

STEINEN

Dyna-Coin® Oil Burner Nozzles

Steinen's worldwide reputation for quality and reliability is a direct result of its 100% devotion to producing the best oil burner nozzle on the market. Today, virtually every major burner manufacturer relies on Steinen nozzles to achieve optimum burner performance.

Our state-of-the-art facilities are available to meet our customers' most demanding requirements. As one of the few nozzle manufacturers who fabricates all components on-site, Steinen completely controls every aspect of nozzle fabrication, ensuring the consistent quality and reliability that make Steinen the #1 choice. Every Steinen nozzle is performance tested before leaving our factory. There by assuring our customers the quality, performance and consistency they have come to expect from Steinen.

With one of the largest sales & service organizations in the industry and office locations throughout the world, Steinen continues to provide it's customers with the products they need to compete in a global market.

Steinen Dyna-Coin Process

Dyna-Coin is a trademark of the Wm. Steinen Mfg. Co. The Dyna-Coin process provides a high quality finish for a perfect seating surface between the metering valve and the nozzle body, thus assuring consistent, accurate fuel delivery.

Nozzle Design Features and Benefits

Nozzle Body — The nozzle body is constructed from a specially formulated stainless steel in order to achieve long wear life and lower internal surface temperatures than brass or similar high conductivity materials. Lower surface temperatures reduce heat transfer thus minimizing varnish accumulation and carbon deposits. Reduced heat absorption within the nozzle body is especially critical with today's smaller and hotter operating combustion conditions.

Valve Jacket — Round fuel inlet holes reduce the possibility of particle contamination while achieving a uniform flow and distribution of fuel oil through the nozzle. All nozzles contain an exclusive nickel alloy treated valve jacket assuring improved wear and corrosion resistance. The nickel alloy treated jacket provides a non-magnetic surface offering a smooth fuel delivery.

Sintered Bronze Filters — Are designed to provide maximum filtration capabilities. Bronze filters are furnished on all standard nozzles, .40 G.P.H. thru 2.00 G.P.H. (1, 51 thru 7,60 l/h).

For flow rates of 2.25 through 15.00 G.P.H. (8,50 through 57,0 l/h), 100 mesh monel strainers are furnished. Nozzles 16.00 G.P.H. (61,0 l/h) and larger are furnished less strainers.

Quality Control — Every Steinen Dyna-Coin nozzle is individually tested in accordance with the latest test standards utilizing the most advanced equipment available to the industry.

To facilitate easy nozzle identification and selection, each nozzle is packed in individual vials and each vial cap is clearly stamped with the nozzle capacity, spray angle and letter identifying the type of spray pattern as follows: "H" for Hollow cone series, "S" for Solid cone series, "Q" for all purpose series. Twelve (12) nozzles of one type, flow and angle are packed with color coded labeling for easy identification.

Nozzle Design & Operating Considerations — Nominal nozzle flow capacities are based on an operating pressure of 100 P.S.I. (7 Bar). Operation at higher pressures increase flow capacity (See table on Page 3).

The effects of pressure, viscosity, density, grade and especially burner configurations, are important in the design and operating performance characteristics of oil fired equipment.

CAPACITIES, Consistent



TYPE S — .40 - 4.00

G.P.H. (1,51 - 15,0 l/h)

Solid cone nozzles are designed to produce a fine atomized uniform spray distribution pattern.



TYPE SS — 4.50 - 28.00

G.P.H. (17,0 - 106 l/h)

A general purpose nozzle in the larger sizes that delivers a semi-solid cone spray distribution pattern. As the flow rate of the nozzle increases, the spray pattern becomes more hollow. This nozzle, in addition to the Type PH, is recommended for applications where large capacities are required.



TYPE Q — .50 - 3.00

G.P.H. (1,89 - 11,4 l/h)

A specially designed nozzle with a distinctive spray pattern for use where the conventional Hollow or Solid Cone spray patterns do not match a particular air pattern. The Type Q is highly successful in solving critical noise and pulsating combustion problems.



TYPE H — .40 - 2.25

G.P.H. (1,51 - 8,5 l/h)

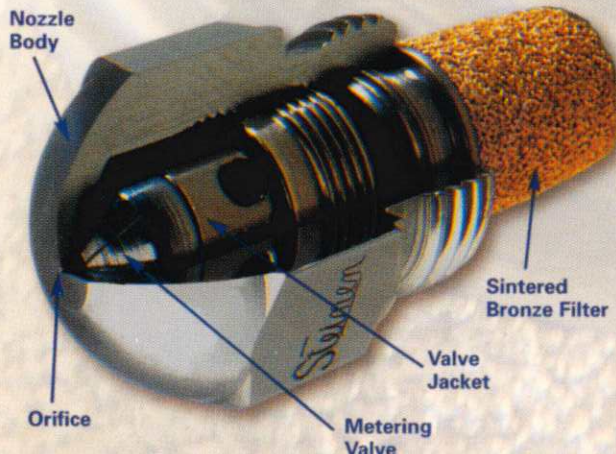
Produces a fine atomized hollow cone spray distribution pattern. The nozzle is designed for use with hollow cone air patterns to produce clean, quiet and efficient combustion. This nozzle is also recommended for burners where there is no distinct air pattern.



TYPE PH — 2.50 - 10.00

G.P.H. (9,50 - 38,0 l/h)

Similar to the Type H spray patterns except that they are relatively more hollow. Made in the larger capacities for light and heavy oil applications where fine atomization is required.

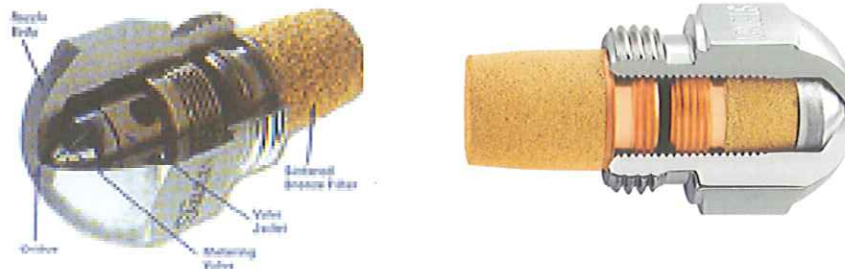




Dyna-Coin® OIL BURNER NOZZLES

Nozzle Design Features

Nozzle Body - The nozzle body is constructed from a specially formulated stainless steel in order to achieve long wear life and lower internal surface temperatures than low cost brass or similar high conductivity materials. Lower surface temperatures reduce heat transfer thus minimizing varnish accumulation and carbon deposits. Reduced heat absorption within the nozzle body is especially critical with today's smaller and hotter operating combustion conditions.



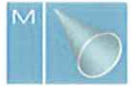
Valve Jacket - Round fuel inlet holes reduce the possibility of particle contamination while achieving a uniform flow and distribution of fuel oil through the nozzle. All nozzles contain an exclusive nickel alloy treated jacket assuring improved wear and corrosion resistance. The nickel alloy treated jacket provides a non-magnetic surface offering a smooth fuel delivery.

Dyna-Coin® Process - The Dyna-Coin® process provides a high quality finish for a perfect seating surface between the metering valve and the nozzle body. This assures consistent, accurate fuel delivery.

Sintered Bronze Filters - Are designed to provide maximum filtration capabilities. Bronze filters are furnished on all standard nozzles, .40 G.P.H. thru 15.00 G.P.H. (1, 51 thru 57, 0 l/h). Nozzles 16.00 G.P.H. (61,0 l/h) and larger are furnished less filters.

Nozzle Design and Operating Considerations - Nominal nozzle flow capacities are based on an operating pressure of 100 P.S.I. (6.9 Bar). Operation at higher pressures increases flow capacities. The effects of pressure, viscosity, density, grade and especially burner configurations, are important in the design and operating performance characteristics of oil fired equipment.

Oil Burner Nozzles



Dyna-Coin® OIL BURNER NOZZLES

Standard Filter Nozzles



TYPE S

.60 - 4.00 G.P.H. (1,96 - 12,71 Kg/h) at 6.9 bar

Solid cone nozzles are designed to produce a fine atomized uniform spray distribution pattern.



TYPE SS

4.50 - 28.00 G.P.H. (14,31 - 89,03 Kg/h) at 6.9 bar

A general purpose nozzle in the larger sizes that delivers a semi-solid cone spray distribution pattern. As the flow rate of the nozzle increases, the spray pattern becomes more hollow. This nozzle, in addition to the type PH, is recommended for applications where large capacities are required.



TYPE Q

.60 - 3.00 G.P.H (1,96 - 9,54 Kg/h) at 6.9 bar

A specially designed nozzle with a distinctive spray pattern for use where the conventional Hollow or Solid Cone spray patterns do not match a particular air pattern. The Type Q is highly successful in solving critical noise and pulsating combustion problems.



TYPE H

.60 - 2.25 G.P.H. (1,96 - 7,15 Kg/h) at 6.9 bar

Produces a fine atomized hollow cone spray distribution pattern. The nozzle is designed for use with hollow cone air patterns to produce clean, quiet and efficient combustion. This nozzle is also recommended for burners where there is no distinct air pattern.



TYPE PH

2.50 - 10.00 G.P.H. (7,95 - 31,79 Kg/h) at 6.9 bar

Similar to the Type H spray patterns except that they are relatively more hollow. Made in the larger capacities for light and heavy oil applications where fine atomization is required.



Pressure Flow Tables

Approximate Capacities at Various Pressures						
Rated Flow at 100 P.S.I.	U.S. Gallons per Hour					
	Pressure P.S.I.					
G.P.H.	125	145	175	200	250	300
0.40	0.45	0.48	0.53	0.57	0.63	0.69
0.45	0.50	0.54	0.60	0.64	0.71	0.78
0.50	0.56	0.60	0.66	0.71	0.79	0.87
0.55	0.61	0.66	0.73	0.78	0.87	0.95
0.60	0.67	0.72	0.79	0.85	0.95	1.04
0.65	0.73	0.78	0.86	0.92	1.03	1.13
0.75	0.84	0.90	0.99	1.06	1.19	1.30
0.85	0.95	1.02	1.12	1.20	1.34	1.47
0.90	1.01	1.08	1.19	1.27	1.42	1.56
1.00	1.12	1.20	1.32	1.41	1.58	1.73
1.10	1.23	1.32	1.46	1.56	1.74	1.91
1.20	1.34	1.45	1.59	1.70	1.90	2.08
1.25	1.40	1.51	1.65	1.77	1.98	2.17
1.35	1.51	1.63	1.79	1.91	2.13	2.34
1.50	1.68	1.81	1.98	2.12	2.37	2.60
1.65	1.84	1.99	2.18	2.33	2.61	2.86
1.75	1.96	2.11	2.32	2.47	2.77	3.03
2.00	2.24	2.41	2.65	2.83	3.16	3.46
2.25	2.52	2.71	2.98	3.18	3.56	3.90
2.50	2.80	3.01	3.31	3.54	3.95	4.33
2.75	3.07	3.31	3.64	3.89	4.35	4.76
3.00	3.35	3.61	3.97	4.24	4.74	5.20
3.50	3.91	4.21	4.63	4.95	5.53	6.06
4.00	4.47	4.82	5.29	5.66	6.32	6.93
4.50	5.03	5.42	5.95	6.36	7.12	7.79
5.00	5.59	6.02	6.61	7.07	7.91	8.66
5.50	6.15	6.62	7.28	7.78	8.70	9.53
6.00	6.71	7.23	7.94	8.49	9.49	10.4
6.50	7.27	7.83	8.60	9.19	10.3	11.3
7.00	7.83	8.43	9.26	9.90	11.1	12.1
7.50	8.39	9.03	9.92	10.6	11.9	13.0
8.00	8.94	9.63	10.6	11.3	12.6	13.9
9.00	10.1	10.8	11.9	12.7	14.2	15.6
10.00	11.2	12.0	13.2	14.1	15.8	17.3
11.00	12.3	13.2	14.6	15.6	17.4	19.1
12.00	13.4	14.5	15.9	17.0	19.0	20.8
13.00	14.5	15.7	17.2	18.4	20.6	22.5
14.00	15.7	16.9	18.5	19.8	22.1	24.2
15.00	16.8	18.1	19.8	21.2	23.7	26.0
16.00	17.9	19.3	21.2	22.6	25.3	27.7
17.00	19.0	20.5	22.5	24.0	26.9	29.4
18.00	20.1	21.7	23.8	25.5	28.5	31.2
20.00	22.4	24.1	26.5	28.3	31.6	34.6
22.00	24.6	26.5	29.1	31.1	34.8	38.1
24.00	26.8	28.9	31.7	33.9	37.9	41.6
26.00	29.1	31.3	34.4	36.8	41.1	45.0
28.00	31.3	33.7	37.0	39.6	44.3	48.5

Oil Standards: 3.4 cst. viscosity, .84 density @ 20 C per EN 293

Approximate Capacities at Various Pressures						
Rated Flow at 100 P.S.I.	Kg/h					
	Pressure BAR					
G.P.H.	l/h	10	12	14	18	20
0.40	1.51	1.59	1.74	1.88	2.13	2.25
0.45	1.70	1.76	1.93	2.08	2.36	2.49
0.50	1.89	1.91	2.09	2.26	2.56	2.70
0.55	2.08	2.12	2.32	2.51	2.84	3.00
0.60	2.27	2.36	2.59	2.79	3.17	3.34
0.65	2.46	2.59	2.84	3.06	3.47	3.66
0.75	2.84	2.89	3.17	3.42	3.88	4.09
0.85	3.22	3.31	3.63	3.92	4.44	4.68
0.90	3.41	3.57	3.91	4.22	4.79	5.05
1.00	3.78	3.73	4.09	4.41	5.00	5.28
1.10	4.16	4.33	4.74	5.12	5.81	6.12
1.20	4.54	4.63	5.07	5.48	6.21	6.55
1.25	4.73	4.83	5.29	5.71	6.48	6.83
1.35	5.11	5.19	5.69	6.14	6.96	7.34
1.50	5.68	5.78	6.33	6.84	7.75	8.18
1.65	6.25	6.36	6.97	7.53	8.53	9.00
1.75	6.62	6.74	7.38	7.97	9.04	9.53
2.00	7.60	7.66	8.39	9.06	10.28	10.83
2.25	8.50	8.61	9.43	10.19	11.55	12.18
2.50	9.50	9.57	10.48	11.32	12.84	13.54
2.75	10.4	10.53	11.53	12.46	14.13	14.89
3.00	11.4	11.49	12.59	13.59	15.42	16.25
3.50	13.0	13.40	14.68	15.85	17.98	18.95
4.00	15.0	15.31	16.77	18.11	20.54	21.65
4.50	17.0	17.23	18.87	20.39	23.12	24.37
5.00	19.0	19.14	20.97	22.65	25.68	27.07
5.50	21.0	21.06	23.07	24.92	28.25	29.79
6.00	23.0	22.97	25.16	27.18	30.82	32.49
6.50	25.0	24.89	27.26	29.45	33.39	35.20
7.00	26.5	26.8	29.36	31.71	35.96	37.91
7.50	28.0	28.71	31.45	33.97	38.52	40.61
8.00	30.0	30.63	33.55	36.24	41.09	43.32
9.00	34.0	34.46	37.75	40.77	46.23	48.74
10.00	38.0	38.28	41.93	45.29	51.36	54.14
11.00	42.0	42.11	46.13	49.82	56.50	59.56
12.00	45.0	45.94	50.32	54.36	61.63	64.98
13.00	49.0	49.77	54.52	58.89	66.77	70.40
14.00	53.0	53.6	58.71	63.42	71.91	75.81
15.00	57.0	57.43	62.91	67.95	77.05	81.23
16.00	61.0	61.26	67.10	72.48	82.19	86.65
17.00	64.0	65.08	71.29	77.00	87.31	92.05
18.00	68.0	68.91	75.48	81.53	92.45	97.47
20.00	76.0	76.57	83.87	90.60	102.7	108.3
22.00	83.0	84.23	92.27	99.66	113	119.14
24.00	91.0	91.88	100.7	108.7	123.27	129.96
26.00	98.0	99.54	109.04	117.8	133.5	140.8
28.00	106	107.2	117.4	126.8	143.8	151.6

Oil Standards: 3.4 cst. viscosity, .84 density @ 20 C per EN 293

Oil Burner Nozzles

Certificate of Registration



This is to certify that the Quality Management System of:

Wm. Steinen Mfg. Co.

29 E. Halsey Rd.
Parsippany NJ 07054
United States of America

applicable to:

Manufacturer of spray nozzles and related accessories.

has been assessed and approved by
National Quality Assurance, U.S.A., against the provisions of:

ISO 9001:2015

For and on behalf of NQA, USA



Certificate Number: 22042
EAC Code: 17
Certified Since: September 12, 2022
Valid Until: September 11, 2028
Reissued: September 12, 2025
Cycle Issued: September 12, 2025



Business Policy Manual

Revision A

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1.0 Introduction

About Steinen



A Hundred and Ten Years.

A hundred and ten years ago the entrepreneurial spirit of our founder created an organization that would establish a reputation for manufacturing quality. From humble beginnings, today Wm. Steinen Mfg. Co. is a global organization and a leading provider of high quality products in specialty markets. Steinen has embraced a philosophy that emphasizes growing its business, enhancing its product offerings and expanding its customer base.

The success of Wm. Steinen Mfg. Co. reflects largely on the contributions of many – our customers, suppliers, employees and shareholders. Our growth into a broadly diversified global organization is due to its vision, and sense of responsibility for the company and its employees

Management recognized that the fluid dispersal field offered tremendous growth opportunities. As a result of expanding product lines and worldwide sales activities the company doubled the size of its facilities and relocated from Newark, New Jersey to Parsippany, New Jersey in 1964. This modern plant houses general sales and administrative departments as well as engineering, research and manufacturing operations devoted to the development and manufacture of fluid dispersal products and allied accessories for the heating and industrial markets.

While Steinen was enjoying commercial success in the fluid dispersal field, beginning in 1970 management implemented a strategy of building future value for its shareholders and employees through acquisitions, mergers and product line expansions. The new acquisitions extended our company's technological capabilities and geographic reach. What evolved was "The Steinen Group of Companies" that was comprised of separate operating divisions in diverse specialty niche markets.



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2.0 Scope

Steinen ensures that it can provide quality products and services that meet customer requirements in a consistent manner and that through the effective management of its processes, addresses customer satisfaction, prevention of nonconformity and continual improvement. Steinen has established and maintains a business management system that is compliant with all the requirements of ISO 9001:2015.

Scope: Steinen designs and manufactures general industrial nozzles, oil burner nozzles, misting, cooling & mosquito nozzles, mining and dust suppression nozzles, ball valves and strainers.

Industries Served:

- Mining
- Commercial
- Energy
- Environmental



Leadership Commitment to Quality

Quality is an integral part of Steinen Business Principles. These principles guide our actions to deliver products that are fully consistent with our customer's spray nozzle requirements, of the highest quality precision, and delivered as promised, making Steinen our customer's preferred spray nozzle supplier.

At Steinen, our Quality Policy summarizes the essential elements of our commitment for excellence and includes:

- Fostering a quality mind-set with the objective of producing products with zero defects that are trusted and preferred by our customers,
- Complying with relevant laws and regulations as well as internal requirements,
- Continuously challenging ourselves to improve the quality management system to prevent quality incidents and eliminate defects through the review of quality objectives and results,
- Ensuring that customer information, documents and drawings are held in the strictest confidence, and
- Encouraging participation and promotion of quality responsibilities amongst all employees and third parties through standards, education, training and coaching, supervision and effective communication.

At Steinen, teamwork, engagement, and support by our employees and suppliers are vital for achieving our quality objectives. We are committed to ensure that our Quality Policy is reviewed annually and communicated to employees and third parties.

At its core, Quality is first and foremost about trust in our ability to produce exacting spray nozzles, but Quality is also more than this, it is about delivering what we promise in everything we do.

William F. Steinen, Jr.

Chief Executive Officer



Quality Policy

Steinen is committed to providing quality spray nozzles fully compliant with our customer's requirements of the highest quality precision, delivered on time as promised.

Steinen is committed to continuous improvement through our Business Management System and in compliance with all regulations governing our business and manufacturing processes.

William F. Steinen Jr.

Chief Executive Officer