µHoubolt Test Protocol

[4TH STATIC FIRE]

[31.05.2022]

LEAD	MISSION CONTROL	PAD	RANGE SAFETY	FIREFIGHTER
GEORG MIKULA	MARKUS PINTER	DANIEL FRANK	ANDREAS UNGERSBÖCK	MAX SPANNRING

TESTTYPE	Fourth static fire of µHoubolt
TESTGOAL	Successful test of new combustion chamber, successful internal control operation
CHANGES	New combustion chamber, new batch of igniters
ADDITIONAL INFO	-

Fails and Learnings

1. Internal control operation didn't work as expected in a dry run. We reverted to the external test sequence.
2. The new combustion chamber held up with the temperature at the wall, but the throat diameter enlarged very rapidly which resulted in minor decreased performance.

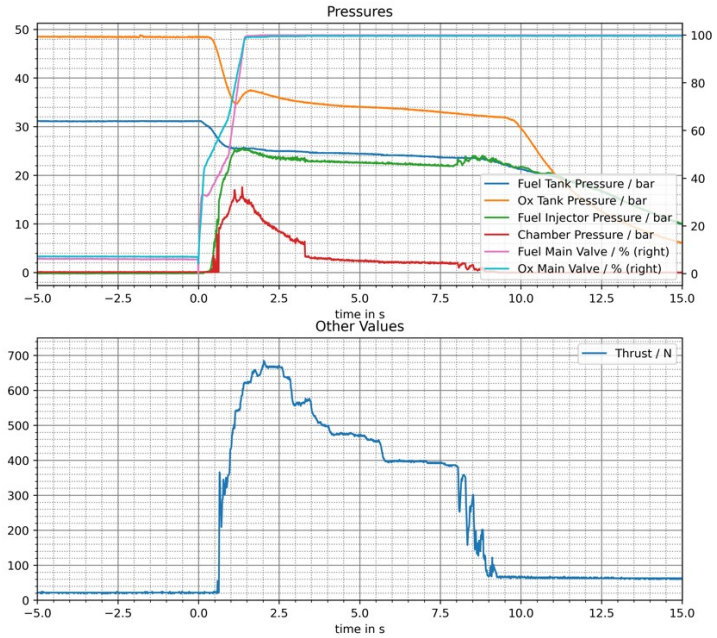
Test summary

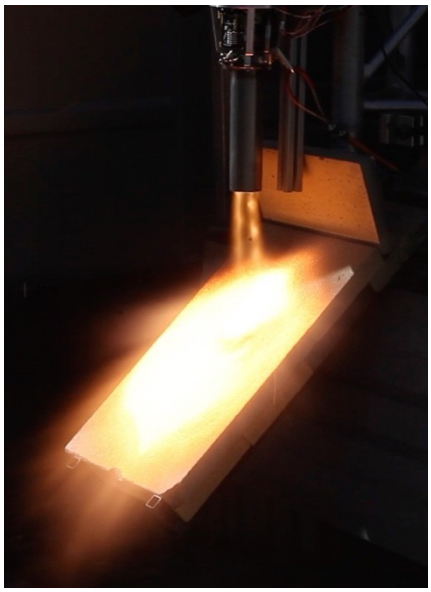
For the fourth test we used a new ablative combustion chamber design made of phenolic resin cotton fabric composite as the liner surrounded by a steel casing, since we had no aluminium tube at hand. Our focus lied in testing the liner.

Tanking went flawlessly. Internal control operation didn't work so we used the external test sequence instead. Engine start-up was nominal. Slower ramp up was clearly visible again.

At start we achieved our highest measured thrust of 680N. After an expanded throat it decreased to 400N. Overall it was our best static fire yet.

Diagrams and Pictures





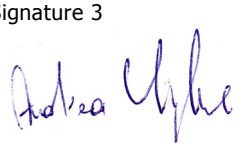
Signature 1

Georg Mikula

Signature 2

Markus Pinter

Signature 3



Andreas Ungersböck