

X200AH Smoking Machine

An entirely new generation of smoking machine

**Combining fully automatic routine analytical smoking
and
Research smoking**



Topics

- 1. X200AH design philosophy**
- 2. X200AH video demo**
- 3. X200AH technical highlights**
- 4. Data comparison**
- 5. Summary**

Design Philosophy

It ultimately starts with you – the end-user – do these comments sound familiar?

- *“We need one-machine to enable us to carry out routine and research smoking using one machine platform rather than two.”*
- *“Software is not user-friendly or flexible. For example, the menu settings are too complex.”*
- *“Daily cleaning and maintenance is time consuming, we need to spend 2 hours each day.”*
- *“Systematic result offsets are inevitable between linear and rotary machines, we need to match the results between existing machines and laboratories.”*

i ssues

■ cl eani ng&
mai ntenance

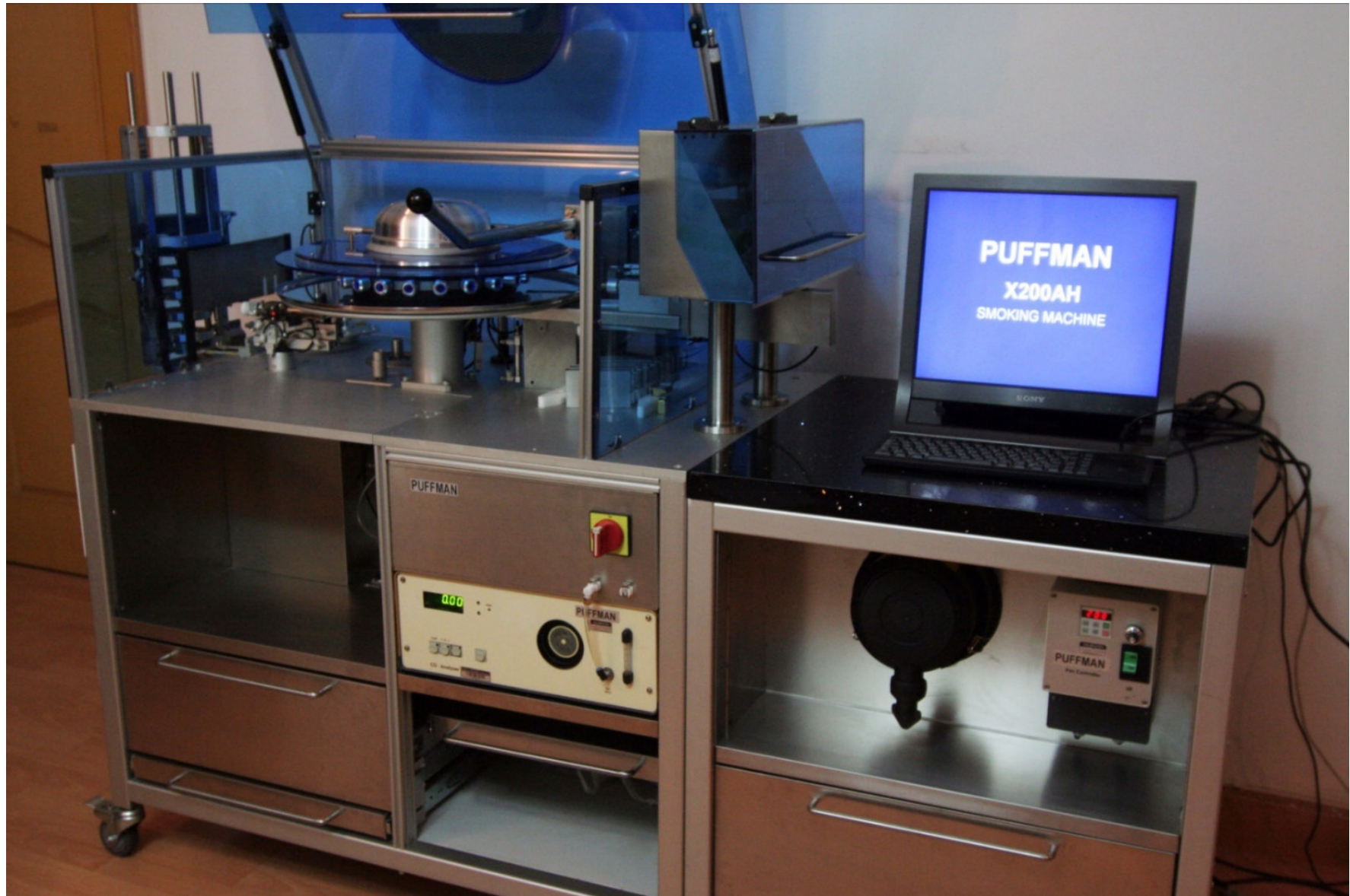
■ software

■ one off sol uti on

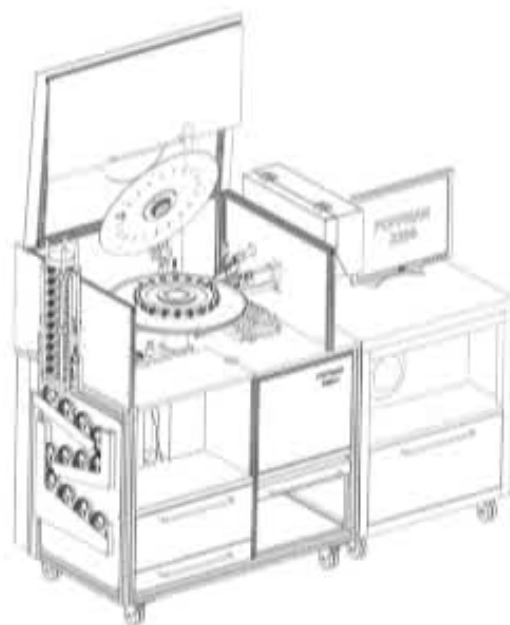
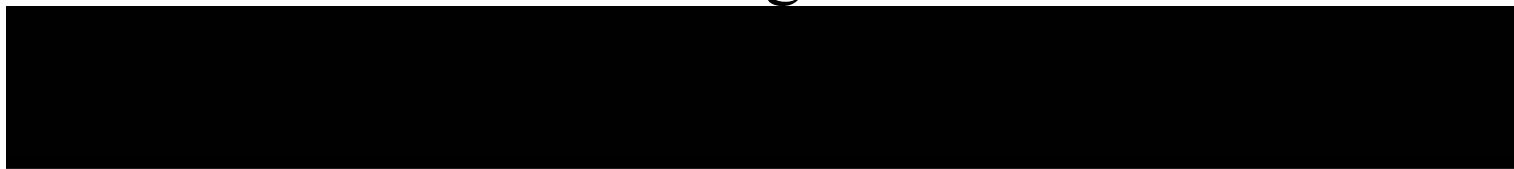
■ resul t offset
between Li near and
Rotary



X200AH Smoking Machine



X200AH Smoking Machine- video



PUFFMAN X200AH
SMOKING MACHINE

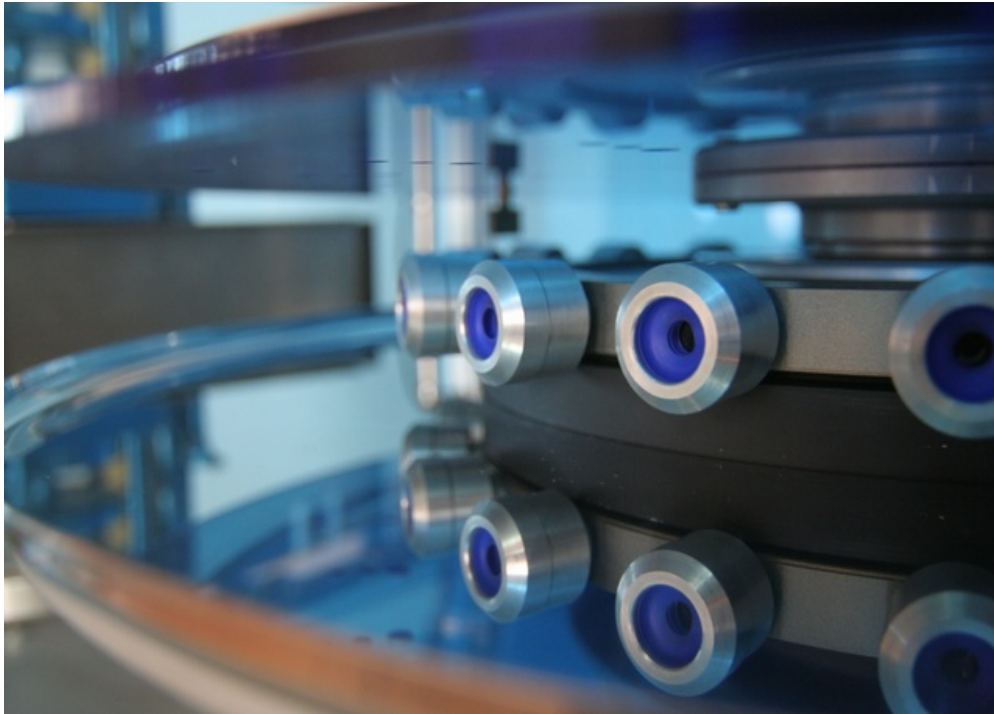


X200AH Highlight 1- Optimized Layout



Truly realizes two capabilities in one machine design; which is automatic routine smoking and research - Hoffman-type analytical work and alternative smoking regimes.

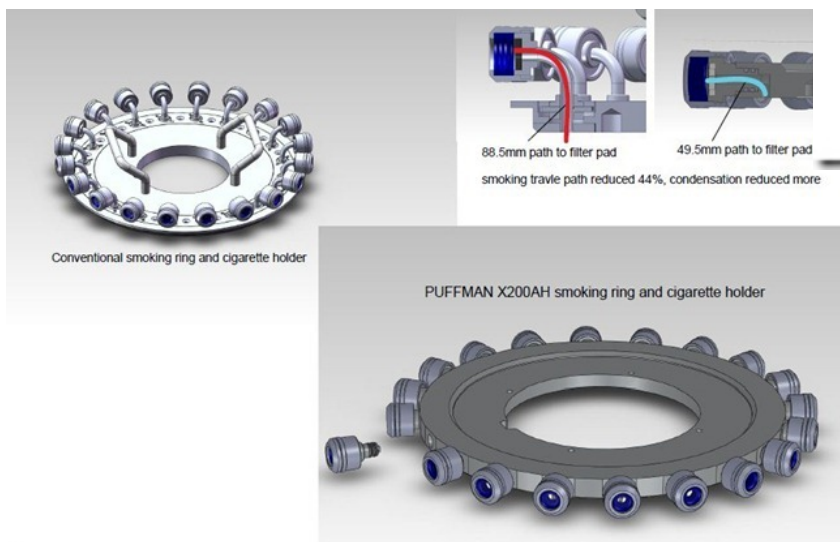
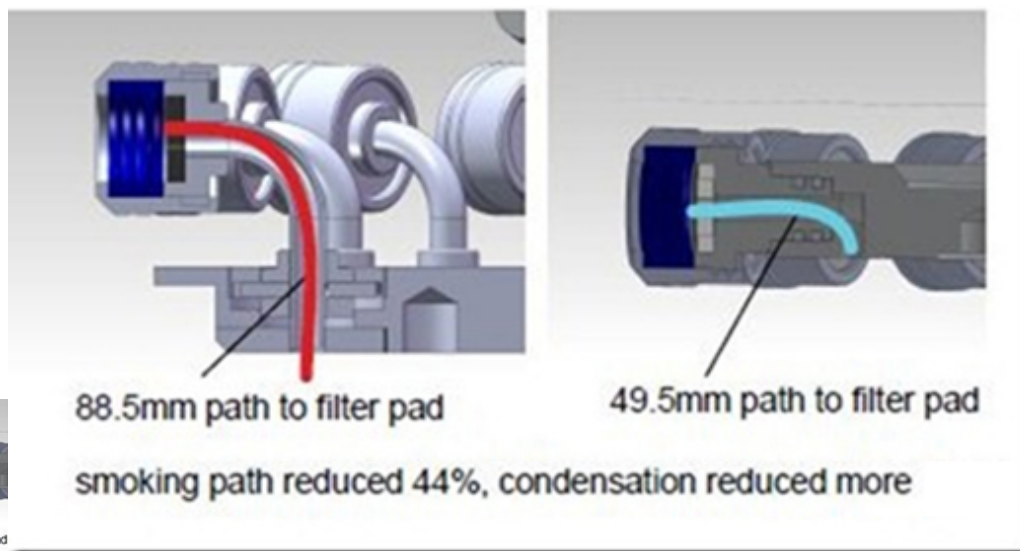
X200AH Highlight 2- Smoke Path



- Flat structure for cigarette holder and smoking ring significantly reduces the smoke path between the cigarette and CFH, it is 44% shorter than others

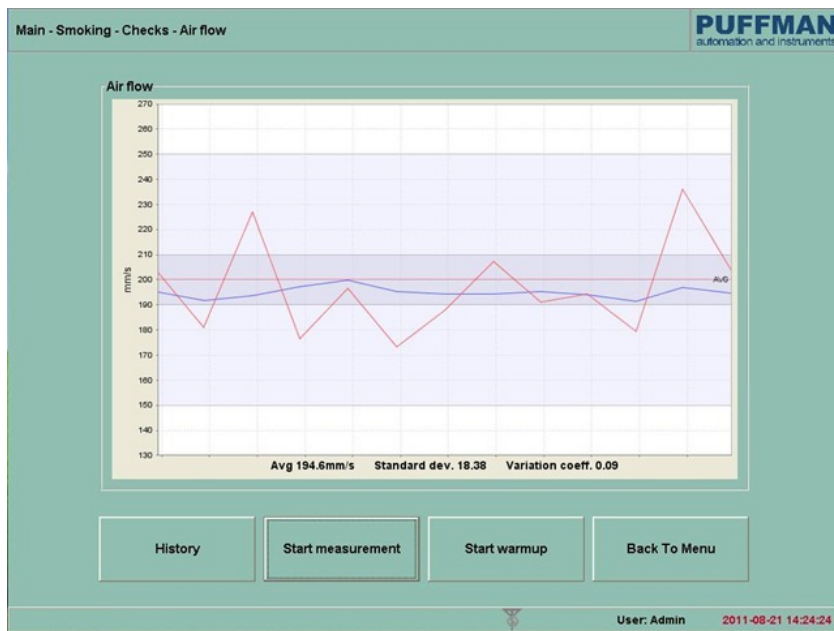
X200AH Highlight 2- Smoke Path

Smoke Path - comparison with other smoking machines

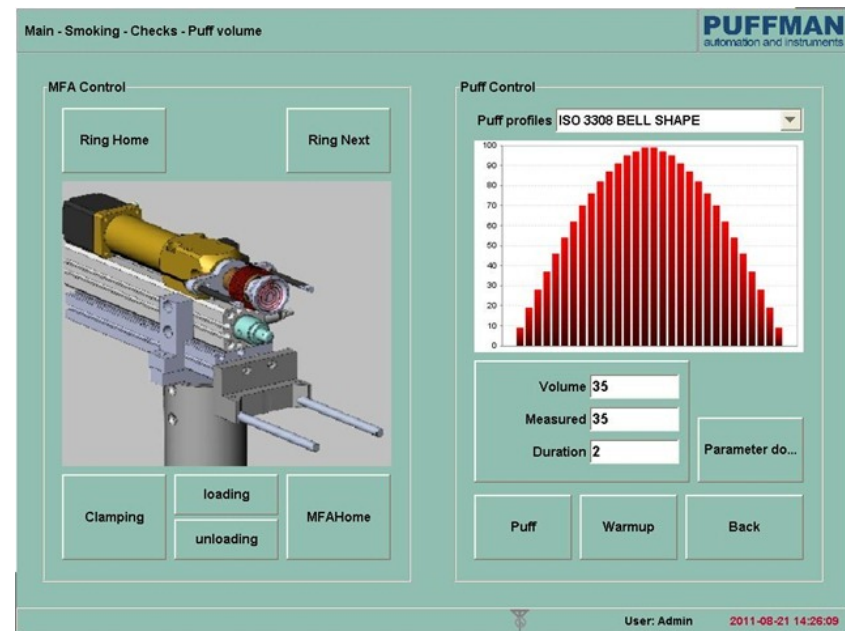


X200AH Highlight 3- Software

Air flow check display



Puff volume setting



X200AH Highlight 3- Software

During smoking

Main - Smoking - Smoking run - Smoking

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automation and instruments

Puff standard

Profile: 3308 BELL SHAPE

Volume: 35.0
Duration: 2.0
Interval: 60.0

Run Parameter

Cigar: cm6
Bank No: 1
Cigarette count: 20
Cigarette length(mm): 84.0
Butt length(mm): 33.0
Clear Puffs: 5
Unit limit: 4
Max diff: 4
COA CO

Smoking start

MFA Home
Clear gas
Loading
Weighing
Clamping
Check leakage
Loading
BTU position adj.
Lighter
Glow check
Puff
Clear puff
UnClamping
Weighing
Capping
Unloading
Reset
CO measure
Data process
End

孔 插 点 燃 潜 按 抽吸
運 潮 火 燒 幕 除 口 數

1	0.0
2	0.0
3	0.0
4	0.0
5	0.0
6	0.0
7	0.0
8	0.0
9	0.0
10	0.0
11	0.0
12	0.0
13	0.0
14	0.0
15	0.0
16	0.0
17	0.0
18	0.0
19	0.0
20	0.0

Before weight: 0.0000 g
After weight: 0.0000 g
TPM: 0.00 mg
CO Value: 0.00 % v/v
CO/mg: 0.0 mg
Puff count: 0.0
Unit count: 0

Start
Back To Menu

User: Admin 2011-08-21 14:52:38

Displayed Results

Main - Result - Info.

PUFFMAN
automation and instruments

20110811-0001

2011-08-11
Start 19:53:23
End 20:06:24

Driver name: PUFFMAN X200AH
User: Admin
Avg air flow: 200.67ml/s
Std. Dev: 7.2%
Var. coc: 0.04%

Profile: 3308 BELL SHAPE
Puff volume: 35.0
Puff time: 2.0
Atm. pres: 102.03kPa
Temperature: 25.0°C

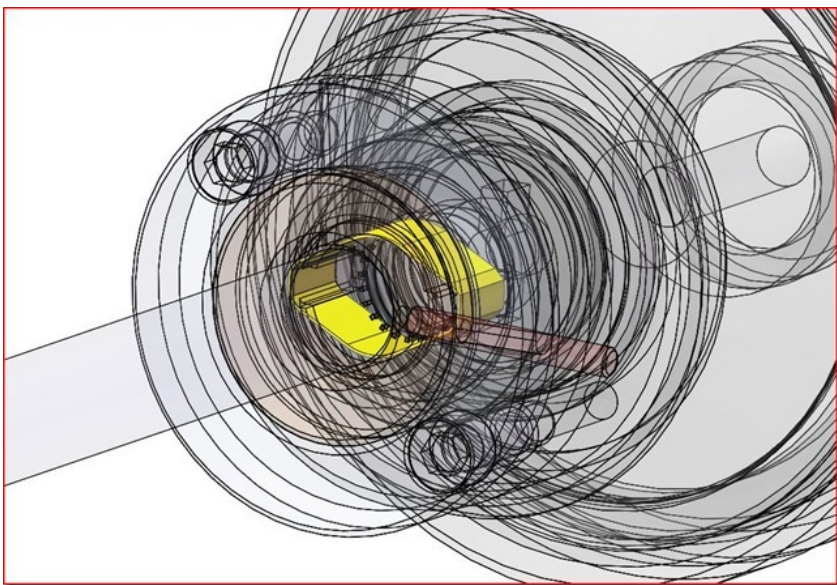
Bank No	1	2	3	4	5	6	7	8	9	10
Cir. name	33									
Cir. Len. (mm)	81.0									
Butt Len. (mm)	33.0									
Cir. num	30									
Puffs/cir.	6.90									
TPM/cir. (mg)	11.83									
CO/cir. (mg)	0									
TP weight 21g	35.5983									
TP weight 21g	35.7362									
TP (mg)	1.8.1									
Puffs	69.8									
Clear puff	5									
Puffs	74.8									
CO (v)	0.0									
Part 1	7.0									
Part 2	0.0									
Part 3	7.0									
Part 4	0.0									
Part 5	7.0									
Part 6	0.0									
Part 7	6.7									
Part 8	0.0									
Part 9	6.3									
Part 10	0.0									

Export
Send result
Printer
Back

User: Admin 2011-08-21 14:37:29

X200AH Highlight 4- VBH

Blueprint of the VBH



Actual one



X200AH Highlight 4- VBH

VBH in a smoking run

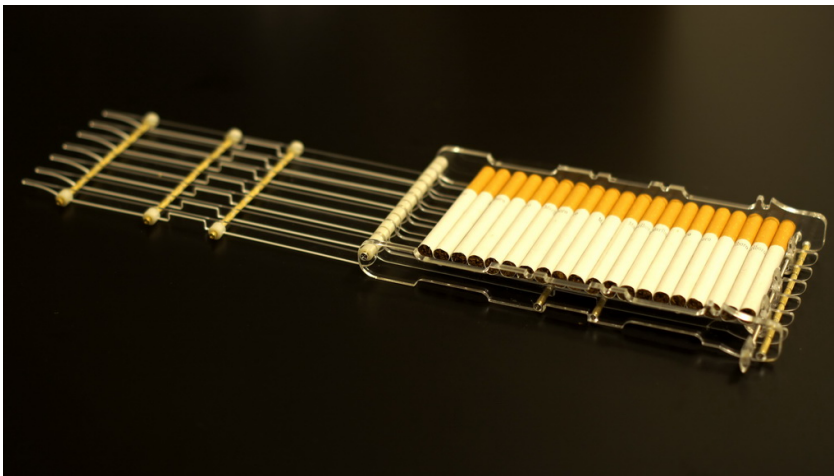


Video for VBH

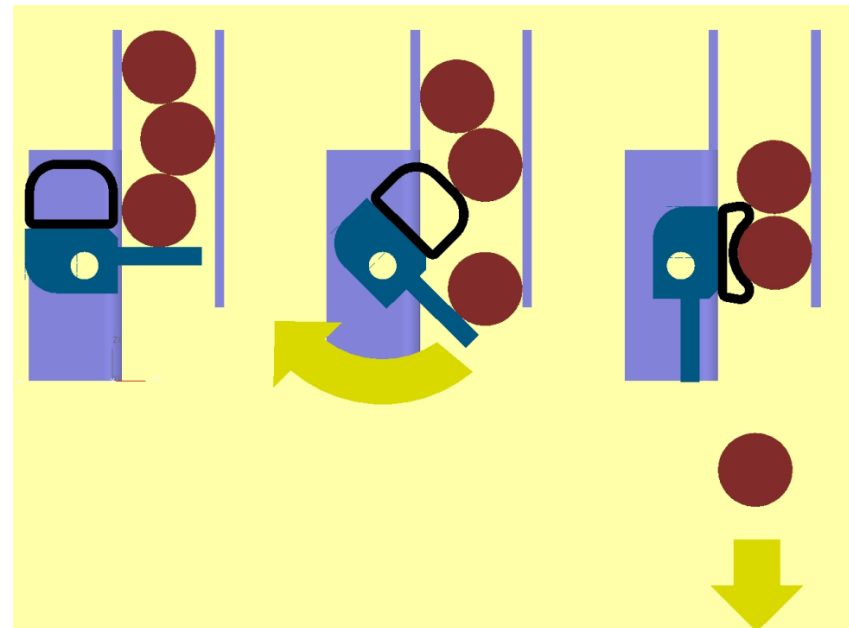


X200AH Highlight 5- Cigarette Cassette

New design- avoids cigarettes to be squeezed.



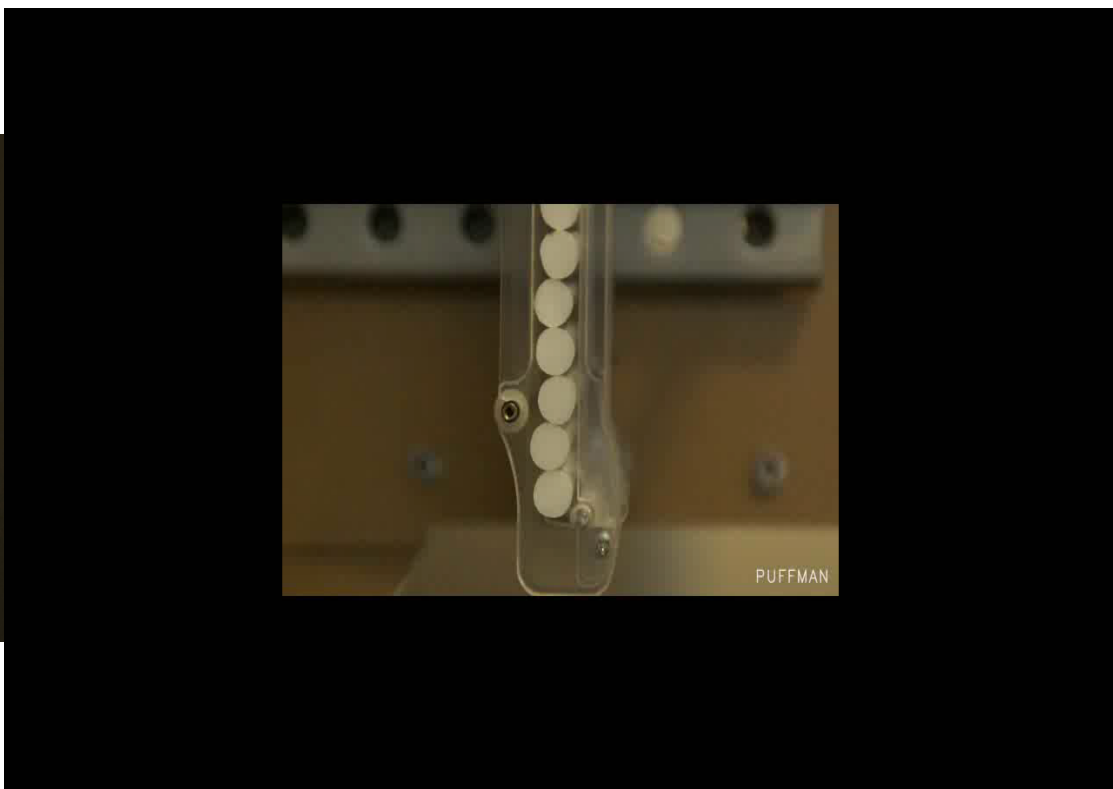
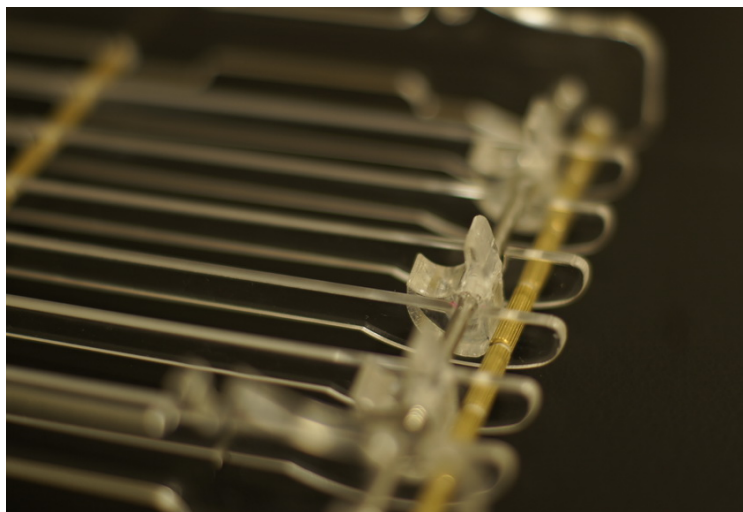
Existing design – cigarettes will be squeezed twice in one run.



X200AH Highlight 5- Cigarette Cassette

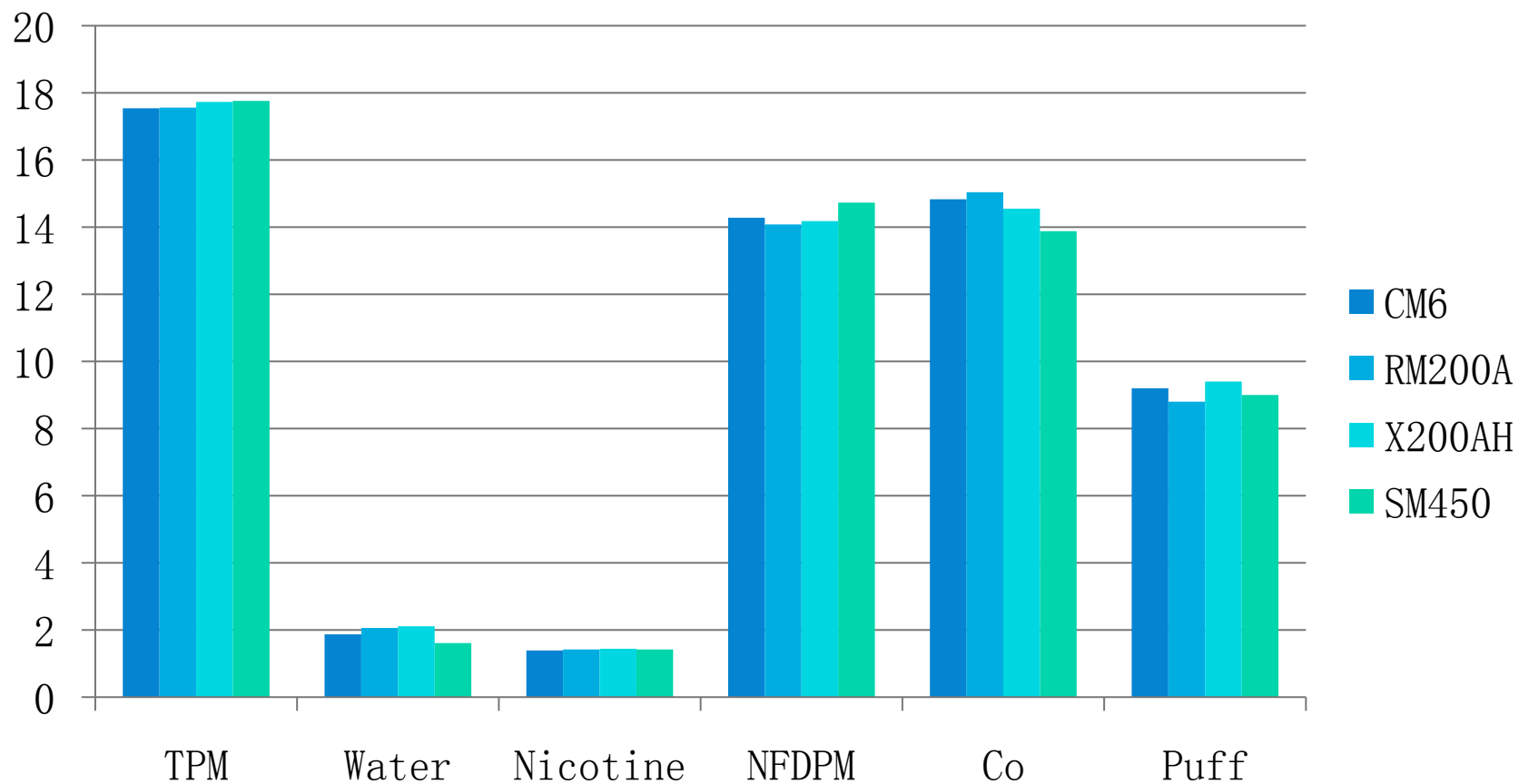
Video for cassette

New design- avoids cigarettes becoming out of shape



Data comparison

- Data from Shanghai Tobacco Group Technical Center



Data comparison

- Data from Shanghai Tobacco Group Technical Center

Machine type	TPM	water	Nicotine	NFDPM	CO	puff
	mg	mg	mg	mg	mg	counter
Coresta Mean	17.54	1.87	1.39	14.28	14.83	9.2
RM200A mean	17.56	2.06	1.42	14.08	15.04	8.8
Puffman X200AH mean	17.73	2.11	1.44	14.18	14.55	9.4
SM450 mean	17.76	1.61	1.42	14.73	13.88	9.0



Summary

X200AH is an entirely new generation of smoking machine, which combines fully automatic routine analytical smoking and research smoking.

Technical highlights include:

- **Layout**
- **Smoke path**
- **Software**
- **VBH**
- **Cigarette cassette**

**Thank you for your attention.
Any questions are welcomed.**