control systems than residential pools. The right equipment can improve water quality, reduce downtime, and help control long-term operating costs. This guide covers the core equipment categories, what to consider when replacing or upgrading systems, and where efficiency improvements may have the greatest impact.

INSIDE THIS GUIDE

1 Start with the entire system	P. 02	2 Commercial pool circulation	P. 02
3 Commercial pool filtration	P. 03	4 Chemical control & water treatment	P. 04
5 Commercial pool heating	P. 04	6 Improve energy efficiency	P. 05
7 Repair, retrofit or replace?	P. 05	8 Equipment selection checklist	P. 06
9 Preventive maintenance checklist	P. 07	10 When is it time to upgrade?	P. 07

SECTION 01 START WITH THE ENTIRE SYSTEM

Commercial pool equipment works as an interconnected system, so one underperforming component can affect several others. Before replacing equipment, it is important to understand whether the issue is isolated or part of a larger system problem.

● BEFORE REPLACING EQUIPMENT, ASK

- | | |
|--|--|
| ◆ Is the current equipment properly sized? | ◆ Could another component be causing the issue? |
| ◆ Would a retrofit solve the problem? | ◆ Is energy or water use higher than it should be? |
| ◆ Are replacement parts still available? | ◆ Does the system meet current facility needs? |



KEY TAKEAWAY

A direct replacement is not always the best solution. Looking at the full system can uncover better-performing and more cost-effective options.

SECTION 02 COMMERCIAL POOL CIRCULATION

Proper circulation keeps water moving through filtration, heating, and chemical-treatment equipment. In commercial facilities, maintaining adequate flow is essential for consistent water quality and reliable system performance.

● COMMERCIAL POOL PUMPS

Pump sizing should consider:

- | | | |
|----------------------|--------------------------|-------------------|
| ◆ Pool volume | ◆ Required turnover rate | ◆ Plumbing size |
| ◆ Total dynamic head | ◆ Filter capacity | ◆ Operating hours |

Oversized pumps can waste energy, while undersized pumps may not provide adequate flow.

● VARIABLE-FREQUENCY DRIVES

VFDs allow pump motors to operate at different speeds based on demand. Potential benefits include:

- | | |
|--------------------------|-----------------------|
| ◆ Lower electricity use | ◆ Better flow control |
| ◆ Reduced equipment wear | ◆ Quieter operation |

● FLOW METERS

Flow meters help verify that water is moving through the system at the required rate. They can also help identify changes in circulation performance.

**SECTION 03****COMMERCIAL POOL FILTRATION**

Commercial pools typically see heavier bather and contaminant loads, making dependable filtration especially important. The right filtration system should balance water quality, maintenance needs, operating costs, and available space.

FILTER TYPE	ADVANTAGES	CONSIDERATIONS
Sand	Durable and easy to operate	Requires backwashing
Cartridge	No backwashing required	Cartridges need cleaning and replacement
D.E.	Very fine filtration	More maintenance required
Regenerative media	Fine filtration with reduced water use	Higher upfront investment

● CONSIDER

- ◆ Pool volume
- ◆ Mechanical-room space
- ◆ Replacement costs
- ◆ Bather load
- ◆ Water use
- ◆ Flow requirements
- ◆ Maintenance needs

**THINK BEYOND PURCHASE PRICE**

Water, labor, maintenance, and replacement parts all affect the true cost of a filtration system.

SECTION 04 CHEMICAL CONTROL & WATER TREATMENT

Commercial pools require consistent water chemistry throughout the operating day, even as bather load changes. Automated controls and feeders can help operators maintain more stable conditions and reduce manual adjustments.

CHEMICAL CONTROLLERS

Automated controllers may monitor:

- ◆ pH
- ◆ Sanitizer levels
- ◆ Flow
- ◆ ORP
- ◆ Temperature

They can communicate with chemical-feed systems to make adjustments as conditions change.

CHEMICAL FEEDERS

Automated feed systems can help:

- ◆ Maintain consistent chemistry
- ◆ Reduce manual adjustments
- ◆ Improve chemical-use efficiency
- ◆ Simplify daily operation



KEEP TESTING

Automation should support, not replace, routine testing and inspections.

SECTION 05 COMMERCIAL POOL HEATING

Commercial pool heaters often operate for longer periods and under heavier demand than residential systems. Proper sizing and maintenance are important for maintaining temperature without creating unnecessary energy costs.

CONSIDER

- ◆ Pool volume
- ◆ Indoor vs. outdoor use
- ◆ Operating schedule
- ◆ Recovery time
- ◆ Target temperature
- ◆ Climate
- ◆ Fuel source

WARNING SIGNS INCLUDE

- ◆ Inconsistent temperature
- ◆ Longer heating cycles
- ◆ Frequent shutdowns
- ◆ Leaks or corrosion
- ◆ Rising utility costs

SECTION 06 IMPROVE ENERGY EFFICIENCY

Commercial pools can consume significant amounts of electricity, water, fuel, and chemicals. Small equipment or control improvements can often reduce operating costs without requiring a full system replacement.

KEY OPPORTUNITIES INCLUDE
VARIABLE-SPEED OPERATION

Reduce pump speed during lower-demand periods.

EFFICIENT FILTRATION

Modern filtration may reduce water and backwashing requirements.

PROPER EQUIPMENT SIZING

Oversized equipment can increase operating costs.

CLEAN FILTERS & PLUMBING

Restricted flow forces pumps to work harder.

AUTOMATED CONTROLS

Modern controls can better match equipment operation to actual demand.

MAINTENANCE MATTERS

Small performance issues can increase operating costs long before equipment fails.

SECTION 07 REPAIR, RETROFIT OR REPLACE?

Not every equipment issue requires full replacement. In many cases, a targeted repair or retrofit can restore performance, improve efficiency, or extend the useful life of existing equipment.

REPAIR	RETROFIT	REPLACE
Equipment is relatively new	Core equipment still performs well	Equipment fails frequently
Problem is isolated	Energy use could improve	Parts are difficult to find
Parts are available	Controls are outdated	Operating costs are excessive
Performance remains acceptable	Automation could improve performance	Equipment no longer meets facility needs

COMMON RETROFIT OPPORTUNITIES

VFDs

Chemical controllers

Flow meters

Pump motors

Filtration upgrades

Automated controls


SECTION 08
EQUIPMENT SELECTION CHECKLIST

Gathering the right information before selecting equipment can help prevent sizing and compatibility issues. It also makes it easier to compare replacement options and identify potential upgrade opportunities.

● POOL INFORMATION

Pool volume _____

Facility type _____

Average bather load _____

Required turnover rate _____

Operating hours _____

● EXISTING EQUIPMENT

Pump manufacturer/model _____

Filter manufacturer/model _____

Heater manufacturer/model _____

Chemical-control equipment _____

Plumbing size _____

Current flow rate _____

● OPERATIONAL INFORMATION

Energy usage _____

Water consumption _____

Recurring maintenance issues _____

Replacement-parts availability _____

Water-quality concerns _____

Future facility plans _____

SECTION 09**PREVENTIVE MAINTENANCE CHECKLIST**

Routine inspections can help identify equipment problems before they result in downtime or expensive repairs. A consistent maintenance schedule also supports better efficiency and longer equipment life.

● ROUTINE

- ☐ Verify flow and circulation
- ☐ Test water chemistry
- ☐ Inspect chemical-feed equipment
- ☐ Check for leaks
- ☐ Review controller readings

● PERIODIC

- ☐ Inspect pump strainers
- ☐ Review filter pressure
- ☐ Check valves and plumbing
- ☐ Review flow-meter readings
- ☐ Listen for unusual noise or vibration

● ANNUAL

- ☐ Inspect pumps and motors
- ☐ Evaluate filter condition
- ☐ Service heaters
- ☐ Inspect controllers and sensors
- ☐ Replace worn seals and gaskets
- ☐ Identify aging equipment

SECTION 10**WHEN IS IT TIME TO UPGRADE?**

Aging equipment does not always fail suddenly. Rising costs, increasing maintenance needs, and inconsistent performance can all signal that it is time to evaluate whether an upgrade would provide better long-term value.

● CONSIDER AN EQUIPMENT EVALUATION IF YOUR FACILITY IS EXPERIENCING

- | | | |
|--|---|---|
| ☐ Rising energy costs | ☐ Inconsistent water quality | ☐ Difficulty finding parts |
| ☐ Excessive water use | ☐ Poor flow | ☐ Increasing maintenance needs |
| ☐ Frequent repairs | ☐ Aging equipment | ☐ Facility expansion |

**PLAN AHEAD**

Proactive planning can help facilities budget for upgrades before a critical component fails.



BUILD A BETTER COMMERCIAL POOL SYSTEM

The strongest commercial pool systems are designed and maintained as a whole. Circulation, filtration, chemistry, heating, and controls all influence one another, so system-level planning can improve both performance and efficiency.

Halogen Supply works with commercial pool operators, contractors, schools, municipalities, hotels, aquatic centers, and other facilities to help identify equipment for replacement, retrofit, and system upgrade.

FACILITY NOTES & EQUIPMENT TO REVIEW



NEED HELP SELECTING COMMERCIAL POOL EQUIPMENT?

Whether you are replacing one component or evaluating a broader system upgrade, Halogen Supply can help you compare options and identify equipment that fits your facility's needs.

Contact Halogen Supply to discuss your commercial pool equipment needs or request a quote.

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REQUEST A QUOTE