

The  
Leader...

C. I. HAYES INC.

# PRODUCT BULLETIN

Bulletin No. 943

## Hayes Atmosphere Delube Vacuum Sintering Furnaces



The Hayes Model CVCQ-LAM vacuum sintering furnace uniquely combines atmosphere delubrication and vacuum sintering. An in-line atmosphere delube/preheat section and integral vacuum sintering chamber allow for processing of P/M compacts at conventional or high temperatures.

Processing versatility includes: conventional ferrous and ferrous alloy materials, stainless steels, tool steels, sinterhard alloys, and custom blends. High pressure gas quenching, oil quenching or gas cooling is available.

Unique Hayes design features include:

### ■ MODULES

Electrically heated or gas fired with conventional or rapid heating provides unparalleled flexibility. Our proven atmosphere add-on module

can process parts under dry or saturated nitrogen, nitrogen/hydrogen mixtures, dissociated ammonia or exothermic gas. Hayes' exclusive atmosphere to vacuum transition module assures continuous high volume production with the benefits of both atmosphere and vacuum.

### ■ COMPUTER CONTROL

System automation and computerization with **SPC reporting, system diagnostics, historization and intelligent alarms** ensure the sintering operation is always repeatable and in complete control.

### ■ AUTOMATED TRANSFER SYSTEMS

A fully automated material transfer system, the Hayes' Smart Cart, ties the

atmosphere and vacuum processing into press discharge systems or post sintering operations conveniently and reliably.

### ■ COMPONENT DESIGN

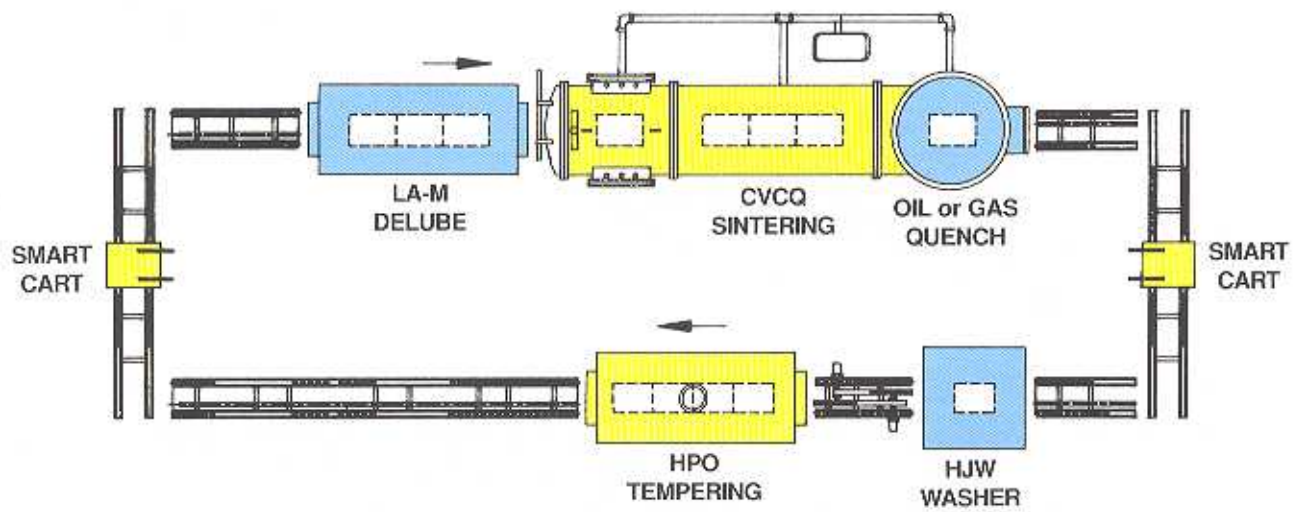
Each area of the furnace has been carefully engineered for ease of equipment operation, maintenance and long life under full production conditions.

The CVCQ-LAM can be provided in a variety of **standard sizes** to meet most part sizes, production rates and workload geometrics.

**Standard options** extend the performance of these units and provide additional operator convenience.

Contact the factory or your local Hayes representative for more details.

# SPECIFICATIONS



Model:	LA-M-060842	CVCQ-060842	LA-M-091872	CVCQ-091872
Function:	Delube	Sinter	Delube	Sinter
Work Tray Dimensions:	6"H x 8"W x 14"L	6"H x 8"W x 14"L	9"H x 18"W x 24"L	9"H x 18"W x 24"L
Heating Elements:	12 Metallic or Silicon Carbide	12 Solid Graphite	18 Metallic or Silicon Carbide	14 Solid Graphite
Tray Positions:	Three (3) @ 14" Long	Three (3) @ 14" Long	Three (3) @ 24" Long	Three (3) @ 24" Long
Maximum Operating Temperature:	1400°F	2400°F	1400°F	2400°F
Temperature Uniformity:	25°F spread	20°F spread (1600° F to 2400°F)	25°F spread	20°F spread (1600° F to 2400°F)
Connected Load: Heating Auxiliary	36 KW 2 KW	45 KW 7 KW	81 KW 2 KW	105 KW 26 KW
Loading Capacity (Nominal):	60#/sq. ft.	60#/sq. ft.	60#/sq. ft.	60#/sq. ft.
Atmosphere Requirements:	600 CFH	30 CF/Cycle @ 1 atm	2000 CFH	190 CF/Cycle @ 1 atm
Cooling Water Requirements:	None	15 GPM @ 20°F Rise	None	35 GPM @ 20°F Rise
Hearth Level:	40" High	40" High	48" High	48" High
Floor Space Requirements	65"H x 58"W x 12'L	66"H x 40"W x 15'L	80"H x 68"W x 17'L	111"H x 112"W x 25'L
Vacuum Level:	Atmospheric	500 Microns (Nominal)	Atmospheric	500 Microns (Nominal)

The Leader... **HAYES**