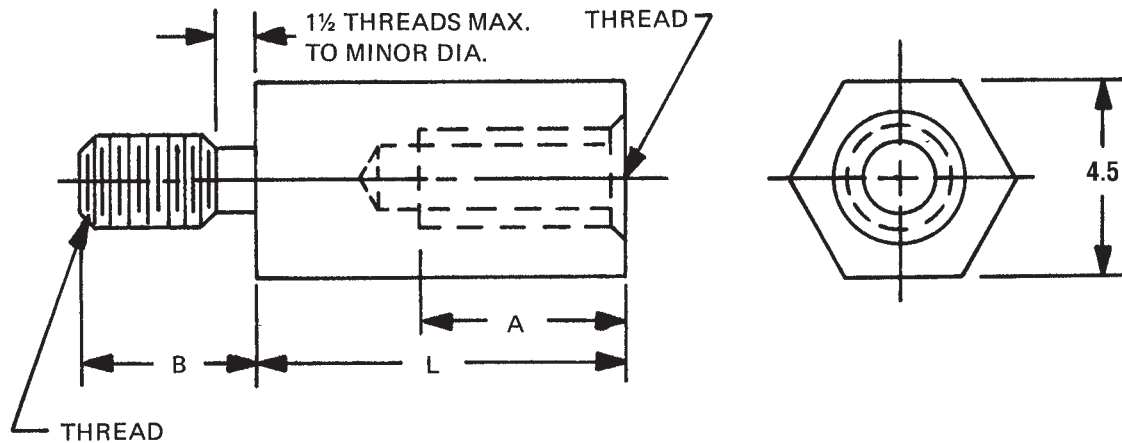
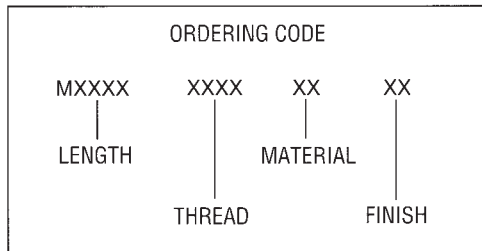


4.5mm HEX MALE-FEMALE STANDOFFS



Available with thread locking products, see page vii

See page 6M for finish codes
For non-standard parts contact Sales Office



THREAD	MINIMUM THREAD DEPTH "A"				
	BODY LENGTH "L"				
	5	6	7	8	9
M2.5x0.45	1.9	2.9	3.9		
M3x0.5	1.8	2.8	3.8	4.8	5.8

LENGTH	PART NO.
5	M2100
6	M2101
7	M2102
8	M2103
9	M2104
10	M2105
11	M2106
12	M2107
13	M2108
14	M2109
15	M2110
16	M2111
17	M2112
18	M2113
19	M2114

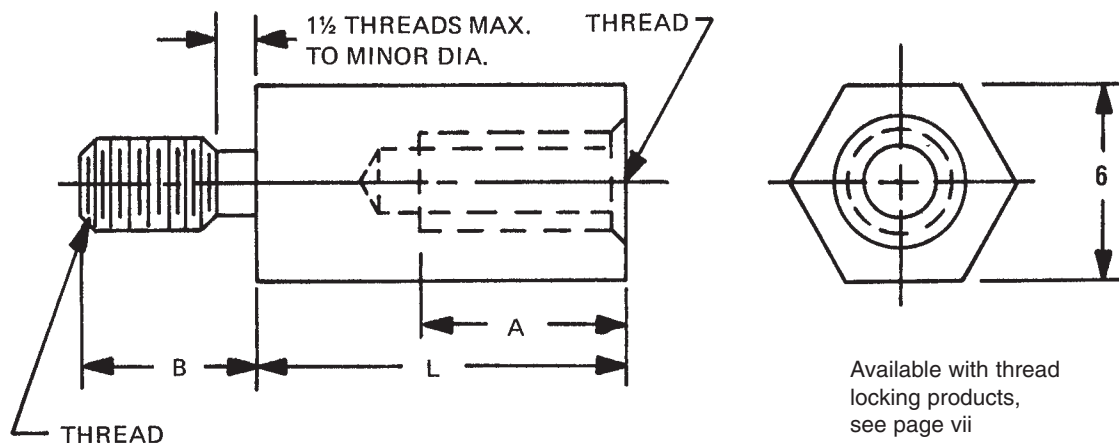
LENGTH	PART NO.
20	M2115
21	M2116
22	M2117
23	M2118
24	M2119
25	M2120
28	M2121
31	M2122
34	M2123
37	M2124
40	M2125
43	M2126
46	M2127
49	M2128
52	M2129

THREAD	CODE	LENGTH	
		"A"	"B"
M2.5x0.45	2545	4.8	3.97
M3x0.5	3005	6.4	4.76

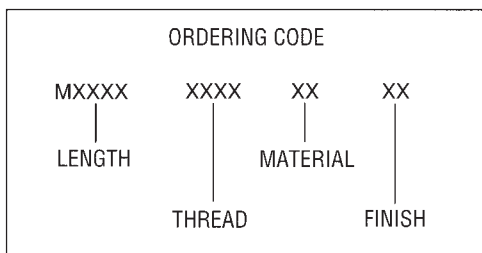
MATERIAL	CODE	RoHS
Aluminum	AL	YES
Brass	B	YES
Stainless Steel	SS	YES
Steel	S	YES
Nylon	N	YES



6mm HEX MALE-FEMALE STANDOFFS



MINIMUM THREAD DEPTH "A"											
THREAD	BODY LENGTH "L"										
	5	6	7	8	9	10	11	12	13	14	15
M2.5x0.45	1.9	2.9	3.9								
M3x0.5	1.8	2.8	3.8	4.8	5.8						
M3.5x0.6		2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5		
M4x0.7		2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1	10.1	11.1



See page 6M for finish codes
For non-standard parts contact Sales Office

LENGTH	PART NO.
5	M2140
6	M2141
7	M2142
8	M2143
9	M2144
10	M2145
11	M2146
12	M2147
13	M2148
14	M2149
15	M2150
16	M2151
17	M2152
18	M2153
19	M2154

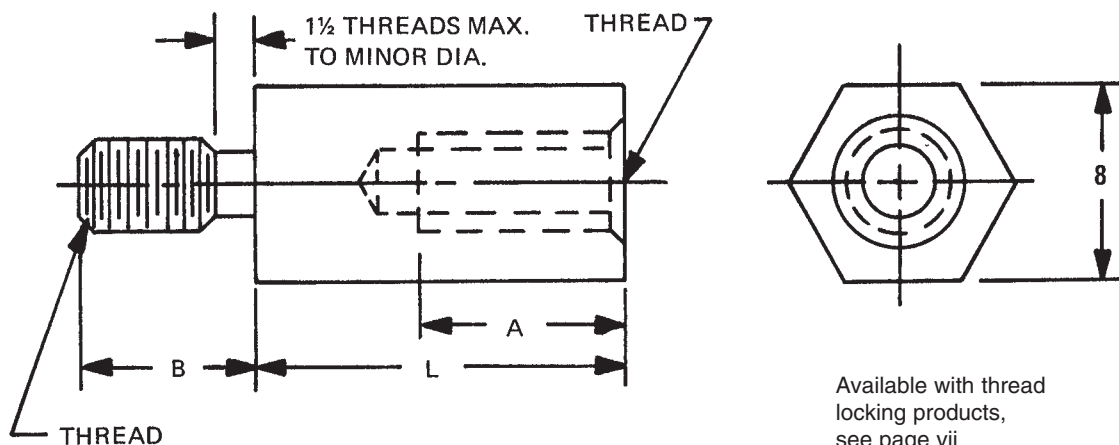
LENGTH	PART NO.
20	M2155
21	M2156
22	M2157
23	M2158
24	M2159
25	M2160
28	M2161
31	M2162
34	M2163
37	M2164
40	M2165
43	M2166
46	M2167
49	M2168
52	M2169

THREAD	CODE	LENGTH	
		"A"	"B"
M2.5x0.45	2545	4.8	3.97
M3x0.5	3005	6.4	4.76
M3.5x0.6	3506	9.5	6.35
M4x0.7	4007	11.1	9.53

MATERIAL	CODE	RoHS
Aluminum	AL	YES
Brass	B	YES
Stainless Steel	SS	YES
Steel	S	YES
Nylon	N	YES

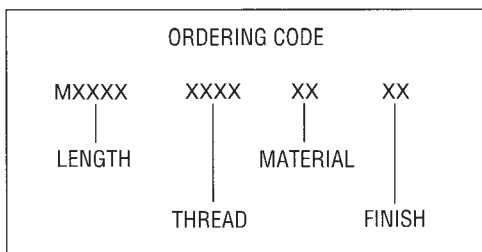


8mm HEX MALE-FEMALE STANDOFFS



Available with thread locking products, see page vii

MINIMUM THREAD DEPTH "A"													
THREAD	BODY LENGTH "L"												
	5	6	7	8	9	10	11	12	13	14	15	16	17
M3x0.5	1.8	2.8	3.8	4.8	5.8								
M3.5x0.6	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5				
M4x0.7	1.1	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1	10.1	11.0		
M5x0.8	.6	1.6	2.6	3.6	4.6	5.6	6.6	7.6	8.6	9.6	10.6	11.6	12.6



See page 6M for finish codes
For non-standard parts contact Sales Office

LENGTH	PART NO.
5	M2180
6	M2181
7	M2182
8	M2183
9	M2184
10	M2185
11	M2186
12	M2187
13	M2188
14	M2189
15	M2190
16	M2191
17	M2192
18	M2193
19	M2194

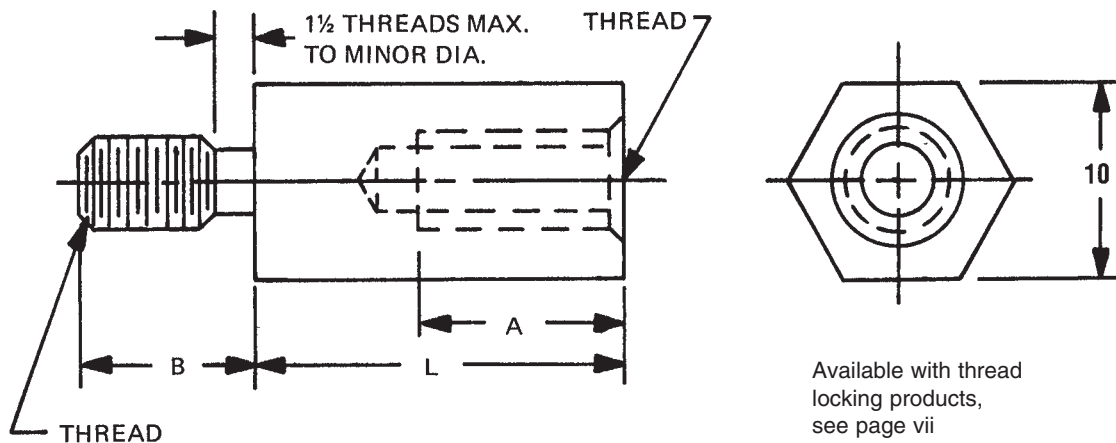
LENGTH	PART NO.
20	M2195
21	M2196
22	M2197
23	M2198
24	M2199
25	M2200
28	M2201
31	M2202
34	M2203
37	M2204
40	M2205
43	M2206
46	M2207
49	M2208
52	M2209

THREAD	CODE	LENGTH	
		"A"	"B"
M3x0.5	3005	6.4	4.76
M3.5x0.6	3506	9.5	6.35
M4x0.7	4007	11.1	9.53
M5x0.8	5008	12.7	9.53

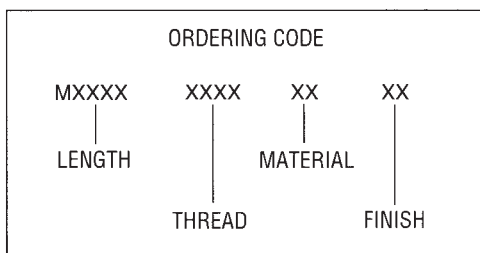
MATERIAL	CODE	RoHS
Aluminum	AL	YES
Brass	B	YES
Stainless Steel	SS	YES
Steel	S	YES
Nylon	N	YES



10mm HEX MALE-FEMALE STANDOFFS



MINIMUM THREAD DEPTH "A"													
THREAD	BODY LENGTH "L"												
	5	6	7	8	9	10	11	12	13	14	15	16	17
M3x0.5	1.8	2.8	3.8	4.8	5.8								
M3.5x0.6	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5				
M4x0.7	1.1	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1	10.1	11.0		
M5x0.8	.6	1.6	2.6	3.6	4.6	5.6	6.6	7.6	8.6	9.6	10.6	11.6	12.6



See page 6M for finish codes
For non-standard parts contact Sales Office

LENGTH	PART NO.
5	M2220
6	M2221
7	M2222
8	M2223
9	M2224
10	M2225
11	M2226
12	M2227
13	M2228
14	M2229
15	M2230
16	M2231
17	M2232
18	M2233
19	M2234

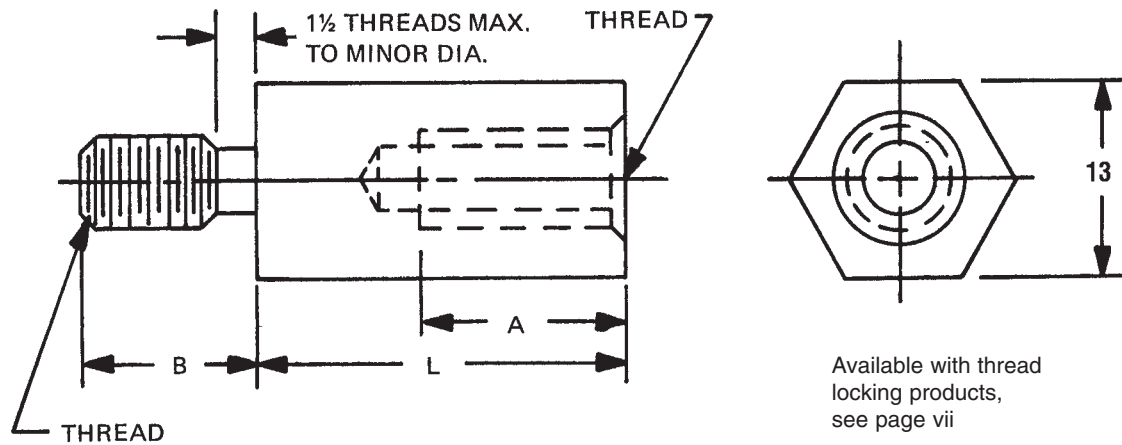
LENGTH	PART NO.
20	M2235
21	M2236
22	M2237
23	M2238
24	M2239
25	M2240
28	M2241
31	M2242
34	M2243
37	M2244
40	M2245
43	M2246
46	M2247
49	M2248
52	M2249

THREAD	CODE	LENGTH	
		"A"	"B"
M3x0.5	3005	6.4	4.76
M3.5x0.6	3506	9.5	6.35
M4x0.7	4007	11.1	9.53
M5x0.8	5008	12.7	9.53

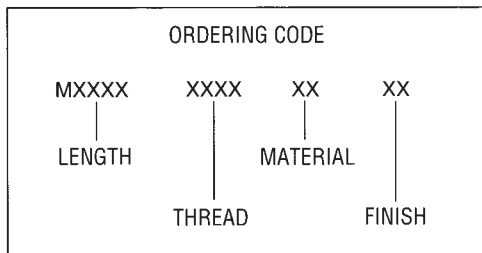
MATERIAL	CODE	RoHS
Aluminum	AL	YES
Brass	B	YES
Stainless Steel	SS	YES
Steel	S	YES
Nylon	N	YES



13mm HEX MALE-FEMALE STANDOFFS



MINIMUM THREAD DEPTH "A"																
THREAD	BODY LENGTH "L"															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
M5x0.8	.6	1.6	2.6	3.6	4.6	5.6	6.6	7.6	8.6	9.6	10.6	11.6	12.6			
M6x1			1.2	2.2	3.2	4.2	5.2	6.2	7.2	8.2	9.2	10.2	11.2	12.2	13.2	
M8x1.25				1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5



See page 6M for finish codes
For non-standard parts contact Sales Office

LENGTH	PART NO.
5	M2260
6	M2261
7	M2262
8	M2263
9	M2264
10	M2265
11	M2266
12	M2267
13	M2268
14	M2269
15	M2270
16	M2271
17	M2272
18	M2273
19	M2274

LENGTH	PART NO.
20	M2275
21	M2276
22	M2277
23	M2278
24	M2279
25	M2280
28	M2281
31	M2282
34	M2283
37	M2284
40	M2285
43	M2286
46	M2287
49	M2288
52	M2289

THREAD	CODE	LENGTH	
		"A"	"B"
M5x0.8	5008	12.7	9.53
M6x1	6010	15.0	12.7
M8x1.25	8012	15.0	12.7

MATERIAL	CODE	RoHS
Aluminum	AL	YES
Brass	B	YES
Stainless Steel	SS	YES
Steel	S	YES
Nylon	N	YES

MATERIALS

MATERIAL ROD & BAR	ORDERING CODE	MATERIAL SPECIFICATIONS	RoHS COMPLIANT
Aluminum	AL	QQ-A-225/3D, QQ-A-225/6A, QQ-A-225/8B, QQ-A-200/9D	YES
Aluminum (Handles Only)	A	QQ-A-225/8B - QQ-A-200/9D	YES
Brass	B	ASTM-B-16	YES
Nylon	N	LP-410A	YES
Steel	S	ASTM-A108-07	YES
Stainless Steel	SS	ASTM-A-581, A-582	YES

* Non RoHS Compliant Finish

FINISH CODES

*1	Cadmium (Commercial) (Special Order Only)	25	Black Oxide, Brass MIL-F-495E
*2	Cadmium QQ-P-416F-Class 2 Type-1 (Clear Chromate) (Special Order Only)	26	Black Oxide, Stainless Steel, Steel Mil-DTL-13924D, Class 1 and 4
*3	Cadmium QQ-P-416F-Class 2 Type-2 (Yellow Chromate) (Special Order Only)	27	Electro Tin Solder (60/40) per M222-MIL-F-14072D
4	Chrome Over Nickel	28	Zinc Plate .0002 ASTM-B-633 (Yellow Chromate)
5	Nickel QQ-N-290 Class 1 Grade G	29	Brushed Finish – Handles Only
*6	Iridite #14 (Gold) MIL-DTL-5541F	30	Brushed Finish – Clear Lacquer – Handles Only
7	Iridite (Clear) MIL-DTL-5541F	31	Brushed Satin – Handles Only
*9	Alodine 1200	32	Brushed Satin – Clear Anodize – Handles Only
10	Chrome QQ-C-320B Class 1 Type I (Bright Finish)	33	Brushed Satin – Black Anodize – Handles Only
11	Chrome QQ-C-320B Class 1 Type II (Satin Finish)	34	Satin Finish – Clear Anodize
12	Zinc .0002 ASTM-B-633 (Clear Chromate)	35	Satin Finish – Black Anodize
13	Bright Dip – Brass	36	Anodize MIL-A-8625F Black High Luster
14	Bright Tin ASTM B545 over Copper Flash Mil-C-14550	37	Ductile Nickel
15	Hot Tin Dip MIL-T-10727C Type II	38	Polished Nickel – Handles Only
16	Electro Tin ASTM B545 Class A, B or C	39	Caustic Etch and Lacquer
19	Caustic Etch	40	Semi-Frost Anodize (Clear)
20	Passivate MIL-F-14072E	41	Semi-Frost Anodize (Black)
21	Anodize MIL-A-8625F – Type II Class 2 (Sulfuric) Chemical Seal (Dark Grey)	42	Black Zinc
22	Anodize MIL-A-8625F – Type II Class 1 (Sulfuric) Hot Water Seal (Clear)	43	Blue Zinc
23	Anodize MIL-A-8625F – Type II Class 2 (Sulfuric) Chemical Seal (Yellow Green)	44	Electro Tin with Nickel Undercoat Per Mil-T-10727C
24	Anodize MIL-A-8625F – Type II Class 2 (Sulfuric) Chemical Seal (Black)	45	Passivate QQ-P-35C Type VI
		46	Passivate ASTM A 967 Nitric 1
		47	Passivate ASTM A 380-96
		48	Passivate AMS 2700 Type 2

STANDOFFS & SPACERS MANUFACTURING TOLERANCES

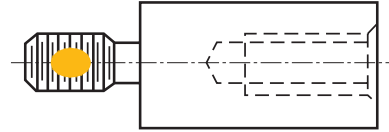
LENGTHS: ± .13mm up to 100mm
 ± .20mm from 100mm to 150mm
 ± .25mm over 150mm

The following processes make threaded fasteners of all sizes and configurations self-locking and self-sealing. They can be used with both male and female threads and leave fasteners fully adjustable. The ND Patches are *Automotive and Military Approved*.

ND PATCH®

Locking, Sealing, Reusable, Factory Pre-Applied

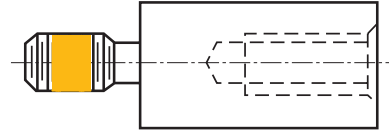
The ND Patch is completely dry, fused to the fastener, and requires no curing time after installation.



ND 360° RING-PATCH®

Locking, Sealing, Reusable, Factory Pre-Applied

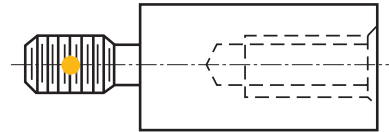
The ND 360° Ring-Patch is completely dry, fused to the fastener, and requires no curing time after installation.



ND PELL-IT®

Locking, Sealing, Reusable, Factory Pre-Applied

The ND Pell-It is a special, tough nylon plug that is inserted into a drilled hole and makes any threaded fastener self-locking and self-sealing while leaving it fully adjustable. In addition to nylon, ND Pell-It is also available in KEL-F® and Vespel® for extremely high temperature applications.

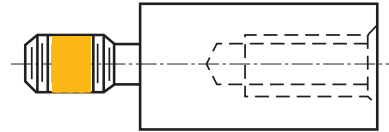


Two additional thread-locking products for your design needs:

ND MICROSPHERES®

Locking, Sealing, Bonding, Factory Pre-Applied

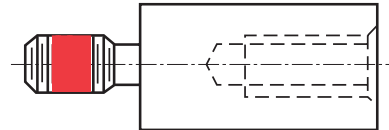
The micro-encapsulated adhesive market is no longer dominated by makers of expensive brand name products. ND Microspheres is an affordable, equivalent-quality alternative to brand name micro-encapsulated adhesives. It is offered in epoxy formulation, and is available *Pre-Applied*.



ND VIBRA-TITE®

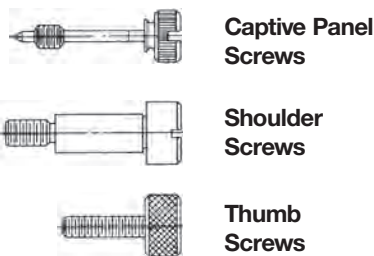
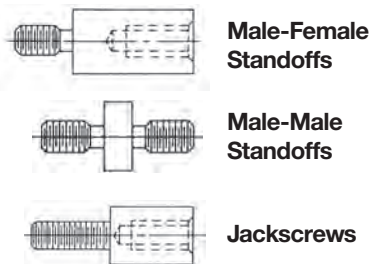
Locking, Sealing, Re-Usable, Factory Pre-Applied, Minimizes Galling/Stripping

This low-cost blend of acrylic resins makes any threaded fastener self-locking and self-sealing, preventing it from loosening even under extreme vibration. Vibra-tite is available factory *Pre-Applied*. Once coated, the parts can be stored indefinitely before use. In addition, ND Vibra-tite is *Military Approved*.



ND®, ND Patch®, ND 360° Ring-Patch®, ND Pell-It®, ND Microspheres®, and ND Vibra-tite® are all registered trademarks of ND Industries, Inc.

Thread-locking products can be added to:



How to order

Just add the appropriate thread-locking designation to our product number. Here's an example of ND PATCH added to a hex male-female standoff number:

4500-440-SS-PL

Thread-locking product designations

ND PATCH	PL
ND 360° RING PATCH	RP
ND PELL-IT	PI
ND MICROSPHERES	MS
ND VIBRA-TITE	VT