Wing Profile lab - Copy data from Excel-VI to Excel template table

The pressure data acquired by the Scanivalve pressure port through the specific VI are saved in an Excel file with the following scheme:

A	B	C	D	E	F	G
x_rake (mm)	P_atm (Pa)	Temp (°C)	h_atm (cm)	Beta (°)	Target U_inf (m/s)	Alpha (°)

H	I	L	M	N	…	S
Nose	Top 1	Top 2	Top 3	Top 4	…	Top 11

T	U	V	W	X	…	AD	AE	AF
Bottom 1	Bottom 2	Bottom 3	Bottom 4	Bottom 5	…	Bottom 11	Floor	Roof

AG	AH	AI	AL	AM	…	BD
P_tot_y_155	P_tot_y_135	P_tot_y_115	P_tot_y_95	P_tot_y_75	…	P_tot_y_-185

BE	BF	BG	…	BM	BO	BP
P_stat_y_185	P_stat_y_145	P_stat_y_105	…	P_stat_y_-155	P_tot_Prandtl	P_stat_Prandtl

Where:
- x_rake (mm) is the stream-twise position of the rake from the wing in mm and it is fixed;
- P_atm (Pa) is the atmospheric pressure in the room in Pascals;
- Temp (°C) is the temperature in the room in Celsius degrees;
- h_atm (cm) is the atmospheric pressure in the room in cm of alcohol of a virtual manometer that is inclined at the angle Beta;
- Beta (°) is the angle of inclination of the virtual manometer;
- Target U_inf (m/s) is the target free stream velocity in the test section in m/s;
- Alpha (°) is the angle of attack of the wing;

- Nose is the pressure value in cm of alcohol in correspondence of the nose of the wing;
- Top 1 to Top 11 are the pressure values in cm of alcohol along the top surface of the wing starting from the leading edge (nose) to the trailing edge;
- Bottom 1 to Bottom 11 are the pressure values in cm of alcohol along the bottom surface of the wing starting from the leading edge (nose) to the trailing edge;
- Floor and Roof are the pressure values in cm of alcohol in the floor and roof of the test section in correspondence of the airfoil;

- P_tot_y_155 to P_tot_y_-185 are the total pressure values in cm of alcohol measured by the Pitot tubes of the rake. The coordinates of each tube is specified in the header and they goes from 155 mm to -185mm from the roof to the floor;
- P_stat_y_185 to P_stat_y_-155 are the are the static pressure values in cm of alcohol measured by the Pitot tubes of the rake. The coordinate system is the same as above;
- P_tot_Prandtl is the total pressure in cm of alcohol of the Prandtl tube at the entrance of the test section;
- P_stat_Prandtl is the static pressure in cm of alcohol of the Prandtl tube at the entrance of the test section;

The data will be analysed using a Matlab script that has been initialised to read a template Excel file with the following scheme:

- For the **Wing** use the Excel template file called: "Wing_GroupXX_TEMPLATE.xlsx"

	A	B	C	D	E	F	G	H	I	J	...	P	Q
1													
2													
3	rör nr:	anfallsvinkel		0,0	3,0	6,0	9,0	12,0	14,0	16,0	...	13,0	rör nr
4	1	nose											
5	2	Översida											
...													
16	13	Undersida											
...													
27	24	Friström	h_inf										
28	25	Stagnation	h_0										
29	26	Tak	h_inf,t										
30	27	Golv	h_inf,g										

The yellow cells have to be filled with the appropriate data copied from the previous Excel file produced from the acquisition VI in the following way[1]:

- (D-P)4[2]: put here data from the VI-Excel from cell H2 to cell H14;
- (D-P)(5-15)[3]: put here the values in (I-S)(2-14);
- (D-P)(16-26): put here the values in (T-AD)(2-14);
- (D-P)27: put here the values in BO(2-14);
- (D-P)28: put here the values in BN(2-14);
- (D-P)29: put here the values in AF(2-14);
- (D-P)30: put here the values in AE(2-14);

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[1] Note that to copy and paste the data from the Excel VI to the Excel template the data have to be transposed.

[2] From column D to column P, row 4.

[3] From column D to column P, from row 5 to row 15.

• For the **Rake** use the Excel template file called: "Rake_GroupXX_TEMPLATE.xlsx"

	A	B	C	D	E	F	G	H	I	J	K	...	Q	
1														
2														
3	rör nr:	anfallsvinkel	mm		0,0	3,0	6,0	9,0	12,0	14,0	16,0	...	13,0	rör nr
4	1	h_inf												
5	2	h_0												
6	3	h_tot	y=155											
7	4	h_tot	y=135											
...														
30	27	h_stat	y=185											
...														
38	35	h_stat	y=-155											

The yellow cells have to be filled with the appropriate data copied from the previous Excel file produced from the acquisition VI in the following way:

- (E-Q)4: put here the values in BO(2-14);
- (E-Q)5: put here the values in BN(2-14);
- (E-Q)(6-29): put here the values in (AG-BD)(2-14);
- (E-Q)(30-38): put here the values in (BE-BM)(2-14);