

**BDA HEAT LOADING PRINCIPLES FOR
SECONDARY COOLING UNITS CONNECTED TO
A PRIMARY PYTHON & REMOTE COOLER
PRODUCT COOLING SYSTEM**



**Registered with BFBi on behalf of BDA
Technical Group**

Recommendation Paper. July 2006

BDA Heat Loading Principles for Secondary Cooling Units connected to a Primary Python & Remote Cooler Product Cooling System

Recommendation:

- All secondary cooling systems linked to a Primary python cooling system to be assigned a Brands Dispense Association heat load rating.
- All Fonts requiring condensation, or flooded cooling chambers to be assigned a Brands Dispense Association heat load rating.
- Any secondary cooling system or Condensing Font to be submitted to the BDA Technical committee, with supporting test data, and assigned a BDA Heat Load rating.
- The Approved BDA Heat Load Test to be used by any Supplier /Brewer to determine heat loading on a Primary Python Remote Cooler System.

BDA (Brands Dispense Association)
Agreed Secondary/Supplementary cooling principles
General rules

Main pythons must not exceed 40 metres.

Minimum flow rate on the main python to be used is no less than 4 litres a minute

Return water recirc no greater than 2°C during normal trading periods

Temperature and flow rate to be measured before and after installation of Secondary cooling

No more than 10 coils in use on remote cooler

No other devices or technologies e.g. Ale Python Controller (APC) or Cask Ale cylinder cooling must be in use on the proposed python/remote.

Specific rules

•BDA (Brands Dispense Association) approval states. Where installation would mean a mix of COLDER devices that use python water in their operation additional load would exist.

Therefore it is important to have specific rules that govern the number and combination of these devices and are applicable per single python/remote.

• The below table is based on a BDA value of differing devices and the total must not exceed 10 in any combination.

MAXIMUM LOADING 10 BDA UNITS FOR COLDER DEVICES. PYTHON/REMOTE MUST COMPLY WITH GENERAL RULE.	
ITEM	VALUE
1 cooling pod module & condensing font	2.0
1 cooling pod single entry	2
! Cooling pod 2 side Booster	2.5
1 Trimcool	4
1 Flooded condensing font	1

•EXAMPLE. A 30 metre python/remote system with 10 coils in use, with no APC's or 2ndry cooling or condensing fonts has a BDA value of 0. Therefore it is possible to install 2 x Trimcool and 2 flooded condensing fonts. System OK as new BDA value of 10 does not exceed maximum.

BDA Secondary Cooling Device values

Device delta T °C	BDA value	Devices	Number dispense points per device
0.1°C - 0.3°C	1	Flooded Condensing Font	
0.4°C - 0.6°C	1.5		
0.7°C - 0.9°C	2	Scot Co pod & condensate, CUK pod only	One
1.0°C - 1.2°C	2.5	DDG unit	One
1.3°C - 1.5°C	3	IMI Pod	One
1.6°C - 1.8°C	3.5		
1.9°C - 2.1°C	4	Coors Compact Twin Cooler	Two
2.2°C - 2.4°C	4.5	Trimcool	Two
2.5°C - 2.7°C	5		

Issues:

1. Python water recirculation flow rate speed measurement.

Agreed corrective action procedure required if:

- Flow rate & the return water coolant temperature is found to be out of specification

2. Peak Demand measure for python water return temp at 30C max.

Unlikely that a Technician / installer will be measuring during peak demand periods. Guidelines need to cover the trading occasions that a Technician is likely to encounter

- Recommendation:

“ no greater than 20C during normal trading periods”

temperature and flowrate to be measured before and after install of secondary cooling

3. Trace Cooling

Use of speedfit cooling loop fitting:

- Recommend that the previous BDA agreement is allowed within the guidelines, with the limiting factor being minimum flow rate and maximum temperature allowed.

- **Variety of Secondary Cooling systems and Condensing Fonts**

- **Issue:** Will a technician be able to recognise type and the allowable heat loading?

Secondary Cooling Types

To be able to categorise each type of cooling unit need a specific category then sub category?

Issue: Cooling pod only – 3 types to date:

1. Double side entry cooling pod
2. Single entry cooling pod
3. Icefloe Booster pod

Condensing Fonts

To be able to categorise each type of Condensing need a specific category then sub category?

Heat Loading on a Condensing Font is dependent on flow rates, surface area of metal being cooled to achieve condensation, ambient temperature and relative humidity. The BDA test only covers one static situation

Design of Condensing Font will govern heat loading and condensing efficiency:

Types: Fully Flooded Font

- : Flooded Chamber within the Font cavity
- : Coolant water contact within flooded chamber – Front Face only
- : U Tube within Font cavity

Recommendation

- Condensing Fonts are labelled with BDA heat loading units
- 2ndry Cooling units are categorised and labelled with BDA heat load rating

4. Existing Primary Cooling System is full – i.e. a maximum number of 2ndry cooling units are already in place before installation.

Need an agreed procedure for Technicians where any additional 2ndry cooling units will overload the system

Interim recommendation – follow existing BDA transaction guidelines where the ingoing brewer installs an additional remote cooler to boost the Primary Cooling System and “sells” at MBMS rates the new remote cooler to the “Cooler Python Owner”