Volume 2 Issue 1

HAYWARD®
POOL PRODUCTS
One source. Every pool.

Splash

A technical publication for Hayward dealers and service providers

Phantom® is first cleaner to tackle it all!

From the top of the pool to the bottom, from the steps to the sides – and everywhere in between – Hayward's new Phantom (above) is the industry's first automated pool cleaner to handle both surface cleaning and bottom cleaning – a TOTAL cleaning solution.

With the flip of a switch, Phantom will clean the bottom or the surface of the pool – or both!

Look for more about the Hayward Phantom in future issues.

— Inside —

Welcome Back: *Diving into heaters*

Welcome to this second edition of the Hayward Splash, our technical services newsletter which this quarter features the new IDL2 heater and related topics.

Specifically, you can read about the IDL2's advanced flame sensor and how it works. Another article spotlights the new silicon-nitride ignitor – the first of its kind in the pool industry. Plus, we've highlighted key differences affecting IDL2 installation, as well as notable operating differences impacting you and your customers.

Response to our inaugural issue was fantastic. We have heard from numerous customers thanking Hayward for the Splash publication, leading the industry with a much-needed technical service publication. We thank you for your very positive feedback!

We also had dozens of Splashback Contest participants, and encourage our dealers and their staffs to participate in this issue's contest. One winner will be selected from the correct entries to receive a valuable service tool – an Omega digital manometer (pictured below). We hope you enjoy reading this issue and will be able to use the information to improve your business, both in service and with Hayward products.

INSIDE: Manometer testing demystified

Low gas pressure fuels heater woes

3 Key Gas Pressure Tests
Page 5

By a wide margin, the most common reason for gas heater failure – and single, biggest source of frustration for pool service technicians – is insufficient gas supply.

Confusion and outright misperceptions about proper gas pressure testing procedures for swimming pool heaters are major roadblocks for many pool technicians.

While fanning the flames of frustration, undetected gas pressure problems also fuel an even bigger problem – that being the multitude of perfectly good heaters that get rebuilt from the ground up, one new part after another, before technicians stumble across low gas pressure being the real culprit.

Low gas pressure is **so frequently the real culprit** in heater problems, we jokingly refer to the Hayward heater "IF" fault code as meaning Insufficient Fuel – though the IF code actually stands for Ignition Failure.

THE GOOD NEWS IS, armed with simple, step-by-step procedures for three sequential gas pressure tests detailed on page 5 in this issue of Splash, technicians can eliminate all the frustration by correctly identifying insufficient gas pressure and its source in very little time.

First, some basics. Gas pressure readings and tables are expressed in "WC" (inches of water column), and testing is done with a manometer. An old manual manometer will do the trick, though a newer digital manometer is far easier, more accurate and much simpler to use. Costing less than $100, the digital manometer (pictured above) should be a staple tool in every technician's toolbox.

Propane vs. Natural Gas. Gas pressure (WC) requirements differ substantially for propane vs. natural gas fuel sources. The adjacent chart shows WC requirements for the most popular Hayward heaters. For individual product specs and other information, please refer to the heater's label or the heater's Installation & Operation Manual.

Acceptable GAS PRESSURE Readings
HAYWARD HEATERS
Refer to System Guides for any products not included, and for further details.
WC = Inches of WATER COLUMN

NATURAL GAS	Test 1 Maximum Inlet	Test 2 Minimum Load	Test 3 Manifold
CZ150/400 Heat Master 280/406	10.0" WC 10.5" WC	5.0" WC 5.0" WC	4.0" WC 4.0" WC
HM2 H-Series 150/400	10.5" WC 10.5" WC	5.0" WC 4.5" WC	4.0" WC 3.5" WC
ABG/H100 H250/350/400 IDL **(A)**	10.5" WC 10.5" WC	3.0" WC 4.5" WC	2.0" WC 3.0" WC
H250/350/400 IDL **(B)** IDL2	10.5" WC 10.5" WC	3.0" WC 3.0" WC	2.0" WC 2.0" WC

PROPANE GAS	Test 1 Maximum Inlet	Test 2 Minimum Load	Test 3 Manifold
CZ150/400 Heat Master 280/406	13.0" WC 14.0" WC	11.0" WC 11.5" WC	10.0" WC 10.5" WC
HM2 H-Series 150/400	13.0" WC 13.0" WC	11.0" WC 10.0" WC	10.0" WC 9.0" WC
ABG/H100 H250/350/400 IDL **(A)**	13.0" WC 13.0" WC	3.0" WC 9.0" WC	2.0" WC 8.0" WC
H250/350/400 IDL **(B)** IDL2	13.0" WC 13.0" WC	8.0" WC 8.0" WC	7.0" WC 7.0" WC

(A) Previous to Serial Number 1115 3115 (B) Starting with Serial Number 1115 3115

Splash

Please send comments or suggestions to:

Splash
Hayward Pool Products
1 Hayward Industrial Dr.
Clemmons, N.C. 27012

or e-mail us at:

Splash@Haywardnet.com

Chlorine must fully dilute

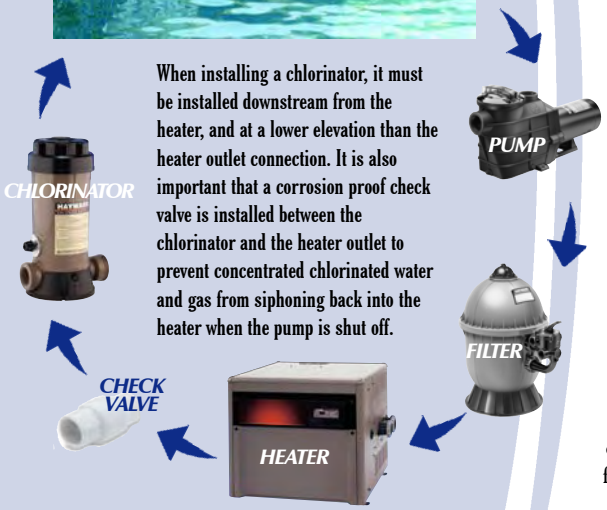
Improper chlorinating can damage heater

Improperly installed chlorinators and other improper chlorine introduction methods are leading contributors to premature failure of heat exchangers on gas heaters.

Skimmers, for example, serve as a single or partial return line to the pump. When chlorine tablets are dropped into a skimmer, water returning to the pump will be highly chlorinated since the chlorine is dissolving in a small amount of water in the skimmer basket area. This highly chlorinated water passes directly through the heat exchanger, and over a short period of time can cause damage to (or premature failure of) the heat exchanger.

Chlorine and other sanitizers should always be introduced in a manner allowing it to dilute with the pool's entire body of water. So, never place chlorine tablets in the skimmer basket or you might be replacing a heat exchanger soon.

When installing a chlorinator, it must be installed downstream from the heater, and at a lower elevation than the heater outlet connection. It is also important that a corrosion proof check valve is installed between the chlorinator and the heater outlet to prevent concentrated chlorinated water and gas from siphoning back into the heater when the pump is shut off.



IDL2 UNDER the HOOD

New Boards & Codes

The intellectual heart of the IDL2 resides on three integrated but separate circuit boards:

- **Fuse Board** – Isolation from other boards allows easy fuse replacement, and affords greater protection to the other circuit boards.
- **Display Board** – Mounted directly behind the keypad on the control panel.
- **Ignition Control Board** – Isolation from the display board allows enhanced functionality and better diagnostics.

The Display Board and Ignition Control Board are connected with a four-pin ribbon cable (circled at right). The ribbon cable is not polarized, meaning it will plug onto the control board in either direction. Reversing it will not damage anything. However, only one direction will allow the heater to operate.

So, if the heater display is blank after electrical installation or maintenance, invert the cable on the Ignition Control Board's "display" pin, as the cable may have been removed and accidentally inverted during the process. If the display then comes on, but displays 'CE', remove power to the heater for one minute, then reconnect the power.

Additional Diagnostic Codes	
BD	Bad Board or Secondary High-Voltage Fault
EE	Bad Board
CE	Communication Error (between control module & display interface assembly)
IO	Ignitor Failure
SB	Keypad Failure

R	
IF	Ignit
SF	Temp
HS	Maxi Temp
HF	Flam Not E
LO	Temp Wate or Ve
AC	Blow
AO	Blow

Note that several new codes have been added to the fault code menu to assist in field troubleshooting. As part of the new design, you will also notice many fewer nuisance faults, particularly on the ignition system and flame sensor.

Rectification Flame Sensor

Flame sensors are an integral safety feature in every Hayward gas heater, triggering an automatic shut-down of gas flow any time a live flame cannot be verified by the sensor.

But exactly how does a flame sensor work?

The answer rests in the physics of rectification flame sensing, of course!

Physics, you say? Flame rectification?

Don't let the fancy language scare you – because the concepts behind rectification flame sensing are really pretty simple.

First, we must understand that there are three basic areas of a flame. The inner cone of the flame contains mostly unburned gas. The flame's outer cone comprises plain air, for the most part.

Between the inner cone and outer cone resides the dark blue area of the flame – the most important part of the flame. Anyone who has used a blow-torch already knows this dark blue area is the 'hottest' part of the flame.

Another unique aspect of the blue area of the flame is that it has the ability to conduct electrical current. This is because the burning flame actually ionizes (electrically "charges") the atmosphere within this part of the flame.

THIS IONIZATION, which allows the flame to conduct current, is the key scientific principle behind a flame sensor.

By placing one wire of an electrical circuit on one side of the flame, and placing the circuit's other wire on the other side of the flame, we can count on the flame completing that electrical circuit.

The IDL2 flame sensor uses the flame to complete a circuit from the flame sensor electrode to the burner tube – where the burner tube is the ground side of our circuit. The control board is monitoring this current going through the flame and to the burner tube. No flame, no complete circuit.

NOW ... ON TO RECTIFICATION.

Rectification is an electrical term for converting an alternating current (AC) to a direct current (DC). You may recall from science class that alternating current (AC) flows in both directions along a conductor while direct current (DC) travels in one direction only.

The flame sensor on the IDL2 is fed by AC current. We could monitor this AC current leaving the flame sensor electrode, flowing through the flame and to the burner tube, which is a complete circuit when the flame is on.

The problem with this method is that any AC leakage from the flame sensor insulation or the wires that lead to it (a short to the cabinet for example) would be "sensed" as a complete circuit (flame present) and would allow the gas valve to remain open even if the flame goes out – not a good thing!

To avoid this problem we rectify the AC current flowing through the flame and to the burner tube to a DC current. We will only monitor this DC current, so now any leakage in the AC circuit of the flame sensor will no longer be sensed, providing a much safer flame sensing system.

THIS RECTIFICATION IS ACHIEVED through the use of different-sized conductor surface areas – the flame sensor electrode being the small conductor and the burner tube being the large conductor.

Retained Codes

- ition Failure
- nperature Sensor Input Failure
- ximum Return Water nperature Exceeded
- me Present with Gas Valve Energized
- nperature Limit Switch Fault or ter Pressure Switch Fault
- Vent Pressure Switch Fault
- wer Vacuum Switch Closed
- wer Vacuum Switch Open

Bypass Connection Simplified

The IDL2 ignition circuit board has been modified to accommodate easy connection of either two-wire or three-wire bypass installations (via the blue connector circled at left). A two-wire thermostat has its own temperature sensor for regulating water temperature, while a three-wire remote switch allows the "Pool" and "Spa" modes to be remotely selected.

Remote Thermostat Installation

Terminal	2-wire	3-wire
Pool	Either wire	Pool/Low
24 VAC	Either wire	Common
Spa		Spa/High

Using the table above, connection of remote switch wiring to the ignition board's blue connector is pretty straightforward. Remember that remote wiring should always be run in a separate conduit, using 22 AWG wire for runs less than 30 feet, and 20 AWG wire for longer runs (not to exceed 200 feet).

The IDL2 is preconfigured for three-wire remote switches. To configure the heater after installing a two-wire thermostat control, select "standby" with the control panel's "mode" key. Then depress the "mode" and "down" keys for three seconds – until the panel displays "BO" (for bypass operation).

Setting up bypass operation

Bypass (remote thermostat) operation for the IDL2 is set with a keypad sequence, instead of circuit board dipswitches as used on previous IDL models (see article to left).

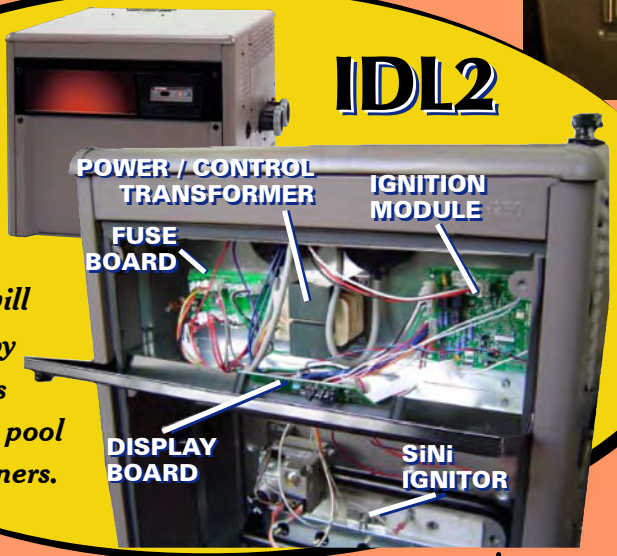
This simplified process greatly reduces potential installation errors, but has one notable difference: Safety precautions prevent the bypass (remote) setting from being activated while any fault code is displayed.

Therefore, during pre-installation, a two-wire bypass cannot be activated until (a) there is water in the pool and (b) the pump-and-filter system is fully operating. Otherwise, a 'LO' fault code will be displayed because of insufficient water flow to satisfy the heater's water pressure switch, a key safety feature.

Therefore, pre-installation plans must include a return trip to set bypass operation after the pool is full of water and the pool system is fully operating.

IDL2

Technological advances unveiled in Hayward's new IDL2 gas heater will be appreciated by technicians as well as pool owners.



IDL2 Wiring: Line Side vs. Load Side

The IDL2 has several unique operating characteristics compared to former IDL models. Depending on whether the heater is wired to the **line side** of the power **or** the **load side** of the power will affect some of these characteristics.

Wiring to the LINE-side, of course, means power is fed to the heater directly from the main power source, without a timer or control device – which would interrupt power to the heater.

LOAD-side wiring means that power passes through a timer or control device, cutting off power to the heater based on time settings programmed by the user.

When wired to the LINE side...

- When the pump is off, the heater will display a fault code of LO (because the heater is receiving power, but no water flow).

  When the pump restarts, the heater will fire up AFTER a 3-minute delay (assuming it is receiving sufficient water flow after 3 minutes). If the pump has been operating for at least 3 minutes before heater demand is required, it will fire within about 15 seconds, assuming there is sufficient water flow.
- While in standby mode, with line-side (continuous power) wiring, the IDL2 blower fan will come on for about 30 seconds each time the pump motor is turned on (either manually or by a timer).
- If the heater is fired when the pump shuts down, the post-purge blower fan will continue to operate until the heater fires again. If the heater is not fired when the pump shuts down, the post-purge blower will not continue to operate.

When wired to the LOAD side...

- Assuming the pump primes normally (quickly) when started, the IDL2 will not have a 3-minute start-up delay. If the pump is slow to prime, the IDL2 will display a "LO" fault code, and will start up after a 3-minute delay.

With either wiring arrangement, there will be a delay of about 10 seconds before the IDL2 blower fan starts each time the heater is switched from "standby" to "pool" or "spa" mode. While either wiring method is acceptable, Hayward recommends wiring to the line side.

How Does That Work

The very small conductor at the flame sensor can easily flow current through the flame to the much larger burner tube. However, it is far more difficult for the current to flow back from the large conductor burner tube through the flame and to the small conductor flame sensor electrode. Since this current cannot flow back very easily, it is now traveling in one direction only, which is DC current (flows in one direction only).

This is how the IDL2 flame sensor rectifies AC current to DC current.

In case anyone stumbled on that last section, the following analogy may be helpful in understanding how rectification is achieved.

Imagine spraying a water hose (electrons) onto the side of a barn. With little effort, almost all of the water (electrons) would strike the barn wall. However, imagine if the barn wall sprayed the water (electrons) back at you. Only a small amount of the water spray (electrons) would hit you, with most of it missing you simply because you are, in comparison, a very small 'conductor'.

So, by making one of the IDL2 flame sensor conductors (electrodes) very small and the other very large, the AC current fed to the IDL2 is rectified to DC current. The amount of DC current passing through the flame is quite small, but it is strong enough that the IDL2 control circuit can monitor it, ensuring that a flame is present.

With all of this in mind, it's easy to see why proper positioning of the flame sensor is critical to its operation.

New Nitride Ignitor Reliable, Durable

The IDL2 introduces the industry's first high-end, silicon-nitride (SiNi) ignitor. A staple OEM component with major furnace manufacturers, the silicon-nitride ignitor offers many advantages over silicon-carbide ignitors commonly used in pool heaters.

Virtually indestructible, the IDL2 silicon-nitride ignitor eliminates concerns about condensation, chemicals, dirt or oily fingers shortening ignitor life or causing ignition failures.

With it's tungsten heating element sandwiched between two layers of silicon-nitride (SiNi) insulators, the IDL2 ignitor's design is sturdier and much more foregiving than other ignitors when accidentally dropped or mishandled.

The adjacent photographs demonstrate the ignitor's strength and moisture tolerance – features that will ensure fewer customer callbacks, smaller inventory needs, and consistent long-term performance.

A-B-C: *Even after being pressed into a sheet of metal, the SiNi ignitor performed perfectly.*

Pulse Training extends ignitor life

Silicon-nitride gives the IDL2 ignitor greater reliability and longevity. Silicon-nitride's need for less power (wattage) is particularly beneficial in extending life expectancy.

Also, as a result of needing only a small power transformer for the ignitor, Hayward replaced the previous IDL heater control transformer with a combined power/control transformer in the IDL2.

Our product engineers then programmed the IDL2 with an adaptive learning routine so that the only voltage delivered to the ignitor is the voltage necessary for proper ignition. This greatly reduces strain on the ignitor – noticeably extending the ignitor's normal life expectancy.

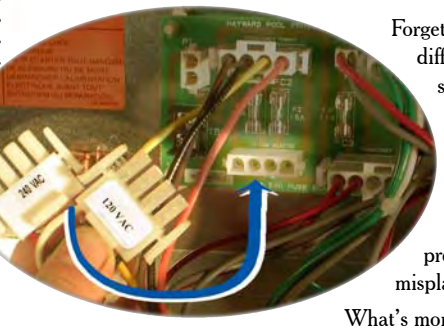
A drip line was no obstacle, either.

Upon initial start-up, the ignition control progressively lowers the voltage to the ignitor one step (about 6%) each successive start-up until a miss occurs. After a miss, the ignitor voltage is increased 1.5 steps – and remains at that level for the next 255 successful ignitions, having learned the minimum voltage needed for ignition. Should a miss occur during successive ignitions, voltage to the ignitor would again increase 1.5 steps (as needed) to provide successful ignition.

Using this sophisticated adaptive learning routine, the IDL2 ignitor may require as little as 38% (maximum reduction) of the available power for successful ignition. Thus, the adaptive learning routine ensures adequate power and trouble-free ignition. And it limits voltage delivered to the ignitor to the minimum effective voltage, reducing ignitor stress and increasing the life of the ignitor.

Dual Voltage

With its dual-voltage transformer and dual-voltage power board, the IDL2 is by far the easiest unit to install on the market.



Forget about having to wire 120 volts differently from 240 volts. Installers simply insert the correct voltage selector plug (120v or 240v) into the Fuse Board's 4-pin female connector. The two plugs are clearly marked (120v and 240v), and both plugs are attached to the wire harness to prevent them from getting lost or misplaced.

What's more, the power board (fuse board) is protected with replaceable fuses in the event the wrong voltage plug is inadvertently used – preventing costly transformer or circuit board replacements.

Healthy Hydraulics

Backyard waterworlds are replacing family swimming pools as hydro landscaping becomes entrenched on the front line in homeowners' battle to keep up with the Joneses.

Keeping Up with the Neighbors

When existing pipes aren't large enough to accommodate new features (or a larger pump needed for all the features), what is the technician to do – especially when the homeowner insists on installing a bigger pump than his system can accommodate?

Honesty is obviously the best policy. A homeowner whose big, new pump cavitates loudly and burns out shortly after installation will quickly become a former customer, whereas a homeowner's momentary disappointment will be replaced by long-term trust and respect for a technician who explains the harmful affects of cavitation and current system limitations.

LEARNING the LINGO

Cavitation

Cavitation – derived from the term "cavity" – is commonly used to describe not only the occurrence, but the impact air cavities (bubbles) have on a hydraulic system's components and effectiveness.

Cavitation occurs when a pump needs more water than can be delivered by the pipes feeding it. This forces a pump to suck in air pockets (cavities) to fill the vacuum voids created by insufficient water supply.

When these air pockets reach the pump's greatest internal pressure points, the cavities collapse, or cavitate. This is the most recognizable part of hydraulic cavitation, for the collapsing air bubbles emit a painfully distinct noise and cause extreme vibration within and around the pump, frequently damaging or destroying these pieces of equipment over a relatively short period of time.

Pump must fit system pipe size

The most common reasons for cavitation in a swimming pool system are

- Insufficiently sized suction-line pipe, and/or
- Insufficiently sized lead-in pipe at the pump's suction-side connection.

As a general rule, a pump's lead-in pipe needs to be 4 to 6 times as long as the suction-side pipe's largest diameter. *(Example: On a system with 1½-inch suction-side piping, the pump lead-in should be 6-9 inches long.)*

Any system in which the suction-line piping is too small, or the pump's lead-in pipe is too short, is likely to experience pump cavitation – because the pump needs more water than can be delivered with either of those two limitations. Pumps are designed to pull in and pump out "X" amount of water per minute. And that's just what the pump will do – or die trying.

Two tricks of the trade for eliminating minor cavitation issues include:

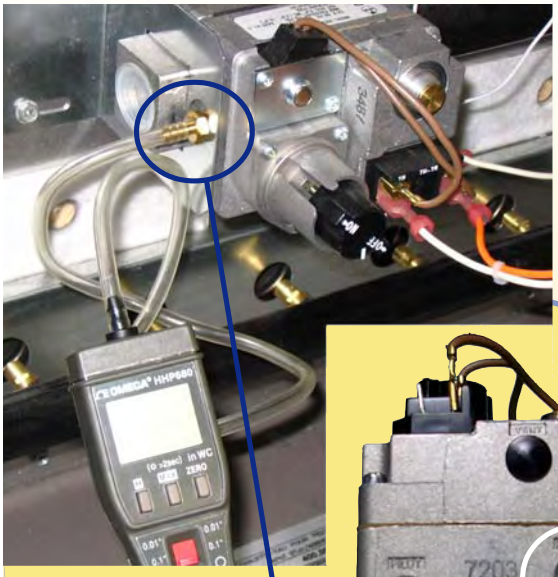
1. Downsizing the pump's impeller, which can reduce water flow needs on the front end, and
2. Raising the pump's back pressure by increasing resistance on the discharge line. This is typically done by installing a ball valve or eyeballs along the discharge line.

Again, these remedies will only slightly lower a pump's effective horsepower, but could be enough to resolve minor cavitation issues.

PAGE Splash FOUR

Heater mysteries solved with sequence of gas tests

Proper execution of the three gas pressure tests outlined here will quickly determine if a heater is receiving adequate gas supply – and identify the most likely source of a gas supply problem.



Inlet-Side Tap
Manometer attaches here for **Test 1** (Static Test) and **Test 2** (Load Pressure

CAUTION
Before connecting or removing a manometer for any gas pressure test, always make sure the main **gas valve** is turned to the **"off"** position.
When removing the manometer from the test port, be sure to replace the allen-head plug before moving to the next test.

Gas pressure readings are obtained by removing one of the gas valve's two 1/8" test plugs with an allen wrench, then threading the hose nipple of your manometer into that plug.

One test plug is located on the valve's INLET side, and one is located on the MANIFOLD/OUTLET side. Attaching the manometer to the correct test plug for each test is essential (see captions at left and instructions per test below).

Static, Load, Manifold Tests
Why are three tests required?

Most pool system technicians understand that measuring static gas pressure determines the amount of gas reaching a heater's gas valve.

However, static pressure by itself usually means very little, and is merely the first of three gas pressure tests that will together help identify the most likely source of a gas supply problem. In fact, load and manifold tests are usually far more revealing than static pressure tests when a gas pressure issue is preventing a heater from properly operating.

Think of static pressure being the pressure that builds up if you place your thumb over the end of your garden hose and turn it on. After removing your thumb, you'll see a short burst of water pressure quickly followed by a sharp drop-off and leveling off of the pressure. This is comparable to load pressure – the "real-life" pressure measured when the heater and other major appliances on the same line are all "in use," reflecting normal operating conditions.

Static, load and manifold tests are similar, but are also distinct and together help identify the most likely source of a gas supply problem.

GAS PRESSURE TESTING: IT'S AS EASY AS 1... 2... 3...

Test 1. STATIC pressure

Measures: Baseline pressure of gas at inlet. Hence, this is a "static" reading that should remain constant.

Manometer Attaches to: INLET side of gas valve

Heater Status during test: Heater OFF

RESULTS

If STATIC pressure reading is LOW

- Meter size too small for all attached appliances, OR
- Gas line size too small (or heater too far from meter), OR
- There is an obstruction in the gas line (such as a shutoff valve that is too restrictive), OR
- Gas line regulator is damaged or not properly set.

Why must other appliances be on?

Ever been in the shower when someone started the washing machine? Especially in older homes, the shower will lose water pressure (and hot water) as the two appliances split the available resources.

This same multi-appliance drain occurs on gas lines, and is why it is imperative to turn on all major gas appliances attached to the same line as the heater prior to conducting a Load or Manifold pressure test. Typically, this includes a home's furnace and water heater.

Test 2. LOAD pressure

Measures: How well the gas pressure/supply holds up under load (while the heater and other appliances are operating).

Manometer Attaches to: INLET side of gas valve

Heater Status during test: Heater Fired (ON, with all major appliances attached to same gas supply turned ON and operating)

RESULTS

If LOAD pressure reading is LOW

- Meter size too small for all attached appliances, OR
- Gas line size too small (or heater too far from meter), OR
- There is an obstruction in the gas line (such as a shutoff valve that is too restrictive), OR
- Gas line regulator is damaged or not properly set.

NOTE: If heater will not fire, record the approximate manometer reading as the heater attempts to fire with gas valve open.

A **drop** in pressure from the static reading indicates the gas valve and all systems controlling the gas valve are operating – even if the heater does not fire.

If the approximate load pressure is LOW (see table on front page), this indicates a gas supply issue. If reading is ACCEPTABLE, proceed to manifold test.

Test 3. MANIFOLD pressure

Measures: Gas pressure/supply reaching the combustion chamber.

Manometer Attaches to: OUTLET/MANIFOLD side of gas valve

Heater Status during test: Heater Fired (ON, with all major appliances attached to same gas supply turned ON and operating)

RESULTS

If reading FLUCTUATES

- Obstruction in gas line or main shutoff valve
- Meter size is too small

If reading is too LOW or HIGH

- Improperly adjusted gas valve. See manual for details.

NOTE: If heater will not fire, record manometer reading (approximate manifold pressure) as heater attempts to fire (while gas valve is open).

If the approximate manifold pressure is acceptable (see table on front page), the heater problem is likely not related to gas supply. Instead, the problem is in either the ignition, combustion or flame sensing sytems.

Totally Hayward

Decision to stress accountability yields success without the stress

Supervisor Rodney Stienstra (left), Route Manager Tommy Elliott (right) and the rest of Pool Care Specialists' field techs embrace and project professionalism by maintaining a clean, businesslike appearance – making time to ensure that they and their service vehicles are organized and prepared for each day's appointments.

Dan and Sandye Willoughby discovered magic in Orlando – not at Disneyworld or the NBA arena, but in the form of a business revelation back in the formative years of their Pool Care Specialists business.

"We learned we needed a way to weed out the problem customers," Dan recalled, "you know – the customers who want you to clean their pool but nothing else, or just do the chemicals, and to only come by every two weeks.

"That type of inconsistent pool maintenance always leads to pool system problems, with the customer eventually pointing their finger at you. No one's happy in the end.

"The only way to avoid that is for one person to be accountable, for one person to have full control of – and responsibility for – the pool's maintenance."

As a result, Dan and Sandye soon decided that would be the only type of customer they would accept – customers willing to give Pool Care Specialists complete control and responsibility for their pool system's weekly maintenance.

In exchange for their customers' trust, Dan and Sandye promise just one thing – that they and their staff of nine will provide an unsurpassed level of quality and service – reliably and professionally delivered each and every week by the same dedicated, well-paid, well-trained, and well-mannered Pool Care Specialist.

"We spoil our customers," Sandye said, "and we treat our employees well, too, treating them the way we'd treat ourselves."

Above-market wages, and formal, supervised, hands-on training help Pool Care Specialists recruit, reward and retain the best technicians available.

A visit to their warehouse quickly reveals a cheerful, pleasantly contagious atmosphere, along with an unwavering resolve "to just doing things the right way," as Dan puts it.

All of these things minimize staff turnover, which further enhances the professional image embodied and projected by Pool Care Specialists.

"We probably charge 20% more than any of our competitors," Dan said. "But we deliver what we promise, without fail, and customers are willing to pay for that level of professionalism."

Incredible as it may sound, company trucks and pullover shirts with their company logo are the only form of advertising Dan could recall purchasing in 16 years of business, including their minimal two free lines in the Yellow Pages™ each year.

"It's all been built through word-of-mouth, one neighbor to another," Sandye said.

"Like the rest of their business, Dan and Sandye's growth and success is driven by a clean and simple business concept," said Bob Corsetti, Hayward's north and central Florida field rep for technical services. "Dan and Sandy's message is not tied to marketing slogans, but rather to a reputation they've built with the unique level of service they provide."

"We do sprinkle in extra touches – such as cleaning the deck as well as the pool – but it's the clean, honest, dependable service that earns and keeps us our customers," Sandye agreed.

"One of the realities of our business is a lot of pool owners live in gated communities, and it's important to them that we look and act professional," added Dan. "The other day, a customer called us up just to tell us how much she appreciated our clean, professional appearance. She said she'd never had a pool cleaner show up wearing a shirt before our technician arrived, smartly attired with a company-logo'd shirt and uniform shorts.

"Customers apparently don't get that type of service with other pool companies, so whenever they find us, they don't leave."

Sandye & Dan Willoughby
Proprietors
Pool Care Specialists
Orlando FL

Totally Hayward

Hayward Pool Systems cannot endorse specific independent dealer business practices shared in Splash, but we encourage readers to view this publication as a dealer forum for sharing service tips and business success stories.

Ohio dealer George Ruth is inaugural Splashback winner

George Ruth of Ruth Pools, Spas and Supplies in Belpre, OH, will be receiving a Fluke Multimeter as the inaugural winner of our Splashback contest. George was among dozens of Hayward field technicians correctly answering last issue's Splashback contest questions.

Last Issue's ANSWERS

1. What is the minimum GPM required for a Hayward heat pump to operate?
   A: 30 GPM
2. List three factors than can affect the size of pipes and equipment needed at different stages in a hydraulic system.
   A: Head-loss friction factors (many choices), turnover rate, elevation changes, atmospheric pressure, initial flow rate & target flow rate (to name a few).
3. What device controls how long a Viper cleaner moves forward before "spinning out" and changing direction?
   A: Spinout cam
4. Which three product groups feature Hayward's new global ID numbering?
   A: Filters, pumps & heat pumps.

This issue's winner to receive digital manometer

Hayward invites service technicians, installers and retail dealers to enter the Hayward Splashback contest each issue by answering our short Splashback quiz. Simply mail or e-mail your answers to us at the address below.

Each issue, we will randomly select one winner from among all the correct Splashback answer sheets we receive (limit of one per person) to receive a special prize. This issue, the special Splashback prize is an Omega manometer, valued at almost $100.

All the answers can be found in this issue of Splash. And remember, the limit is one entry per person (not per dealer, which means every technician in your organization can enter).

Send your answers to:

Splashback Quiz
Hayward Technical Services
1 Hayward Industrial Drive
Clemmons, NC 27012

OR, E-mail your answers to:
Splash@Haywardnet.com

This issue's Splashback questions

1. When installing an IDL2, which step(s) differs when wiring for 120 volts vs. 240 volts?
2. Which part of a flame conducts electrical current?
3. Which gas pressure test(s) should be taken only with the heater and all major gas appliances turned on and operating?
4. Is the ribbon cable connecting the IDL2 display board to the control board polarized?