593 394 to 564

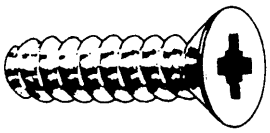
SCREWS FOR PLASTICS

Plastite®

Plastite, a member of the trilobular family of products has been developed for use into thermoplastic materials.

Plastite has a trilobular threadform and produces a low driving torque and consequently low bursting effect within the plastic material.

The deep, widely spaced threads ensure high failure torque and pull out loads.



Plastite allows for increased tolerance of tapping hole variation.

Plastite screws are suitable for use in pre-drilled or moulded holes and can accommodate a variation of pilot holes.

The recommended pilot holes when used into plastics are as follows:-

Screw Size	Soft Plastics			Hard Plastics		
	Hole dia. in	Nearest Drill Size		Hole dia. in	Nearest Drill Size	
		mm	Alternatives		mm	Alternatives
2-28	0.076	1.9	48	0.080	2.0	46
4-20	0.100	2.5	39	0.106	2.7	36
6-19	0.122	3.1	31	0.128	3.2	30
8-16	0.149	3.7	26	0.158	4.0	22
10-14	0.175	4.4	17	0.185	4.7	13

Dimensions in inches

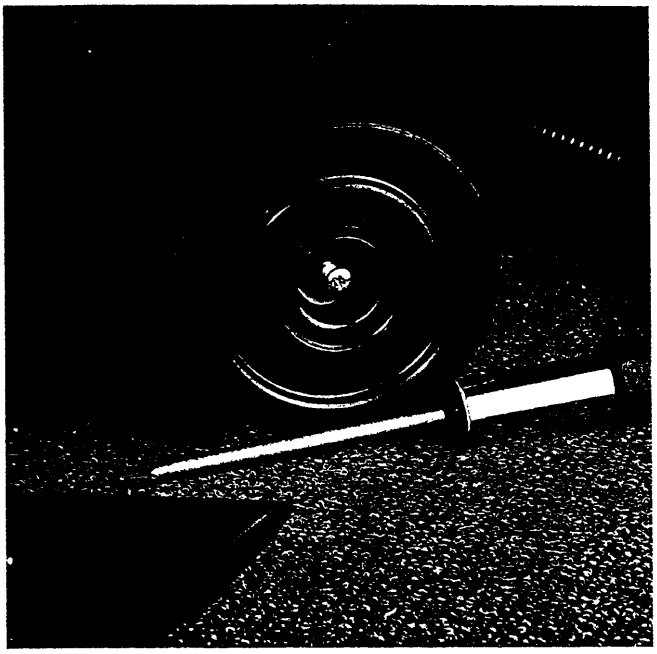
The pilot holes are only a guide and for particular applications please consult Nettlefolds Application Engineers.

PRODUCT FINISHES

Plastite screws are available in a bright zinc plated finish (Suffix 81).

Bright Zinc (Suffix 81)

Electroplated zinc finish to .0002" minimum batch average thickness and clear passivated. Suitable for indoor applications where there is adequate heating and ventilation.



TYPICAL APPLICATIONS

Plastite screws are suitable for use into a range of engineering plastics and some thermosets. Typical materials into which Plastite is used are Nylon, ABS and some of the glass filled nylons.

PRODUCT SIZES AVAILABLE


ARTICLE No./FINISH	4520-81 Supadriv Pan	4522-81 Supadriv Countersunk
Diameter range (SG)	4-10	4-8
Length range (ins)	1/4-1	3/8-3/4

For details of sizes available please refer to price list.

PRODUCT REFERENCE SYSTEM

When ordering Plastite screws the following explains the reference system.

10 x 1" Supadriv Countersunk Plastite Zinc plated will have the reference number:-

10 x 1	Article 4522 - 81
Gauge & length	Type - Finish

NETTLEFOLDS

NETTLEFOLDS SELF TAPPING SCREWS PRODUCT AND APPLICATION GUIDE

The Nettlefolds Self Tapping Screw Product and Application Guide contains the range of Self Tapping Screws, Taptite® , Screws for Plastics and other associated products.

The information shown is designed to give a general guide to the product, its range and application.

The choice of the correct type of screw depends upon several factors including:

i Type of material into which the screw is to be inserted — malleable, brittle and thickness of section.

ii Method of pilot hole preparation — punched, drilled, rim extruded, moulded.

iii Method of driving — hand or power driver.

The aim of the fastener assembly is to achieve maximum engagement between fastener and mating material under good driving conditions with a minimum of over-stressing on the screw and a minimum of difficulty for the operator.

The guide gives the following information:

1. Product features
2. Design Considerations
3. Typical product applications
4. Product finishes
5. Product size availability
6. Product reference system.

Nettlefolds range of Self Tapping Screws are manufactured to BS 4174 where applicable.

Quality Statement

Nettlefolds Limited is commited to total quality management and operates quality control systems at all stages from receipt of raw material through to despatch to the customer.

The manufacturing site is registered to BS5750 Part 2 1987 (ISO 9002 1987) and QAS 3137/7 as a Firm of Assessed Capability (certificate No. FM 069). The Distribution Centre is a BSI Stockist of Assessed Capability (certificate No. RS 102, Part 1 and 2).

Customer support

Nettlefolds Limited provides one of the most comprehensive technical support services for its customers in the fastener industry. To promote good fastener engineering and reduce in-place costs, the company advises on materials, assembly and other factors relevant to the specification of optimum fastener solutions. This is provided through the facilities of the in-house laboratory and product development teams and by application engineers who visit customers countrywide to discuss their individual requirements.

This Product and Application Guide covers the Self Tapping Screw range of products. Similar literature is available on other product ranges.

The table provides a rapid reference when determining the most suitable Self Tapping Screw for particular applications. The table shows the range of Nettlefolds products available and the materials into which the product can be used. The far right hand column of the table shows the appropriate product page on which further details are available.

Material / Product	Thin sheet metal 0.45-1.2mm	Thick sheet metal 1.62-5.08mm	Structural steel and ferrous castings	Light alloy die castings	Brittle Plastics bakelite, perspex	Hard Plastics ABS, GR Plastics	Soft Plastics Nylon, PVC Polypropylene	Product Page No.
Type AB	■	•		•		•	•	2/3
Type B		■	•	■		•	•	4/5
Taptite® II	• (2)	■	■	■				10/11
Type Y					■	•		6
Type U		■	■	■		■	■	7
Screw nail	■ (1)							15
Polymate®				•		■	■	12/13
Plastite®						■	■	14

■ First choice
• Second choice

(1) This is for fixing through the material into timber, it is not a recommendation for "fixing to".

(2) Extrude-tite™ Taptite for details refer to Nettlefolds Application Engineers.

NOTE:

(a) A range of stainless steel AB, B and "U" type screws are available for harsher environmental conditions. For details please see product pages 8/9

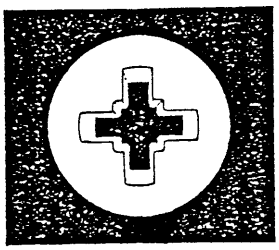
(b) A range of Driver bits and adaptors, please see product page 16

593-394 → 593-394

European Industrial Services Limited

Screws and Fasteners Division

SUPADRIV MACHINE SCREWS

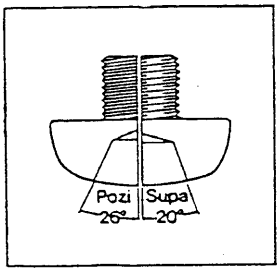


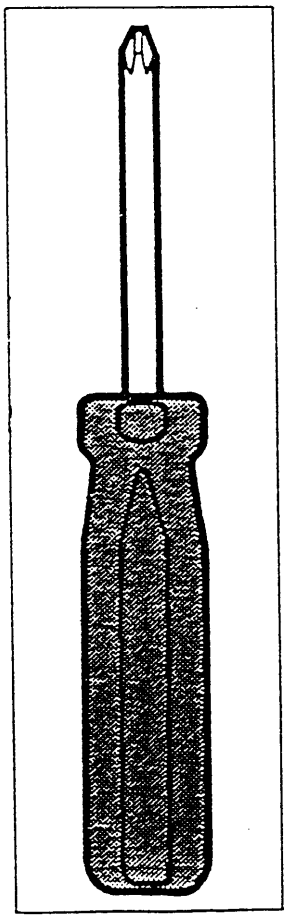
THE RECESS - BETTER FROM ANY ANGLE

Pozidriv proved its worth over many years of assembly line use. But experience showed that in adverse conditions performance could be improved, particularly where the driver and screw were not in line, and where the recess had to be used after painting.

The Supadriv recess has a 20° angle at the edges of the wings. So that, when the existing 26° angle Pozidriver is used, there is a clearance at the sides and base of the recess. This, together with improved recess definition, permits angle driving without reduction in driver engagement. And the Supadriv recess can accommodate a build up of metal, plating or paint.

So the end result is:- FASTER ASSEMBLY HIGHER PRODUCTIVITY
BETTER END PRODUCT LESS DOWN TIME
REDUCED COSTS.





THE DRIVER

THE CHANGE OVER IS PAINLESS. Many product improvements involve associated tooling costs. This is not the case with Supadriv. The substitution of Pozidriv with Supadriv screws is straightforward. No need to change drivers. The same five Pozidriv driver point sizes cover the full range of Supadriv machine screws.

TABLE OF SUPADRIV MACHINE SCREW RECESS SIZES

Head Style	Thread type	Recess No. 0	1	2	3	4
		Screw Diameter				
Countersunk and Rsd. Countersunk	Metric	2	2.5 & 3	3.5, 4, 5	6	8, 10
	Unified	–	2 & 4	6, 8, 10	12 & ¼"	5/16"
	B.A.	–	6	4 to 1	0	–
	Whitworth	–	1/8"	3/32" & 7/64"	¼"	5/16"
Pan	Metric	2	2.5 & 3	3.5, 4, 5	6	8, 10
	Unified	–	4	6, 8, 10	12 & ¼"	7/64" to 7/16"
	B.A.	–	6	5 to 2	0	–
	Whitworth	–	–	1/8" to 7/64"	¼"	5/16"
Mushroom	Unified	–	–	10	–	–
	B.A.	–	–	2	–	–
	Whitworth	–	–	7/64"	–	–
Fillister	Unified	–	4	6, 8, 10	¼" & 7/64"	–
	B.A.	–	6	4 & 2	0	–

STOCK RANGE

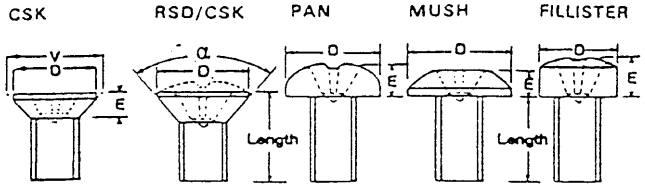
The ISO Metric Stock Range is shown overleaf alongside the dimensions. In other thread forms the range is:

4UN to ¼"UN (Coarse or Fine) lengths up to 1¼"
2BA to 6BA lengths up to 1½"
3/16" & ¼" WHIT lengths up to 1¼"

DATA SHEET NO4

SUPADRIV DIMENSIONS

The diagram shows commonly encountered Supadriv Head Styles whose dimensions are given in the accompanying tables.



α = 90° Metric, Whitworth, B.A.
= 80° Unified

I.S.O. METRIC—Threads to B.S. 3643 other dimensions to B.S. 4183:

Dimensions in Millimetres

Nominal Size	Pitch	Csk. and Rsd. Csk. Head Dia. of Head D "V" sharp	Max.	Min.	Ht. of Raise	Depth of Head E Max.	Pan Head Dia. of Head D Max.	Min.	Depth of Head E Max.	Min.	Stock Lengths P + available in Pan Head C + Countersunk 4 5 6 8 10 12 16 20 25 30 35 40 45 50 6
M2	0.40	4.40	3.8	3.5	0.50	1.20	4.00	3.70	1.60	1.46	PC PC PC PC PC PC — — — — — — — — -
M2.5	0.45	5.50	4.7	4.4	0.60	1.50	5.00	4.70	1.75	1.61	— PC PC PC PC PC PC — — — — — — — — -
M3	0.50	6.30	5.6	5.3	0.75	1.65	6.00	5.70	2.10	1.96	— PC PC PC PC PC P- PC PC — — — — — — -
M3.5	0.60	7.35	6.5	6.1	0.90	1.93	7.00	6.64	2.45	2.31	— — P- PC PC PC PC P- P- — — — — — — -
M4	0.70	8.40	7.4	7.0	1.00	2.20	8.00	7.64	2.80	2.66	— P- PC PC PC PC PC PC PC PC PC — — — — -
M5	0.80	10.00	9.2	8.8	1.25	2.50	10.00	9.64	3.50	3.32	— — PC PC PC PC PC PC PC PC PC P- P- P- P- -
M6	1.00	12.00	11.0	10.5	1.50	3.00	12.00	11.57	4.20	3.98	— — — — PC PC PC PC PC PC PC PC PC PC -C -
M8	1.25	16.00	14.5	14.0	2.00	4.00	16.00	15.57	5.60	5.42	— — — — — — — PC PC -C — PC — -C -
M10	1.50	20.00	18.0	17.5	2.50	5.00	20.00	19.48	7.00	6.78	— — — — — — — — -C — — — — — — -
M12	1.75	24.00	21.5	21.0	3.00	6.00	—	—	—	—	— — — — — — — — — — — — — — — -

'V' sharp is the theoretical sharp diameter, and is the diameter to which holes should be countersunk with a 90° included angle, to enable the screw heads to fit flush with the surface.

UNIFIED—Threads to B.S. 1580 other dimensions to B.S. 1981, 1972:

Dimensions in Inches

Nom. Screw Size	Nom. Dia.	T.P.I. UNC	UNF	Csk. and Rsd. Csk. Diameter "V" sharp	D Min.	Depth E Max.	Pan Ht. of Raise	Diameter D Max.	Min.	Depth E Max.	Min.	Mushroom Diameter D Max.	Min.	Depth E Max.	Min.	Fillister Diameter D Max.	Min.	Depth E Max.	Min.
2	·086	56	64	·172	·147	·051	·020	·167	·155	·062	·053	—	—	—	—	·140	·124	·083	·066
4	·112	40	48	·225	·195	·067	·026	·219	·205	·080	·070	·257	·241	·069	·059	·183	·166	·107	·088
6	·138	32	40	·279	·244	·083	·033	·270	·256	·097	·087	·321	·303	·086	·074	·226	·208	·132	·111
8	·164	32	36	·332	·292	·100	·040	·322	·306	·115	·105	·384	·364	·102	·088	·270	·250	·156	·133
10	·190	24	32	·385	·340	·116	·046	·373	·357	·133	·122	·448	·425	·118	·103	·313	·292	·180	·156
12	·216	24	28	·438	·389	·132	·053	·425	·407	·151	·139	·511	·487	·134	·118	·357	·334	·205	·178
1/4"	·250	20	28	·507	·452	·153	·062	·492	·473	·175	·162	·573	·545	·150	·133	·414	·389	·237	·207
5/16"	·312	18	24	·635	·568	·191	·075	·615	·594	·218	·203	·698	·666	·183	·162	·518	·490	·295	·262
3/8"	·375	16	24	·762	·685	·230	·096	·740	·716	·261	·244	·823	·787	·215	·191	·622	·590	·355	·315

Although dimensions are given below for the B.A. and B.S.W. screws they are OBSOLESCENT and their continued specification is to be discouraged. B.S.F. screws are no longer manufactured by Thomas Haddon & Stokes Ltd.

B.A.—Threads to B.S. 93, other dimensions to B.S. 57:

Dimensions in Inches

B.A. No.	Nom. Dia. Ins.	T.P.I.	Csk. and Rsd. Csk. Diameter D Max.	Min.	Depth E Max.	Ht. of Raise	Pan Diameter D Max.	Min.	Depth E Max.	Min.	Mushroom Diameter D Max.	Min.	Depth E Max.	Min.
8	·087	59·1	·157	·147	·042	·020	·167	·155	·062	·053	—	—	—	—
6	·110	47·9	·196	·184	·052	·024	·219	·205	·080	·070	·257	·241	·069	·059
5	·126	43·1	·225	·211	·060	·026	·245	·231	·089	·079	·289	·272	·078	·066
4	·142	38·5	·257	·242	·065	·030	·270	·256	·097	·087	·321	·303	·086	·074
3	·161	34·8	·290	·273	·078	·036	·322	·306	·115	·105	·384	·364	·102	·088
2	·185	31·4	·329	·309	·087	·040	·373	·357	·133	·122	·448	·425	·118	·103
1	·209	28·2	·378	·356	·101	·046	·425	·407	·151	·139	·511	·487	·134	·118
0	·236	25·4	·428	·403	·115	·055	·492	·473	·175	·162	·573	·546	·150	·133

WHITWORTH—Threads to B.S. 92, other dimensions to B.S. 450:

Dimensions in Inches

Nom. Screw Size	Nom. Dia.	T.P.I. B.S.W.	Csk. and Rsd. Csk. Diameter D Max.	Min.	Depth E Max.	Ht. of Raise	Pan Diameter D Max.	Min.	Depth E Max.	Min.	Mushroom Diameter D Max.	Min.	Depth E Max.	Min.
1/8"	·125	40	·219	·201	·056	·026	·245	·231	·089	·079	·289	·272	·078	·066
5/32"	·156	32	·273	·254	·070	·042	·322	·306	·115	·105	·384	·364	·102	·088
3/16"	·187	24	·328	·307	·084	·040	·373	·357	·133	·122	·448	·425	·118	·103
1/4"	·250	20	·438	·412	·113	·055	·492	·473	·175	·162	·573	·546	·150	·133
5/16"	·312	18	·547	·518	·141	·068	·615	·594	·218	·203	·698	·666	·183	·162
3/8"	·375	16	·656	·624	·169	·080	·740	·716	·251	·244	·823	·787	·215	·191

Screw size		Material thickness	Mild steel sheet and bar		Aluminium sheet and bar aluminium and zinc based die-castings	
Dia.	Pitch mm	mm	Hole dia. required mm	Drill size mm	Hole dia required mm	Drill size mm
M2·5	0·45	0·50—2·00	2·25	2·25	2·20	2·20
		1·50—3·50	2·30	2·30	2·25	2·25
		3·00—6·50	2·35	2·35	2·30	2·30
M3	0·50	0·50—2·00	2·70	2·70	2·60	2·60
		1·50—3·50	2·75	2·75	2·70	2·70
		3·00—6·50	2·80	2·80	2·75	2·75
M3·5	0·60	0·50—2·00	3·10	3·10	3·10	3·10
		1·50—3·50	3·20	3·20	3·10	3·10
		3·00—6·50	3·20	3·20	3·20	3·20
		6·00—8·00	3·30	3·30	3·20	3·20
		8·00—12·00	3·30	3·30	3·20	3·20
M4	0·70	0·50—2·00	3·60	3·60	—	—
		1·50—3·50	3·70	3·70	3·60	3·60
		3·00—6·50	3·70	3·70	3·70	3·70
		8·00—8·00	3·80	3·80	3·70	3·70
		8·00—12·00	3·80	3·80	3·70	3·70
M5	0·80	1·50—3·50	4·50	4·50	4·50	4·50
		3·00—6·50	4·60	4·60	4·50	4·50
		8·00—8·00	4·70	4·70	4·60	4·60
		8·00—12·00	4·70	4·70	4·70	4·70
M6	1·00	1·50—3·50	5·40	5·40	5·40	5·40
		3·00—6·50	5·50	5·50	5·40	5·40
		6·00—8·00	5·60	5·60	5·50	5·50
		8·00—12·00	5·70	5·70	5·60	5·60
M8	1·25	1·50—3·50	7·30	7·30	7·30	7·30
		3·00—6·50	7·40	7·40	7·30	7·30
		6·00—8·00	7·50	7·50	7·40	7·40
		8·00—12·00	7·60	7·60	7·50	7·50

Plastite thread forming screws

Hardened steel

Recommended hole and drill sizes

In pliable plastics and ductile metals

Notes: 1. Because of variations in fastening conditions, the following table is intended only as a guideline. It may be necessary to vary the hole size to suit a particular application.

2. See Plastite brochure A397 for further details.

Screw Size (No.)	Hole diameter required in.	Drill size mm	Alternatives
2	0·073	1·85	49
4	0·099	2·50	40
6	0·116	2·95	32
8	0·149	3·80	26
10	0·173	4·40	17