EN TABLE OF STATIC FLOWS
IN RELATION TO INJECTOR NOZZLE DIAMETER

Qs - static flow - maximum "efficiency" in the open state

HP - power value in HP/cylinder

ϕ	1,0 bar		1,2 bar		1,4 bar		1,6 bar		1,8 bar		2,0 bar		SUGGESTED NOZZLE DIAMETER for the capacity of one cylinder	
	Qs	HP	Qs	HP	Qs	HP	Qs	HP	Qs	HP	Qs	HP		
1,60	37	13	41	15	44	16	48	18	52	19	56	21	Nozzles 1,8 mm	333 cm^3
1,80	47	17	52	19	56	21	62	23	66	24	71	26		
2,00	56	21	61	23	67	25	73	27	79	29	84	31	Nozzles 2,5 mm	from 333 cm^3 to 399 cm^3
2,20	66	24	73	27	79	29	86	32	93	34	100	37		
2,40	75	27	83	31	90	33	98	36	106	39	114	42		
2,60	83	30	92	34	100	37	109	40	118	43	127	47	Nozzles 2,8 mm	from 400 cm^3 to 450 cm^3
2,80	90	33	100	37	110	40	118	43	128	47	137	51		
3,00	94	34	105	39	115	42	125	46	136	50	146	54	No nozzles	From 450 cm^3
3,20	95	35	108	40	117	43	128	47	139	51	150	55		
3,40	97	36	109	40	119	44	131	48	141	52	152	56		
3,60	98	36	110	40	120	44	131	48	142	52	153	56		
3,80	99	36	110	41	120	44	131	48	142	52	153	56		
4,00	99	36	111	41	120	44	131	48	142	52	153	56		
4,20	100	37	111	41	120	44	131	48	142	52	153	56		

In most cases, it is sufficient to use nozzles with standard diameters:

- 1.8 mm - for one cylinder capacity up to 333 cm

- 2.5 mm - for one cylinder capacity from 333 cm to 399 cm

- 2.8 mm - for one cylinder capacity from 400 cm to 450 cm

- do not use nozzles at all - for single cylinder capacity from 450 cm.

Additional correction should be made by changing the reducer pressure.

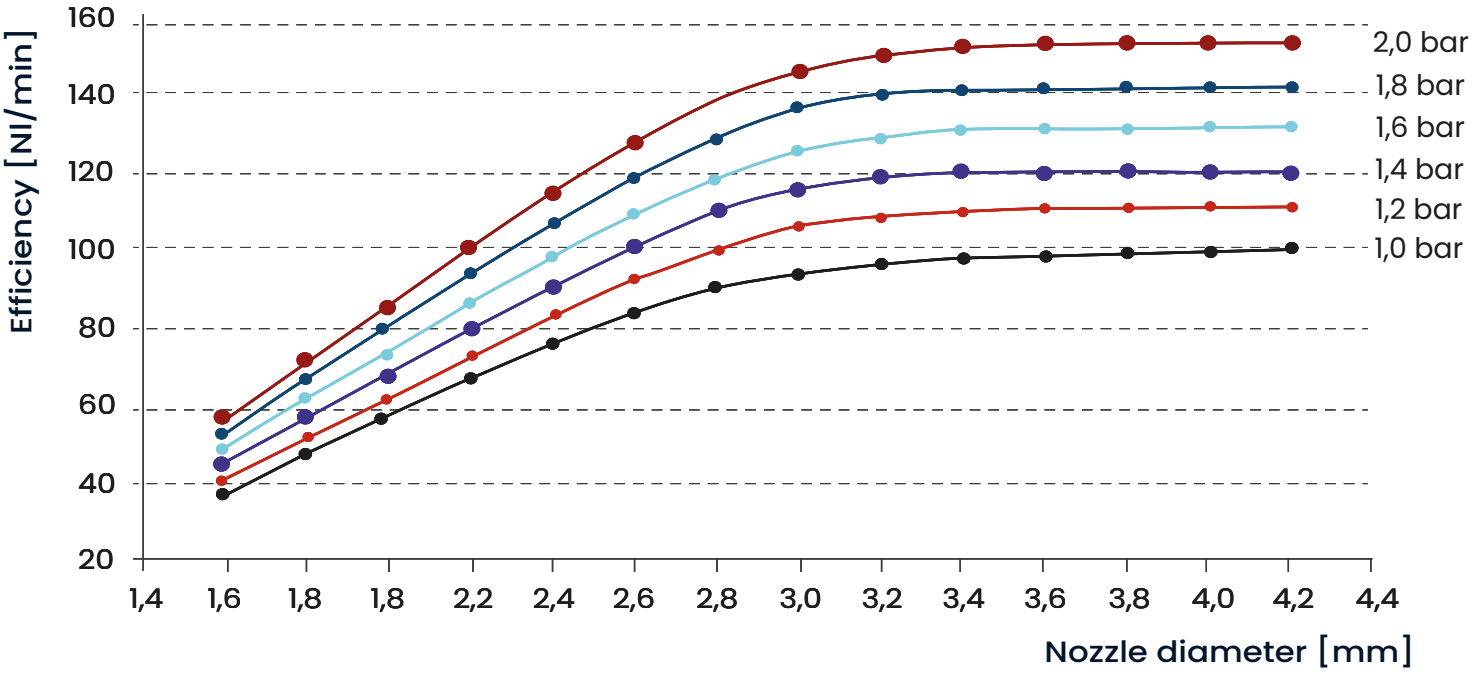
ATTENTION:

In most cars, the use of nozzles is sufficient:

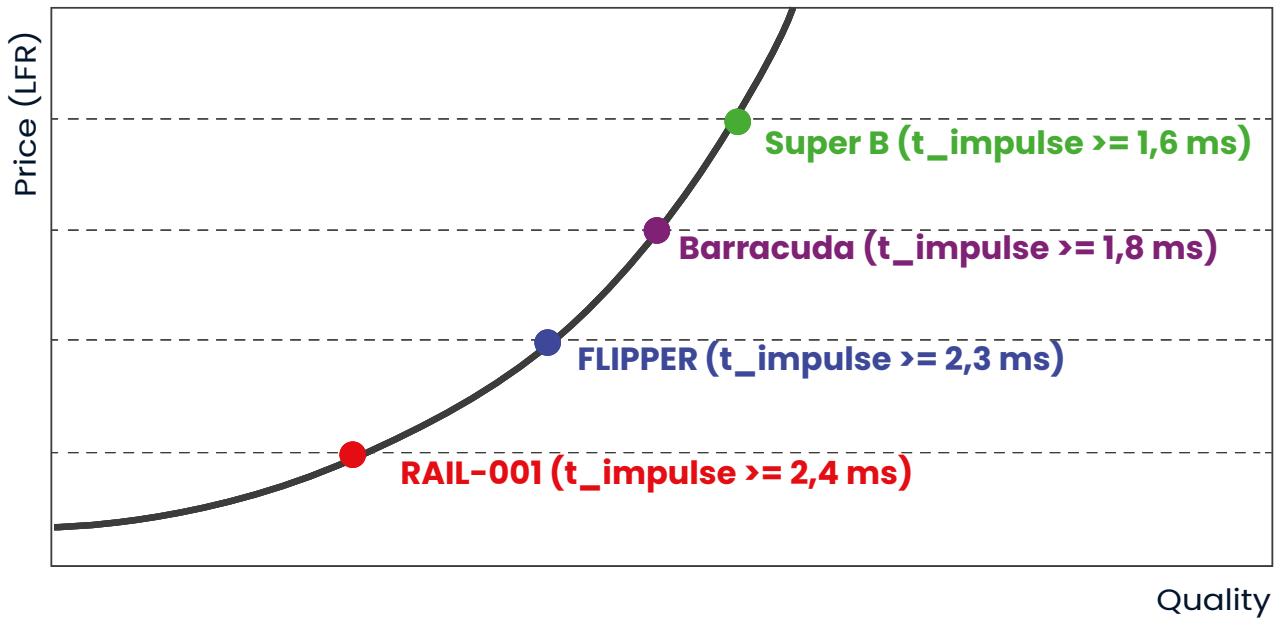
1. 8 mm–2.5 mm–2.8 mm–without nozzle. Additional correction should be made by changing the reducer pressure.
2. Power values may differ from the actual ones by 30% due to the composition of the LPG fuel.
3. In supercharged engines, pay attention to the engine boost value. It can be assumed that the lower the engine boost value compared to its maximum power, the larger the injector outlet nozzle.
   Example: In the 1.8T engine with a 1.0 Bar boost and a power of 200 HP, 2.8 mm nozzles can be used.
   In the case of a 1.8T engine with a 0.7 Bar 200 HP boost, use the maximum nozzle size (without nozzles).
4. As boost pressure decreases for turbocharged engines and especially naturally aspirated engines, larger nozzles may be needed.
5. As torque increases, larger nozzles may be needed.

DEPENDENCE OF FLOW OUTPUT

ON INJECTOR NOZZLE DIAMETER



The above chart shows that nozzles above 3.2 mm in diameter slightly increase the flow.



INJECTORS COMPARISON

Classification according to switching time:

Super B	for petrol times not shorter than 1,6 ms
Barracuda	for petrol times not shorter than 2,0 ms
FLIPPER	for petrol times not shorter than 2,5 ms
RAIL-001	for petrol times not shorter than 3,0 ms

Classification according to the minimum dose at the maximum nozzle size:

Super B	minimalna dawka gazu	1,3 cm3 @ 1,6 ms
Barracuda	minimalna dawka gazu	1,7 cm3 @ 1,8 ms
FLIPPER	minimalna dawka gazu	2,8 cm3 @ 2,3 ms
RAIL-001	minimalna dawka gazu	3,2 cm3 @ 2,4 ms

The injector opening time, below which operation may be unstable (applies especially to the minimum gas dose, e.g. at idle):

Super B	1,6 ms @1.0bar
Barracuda	2,0 ms @1.0bar
FLIPPER	2,6 ms @1.0bar
RAIL-001	3,5 ms @1.0bar

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