

P-K MACH[®]

High Efficiency Condensing
Aluminum Boilers



 **PATTERSON-KELLEY** 

P-K MACH[®] Condensing Boilers

The P-K MACH[®] is the high-efficiency aluminum boiler of choice for a wide variety of commercial and industrial building applications, from new construction to retrofit projects. AHRI Certified up to 95% efficiency and standard with the NURO[®] Touch-Screen Control System with NURO[®] Connect, the P-K MACH[®] offers unmatched fuel savings.



Premium quality boilers

P-K MACH[®] condensing boilers feature fully independent cast aluminum heat exchangers, resulting in increased heat transfer surface for higher efficiency. The aluminum heat engine easily sheds condensate thanks to an aluminum oxide barrier that forms during use for extreme corrosion resistance.

FEATURES

- ✓ All-purpose boiler suitable for condensing and non-condensing systems
- ✓ Cast aluminum heat exchanger resists corrosive condensate
- ✓ Certified low NOx performance
- ✓ Low water-side pressure drop
- ✓ Full modulation burner with 5:1 turndown
- ✓ Variable speed combustion air blower
- ✓ Automatically compensates for changes in air temperature and pressure
- ✓ Certified at 3.5 inch Water Column minimum gas pressure

ADVANTAGES

- ✓ A viable option for existing system retrofit as well as in new installations
- ✓ Works well at low or high temperatures
- ✓ Reduces overall plant life cycle costs
- ✓ Enhances your system's technical and economic performance
- ✓ Qualify for utility rebates
- ✓ Barely audible, even at high fire
- ✓ Actual net thermal efficiencies may be achieved up to 99%
- ✓ Extremely low electrical energy consumption increases potential savings



A world of savings.

Save money by choosing a high efficiency condensing boiler over an 85% efficient non-condensing boiler. Save even more when you replace outdated equipment operating at only 75% efficiency with P-K MACH[®] condensing boilers.



Sized to get in and fit in

There's no special rigging required to put your P-K MACH® condensing boiler in any room of your building, whether it's the basement or the penthouse. All P-K MACH® condensing boilers fit through a standard 36 inch doorway or a standard elevator.

Our largest models (1,500,000 BTU/hr and larger) are equipped with wheels so that they can be moved by two people without a forklift. The narrow design of all P-K MACH® condensing boilers allows them to navigate corners and hallways with ease.

P-K MACH® condensing boilers are perfect for new installation and retrofit projects, requiring only 4 utility hook ups – gas, water, electric and venting.

Maximize efficiency with NURO® Touch-Screen Control System

The NURO® Touch-Screen Control System with NURO® Connect provides the most intuitive interface in the industry. Designed to maximize efficiency, NURO® monitors and modulates the combustion and ignition of the boiler to maintain the desired outlet temperature. The lead/lag setup and boiler start rotation ensures run times are equally distributed across each unit in the system, extending the life of the boilers. NURO® Connect allows for peace of mind monitoring of boiler systems on your desktop or on the go via mobile devices.



Easy to Use:

Touch-screen interface provides simple step-by-step navigation for set-up, maintenance, custom configurations, efficiency, and more.



Easy to Set-up:

Whether installing a single boiler or cascading multiple boiler units, select from a variety of preconfigured settings for optimal system efficiency, with a simple touch.



Easy to Maintain:

Software upgrades can be made utilizing the USB port on the NURO®, thus eliminating hardware replacement and costly service calls.

BOILER RATINGS	CM300	CM399	CM500	C750	C900	C1050	C1500	C2000	C2500	C3000	C4000
EFFICIENCY	93.0%	93.1%	91.2%	93.9%	93.9%	93.9%	94.3%	95.1%	94.4%	91.1%	94.1%
MAX BTU/HR INPUT	300,000	399,000	500,000	750,000	900,000	1,050,000	1,500,000	2,000,000	2,500,000	3,000,000	4,000,000
MAX KW INPUT	88	116.9	146.5	219.8	263.8	307.7	439.6	586.1	732.7	879.2	1172.3
MAX BTU/HR OUTPUT	279,000	371,469	456,000	704,250	845,100	985,950	1,414,500	1,902,000	2,360,000	2,733,000	3,764,000
MAX KW OUTPUT	82	108.9	133.6	206.4	247.7	289.0	414.5	557.4	691.6	801.0	1103.1
MIN FLOW @ IGNITION (GPM)	7.0	9.0	11.5	27.0	32.0	37.0	50.0	66.0	84.0	100.0	123.0
MIN FLOW @ IGNITION (L/SEC)	0.4	0.6	0.7	1.7	2.0	2.3	3.2	4.2	5.3	6.3	7.8
MIN BTU/HR INPUT	60,000	79,800	100,000	150,000	180,000	210,000	300,000	400,500	500,000	600,000	800,000
MIN KW INPUT	17.6	23.4	29.3	44.0	52.8	61.5	87.9	117.2	146.5	175.8	234.5
MIN BTU/HR OUTPUT	55,800	74,294	91,200	140,850	169,020	197,190	282,900	380,400	472,000	546,600	752,800
MIN KW OUTPUT	16.4	21.8	26.7	41.3	49.5	57.8	82.9	111.5	138.3	160.2	220.6
INDOOR/OUTDOOR	INDOOR	INDOOR	INDOOR	INDOOR/ OUTDOOR	INDOOR/ OUTDOOR	INDOOR/ OUTDOOR	INDOOR/ OUTDOOR	INDOOR	INDOOR	INDOOR	INDOOR
TURNDOWN	5:1	5:1	5:1	5:1	5:1	5:1	5:1	5:1	5:1	5:1	5:1
FUEL- NG = NATURAL GAS, LP = PROPANE, DF = DUAL FUEL	NG LP	NG LP	NG LP	NG LP DF	NG LP DF	NG LP DF	NG LP DF	NG LP DF	NG LP DF	NG LP DF	NG LP DF
DEPTH (IN / MM)	21.75 / 552	21.75/552	21.75/552	42.625 / 1083	42.625 / 1083	42.625 / 1083	66.25 / 1756	72.5 / 1920	58.325 / 1483	58.325 / 1483	62.5 / 1587.5
WIDTH (IN / MM)	36.5 / 927	36.5 / 927	36.5 / 927	28.125 / 713	28.125 / 713	28.125 / 713	30.25 / 769	30.25 / 769	31.75 / 806	31.75 / 806	31.75 / 806
HEIGHT (IN / MM)	34 / 862	34 / 862	34 / 862	54.625 / 1387	54.625 / 1387	54.625 / 1387	56 / 1423	56 / 1423	78.75 / 2000	78.75 / 2000	78.75 / 2000
BOILER HP	8.3	11.0	13.7	21.0	25.0	30.0	43.0	57.0	72.0	85.0	114.0
MAX INLET GAS PRESSURE NG/LP (INCHES / WC)	14 / 14	14 / 14	14 / 14	14 / 14	14 / 14	14 / 14	14 / 14	14 / 14	14 / 14	14 / 14	14 / 14
MIN INLET GAS PRESSURE NG/LP (INCHES / WC)	3.5 / 7	3.5 / 7	6-or-3.5 / 7	3.5 / 7	3.5 / 7	3.5 / 7	3.5 / 7	3.5 / 7	3.5 / 7	4.5 / 7	3.5 / 7
SHIPPING WEIGHT (LBS / KILOS)	420 / 191	445 / 202	445 / 202	735 / 333	790 / 358	820 / 372	1330 / 603	1630 / 740	1550 / 703	1600 / 726	2100 / 953
ELECTRICAL REQUIREMENTS	120V 1ph 60hz <8 amps	120V 1ph 60hz <8 amps	120V 1ph 60hz <8 amps	120V 1ph 60hz <5 amps	120V 1ph 60hz <5 amps	120V 1ph 60hz <5 amps	120V 1ph 60hz <15 amps	120V 1ph 60hz <15 amps	120V 1ph 60hz <17 amps	204/240V 3ph 60hz 480V 3ph 60hz <20 amps	204/240V 3ph 60hz 480V 3ph 60hz <20 amps
OPERATING WEIGHT (LBS / KILOS)	290 / 132	313 / 142	313 / 142	695 / 315	735 / 222	780 / 254	1200* / 612 *add 100 lbs for DF models	1600 / 726	1550 / 703	1600 / 726	1900 / 862
FLOW RATE 20°F ΔT GPM (LT/SEC)	28 / 1.8	37 / 2.3	46 / 2.9	70 / 4.4	85 / 5.4	99 / 6.3	141 / 8.9	190 / 12.0	236 / 14.9	273 / 17.3	376 / 23.8
AL29-4C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
316L SS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PVC	-	-	-	-	-	-	-	-	-	-	-
CPVC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
POLYPROPYLENE ^{NEW}	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-
CAT II	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CAT IV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

***P-K MACH Models C750, C900, C1050, C1500, and C2000 with 10:1 mechanical turndown are only available for Indoor Natural Gas (NG) applications.**

THE PATTERSON-KELLEY EXPERIENCE

Patterson-Kelley, a division of SPX Technologies, is the leading provider and producer of commercial hot water heating solutions. With over 135 years of experience and an innovative R&D pipeline, we provide a full line of condensing and noncondensing boilers, semi-instantaneous water heaters, and an array of commercial boiler and water heating products including gas fired, dual fuel and outdoor boilers.

Because we are continuously evolving our products, descriptions and technical data are subject to change without notice.

Contact your local Patterson-Kelley representative for the most up-to-date information and product application support

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1005101565 Rev B Oct-2025