The Mettleworks – 8600 NE Odean Ave – Otsego – MN – 55330 – (651) 600-2239
InductionForges.com – Sales@mettleworks.com

The SP-15A Induction Forge

Enough capacity to heat 1.5" bar stock.
in a 220 volt Single Phase Machine

Specifications:

★ Input voltage : Single-phase 208-240V, 50 or 60 HZ
★ Max input current : 32A,
★ Output Oscillation Frequency : 30-100KHZ
★ Solid State Power
★ Duty cycle : 80%
★ Max input power : 7KW,
★ Minimum water cooling required: 10,500 btu,
1.3 gal/min (0.2Mpa, 5 L/min)
★ Dimensions: 18 x 8 x 17" - 44lbs
(46 x 20 x 44cm - 20kg)

The SP-15A is a 208-240 volt induction heating machine.
It comes with a manual, a foot pedal remote, three heating coils and parts for 3 more.
This is a smart, safe machine with built in safeguards and automatic optimizing logic.
The frequency output of the machine varies from 30 to 100KHZ with the number of loops in the coil and feedback from the material inserted into it. The machine is programed to optimize the frequency.
It draws 32amps at 240 V. and has a rated output amperage of 600 amps thru the water cooled coil. It can heat several inches of 1.5" bar stock to forging heat in less than a minute.

It shuts down with warning lights and alarms for over current, over voltage, and lack of water pressure.
Over heating will also shut the machine down, but there is no buzzer. It may be restarted once cool.[1]

It has three built in 99 second timers, the first two are tied to output level adjusters.
The first timer and power level control can be set to rapidly heat a part to temp and then the second pair set to a lower level to hold it at temp, the third timer is for machine cool down time.
A toggle switch on the console switches the machine between timed and manual operation.
Manual operation can be handled with on/off buttons on the machine or with the foot pedal remote.

Custom coils can be built to heat specific areas.

We provide a one year repair or replacement warranty.[2]

These are the same reliable machines that Grant Sarver introduced and Larry Langdon handled.

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Duty Cycle

It is an 80% duty cycle machine. Our 100% duty cycle machines run at 380 or 440 volts and because of the higher amperage used at lower voltage we get a heat buildup in the 220v components. These machines need 2 out of 10 minutes down time to radiate the built up heat, in other words the *maximum recommended continuous on time at 600 amps output is 8 minutes* followed by at least 2 minutes of rest time with coolant running thru the machine.

Example 1

Heat a part for 20 seconds take 5 seconds with your foot off the pedal as you drop the part into the quench tank and pick up the next and insert it into the coil. Start over ... that was 20 percent down time as far as the machine was concerned. (20 seconds on, 5 off, 25 seconds total cycle time 80% on)

Example 2

You find it takes about 60 seconds to heat your part and you have about a minute's forging to do on it. You switch the machine to automatic. You set the first timer to 15 seconds and the power to 0. You set the second timer to 60 seconds and the heat to full or whatever you find is the best for your part...
You hit stop, pull out a hot part, put in a fresh part, hit start and turn to the anvil and start forging. The machine rests for 15 seconds in cycle one and then starts heating in cycle 2 all in the background while you are forging. When you finish forging, you turn around and as the part reaches temp you hit stop, pull out the hot part, replace it with a cold one and hit start as you turn back to the anvil. Repeat....

Example 3

You are using the machine to heat small parts and you find that you do not need to have the machine running at full power to get parts as hot as you need and as fast as you can use them. If your adjustment sets the output on the amp meter to 520 or less, you can run continuous. (80% of the 600 Amp rated output is 540 but aim a little lower when setting the amps to make sure we don't overheat)

Cooling requirements.

The internal circuitry is water cooled as is the induction coil. We recommend the Dynaflux R1100 tig cooler or equivalent.

Parts and service.

If your machine is out of warranty, we can still get parts and provide service.
There are hundreds of these machines working here in the US.

1 The built in safety limits and warning signals are there to protect YOU and the machine from harm. Chronically exceeding these limits can lead to a shortened lifespan of the product and potential harm to the user.

2 We warrant the machine under normal working conditions, not exceeding the 80% rated duty cycle and running on adequate power at the proper voltage.