GEWINDEFORMER NANO
THREAD FORMERS NANO

DC -Anwendungsgruppen

DC Material classification

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm²)	Dehnung Elongation A (%)
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700	< 10
		12	Baustahl, Einsatzstahl	Structural, cementation steels	< 200	< 700	< 30
		13	Kohlenstoffstahl	Carbon steels	< 300	< 1000	< 20
		14	Stahl legiert < 850 N/mm²	Alloy steels < 850 N/mm²	< 250	< 850	< 30
		15	Stahl legiert / vergütet > 850 - < 1150 N/mm²	Alloy steels hard. / temp. > 850 - < 1150 N/mm²	> 250	> 850	< 30
		16	Hochfester Stahl ≤ 44 HRC	High tensile alloy steels ≤ 44 HRC	> 250	> 850	< 12
		17	Stahl vergütet > 44 - ≤ 54 HRC	Alloy steels tempered > 44 - ≤ 54 HRC	> 410	> 1400	< 2
		18	Stahl gehärtet > 54 - ≤ 63 HRC	Alloy steels hardened > 54 - ≤ 63 HRC	> 560	> 1980	< 2
20	Rostfreier Stahl Stainless steels	21	Rostfreier Stahl, geschwefelt	Free machining stainless steels	< 250	< 850	< 25
		22	Austenitisch	Austenitic stainless steels	< 250	< 850	> 20
		23	Ferritisch, martensitisch < 850 N/mm²	Ferritic and martensitic < 850 N/mm²	< 250	< 850	> 20
		24	Ferritisch, martensitisch > 850 - < 1150 N/mm²	Ferritic and martensitic > 850 - < 1150 N/mm²	> 250	> 850	> 15
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850	< 10
		32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850	> 20
		42	Titanlegierung	Titanium alloys	> 250	> 850	< 20
50	Nickel Nickel	51	Nickellegierung 1 ≤ 850 N/mm²	Nickel alloys 1 ≤ 850 N/mm²	< 250	< 850	> 25
		52	Nickellegierung 2 > 850 - ≤ 1150 N/mm²	Nickel alloys 2 > 850 - ≤ 1150 N/mm²	> 250	> 850	< 25
		53	Nickellegierung 3 > 1150 - ≤ 1600 N/mm²	Nickel alloys 3 > 1150 - ≤ 1600 N/mm²	> 340	> 1150	< 20
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolytic copper)	< 120	< 400	> 12
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
		63	Messing (langspanend)	Long chip brass	< 200	< 700	> 12
		64	Messing bleifrei	Lead free brass	< 220	< 700	> 15
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350	> 15
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	> 15
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
		74	Al legiert Si > 10 %, Mg-Legierungen	Al alloyed Si > 10 %, Mg-alloys	< 120	< 400	< 10
80	Kunststoff Plastic compounds	81	Thermoplaste	Thermoplastics	-	-	-
		82	Duroplaste	Duroplastics	-	-	-
		83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-	-
90	Edelmetalle Precious metals	91	Gelbgold	Yellow gold	-	-	-
		92	Rotgold	Red gold	-	-	-
		93	Weissgold	White gold	-	-	-
		94	Silber	Silver	-	-	-

Optimal mit Schneidöl
Optimal with cutting oil

Geeignet mit Schneidöl
Suitable with cutting oil

Optimal mit Emulsion
Optimal with emulsion

Geeignet mit Emulsion
Suitable with emulsion

GEWINDEFORMER NANO — THREAD FORMERS NANO

CLASSIC SYNCHRO

Ab Seite: From page:
M
MF
UNC
UNF
S
SF
SL

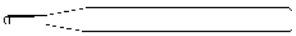
	Vc (m/min) Guide Line Ø 0.3 - 1.4 mm Beschichtet Coated	Ø 1.4 - 2.8 mm Beschichtet Coated	FA Normale Werkstoffe Normal materials FA80VS	FA83VS	CFA Nichteisen-Metalle Non-ferrous materials CFA80VS	CFA83VS	
			363	363	370	370	
			364	364			
			365	365	371	371	
			366	366	372	372	
			367	367	373	373	
			368	368			
			369	369			
							
			FA80VS	FA83VS	CFA80VS	CFA83VS	
11	4 - 10	12 - 20	O E	O E			11
12	4 - 10	12 - 20	O E	O E			12
13	4 - 10	12 - 20	O E	O E			13
14	4 - 10	12 - 20	O E	O E			14
15	3 - 6	6 - 12	O	O			15
16							16
17							17
18							18
21	4 - 10	12 - 20	O E	O E			21
22	3 - 6	6 - 12	O E	O E			22
23	3 - 6	6 - 12	O E	O E			23
24	3 - 6	6 - 12	O	O			24
31							31
32							32
41							41
42							42
51	3 - 6	6 - 12	O	O			51
52							52
53							53
61	4 - 10	12 - 20	O E	O E			61
62	4 - 10	12 - 20			O E	O E	62
63	4 - 10	12 - 20	O E	O E	O E	O E	63
64	4 - 10	12 - 20	O E	O E			64
71	4 - 10	12 - 20	O E	O E			71
72	4 - 10	12 - 20	O E	O E			72
73	4 - 10	12 - 20	O E	O E			73
74							74
81							81
82							82
83							83
91	4 - 10	12 - 20	O E	O E	O E	O E	91
92	4 - 10	12 - 20	O E	O E	O E	O E	92
93	4 - 10	12 - 20					93
94	4 - 10	12 - 20	O E	O E	O E	O E	94

Optimal mit Luft / **Optimal with air**

Geeignet mit Luft / **Suitable with air**

Bedingt geeignet / **Limited**

Bei den oben aufgeführten Daten handelt es sich um Richtwerte.
The indicated values are a guideline.

				FA		CFA	
Merkmale **Characteristics**				VS E 1.5 x P	VS C 2.5 x P	VS E 1.5 x P	VS C 2.5 x P
							
Lochart **Hole type**				< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
				**FA80VS**	**FA83VS**	**CFA80VS**	**CFA83VS**
M	**4HX / 6HX**	**ISO DIN 14 ISO DIN 13**	**DC ~DIN 371**	363	363	370	370
MF	**4HX / 6HX**	**ISO DIN 13**	**DC ~DIN 371**	364	364		
UNC	**2BX**	**ASME B1.1**	**DC ~DIN 371**	365	365	371	371
	3BX	**ASME B1.1**	**DC ~DIN 371**	365	365		
UNF	**2BX**	**ASME B1.1**	**DC ~DIN 371**	366	366	372	372
	3BX	**ASME B1.1**	**DC ~DIN 371**	366	366		
S	**NIHS**	**NIHS 06 - 10**	**DC**	367	367	373	373
SF	**NIHS**	**NIHS 06-10 Fine Thread**	**DC**	368	368		
SL	**Safelock**	**SL 15 - 01**	**DC**	369	369		

M ISO DIN 13 ISO DIN 14

CLASSIC SYNCHRO | PM | DC – DIN 371

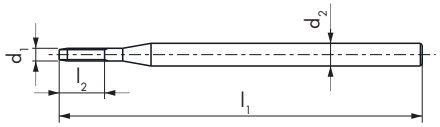
FA

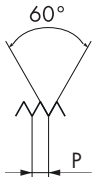
	FA80VS	FA83VS		
				
				

FA80VS  VS

FA83VS  VS

11 12 13 14 15
21 22 23 24 51
61 63 64 71 72
73 91 92 94



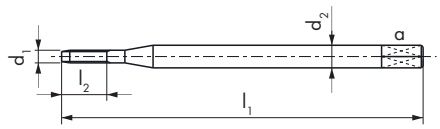


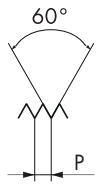
E 1.5 x P — 4HX — ID: ● 161750 ● 152412 ● 152415 ● 152418 ● 152421 ● 151559 ● 151565 ● 152429

C 2.5 x P — 4HX — ID: ● 173719 ● 173720 ● 173721 ● 173722 ● 173723 ● 173729 ● 173730 ● 173731

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	
0.5	0.125	25	1.5	2	Δ 0.44
0.6	0.15	25	1.8	2	Δ 0.53
0.7	0.175	25	2.1	2	Δ 0.62
0.8	0.2	25	2.4	2	Δ 0.71
0.9	0.225	25	2.7	2	Δ 0.8
1	0.25	40	3	2.5	Δ 0.88
1.2	0.25	40	3.6	2.5	Δ 1.08
1.4	0.3	40	4.2	2.5	Δ 1.25

Δ Tol. = +0/0.02 mm





6HX — ID: ● 152433 ● 193764 ● 151566 ● 193765 ● 193766 ● 193767

6HX — ID: ● 193801 ● 193802 ● 193803 ● 193804 ● 193805 ● 193806

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm	
1.6	0.35	40	4.8	2.5		Δ 1.45
1.8	0.35	40	5.4	2.5		Δ 1.65
2	0.4	45	8	2.8	2.1	Δ 1.8
2.3	0.4	45	9	2.8	2.1	Δ 2.1
2.5	0.45	50	10	2.8	2.1	Δ 2.3
2.6	0.45	50	10	2.8	2.1	Δ 2.4

Δ Tol. = +0/0.02 mm

MF ISO DIN 13

CLASSIC SYNCHRO

PM

DC – DIN 371

FA

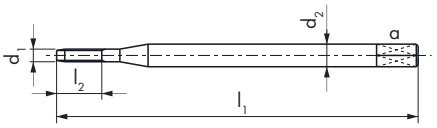
FA80VS

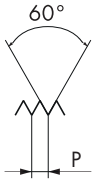
FA83VS

VS

11 12 13 14 15
21 22 23 24 51
61 63 64 71 72
73 91 92 94

FA80VS	FA83VS		





E 1.5 x P

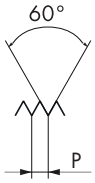
C 2.5 x P

4HX

4HX

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
1.4	0.2	40	4.2	2.5		Δ 1.31	155928	180436
1.6	0.2	40	4.8	2.5		Δ 1.51	156480	193807
1.8	0.2	40	5.4	2.5		Δ 1.71	193768	193808
2	0.2	45	6	2.8	2.1	Δ 1.91	193769	193809
2	0.25	45	6	2.8	2.1	Δ 1.88	193770	193810
2.2	0.2	45	6.6	2.8	2.1	Δ 2.11	193771	193811
2.2	0.25	45	6.6	2.8	2.1	Δ 2.08	193772	193812
2.3	0.2	45	6.9	2.8	2.1	Δ 2.21	193773	193813
2.3	0.25	45	6.9	2.8	2.1	Δ 2.18	193774	193814
2.5	0.2	50	7.5	2.8	2.1	Δ 2.41	193775	193815
2.5	0.25	50	7.5	2.8	2.1	Δ 2.38	193776	193816

Δ Tol. = +0/0.02 mm



6HX

6HX

Ø d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
2.5	0.35	50	7.5	2.8	2.1	Δ 2.35	193777	193817
2.6	0.35	50	7.8	2.8	2.1	Δ 2.45	193778	193818

Δ Tol. = +0/0.02 mm

UNC ASME B1.1

CLASSIC | SYNCHRO | PM | DC – DIN 371

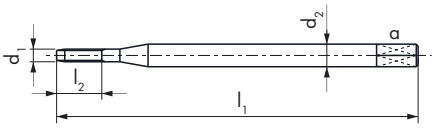
FA

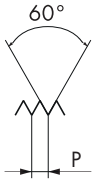
	FA80VS	FA83VS		
				
	< 2.5 x D	< 2.5 x D		

FA80VS  VS

FA83VS  VS

11 12 13 14 15
21 22 23 24 51
61 63 64 71 72
73 91 92 94



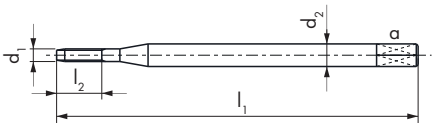


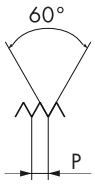
E 1.5 x P — C 2.5 x P

2BX — 2BX

Ø d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
1	64	1.85	40	5.6	2.5		Δ1.65	● 193779	● 193819
2	56	2.18	45	9	2.8	2.1	Δ2	● 193780	● 193820
3	48	2.51	50	10	2.8	2.1	Δ2.25	● 193781	● 193821

Δ Tol. = +0/0.02 mm





3BX — 3BX

Ø d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
1	64	1.85	40	5.6	2.5		Δ1.65	● 193782	● 193822
2	56	2.18	45	9	2.8	2.1	Δ2	● 193783	● 193823
3	48	2.51	50	10	2.8	2.1	Δ2.25	● 193784	● 193824

Δ Tol. = +0/0.02 mm

nano

UNF ASME B1.1

CLASSIC SYNCHRO

PM

DC – DIN 371

FA

FA80VS

FA83VS

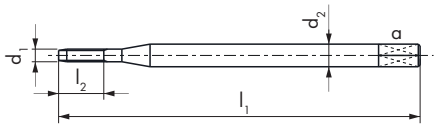
VS

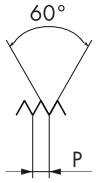
11 12 13 14 15
21 22 23 24 51
61 63 64 71 72
73 91 92 94

FA80VS	FA83VS		

< 2.5 x D

< 2.5 x D





E 1.5 x P

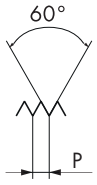
C 2.5 x P

2BX

2BX

Ø d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
0	80	1.52	40	4.6	2.5		Δ1.4	● 193785	● 193825
1	72	1.85	40	5.6	2.5		Δ1.7	● 193786	● 193826
2	64	2.18	45	9	2.8	2.1	Δ2	● 193787	● 193827
3	56	2.51	50	10	2.8	2.1	Δ2.3	● 193788	● 193828

Δ Tol. = +0/0.02 mm



3BX

3BX

Ø d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID
0	80	1.52	40	4.6	2.5		Δ1.4	● 193789	● 193829
1	72	1.85	40	5.6	2.5		Δ1.7	● 193790	● 193830
2	64	2.18	45	9	2.8	2.1	Δ2	● 193791	● 193831
3	56	2.51	50	10	2.8	2.1	Δ2.3	● 193792	● 193832

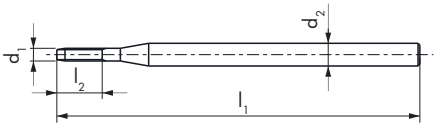
Δ Tol. = +0/0.02 mm

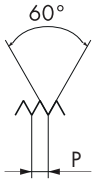
FA

FA80VS	FA83VS		
			
			

FA80VS  VS

FA83VS  VS





Ø d_1 S	P mm	l_1 mm	l_2 mm	d_2 mm		ID	ID
0.5	0.125	25	1.5	2	Δ 0.44	● 158977	● 173724
0.6	0.15	25	1.8	2	Δ 0.53	● 151561	● 173725
0.7	0.175	25	2.1	2	Δ 0.62	● 151742	● 173726
0.8	0.2	25	2.4	2	Δ 0.71	● 151564	● 173727
0.9	0.225	25	2.7	2	Δ 0.8	● 151562	● 173728
1	0.25	40	3.0	2.5	Δ 0.88	● 151542	● 173732
1.2	0.25	40	3.6	2.5	Δ 1.08	● 151543	● 173733
1.4	0.3	40	4.2	2.5	Δ 1.25	● 152427	● 173734

Δ Tol. = +0/0.02 mm

SF

NIHS 06-10 Fine Thread

CLASSIC | SYNCHRO | PM | DC – DIN 371

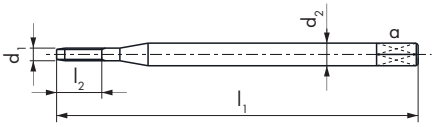
FA

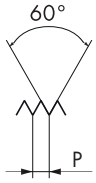
	FA80VS	FA83VS		
				
				

FA80VS  VS

FA83VS  VS

11 12 13 14 15
21 22 23 24 51
61 63 64 71 72
73 91 92 94





	FA80VS	FA83VS		
	E 1.5 x P	C 2.5 x P		
	NIHS	NIHS		

Ø d_1 SF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		FA80VS ID	FA83VS ID
1.4	0.2	40	4.2	2.5		Δ1.31	176180	193793
1.6	0.2	40	4.8	2.5		Δ1.51	193757	193794
1.8	0.2	40	5.4	2.5		Δ1.71	193758	193795
2	0.2	45	6	2.8	2.1	Δ1.91	193759	193796
2.2	0.2	45	6.6	2.8	2.1	Δ2.11	193760	193797
2.2	0.25	45	6.6	2.8	2.1	Δ2.08	193761	193798
2.5	0.2	50	7.5	2.8	2.1	Δ2.41	193762	193799
2.5	0.25	50	7.5	2.8	2.1	Δ2.38	193763	193800

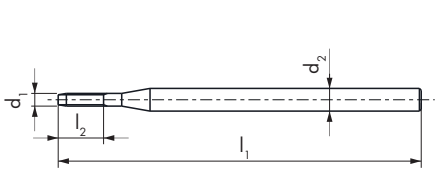
Δ Tol. = +0/0.02 mm

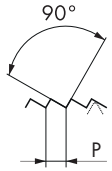
FA

FA80VS VS

FA83VS VS

11 12 13 14 15
21 22 23 24 51
61 63 64 71 72
73 91 92 94





FA80VS	FA83VS		
			
< 2.5 x D	< 2.5 x D		
E 1.5 x P	C 2.5 x P		

Ø d_1 SL	P mm	l_1 mm	l_2 mm	d_2 mm	ID	ID
0.5	0.1	25	1.5	2	600049	600100
0.6	0.125	25	1.8	2	600050	600101
0.7	0.15	25	2.1	2	600051	600102
0.8	0.15	25	2.4	2	600052	600103
0.9	0.175	25	2.7	2	600053	600104
1	0.2	40	3	2.5	600054	600105
1.2	0.2	40	3.6	2.5	600055	600106
1.4	0.25	40	4.2	2.5	600056	600107

M ISO DIN 13 ISO DIN 14

CLASSIC | SYNCHRO | VHM CAR | DC

CFA

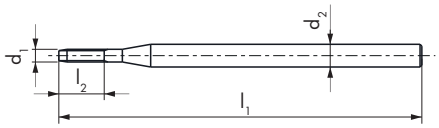
CFA80VS	CFA83VS		

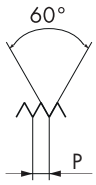
CFA80VS — VS

62 | 63 | 91 | 92 | 94

CFA83VS — VS

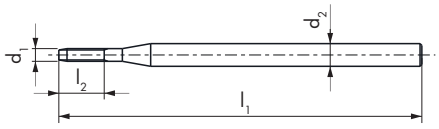
4HX | 4HX

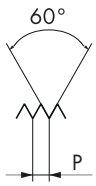




Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2h5 mm		ID	ID
0.5	0.125	32	1.5	1.5	Δ 0.44	● 171771	● 193611
0.6	0.15	32	1.8	1.5	Δ 0.53	● 171773	● 193612
0.7	0.175	32	2.1	1.5	Δ 0.62	● 171775	● 193613
0.8	0.2	32	2.4	1.5	Δ 0.71	● 171777	● 193614
0.9	0.225	32	2.7	1.5	Δ 0.8	● 171779	● 193615
1	0.25	32	3	2	Δ 0.88	● 171782	● 193616
1.2	0.25	32	3.6	2	Δ 1.08	● 171783	● 193617
1.4	0.3	32	4.2	2	Δ 1.25	● 171785	● 193618

Δ Tol. = +0/0.02 mm





6HX | 6HX

Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2h5 mm		ID	ID
1.6	0.35	32	4.8	2	Δ 1.45	● 193590	● 193619
1.8	0.35	32	5.4	2	Δ 1.65	● 193591	● 193620
2	0.4	39	8	3	Δ 1.8	● 193592	● 193621
2.3	0.4	39	9	3	Δ 2.1	● 193593	● 193622
2.5	0.45	39	10	3	Δ 2.3	● 193594	● 193623
2.6	0.45	39	10	3	Δ 2.4	● 193595	● 193624

Δ Tol. = +0/0.02 mm

UNC ASME B1.1

CLASSIC | SYNCHRO | VHM CAR | DC

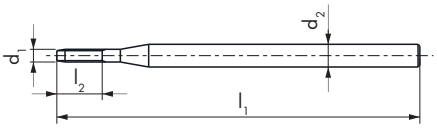
CFA

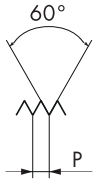
CFA80VS  VS

62 | 63 | 91 | 92 | 94

CFA83VS  VS

CFA80VS	CFA83VS		
			
 < 2.5 x D	 < 2.5 x D		
 E 1.5 x P	 C 2.5 x P		
2BX	2BX		





Ø d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2h5 mm		CFA80VS ID	CFA83VS ID
1	64	1.85	32	5.5	2	Δ 1.65	● 193596	● 193625
2	56	2.18	39	8.6	3	Δ 2	● 193597	● 193626
3	48	2.51	39	10	3	Δ 2.25	● 193598	● 193627

Δ Tol. = +0/0.02 mm

nano

UNF ASME B1.1

CLASSIC | SYNCHRO | VHM CAR | DC

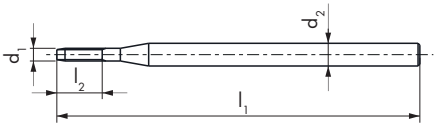
CFA

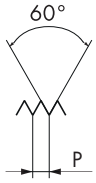
	CFA80VS	CFA83VS		
				
	< 2.5 x D	< 2.5 x D		
	E 1.5 x P	C 2.5 x P		
	2BX	2BX		

CFA80VS  VS

62 63 91 92 94

CFA83VS  VS





Ø d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2h5 mm		ID	ID
0	80	1.52	32	4.5	2	Δ1.4	● 193599	● 193628
1	72	1.85	32	5.5	2	Δ1.7	● 193600	● 193629
2	64	2.18	39	8.6	3	Δ2	● 193601	● 193630
3	56	2.51	39	10	3	Δ2.3	● 193602	● 193631

Δ Tol. = +0/0.02 mm

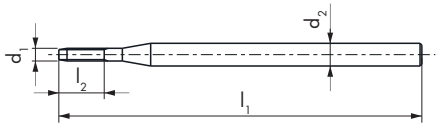
CFA

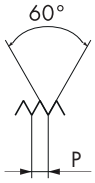
CFA80VS VS

62 63 91 92 94

CFA83VS VS

CFA80VS	CFA83VS		
			
			





CFA80VS	CFA83VS		
E 1.5 x P	C 2.5 x P		
NIHS	NIHS		

Ø d_1 S	P mm	l_1 mm	l_2 mm	d_2 h5 mm		CFA80VS ID	CFA83VS ID
0.5	0.125	32	1.5	1.5	Δ 0.44	171770	193603
0.6	0.15	32	1.8	1.5	Δ 0.53	171772	193604
0.7	0.175	32	2.1	1.5	Δ 0.62	171774	193605
0.8	0.2	32	2.4	1.5	Δ 0.71	171776	193606
0.9	0.225	32	2.7	1.5	Δ 0.8	171778	193607
1	0.25	32	3	2	Δ 0.88	171780	193608
1.2	0.25	32	3.6	2	Δ 1.08	171781	193609
1.4	0.3	32	4.2	2	Δ 1.25	171784	193610

Δ Tol. = +0/0.02 mm