

## Selection Guide

The choice for a proper configuration of:

- **Wash Gun**
- **Lance**
- **Nozzle**

For surface jetting applications has to take into account the following:

1. **Flow parameters** of the pump of the jetting system (flow and pressure)
2. **Length of the lance**
3. **Type of application** to be performed, in order to determine the optimal nozzle to apply at the end of the lance.

### WASH GUNS

Several types of guns are available on the market, whose characteristics vary according to:

- **Maximum Flow and Pressure:** it is absolutely necessary to use a gun with a working pressure that is greater than the maximum pressure of the HP pump you are using;
- **Weight:** the smaller the weight of the gun, the easier it is to use it for the operator.

#### MAX FLOW 50 L/MIN – MAX PRESSURE 400 BAR



NAME	ST-2600	ML957	NOVA400	ST-601
<b>Part number</b>	<b>3801.115-02</b>	<b>3803.957S</b>	<b>3803.NOVA400</b>	<b>3801.114-01</b>
Inlet	3/8" F (swivel)	3/8" F (swivel)	3/8" F	3/8" F
Outlet	1/4" F	1/4" F	1/4" F	1/4" F
Max Pressure (bar)	310	280	400	275
Max Flow (l/min)	45	50	40	45
Weight (kg)	0,62	0,62	0,6	
Max temperature (°C)	150	160	160	160

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**MAX FLOW 120 L/MIN – MAX PRESSURE 600 BAR**



NAME	ST-3600	RL84	ST-3240
<b>Part number</b>	<b>3803.ST36</b>	<b>3803.RL84</b>	<b>3803.ST3240</b>
Inlet	1/2" F (swivel)	1/2" F	1/2" F
Outlet	1/2" F	1/2" F	1/2" F
Max Pressure (bar)	600	500	310
Max Flow (l/min)	80	80	120
Weight (kg)	1,2	1,4	0,8
Max temperature (°C)	150	100	100

**MAX FLOW 200 L/MIN – MAX PRESSURE 350 BAR**



NAME	ST-3500	RL204	RL600
<b>Part number</b>	<b>3803.ST35</b>	<b>3803.RL204</b>	<b>3803.RL600</b>
Inlet	1/2" F (swivel)	3/4" F	3/8" F
Outlet	1/2" F	1/2" F	3/8" F
Max pressure (bar)	350	200	600
Max flow (l/min)	200	200	60
Weight (kg)	1,2	1,47	1
Max temperature (°C)	150	100	100

## **LANCES**

These devices allow to reduce the distance between the high-pressure water jet to the surface to be cleaned.

The length of the lance should be enough to avoid the operator to accidentally direct the jet towards him or herself.

The maximum working pressure has to be greater or equal to the maximum pressure of the wash gun you are working with.

The inlet thread of the lance has to be compatible with outlet thread of the wash gun.

The same holds for the outlet thread of the lance that has to be compatible with the inlet of the nozzle.



The lances are available with either a straight end or a bended end to better direct the jet towards the surface to be cleaned.

Normally the outlet of the lance has a Male thread. If necessary, sleeves (F/F) can be used, to allow the matching of the lance with the nozzles with male thread.



The lances are made of galvanized steel or stainless steel.

*Sleeve ¼" F ¼" F  
5945.02*

Most of the lances are fitted with an adjustable insulating handle that makes it easier for the operator to hold the lance.

**TECHNICAL FOCUS**  
Spray guns and lances

**LANCES WITH 1/4" M INLET**

Part number	3801.12-0500ST	3801.12-500	3801.12-C0800ST	3801.17-0900U	3801.17-0900ST	3801.14-1200ST	3801.12-1200	3801.16-1200	3803.1200NOVA	3801.14-2000
Length (mm)	500	500	800	900	900	1200	1200	1200	1200	2000
Inlet	1/4" M	1/4" M	1/4" M	1/4" M	1/4" M	1/4" M	1/4" M	1/4" M	1/4" M	1/4" M
Outlet	1/4" M	1/4" F	1/4" F NPT	2 x 1/4" M	1/4" M	1/4" M	1/4" F	1/4" M	1/4" F	1/4" M
Max Pressure (bar)	400	280	250	250	400	400	250	250	400	310
Max Flow (l/min)	50	50	50	50	50	50	50	50	40	50
Material	Galv. Steel with ins. handle	Galv. Steel with ins. handle	Galv. Steel with ins. handle	SS with ins. handle	SS with ins. handle	SS with ins. handle	Galv. Steel with ins. handle	SS with ins. handle	SS with adjustable ins. handle	SS
Max Temperature (°C)	150	150	150	150	150	150	150	90	160	150



**3801.12-0500ST**  
**3801.17-0900ST**  
**3801.14-1200ST**



**3801.12-500**  
**3801.12-C0800ST**  
**3801.12-1200**



**3801.17-0900U**



**3801.16-1200**



**3803.1200NOVA**



**3801.14-2000**

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**TECHNICAL FOCUS**  
Spray guns and lances

**LANCES WITH 1/2" M INLET**

Part number	3803.400RL204	3803.0800ST	3803.800RL204	3803.1250RL204
Length (mm)	400	800	800	1250
Inlet	1/2"M	1/2"M	1/2"M	1/2"M
Outlet	1/4"F	1/4"F	1/4"F	1/4"F
Max Pressure (bar)	560	600	560	560
Max Flow (l/min)	200	200	200	200
Material	SS with insulating handle	SS with insulating handle	SS with insulating handle	SS with insulating handle
Max Temperature (°C)	43	150	43	43



**3803.400RL204**  
**3803.800RL204**  
**3803.1250RL24**



**3803.0800ST**

**LANCES WITH 3/8" M HANDLE**

Part number	3803.800RL600
Length (mm)	800
Inlet	3/8" M
Out	3/8"F
Max Pressure (bar)	600
Max Flow (l/min)	60
Material	SS
Max Temperature (°C)	100

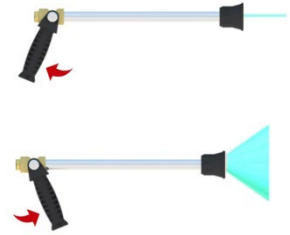


**3803.800RL600**

**TECHNICAL FOCUS**  
Spray guns and lances

**WASH GUNS WITH VARIABLE JET LANCES**

Three preset configurations of wash gun and variable jet lances are available and they allow to change the type of the jet by switching on the handle of the lance: pushing out the handle will result in a conical jet; when the handle is moved towards the wash gun the jet will be linear.



Part number	3806.511-01F	3806.500-01F	3806.510-01F
Inlet	1/2" F Swivel	1/2" F	3/8" F Swivel
Out	M15x1 with nozzle holder	M16	M16
Max Pressure (bar)	250	250	200
Max Flow (l/min)	60	40	80
Weight (kg)	-	2,25	2,65
Max Temperature (°C)	100	90	43
Total length (mm)	850	943	848

**NOZZLES**

The nozzles have to be selected according to the **flow coefficient** of the pump, in order to assure the right amount of water is flowing through the washing system, compatible (greater than or equal) with the maximum working pressure.

**Longcast Nozzles**

Long reach nozzles with 5 mm orifice. Maximum working pressure 250 bar. Suitable for lances with 1/2" M inlet.

Ideal solution for the cleaning of manholes.



Part numbers	3804.009F-05	3804.010F-05	3804.010-05
Inlet	1/2" F	3/4" F	3/4" M
∅ x L (mm)	32 x 85	32 x 85	32 x 85
Orifice (mm)	5	5	5

**TECHNICAL FOCUS**  
Spray guns and lances

**Fixed Jet Nozzles**

The fixed jet nozzles (normally delivered with ¼" BSPP Male Thread) are available in two versions: with a linear jet (0°) or a fan jet with several jet inclinations (15°/25°/40°/65°)



0°	15°	25°	40°	65°	Part. No.	USG <sup>1</sup>	Flow (lit/min) against pressure values (bar)						
							20	30	50	70	100	150	200
			●	●	1340	015	1,52	1,86	2,40	2,84	3,40	4,16	4,81
	●	●	●		1460	02	2,06	2,52	3,25	3,85	4,60	5,63	6,51
		●	●		1560	025	2,50	3,07	3,96	4,69	5,60	6,86	7,92
			●		1686	03	3,07	3,76	4,85	5,74	6,86	8,40	9,70
	●	●	●	●	2103	045	4,61	5,64	7,28	8,62	10,3	12,6	14,6
	●	●	●	●	2116	05	5,19	6,35	8,20	9,71	11,6	14,2	16,4
		●			2126	055	5,63	6,90	8,91	10,5	12,6	15,4	17,8
				●	2138	06	6,17	7,56	9,76	11,5	13,8	16,9	19,5
			●		2149	065	6,66	8,16	10,5	12,5	14,9	18,2	21,1
	●		●		2160	07	7,16	8,76	11,2	13,4	16,0	19,6	22,6
		●			2170	075	7,60	9,31	12,0	14,2	17,0	20,8	24,0
			●		2181	08	8,09	9,91	12,8	15,1	18,1	22,2	25,6
		●			2220	095	9,84	12,1	15,6	18,4	22,0	26,9	31,1
			●		2230	10	10,3	12,6	16,3	19,2	23,0	28,2	32,5
●		●		●	2248	11	11,1	13,6	17,5	20,7	24,8	30,4	35,1
			●		2280	12,5	12,5	15,3	19,8	23,4	28,0	34,3	39,6
				●	2296	13	13,2	16,2	20,9	24,8	29,6	36,3	41,9
	●	●			2320	14	14,3	17,5	22,6	26,8	32,0	39,2	45,3
			●	●	2341	15	15,2	18,6	24,0	28,4	34,1	41,5	47,9
			●		2456	20	20,4	25,0	32,2	38,2	45,4	55,8	64,5
		●	●		2682	30	30,5	37,4	48,2	57,1	67,9	83,5	96,4
●		●	●		3113	50	50,5	61,9	79,9	94,5	113	138	160
●					3135	60	60,4	73,9	95,5	113	135	165	191

<sup>1</sup> The "USG" column shows the nominal flow value in US Gallons per minute, corresponding to a pressure of 4000 psi (276 bar), which is the standard value used to identify the washing high pressure nozzles, which is linked to the Flow Coefficient.

**TECHNICAL FOCUS**  
Spray guns and lances

A sample code is:

**FBL.1460.C2**

Where:

- “FB” stands for the type of the nozzle
- The letter “L” represents the width of the jet (40°)
- 1460 is to self-explaining code the corresponds to the flow of the nozzle at 100 bar (4,60 lt/min). The first number determines the decimal places of the value.
- C2 is the code for the material: SS AISI 416 hardened

### Pin Jet nozzles

Part number	Description
<b>85506.10</b>	TE 1/4" DN 1,0 mm
<b>85506.12</b>	TE 1/4" DN 1,2 mm
<b>85506.14</b>	TE 1/4" DN 1,4 mm
<b>85506.16</b>	TE 1/4" DN 1,6 mm
<b>85506.18</b>	TE 1/4" DN 1,8 mm
<b>85506.20</b>	TE 1/4" DN 2,0 mm
<b>85506.22</b>	TE 1/4" DN 2,2 mm
<b>85506.24</b>	TE 1/4" DN 2,4 mm
<b>85506.26</b>	TE 1/4" DN 2,6 mm
<b>85506.28</b>	TE 1/4" DN 2,8 mm
<b>85506.31</b>	TE 1/4" DN 3,1 mm
<b>85506.34</b>	TE 1/4" DN 3,4 mm
<b>85506.40</b>	TE 1/4" DN 4,0 mm





**TECHNICAL FOCUS**  
Spray guns and lances

**Rotating Jet Nozzles (Rotojet)**

The rotating jet nozzles have a very strong impact on the surface where they are directed. They are characterized by the maximum pressure and the **flow coefficient**<sup>2</sup>.

They have a 1/4" F thread and are mounted directly on the lance.



Model	Rotojet 255	Rotojet 310	Rotojet 400	Rotojet 600
Thread	1/4" F	1/4" F	1/4" F	1/4" F
Weight (gr)	327	407	732	540
Max Pressure (bar)	255	310	400	600
Max Temperature (°C)	100	100	90	90
Nozzles available for each size				
02	<i>75000.93/020</i>		<i>75000.90/020</i>	<i>75000.96/020</i>
025	<i>75000.93/025</i>			
03	<i>75000.93/030</i>	<i>75000.92/030</i>	<i>75000.90/030</i>	<i>75000.96/030</i>
035	<i>75000.93/035</i>			
04	<i>75000.93/040</i>	<i>75000.92/040</i>	<i>75000.90/040</i>	<i>75000.96/040</i>
045	<i>75000.93/045</i>		<i>75000.90/045</i>	
05			<i>75000.90/050</i>	<i>75000.96/050</i>
055			<i>75000.90/055</i>	
06		<i>75000.92/060</i>	<i>75000.90/060</i>	<i>75000.96/060</i>
065			<i>75000.90/065</i>	
07	<i>75000.93/070</i>	<i>75000.92/070</i>	<i>75000.90/070</i>	<i>75000.96/070</i>
075			<i>75000.90/075</i>	
08				<i>75000.96/080</i>
09	<i>75000.93/090</i>		<i>75000.90/090</i>	
10			<i>75000.90/100</i>	
11	<i>75000.93/110</i>			
12	<i>75000.93/120</i>		<i>75000.90/120</i>	
15			<i>75000.90/150</i>	
20			<i>75000.90/200</i>	

<sup>2</sup> **Flow Coefficient:** parameter of a nozzle, calculated according to the pressure at the nozzle and the flow. The size of a Rotojet corresponds – by convention – to the significant digits of the calculated value. The measure of the nozzle is determined by the value of the required flow in USgpm when the pressure is equal to 4000 psi (276 bar): for instance if at 4000 psi 2,50 USgpm are required the size of the nozzle will be 025.

**TECHNICAL FOCUS**  
Spray guns and lances

SIZE	180 2611	190 2756	200 2901	210 3046	220 3191	230 3336	240 3481	250 3626	260 3771	270 3916	276 4000	280 4061	290 4206	300 4351	310 4496	320 4641	330 4786	bar psi
02	6,1 1,62	6,3 1,66	6,4 1,70	6,6 1,75	6,8 1,79	6,9 1,83	7,1 1,87	7,2 1,90	7,4 1,94	7,5 1,98	7,6 2,00	7,6 2,02	7,8 2,05	7,9 2,09	8,0 2,12	8,2 2,15	8,3 2,19	
025	7,06 2,02	7,9 2,08	8,1 2,13	8,3 2,18	8,5 2,23	8,6 2,28	8,8 2,33	9,0 2,38	9,2 2,43	9,4 2,47	9,5 2,50	9,5 2,52	9,7 2,56	9,9 2,61	10,0 2,65	10,2 2,69	10,4 2,73	
03	9,2 2,42	9,4 2,49	9,7 2,55	9,9 2,62	10,1 2,68	10,4 2,74	10,6 2,80	10,8 2,86	11,0 2,91	11,2 2,97	11,4 3,00	11,4 3,02	11,6 3,08	11,8 3,13	12,0 3,18	12,2 3,23	12,4 3,28	
035	10,7 2,83	11,0 2,83	11,3 2,98	11,6 3,05	11,8 3,13	12,1 3,20	12,4 3,27	12,6 3,33	12,9 3,40	13,1 3,46	13,2 3,50	13,3 3,53	13,6 3,59	13,8 3,65	14,0 3,71	14,3 3,77	14,5 3,83	
04	12,2 3,23	12,6 3,32	12,9 3,41	13,2 3,49	13,5 3,57	13,8 3,65	14,1 3,73	14,4 3,81	14,7 3,88	15,0 3,96	15,1 4,00	15,3 4,03	15,5 4,10	15,8 4,17	16,1 4,24	16,3 4,31	16,6 4,38	
045	13,8 3,64	14,1 3,74	14,5 3,83	14,9 3,93	15,2 4,02	15,6 4,11	15,9 4,20	16,2 4,28	16,5 4,37	16,9 4,45	17,0 4,50	17,2 4,53	17,5 4,61	17,8 4,69	18,1 4,77	18,3 4,85	18,6 4,92	
05	15,3 4,04	15,7 4,15	16,1 4,26	16,5 4,36	16,9 4,47	17,3 4,57	17,7 4,66	18,0 4,76	18,4 4,85	18,7 4,95	18,9 5,00	19,1 5,04	19,4 5,13	19,7 5,21	20,1 5,30	20,4 5,39	20,7 5,47	
055	16,8 4,44	17,3 4,57	17,7 4,68	18,2 4,80	18,6 4,91	19,0 5,02	19,4 5,13	19,8 5,24	20,2 5,34	20,6 5,44	20,8 5,50	21,0 5,54	21,3 5,64	21,7 5,74	22,1 5,83	22,4 5,92	22,8 6,02	
06	18,3 4,85	18,9 4,98	19,3 5,11	19,8 5,24	20,3 5,36	20,7 5,48	21,2 5,60	21,6 5,71	22,1 5,83	22,5 5,94	22,7 6,00	22,9 6,05	23,3 6,15	23,7 6,26	24,1 6,36	24,5 6,46	24,8 6,56	
065	19,9 5,25	20,4 5,40	21,0 5,54	21,5 5,67	22,0 5,81	22,5 5,94	23,0 6,06	23,4 6,19	23,9 6,31	24,3 6,43	24,6 6,50	24,8 6,55	25,2 6,67	25,7 6,78	26,1 6,89	26,5 7,00	26,9 7,11	
07	21,4 5,66	22,0 5,81	22,6 5,96	23,1 6,11	23,7 6,25	24,2 6,39	24,7 6,53	25,2 6,66	25,7 6,80	26,2 6,93	26,5 7,00	26,7 7,05	27,2 7,18	27,6 7,30	28,1 7,42	28,5 7,54	29,0 7,66	
075	22,9 6,06	23,6 6,23	24,2 6,39	24,8 6,54	25,4 6,70	25,9 6,85	26,5 7,00	27,0 7,14	27,6 7,28	28,1 7,42	28,4 7,50	28,6 7,56	29,1 7,69	29,6 7,28	30,1 7,95	30,6 8,08	31,1 8,20	
08	24,5 6,46	25,1 6,64	25,8 6,81	26,4 6,98	27,0 7,15	27,7 7,31	28,3 7,46	28,8 7,62	29,4 7,77	30,0 7,92	30,3 8,00	30,5 8,06	31,1 8,20	31,6 8,34	32,1 8,48	32,6 8,62	33,1 8,75	
09	27,5 7,27	28,3 7,47	29,0 7,66	29,7 7,85	30,4 8,04	31,1 8,22	31,8 8,40	32,4 8,57	33,1 8,74	33,7 8,91	34,1 9,00	34,3 9,07	34,9 9,23	35,5 9,39	36,1 9,54	36,7 9,69	37,3 9,84	
10	30,6 8,08	31,4 8,30	32,2 8,52	33,0 8,73	33,8 8,93	34,6 9,13	35,3 9,34	36,0 9,52	36,8 9,71	37,5 9,89	37,9 10,00	38,1 10,08	38,8 10,25	39,5 10,43	40,1 10,60	40,8 10,77	41,4 10,94	
11	33,6 8,89	34,6 9,13	35,5 9,37	36,3 9,60	37,2 9,82	38,0 10,05	38,8 10,26	39,6 10,47	40,4 10,68	41,2 10,88	41,6 11,00	42,0 11,08	42,7 11,28	43,4 11,47	44,1 11,66	44,9 11,85	45,5 12,03	
12	36,7 9,69	37,7 9,96	38,7 10,22	39,6 10,47	40,6 10,72	41,5 10,96	42,4 11,19	43,2 11,43	44,1 11,65	44,9 11,87	45,4 12,00	45,8 12,09	46,6 12,31	47,4 12,52	48,2 12,72	48,9 12,93	49,7 13,13	
15	45,9 12,12	47,1 12,45	48,4 12,77	49,5 13,09	50,7 13,40	51,9 13,70	53,0 13,99	54,1 14,28	55,1 14,56	56,2 14,84	56,8 15,00	57,2 15,11	58,2 15,38	59,2 15,64	60,2 15,90	61,2 16,16	62,1 16,41	
20	61,2 16,16	62,8 16,60	64,5 17,03	66,1 17,45	67,6 17,86	69,1 18,26	70,6 18,66	72,1 19,04	73,5 19,42	74,9 19,79	75,7 20,00	76,3 20,15	77,6 20,51	79,0 20,86	80,3 21,20	81,6 21,54	82,8 21,88	

I/min  
USGpm

*Rotajet nozzles: the size of the nozzles according to the values of the flow and the pressure.  
The size of the nozzle is directly linked to the flow coefficient.  
The data shown in the table have a tolerance value of ±4%.*

**TECHNICAL FOCUS**  
Spray guns and lances

**ACCESSORIES**

**Rotating Swivels**

For the connection between the high-pressure hose and the wash gun.



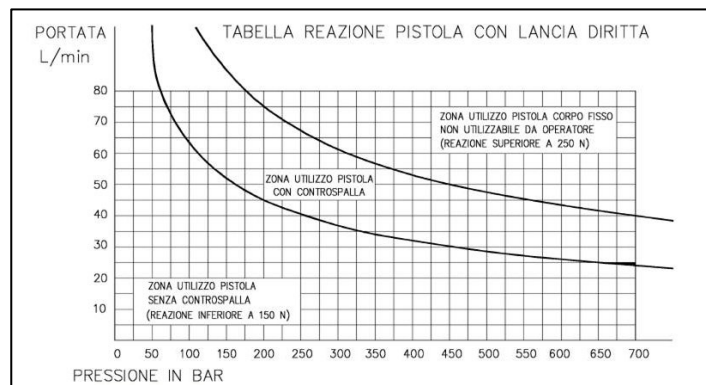
*Rotating Swivel 1/2" M 1/2" F  
275 bar (5030.83-04)*

**Shoulder rest/support**

Using this device will reduce the risk of instability when dealing with a wash gun, due to jumping pressure. It should be used according to the parameter for flow and pressure as shown in the figure below.



*Shoulder rest/support (3803.CP)*



*Plot used to determine if it is necessary to use the shoulder rest/support, according to pressure and flow values.*

**Flexi Nozzle Adaptor**

This accessory is useful to address the water jet in a different direction compared to the lance.



*Wash Gun with Lance, Flexi Nozzle Adaptor (3807.00) and Rotojet*

**Foot operated gun**

Wash gun triggered by a pedal (open/close action).



*Foot operated gun (9.0503-01)*

**TECHNICAL FOCUS**  
Spray guns and lances

## HOW TO ORDER

### Desired configuration (as a sample):

- Wash gun with 900 mm lance
- Nozzle with fan jet (25°)
- Pump: 45 lit/min @ 170 bar
- High pressure hose 1/2" F, length 67 mt



**5929.12-60R** Hose LONG LIFE 1/2" 60 mt M-F 1/2" - 280 bar



**5930.02HP** Nipple 3/8" - 1/2" HP



**3803.957S**

Wash Gun ML957 | 250 bar | 50 lit/min  
Inlet: 3/8" F Swivel  
Out: 1/4" F



**3801.12-0900ST**

Straight Galvanized Steel Lance 900 mm  
with insulating handle  
Inlet: 1/4" M  
Out: 1/4" M



**5945.02**

Sleeve 1/4" F HP



**FBD.2341.C2**

Nozzle 1/4" M BSPT DN 2,40  
Jet 25° INOX



**3803.CP**

Shoulder rest/support 300 mm  
for wash gun with 1/4" M inlet  
(optional)

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