

WORLDWIDE REACH,
UNMATCHED QUALITY



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PRECISION IN EVERY CURVE

Engineered to Perfection, Designed for Excellence

www.ratnaveer.com

Precision. Innovation. Diversification.

Leveraging Our Expertise To Engineer The Best Solutions

A strong focus on manufacturing excellence and precision engineering continues to steer our way forward. Our emphasis on meeting the evolving demands of diverse industries has enabled us to consistently improve our product range, diversify into new verticals and fulfil the need for supplying world-class products.

Over the years, we have earned a reputation as a leading stainless steel washer manufacturer and supplier. Resting on our backward integration capabilities, we have developed the ability to manufacture different types of products in accordance with international quality parameters. Our precision engineering capability has further improved our acceptance among industries as diverse as railways and marine to defence and aerospace. Moreover, our constant investment in R&D has enabled us to offer advanced and innovative solutions that not only fulfil customer expectations but empower us to explore new growth trajectories.

Looking ahead, we seek to create a differentiated position for Ratnaveer Precision Engineering Limited and carve a niche as a preferred business partner for our clients. Carrying forward our legacy of engineering excellence, we are now primed to strengthen the foundation of a sustainable business.

Delivering Precision, Leading the Industry

We manufacture washers designed to meet diverse international standards and quality requirements.

At Ratnaveer, we manufacture over 2,500 types of washers, adhering to diverse sizes and international standards. Our in-house, backward-integrated facility empowers us to produce any product size on demand, ensuring complete manufacturing independence. This capability has fueled our global expansion and earned recognition worldwide.

Founded in 2002 in Gujarat, India, we have continually enhanced our infrastructure and facilities over 22 years, staying ahead of customer demands and industry trends.

Our Prestigious Certifications



Customer-Centric



Cutting-Edge Machinery



State-of-the-Art Manufacturing



On-Time, Every Time



Expert Team



Quality You Can Trust



Affordable Excellence



Global Footprint



Precision Washers for a Stronger Foundation

Precision washers are engineered to provide unmatched strength and stability, ensuring a secure foundation for various applications. Designed for accuracy and durability, they enhance load distribution, reduce wear, and improve overall performance. Whether in construction, engineering, or manufacturing, our precision washers deliver reliability you can trust for critical projects.

Vision

To lead with innovation and excellence, delivering world-class solutions that inspire trust and create lasting impact.

Mission

To deliver superior products and services that drive growth, sustainability, and customer satisfaction.

Value

Rooted in integrity, innovation, and excellence, our values guide every decision and action we take.



PRODUCT FEATURES & BENEFITS



We've Been Producing Washers
That Meet Different Country Standards
and Quality Requirements.



ANSI & ASME-USA



DIN-GERMANY



BS-UK



AFNOR-FRANCE



UNI-ITALY



ISO-INTERNATIONAL

Manufacturing Process

With a raw material storage capacity exceeding 800 MT, we ensure a seamless production flow, boosting efficiency and output without compromising on quality. Our manufacturing operations leverage advanced automatic and semi-automatic machinery from top-tier manufacturers.

The hydraulic shearing machine delivers precise and efficient cutting, essential for the production of sheet and sheet metal products. Our power press machines enhance pressing operations with speed and precision in a controlled environment.

Additionally, deburring, shot blasting, and polishing processes not only improve product aesthetics but also extend their lifespan, ensuring superior performance and durability.



HIGH QUALITY
MATERIALS



CORROSION
RESISTANCE



PRECISION
ENGINEERING



DURABILITY



RE-GENERATIVE



WASHERS RANGE

DIN 125	ISO 7093 200 HV	DIN 25201 - DACROMET	DIN 931
DIN 9021	NFE 25 511 L	DIN 25201 - SS	DIN 933
DIN 433/150 7092	NFE 25 511 M	DIN 9240	DIN 934
DIN 440 R/ISO 7094	NFE 25 511 S	DIN 471	DIN-6921
DIN 440 V	NFE 25 514 L	DIN 472	DIN-912
DIN 7349	NFE 25 514 LL	DIN 6799	DIN-603/934
DIN 7980	NFE 25 514 M	DIN 6797 A	DIN-608
DIN 7989	NFE 25 514 Z	DIN 6797 J	DIN-84
DIN 93	BS 3410 TABLE 3 HEAVY	DIN 6798 A	DIN-7985
DIN 463	BS 3410 TABLE 3 LGHT	DIN 6798 J	DIN-963
DIN 432	BS 3410 TABLE 4 HEAVY	DIN 2093	DIN-965
DIN 1440	BS 3410 TABLE 4 LGHT	DIN 2093 SERIES A,B,C	DIN-985
DIN 1441	BS 4320 FORM B	DIN 6796	DIN-6923
DIN 1052	BS 4320 FORM C	DIN 127 (Type-B)	DIN-1587
KARO	FENDER WASHER	DIN 137 A	
ISO 7089 200 HV	NAS	DIN 137 B	



MATERIAL OPTION

AISI GRADE	GERMANY WORKSHOP STANDARD
301	1.4301
304	1.4301
304L	1.4307
316	1.4401
316L	1.4404
316TI	1.4571
420	1.4031
632	1.4532
Duplex	1.4462
Alloy 716	Inconel
Alloy 926	1.4529
Copper	-
Aluminum	-
Steel	-
Spring Steel	-
Carbon Steel	-
High Carbon Steel	-
Spring Carbon Steel	-

DIN 125/ISO 7089

SIZE	d1	d2	h
M3	3.20-3.38	6.64 -7.00	0.45-0.55
M3.5	3.70-3.88	7.64 -8.00	0.45-0.55
M4	4.30-4.48	8.64 -9.00	0.70-0.90
M5	5.30-5.48	9.64 -10.00	0.90-1.10
M6	6.40-6.62	11.57 -12.00	1.40-1.80
M7	7.40-7.62	13.57 -14.00	1.40-1.80
M8	8.40-8.62	15.57 -16.00	1.40-1.80
M10	10.50-10.77	19.48 -20.00	1.80-2.20

AVAILABLE UPTO M-64

DIN 9021/ISO 7093

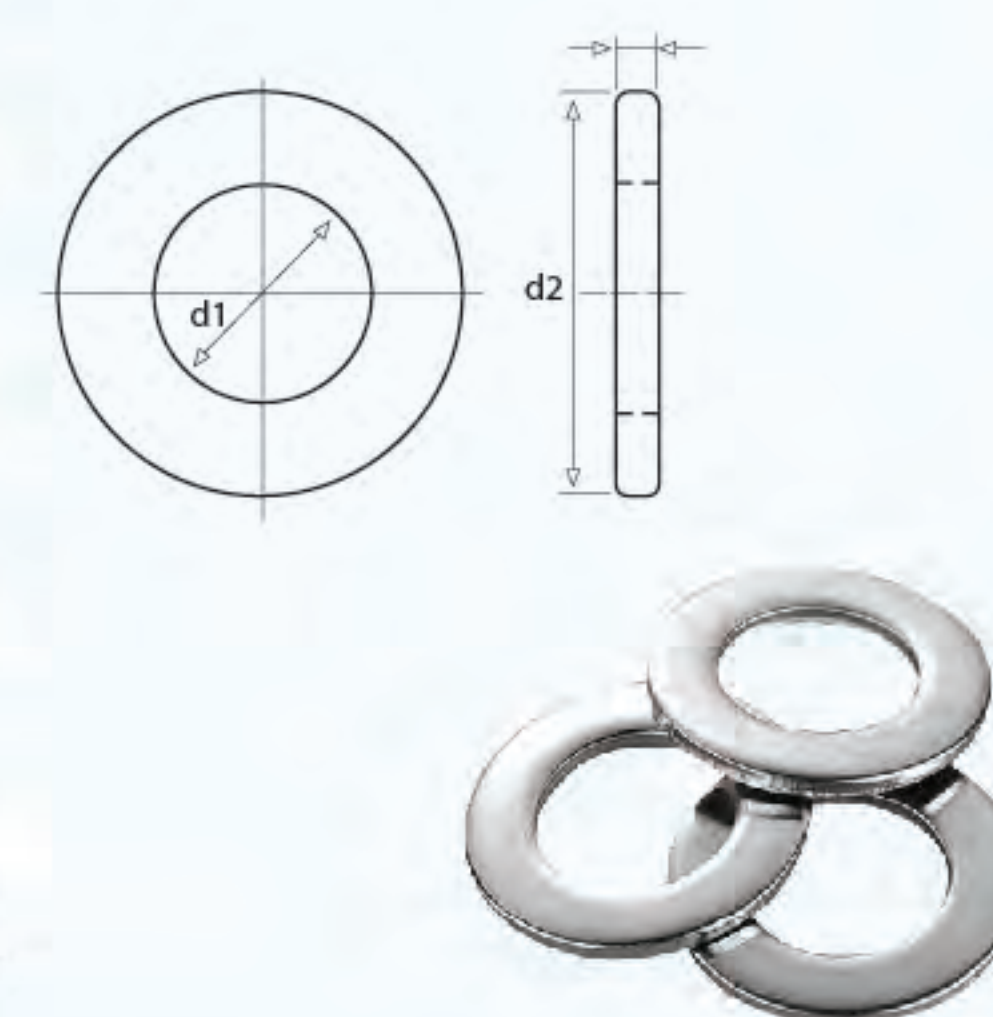
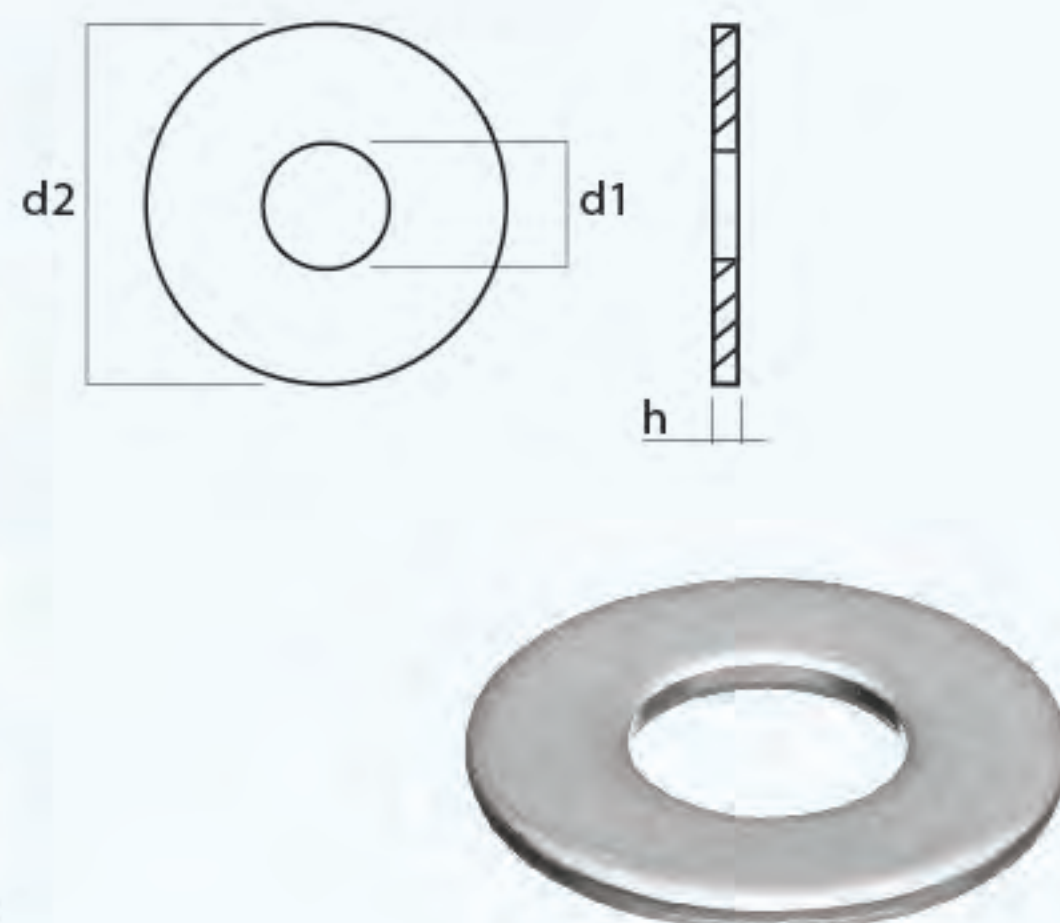
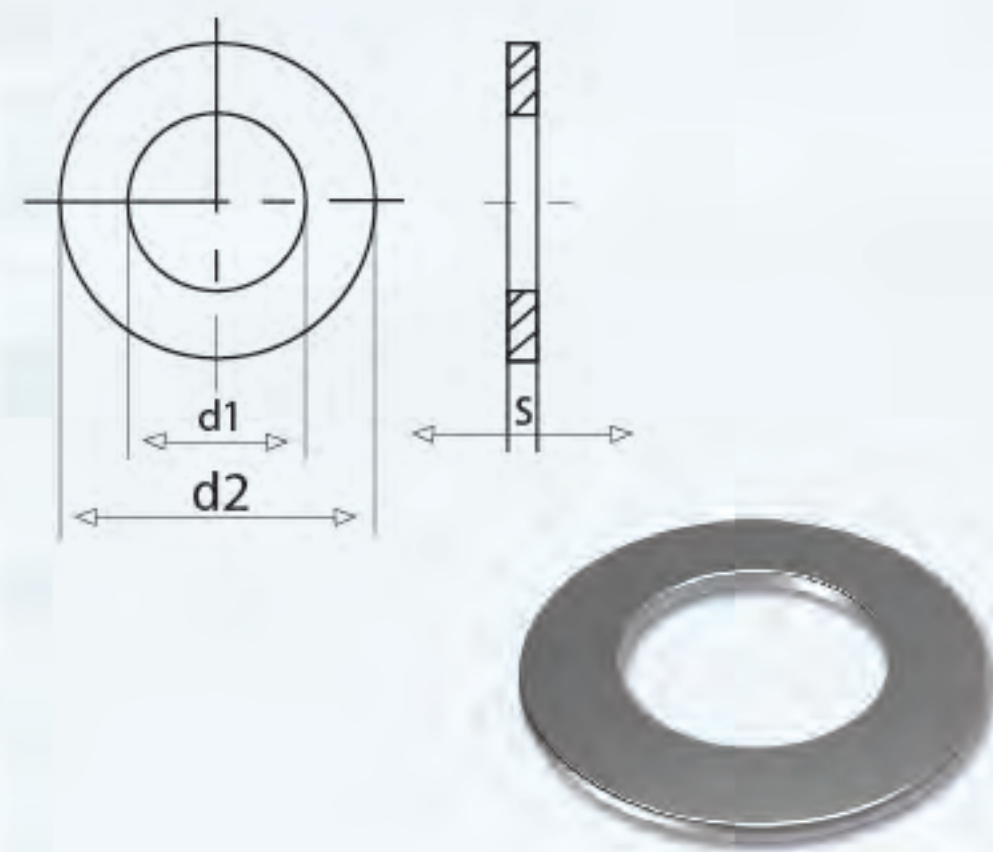
SIZE	d1	d2	h
M3	3.20-3.38	8.64-9.00	0.70-0.90
M 3.5	3.70-3.88	10.57-11.00	0.70-0.90
M4	4.30-4.48	11.57-12.00	0.90-1.10
M5	5.30-5.48	14.57-15.00	1.00-1.40
M6	6.40-6.62	17.57-18.00	1.40-1.80
M8	8.40-8.62	23.48-24.00	1.80-2.20
M10	10.50-10.77	29.48-30.00	2.30-2.70
M 12	13.00-13.27	36.38-37.00	2.70-3.30

AVAILABLE UPTO M-36

DIN 433/ISO 7092

SIZE	d1	d2	h
M3	3.20- 3.38	5.70- 6.00	0.45-0.55
M3.5	3.70-3.88	6.64-7.00	0.45- 0.55
M4	4.30-4.48	7.64- 8.00	0.45- 0.55
M5	5.30-5.48	8.64-9.00	0.90-1.10
M6	6.40-6.62	10.57-11.00	1.40-1.80
M8	8.40-8.62	14.57-1 5.00	1.40-1.80
M10	10.50- 10.77	17.57-1 8.00	1.40-1.80
M12	13.00-13.27	19.48-20.00	1.80-2.20

AVAILABLE UPTO M-36



DIN 440 R/ISO 7094

SIZE	d1	d2	h
M5	5.50-5.80	16.90-18.00	1.70-2.30
M6	6.60-6.96	20.70-22.00	1.70-2.30
M8	9.00-9.36	26.70-28.00	2.40-3.60
M10	11.00-11.43	32.40-34.00	2.40-3.60
M12	13.50-13.93	42.40-44.00	3.40-4.60
M14	15.50-15.93	48.40-50.00	3.40-4.60
M16	17.50-18.20	54.10-56.00	4.00-6.00
M20	22.00-22.84	70.10-72.00	5.00-7.00

AVAILABLE UPTO M-52

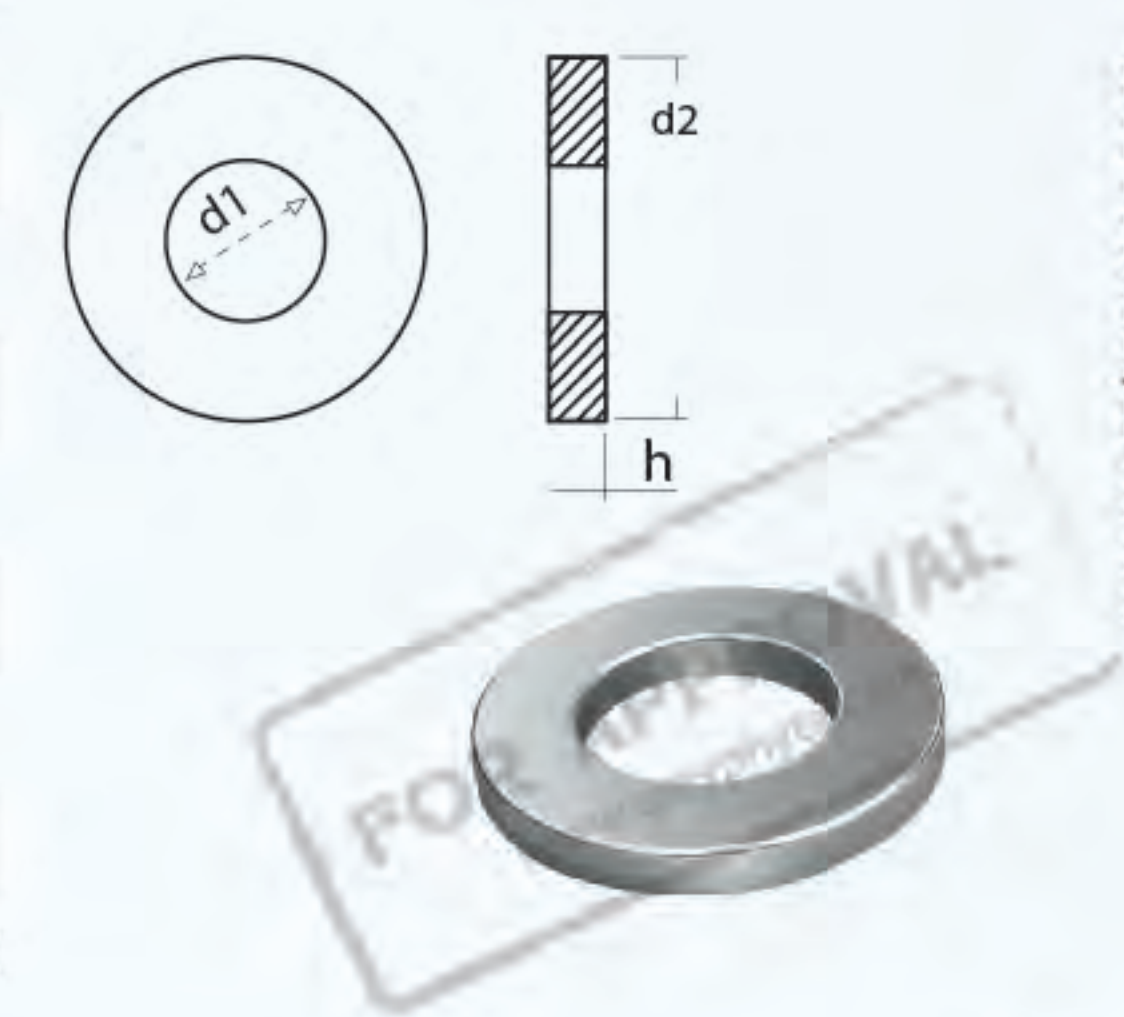
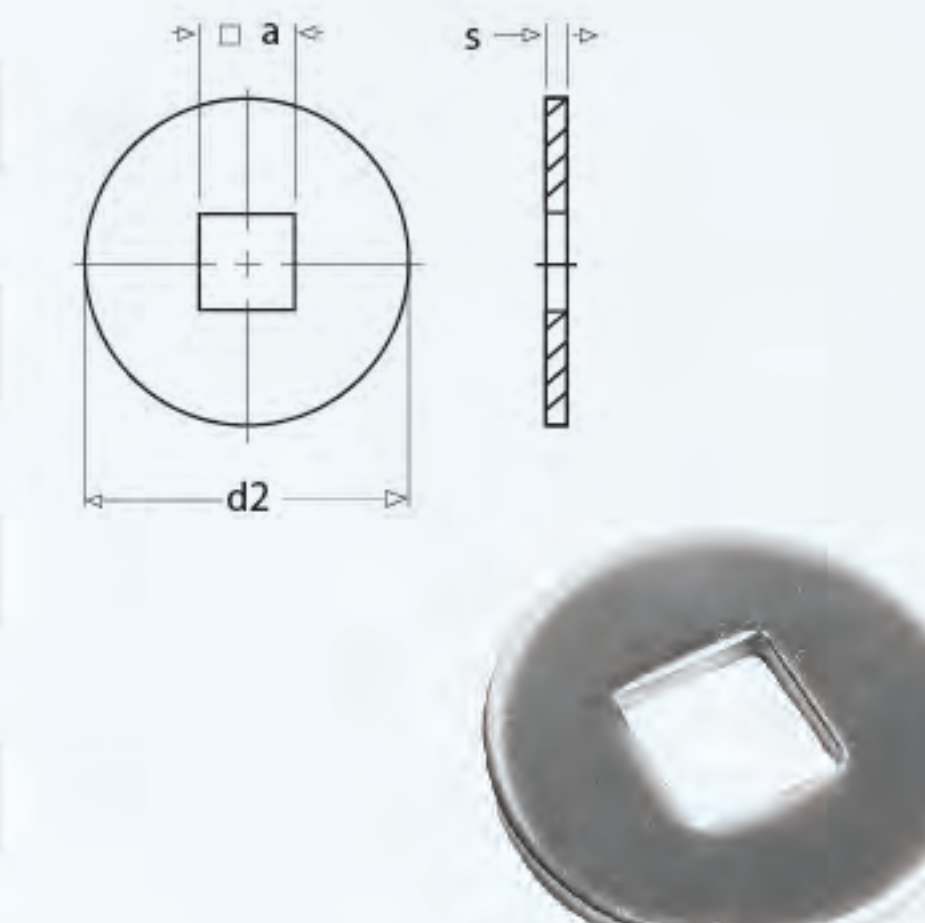
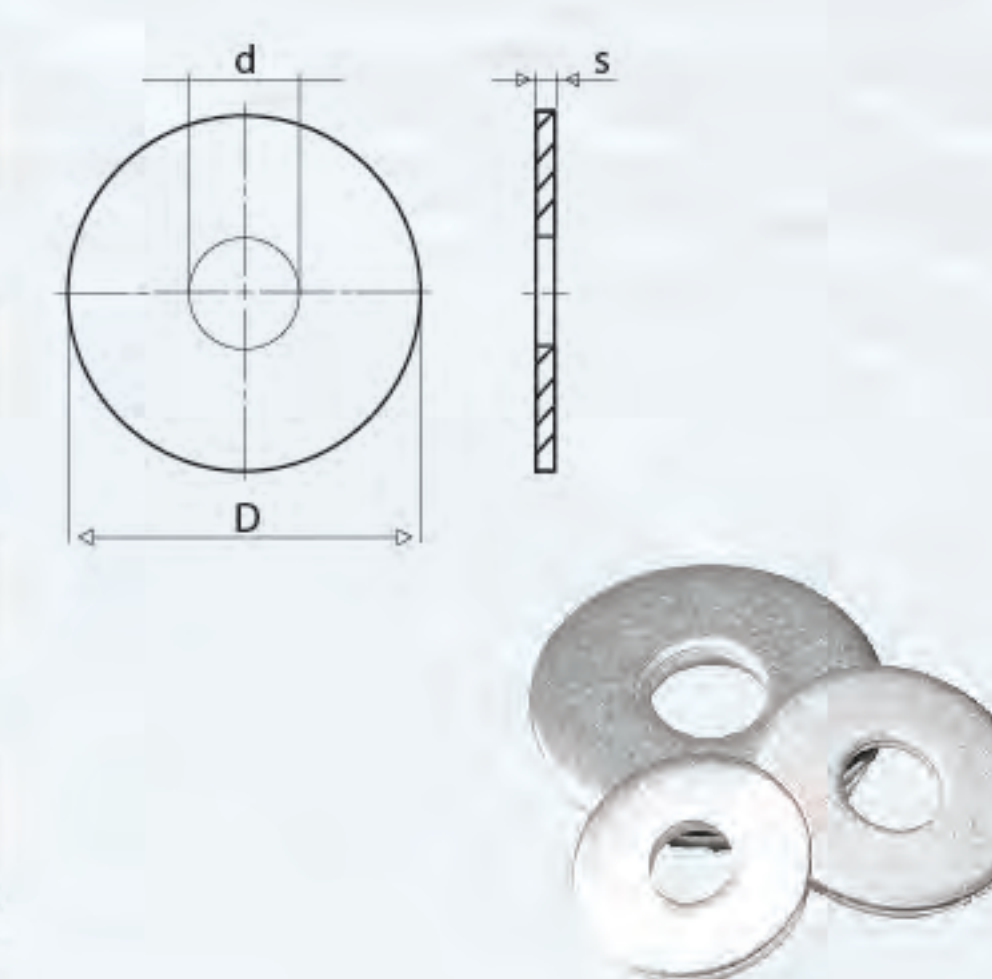
DIN 440 SQUARE HOLE TYPE "V"

SIZE	a(d1)	d2	h
M5	5.50-5.80	16.90-18.00	1.70-2.30
M6	6.60-6.96	20.70-22.00	1.70-2.30
M8	9.00-9.36	26.70-28.00	2.40-3.60
M10	11.00-11.43	32.40-34.00	2.40-3.60
M12	14.00-14.43	42.40-44.00	3.40-4.60
M16	18.00-18.70	54.10-56.00	4.00-6.00
M20	22.00-22.84	70.10-72.00	5.00-7.00
M22	24.00-24.84	78.10-80.00	5.00-7.00

DIN 7349

SIZE	d1	d2	h
3	3.20-3.38	8.64-9.00	0.90-1.10
4	4.30-4.48	11.58-12.00	1.40-1.80
5	5.30-5.48	14.58-15.00	1.80-2.20
6	6.40-6.62	16.60-17.00	2.70-3.30
8	8.40-8.62	20.48-21.00	3.70-4.30
10	10.50-10.77	24.48-25.00	3.70-4.30
12	13.0- 13.27	29.48-30.00	5.40-6.60
14	15.0- 15.27	35.0-36.00	5.40-6.60

AVAILABLE UPTO 30

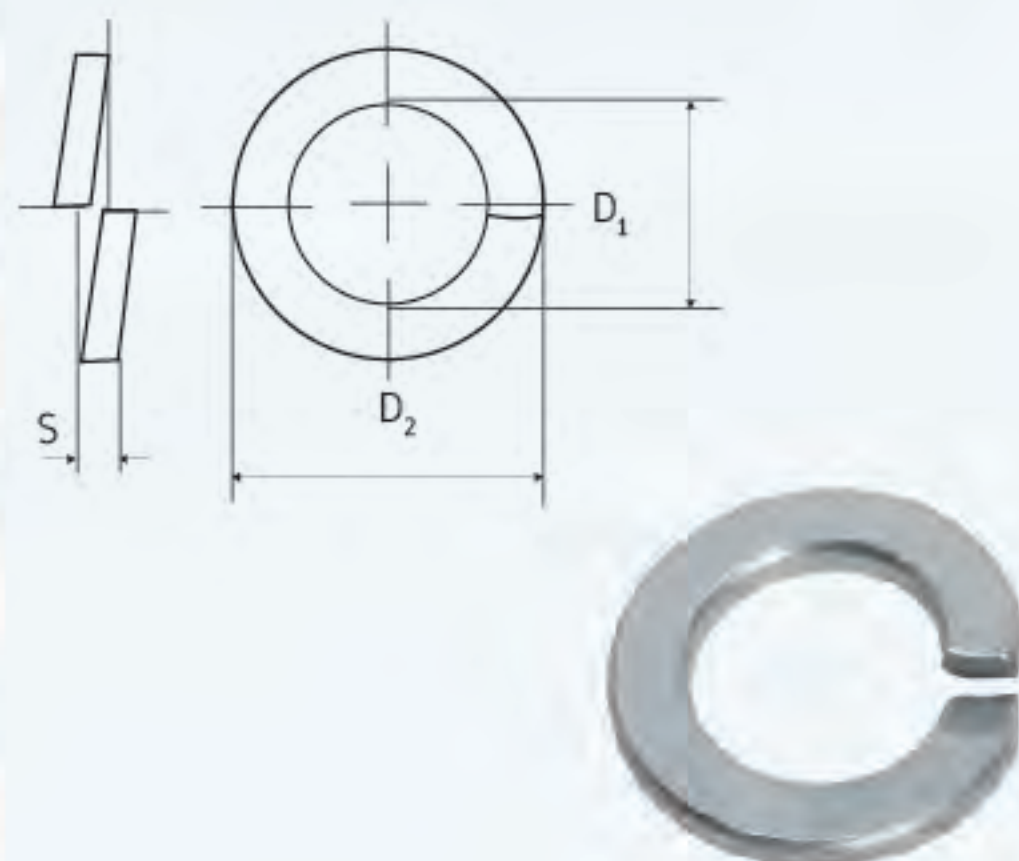


Product Range

DIN 7980

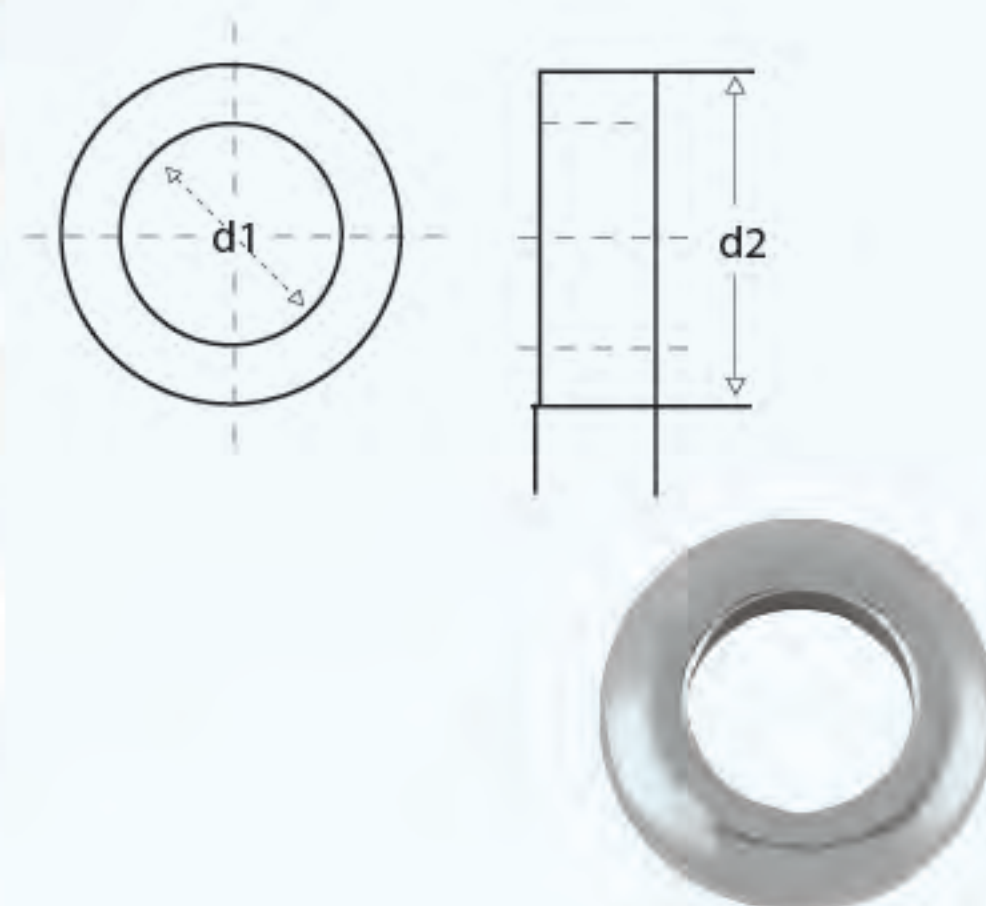
SIZE	d1	d2	S
M4	4.10 - 4.40	7.00	1.20 (± 0.10)
M5	5.10 - 5.40	8.80	1.60 (± 0.10)
M6	6.10 - 6.50	9.90	1.60 (± 0.10)
M8	8.10 - 8.50	12.70	2.00 (± 0.10)
M10	10.20 - 10.70	16.00	2.50 (± 0.15)
M12	12.20 - 12.70	18.00	2.50 (± 0.15)
M14	14.20 - 14.70	21.10	3.00 (± 0.20)
M16	16.20 - 17.0	24.40	3.50 (± 0.20)

AVAILABLE UPTO M-24



DIN 7989

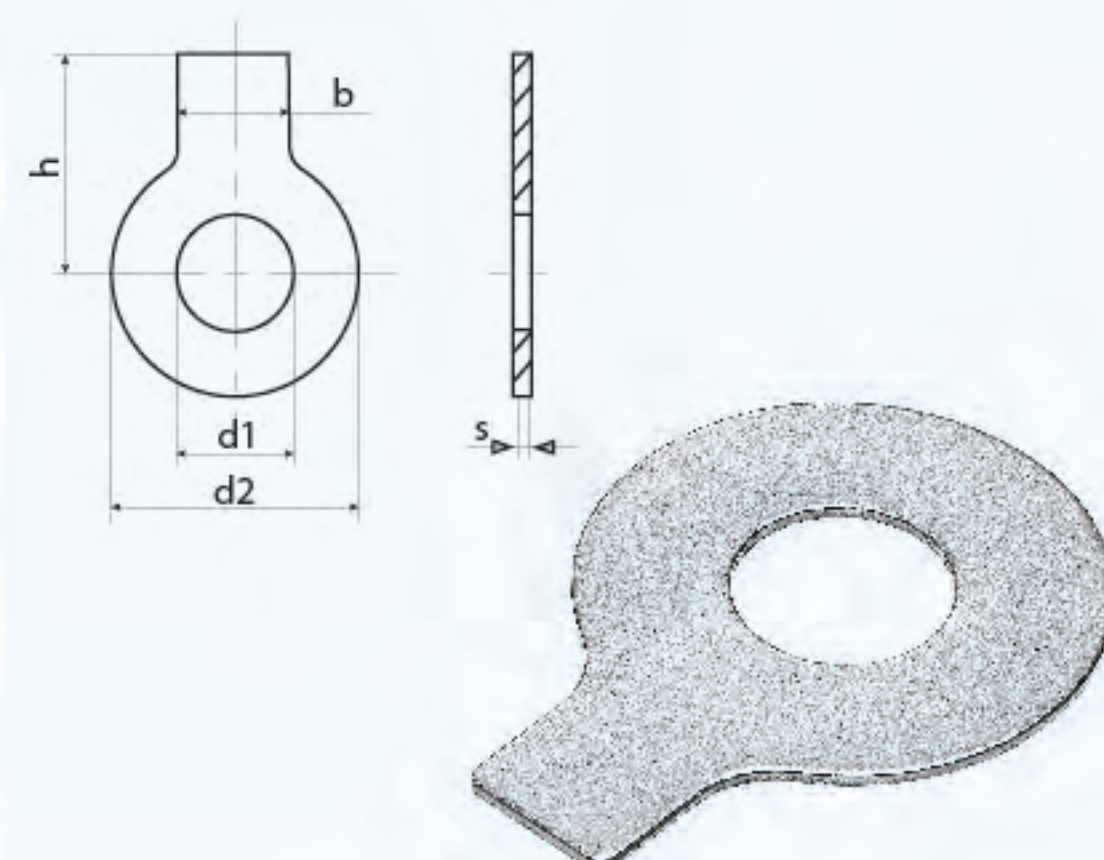
SIZE	d1	d2	h
M10	11.00-11.70	18.70-20.00	
M12	13.50-14.20	22.70-24.00	
M16	17.50-18.20	28.70- 30.00	
M20	22.00-22.84	35.40- 37.00	6.80-9.20
M24	26.00-26.84	42.40-44.00	
M27	30.00-30.84	48.40- 50.00	
M30	33.00-34.00	54.10- 56.00	



DIN 93

SIZE	d1	b	d2	S(h)
3.2	3.20-3.38	3.80-4.00	11.57-12.00	0.33-0.38
3.7	3.70-3.88	3.80-4.00	11.57-12.00	0.33-0.38
4.3	4.30-4.48	4.80-5.00	13.57-14.00	0.33-0.38
5.3	5.30-5.48	5.80-6.00	16.57-17.00	0.45-0.55
6.4	6.40-6.62	6.64-7.00	18.48-19.00	0.45-0.55
7.4	7.40-7.62	6.64-7.00	18.48-19.00	0.45-0.55
8.4	8.40-8.62	7.64-8.00	21.48-22.00	0.65-0.85
10.5	10.50-10.77	9.64-10.00	25.48-26.00	0.65-0.85

AVAILABLE UPTO 54

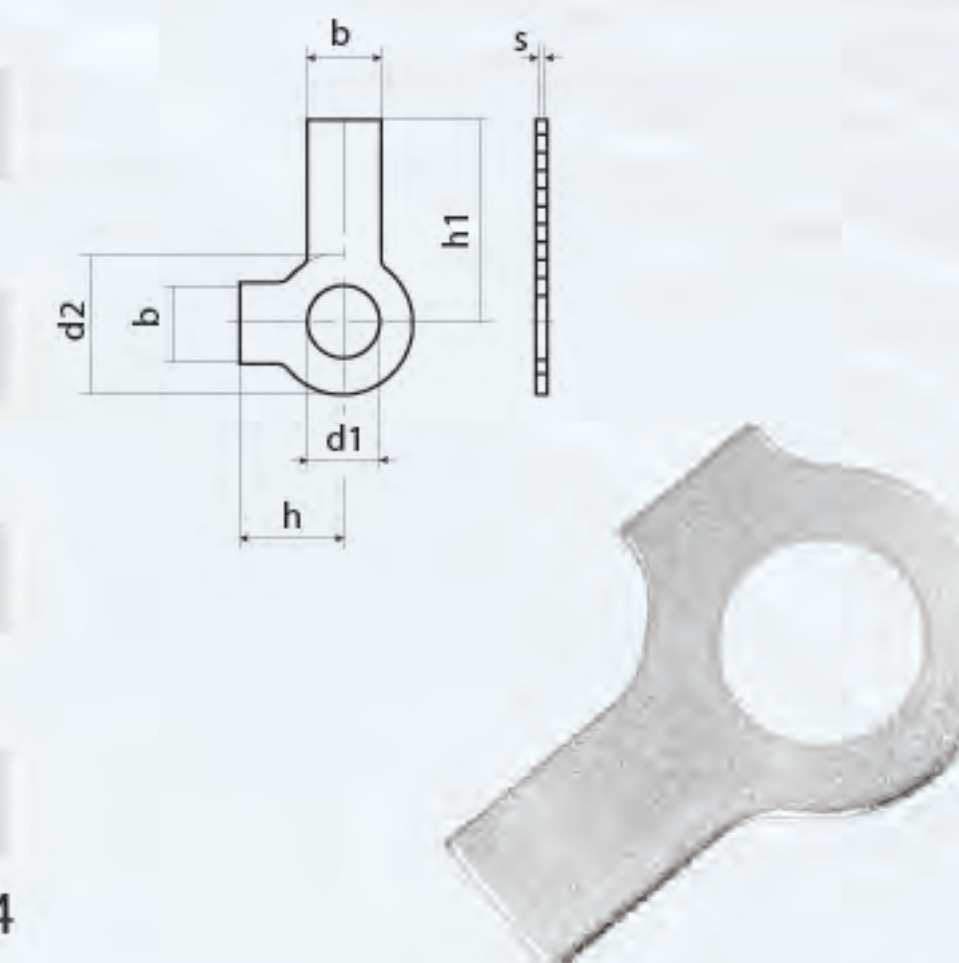


Product Range

DIN 463

SIZE	d1	d2	S(h)
5.3	5.30	10.00	0.45-0.55
6.4	6.40	12.50	0.45- 0.55
7.4	7.40	14.00	0.45- 0.55
8.4	8.40	17.00	0.65- 0.85
10.5	10.50	21.00	0.65- 0.85
13	13.00	24.00	0.9-1.1
15	15.00	28.00	0.9- 1.1
17	17.00	32.00	0.9-1.1

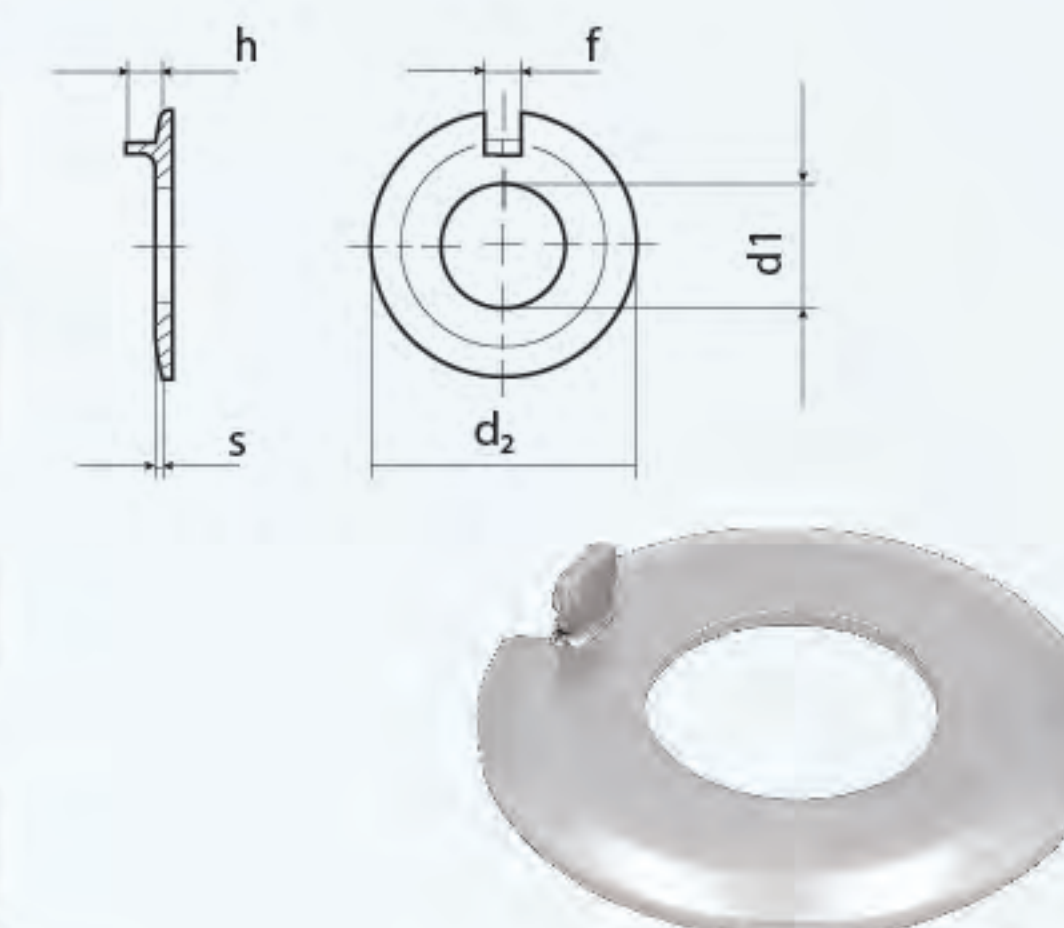
AVAILABLE UPTO 54



DIN 432

SIZE	d1	d2	S
5.3	5.30- 5.48	16.57- 17.00	0.65- 0.85
6.4	6.40- 6.62	18.48- 19.00	0.65- 0.85
7.4	7.40-7.62	18.48- 19.00	0.65- 0.85
8.4	8.40- 8.62	21.48-22.00	0.90- 1.10
10.5	10.50- 10.77	25.48-26.00	0.90- 1.10
13	13.00- 13.27	29.48-30.00	1.00- 1.40
15	15.00-15.27	32.38-33.00	1.00- 1.40
17	17.00- 17.27	35.38-36.00	1.00- 1.40

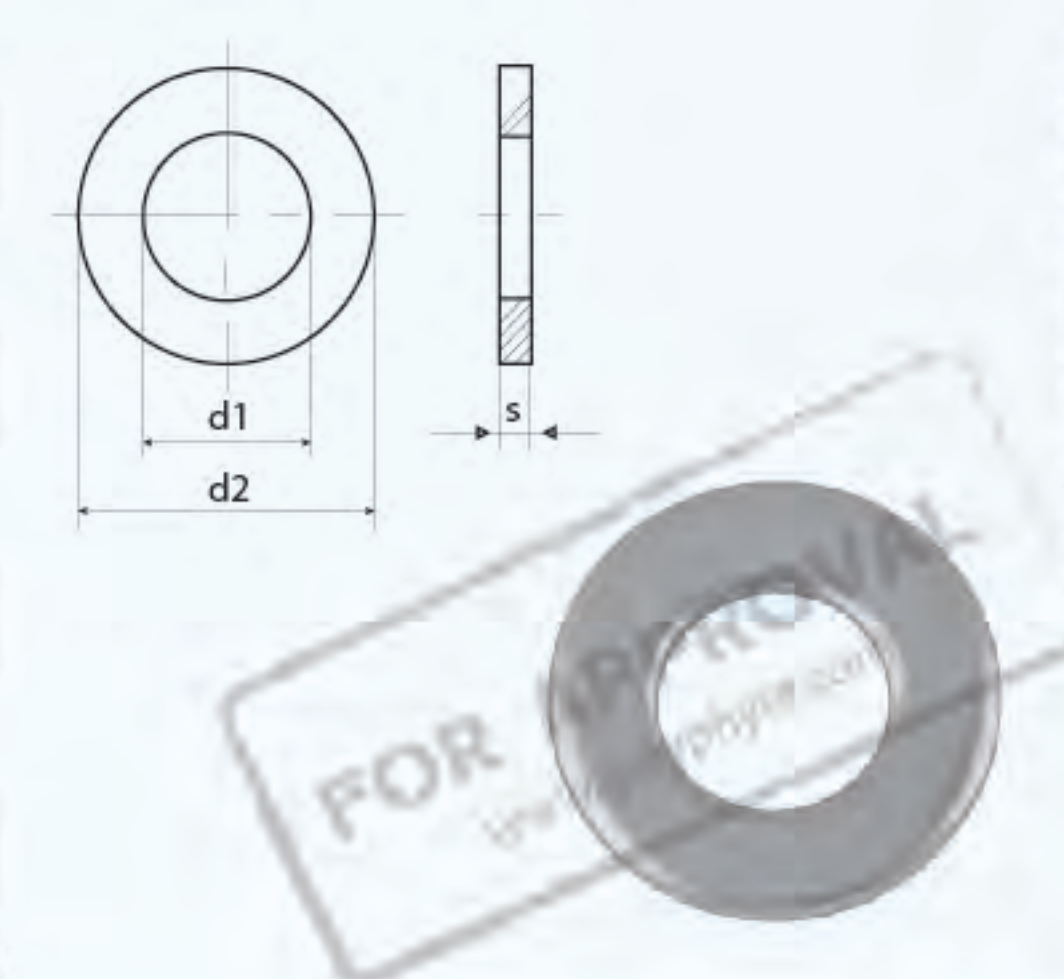
AVAILABLE UPTO 54



DIN 1440

SIZE	d1	d2	S(h)
3	3.0 -3.06	5.70-6.00	0.70-0.90
4	4.0 -4.08	7.64-8.00	0.70 -0.90
5	5.0 -5.08	9.64-10.0	0.70 -0.90
6	6.0 -6.08	11.58 -12.0	1.40 -1.80
7	7.0 -7.09	13.58 -14.0	1.40 -1.80
8	8.0 -8.09	15.58 -16.0	1.80 -2.20
10	10.0 -10.09	19.48 -20.0	2.30 -2.70
12	12.0 -12.11	24.48 -25.0	2.70 -3.30

AVAILABLE UPTO 45

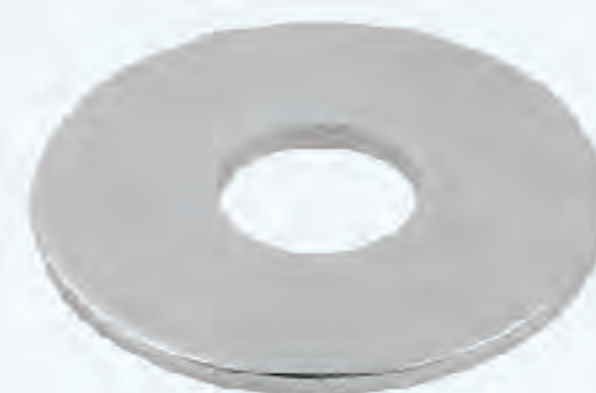
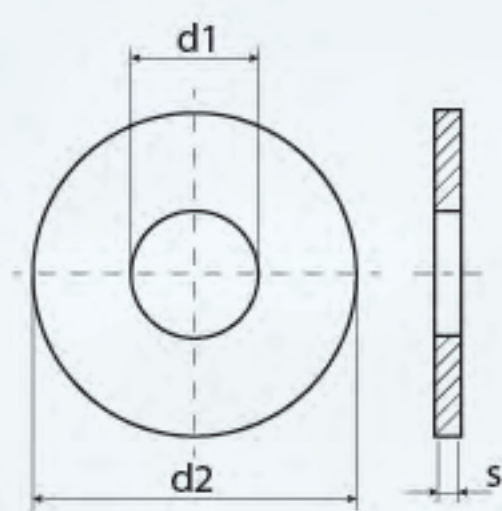


Product Range

DIN 1441

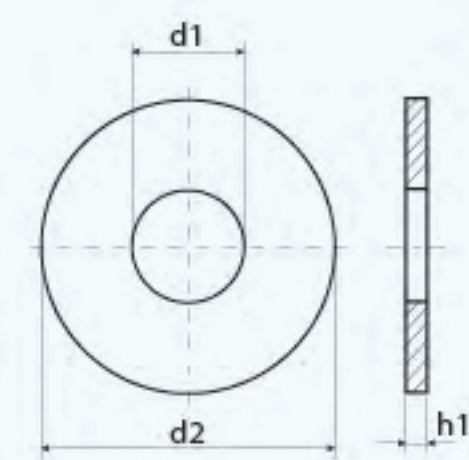
SIZE	ID	OD	THK
5	5.50-5.68	9.64- 10.00	0.75-0.85
6	7.00-7.22	11.57- 12.0	1.40- 1.80
7	8.0- 8.22	13.57- 14.0	1.40- 1.80
8	9.0-9.22	15.57- 16.0	1.80- 2.20
10	11.0-11.27	19.48-20.0	2.30-2.70
12	13.0-13.27	24.48- 25.0	2.70- 3.30
13	14.0-14.27	24.48-25.0	2.70- 3.30
14	15.0-15.27	27.48-28.0	2.70-3.30

AVAILABLE UPTO 30



DIN 1052

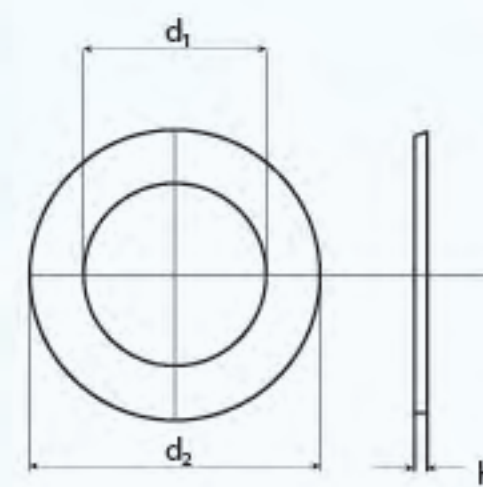
SIZE	d1	d2	h1
14X58X6	14.00	58.00	5.5 - 6.5
18X68X6	18.00	68.00	5.5 - 6.5
23X80X8	23.00	80.00	6.8 - 9.2
25X92X8	25.00	92.00	7.0 - 9.0
27X105X8	27.00	105.00	7.0 - 9.0



KARO

SIZE	d1	d2	h
12x4.3x1.0	4.30	12.00	0.95 - 1.05
15x4.3x1.0	4.30	15.00	0.9 - 1.1
15X4.3X1.25	4.45	14.50	1.2 - 1.3
15X4.3X1.5	4.30	15.00	1.3 - 1.7
15X5.3X1.5	5.40	14.50	1.4 - 1.6
20X4.3X1.25	4.45	19.50	1.15 - 1.35
20X4.3X1.5	4.45	19.50	1.3 - 1.7
20X5.3X1.5	5.40	19.50	1.4 - 1.6

AVAILABLE UPTO M12X50X5

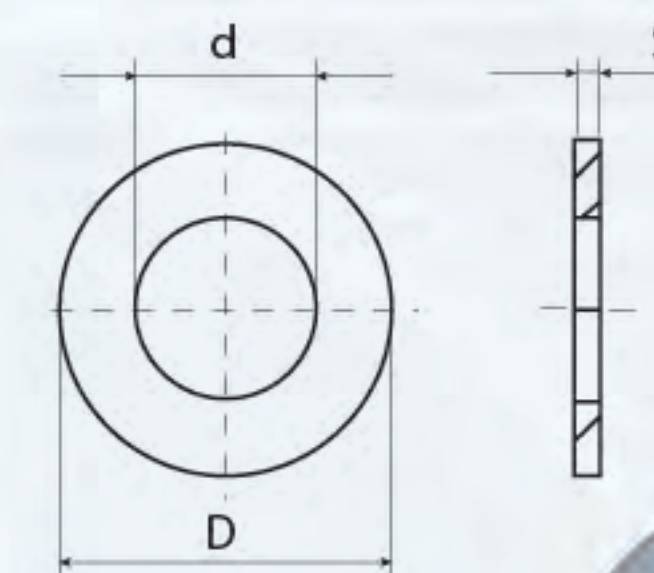


Product Range

ISO 7089 200 HV

SIZE	ID	OD	THK
5	5.30- 5.48	9.64-10.00	0.90-1.10
6	6.40- 6.62	11.57- 12.00	1.40- 1.80
8	8.40- 8.62	15.57- 16.00	1.40-1.80
10	10.50-10.77	19.48-20.00	1.80-2.20
12	13.00-13.27	23.48-24.00	2.30-2.70
14	15.00-15.27	27.48-28.00	2.30-2.70
16	17.00-17.27	29.48-30.00	2.70-3.30
18	19.00-19.33	33.38-34.00	2.70-3.30

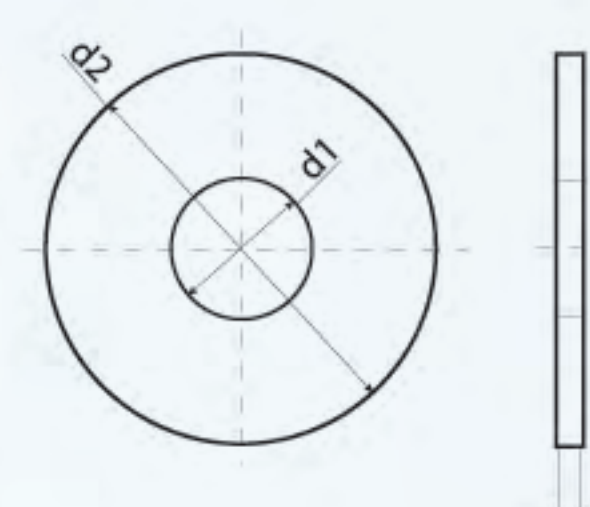
AVAILABLE UPTO 30



ISO 7093 200HV

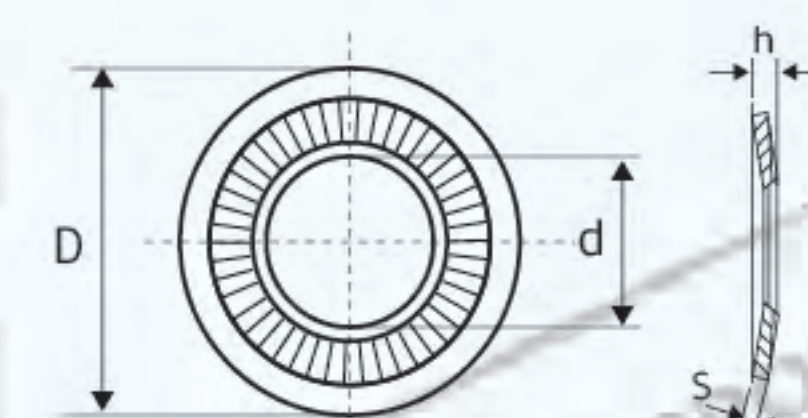
SIZE	D(d1)	D(d2)	h
4	4.30-4.48	11.57-12.00	0.90-1.10
5	5.30- 5.48	14.57-15.00	0.90-1.10
6	6.40- 6.62	17.57-18.00	1.40-1.80
8	8.40- 8.62	23.48-24.00	1.80-2.20
10	10.50-10.77	29.48-30.00	2.30-2.70
12	13.00-13.27	36.38-37.00	2.70-3.30
14	15.00-15.27	43.38-44.00	2.70-3.30
16	17.00-17.27	49.38-50.00	2.70-3.30

AVAILABLE UPTO 20



NFE 25 511 (TYPE L)

SIZE	d(d1)	D(d2)	h
M6	6.1-6.4	18.35- 17.65	1.36-1.44
M8	8.2-8.56	22.42-21.58	1.55-1.65
M10	10.2-10.56	27.42-26.58	1.75-1.85
M12	12.4 - 12.83	32.5-31.5	1.95-2.05

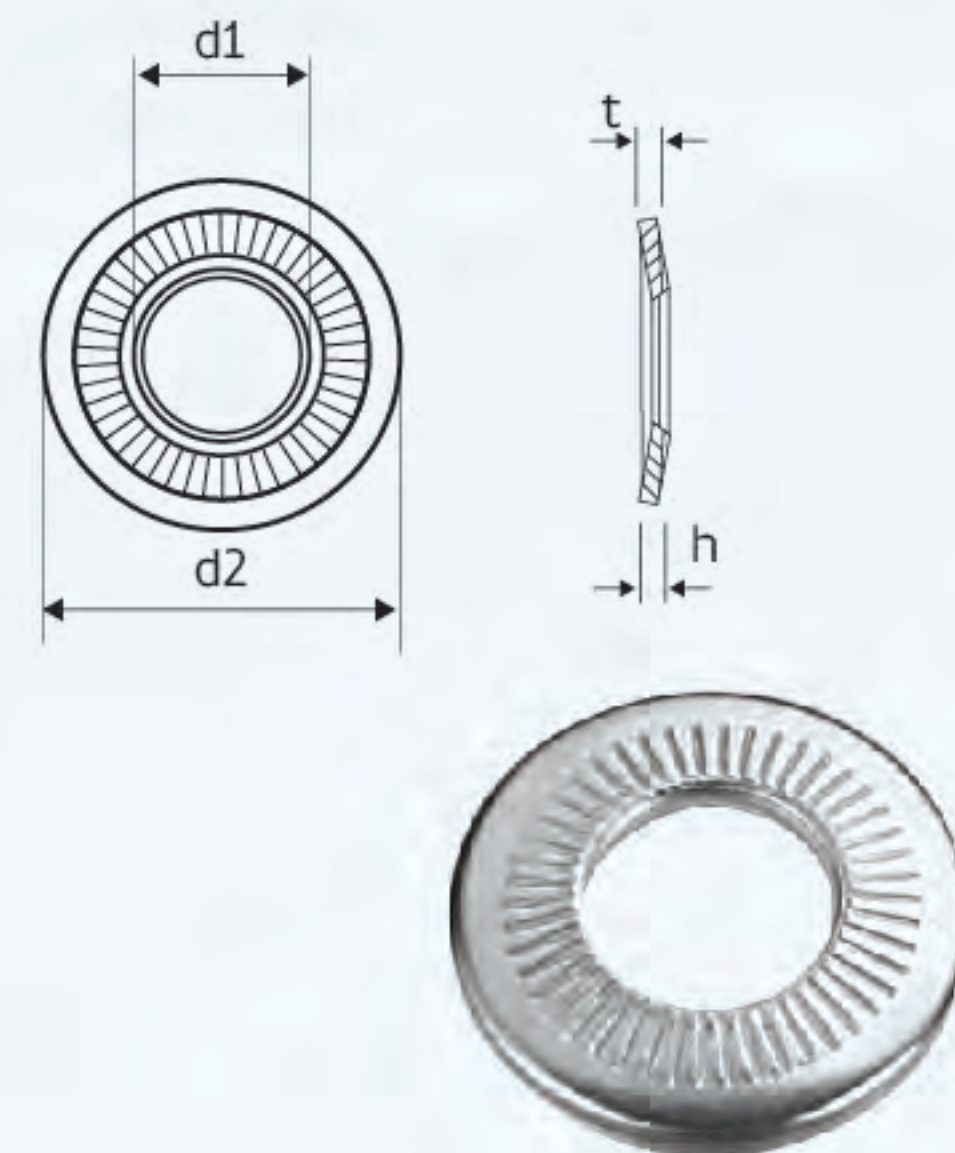


Product Range

NFE 25 511 (TYPE M)

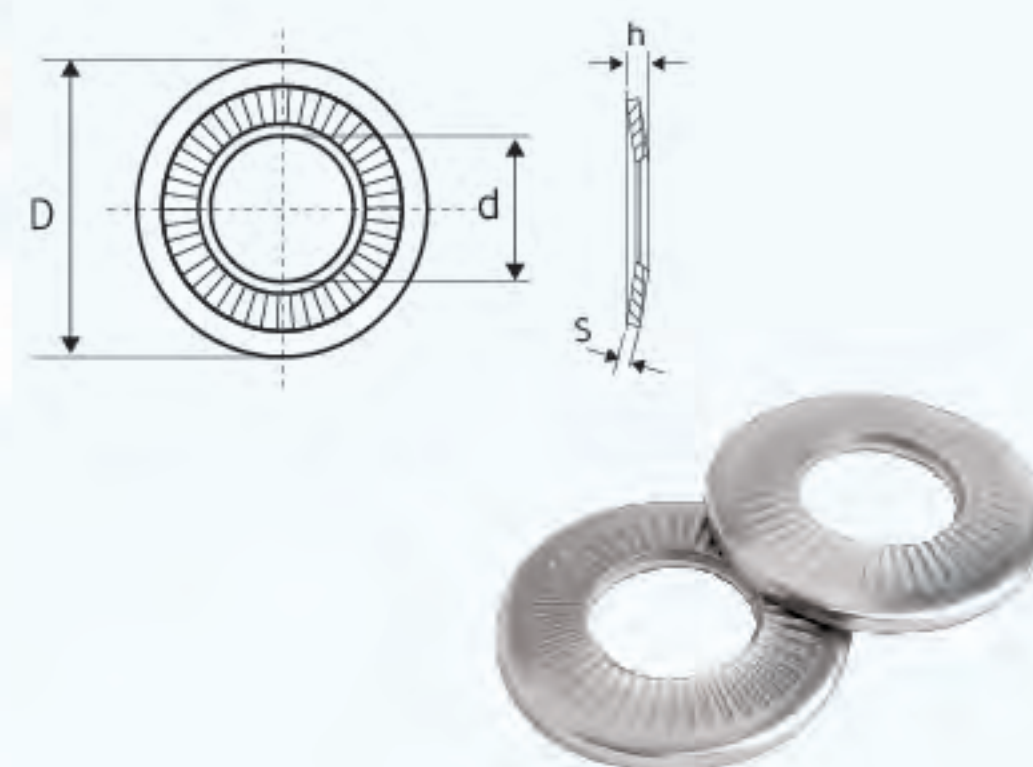
SIZE	d1	d2	S(h)
M6	6.10-6.40	14.35-13.65	1.26-1.34
M8	8.20-8.56	18.35-17.65	1.36-1.44
M10	10.20-10.56	22.42-21.58	1.55-1.65
M12	12.40-12.83	27.42-26.58	1.75-1.85
M14	14.40-14.83	30.42-29.58	2.34-2.46
M16	16.40-16.83	32.50-31.50	2.74-2.86
M20	20.50-21.02	40.50-39.50	3.14-3.26

AVAILABLE UPTO M 36



NFE 25 511 (TYPE S)

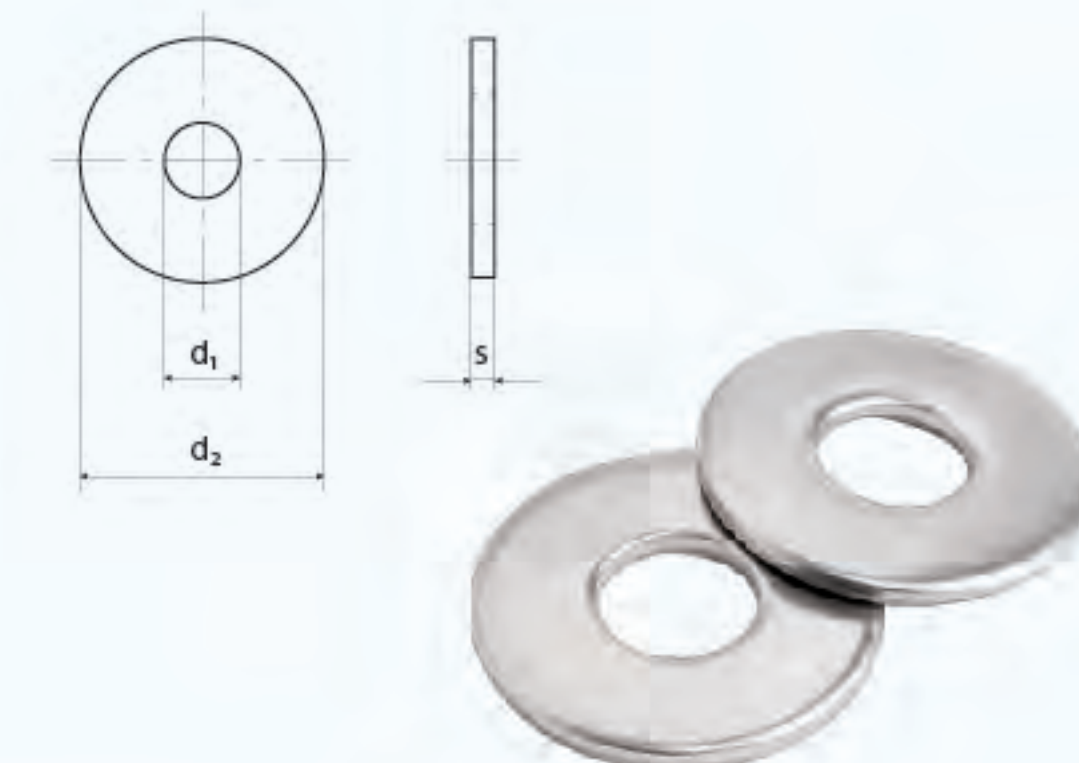
SIZE	d(D)	D(d2)	THK
M6	6.10-6.40	12.35-11.65	1.16-1.24
M8	8.20-8.56	16.35-15.65	1.36-1.44
M10	10.20-10.56	20.42-19.58	1.55-1.65
M12	12.40-12.83	24.42-23.58	1.75-1.85



NFE 25 514-L

SIZE	D(d1)	D(d2)	h
M3	3.20-3.38	11.57-12.00	0.90-1.10
M4	4.30-4.48	13.57-14.00	0.90-1.10
M5	5.30-5.48	15.57-16.00	1.40-1.80
M6	6.40-6.62	17.57-18.00	1.80-2.20
M7	7.40-7.62	19.48-20.00	2.30-2.70
M8	8.40-8.62	21.48-22.00	2.70-3.30
M10	10.50-10.77	26.48-27.00	2.70-3.30
M12	13.00-13.27	31.38-32.00	2.70-3.30

AVAILABLE UPTO 30

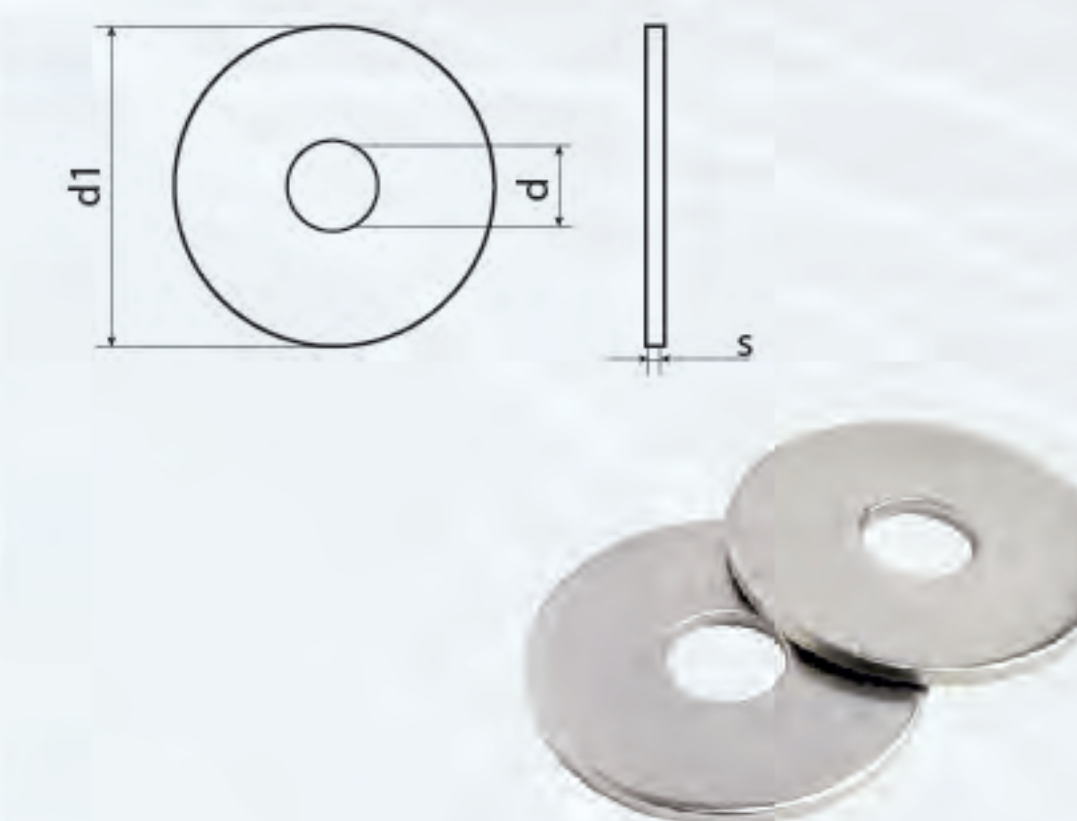


Product Range

NFE 25 514-LL

SIZE	D(d1)	D(d2)	h
M3	3.20-3.38	13.57-14.00	0.72-0.88
M4	4.30-4.48	15.57-16.00	0.72-0.88
M5	5.30-5.48	19.48-20.00	0.90-1.10
M6	6.40-6.62	23.48-24.00	1.08-1.32
M7	7.40-7.62	26.48-27.00	1.35-1.65
M8	8.40-8.62	29.48-30.00	1.35-1.65
M10	10.50-10.77	35.38-36.00	1.80-2.20
M12	13.00-13.27	39.38-40.00	2.25-2.75

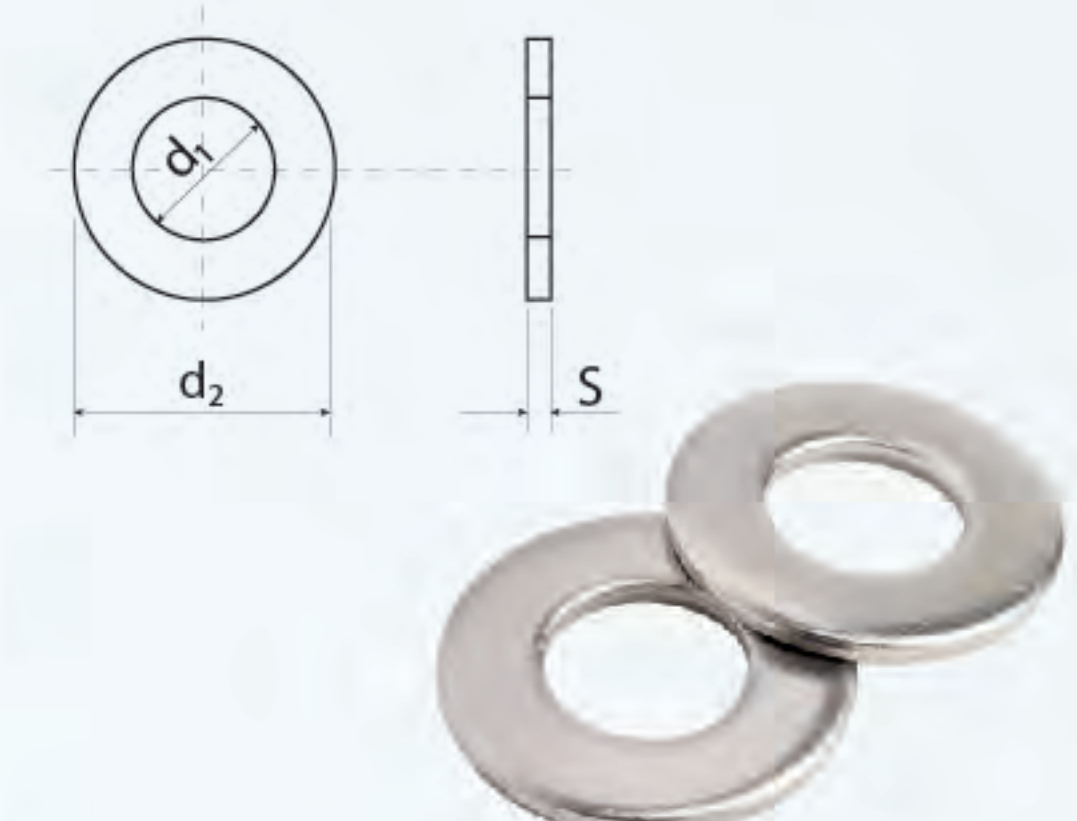
AVAILABLE UPTO 20



NFE 25 514 M

SIZE	d1	d2	S(h)
M3	3.20-3.38	7.64-8.00	0.73-0.87
M4	4.30-4.48	9.64-10.00	0.73-0.87
M5	5.30-5.48	11.57-12.00	0.93-1.07
M6	6.40-6.62	13.57-14.00	1.13-1.27
M7	7.40-7.62	15.57-16.00	1.43-1.57
M8	8.40-8.62	17.57-18.00	1.43-1.57
M10	10.50-10.77	21.48-22.00	1.88-2.12
M12	13.00-13.27	26.48-27.00	2.38-2.62

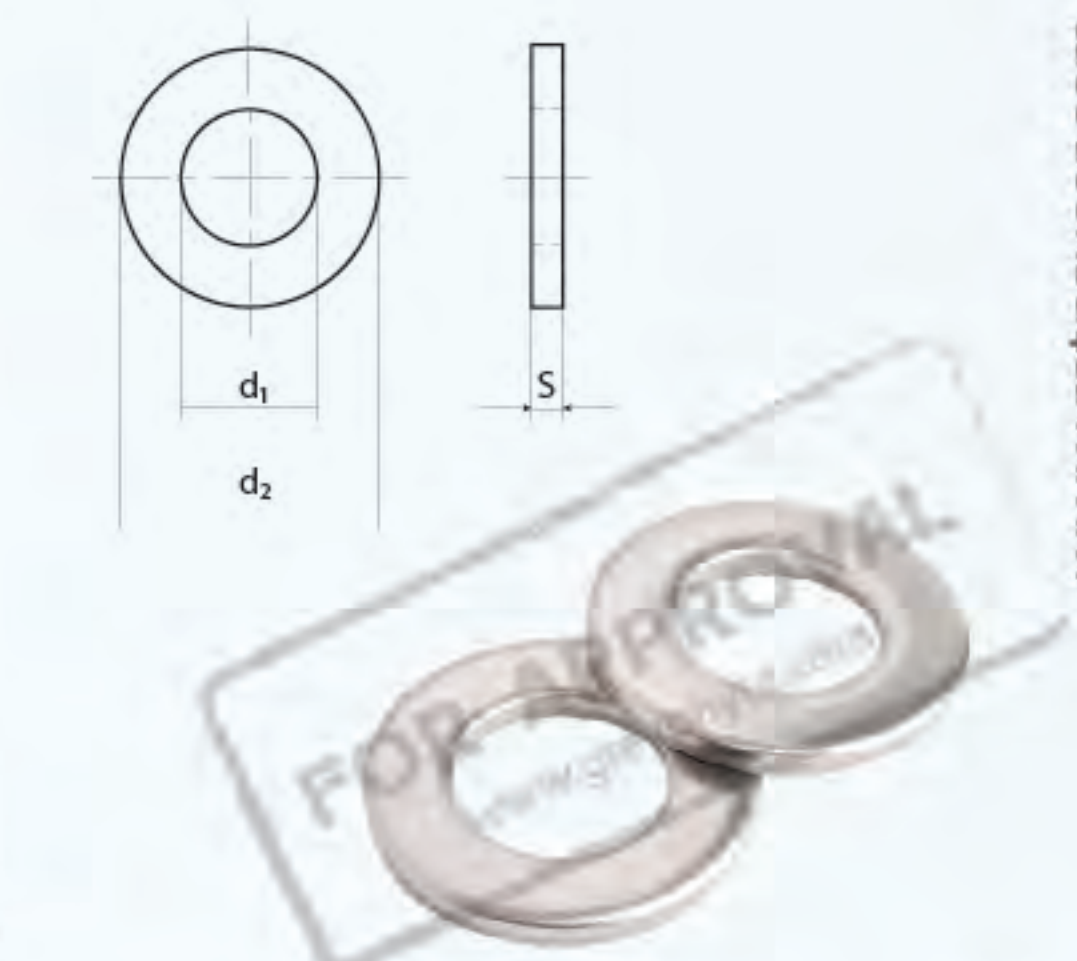
AVAILABLE UPTO 30



NFE 25 514 Z

SIZE	d1	d2	S
M3	3.20-3.38	5.70-6.00	0.73-0.87
M4	4.30-4.48	7.64-8.00	0.73-0.87
M5	5.30-5.48	9.64-10.00	0.93-1.07
M6	6.40-6.62	11.57-12.00	1.13-1.27
M7	7.40-7.62	13.57-14.00	1.43-1.57
M8	8.40-8.62	15.57-16.00	1.43-1.57
M10	10.50-10.77	19.48-20.00	1.88-2.12
M12	13.00-13.27	23.48-24.00	2.38-2.62

AVAILABLE UPTO 30



BS 3410 TABLE 3 HEAVY

SIZE	d1	d2	h
1/4	6.86	14.22	0.80-1.00
5/16	8.38	15.80	0.90 -1.10
3/8	10.01	19.05	1.10 -1.30
7/16	11.56	22.15	1.12 -1.27
1/2	13.21	25.40	1.40 -1.60
9/16	14.99	28.45	1.40 -1.60
5/8	16.64	31.62	1.70 -1.90
3/4	19.81	38.10	1.70 -1.90

AVAILABLE UPTO 2

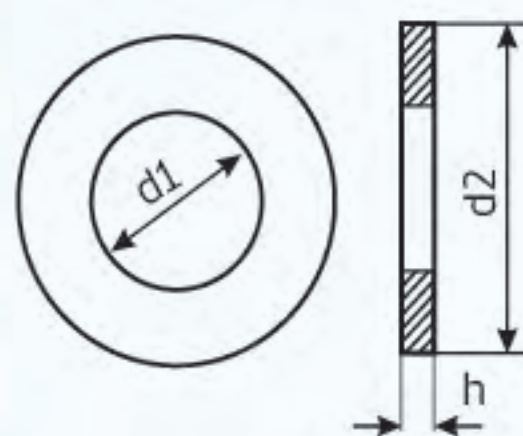
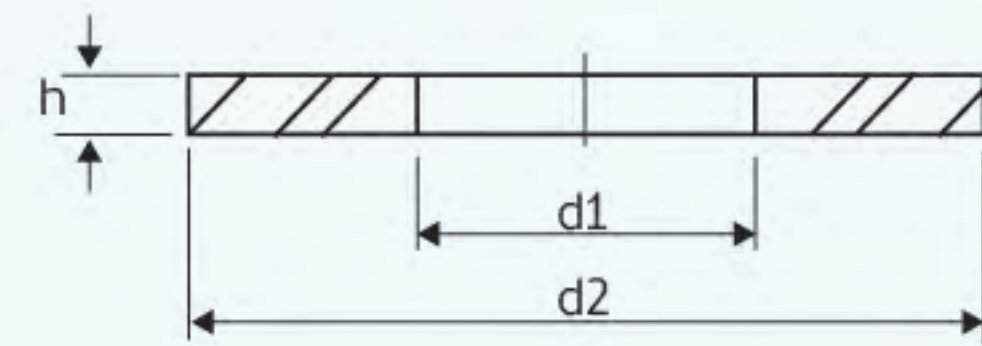
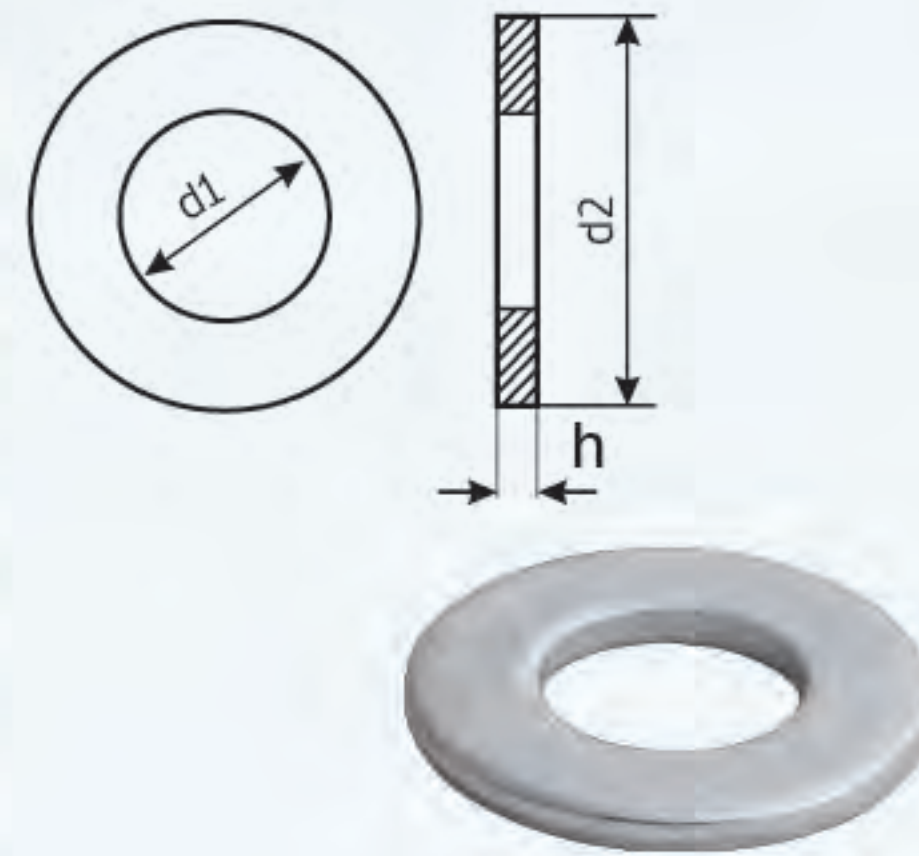
BS 3410 TABLE 3 LIGHT

SIZE	d1	d2	h
1/4	0.270-0.265	0.562-0.557	0.036
5/16	0.333-0.328	0.625-0.620	0.040
3/8	0.395-0.390	0.750-0.745	0.048
7/16	0.458-0.453	0.875-0.870	0.048
1/2	0.520-0.515	1.000-0.995	0.056
5/8	0.656-0.651	1.250-1.240	0.072
3/4	0.781-0.776	1.500-1.490	0.072
7/8	0.906-0.901	1.625-1.615	0.072
1"	1.031-1.026	1.875-1.865	0.072

BS 3410 TABLE 4 HEAVY

SIZE	d1	d2	h
1/4	6.86	15.75	1.3-1.5
5/16	8.38	19.05	1.7 -1.9
3/8	10.01	22.23	1.7 -1.9
7/16	11.56	25.40	2.25 -3.45
1/2	13.21	28.45	2.25 -3.45
9/16	14.99	31.62	2.55 -2.75
5/8	16.64	34.80	2.85 -3.02
3/4	19.81	41.15	2.85 -3.02

AVAILABLE UPTO 2



BS 3410 TABLE 4 LIGHT

SIZE	d1	d2	h
1/4	6.86	15.75	0.92-1.12
5/16	8.38	19.05	1.12 -1.32
3/8	10.01	22.23	1.12 -1.32
7/16	11.56	25.40	1.30 -1.50
1/2	13.21	28.45	1.30 -1.50
9/16	14.99	31.62	1.30 -1.50
5/8	16.64	34.80	1.73 -1.93
3/4	19.81	41.15	1.73 -1.93

AVAILABLE UPTO 2

BS 4320 FORM B

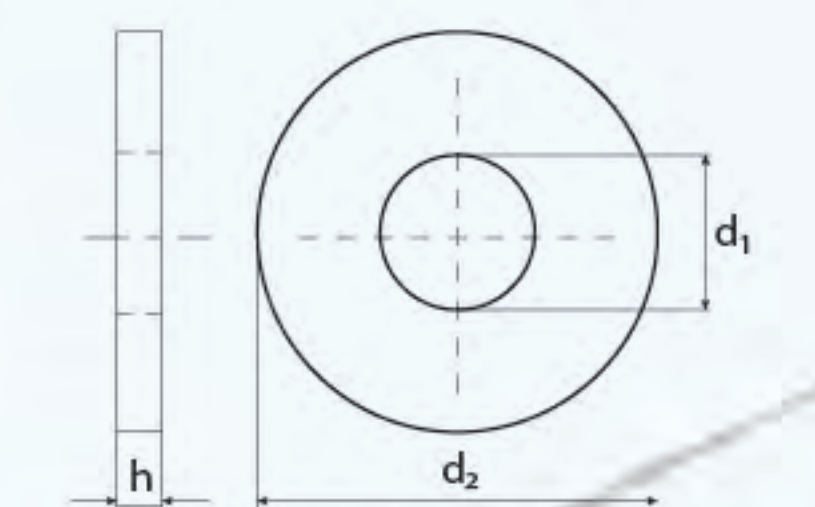
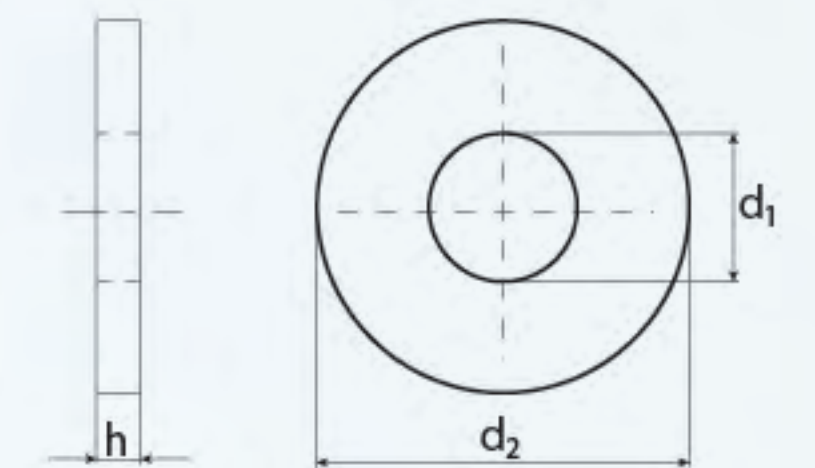
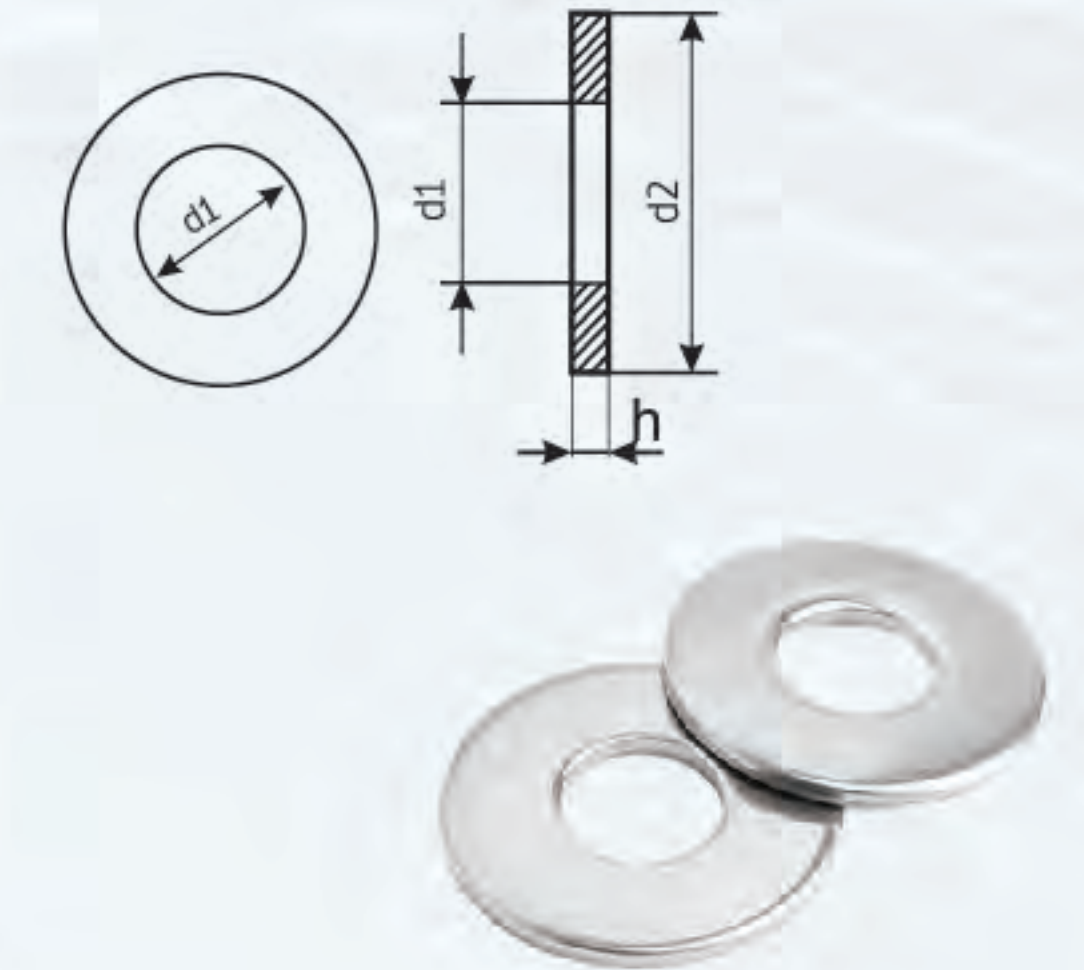
SIZE	d1	d2	h
M6	6.40- 6.70	12.10-12.50	0.70-0.90
M8	8.40-8.70	16.60- 17.00	0.90-1.10
M10	10.50-10.90	20.50-21.00	1.05-1.45
M12	13.00-1 3.40	23.50-24.00	1.40-1.80
M14	15.00-15.40	27.50-28.00	1.40-1.80
M16	17.00-17.40	29.50- 30.00	1.80-2.20
M18	19.00-19.50	33.20- 34.00	1.80-2.20
M20	21.00-21.50	36.20- 37.00	1.80-2.20

AVAILABLE UPTO M-39

BS 4320 FORM C

SIZE	d1	d2	S(h)
M6	6.40- 6.70	13.60- 14.00	1.40-1.80
M8	8.40-8.70	20.50-21.00	1.40-1.80
M10	10.50-10.90	23.50-24.00	1.80-2.20
M12	13.00- 13.40	27.50-28.00	2.30-2.70
M14	15.00-15.40	29.50-30.00	2.30-2.70
M16	17.00-17.40	33.20-34.00	2.70-3.30
M18	19.00- 49.50	36.20-37.00	2.70-3.30
M20	21.00-21.50	38.20-39.00	2.70-3.30

AVAILABLE UPTO M-39



FLAT WASHERS - STAINLESS STEEL 18-8 AND 316

Size	#12	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1-1/8	1-1/4	1-3/8	1-1/2	1-3/4	2
O.D.	9/16	5/8	3/4	7/8	1-1/8	1-1/4	1-3/8	1-1/2	1-7/8	2	2	2-1/2	2-3/4	3-1/4	3-1/4	3-1/2	4
I.D.	.250	.281	.343	.406	.500	.531	.625	.687	.812	.937	1.062	1.187	1.312	1.500	1.562	1.812	2.125
Nom. Thickness	.050	.050	.050	.050	.062	.062	.078	.078	.109	.109	.125	.125	.125	.140	.140	.140	.187

NAS Stainless

Size	0	2	3	3L	4	4L	5	5L	6	6L	8	8L	10	10L	416	416L
O.D.	.099	.149	.180	.180	.209	.209	.238	.238	.267	.267	.304	.304	.304	.354	.468	.468
I.D.	.063	.089	.102	.102	.115	.115	.128	.128	.143	.143	.169	.169	.169	.195	.255	.255
Thickness	.016	.016	.032	.016	.032	.016	.032	.016	.032	.016	.032	.016	.063	.032	.063	.032

FENDER WASHERS

	OD	ID	Thickness
#6	5/8	.149	.031
#8	3/4	.174	.040
#10	11/16	.203	.040
#10	3/4	.203	.040
#10	1	.203	.040
1/4	11/16	.281	.050
1/4	1	.281	.050
1/4	1-1/4	.281	.050
1/4	1-1/2	.281	.062
1/4	2	.281	.062
5/16	1	.343	.050
5/16	1-1/4	.343	.050
5/16	1-1/2	.343	.062
5/16	2	.343	.062
3/8	1	.406	.050
3/8	1-1/4	.406	.050
3/8	1-1/2	.406	.062
3/8	2	.406	.062
1/2	1-1/2	.531	.062
1/2	2	.531	.062
3/4	1-3/4	.812	.109

316 FLAT WASHERS SMALL SIZES

Size	4	6	8	10
C.D.	.312	.312	.375	.437
I.D.	.125	.156	.174	.203
Thickness	.031	.031	.031	.031

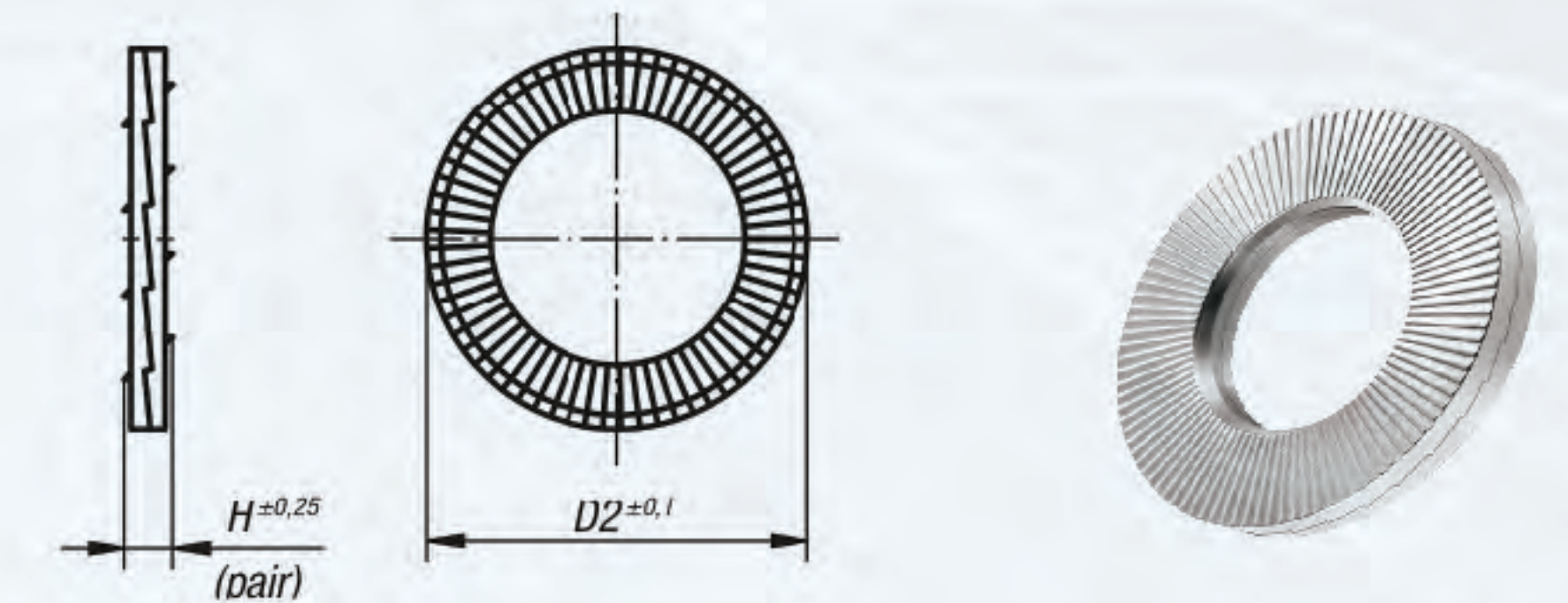
MATRIC - INCH CONVERSION CHART

Metric MM	2	2.5	3	4	5	6	8	10	12	14	16	18	20	22
Approx. Inch	5/64"	3/32"	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"	9/16"	5/8"	11/16"	3/4"	7/8"

Metric MM	25	30	35	40	45	50	60	70	80	90	100	120	140	160
Approx. Inch	1"	1-3/16"	1-3/8"	1-9/16"	1-3/4"	2"	2-3/8"	2-3/4"	3-3/16"	3-1/2"	4"	4-3/4"	5-1/2"	6-1/4"

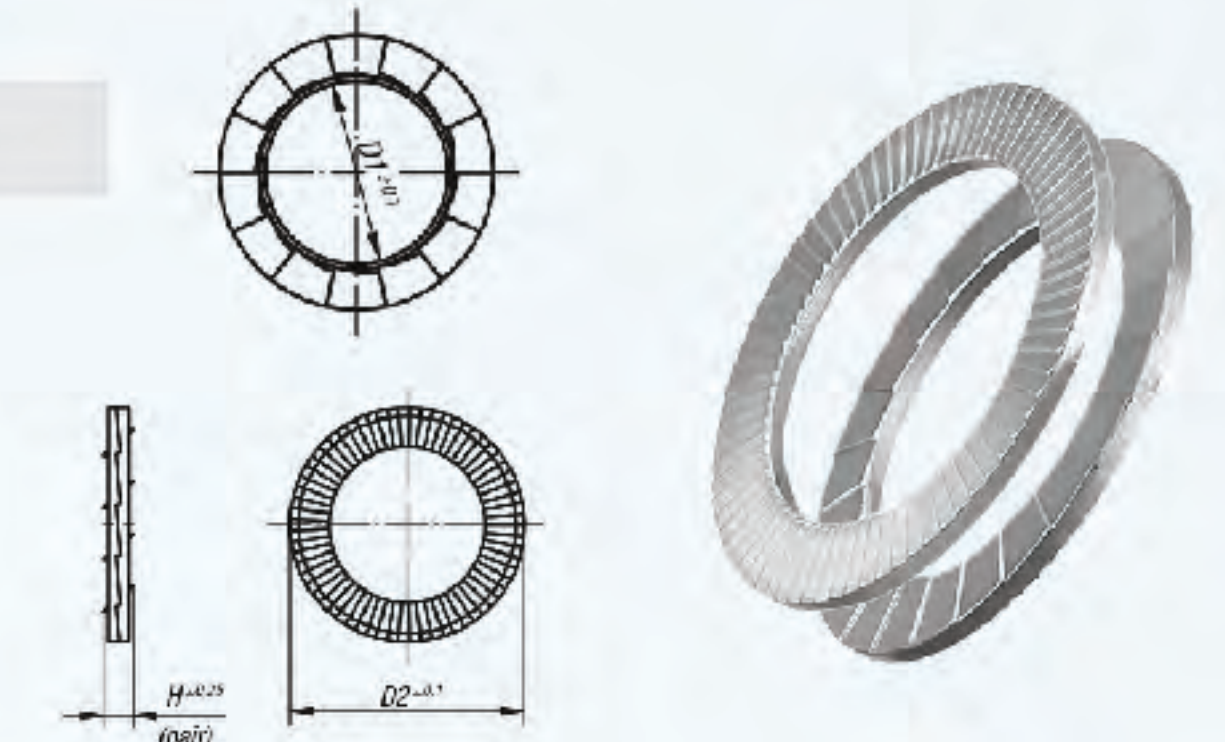
DIN 25201 - DACROMET

SIZE	h
M12	2.00
M16	3.00
M20	3.00
M24	3.20
M27	6.80
M30	6.80



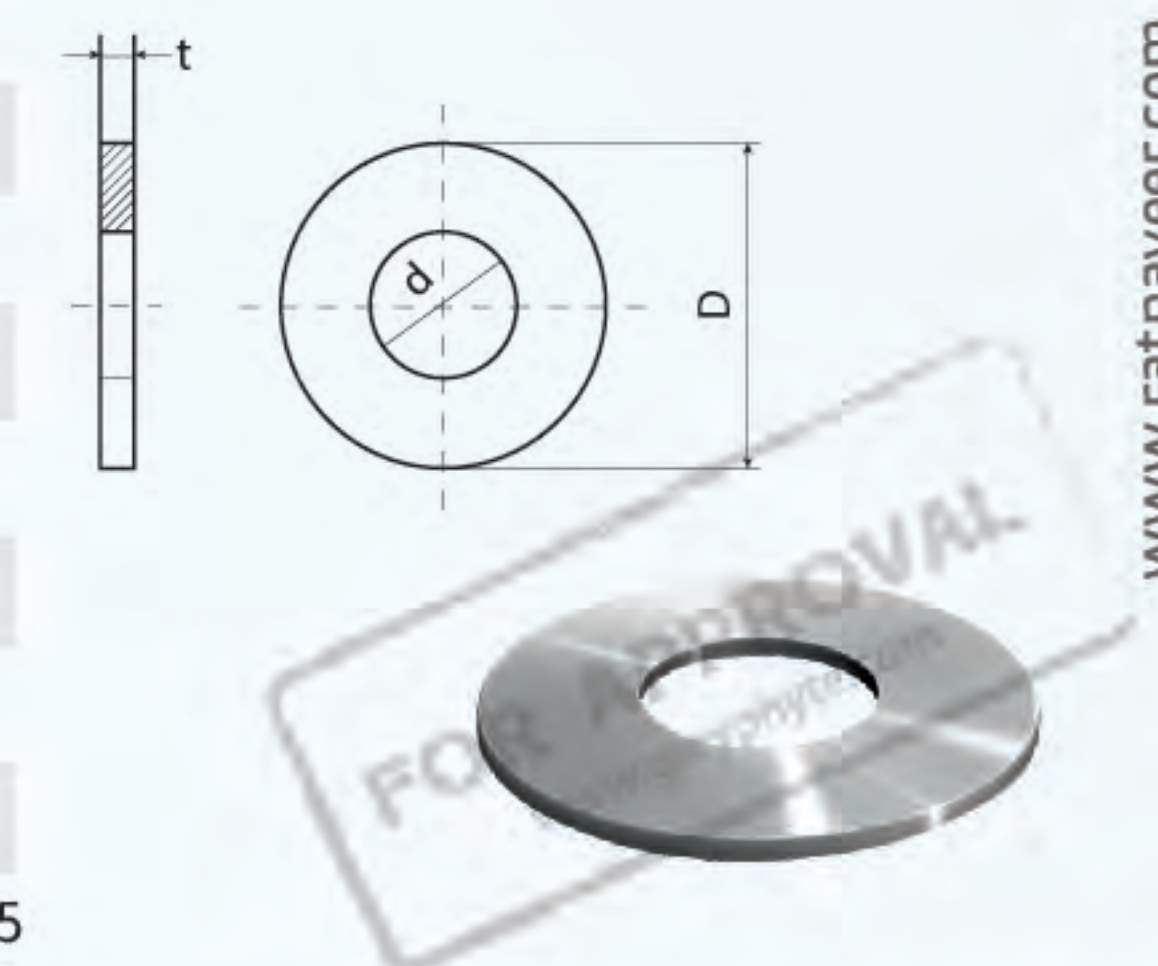
DIN 25201 - SS

SIZE	d1	d2	S(h)
M8	8,7	13,5	2,5
M10	10,7	16,6	2,5
M12	13	19,5	2,5



DIN 9240

SIZE	d1	d2	h
4.3x12x1.0	4.30	12.00	0.95 - 1.05
4.3x15x1.0	4.30	15.00	0.95 - 1.05
4.3x20x1.2	4.30	20.00	1.1 - 1.3
4.3x25x1.5	4.30	25.00	1.4 - 1.6
5.3x15x1.5	5.30	15.00	1.4 - 1.6
5.3x20x1.5	5.30	20.00	1.4 - 1.6
5.3x25x1.5	5.30	25.00	1.4 - 1.6
5.3x30x1.5	5.30	30.00	1.4 - 1.6



AVAILABLE UPTO 12.5X40X1.5

DIN 471

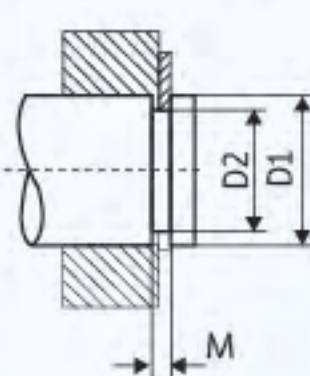
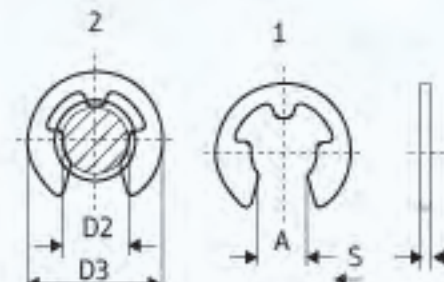
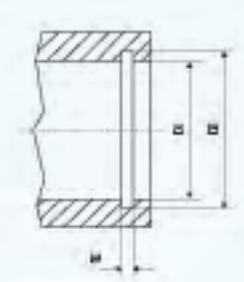
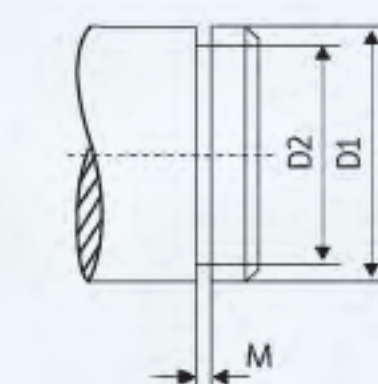
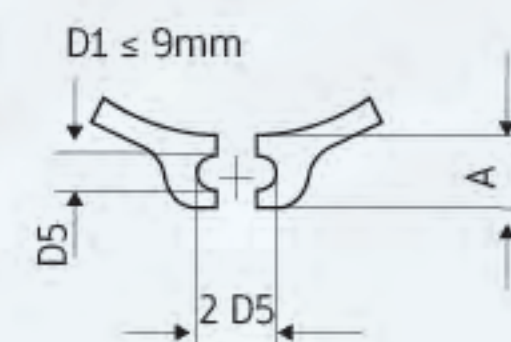
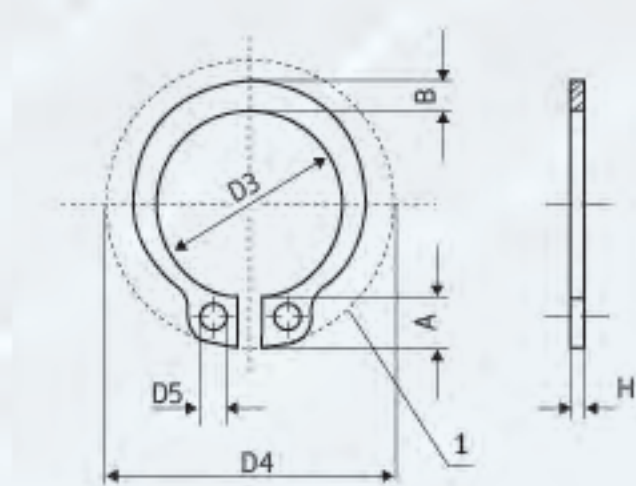
SHAFT DIA.	S		d3		a	b	d5	d2		d4
	Nom.	Perm Dev	Nom.	Perm Dev	max	=	Min	Nom.	Perm Dev	
6	0.7	$\frac{0}{-0.05}$	5.6	$\frac{+0.04}{-0.15}$	2.7	1.3	1.2	5.7	$\frac{0}{-0.05}$	11.7
7	0.8	$\frac{0}{-0.05}$	6.5	$\frac{+0.06}{-0.18}$	3.1	1.4	1.2	6.7	$\frac{0}{-0.06}$	13.5
8	0.8	$\frac{0}{-0.05}$	7.4	$\frac{+0.06}{-0.18}$	3.2	1.5	1.2	7.6	$\frac{0}{-0.06}$	14.7
9	1	$\frac{0}{-0.06}$	8.4	$\frac{+0.06}{-0.18}$	3.3	1.7	1.2	8.6	$\frac{0}{-0.11}$	16
10	1	$\frac{0}{-0.06}$	9.3	$\frac{+0.10}{-0.36}$	3.3	1.8	1.5	9.6	$\frac{0}{-0.11}$	17

DIN 472

SHAFT DIA.	S		d3		a	b	d5	d2		d4
	Nom.	Perm Dev	Nom.	Perm Dev	max	=	Min	Nom.	Perm Dev	
8	0.8	$\frac{0}{-0.05}$	8.7	$\frac{+0.36}{-0.06}$	2.4	1.1	1	8.40	$\frac{+0.09}{-0.09}$	3
9	0.8	$\frac{0}{-0.05}$	9.8	$\frac{+0.36}{-0.06}$	2.5	1.3	1	9.4	$\frac{+0.09}{-0.09}$	3.7
10	1	$\frac{0}{-0.06}$	10.8	$\frac{+0.36}{-0.06}$	3.2	1.4	1.2	10.4	$\frac{+0.11}{-0.11}$	3.3
11	1	$\frac{0}{-0.06}$	11.8	$\frac{+0.36}{-0.06}$	3.3	1.5	1.2	11.4	$\frac{+0.11}{-0.11}$	4.1
12	1	$\frac{0}{-0.06}$	13	$\frac{+0.36}{-0.06}$	3.4	1.7	1.5	12.5	$\frac{+0.11}{-0.11}$	4.9

DIN 6799

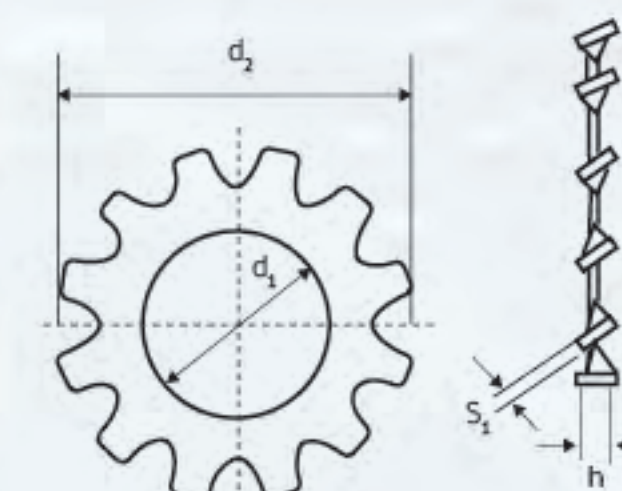
Shaft Diameter d1 Nominal Size	Groove Diameter d2		Thickness S		Groove Diameter a		Diameter d3 (Max)
	(Nom)	Perm. Dev.	(Nom)	Perm. Dev.	(Nom)	Perm. Dev.	
$6 \leq d1 \leq 8$	5	0-0.075	0.7	± 0.02	4.11	± 0.048	11.3
$7 \leq d1 \leq 9$	6	0-0.075	0.7	± 0.02	5.26	± 0.048	12.3
$8 \leq d1 \leq 11$	7	0-0.09	0.9	± 0.02	5.84	± 0.048	14.3
$9 \leq d1 \leq 12$	8	0-0.09	1	± 0.03	6.52	± 0.058	16.3
$10 \leq d1 \leq 14$	9	0-0.09	1.1	± 0.03	7.63	± 0.058	18.8
$11 \leq d1 \leq 15$	10	0-0.09	1.2	± 0.03	8.32	± 0.058	20.4



AVAILABLE UPTO 32 ≤ D1 ≤ 42

DIN 6797 A

SIZE	d1	d2	h
4.3	4.30-4.48	8.00-7.64	0.50 (+/-0.030)
5.3	5.30- 5.48	10.00- 9.64	0.60 (+/-0.030)
6.4	6.40- 6.62	11.00- 10.57	0.70 (+/-0.035)
7.4	7.40-7.62	12.50-12.07	0.80 (+/-0.035)
8.4	8.40- 8.62	15.00-14.57	0.80 (+/-0.035)
10.5	10.50-10.77	18.00-17.57	0.90 (+/-0.035)
13	13.00-13.27	20.50-19.98	1.00 (+/-0.035)
15	15.00-15.27	24.00-23.48	1.00 (+/-0.035)



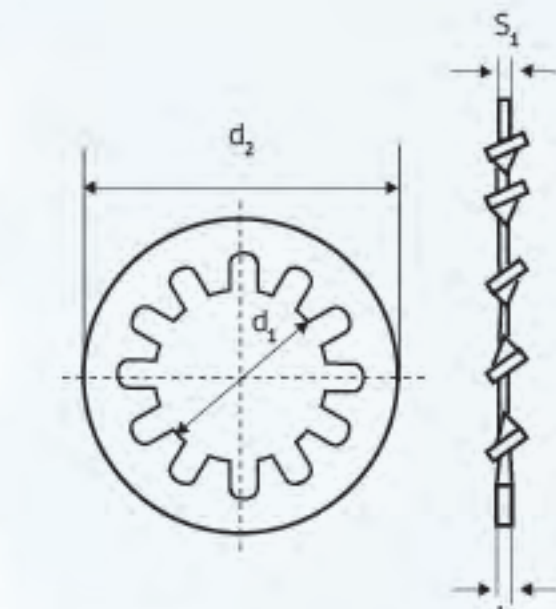
Type A, with external teeth



AVAILABLE UPTO 31

DIN 6797-J

SIZE	d1	d2	S1(h)
4.3	4.30-4.48	8.00- 7.64	0.50 (+/-0.030)
5.3	5.30-5.48	10.00-9.64	0.60 (+/-0.030)
6.4	6.40-6.62	11.00-10.57	0.70 (+/-0.035)
7.4	7.40-7.62	12.50-12.07	0.80 (+/-0.035)
8.4	8.40-8.62	15.00-14.57	0.80 (+/-0.035)
10.5	10.50-10.77	18.00-17.57	0.90 (+/-0.035)
13	13.00-13.27	20.50-19.98	1.00 (+/-0.035)
15	15.00-15.27	24.00-23.48	1.00 (+/-0.035)



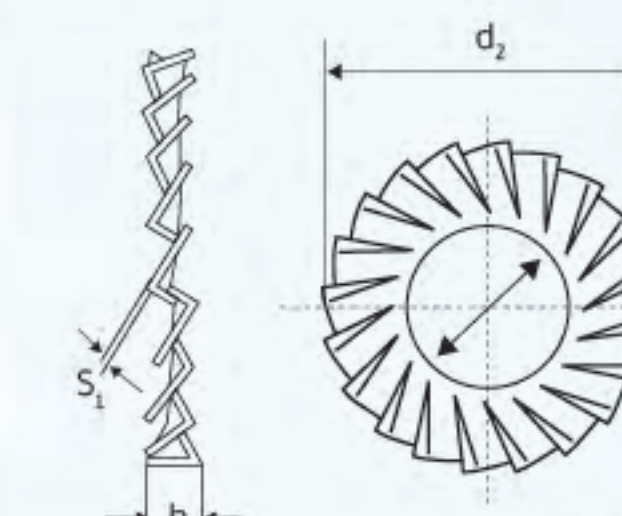
Type J, with internal teeth



AVAILABLE UPTO 31

DIN 6798-A

SIZE	d1	d2	h
4.3	4.30-4.48	8.00-7.64	0.50 (+/-0.030)
5.3	5.30-5.48	10.00-9.64	0.60 (+/-0.030)
6.4	6.40-6.62	11.00-10.57	0.70 (+/-0.035)
7.4	7.40-7.62	12.50-12.07	0.80 (+/-0.035)
8.4	8.40-8.62	15.00-14.57	0.80 (+/-0.035)
10.5	10.50-10.77	18.00-17.57	0.90 (+/-0.035)
13	13.00-13.27	20.50-19.98	1.00 (+/-0.035)
15	15.00-15.27	24.00-23.48	1.00 (+/-0.035)



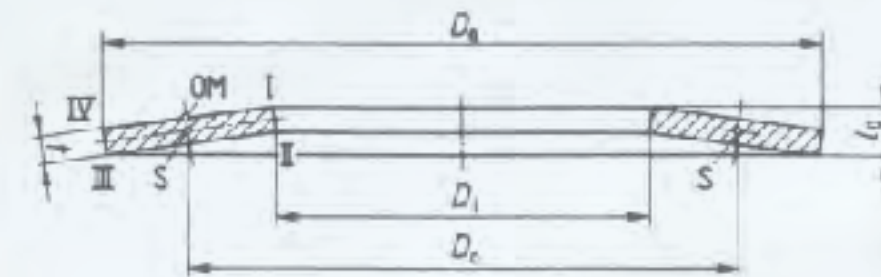
Type A, with external teeth



AVAILABLE UPTO 31

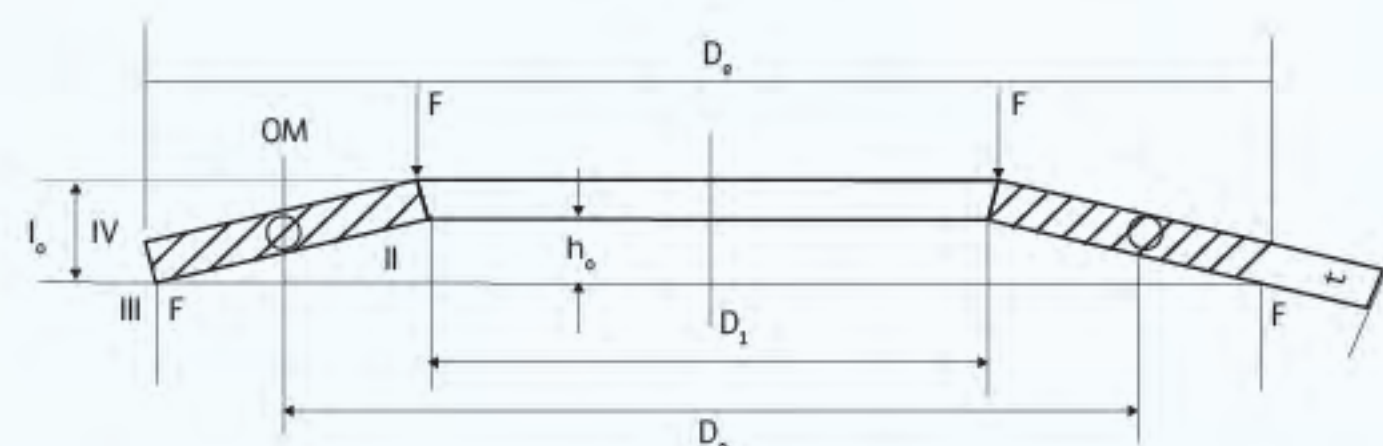
DIN 2093

D_e	D_i	T or (T') ¹⁾
12.5	6.2	0.7
20	10.2	1.1
25	12.2	1.5
50	25.4	3



CONICAL DISC SPRING OF DIN 2093 SERIES A

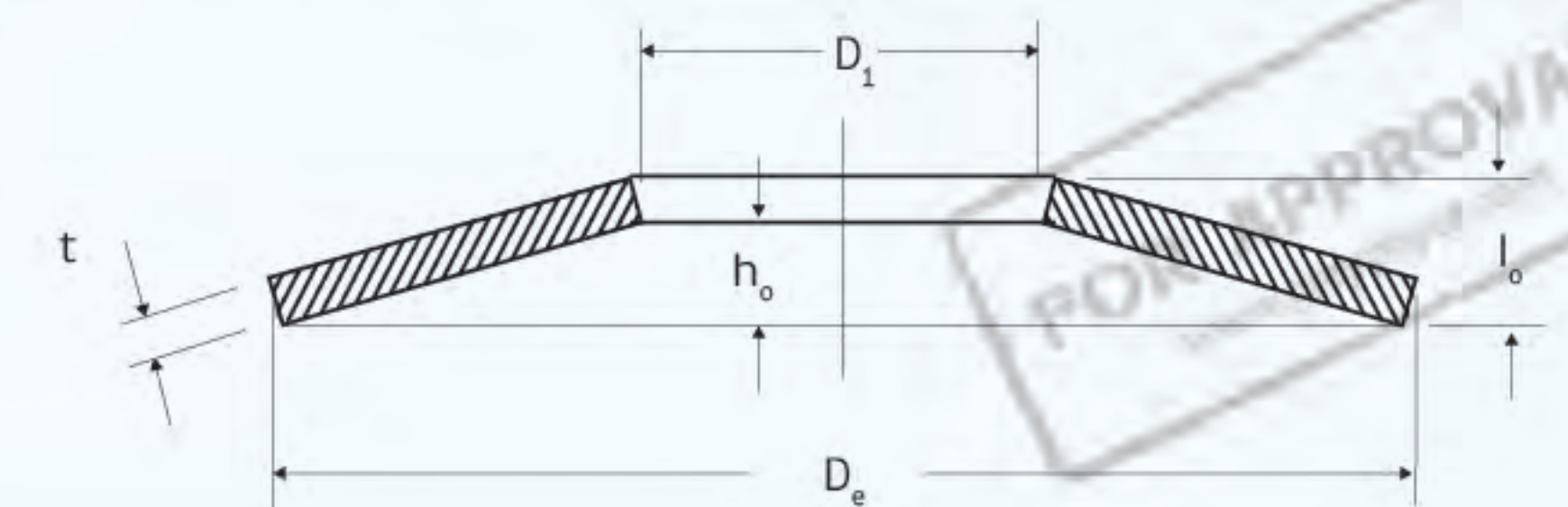
Group	D_e h12	D_i H12	t or (rr) ¹⁾	h_o	l_o	F N	S	$l_o S$ (where $s=0.75h_o$)	$a_o M^2$ $\frac{N}{mm^2}$	$a_{II}^{3)} a_{III}$ $\frac{N}{mm^2}$
1	8	4.2	0.2	0.25	0.45	39	0.19	0.26	-762	1040
	10	5.2	0.25	0.3	0.55	58	0.23	0.32	-734	980
	12.5	6.2	0.35	0.45	0.8	152	0.34	0.46	-944	1280
	14	7.2	0.35	0.45	0.8	123	0.34	0.46	-769	1060
	16	8.2	0.4	0.5	0.9	155	0.38	0.52	-751	1020
	18	9.2	0.45	0.6	1.05	214	0.45	0.6	-789	1110
	20	10.2	0.5	0.65	1.15	254	0.49	0.66	-772	1070
	22.5	11.2	0.6	0.8	1.4	425	0.6	0.8	-883	1230
	12.2	6.2	0.7	0.9	1.6	601	0.68	0.92	-936	1270
	25	14.2	0.8	1	1.8	801	0.75	1.05	-961	1300
	28	16.3	0.8	1.05	1.85	687	0.79	1.06	-810	1130
	31.5	18.3	0.8	1.15	2.05	831	0.86	1.19	-779	1080
	35.5	20.4	0.9	1.3	2.3	1020	0.98	1.32	-772	1070
	40	20.4	1	1.3	2.3	1020	0.98	1.32	-772	1070
	45	22.4	1.25	1.6	2.85	1890	1.2	1.65	-920	1250
	50	25.4	1.25	1.6	2.85	1550	1.2	1.65	-754	1040
2	56	28.5	1.5	1.95	3.45	2620	1.46	1.99	-879	1220
	63	31	1.8	2.35	4.15	4240	1.76	2.39	-985	1350
	71	36	2	2.6	4.6	5140	1.95	2.65	-971	1340
	80	41	2.25	2.95	5.2	6610	2.21	2.99	-982	1370
	90	46	2.5	3.2	5.7	7680	2.4	3.3	-935	1290
	100	51	2.7	3.5	6.2	8610	2.63	3.57	-895	1240
	112	57	3	3.9	6.9	10500	2.93	3.97	-882	1220
	125	64	3.5	4.5	8	15400	3.38	4.62	-956	1320
	140	72	3.8	4.9	8.7	17 200	3.68	5.02	-904	1250
	160	82	4.3	5.6	9.9	21 800	4.2	5.7	-892	1240
	180	92	4.8	6.2	11	26 400	4.65	6.35	-869	1200
	200	102	5.5	7	12.5	36 100	5.25	7.25	-910	1250
	225	112	6.5 (6.2)	7.1	13.6	44 600	5.33	8.27	-840	1140
	250	127	7 (6.7)	7.8	14.8	50 500	5.85	8.95	-814	1120
	225	112	8 (7.5)	6.5	14.5	70800	4.88	9.62	-951	1180
	250	127	10 (9.4)	7	17	119000	5.25	11.75	-1050	1240



CONICAL DISC SPRING OF DIN 2093 SERIES B

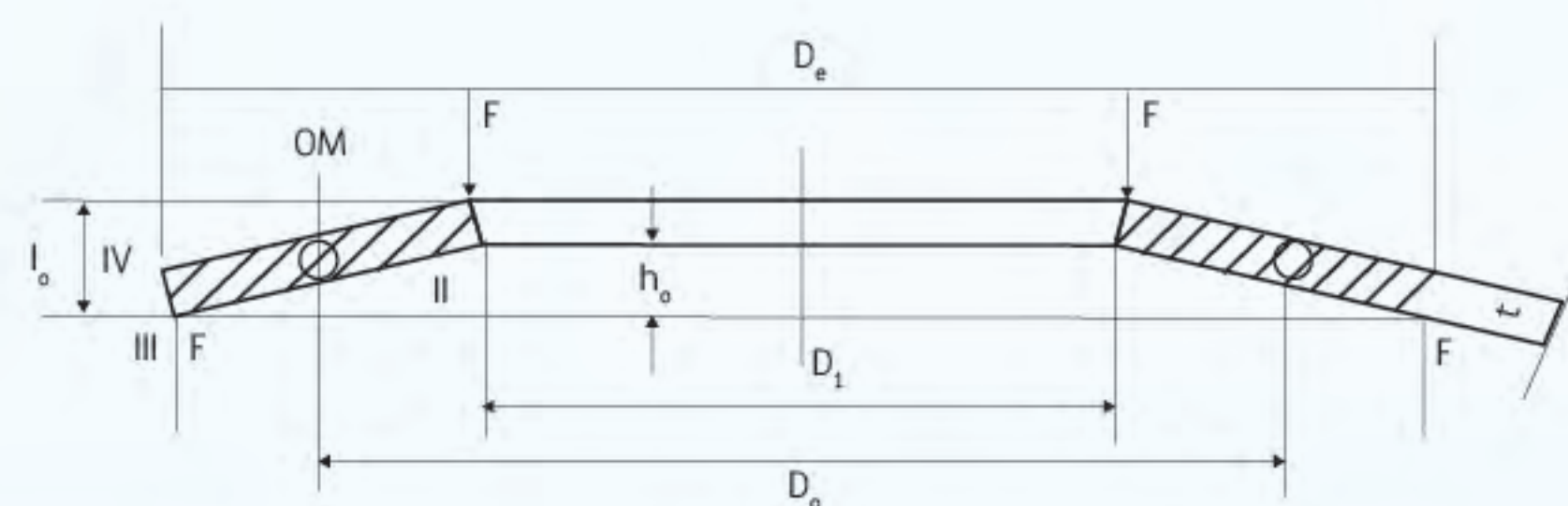
Group	D_e h12	D_i H12	t or (r') ¹⁾	h_o	l_o	F N	S	$l_o S$ (where $s=0.75h_o$)	$a_o M^2$ $\frac{N}{mm^2}$	$a_{II}^{3)} a_{III}$ $\frac{N}{mm^2}$
1	8	4.2	0.3	0.25	0.55	119	0.19	0.36	-1140	1330
	10	5.2	0.4	0.3	0.7	213	0.23	0.47	-1170	1300
	12.5	6.2	0.5	0.35	0.85	291	0.26	0.59	-1000	1110
	14	7.2	0.5	0.4	0.9	279	0.3	0.6	-970	1100
	16	8.2	0.6	0.45	1.05	412	0.34	0.71	-1010	1120
	18	9.2	0.7	0.5	1.2	572	0.38	0.82	-1040	1130
	20	10.2	0.8	0.55	1.35	745	0.41	0.94	-1030	1110
	22.5	11.2	0.8	0.65	1.45	710	0.49	0.96	-962	1080
	25	12.2	0.9	0.7	1.6	868	0.53	1.07	-938	1030
	28	14.2	1	0.8	1.8	1110	0.6	1.2	-961	1090
	31.5	16.3	1.25	0.9	2.15	1920	0.68	1.47	-1090	1190
	35.5	18.3	1.25	1	2.25	1700	0.75	1.5	-944	1070
	40	20.4	1.5	1.15	2.65	2620	0.86	1.79	-1020	1130
	45	22.4	1.75	1.3	3.05	3660	0.98	2.07	-1050	1150
	50	25.4	2	1.4	3.4	4760	1.05	2.35	-1060	1140
2	56	28.5	2	1.6	3.6	4440	1.2	2.4	-963	1090
	63	31	2.5	1.75	4.25	7180	1.31	2.94	-1020	1090
	71	36	2.5	2	4.5	6730	1.5	3	-934	1060
	80	41	3	2.3	5.3	10500	1.73	3.57	-1030	1140
	90	46	3.5	2.5	6	14200	1.88	4.12	-1030	1120
	100	51	3.5	2.8	6.3	13100	2.1	4.2	-926	1050
	112	57	4	3.2	7.2	17800	2.4	4.8	-963	1090
	125	64	5	3.5	8.5	30000	2.63	5.87	-1060	1150
	140	72	5	4	9	27900	3	6	-970	1110
	160	82	6	4.5	10.5	41100	3.38	7.12	-1000	1110
	180	92	6	5.1	11.1	37500	3.83	7.27	-895	1040
	200	102	8 (7.5)	5.6	13.6	76400	4.2	9.4	-1060	1250
	225	112	8 (7.5)	6.5	14.5	70800	4.88	9.62	-951	1180
	250	127	10 (9.4)	7	17	119000	5.25	11.75	-1050	1240
	225	112	8 (7.5)	6.5	14.5	70800	4.88	9.62	-951	1180
	250	127	10 (9.4)	7	17	119000	5.25	11.75	-1050	1240

D_e = External Diameter of Disc
 D_i = Internal Diameter of Disc
 l_o = Free Height of Disc
 t = Material Thickness of Disc
 h_o = Free Cone Height of Disc



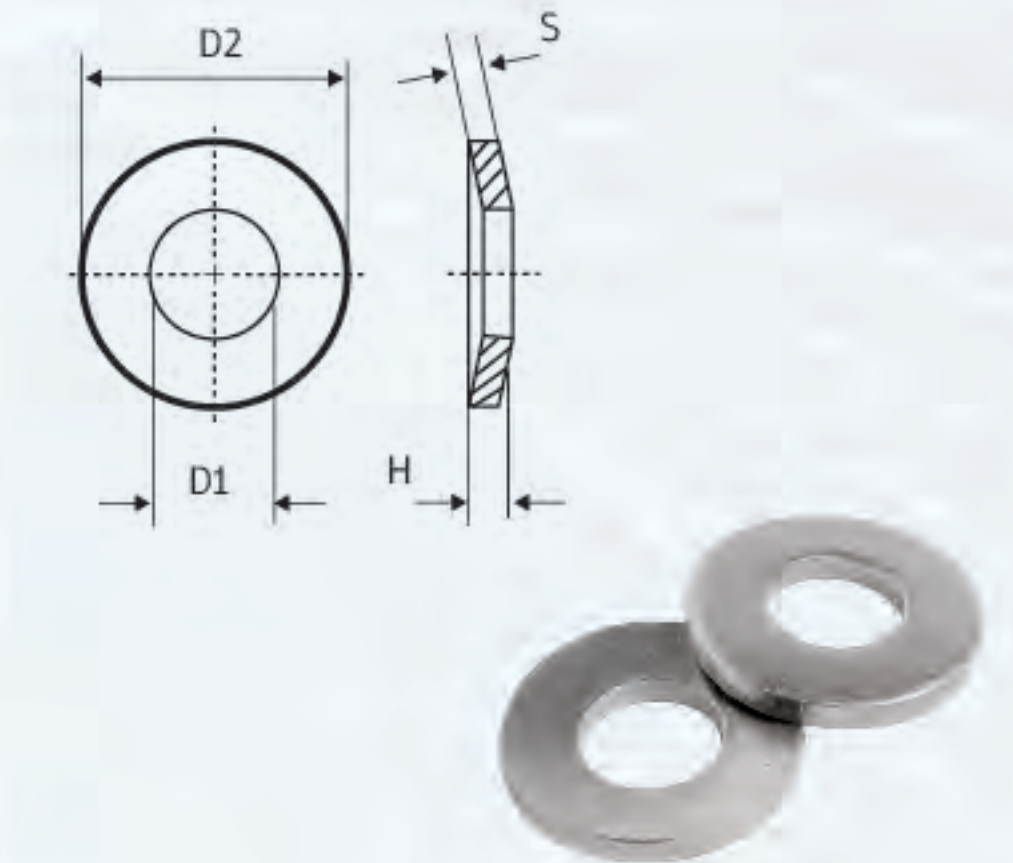
CONICAL DISC SPRING OF DIN 2093 SERIES C

Group	D _e h12	D ₁ H12	t or (r ^r) ¹⁾	h ₀	l ₀	F N	S	l ₀ S (where s=0.75h ₀)	a ₀ M ² N mm ²	a ₁₁ ³⁾ a ₁₁ N mm ²
1	8	4,2	0,4	0,2	0,6	210	0,15	0,45	-1200	1220*
	10	5,2	0,5	0,25	0,75	329	0,19	0,56	-1210	1240*
	12,5	6,2	0,7	0,3	1	673	0,23	0,77	-1280	1420*
	14	7,2	0,8	0,3	1,1	813	0,23	0,87	-1190	1340*
	16	8,2	0,9	0,35	1,25	1000	0,26	0,99	-1160	1290*
	18	9,2	1	0,4	1,4	1250	0,3	1,1	-1170	1300*
	20	10,2	1,1	0,45	1,55	1530	0,34	1,21	-1180	1300*
2	22,5	11,2	1,25	0,5	1,75	1950	0,38	1,37	-1170	1320*
	25	12,2	1,5	0,55	2,05	2910	0,41	1,64	-1210	1410*
	28	14,2	1,5	0,65	2,15	2850	0,49	1,66	--1180	1280*
	31,5	16,3	1,75	0,7	2,45	3900	0,53	1,92	-1190	1310*
	35,5	18,3	2	0,8	2,8	5190	0,6	2,2	-1210	1330*
	40	20,4	2,25	0,9	3,15	6540	0,68	2,47	-1210	1340*
	45	22,4	2,5	1	3,5	7720	0,75	2,75	-1150	1300*
	50	25,4	3	1,1	4,1	12000	0,83	3,27	-1250	1430*
	56	28,5	3	1,3	4,3	11400	0,98	3,32	-1180	1280*
	63	31	3,5	1,4	4,9	15000	1,05	3,85	-1140	1300*
	71	36	4	1,6	5,6	20500	1,2	4,4	-1200	1330*
	80	41	5	1,7	6,7	33700	1,28	5,42	-1260	1460*
	90	46	5	2	7	31400	1,5	5,5	-1170	1300*
	100	51	6	2,2	8,2	48000	1,65	6,55	-1250	1420*
	112	57	6	2,5	8,5	43800	1,88	6,62	-1130	1240*
3	125	64	8(7,5)	2,6	10,6	85900	1,95	8,65	-1280	1330*
	140	72	8(7,5)	3,2	11,2	85300	2,4	8,8	-1260	1280*
	160	82	10(9,4)	3,5	13,5	139000	2,63	10,87	-1320	1340*
	180	92	10(9,4)	4	14	125000	3	11	-1180	1200*
	200	102	12(11,25)	4,2	16,2	183000	3,15	13,05	-1210	1230*
	225	112	12 (11,25)	5	17	171000	3,75	13,25	-1120	1140
	250	127	14 (13,1)	5,6	19,6	249000	4,2	15,4	-1200	1220



DIN 6796

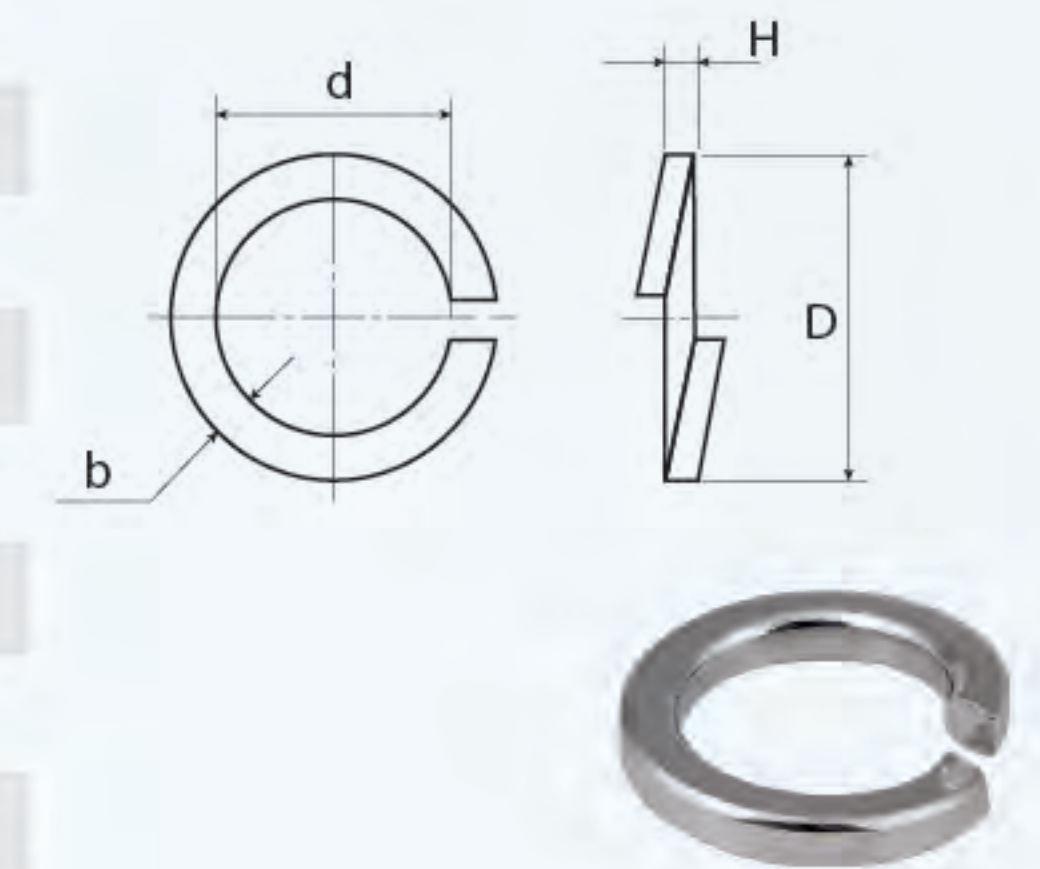
SIZE	D1	D2	h
4.3	4.30-4.60	9.00-8.64	1.00 (+/- 0.035)
5.3	5.30-5.60	11.00-10.57	1.20 (+/- 0.04)
6.4	6.40-6.76	14.00-13.57	1.50 (+/- 0.04)
7.4	7.40-7.76	17.00-16.57	1.75 (+/- 0.05)
8.4	8.40-8.76	18.00-17.57	2.00 (+/- 0.05)
10.5	10.50-10.93	23.00-22.48	2.50 (+/- 0.05)
13	13.00-13.43	29.00-28.48	3.00 (+/- 0.06)
15	15.00-15.43	35.00-34.38	3.50 (+/- 0.06)



AVAILABLE UPTO 31

DIN 127 (TYPE-B)

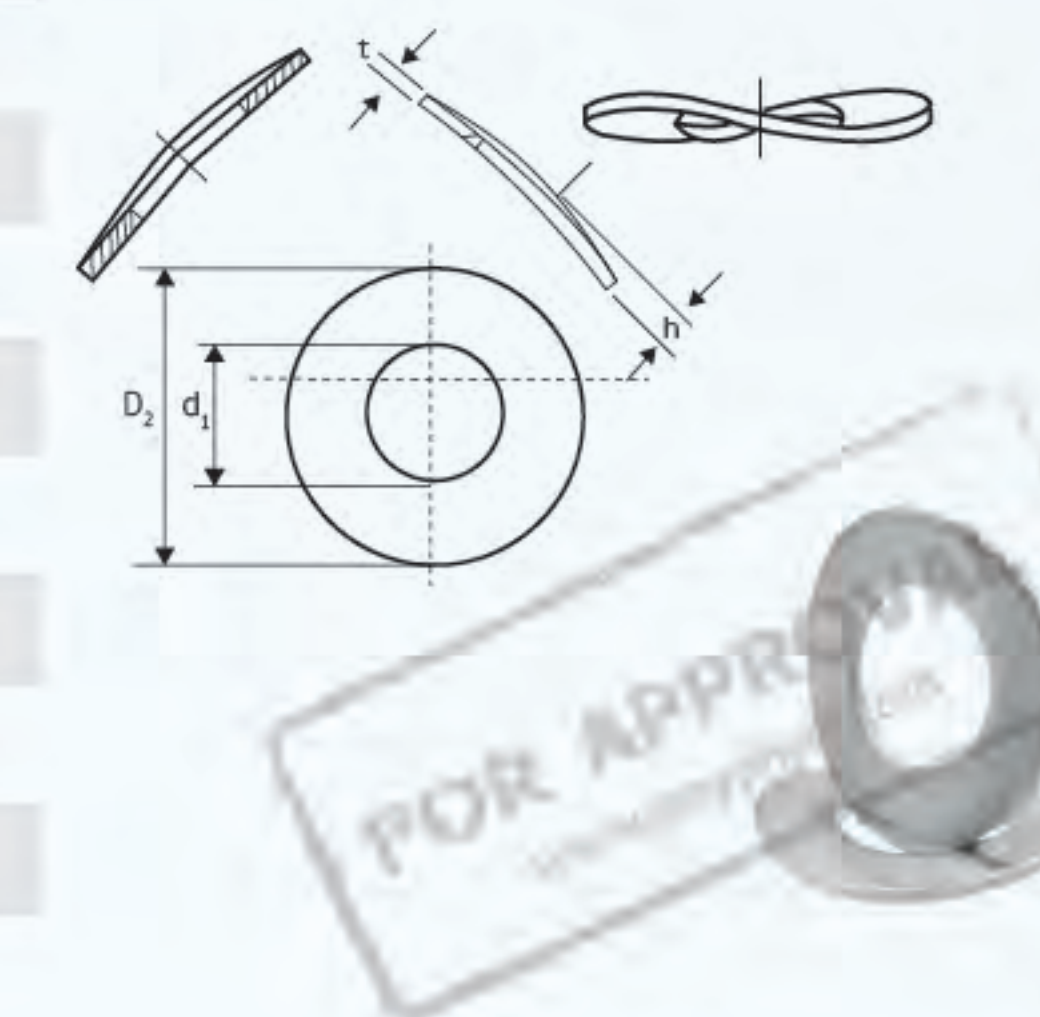
SIZE	d1	d2	h1
M4	4.10-4.40	7.60	0.90(±0.10)
M5	5.10-5.40	9.20	1.20(±0.10)
M6	6.10-6.50	11.80	1.60(±0.10)
M7	7.10-7.50	12.80	1.60(±0.10)
M8	8.10-8.50	14.80	2.00(±0.10)
M10	10.20-10.70	18.10	2.20(±0.15)
M12	12.20-12.70	21.10	2.50(±0.15)
M14	14.20-14.70	24.10	3.00(±0.15)



AVAILABLE UPTO M-24

DIN 137-A

SIZE	d1	d2	h
3.2	3.20-3.50	8.45-7.55	0.35-0.45
3.7	3.70-4.00	8.45-7.55	0.35-0.45
4.3	4.30-4.60	9.45- 8.55	0.45-0.55
5.3	5.30-5.60	11.55-10.45	0.45-0.55
6.4	6.40-6.760	12.55-11.45	0.45-0.55
7.4	7.40-7.760	14.55-13.45	0.45-0.55
8.4	8.40-8.760	15.55-14.45	0.45-0.55
10.5	10.50-10.93	21.65-20.35	0.74-0.86



DIN 137-B

SIZE	d1	d2	h
3.2	3.20-3.50	8.45-7.55	0.45-0.55
3.7	3.70-4.00	8.45-7.55	0.45-0.55
4.3	4.30-4.60	9.45-8.55	0.45-0.55
5.3	5.30-5.60	11.55-10.45	0.45-0.55
6.4	6.40-6.76	12.55-11.45	0.45-0.55
7.4	7.40-7.76	14.55-13.45	0.74-0.86
8.4	8.40-8.76	15.55-14.45	0.74-0.86
10.5	10.50-10.93	21.65-20.35	0.93-1.07

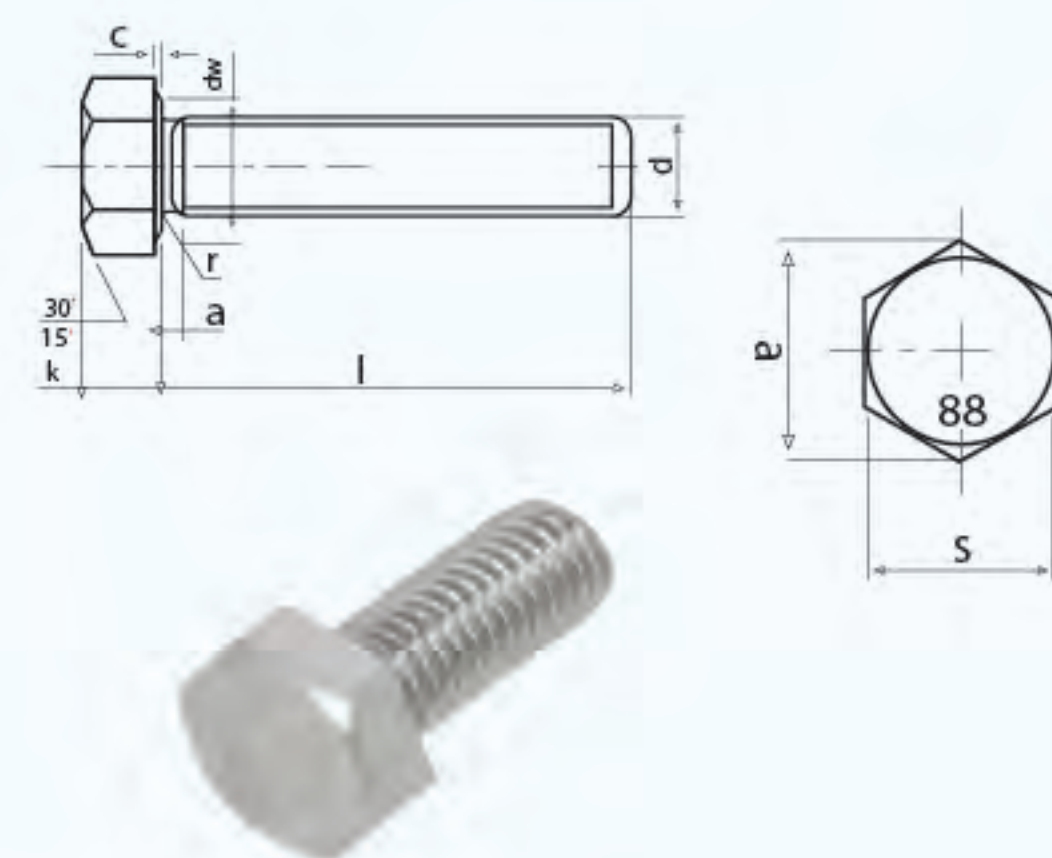
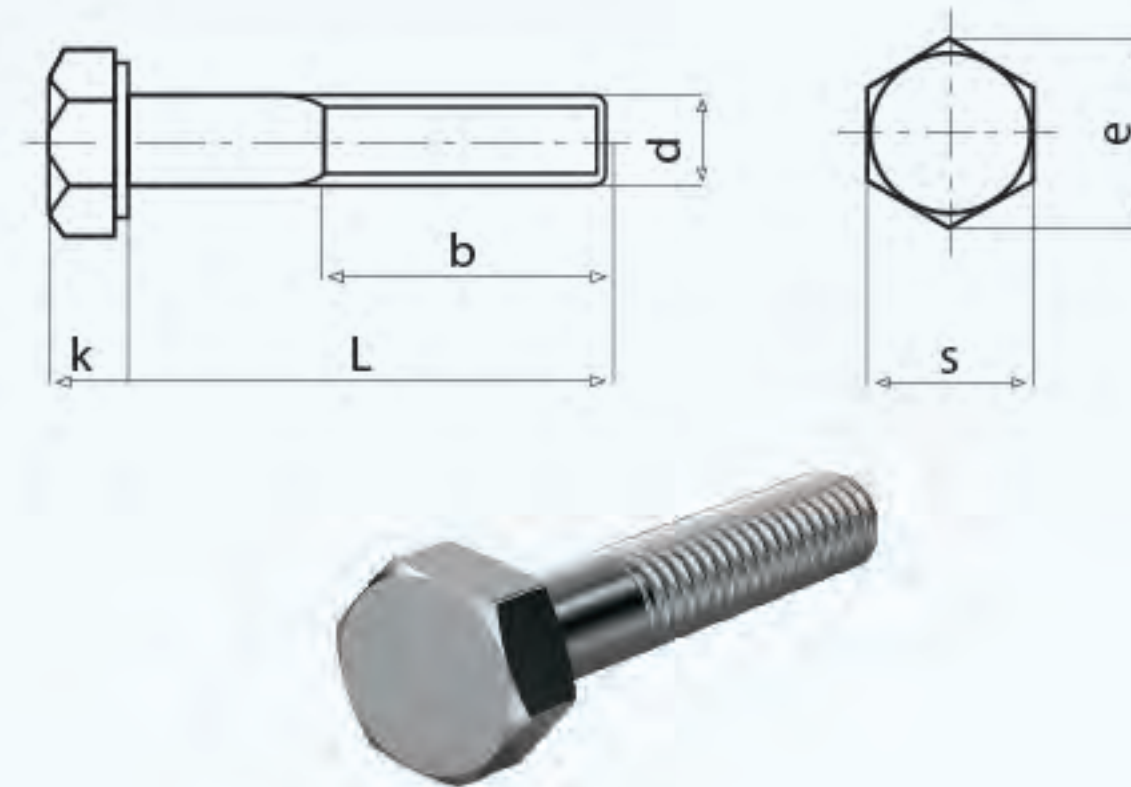
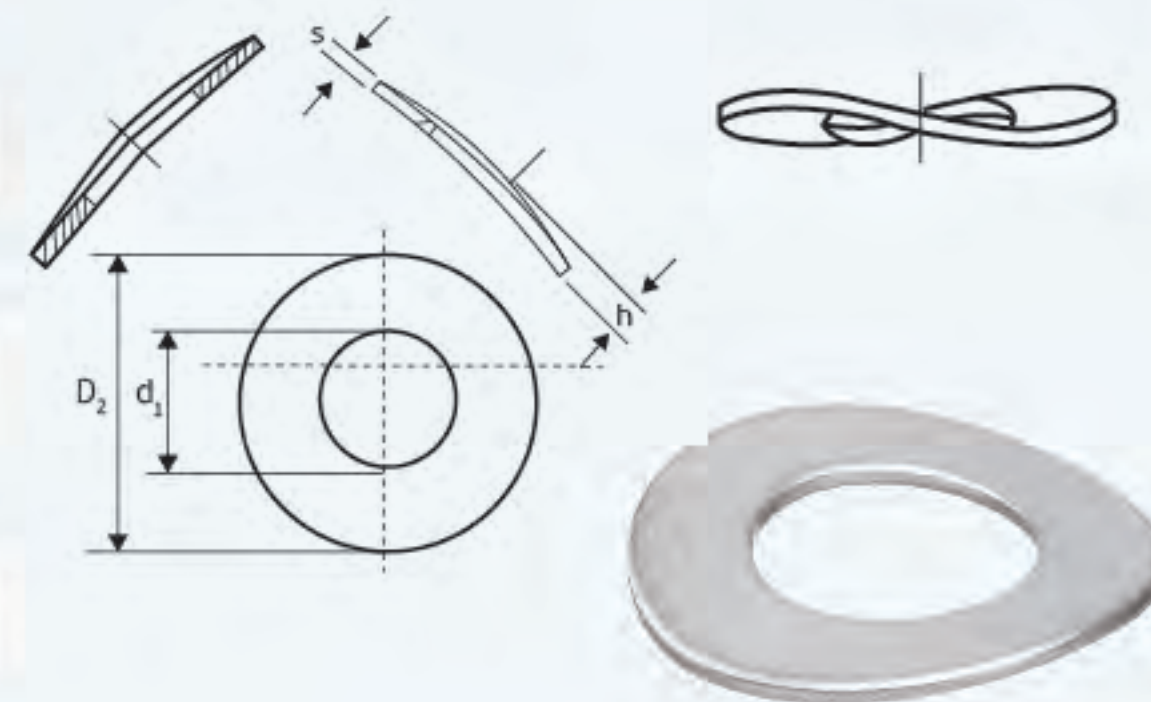
AVAILABLE UPTO 37

| SCREWS DIN 931

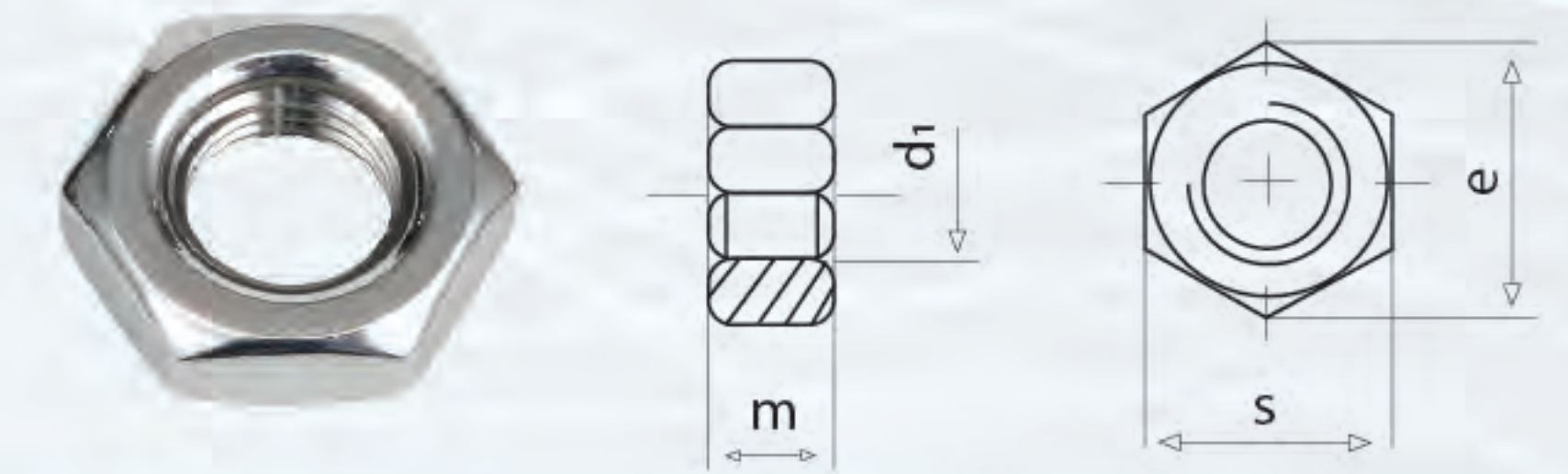
d1	b 125	b to 200	b over	k	e	s
M4	14	-	-	2.8	7.66	7
M5	16	-	-	3.5	8.79	8
M6	18	24	-	4	11.05	10
M8	22	28	-	5.3	14.38	13
M10	26	32	45	6.4	18.9	17
M12	30	36	49	7.5	21.1	19
M14	34	40	53	8.8	24.49	22
M16	38	44	57	10	26.75	24
M18	42	48	61	11.5	30.14	27
M20	46	52	65	12.5	33.53	30

DIN 933

Threads (d)		M6	M8	M10	M12	M16	M20
Across Flat (s)	Min	9.78	12.73	16.73	18.7	23.67	29.67
	Max	10.00	13.00	17.00	19.00	24.00	30.00
Across corner (e)	Min	11.05	14.38	18.90	21.10	26.75	33.53
	Max	11.05	14.38	18.90	21.10	26.75	33.53
Head Thickness(k)	Min	3.85	5.15	6.22	7.32	9.82	12.28
	Max	4.15	5.45	6.58	7.68	10.18	12.72
Unthreaded Length (a)	Min	1.00	1.25	1.5	1.75	2.00	2.50
	Max	3.00	4.00	4.50	5.30	6.00	7.50
Washer face Depth (c)	Min	0.15	0.15	0.15	0.15	0.20	0.20
	Max	0.50	0.60	0.60	0.60	0.80	0.80
Washer face Dia (dw)	Min	8.88	11.63	15.60	17.40	22.49	28.19
	Max	8.88	11.63	15.60	17.40	22.49	28.19
Head junction Radius (r)	Min	0.25	0.40	0.40	0.60	0.60	0.80



| NUTS DIN 934



d1	M1,6	M2	M2,3	M2,5	M3	M3,5	M4	M5	M6
e min	3.41	4.32	4.88	5.45	6.01	6.58	7.66	8.79	11.05
S	3.2	4	4.5	5	5.5	6	7	8	10
m max	1.3	16	1.8	2	2.4	2.8	3.2	4.1	5

d1	M7	M8	M10	M12	M14	M16	M18	M20	M22
e min	12.12	14.38	18.9	21.1	24.49	26.75	29.56	32.95	35.03
S	11	13	17	19	22	24	27	30	32
m max	5.5	6.5	8	10	11	13	15	16	18

d1	M24	M27	M30	M33	M36	M39	M42	M45	M48
e min	39.55	45.2	50.85	55.37	60.79	66.44	71.3	76.95	82.6
S	36	41	46	50	55	60	65	70	75
m max	19	22	24	26	29	31	34	36	38

d1	M52	M56	M60	M64	M72	M80	M90	Material: carbon steel, stainless steel 304/316, brass, nylon, copper, aluminum
e min	89.56	93.56	99.21	104.86	116.16	127.46	144.08	
S	80	85	90	95	105	115	130	
m max	42	45	48	51	58	64	72	

d1	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"
threads/in	20	18	16	14	13	12	11	10	9
s"	7/16"	1/2"	9/16"	11/16"	3/4"	7/8"	15/16"	1 1/8"	1 5/16"
s mm	11.1	12.7	14.3	17.5	19	22.2	23.8	28.6	33.3
m	5.8	7	8.6	9.8	11.4	12.6	14.2	16.9	19.7

DIN 6921

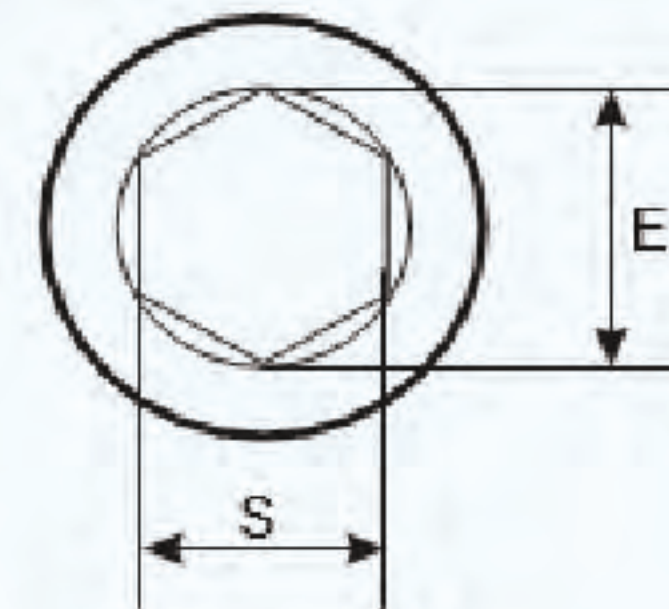
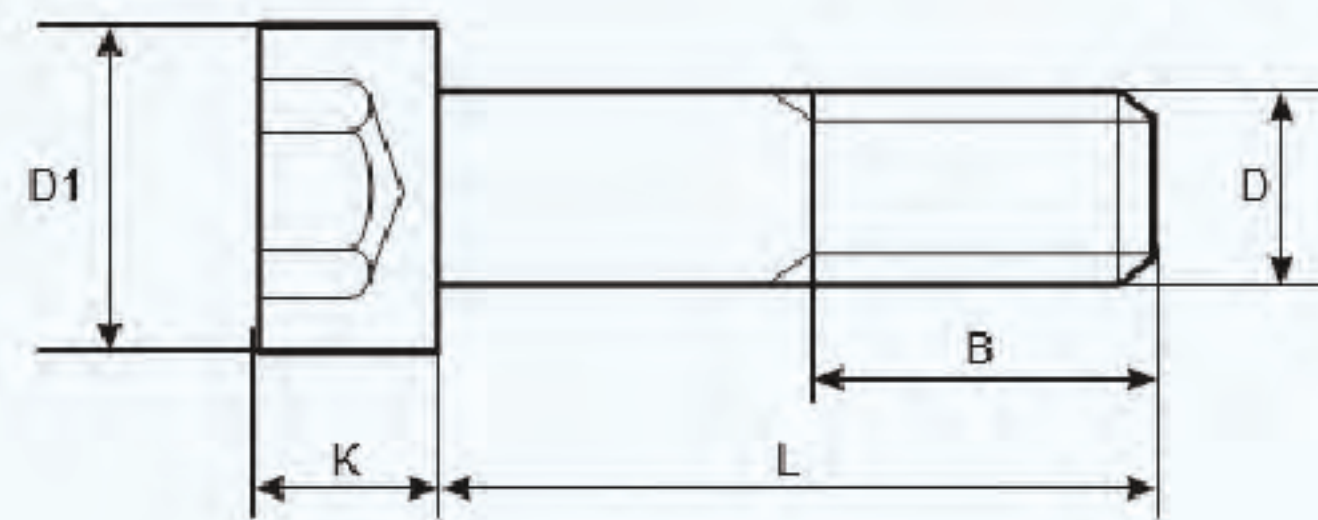
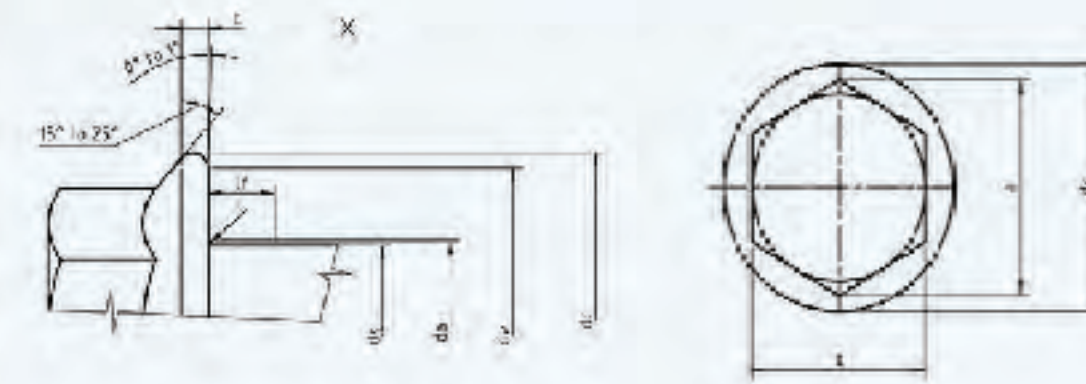
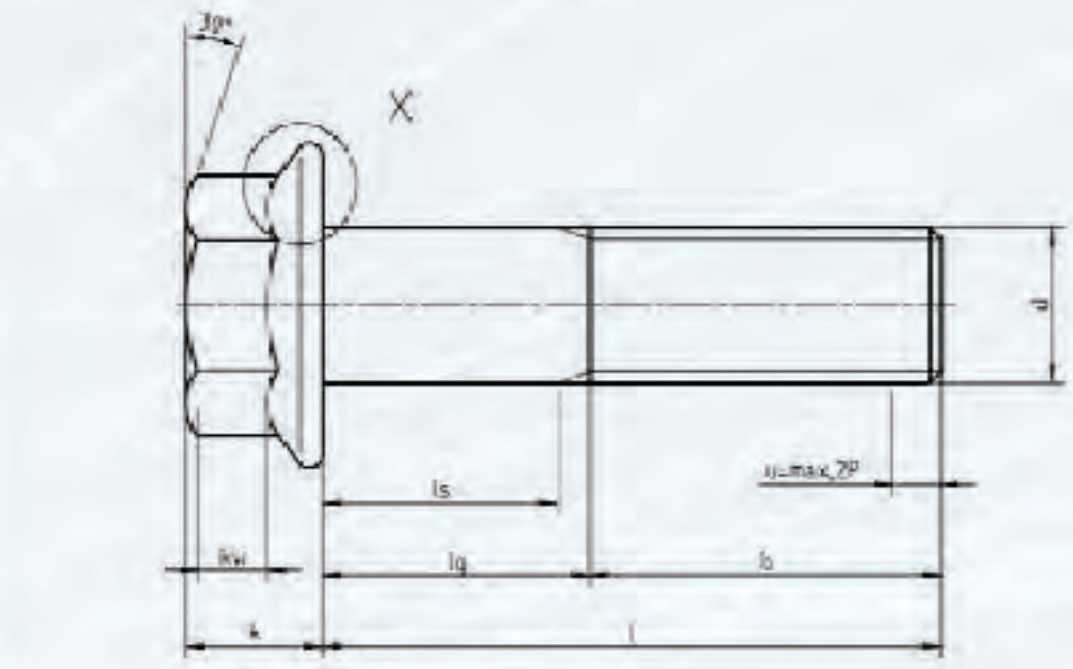
Thread		M5	M6	M8	M10
size d		-	-	M8 x 1	M10 x 1.25
		-	-	-	(M10 x 1)
P		0.8	1	1.25	1.5
C	Min.	1	1.1	1.2	1.5
	Max.	5	6	8	10
da	Max.	5.75	6.75	8.75	10.8
dc	Max.	11.8	14.2	17.9	21.8
dw	Min.	9.8	12.2	15.8	19.6
e	Min.	8.79	11.05	14.38	16.64
h	Max.	6.2	7.3	9.4	11.4
m	Min.	4.7	5.7	7.6	9.6
m'	Min.	2.2	3.1	4.5	5.5
s	Nominal size = max.	8	10	13	15
	Min.	7.78	9.78	12.73	14.73
r	Max.	0.3	0.36	0.48	0.6

AVAILABLE UPTO 20

DIN 912

D	M3	M4	M5	M6	M8	M10
D1	5.5	7	8.5	10	13	16
K	3	4	5	6	6	10
S	2.5	3	4	5	6	8

AVAILABLE UPTO 20



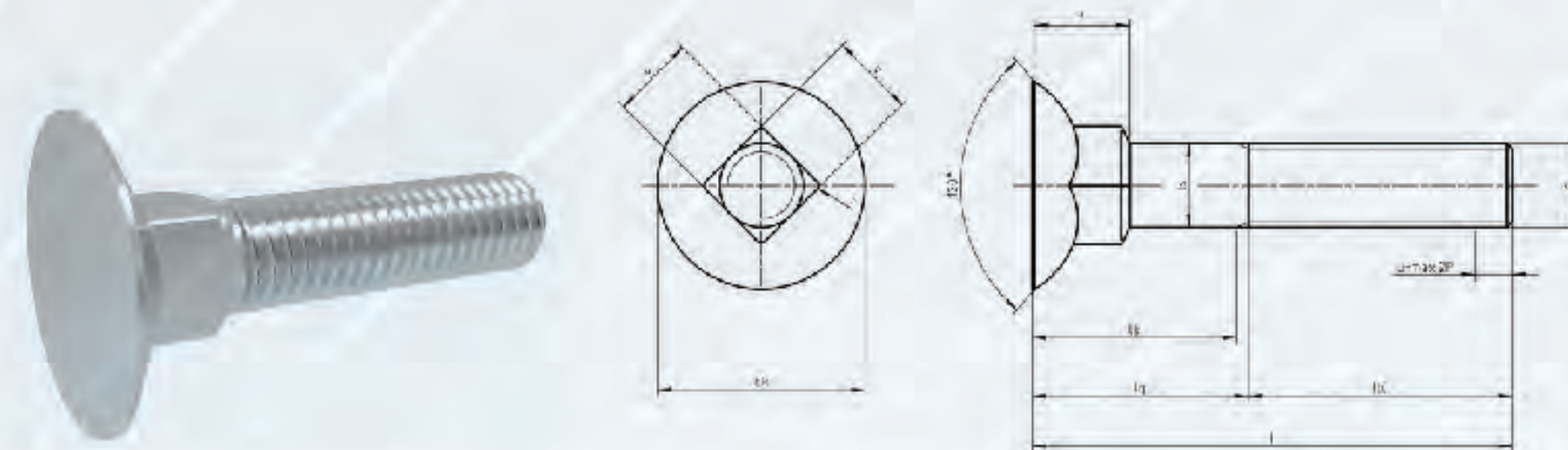
DIN 603



l			M5		M6		M8		M10		M12
nominal size	min.	max.	ls min.	lg max.	ls min.	lg max.	ls min.	lg max.	ls min.	lg max.	ls min.
16	15,1	16,9	-	8	-	10					
20	18,95	21,05	-	8	-	10	-	12	-	14	
25	23,95	26,05	-	8	-	10	-	12	-	14	
30	28,95	31,05	-	18	-	10	-	12	-	14	-
35	33,75	36,25	15	19	12	17	-	12	-	14	-
40	38,75	41,25	20	24	17	22	11,75	18	14		

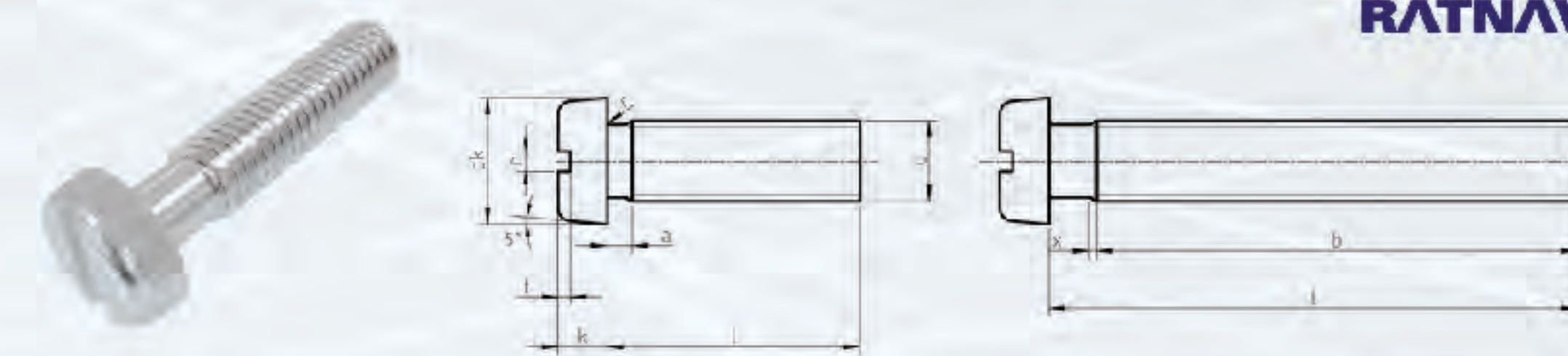
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DIN 608



Thread d			M10		M12	
p			1,5		1,75	
b			26		30	
dk	max.		19,65		24,65	
	min.		18,35		23,35	
ds	max.		10		12	
	min.		9,42		11,3	
f	max.		8,45		11,05	
	min.		7,55		9,95	
r	max.		1,5		1,8	
v	max.		10,58		12,7	
	min.		9,42		11,3	
l			ls	lg	ls	lg
nominal	min.	max.	min.	max.	min.	max.
25	23,95	26,05	-	16	-	
30	28,95	31,05	-	16	-	20
35	33,75	36,25	-	16	-	20
40	38,75	41,25	-	16	-	20
45	43,75	46,25	11,5	19	-	20
50	48,75	51,25	16,5	24	-	20
Thread d			M10		M12	
l		Weight kg/1000pcs				
25		18,2				
30		20,7			33	
35		23,2			36,6	
40		25,7			40,2	
45		28,8			43,8	
50		31,9			48,2	

DIN 84

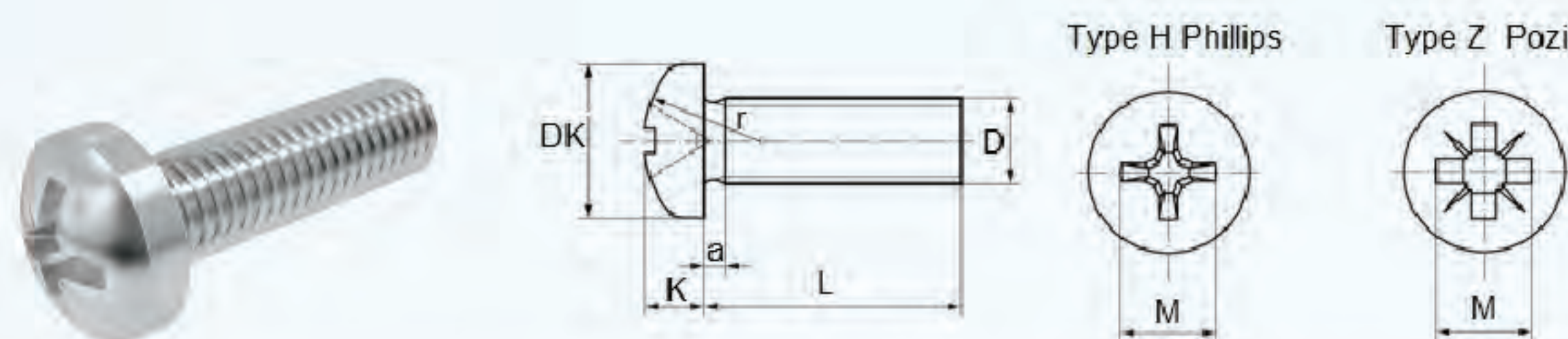


Thread d			M1.6	M2	M2.5	M3	(M3.5)	M4	M5	M6	M8
P			0,35	0,4	0,45	0,5	0,6	0,7	0,8	1	1,25
a		max.	0,7	0,8	0,9	1,0	1,2	1,4	1,6	2,0	2,5
b		min.	25	25	25	25	38	38	38	38	38
da		max.	2,0	2,6	3,1	3,6	4,1	4,7	5,7	6,8	9,2
dk	nominal	= max.	3,00	3,80	4,50	5,50	6,00	7,00	8,50	10,00	13,00
	min.	2,86	3,62	4,32	5,32	5,82	6,78	8,28	9,78	12,73	15,73
k	nominal	= max.	1,10	1,40	1,80	2,00	2,40	2,60	3,30	3,9	5,0
		min.	0,96	1,26	1,66	1,86	2,26	2,46	3,12	3,6	4,7
n		nominal	0,4	0,5	0,6	0,8	1	1,2	1,2	1,6	2
		max.	0,60	0,70	0,80	1,00	1,20	1,51	1,51	1,91	2,31
		min.	0,46	0,56	0,66	0,86	1,06	1,26	1,26	1,66	2,06
r		min.	0,10	0,10	0,10	0,10	0,10	0,20	0,20	0,25	0,40
t		min.	0,45	0,60	0,70	0,85	1,00	1,10	1,30	1,60	2,00
w		min.	0,40	0,50	0,70	0,75	1,00	1,10	1,30	1,60	2,00
x		max.	0,90	1,00	1,10	1,25	1,50	1,75	2,00	2,50	3,20
l			Weight kg per 1000pcs								
Nominal	min.	max.									
2	1,80	2,20	0,07								
3	2,80	3,20	0,082	0,16	0,272						
4	3,76	4,24	0,094	0,179	0,302	0,515					
5	4,76	5,24	0,105	0,198	0,332	0,56	0,786	1,09			
6	5,76	6,24	0,117	0,217	0,362	0,604	0,845	1,17	2,06		
8	7,71	8,29	0,14	0,254	0,422	0,692	0,966	1,33	2,3	3,56	
10	9,71	10,29	0,163	0,291	0,482	0,78	1,08	1,47	2,55	3,92	7,85
12	11,65	12,35	0,186	0,329	0,542	0,868	1,2	1,63	2,8	4,27	8,49
(14)	13,65	14,35	0,209	0,365	0,602	0,956	1,32	1,79	3,05	4,62	9,13

Product Range

16	15,65	16,35	0,232	0,402	0,662	1,04	1,44	1,95	3,3	4,98	9,77
20	19,58	20,42		0,478	0,782	1,22	1,68	2,25	3,78	5,69	11
25	24,58	25,42			0,932	1,44	1,98	2,64	4,4	6,56	12,6
30	29,58	30,42				1,66	2,28	3,02	5,02	7,45	14,2
35	34,50	35,50				1 • •	2,57	3,41	5,62	8,25	15,8
40	39,50	40,50				1 1 a		3,8	6,25	9,2	17,4
45	44,50	45,50							6,88	10	18,9
50	49,50	50,50							7,5	10,9	20,6
(55)	54,05	55,95								11,8	22,1
60	59,05	60,95								12,7	23,7
(65)	64,05	65,95									25,2
70	69,05	70,95									26,8
(75)	74,05	75,95									28,3
80	79,05	80,95									29,8

DIN 7985

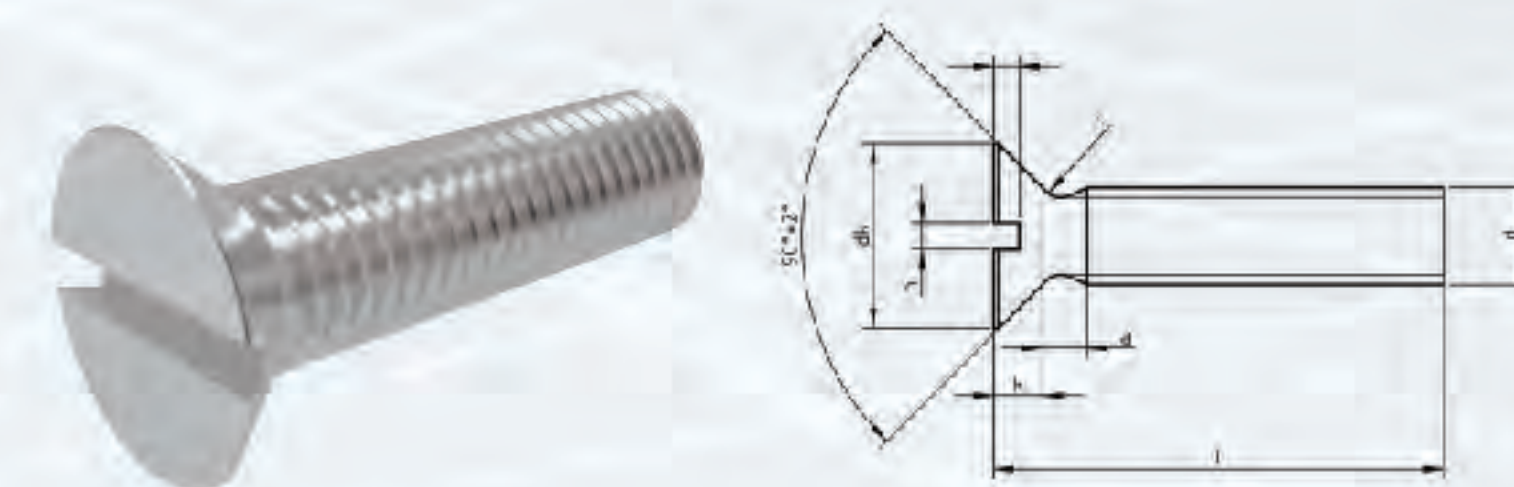


Thread d			M1.6	M2	M2.5	M3	(M3.5)	M4	M5	M6	M8	M10
L			Weight kg/1000pcs									
nominal	min.	max.										
5	4,75	5,25			0,4	0,67	0,99	1,4				
6	5,75	6,25			0,43	0,71	1,05	1,48	2,66			
8	7,7	8,3			0,49	0,8	1,17	1,63	2,91			
10	9,7	10,3			0,55	0,88	1,29	1,79	3,16	5,14	10,9	
12	11,65	12,35			0,61	0,95	1,42	1,94	3,41	5,49	11,5	21,2
14	13,65	14,35			0,67	1,03	1,54	2,1	3,66	5,84	12,2	22,2
16	15,65	16,35			0,73	1,11	1,67	2,25	3,91	6,29	12,8	23,2
18	17,65	18,35			0,79	1,19	1,8	2,41	4,16	6,64	13,5	24,2
20	19,6	20,4			0,85	1,27	1,92	2,56	4,41	7,00	14,2	25,2

AVAILABLE UP TO M60

Product Range

DIN 963

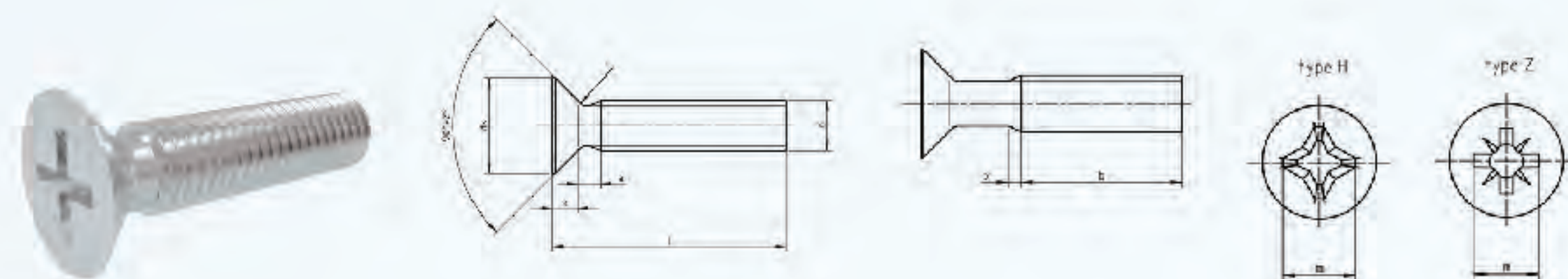


Thread d			M1	M1,2	M1,4	M1,6	M2	M2,5	M3	(M3,5)	M
P			0,25	0,25	0,3	0,35	0,4	0,45	0,5	0,6	0
a	max.		0,5	0,5	0,6	0,7	0,8	0,9	1	1,2	1
b	min.		full thread			15	16	18	19	20	2
dk	nominal=max.		1,9	2,3	2,6	3	3,8	4,7	5,6	6,5	7
	min.		1,76	2,06	2,46	2,86	3,5	4,4	5,3	6,14	7
k	max.		0,6	0,72	0,86	0,96	1,2	1,5	1,65	1,93	2
n	nominal		0,25	0,3	0,3	0,4	0,5	0,6	0,8	0,8	1
	max.		0,31	0,36	0,36	0,46	0,56	0,66	0,86	0,96	1
	min.		0,45	0,5	0,5	0,6	0,7	0,8	1	1	1
r	max.		0,1	0,12	0,14	0,16	0,2	0,25	0,3	0,35	0
t	min.		0,2	0,25	0,28	0,32	0,4	0,5	0,6	0,7	0
	max.		0,3	0,35	0,4	0,45	0,6	0,7	0,85	1	1
x	max.		-	-	-	0,9	1	1,1	1,25	1,5	1
l			weight (7,85 kg/dm3) kg/1000pcs								
nominal	min.	max.									
2	1,8	2,2	0,014	0,023	0,033	0,046					
3	2,8	3,2	0,019	0,031	0,042	0,058	0,101	0,175			
4	3,75	4,25	0,023	0,037	0,051	0,069	0,119	0,206	0,291	0,434	
5	4,75	5,25	0,027	0,043	0,06	0,081	0,137	0,236	0,335	0,494	0
6	5,75	6,25		0,049	0,069	0,093	0,152	0,266	0,379	0,554	0
8	7,7	8,3			0,087	0,116	0,193	0,326	0,467	0,673	0
10	9,7	10,3			0,105	0,139	0,231	0,386	0,555	0,792	1
12	11,65	12,35					0,268	0,446	0,643	0,911	1
(14)	13,65	14,35					0,306	0,507	0,731	1,03	1
16	15,65	16,35					0,343	0,567	0,82	1,15	1
(18)	17,65	18,35					0,381	0,627	0,908	1,27	1
20	19,6	20,4						0,687	0,996	1,39	1
(22)	21,6	22,4						0,747	1,08	1,51	1

Product Range

25	24,6	25,4						0,838	1,22	1,69	2
(28)	27,6	28,4							1,35	1,87	2
30	29,6	30,4							1,44	1,99	2
35	34,5	35,5								2,29	2
40	39,5	40,5									3
45	44,5	45,5									
50	49,5	50,5									
55	54	56									
60	59	61									
70	69	71									
80	79	81									
90	89	91									
100	99	101									

DIN 965

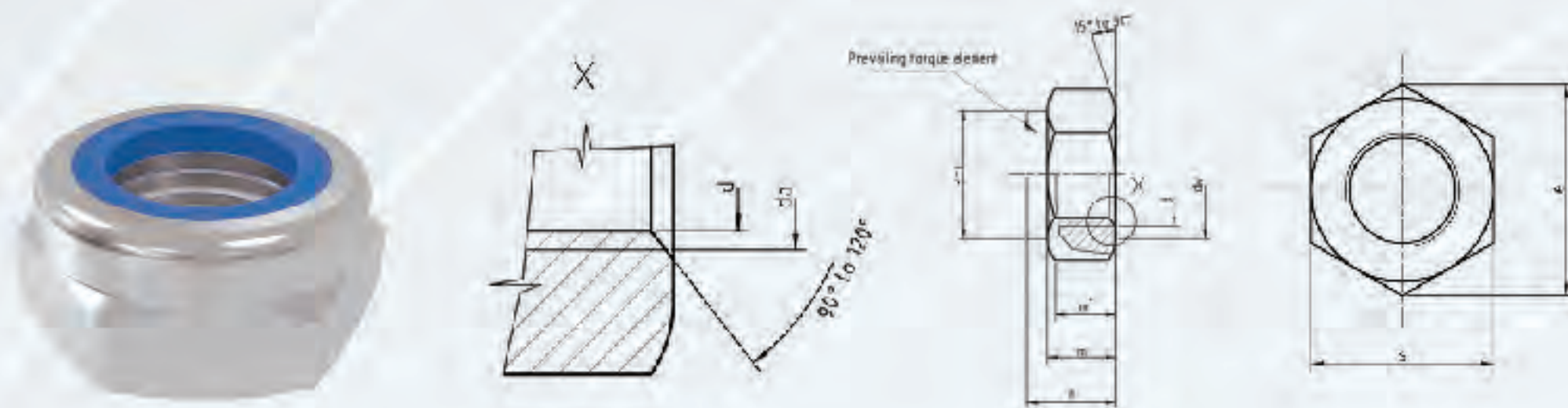


Thread d		M1,6	M2	M2,5	M3	(M3,5)	M4	M5	M6
P		0,35	0,4	0,45	0,5	0,8	0,7	0,8	1
a	max.	0,7	0,8	0,9	1	1,2	1,4	1,6	2
b	min.	15	16	18	19	20	22	25	28
dk	nominal = max.	3	3,8	4,7	5,6	6,5	7,5	9,2	11
	min.	2,75	3,5	4,4	5,3	6,14	7,14	8,84	10,57
k	max.	0,96	1,2	1,5	1,65	1,93	2,2	2,5	3
r	max.	0,4	0,5	0,7	0,8	0,95	1	1,3	1,6
x	max.	0,9	1	1,1	1,25	1,5	1,75	2	2,5

Product Range

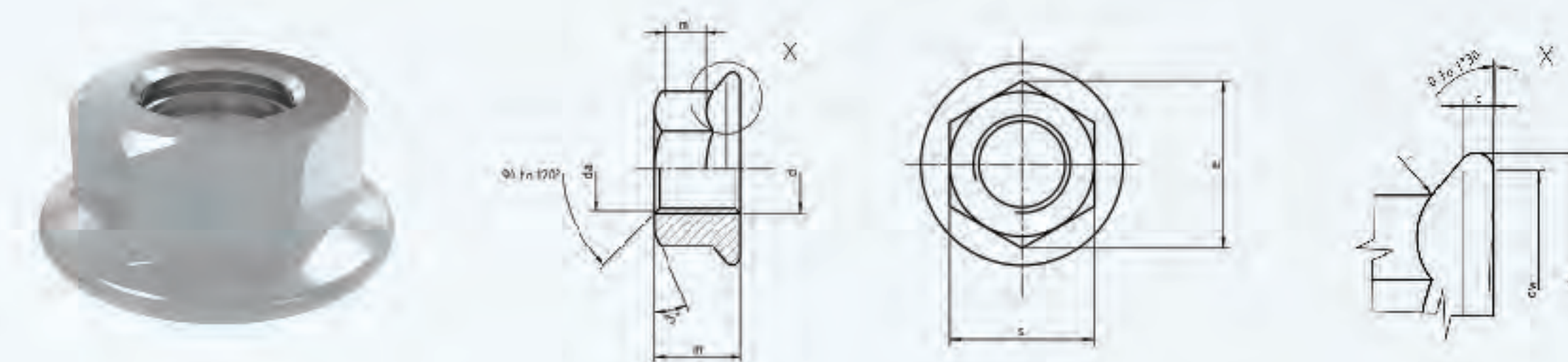
Cross recess	no.			0	1	1	1	2	2	2	3
	type H	m	approx.	1,7	2,35	2,7	2,9	3,9	4,4	4,6	6,6
		penetration depth	min.	0,66	0,95	1,25	1,5	1,4	1,9	2,1	2,8
			max.	0,91	1,25	1,55	1,8	1,9	2,4	2,6	3,3
	type Z	m	approx.	1,8	2,2	2,5	2,8	3,7	4	4,4	6,1
		penetration depth	min.	0,89	0,92	1,22	1,48	1,34	1,6	2,05	2,46
			max.	1,14	1,17	1,47	1,73	1,8	2,06	2,51	2,92
I				Weight (7,85 kg/dm3) kg / 1000pcs							
nominal		min.	max.								
3	2,8	3,2	0,058	0,101	0,175						
4	3,75	4,25	0,069	0,119	0,206	0,291	0,434				
5	4,75	5,25	0,081	0,137	0,236	0,335	0,494	0,676			
6	5,75	6,25	0,093	0,152	0,266	0,379	0,554	0,754	1,21		
8	7,7	8,3	0,116	0,193	0,326	0,467	0,673	0,9	1,45	2,19	
10	9,7	10,3	0,139	0,231	0,386	0,555	0,792	1,06	1,7	2,54	
12	11,65	12,35	0,162	0,268	0,446	0,643	0,911	1,22	1,95	2,89	
(14)	13,65	14,35	0,185	0,306	0,507	0,731	1,03	1,37	2,19	3,25	
16	15,65	16,35	0,208	0,343	0,567	0,82	1,15	1,53	2,44	3,61	
(18)	17,65	18,35		0,381	0,627	0,908	1,27	1,68	2,69	3,95	
20	19,6	20,4		0,417	0,687	0,996	1,39	1,84	2,94	4,31	
(22)	21,6	22,4			0,747	1,08	1,51	1,99	3,18	4,66	
25	24,6	25,4			0,838	1,22	1,69	2,22	3,55	5,19	
(28)	27,6	28,4				1,35	1,87	2,46	3,93	5,72	
30	29,6	30,4				1,44	1,99	2,61	4,16	6,08	
35	34,5	35,5					2,29	2,99	4,76	6,96	
40	39,5	40,5						3,36	5,39	7,84	
45	44,5	45,5							6,02	8,73	
50	49,5	50,5							6,65	9,61	
55	54	56									
60	59	61									

DIN 985



Thread d		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16
		-	-	-	-	-	M8x1	M10x1	M12x1,5	M14x1,5	M16
		-	-	-	-	-	-	M10x1,25	M12x1,25	-	-
P		0,5	0,7	0,8	1	1	1,25	1,5	1,75	2	2
da	min.	3	4	5	6	7	8	10	12	14	16
	max.	3,45	4,6	5,75	6,75	7,75	8,75	10,8	13	15,1	17,3
dw	min.	4,6	5,9	6,9	8,9	9,6	11,6	15,6	17,4	20,5	22,5
e	min.	6,01	7,66	8,79	11,05	12,12	14,38	18,9	21,1	24,49	26,7
h	nominal= max.	4	5	5	6	7,5	8	10	12	14	16
	min.	3,7	4,7	4,7	5,7	7,14	7,64	9,64	11,57	13,3	15,3
m	min.	2,4	2,9	3,2	4	4,7	5,5	6,5	8	9,5	10,5
m'	min.	1,65	2,2	2,75	3,3	3,85	4,4	5,5	6,6	7,7	8,8
s	nominal= max.	5,5	7	8	10	11	13	17	19	22	24
	min.	5,32	6,78	7,78	9,78	10,73	12,73	16,73	18,67	21,67	23,6
Weight (7,85Kg/dm3) kg/1000pcs		0,5	1	1,4	2,4	3	5,1	10,6	17,2	26	34
Thread d		M20	M22	M24	M27	M30	M33	M36	M39	M42	
		M20x2	M22x2	M24x2	M27x2	M30x2	M33x2	M36x3	M39x3	M42x3	
		M20x1,5	M22x1,5	-	-	-	-	-	-	-	
P		2,5	2,5	3	3	3,5	3,5	4	4	4,5	
da	min.	20	22	24	27	30	33	36	39	42	
	max.	21,6	23,7	25,9	29,1	32,4	35,6	38,9	42,1	45,4	
dw	min.	27,7	29,5	33,2	38	42,7	46,6	51,1	55,9	60,6	
e	min.	32,95	35,03	39,55	45,2	50,85	55,37	60,79	66,44	72,09	
h	nominal= max.	20	22	24	27	30	33	36	39	42	
	min.	18,7	20,7	22,7	25,7	28,7	31,4	34,4	37,4	40,4	

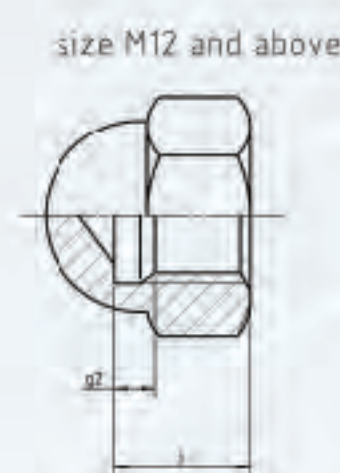
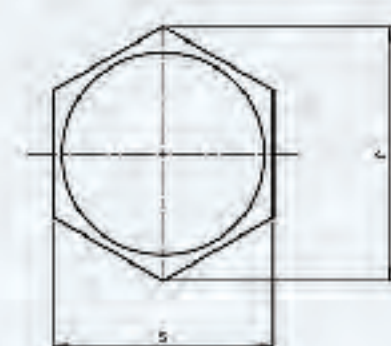
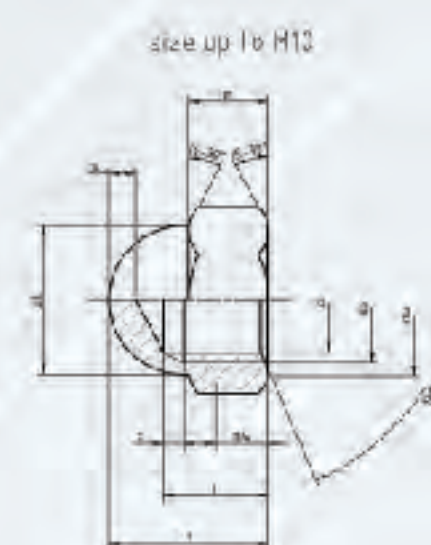
m	min.	14	15	15	17	19	22	25	27	29
m'	min.	11	12,2	13,2	14,8	16,5	18,2	19,8	21,5	23,1
s	nominal= max.	30	32	36	41	46	50	55	60	65
	min.	29,16	31	35	40	45	46	53,8	58,8	63,8
Weight (7,85Kg/dm3) kg/1000pcs		65	75	100	162	212	317	415	499	628



DIN 6923

Thread size d		M5	M6	M8	M10	M12	M14	M16	M20
		-	-	M8x1	M10x1,25	M12x1,5	M14x1,5	M16x1,5	M20x1,5
		-	-	-	(M10x1)	(M12x1,5)	-	-	-
P		0,8	1	1,25	1,5	1,75	2	2	2,5
c	min.	1	1,1	1,2	1,5	1,8	2,1	2,4	3
da	min.	5	6	8	10	12	14	16	20
	max.	5,75	6,75	8,75	10,8	13	15,1	17,3	21,6
dc	max.	11,8	14,2	17,9	21,8	26	29,9	34,5	42,8
dw	min.	9,8	12,2	15,8	19,6	23,8	27,6	31,9	39,9
e	min.	8,79	11,05	14,38	16,64	20,03	23,36	26,75	32,95
m	max.	5	6	8	10	12	14	16	20
	min.	4,7	5,7	7,6	9,6	11,6	13,3	15,3	18,9
m'	min.	2,2	3,1	4,5	5,5	6,7	7,8	9	11,1
s	nominal= max.	8	10	13	15	18	21	24	30
	min.	7,78	9,78	12,73	14,73	17,73	20,67	23,67	29,67
r	max.	0,3	0,36	0,48	0,6	0,72	0,88	0,96	1,2

DIN 1587



thread	Series 1	M4	M5	M6	M8	M10	M12	(M14)	M16	(M
	Series 2	-	-	-	M8x1	M10x1	M12x1,5	(M14x1,5)	(M16x1,5)	(M
	Series 3	-	-	-	-	M10x1,25	M12x1,25	-	-	(M
P	Series 1	0,7	0,8	1	1,25	1,5	1,75	2	2	2,5
da	min.	4	5	6	8	10	12	14	16	18
	max.	4,6	5,75	6,75	8,75	10,8	13	15,1	17,3	19
dk	max.	6,5	7,5	9,5	12,5	15	17	20	23	26
dw	min.	5,9	6,9	8,9	11,6	14,6	16,6	19,6	22,5	24
e min.	Product grade A	7,66	8,79	11,05	14,38	17,77	20,03	23,35	26,75	30
	Product grade B	7,5	8,63	10,89	14,2	17,59	19,85	22,78	26,17	29
x max.	Series 1	1,4	1,6	2	2,5	3	-	-	-	-
	Series 2	-	-	-	2	2	-	-	-	-
	Series 3	-	-	-	-	2,5	-	-	-	-
g2 max.	Series 1	-	-	-	-	-	6,4	7,3	7,3	9,3
	Series 2	-	-	-	-	-	5,6	5,6	5,6	5,6
	Series 3	-	-	-	-	-	4,9	-	-	7,3

h	max. nominal size	8	10	12	15	18	22	25	28	32
	min. P. grade A	7,64	9,64	11,57	14,57	17,57	21,48	24,48	27,48	32
	min. P. grade B	7,42	9,42	11,3	14,3	17,3	21,16	24,16	27,16	31
m	max.	3,2	4	5	6,5	8,8	10	11	13	15
	min.	2,9	3,7	4,7	6,14	7,64	9,64	10,3	12,3	14
Mw	min.	2,32	2,96	3,76	4,91	6,11	7,71	8,24	9,84	11
r	approx.	3,25	3,75	4,75	6,25	7,5	8,5	10	11,5	13
s	Max. = nominal size	7	8	10	13	16	18	21	24	27
	min. P. grade A	6,78	7,78	9,78	12,73	15,73	17,73	20,67	23,67	26
	min. P. grade B	6,64	7,64	9,64	12,57	15,57	17,57	20,16	23,16	26
t	min.	5,26	7,21	7,71	10,65	12,65	15,65	17,65	20,58	24
	max.	5,74	7,79	8,29	11,35	13,35	16,35	18,35	21,42	25
w	min.	2	2	2	2	2	3	4	4	5
Weight kg /1000pcs		-	-	4,66	11	20,1	28,3	-	54,3	95

SUPPORTING SOLAR POWER INNOVATION

Solar power, a leading source of renewable energy, relies on washers and sheet metal components to optimize efficiency and durability in various projects.

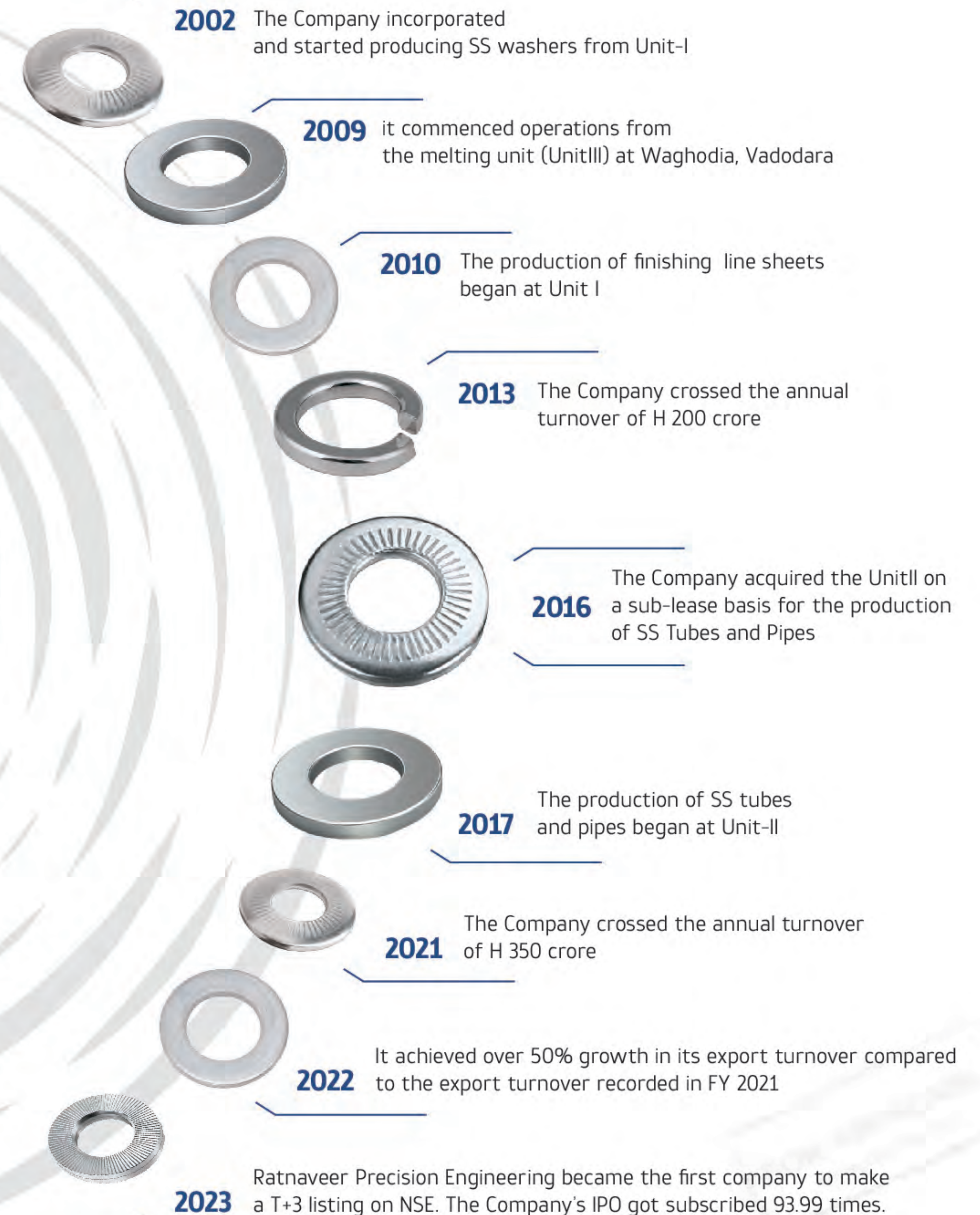
These components play a critical role in mounting solar panels and adapting to environmental changes like temperature, wind speed, and air velocity. From installation and design to enhancing overall system performance, our precision-engineered sheet metal products power the future of sustainable energy.



SHEET METAL COMPONENT

- HAMMER HEAD BOLT
- LONG ROOFING HOOK
- REINFORCEMENT
- PAN TILE HOOK
- GWEINDE PLATE
- VARIO HOOK
- FIX HOOK
- ADAPTER & WINKLE

MILESTONES IN OUR JOURNEY



AUTO PACKING AND SORTING SYSTEM

Quality Specification

At Ratnaveer, we prioritize delivering excellence. Every in-house product undergoes rigorous quality inspections to ensure only the highest-quality items reach our customers after thorough QC checks.

Labelling

We enhance packaging with customized labels tailored to customer requirements. From size to content, every detail is designed to meet specific demands, ensuring a seamless and professional presentation.

Packaging

High-quality products deserve impeccable packaging. Our flawless packaging processes at Ratnaveer protect and preserve the integrity of every product.



ELECTRONIC WEIGHING SCALE



PRODUCT APPLICATIONS



AEROSPACE



RAILWAY SECTOR



DEFENCE



SOLAR ENERGY



AUTOMOBILE



ARCHITECTURES & BUILDING

PRODUCT QUALITY ASSURANCE : STAINLESS STEEL WASHERS

At Ratnaveer Precision Engineering Limited, we are committed to delivering high-quality stainless steel washers that meet the highest industry standards. Each washer undergoes multiple stages of inspection and testing to ensure dimensional precision, material integrity, and surface finish. Below is a detailed description of the processes and testing our washers go through to guarantee excellence in every piece.

RAW MATERIAL TESTING BY PHOTOSPECTROMETER



Before production begins, the raw stainless steel material is subjected to photospectrometer testing. This instrument accurately analyzes the chemical composition of the material, verifying that it meets the required grade and alloy specifications. This ensures that the washers possess high corrosion resistance, strength, and durability right from the start.

After the washers are punched or machined, bur removal is a crucial step. Any sharp edges, metal burrs, or surface irregularities resulting from the manufacturing process are eliminated through mechanical deburring techniques, such as vibratory finishing, tumbling, or hand deburring. This ensures that the washer surfaces are smooth, safe to handle, and free from any imperfections that might affect performance.

BUR REMOVAL PROCESS



DIMENSIONAL ACCURACY TESTING - VERNIER CALIPER



To ensure that each washer meets the exact required specifications, we use a vernier calliper to check the outer diameter, inner diameter, and thickness. This tool allows us to achieve accurate dimensional verification, ensuring every washer fits precisely in its intended application.

PRECISION MEASUREMENT - MICROMETER SCREW GAUGE

For even finer measurements, a micrometre screw gauge is used to measure the thickness and critical dimensions of the washers. This ensures that each washer conforms to stringent tolerances, providing unmatched precision in engineering applications.



HARDNESS TESTING - HARDNESS TESTER



To assess the mechanical strength of the washers, we employ a hardness tester to measure resistance to deformation. This test ensures that the washers have the proper hardness to withstand operational stresses and harsh conditions, ensuring reliable performance over time.

POLISHING PROCESS

After deburring and testing, the washers undergo a polishing process to enhance the surface finish. Depending on the application, this may include mechanical polishing or electro-polishing to achieve a smooth, reflective, and aesthetically pleasing finish. Polishing not only improves the appearance but also contributes to the washer's resistance to corrosion and wear, ensuring long-lasting performance and visual appeal.



FINAL INSPECTION



Before the washers are packed and dispatched, a final inspection is carried out to ensure all products meet the required quality standards. Only washers that pass all the tests are approved for delivery to our customers.

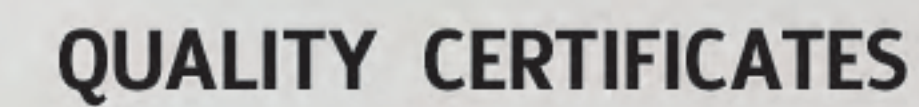
CONCLUSION

Through a combination of raw material analysis, precision measurement, deburring, hardness testing, and polishing, Ratnaveer Precision Engineering Limited ensures that our stainless steel washers meet the highest standards of performance and durability. Our ISO-certified processes guarantee products that are perfect for both domestic and international markets.

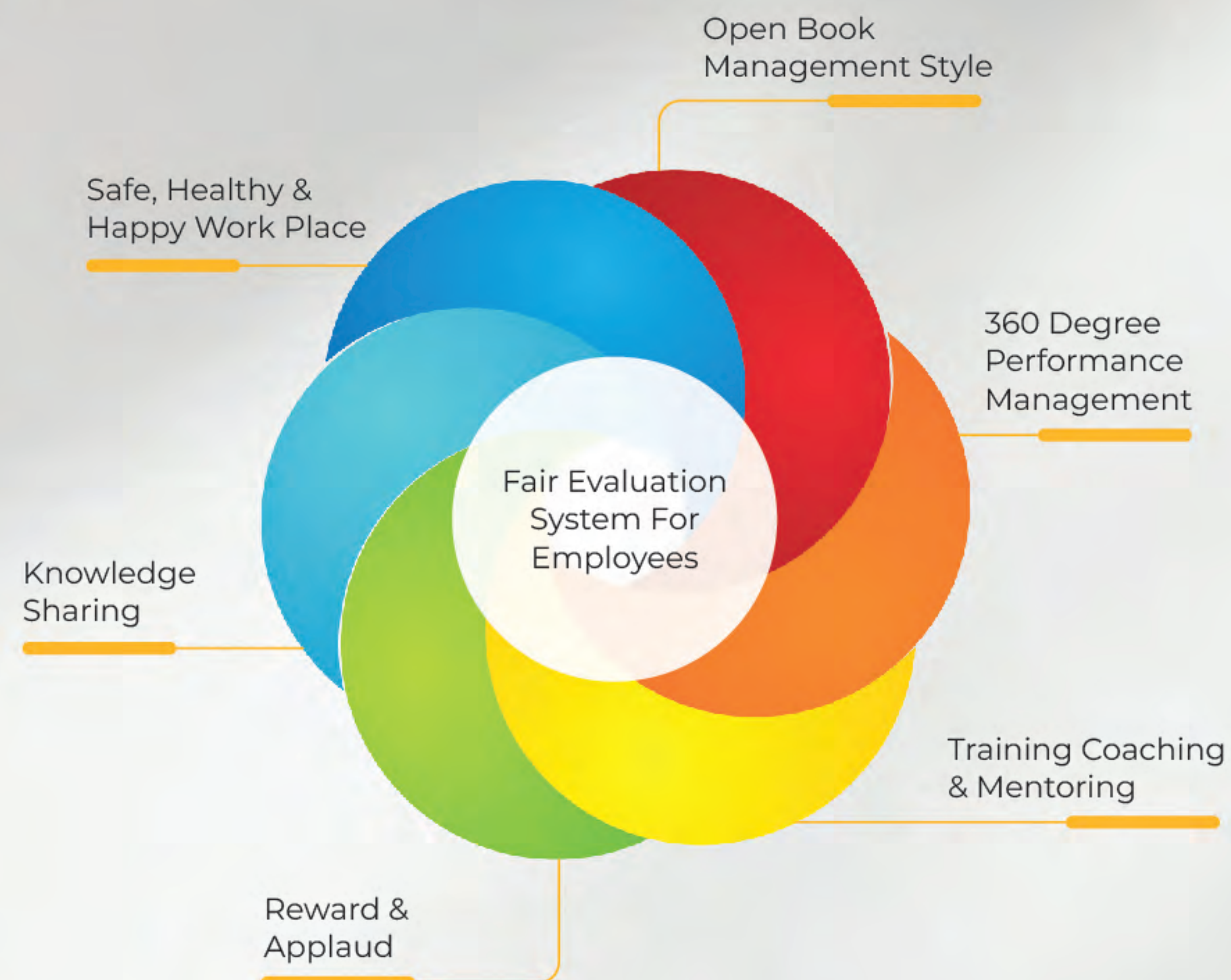
A WORLD OF PRECISION

A 3D cutaway diagram of a car, showing the internal components. The car is rendered in a blue, semi-transparent style, revealing the engine, transmission, suspension, and other mechanical parts. The components are labeled with text and icons:

- Sun Roofs
- Air Bags
- Ignition Switches
- Steering System
- Fuel Rails
- Cooling System
- Turbo Chargers
- Starters
- Transmissions
- Brake Systems
- Seatings
- Door Locks
- Gas Spring & Dampers



www.ratnaveer.com



WHY CHOOSE RATNAVEER?



CLIENT TESTIMONIALS

“ The Company’s atmosphere & working culture are very good. the whole team seems to be very cooperative & understanding & looking positive approach from the whole team & MD of Ratnaveer ”

MR. SANJAY RAHEJA

“ The Facilities are organized. Production mostly uses no scrap material: automatic production, supporting Factors, or quick production. Advantage against some other suppliers ”

MR. SERDAL TAK

“ Well-managed company, no complaints about quality, Ratnaveer is our best supplier for all kinds of washers ”

MR. PAOLO MOCHI

“ It was a great pleasure to be at Ratnaveer after a long time & we could see a lot of changes in the case of buildings & Machines. Some improvements still have to be made but you are a good way ”

MR. MARKUS HANSELMEANN

“ It was a pleasure & a Good experience to visit your facilities. I strongly believe in a possible cooperation. one of a few producers with such a wide range of products. ”

MR. OGUZ AKSOY

“ Good improvement in the last two years. Ratnaveer is watching the workers, quality and delivery on time ”

MR. HEIDENBLUNTH

Why Clients Trust Us

Precision-engineered products

Reliable and timely delivery

Exceptional customer support

Join our growing list of satisfied clients worldwide.

