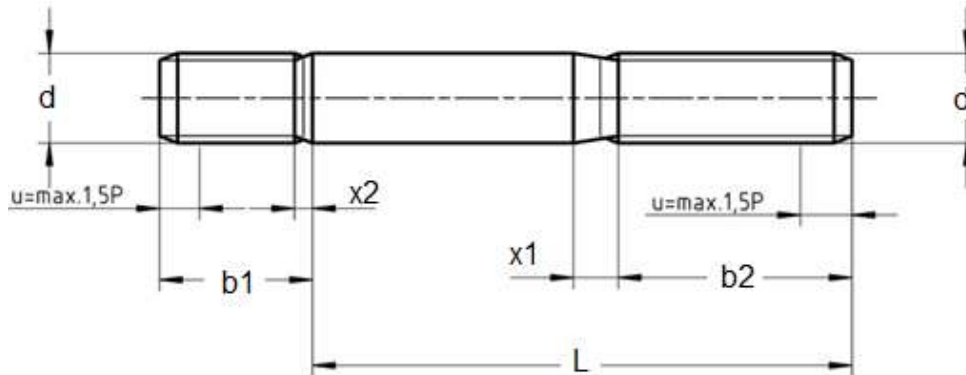


Metric DIN 939 Double End Studs (1.25xD)

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Dimensions of Metric DIN 939 Double End Studs

DIAMETER (D)	PITCH	1.25XD (B1)	(B2) L < 125	(B2) L = 125-200	(B2) L ≥ 200	X1	X2
M8	1.25	10	22	28	–	3.2	1.6
M10	1.5	12	26	32	45	3.8	1.9
M12	1.75	15	30	36	49	4.3	2.2
M14	2	18	34	40	53	5	2.5
M16	2	20	38	44	57	5	2.5
M18	2.5	22	42	48	61	6.3	3.2
M20	2.5	25	46	52	65	6.3	3.2
M22	2.5	28	50	56	69	6.3	3.2
M24	3	30	54	60	73	7.5	3.8
M27	3	35	60	66	79	7.5	3.8
M30	3.5	38	66	72	85	9	4.5
M33	3.5	42	72	78	91	9	4.5
M36	4	45	78	84	97	10	5
M39	4	50	84	90	103	10	5
M42	4.5	52	90	96	109	11	5.5
M45	4.5	58	98	102	115	11	5.5
M48	5	60	102	108	121	13	6.3
M52	5	65	110	116	129	13	6.3

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Metric DIN 939 double end studs are machine thread fasteners without a head and may or may not be fully threaded depending on the length of the fastener. Depending on the application, both ends can accept a nut or one end may be threaded into a pre-tapped hole, leaving the other end available for attaching a mated component secured with a nut. Studs assemblies offer several advantages over bolts: They eliminate the need for perfect squareness in an assembly allowing a nut to "float" and adjust on the nut end threads. Furthermore studs can act as pilots to ease the assembly and disassembly of mated parts.

When ordering DIN 939 double end studs, the correct dimension is diameter x nominal length (excluding the tap end b_1). For example, with a stud measuring M10X50 (the diameter(d) = 10mm and nominal length(l) = 50 mm where the thread length on the metal end (tap end) b_1 = 12 mm; the overall length of the stud is 50 + 12 = 62 mm. The thread length on the nut end b_2 varies depending on the length of the stud as illustrated in the table above.

Note: Studs whose length (L) is less than or equal to 2 times their nominal diameter + 6mm, will normally be fully threaded.

Aspen Fasteners offers one of the most complete ranges of metric studs and other inch and metric industrial fasteners for immediate delivery from stock. The following sizes of metric DIN 939 double end studs are available for immediate shipping from stock: Diameters ranging from M5 to M30 and lengths to 120mm in A2 and marine grade A4 stainless steel. View parts by clicking on the following link: [DIN 939 double end studs](#)

DIN (**D**eutsches **I**nstitut für **N**ormung - German Institute for Standardization) standards are issued for a variety of components including industrial fasteners as Metric DIN 939 double end studs. The DIN standards remain common in Germany, Europe and globally even though the transition to ISO standards is taking place. DIN standards continue to be used for parts which do not have ISO equivalents or for which there is no need for standardization.

1) Mechanical properties of stainless steel for metric DIN 939 Double End Studs

Stainless steels can be divided into three groups of steel - austenitic, ferritic and martensitic. Austenitic steel is by far the most common type (>90% of commercial fasteners). The steel groups and strength classes are designated by a four-digit sequence of letters and numbers (eg A2-70) as shown in the following table. DIN EN ISO 3506 governs screws and nuts made from stainless steel.

Steel group	Steel grade	Strength class	Screws, Nuts and Bolts			
			Tensile strength N/mm ²	Tensile strength PSI	Dia range	Nut Load N/mm ²
Austenitic	A2 and A4	50	500	70,000	<=M39	500
		70	700	100,000	<=M20	700
		80	800	118,000	<=M20	800

The tensile stress is calculated with reference to the tensile stress area (see DIN EN ISO 3506-1979). Nuts to be paired with same grade of stainless steel screws

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Steel group	Property Strength class	Made From	Characteristics
Austenitic	50	A1, A2	Soft; cold worked, turned and soft pressed fasteners
	70	A2, A4	Cold worked, normal strength formed fasteners
	80	A2, A4	Extreme cold worked, high strength, special applications

2) Chemical composition of stainless steel metric DIN 939 Double End Studs

Grade	USA Grade	Material designation	Material no.	C %	Si ≤ %	Mn ≤ %	Cr %	Mo %	Ni %
A 2	304	X 5Cr Ni 1810	1.4301	≤ 0.07	1.0	2.0	17.5 to 19.5	-	8.0 to 10.5
		X 2 Cr Ni 1811	1.4306	≤ 0.03	1.0	2.0	18.0 to 20.0	-	10 to 12.0
		X 8 Cr Ni 19/10	1.4303	≤ 0.07	1.0	2.0	17.0 to 19.0	-	11.0 to 13.0
A 4	316	X 5 Cr Ni Mo 1712	1.4401	≤ 0.07	1.0	2.0	16.5 to 18.5	2.0 to 2.5	10.0 to 13.0
		X 2 Cr Ni Mo 1712	1.4404	≤ 0.03	1.0	2.0	16.5 to 18.5	2.0 to 2.5	10 to 13

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3) Chemical composition of steel metric DIN 939 Double End Studs

PROPERTY CLASS	MATERIAL AND TREATMENT	CHEMICAL COMPOSITION LIMITS %				TEMPERING TEMP °C MIN.
		C		P	S	
		min.	max.	max.	max.	
4.6, 4.8, 5.8, 6.8	Low or medium carbon steel	-	0.55	0.05	0.06	-
8.8	Medium carbon steel quenched, tempered	0.25	0.55	0.04	0.05	425
9.8	Medium carbon steel quenched, tempered	0.25	0.55	0.04	0.05	425
10.9	Medium carbon steel additives e.g. boron, Mn, Cr or Alloy steel - quenched, tempered	0.20	0.55	0.04	0.05	425
12.9	Alloy steel - quenched, tempered	0.20	0.50	0.035	0.035	380

4) Mechanical properties of steel for metric DIN 939 Double End Studs

MECHANICAL PROPERTY		PROPERTY CLASS								
		4.8	5.6	5.8	6.8	8.8		9.8	10.9	12.9
						Up to M16	Over M16			
Tensile Strength (Rm, N/mm ²)	nom.	400	500		600	800		900	1000	1200
	min.	420	500	520	600	800	830	900	1040	1220
Vickers Hardness	min.	130	155	160	190	250	255	290	320	385
	max.	250				320	336	360	380	435
Brinell Hardness	min.	124	147	152	181	319	242	266	295	353
	max.	238				385	319	342	363	412
Rockwell Hardness	min. HR	71	79	82	89	-				
	HRC	-	-	-	-	20	23	28	32	39
	HR	95				99	-			
	max. HRC	-	-	-	-	32	34	37	39	44
Yield Stress ReL. N/mm ²	nom.	320	300	400	480	-				
	min.	340	300	420	480	-				
Stress at permanent set limit N/mm ²	nom.	-				640		720	900	1080
	min.	-				640	660	720	940	1100

Disclaimer

Dimensional data and technical information for Metric DIN 939 double end studs was obtained from publicly available sources and not acquired through standards agencies. It has been completed and compiled for reference purposes only; where discrepancies are found they are subject to change without notice. Aspen Fasteners makes no warranties or representations regarding the accuracy and validity of the compiled information and data. Contact the relevant standards authorities for accurate and detailed information.

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