

Micro Control Systems

APPLICATION NOTE

APP-045

Hanbell Step Capacity Loading

- NO / NC Load Solenoid's
- Step Capacity Loading
- Original Infinite Capacity Loading
- New Infinite Capacity Minimum 50 %

Revision History

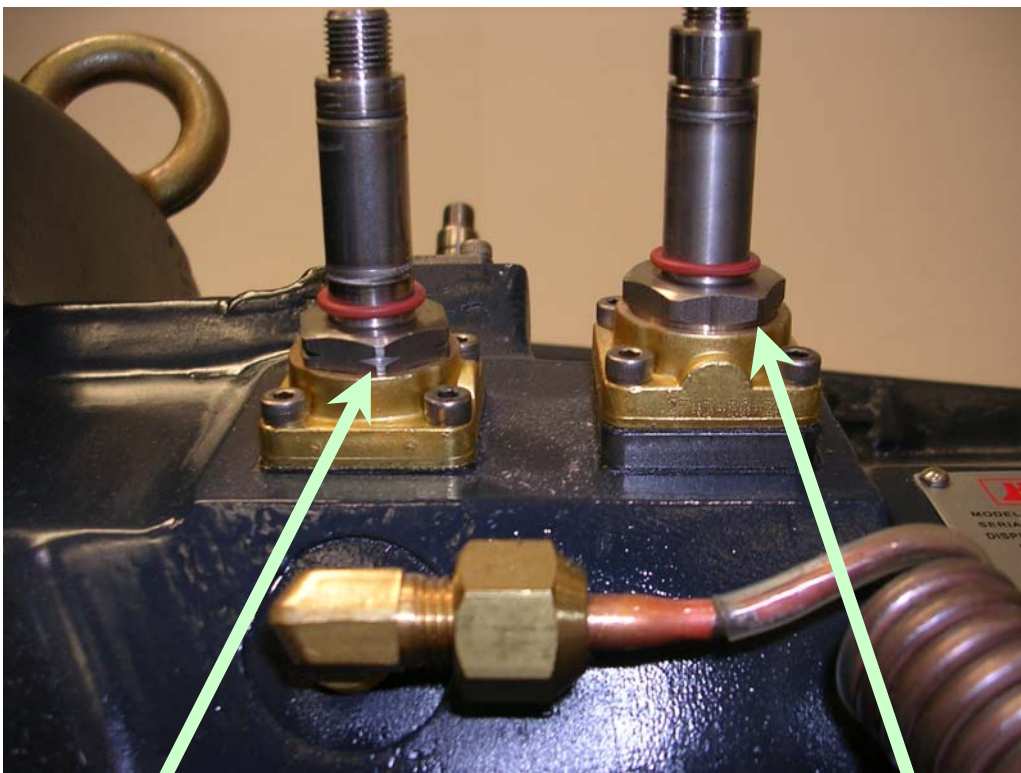
Date	Author	Description
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09/15/08	Bret Lai	Edited

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This Application Note identifies the Solenoid arrangement for the various Hanbell Screw options. Solenoid identification, solenoid arrangement for step control and solenoid arrangement for infinite capacity control.

1. Solenoid identification

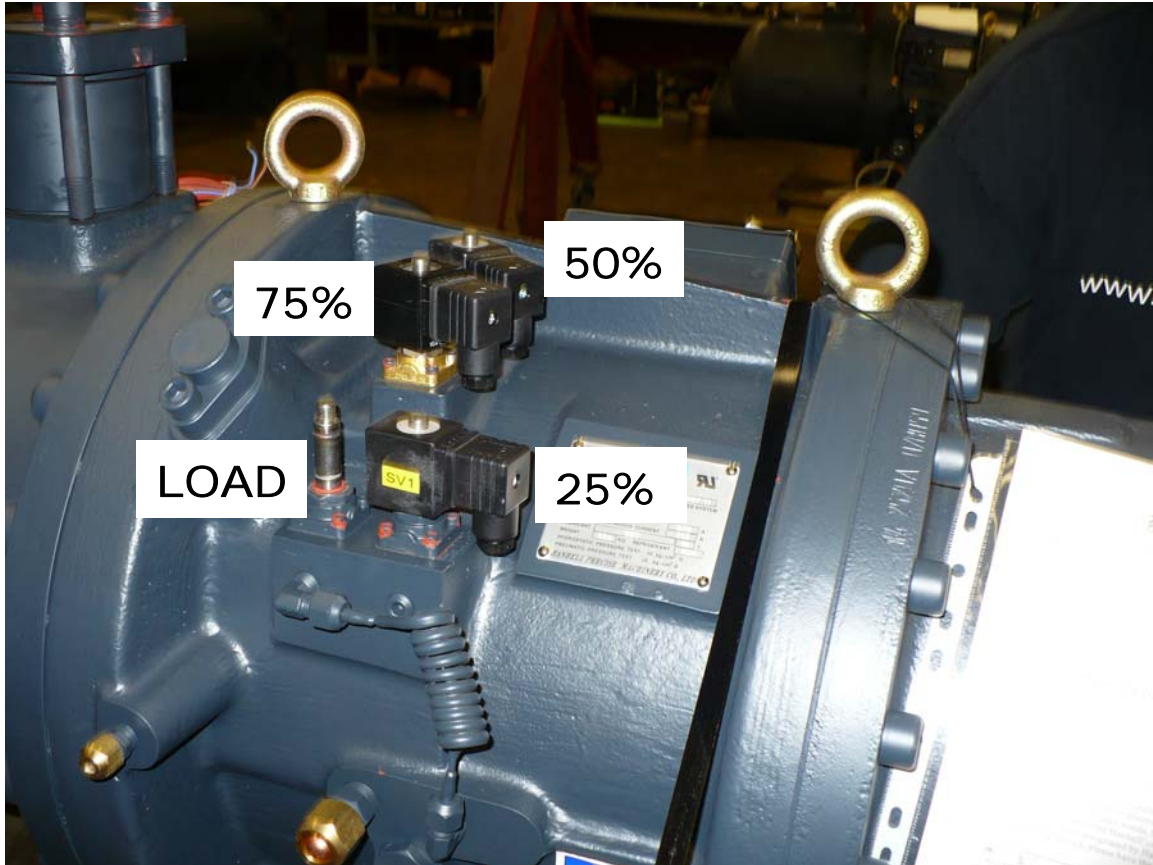


Normally open solenoid-
Can be identified by notches on nut.

Normally closed solenoid-
There are no notches on the nut.

2. Standard Step Control (25, 50, 75, 100) / (33, 66, 100)

RC2-100, RC2-140 & RC2-180 have one less solenoid and 3 steps of control when in step configuration.



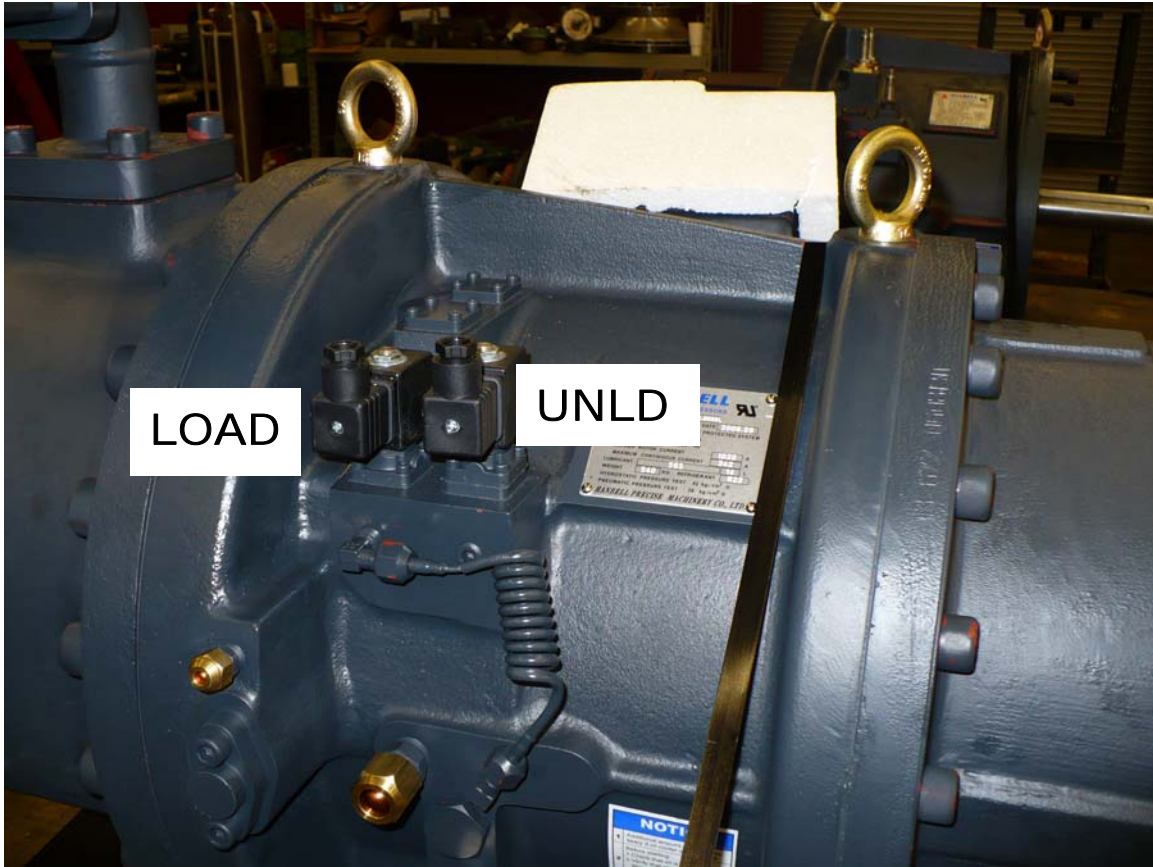
- The compressor should be started and stopped at the minimum position. During starting & stopping the unit should be kept at the minimum position for at least 30 to 60 seconds.

RC2-170,RC2-200~1520 capacity control system	25%(NC)	75%(NC)	50%(NC)
100% full load	Not Energized	Not Energized	Not Energized
75% of full load	Not Energized	Energized	Not Energized
50% of full load	Not Energized	Not Energized	Energized
25% for starting	Energized	Not Energized	Not Energized

NOTE:

It is critical with step control that the LOAD Solenoid is normally open and the solenoid coil be removed from the stem. (This allows oil to flow through the Solenoid.) You may also replace with an open flow cap / cover.

3. Original Infinite Capacity Loading (25 to 100%)



1. For the original continuous (step less) capacity control system, Hanbell equipped one Normally Open (loading) type solenoid valve and one Normally Closed (unloading) type solenoid valve as standard accessory. In new models the Load Solenoid will be Normally Closed.
2. If normally Open Solenoid, wire through the Normally Closed Relay Output.
3. If normally Closed Solenoid, wire through Normally Open Relay Output.

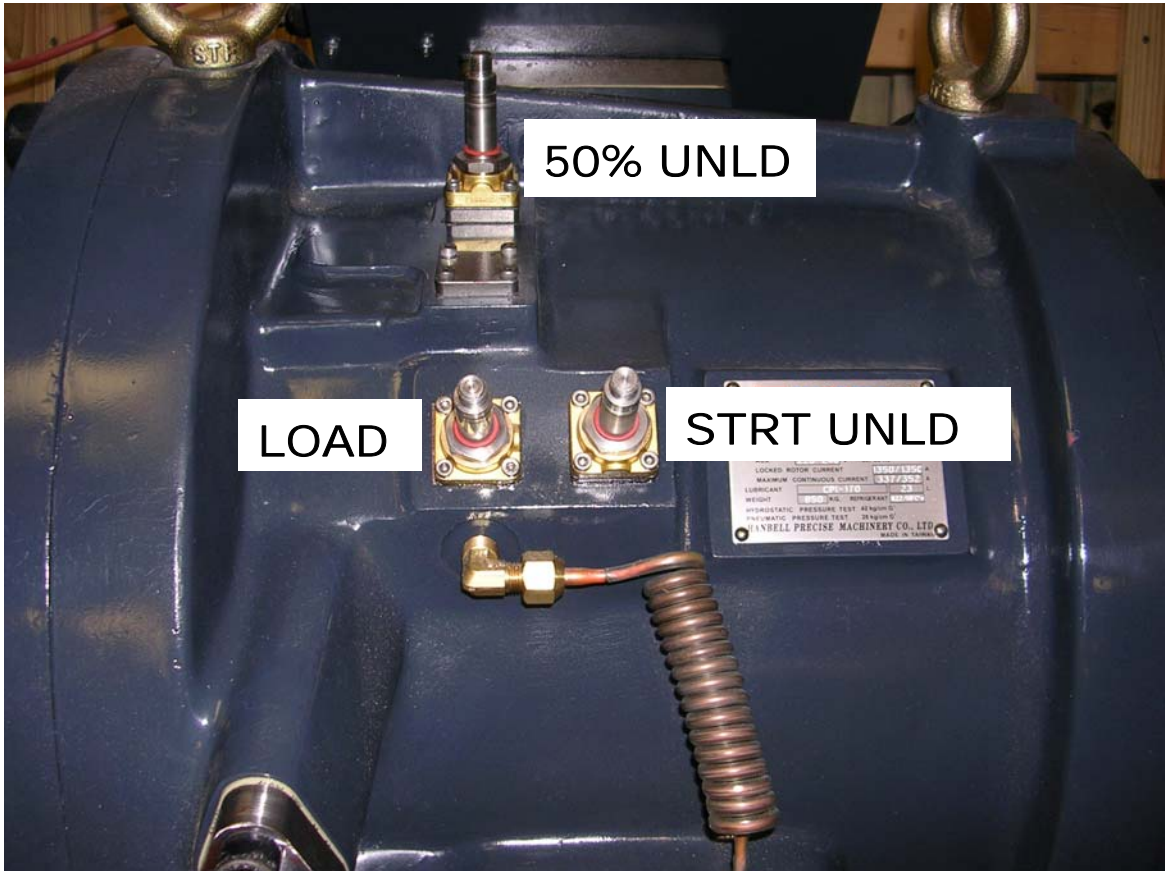
Original with Normally Open Load Solenoid

	UNLOAD(NC)	LOAD(NO)
Start	Energize	Not Energize
Loading	Not Energize	Energize
Unloading	Energize	Not Energize
Stable	Not Energize	Not Energize

New with Normally Closed Load Solenoid

	UNLOAD(NC)	LOAD(NC)
Start	Energize	Not Energize
Loading	Not Energize	Energize
Unloading	Energize	Not Energize
Stable	Not Energize	Not Energize

4. New Infinite Capacity Minimum (50 to 100%)



1. For New continuous (step less) capacity control system, Hanbell equipped all solenoid valves as Normally Closed. If it is necessary to be equipped with other type solenoid valve, please specify it with MCS / Hanbell before order confirmation.
Verify compressor load solenoid as Normally Open or Normally Closed.
2. If normally Open Solenoid, wire through the Normally Closed Relay Output.
3. If normally Closed Solenoid, wire through Normally Open Relay Output.

	UNLOAD(NC)	LOAD(NC)	STRT UNLD(NC)
Start	energize	Not energize	energize
Loading	Not energize	energize	Not energize
Unloading	energize	Not energize	Not energize
Stable	Not energize	Not energize	Not energize