SWITZERLAND

Bergonzo Charles SA

For all your pulverization problems

Nozzles for fuel oil burners

Pulverization

Flyback nozzles :

To allow perfect function never close the flyback completely

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Type R

Nozzles for fuel oil burners

Type	Pulverization angle			
	30°	45°	60°	80°
R	0,40 -1,50	0,40 -3,75	0,40 -3,75	0,40 -3,75
RC		4,00 - 12	4,00 - 30	4,00 - 30

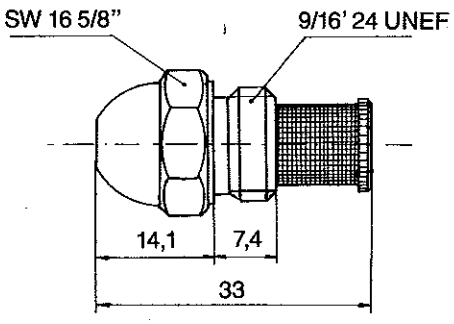
Standard output in USG/hr										
0,40	0,75	1.25	2,00	3,25	5,00	7,50	10	12,5	17	24
0,50	0,85	1,35	2,25	3,50	5,50	8,00	10,5	13	18	26
0,55	1,00	1,50	2,50	3,75	6,00	8,50	11	14	19	28
0,60	1,10	1,65	2,75	4,00	6,50	9,00	11,5	15	20	30
0,65	1,20	1,75	3,00	4,50	7,00	9,50	12	16	22	

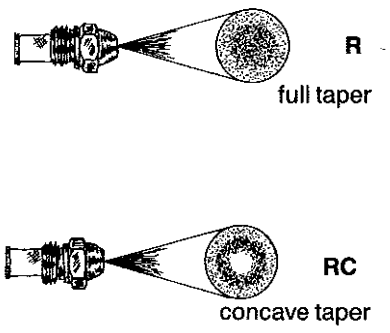
Output at pressure of 7 bar : 1 USG = 3,785 l.
Viscosity : 1,3 ° E

Stainless steel filter :
Net density 200 stitches up to 2,00 USG/hr and net density 120 stitches above 2,00 USG/hr
Packing : 12 and 20 pieces in cardboard box
Each nozzle is tested individually

Example for placing your orders :

Number of pieces	Type	Angle	Output
20	R	45°	1,10 USG/hr





If our nozzles are dismantled, we refuse to accept any responsibility and any return.

Subject to modifications June 2014

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Type D saphir

Nozzles for fuel oil burners

Thanks to the sapphire insert this nozzle saves energy and respects ecological standards

Type	Pulverization angle	
	30°	45° - 60° - 80°
D	0,50 - 50	0,40 - 50

Standard output in USG/hr													
0,40	0,75	1.25	1,75	2,75	4,00	6,00	8,00	10	12	16	20	28	40
0,50	0,85	1,35	2,00	3,00	4,50	6,50	8,50	10,5	13	17	22	30	45
0,55	1,00	1,50	2,25	3,25	5,00	7,00	9,00	11	14	18	24	33	50
0,60	1,10	1,65	2,50	3,50	5,50	7,50	9,50	11,5	15	19	26	36	
0,65				3,75									

Output at pressure of 7 bar : 1 USG = 3,785 l.

Viscosity : 1,3 ° E

Stainless steel filter :

Net density 200 stitches up to 2,00 USG/hr and 120 stitches above 2,00 USG/hr

Packing : 12 pieces and 20 pieces in cardboard box

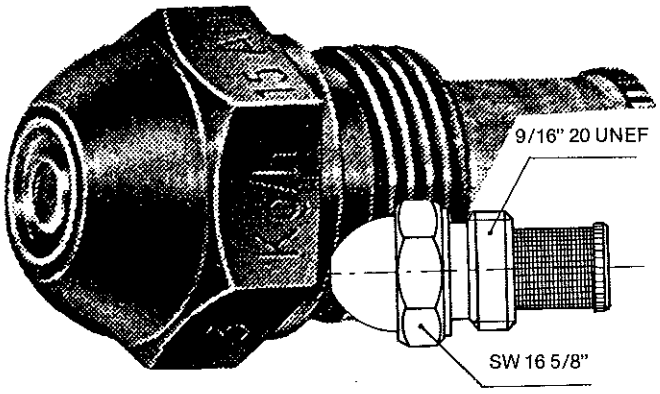
Each nozzle is tested individually

Example for placing your orders :

Number of pieces	Type	Angle	Output
40	D	60°	1,50 USG/hr

BENEFITS OF THE SAPPHIRE NOZZLE

1) Finer pulverization
2) Improved combustion
3) Energy saving
4) High resistance to wear and corrosion



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Type A

Flyback nozzles

Sapphire insert

Type	Pulverization angle	
	45°	60°
A3	3 -250	3 – 250
A4	25 - 250	25 - 250

Standard output in kg/hr								
3	10	30	50	70	110	150	190	230
4	15	35	55	80	120	160	200	240
5	20	40	60	90	130	170	210	250
7,5	25	45	65	100	140	180	220	

Initial pressure : 20 bar

1 kg = 0,31 USG

Viscosity : 1,3 ° E

Variable output

Max. : flyback completely closed

Min. : flyback pressure 3 bar

A3 : 1/3 of max. output

A4 : 1/4 of max. output

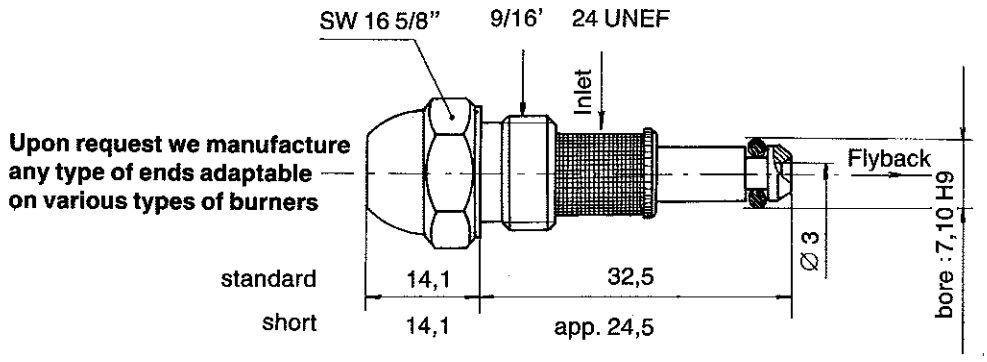
Stainless steel filter :

Net density 200 stitches up to 10 kg/hr and 120 stitches above 10 kg/hr

Packing: 20 pieces in cardboard box

Example for placing your orders :

Number of pieces	Type	Ratio	Angle	Output
40	A	3	60°	120 kg/hr



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Type B

Industrial flyback nozzles

With or without needle

Type	Pulverization angle	
	30°	45°- 60° - 80°
B3	100 -1000	20 - 1000
B5	100 -1000	20 - 1000

Standard output in kg/hr									
20	50	90	130	200	300	400	500	600	800
25	60	100	140	225	325	425	525	650	850
30	70	110	150	250	350	450	550	700	900
40	80	125	175	275	375	475	575	750	950
									1000

Initial pressure : 25 bar

Variable output

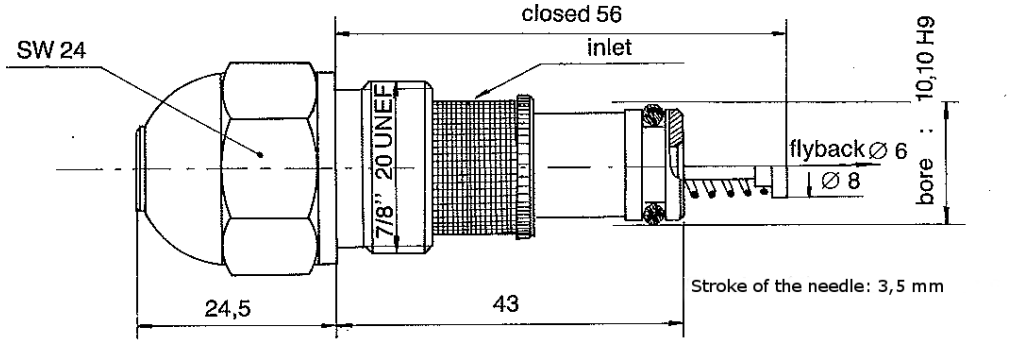
Max. : flyback completely closed
Min. : flyback pressure 3 bar
B3 : 1/3 of max. output
B5 : 1/5 of max. output

Viscosity : 2 ° E

With filter : up to 100 kg/hr and upon request above 100 kg/hr
Packing : Individual plastic box
Upon request we supply: AA = with needle and SA = without needle

Example for placing your orders :

Number of pieces	Type	Ratio	Angle	With needle	Output
40	B	5	60°	AA	125 kg/hr



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Type C

Industrial flyback nozzles

With or without needle

Type	Pulverization angle			
	45°	60°	80°	120°
C3	350 - 2000	350 -2000		
C5	350 - 1400	350 -1400	800 - 2000	800 - 2000

Standard output in kg/hr								
350	500	650	800	950	1100	1250	1500	1800
400	550	700	850	1000	1150	1300	1600	1900
450	600	750	900	1050	1200	1400	1700	2000

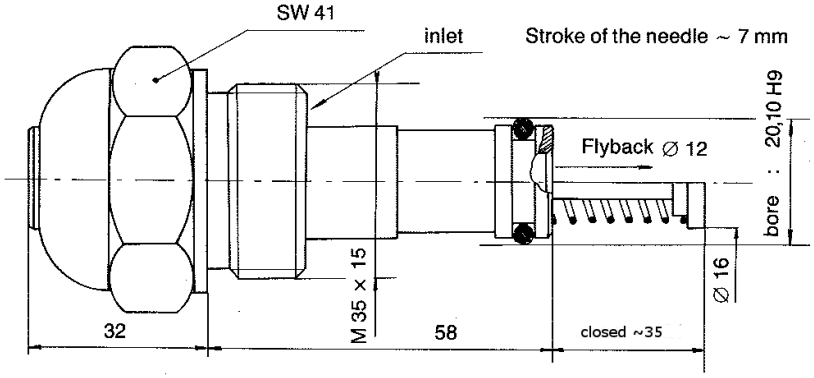
Initial pressure : 25 bar
Viscosity : 2 ° E

Variable output :
Max. : flyback completely closed
Min. : flyback pressure 3 bar
C3 = 1/3 of max. output
C5 = 1/5 of max. output

Upon request we supply: AA = with needle/ SA = without needle

Example for placing your orders :

Number of pieces	Type	Ratio	Angle	With needle	Output
40	C	3	45°	AA	950 kg/hr



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Type H

Industrial flyback nozzles

Type	Pulverization angle			
	30°	45°	60°	80°
H3	75 - 1000	75 - 1200	70 - 1000	75 - 1000
H5	75 - 1000	75 - 1000	75 - 1100	75 - 1000

	Standard output in kg/h					
70	125	250	375	600	800	1050
75	150	275	400	650	850	1100
80	175	300	450	675	900	1200
90	200	325	500	700	950	
100	225	350	550	750	1000	

Initial pressure : 25 bar

Viscosity : 2 ° E

Variable output :

Max. : flyback pressure 1 bar

Min. : flyback pressure 3 bar

H3 = 1/3 max. output

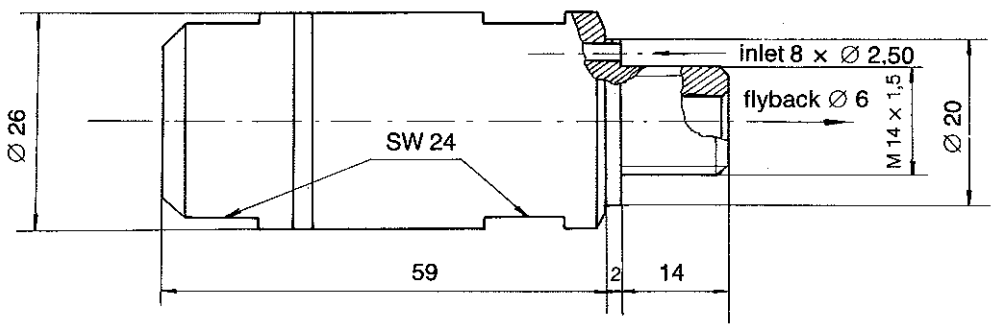
H5 = 1/5 max. output

Packing : Individual plastic box

For EH orders we also supply contents separately

Example for placing your orders :

Number of pieces	Type	Ratio	Angle	Output
40	H	3	45°	150 kg/hr



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Subject to modifications

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Type M 14

Industrial flyback nozzles

Type	Pulverization angle	
	45°	55°
M 14/3 saphir	30 – 350	
M14/5 saphir	30 – 350	35 -300
M 14/3	375 – 1200	
M14/5	375 - 1200	350 – 1300

Standard output in kg/hr								
30	50	120	200	300	450	650	850	1050
35	60	140	225	350	500	700	900	1100
40	80	160	250	375	550	750	950	1150
45	100	180	275	400	600	800	1000	1200
								1300

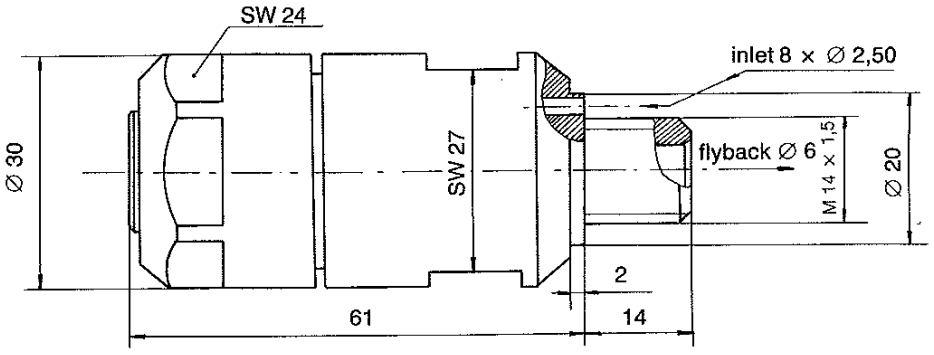
Initial pressure : 25 bar
Viscosity : 2 ° E

Variable output:
Max. : flyback pressure 1 bar
Min. : flyback pressure 3 bar
M 14/3 = 1/3 of max. output
M 14/5 = 1/5 of max. output

Packing : individual cardboard box

For EM 14 orders we also supply contents separately
Example for placing your orders:

Number of pieces	Type	Ratio	Angle	Output
40	M 14	3	45°	100 kg/hr



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Type M 30

Industrial flyback nozzles

Type	Pulverization angle	
	45°	55°
M30 1/5	700 -2000	700 - 2000

Standard output in kg/hr				
700	950	1150	1350	1700
800	1000	1200	1400	1800
850	1050	1250	1500	1900
900	1100	1300	1600	2000

Initial pressure : 25 bar
Viscosity : 2 ° E

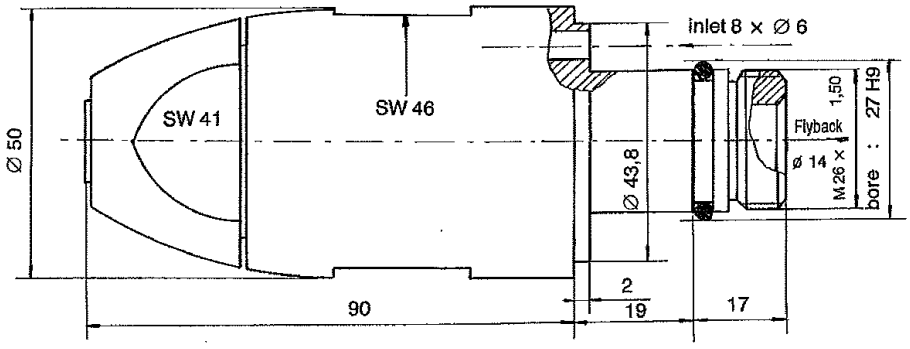
Variable output

Max. : flyback pressure -1 bar
Min. : flyback pressure 3 bar
M30 1/5 = 1/5 of max. output

For EM 30 orders we also supply contents separately

Example for placing your orders :

Number of pieces	Type	Angle	Output
40	M30	45°	1000 kg/hr



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Type S

Industrial flyback nozzles

Type	Pulverization angle	
	45°	60°
S 5	60 -1000	60 – 1000

Standard output in kg/hr						
60	140	225	350	550	750	950
80	160	250	400	600	800	1000
100	180	275	450	650	850	
120	200	300	500	700	900	

Initial pressure : 25 bar
Viscosity : 2 ° E

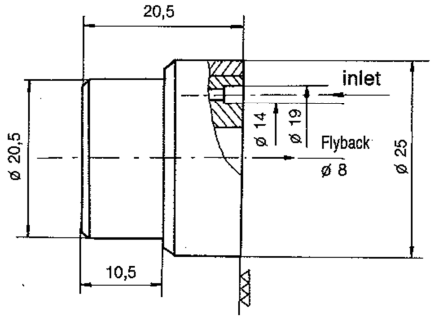
Variable output

Max. : flyback completely closed
Min. : flyback pressure 3 kg/cm2
S5 : 1/5 of max. output

Packing : nozzle tip and baffle manufactured together and numbered

Example for placing your orders :

Number of pieces	Type	Angle	Output
40	S	60°	120 kg/hr



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Kg/hr output of nozzles for fuel oil burner and potential of thermal efficiency calculated for a 90% combustion

Nozzles output in USG	Pump pressure in kg/cm2							
		7	10	12	14	16	18	20
0,40	kg/h kcal/h	1,28 11,520	1,49 13,410	1,62 14,580	1,79 16,110	1,91 17,190	2,00 18,000	2,01 18,090
0,50		1,58 14,220	1,90 17,100	2,05 18,450	2,14 19,260	2,32 20,880	2,40 21,600	2,46 22,140
0,60		1,91 17,190	2,30 20,700	2,55 22,050	2,72 24,480	2,90 26,100	3,02 27,180	3,10 27,900
0,65		2,11 18,990	2,40 21,600	2,76 24,840	2,95 26,550	3,09 27,810	3,29 29,610	3,41 30,690
0,75		2,38 21,420	2,89 26,010	3,18 28,620	3,40 30,600	3,57 32,130	3,78 34,020	3,91 35,190
0,80		2,60 23,400	2,95 26,550	3,40 30,600	3,63 32,670	3,79 34,110	3,96 35,640	4,04 36,360
0,85		2,72 24,480	3,27 29,430	3,57 32,130	3,82 34,380	4,07 36,630	4,30 38,700	4,42 39,780
1,00		3,20 28,880	3,85 34,650	4,25 38,250	4,50 40,500	4,78 43,020	5,03 45,270	5,23 47,070
1,20		3,87 34,830	4,63 41,670	5,10 45,900	5,44 48,960	5,74 51,660	6,04 54,360	6,30 56,700
1,35		4,33 38,970	5,20 46,800	5,74 51,660	6,12 55,080	6,46 58,140	6,80 61,200	7,07 63,630
1,50	Kg/h kcal/h	4,80 43,200	5,78 52,020	6,38 57,420	6,80 61,200	7,19 64,710	7,56 68,040	7,86 70,740
1,65		5,31 47,790	6,38 57,420	7,01 63,090	7,48 67,320	7,90 71,100	8,34 75,060	8,67 78.030
1,75		5,61 50,490	6,76 60,840	7,44 66,960	7,95 71,550	8,41 75,690	8,89 80,010	9,23 83,070
2,00		6,42 57,780	7,70 69,300	8,50 76,500	9,10 81,900	9,60 86,400	10,10 90,900	10,45 94,050
2,25		7,22 64,980	8,67 78,030	9,56 86,040	10,20 91,800	10,80 97,200	11,40 102,600	11,80 106,200
2,50		8,04 72,360	9,65 86,850	10,59 95,310	11,30 101,700	11,99 107,910	12,61 113,490	13,10 117,900
3,00		9,65 86,850	11,55 103,950	12,70 114,300	13,60 122,400	14,40 129,600	15,11 135,990	15,69 141,210
3,50		11,21 100,890	13,47 121,230	14,81 133,290	15,85 142,650	16,75 150,750	17,61 158,490	18,30 164,700
4,00		12,82 115,380	15,41 138,690	16,95 152,550	18,10 162,900	19,12 172,080	20,02 180,180	20,09 180,810
4,50		14,45 130,050	17,32 155,880	19,10 171,900	20,04 180,360	21,50 193,500	22,70 204,300	23,29 209,520
5,00		16,10 144,900	19,30 173,700	21,20 190,800	22,65 203,850	24,00 216,000	25,25 227,250	26,20 235,800
5,50		17,70 159,300	21,20 190,800	23,30 209,700	24,90 224,100	26,40 237,600	27,70 249,300	28,80 259,200
6,00		19,60 176,400	23,17 208,530	25,50 229,500	27,20 244,800	28,75 258,750	30,03 270,270	31,45 283,050
6,50	Kg/h kcal/h	21,10 189,900	24,00 216,000	27,64 248,760	29,50 265,500	30,90 278,100	32,90 296,100	34,10 306,900

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Subject to modifications

June 2014

SWITZERLAND

General conditions

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1. **Application**

These conditions are fully valid for all our sales unless they are modified or completed by written agreements from both parties.

2. **Quotations**

All our quotations are without obligation. We keep industrial property rights and royalties on all our products. The validity of our offers is 2 months. We reserve the right to increase the prices according to the rise of the cost of living, of the cost of the surface treatment, and the raw material.

3. **Orders**

Nozzles A-D-R-RC-HO :

-For an order with a value of goods inferior to CHF 100.- : supplement of CHF 35.-

-For an order with a value of goods inferior to CHF 250.- : supplement of CHF 25.-

Other types of nozzles : for a total order of 3 nozzles a supplement varying with the required type will be invoiced.

4. **Prices**

Our prices are ex works, Moutier, exclusive of VAT, insurance, packaging, transport and customs charges.

5. **Payments**

Our invoices are due net, without any deductions, 30 days net from the date of invoice. Our proforma invoices are due net in advance.

All potential banking costs caused by payments are payable by the buyer.

6. **Delivery dates**

We always try to respect our delivery dates which we fix as precisely as we can. However we don't take any guarantee if they are not met.

In case of force majeure and strike in our company or in one of our provider's companies the delivery date is delayed proportionally. Any compensation for late delivery is excluded.

7. **Complaints**

Complaints about potential defects of our products must be written to us within 3 months after receipt of goods. Without any notification the shipment is considered as accepted.

The articles with obvious defects will be taken back and exchanged free of charge as soon as possible.

Any liability for damages caused directly or indirectly by a defect of our products is excluded.

If the customer or unauthorized people dismantle our products or use them incorrectly we deny responsibility and refuse any return of goods.

8. **Cancellation of order by the buyer**

A cancellation of order can only be accepted if the customer takes charge of the pieces already manufactured as well as of the corresponding transport charges, packaging and banking costs.

9. **Cancellation of order by Bergonzo SA**

In case of force majeure or exceptional circumstances beyond our control we reserve the right to cancel the contract and the customer cannot claim any compensation.

10. **Court of jurisdiction and applicable law**

Only Swiss law is applicable and the court of jurisdiction is in Moutier.

Bergonzo Charles SA

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