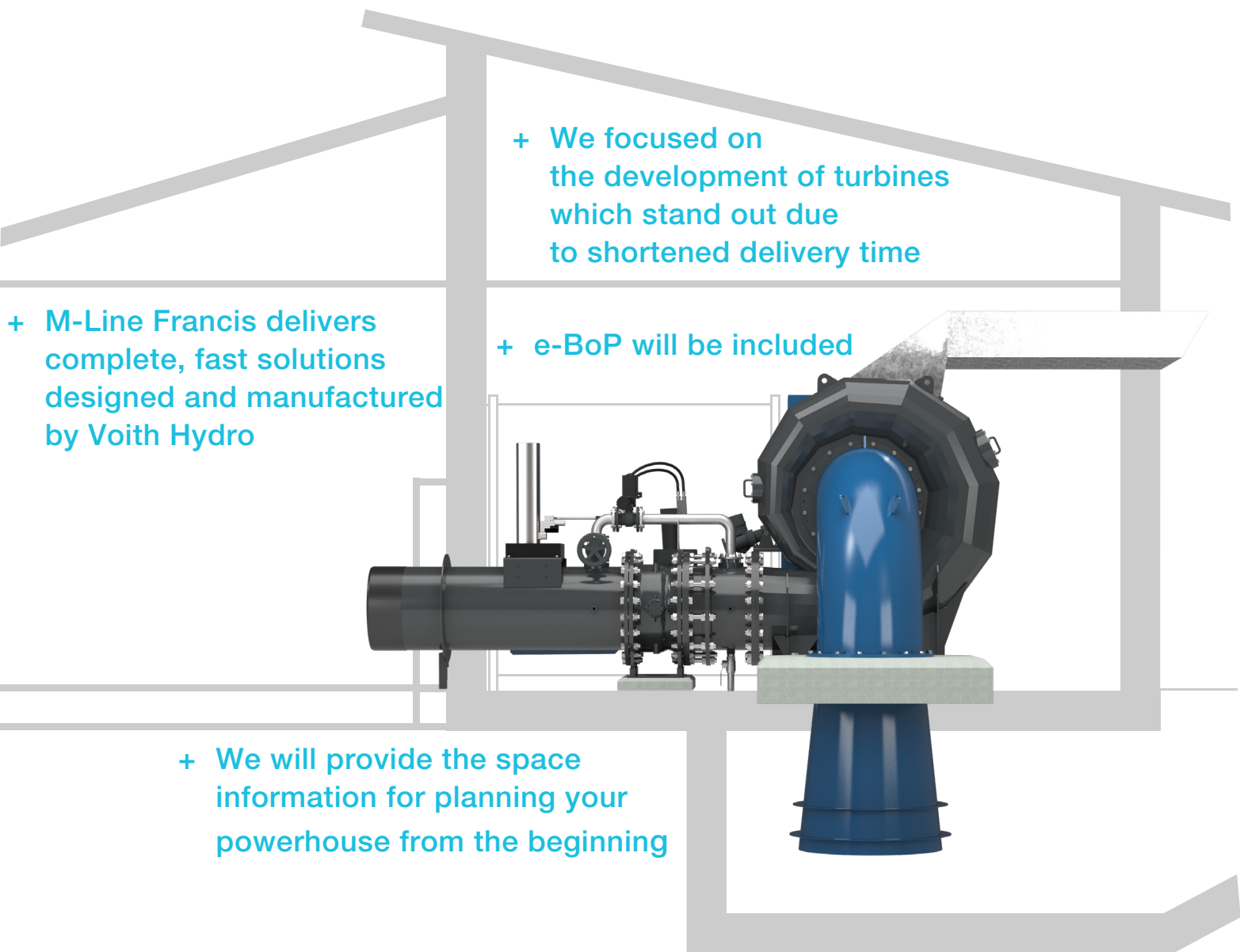


M-Line Francis

Shorten the delivery time up to 30%



+ We focused on the development of turbines which stand out due to shortened delivery time

+ M-Line Francis delivers complete, fast solutions designed and manufactured by Voith Hydro

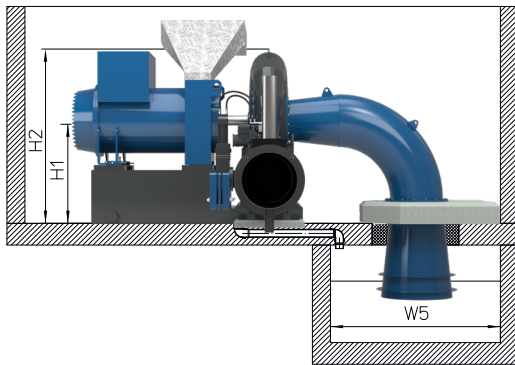
+ e-BoP will be included

+ We will provide the space information for planning your powerhouse from the beginning

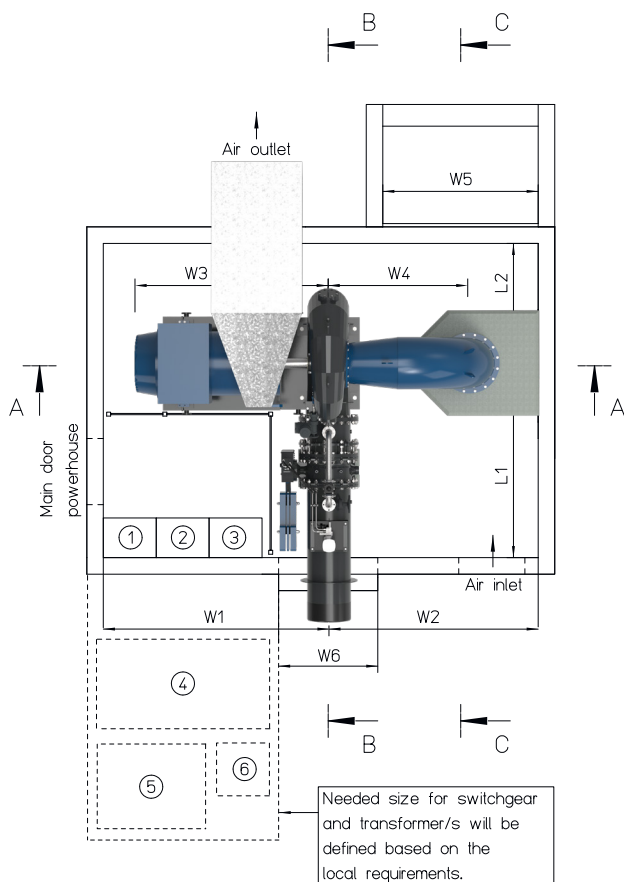
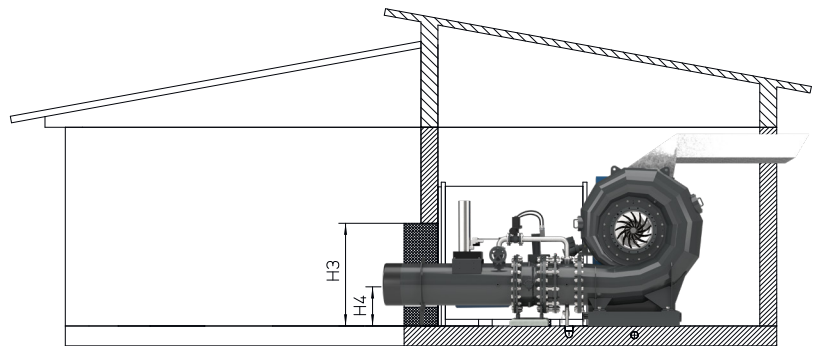
+ We offer a fast installation with the proven Voith Hydro quality

M-Line Francis Standardized Layout Drawing

Section A-A

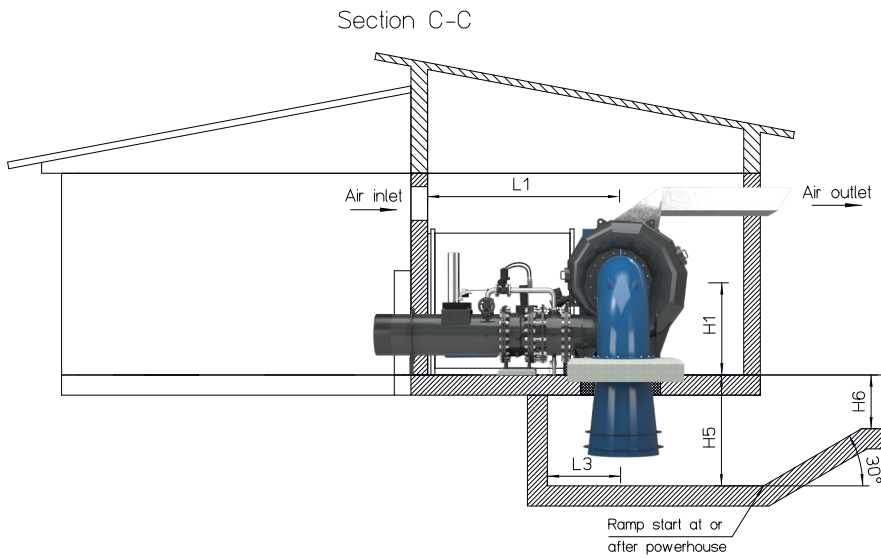


Section B-B

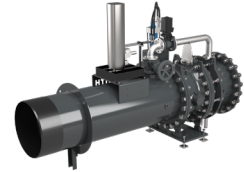


Legend

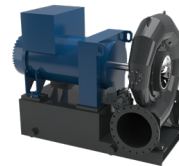
- (1) Cubicle for automation
- (2) Cubicle for automation
- (3) Cubicle for automation
- (4) Switchgear
- (5) Main transformer
- (6) Auxiliary transformer (at medium voltage)



Module Inlet



Module Turbine



Module Draft Tube



Module Automation



The M-Line Francis is available in different sizes to suit your needs in the most efficient way. Once defined the right size with the application diagrams at the back, you will immediately see all major space information of our recommended layout in the table below to start planning the powerhouse right away.

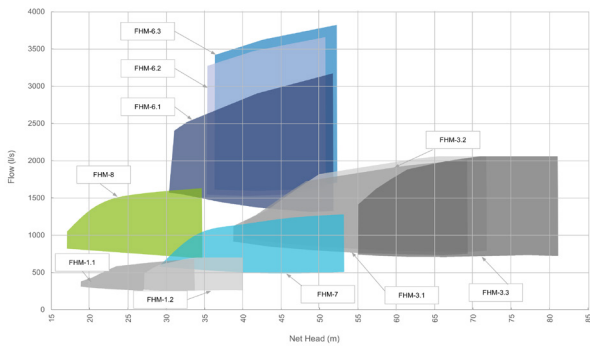
Value (mm)*	FHM-1	FHM-2	FHM-3	FHM-4	FHM-5	FHM-6
H1	960	1370	1370	1450	1450	1810
H2	1645	2300	2310	2445	2445	3060
H3	1300	1550	1550	1550	1550	1700
H4	445	605	590	645	645	800
H5	1180	1630	1650	1700	2000	2000
H6	550	760	800	870	1035	950
L1	2350	2900	2900	3050	3050	3400
L2	1500	1850	1850	1950	1950	2250
L3	730	1000	1100	1100	1150	1350
W1	3400	3400	3400	3900	3900	4400
W2	2020	2770	3175	3040	3090	3830
W3	2200	2650	2650	3150	3150	3650
W4	1220	1670	2005	1840	1835	2355
W5	1600	2200	2350	2400	2500	2950
W6	1300	1500	1500	1600	1600	1800

* Voith reserves the right to make changes of the dimensions.

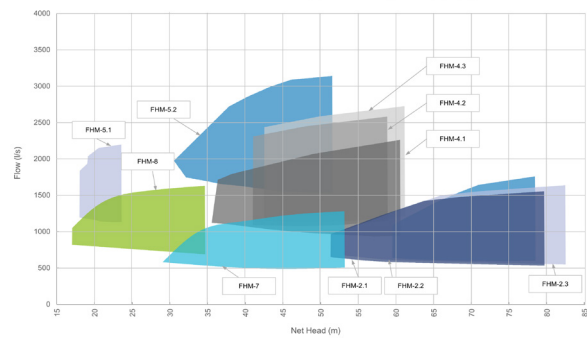
M-Line Francis

Our customers can benefit from many different advantages

Application Diagram 1, 3, 6, 7, 8



Application Diagram 2, 4, 5, 7, 8



On the application diagrams you can see all available sizes of the Francis Horizontal M-Line. Use your net head/discharge area in the diagram to see your M-Line size immediately.

The turbine power output is depending on the M-Line size. If your data applies on two sizes feel free to contact us to find the best solution for your project.

Benefits

- + Short delivery time
- + Proven Voith quality
- + Viability check via application diagram
- + Minimum power house dimensions
- + Simplified power house design that saves building costs

- + Reduced installation and startup times through pre-assembled modules
- + e-BoP will be included

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