

NEW
BLACK MOULDED
SHOULDER WASHERS

SUPREME

Fasteners and Components

Australia's Leading Supplier of High Quality
Plastic Fasteners and Components

Catalogue 2016/18

EXPANDED MATERIAL RANGE

Natural Nylon | Black Nylon
GF Nylon | TPR | Neoprene
PVDF | Polypropylene | PVC
PTFE | Peek | Polycarbonate



WHEN YOUR APPLICATIONS REQUIRE THE FOLLOWING

- High Dielectric Strength
- Low Conductivity of Heat or Cold
- Chemical Resistance
- Extreme Operating Temperatures
- Non Flammability
- Light-Weight
- Dimensional Stability
- Corrosion Resistance
- Isolation with other Materials
- Weather Resistance
- Low Coefficient of Friction
- Non Magnetic with High Volume Resistance
- Sealant Properties

SUPREME Fasteners and Components can HELP!

Our worldwide engineering teams can offer customer assistance in the areas of material selection and design for both our STANDARD and CUSTOM Parts.



Washers, Spacers



Standard Screws



Threaded Rods



Protecting Caps, Cover Caps



Nuts



















Assembly Systems

SUPREME Fasteners and Components have been involved in the manufacture of moulded and precision machined plastic items for more than 45 years.

Through our world-wide resources of having access to manufacturing plants in Australia, the USA and Europe we are able to offer our customers the most comprehensive range of plastic fasteners and components possible.

This catalogue details our Main Products range.

SCREWS NUTS WASHERS RODS

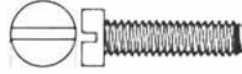
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NOTE: Unless otherwise indicated most items in this Catalogue are moulded from PA 6 or PA 6.6 (Nylon).

CHEESE HEAD SCREWS

METRIC DIN 84

NATURAL NYLON



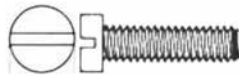
BLACK NYLON

Dia.	Length	Length	Pack
M2	4MM	5MM	*
	6MM	8MM	
	10MM	12MM	
	16MM	20MM	
	25MM		
M2.5	5MM	8MM	*
	10MM	12MM	
	16MM	20MM	
	25MM		
M3	4MM	5MM	500
	6MM	8MM	
	10MM	12MM	
	16MM	20MM	
	25MM	30MM	
	35MM	40MM	
M4	5MM	6MM	500
	8MM	10MM	
	12MM	16MM	
	20MM	25MM	
	30MM	35MM	
	40MM	45MM	
	50MM		
M5	6MM	8MM	500
	10MM	12MM	
	16MM	20MM	
	25MM	30MM	250
	35MM	40MM	
50MM	60MM		
70MM			
M6	5MM	8MM	250
	10MM	12MM	
	16MM	20MM	
	25MM	30MM	100
	35MM	40MM	
	45MM	50MM	
	60MM	70MM	
75MM			
M8	10MM	16MM	100
	20MM	25MM	
	30MM	35MM	
	40MM	50MM	
	60MM	70MM	

Dia.	Length	Length	Pack
M8	75MM	80MM	250
	85MM	90MM	
	95MM	100MM*	
	110MM*	120MM*	
	130MM*		
M10	6MM	8MM	250
	10MM	12MM	
	16MM	20MM	
M10	25MM	30MM	100
	35MM	40MM	
	50MM	60MM	
	70MM		
	100MM*	110MM*	
M10	120MM*	130MM*	250
M12	10MM	12MM	250
	16MM	20MM	
	25MM	30MM	
	35MM	40MM	
	50MM	60MM	
	70MM		

Dia.	Length	Length	Pack
M3	6MM	8MM	*
	10MM	16MM	
	20MM		
M4	6MM	10MM	*
	16MM	20MM	
	30MM		
M5	10MM	16MM	500
	20MM	25MM	
	30MM	40MM	
M6	8MM	10MM	250
	12MM	16MM	
	20MM	30MM	
M8	10MM	16MM	250
	20MM	30MM	
M10	20MM	30MM	250

IMPERIAL (Inches)



Dia.	Length	Length	Pack
3/16	3/8	1/2	500
	5/8	3/4	
	1	1 1/4	
	1 1/2	2	
1/4	1/2	5/8	500
	3/4	1	
	1 1/2	2	

SCREWS MARKED * NOT FULLY THREADED.

BLACK NYLON VERSUS BLACKENED NYLON

Dyeing individual items (mainly in Black) has always been available as a cosmetic alternative to Natural Nylon. Suitable for many applications, Blackened Nylon, however, has limited outdoor use as the dye can often wash out.

Moulding in Black Nylon is the best way to get increased outdoor performance and in this catalogue only items made this way are shown in each section under the heading BLACK NYLON.

All Natural Moulded items are able to be dyed and we will continue to offer this service, should you require it.

OTHER HEAD STYLES AVAILABLE ON REQUEST INCLUDE;

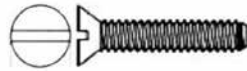
IMPERIAL – BINDER SLOT, HEX SLOT, PAN SLOT, SET SLOT, SOCKET SET, PAN PHILLIPS, HEX SOCKET CAPS.

METRIC – PAN SLOT, PAN PHILLIPS, FILLISTER SLOT, PHILLIPS COUNTERSUNK, ROUND HEAD AND WING SCREWS.

* SPECIAL ORDERS:
 MINIMUM ORDER LEVELS APPLY

COUNTERSUNK HEAD SCREWS

METRIC DIN 963



NATURAL NYLON

Dia.	Length	Length	Pack
M2	4MM	5MM	*
	6MM	8MM	
	10MM	12MM	
	15MM	20MM	
	25MM		
M2.5	4MM	5MM	*
	6MM	8MM	
	10MM	12MM	
	15MM	20MM	
	25MM		
M3	4MM	5MM	500
	6MM	8MM	
	10MM	12MM	
	15MM	16MM	
	20MM	25MM	
M4	5MM	6MM	500
	8MM	10MM	
	12MM	16MM	
	20MM	25MM	
	30MM	35MM	
M5	8MM	10MM	500
	12MM	15MM	
	20MM	25MM	250
	30MM	35MM	
	40MM	50MM	
M6	8MM	10MM	250
	12MM	16MM	
	20MM	25MM	
	30MM	35MM	
	40MM	45MM	
M8	10MM	12MM	100
	16MM	20MM	
	25MM	30MM	
	35MM	40MM	250
	45MM	50MM	
55MM	60MM	250	
65MM	75MM		
85MM			

BLACK NYLON

Dia.	Length	Length	Pack
M3	9MM	10MM	*
	12MM	16MM	
	20MM		
M4	10MM	12MM	*
	16MM	20MM	
	30MM		
M5	10MM	16MM	500
	20MM	30MM	
	40MM		
M6	10MM	12MM	250
	16MM	20MM	
	30MM	40MM	
	60MM		
M8	16MM	20MM	250
	30MM	50MM	

IMPERIAL (Inches)

Dia.	Length	Length	Pack
3/16	1/2	3/4	500
	1		
1/4	1/2	5/8	500
	3/4	1	
	1 1/2	1 3/4	
	2	2 1/2	

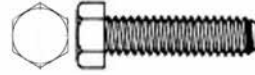
* SPECIAL ORDERS:
 MINIMUM ORDER LEVELS APPLY



SUPREME FASTENERS & COMPONENTS
 PH: (02) 9450 0991 FAX: (02) 94500979

HEXAGONAL HEAD SET SCREWS

METRIC DIN 933



NATURAL NYLON

Dia.	Length	Length	Pack
M2	6MM	8MM	*
	10MM	12MM	
	16MM	20MM	
M2.5	6MM	8MM	*
	10MM	12MM	
	16MM	20MM	
M3	5MM	6MM	500
	8MM	10MM	
	12MM	16MM	
	20MM		
M3	25MM	30MM	250
	35MM	40MM	
M4	5MM	6MM	500
	8MM	10MM	
	12MM	16MM	
	20MM	25MM	
M4	30MM	35MM	250
	40MM		
M5	5MM	6MM	500
	8MM	10MM	
	12MM	16MM	
	20MM	25MM	
M5	30MM	35MM	250
	40MM	45MM	
	50MM	60MM	
M5	70MM		
M6	6MM	8MM	250
	10MM	12MM	
	16MM	20MM	
M6	25MM	30MM	100
	35MM	40MM	
	45MM	50MM	
	60MM	70MM	
	75MM	80MM	
M8	6MM	8MM	100
	10MM	12MM	
	16MM	20MM	
	25MM	30MM	
	35MM	40MM	
	45MM	50MM	
M8	60MM	70MM	
	75MM	80MM	
	100MM		
M10	6MM	8MM	100
	10MM	12MM	
	16MM	20MM	
	25MM	30MM	
	35MM	40MM	
	45MM	50MM	
M10	60MM	70MM	
	75MM	80MM	
	100MM		

BLACK NYLON

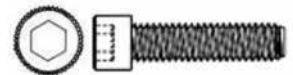
Dia.	Length	Length	Pack
M12	10MM	12MM	100
	16MM		
M12	20MM	25MM	50
	30MM	35MM	
	40MM	45MM	
	50MM	60MM	
	70MM	75MM	
	80MM	100MM	
M16	20MM	25MM	50
	30MM	35MM	
	40MM	45MM	
	50MM	55MM	
M16	60MM	65MM	
	70MM	75MM	
	80MM	100MM	
M20	25MM	30MM	50
	35MM	40MM	
	45MM	50MM	
	55MM	60MM	
	65MM	70MM	
	75MM	80MM	
M20	100MM		
M24	20MM	25MM	50
	30MM	35MM	
	40MM	45MM	
	50MM	55MM	
	60MM	65MM	
	70MM	75MM	
M24	80MM	100MM	

Dia.	Length	Length	Pack
M3	10MM	16MM	*
	20MM		
M4	10MM	16MM	*
	20MM	30MM	
M5	10MM	16MM	500
	20MM	30MM	
M6	10MM	16MM	250
	20MM	30MM	
	40MM		
M8	20MM	30MM	250
	40MM	60MM	
M10	20MM	30MM	250
	50MM	60MM	
M12	40MM	60MM	250

HEXAGONAL SOCKET HEAD SCREWS

NATURAL NYLON

METRIC DIN 931



IMPERIAL (Inches)

Dia.	Length	Length	Pack
1/4	1/2	3/4	250
	1	2 1/2	
	3		
5/16	1/2	3/4	250
	1		
3/8	1/2	3/4	100
	1	2	
1/2 UNC	3/4	1	100

Dia.	Length	Length	Pack
M8	20MM	25MM	100
	30MM	35MM	
	40MM	45MM	
	50MM	60MM	
UP TO 130MM			
M10	20MM	25MM	100
	30MM	35MM	
	40MM	45MM	
	50MM	60MM	
UP TO 130MM			
M12	20MM	25MM	100
	30MM	35MM	
	40MM	45MM	
	50MM	60MM	
UP TO 130MM			

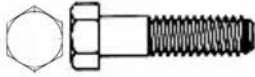
* SPECIAL ORDERS:
 MINIMUM ORDER LEVELS APPLY

ALSO AVAILABLE ON REQUEST M3, M4, M5, M6
 AND M16 (MINIMUM ORDER LEVELS APPLY).

HEXAGONAL HEAD BOLTS

METRIC DIN 931

NATURAL NYLON



Dia.	Length	Length	Pack
M6	60MM	80MM	100
	100MM		
M8	80MM	100MM	100
	105MM	110MM	
	120MM	125MM	
	130MM		
M10	60MM	70MM	100
	80MM	105MM	
	110MM	120MM	
	125MM	130MM	
	150MM		
M12	40MM	60MM	100
	70MM	80MM	
	105MM	110MM	
	120MM	125MM	
	130MM		
M16	105MM	110MM	100
	120MM	125MM	
	130MM	140MM	
	140MM	150MM	
M20	105MM	110MM	100
	120MM	125MM	
	130MM	140MM	
	150MM		
M24	105MM	110MM	100

ATTENTION: THREAD LENGTH IN METRIC MAY VARY ACCORDING TO BOLT LENGTH

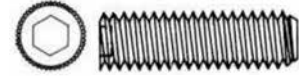
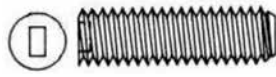
IMPERIAL (Inches)

Dia.	Length	Length	Pack
1/4	1 1/4	1 1/2	100
	2	2 1/2	
	3	3 1/2	
	4		
5/16	1 1/4	1 1/2	100
	2	2 1/2	
	3	3 1/2	
	4		
3/8	1 1/4	1 1/2	100
	2	2 1/2	
	3	3 1/2	
	4	4 1/2	
	5		
1/2 UNC	1 1/2	2	100
	2 1/2	3	
	3 1/2	4	
	4 1/2	5	

SLOTTED GRUB SCREWS AND HEX SOCKET GRUB SCREWS

METRIC DIN 551 / DIN 913

NATURAL NYLON



Dia.	Length	Length	Pack
M5	10MM	12MM	*
	16MM	20MM	
	25MM	30MM	
M6	10MM	12MM	100*
	16MM	20MM	
	25MM	30MM	
M8	10MM	12MM	100*
	16MM	20MM	
	25MM	30MM	
M10	10MM	12MM	100
	16MM	20MM	
	25MM	30MM	

* SPECIAL ORDERS: MINIMUM ORDER LEVELS APPLY

Dia.	Length	Length	Pack
M12	20MM	25MM	100
	30MM	35MM	
	40MM		
M16	20MM	25MM	*
	30MM	35MM	
	40MM		
M20	20MM	25MM	*
	30MM	35MM	
	40MM	45MM	
	50MM		
M24	20MM	25MM	*
	30MM	35MM	
	40MM		

OTHER SIZES AVAILABLE SUBJECT TO MINIMUM ORDER LEVELS.



SUPREME FASTENERS & COMPONENTS
 PH: (02) 9450 0991 FAX: (02) 94500979

HEXAGONAL NUTS

METRIC DIN 934 (Millimetres)

NATURAL NYLON

Size	H	A/F	Pack
M2	1.2	3.9	500
M2.5	1.8	4.9	
M3	2.4	5.4	
M3.5	2.7	6.9	
M4	3.2	7.0	
M5	4.0	8.0	250
M6	5.0	10.0	
M8	6.5	13.0	
M10	8.0	16.0	
M12	10.0	18.0	100
M14	11.0	22.0	
M16	13.0	24.0	
M18	15.0	27.0	
M20	16.0	30.0	
M24	19.0	36.0	
M30	25.0	45.0	

IMPERIAL (Inches)

NATURAL NYLON

Size	H	A/F	Pack
3/16	0.135	0.365	500
3/16 L*	0.196	0.365	
1/4	0.235	0.425	
5/16	0.270	0.500	250
3/8	0.330	0.560	
1/2 UNC	0.430	0.750	100
5/8 UNC	0.550	0.925	
3/4 UNC	0.640	1.100	
1 UNC	0.870	1.470	

L*=INDICATES LARGER SIZE

EXPLANATION

H = HEIGHT
 A/F = ACROSS THE FLATS

A LIMITED RANGE OF METRIC HEX JAM NUTS ALSO CAN BE SUPPLIED.

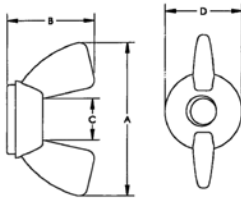
BLACK NYLON

Size	H	A/F	Pack
M3	2.4	5.5	250
M4	3.2	7.0	
M5	4.2	8.0	
M6	5.0	10.0	
M8	6.5	13.0	100
M10	8.0	17.0	
M12	10.8	18.0	

WING NUTS

METRIC (Millimetres)

NATURAL NYLON



Size	A	B	C	D	Pack
M4	22.8	12.2	5.8	10.2	100
M5	22.8	12.2	5.8	10.2	
M6	27.7	16.0	7.6	14.2	
M8	34.8	18.3	9.6	16.2	
M10	34.8	18.3	9.6	16.2	
M12	44.7	22.7	15.0	21.1	

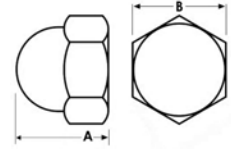
IMPERIAL (Inches)

Size	A	B	C	D	Pack
1/4	1.36	0.71	0.36	0.65	250
5/16	1.37	0.72	0.38	0.64	
3/8	1.37	0.72	0.38	0.64	100
1/2 UNC	1.76	0.90	0.56	0.85	

DOME NUTS

METRIC DIN 1587

NATURAL NYLON



Size	A	B	Pack
M3	6.3	5.5	250
M4	8.0	7.0	
M5	10.0	8.0	
M6	12.0	10.0	
M8	15.0	13.0	100
M10	18.0	17.0	
M12	22.0	19.0	
M16	25.0	24.0	
M20	29.0	27.0	
M24	42.0	36.0	

IMPERIAL (Inches)

NATURAL NYLON

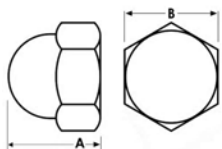
Size	A	B	Pack
3/16 UNC	.370	.360	250
1/4 UNC	.475	.425	
5/16 UNC	.530	.500	
3/8 UNC	.620	.560	100
1/2 UNC	.810	.750	
5/8 UNC	.970	.935	



DOME NUTS

METRIC DIN 1587

BLACK NYLON

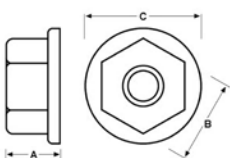


Size	A	B	Pack
M3	6.0	5.5	250
M4	8.0	7.0	
M5	10.0	8.0	
M6	12.0	10.0	
M8	15.0	13.0	
M10	18.0	17.0	100
M12	22.0	19.0	

WASHER FACED NUTS

METRIC (Millimetres)

NATURAL NYLON



Size	A	B	C	Pack
M3	3.4	5.5	7.0	250
M4	4.2	7.0	9.5	
M5	5.2	8.0	11.0	
M6	6.0	10.0	13.0	
M8	7.4	13.0	16.8	
M10	9.5	16.0	21.7	100
M12	12.7	18.0	27.1	
M16	16.6	23.7	35.0	250
M20	20.0	30.0	44.0	
M24	23.8	36.0	53.0	

PROTECTING CAPS

METRIC (Millimetres)

IMPERIAL (Inches)

POLYETHYLENE

POLYETHYLENE

Size	A	B	Pack
M4	7.0MM	8.5MM	250
M5	8.0MM	10.5MM	
M6	10.0MM	12.8MM	
M8	13.0MM	15.5MM	
M10	17.0MM	19.0MM	
M12	19.0MM	20.5MM	100
M14	22.0MM	23.8MM	
M16	24.0MM	26.5MM	
M18	27.0MM	30.0MM	
M20	30.0MM	31.5MM	
M24	36.0MM	39.0MM	

Size	A	B	Pack
#10	0.276	0.428	500
1/4	0.425	0.520	
5/16	0.484	0.640	
3/8	0.550	0.710	

**STANDARD COLOURS
 BLACK, WHITE, GREY OR BROWN**



A= ACROSS THE FLATS INTERNAL
 B= HEIGHT

**PROTECTING CAPS FIT SNUGLY
 ONTO HEX HEAD FASTENERS.
 JUST PRESS IT ON FOR A SAFE,
 CONCEALED BOLT OR NUT.**

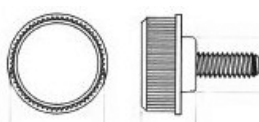
ROUND HEAD KNOBS

METRIC (Millimetres)

**PRESS ONTO ANY STANDARD
 HEXAGONAL SOCKET HEAD**

**AVAILABLE IN
 BLACK OR RED ACETAL**

**ROUND HEAD KNOBS ARE
 DESIGNED TO ASSIST HAND
 TIGHTENING AND REMOVAL**



Screw	Pack
M3	500
M4	
M5	
M6 (S)	250
M6 (L)	
M8	

ROUND HEAD KNOB



SHOULDER/INSULATING (TOP HAT) WASHERS

METRIC (Millimetres)

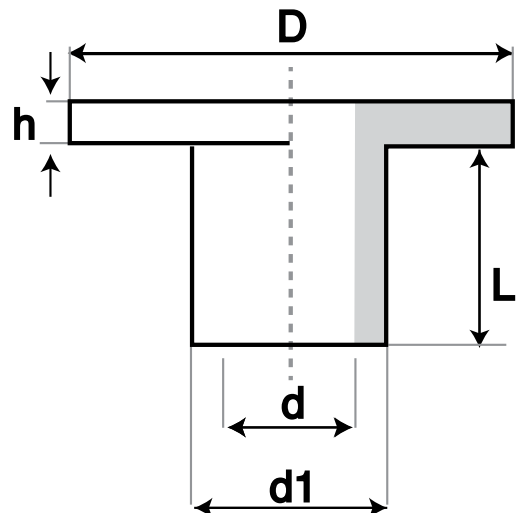
NATURAL NYLON

Size	ID	OD	Length	Head Dia.	Thick	Pack	
M4	4.1	6.0	3.0	8.4	1.5	1,000	
	4.1	6.0	4.0	8.4	1.5		
	4.1	6.0	5.0	8.4	1.5		
	4.1	6.0	7.0	8.4	1.5		
	4.1	6.0	9.0	8.4	1.5		
M5	5.1	7.0	3.0	10.2	2.0	1,000	
	5.1	7.0	4.0	10.2	2.0		
	5.1	7.0	5.0	10.2	2.0		
	5.1	7.0	7.0	10.2	2.0		
	5.1	7.0	9.0	10.2	2.0		
M5	5.1	8.0	3.5	14.0	1.5	500	
	5.1	8.0	8.5	14.0	1.5		
	5.1	8.0	13.5	14.0	1.5		
	5.1	8.0	18.5	14.0	1.5		
	5.1	8.0	23.5	14.0	1.5		
	5.1	8.0	28.5	14.0	1.5		
	5.1	8.0	33.5	14.0	1.5		
M6	6.1	8.0	4.0	12.2	2.0	1,000	
	6.1	8.0	6.0	12.2	2.0		
	6.1	8.0	8.0	12.2	2.0		
	6.1	8.0	10.0	12.2	2.0		
	6.1	8.0	12.0	12.2	2.0		
	6.1	9.0	3.5	16.0	1.5		500
6.1	9.0	8.5	16.0	1.5			
6.1	9.0	13.5	16.0	1.5			
6.1	9.0	18.5	16.0	1.5			
6.1	9.0	23.5	16.0	1.5			
6.1	9.0	28.5	16.0	1.5			
M6	6.1	9.0	33.5	16.0	1.5	500	
	6.5	12.0	8.0	24.0	3.0		
	8.1	10.0	4.0	14.2	2.5		500
	8.1	10.0	6.0	14.2	2.5		
	8.1	10.0	8.0	14.2	2.5		
8.1	10.0	10.0	14.2	2.5			
8.1	10.0	12.0	14.2	2.5			
M8	8.1	11.0	3.0	20.0	2.0	500	
	8.1	11.0	8.0	20.0	2.0		
	8.1	11.0	13.0	20.0	2.0		
	8.1	11.0	18.0	20.0	2.0		
	8.1	11.0	23.0	20.0	2.0		
	8.1	11.0	28.0	20.0	2.0		
	8.1	11.0	33.0	20.0	2.0		
	8.1	11.0	38.0	20.0	2.0		
	8.1	11.0	43.0	20.0	2.0		
	8.3	9.7	4.0	12.0	2.0		

Size	ID	OD	Length	Head Dia.	Thick	Pack
M10	10.1	13.0	3.0	23.7	2.0	250
	10.1	13.0	8.0	23.7	2.0	
	10.1	13.0	13.0	23.7	2.0	
	10.1	13.0	18.0	23.7	2.0	
	10.1	13.0	23.0	23.7	2.0	
	10.1	13.0	28.0	23.7	2.0	
	10.1	13.0	33.0	23.7	2.0	
	10.1	13.0	38.0	23.7	2.0	
	10.1	13.0	43.0	23.7	2.0	
	10.4	11.7	4.0	20.0	2.0	
M12	12.1	14.8	3.0	25.6	2.0	250
	12.1	14.8	8.0	25.6	2.0	
	12.1	14.8	13.0	25.6	2.0	
	12.1	14.8	18.0	25.6	2.0	
	12.1	14.8	23.0	25.6	2.0	
	12.1	14.8	28.0	25.6	2.0	
	12.1	14.8	33.0	25.6	2.0	
	12.1	14.8	38.0	25.6	2.0	
	12.1	14.8	43.0	25.6	2.0	
	12.1	14.8	48.0	25.6	2.0	
12.5	13.7	4.0	25.0	2.0		

SCREWS INSULATORS / SHOULDER (TOP HAT) WASHERS HAVE FIVE (5) MEASUREMENTS THAT NEED TO BE INCLUDED WHEN YOU ARE ORDERING:

- ID = INNER DIAMETER, SCREW / BOLT SIZE (d)**
- OD = OUTER DIAMETER, SIZE OF INSERT HOLE (d1)**
- LENGTH = DEPTH REQUIRED/ LENGTH UNDER WASHER (L)**
- HEAD = WIDTH OF OUTER FLANGE (D)**
- THICK = THICKNESS OF FLANGE (h)**



OTHER SIZES INCLUDING IMPERIAL DIMENSIONS ARE ALSO AVAILABLE.

SHOULDER/INSULATING (TOP HAT) WASHERS

METRIC (Millimetres)

NATURAL NYLON

Size	ID	OD	Length	Head Dia.	Thick	Pack
M16	16.1	19.0	2.0	34.5	3.0	100
	16.1	19.0	7.0	34.5	3.0	
	16.1	19.0	12.0	34.5	3.0	
	16.1	19.0	17.0	34.5	3.0	
	16.1	19.0	22.0	34.5	3.0	
	16.1	19.0	27.0	34.5	3.0	
	16.1	19.0	32.0	34.5	3.0	
	16.1	19.0	42.0	34.5	3.0	
	16.1	19.0	47.0	34.5	3.0	
	16.1	21.5	17.0	27.0	3.0	
16.1	21.5	22.0	27.0	3.0		
M20	20.2	22.0	12.0	36.0	2.0	100
	20.2	22.0	15.0	36.0	2.0	
	20.2	22.0	17.5	36.0	2.0	
	20.2	22.0	20.0	36.0	2.0	
	20.2	22.2	22.0	35.3	3.0	

Size	ID	OD	Length	Head Dia.	Thick	Pack
M24	24.2	26.0	12.5	44.0	2.0	100
	24.5	26.0	17.0	46.0	3.0	
	24.5	26.5	19.0	44.0	1.6	
	25.0	35.8	25.0	47.5	6.0	
M27	28.0	32.0	20.0	40.0	3.0	100
M30	30.5	32.5	34.0	56.0	1.6	100
	31.0	33.0	20.0	56.0	3.0	
	31.0	33.0	40.0	56.0	3.0	
M33	34.0	37.0	20.0	60.0	2.0	100
M36	37.0	40.0	20.0	66.0	5.0	100

SOME SIZES ALSO AVAILABLE IN ACETAL,
 POLYPROPYLENE AND GLASS FILLED NYLON
 - Subject to Minimum Order Levels

METRIC (Millimetres)

BLACK NYLON

Size	ID	OD	Length	Head Dia.	Thick	Pack
M5	5.1	7.0	3.0	10.2	2.0	1,000
	5.1	7.0	4.0	10.2	2.0	
	5.1	7.0	5.0	10.2	2.0	
	5.1	7.0	7.0	10.2	2.0	
	5.1	7.0	9.0	10.2	2.0	
M6	6.1	8.0	4.0	12.2	2.0	1,000
	6.1	8.0	6.0	12.2	2.0	
	6.1	8.0	8.0	12.2	2.0	
	6.1	8.0	10.0	12.2	2.0	
	6.1	8.0	12.0	12.2	2.0	
M8	8.1	10.0	3.0	14.2	2.5	500
	8.1	10.0	4.0	14.2	2.5	
	8.1	10.0	6.0	14.2	2.5	
	8.1	10.0	8.0	14.2	2.5	
	8.1	10.0	10.0	14.2	2.5	
	8.1	10.0	12.0	14.2	2.5	
M10	10.1	13.0	3.0	23.7	2.0	250
	10.1	13.0	8.0	23.7	2.0	
	10.1	13.0	10.0	23.7	2.0	
	10.1	13.0	13.0	23.7	2.0	
	10.1	13.0	18.0	23.7	2.0	
	10.1	13.0	23.0	23.7	2.0	

Size	ID	OD	Length	Head Dia.	Thick	Pack
M12	12.1	14.8	3.0	25.6	2.0	250
	12.1	14.0	8.0	25.6	2.0	
	12.1	14.8	8.0	25.6	2.0	
	12.1	14.8	13.0	25.6	2.0	
	12.1	14.8	18.0	25.6	2.0	
	12.1	14.8	23.0	25.6	2.0	
	12.3	13.9	6.0	25.6	2.0	
M16	16.1	19.0	2.0	34.5	3.0	100
	16.1	19.0	7.0	34.5	3.0	
	16.1	19.0	12.0	34.5	3.0	
	16.1	19.0	17.0	34.5	3.0	
	16.1	19.0	22.0	34.5	3.0	
M20	20.2	22.0	12.0	36.0	2.0	100
	20.2	22.0	15.0	36.0	2.0	
	20.2	22.0	17.5	36.0	2.0	
	20.2	22.0	20.0	36.0	3.0	
	20.2	35.0	25.0	50.0	10.0	
M24	24.2	26.0	12.5	44.0	2.0	100
	24.5	26.0	17.0	46.0	3.0	
	24.5	26.5	19.0	44.0	1.6	
M27	28.0	32.0	20.0	40.0	3.0	100
	28.0	35.8	25.0	47.5	6.0	

FLAT WASHERS

METRIC (Millimetres)

NATURAL NYLON

Size	I.D.	O.D.	Thick	Pack
M2	2.2	5.0	0.3	1,000
	2.2	5.0	0.8	
M2.5	2.7	6.0	0.6	
	2.6	5.6	0.8	
M3	3.2	7.0	0.5	
	3.2	8.0	0.8	
	3.2	9.0	0.8	
M3.5	3.7	8.0	0.5	
	3.7	8.0	0.8	
M4	4.3	9.0	0.8	
	4.3	12.0	1.0	
	4.3	12.0	1.2	
	4.3	16.0	1.5	
M5	5.3	9.0	1.0	
	5.3	10.0	1.0	
	5.3	11.0	1.0	
	5.3	15.0	1.2	
	5.3	15.0	1.5	
M6	6.2	10.0	1.6	
	6.4	11.0	1.6	
	6.4	12.0	1.0	
	6.4	12.0	1.5	
	6.4	12.0	1.6	
	6.4	12.5	1.6	
	6.4	14.0	0.8	
	6.4	14.0	1.2	
	6.4	14.0	1.6	
	6.4	18.0	1.6	
	6.4	32.0	1.6	
	7.4	14.0	1.6	
M8	8.4	16.0	1.0	
	8.4	16.0	1.6	
	8.4	17.0	1.0	
	8.4	17.0	1.6	
	8.4	17.0	2.0	
	8.4	18.0	1.6	
	8.4	18.0	2.0	
	8.4	21.0	2.0	
	8.4	24.0	2.0	
M10	8.4	25.0	2.0	
	10.5	20.0	2.0	
	10.5	20.0	2.5	
	10.5	21.0	1.0	
	10.5	21.0	1.5	
	10.5	21.0	2.0	
	10.5	22.0	2.0	
	10.5	22.0	2.5	
	10.5	24.0	2.0	
	10.5	30.0	2.5	
	10.5	32.0	1.6	
	10.5	50.0	3.0	
M12	13.0	24.0	2.0	
	13.0	24.0	2.5	
	13.0	40.0	3.0	
M14	15.0	30.0	3.0	
	15.0	44.0	3.0	

Size	I.D.	O.D.	Thick	Pack
M16	17.0	30.0	2.0	500
	17.0	30.0	3.0	
	17.0	50.0	3.0	
M18	19.0	34.0	3.0	250
M20	21.0	37.0	3.0	
	21.0	39.0	3.0	
	21.0	60.0	4.0	
M22	23.0	39.0	3.0	
M24	25.0	44.0	4.0	
	25.0	50.0	4.0	
	26.0	72.0	5.0	
M27	28.0	50.0	4.0	100
	28.0	56.0	4.0	
M30	31.0	56.0	4.0	
M33	34.0	60.0	5.0	
	34.0	66.0	5.0	
M36	37.0	66.0	5.0	
M39	40.0	72.0	6.0	
M42	43.0	72.0	6.0	

IMPERIAL (Inches)

NATURAL NYLON

Size	I.D.	O.D.	Thick	Pack
1/8	0.140	0.312	0.032	1,000
5/32	0.165	0.350	0.032	
8-032	0.171	0.375	0.032	
10-032	0.194	0.375	0.032	
10-062	0.194	0.375	0.062	
3/16	0.195	0.437	0.032	
1/4	0.257	0.500	0.032	
250-625	0.257	0.625	0.062	
250-750	0.257	0.750	0.062	
312-500	0.317	0.500	0.062	
5/16	0.331	0.625	0.062	500
375-625	0.380	0.625	0.062	
3/8	0.390	0.750	0.062	
500-750	0.505	0.750	0.062	
1/2	0.518	1.000	0.064	
5/8"	0.643	1.225	0.100	
3/4	0.760	1.490	0.100	250
1000	1.015	1.500	0.080	
1	1.028	1.850	0.120	

BLACK NYLON

Size	I.D.	O.D.	Thick	Pack
M3	3.2	7.0	0.5	1000
M4	4.3	9.0	0.8	
M5	5.3	10.0	1.0	
M6	6.4	12.0	1.6	
M8	8.4	16.0	1.6	
M10	10.5	20.0	2.0	
M12	13.0	24.0	2.5	500
M16	17.0	30.0	3.0	
M20	21.0	37.0	3.0	
M24	25.0	44.0	4.0	

BLACK TPR

Size	I.D.	O.D.	Thick	Pack
M3	3.2	8.0	0.8	1000
M4	4.3	10.0	0.8	
M5	5.3	10.0	1.0	
M6	6.4	12.0	1.6	
	6.4	18.0	1.6	
M8	8.4	16.0	1.6	
	8.4	18.0	1.5	500
M10	10.5	20.0	2.0	
M12	13.0	24.0	2.5	
M16	17.0	30.0	3.0	
M20	21.0	37.0	3.0	

BLACKENED

ALL NATURAL NYLON PRODUCTS
 CAN BE DYED BLACK FOR
 COSMETIC APPEARANCES ONLY

30% GLASS FILLED NYLON

Size	I.D.	O.D.	Thick	Pack
M5	5.3	10.0	1.0	100
M6	6.4	12.0	1.6	
M8	8.4	17.0	1.6	
M10	10.5	21.0	2.0	
M12	13.0	24.0	2.5	
M16	17.0	30.0	3.0	

ITEMS MARKED IN BOLD ON THIS PAGE ARE STOCK ITEMS,
 ALL OTHERS ARE SUBJECT TO MINIMUM ORDER REQUIREMENTS.

FLAT WASHERS

METRIC (Millimetres)

P.V.D.F

Size	I.D.	O.D.	Thick	Pack
M3	3.2	7.0	0.5	500
M4	4.3	9.0	0.8	
M5	5.3	10.0	1.0	
M6	6.4	12.0	1.6	
M8	8.4	16.0	1.6	
M10	10.5	20.0	2.0	
M12	13.0	24.0	2.5	
M16	17.0	30.0	3.0	
M20	21.0	37.0	3.0	

HARD P.V.C.

Size	I.D.	O.D.	Thick	Pack
M3	3.2	7.0	0.5	500
M4	4.3	9.0	0.8	
M5	5.3	10.0	1.0	
M6	6.4	12.0	1.5	
M8	8.4	16.0	1.5	
M10	10.5	20.0	2.0	
M12	13.0	24.0	2.0	250
M16	17.0	30.0	3.0	
M20	21.0	37.0	3.0	

PEEK (BROWN)

Size	I.D.	O.D.	Thick	Pack
M3	3.2	7.0	0.5	250
M4	4.3	9.0	0.8	
M5	5.3	10.0	1.0	
M6	6.4	12.5	1.6	100
M8	8.4	17.0	1.6	
M10	10.5	21.0	2.0	
M12	13.0	24.0	2.5	

POLYCARBONATE (CLEAR)

Size	I.D.	O.D.	Thick	Pack
M3	3.3	8.0	0.8	500
M4	4.5	10.0	0.8	
M5	5.5	12.0	1.0	
M6	6.5	13.0	1.6	
M8	8.5	18.0	1.6	

POLYPROPYLENE

Size	I.D.	O.D.	Thick	Pack
M3	3.2	7.0	0.5	500
M4	4.3	9.0	0.8	
M5	5.3	10.0	1.0	
M6	6.4	12.0	1.5	
M8	8.4	17.0	1.6	
M10	10.5	20.0	2.0	250
M12	13.0	24.0	2.5	
M16	17.0	30.0	3.0	
M20	21.0	37.0	3.0	

NEOPRENE (BLACK)

Size	I.D.	O.D.	Thick	Pack
M3	3.2	7.0	0.5	500
M4	4.3	9.0	1.0	
M5	5.3	10.0	1.0	
M6	6.4	12.5	1.0	
M8	8.4	17.0	1.5	
M10	10.5	21.0	1.5	
M12	13.0	24.0	2.0	250
M16	17.0	30.0	2.0	
M20	21.0	37.0	3.0	

FIBRE (ORANGE/RED)

Size	I.D.	O.D.	Thick	Pack
M3	3.2	7.0	0.5	500
M4	4.3	9.0	0.8	
M5	5.3	10.0	1.0	
M6	6.4	12.5	1.0	
M8	8.4	17.0	1.0	
M10	10.5	21.0	1.0	

P.V.C. (GREY)

Size	I.D.	O.D.	Thick	Pack
M10	10.5	20.0	2.0	100
M12	13.0	24.0	2.0	
M16	17.0	30.0	3.0	
M20	21.0	37.0	3.0	

P.T.F.E. (TEFLON)

Size	I.D.	O.D.	Thick	Pack	
M3	3.2	7.0	0.5	500	
M4	4.3	9.0	0.8		
M5	5.3	10.0	1.0		
M6	6.4	12.0	1.5		
M8	8.4	16.0	1.5		
M10	10.5	20.0	2.0		
M12	13.0	24.0	2.5		250
M16	17.0	30.0	3.0		
M20	21.0	37.0	3.0		

WE CAN PROVIDE A RANGE OF OTHER SIZES AND MATERIALS, THESE INCLUDE:

EPDM – BUTYL – GU – PERB – NEO – HD & LD POLYETHYLENE ALL ORDERS SUBJECT TO MINIMUM ORDER LEVELS.

SPACERS

METRIC (Millimetres)

NATURAL NYLON

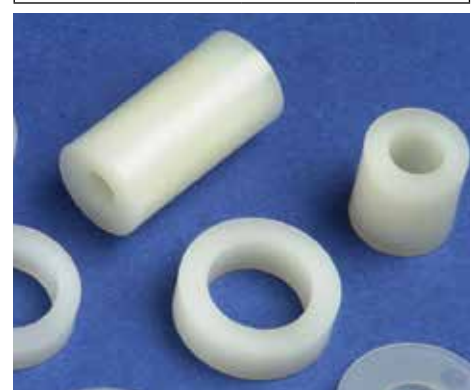
ID	OD	#	Pack
3.2	5.0	B	1,000
	8.0	B	
3.6	6.0	B	1,000
	8.0	B	
4.3	10.0	B	1,000
	12.0	B	
	12.0	B	
5.2	8.0	D	1,000
	10.0	B	
5.3	12.0	D	1,000
	14.0	D	
	15.0	B	
	20.0	B	
	24.0	B	
	28.0	B	
6.4	10.0	C	1,000
	12.5	B	
	15.0	B	
	18.0	B	
8.2	12.0	D	1,000
	20.0	B	
8.4	15.0	B	500
	17.0	B	
	20.0	B	
	25.0	B	
10.5	15.0	B	500
	21.0	B	
	30.0	B	
12.2	18.0	B	500
	20.0	B	
13.0	24.0	B	500
	28.0	B	
	28.0	B	
16.5	24.0	C	500

HEAT STABILIZED BLACK NYLON

Dia.	OD	Length	Pack
3.2	5.0	2.0	500
	5.0	3.0	
	5.0	5.0	
	5.0	7.5	
	5.0	10.0	
	5.0	15.0	
	5.0	20.0	
	8.0	3.0	
	8.0	5.0	
	8.0	7.5	
4.3	8.0	10.0	500
	8.0	15.0	
	8.0	20.0	
	8.0	3.0	
	8.0	5.0	
	8.0	7.5	
5.3	8.0	10.0	500
	8.0	15.0	
	8.0	20.0	
	10.0	3.0	
	10.0	5.0	
	10.0	7.5	
6.3	10.0	10.0	500
	10.0	15.0	
	10.0	20.0	
	10.0	25.0	
	10.0	28.0	
	10.0	30.0	
6.5	15.0	3.0	250
	15.0	5.0	
	15.0	7.5	
	15.0	10.0	
	15.0	15.0	
	15.0	20.0	
8.3	18.0	3.0	250
	18.0	5.0	
	18.0	7.5	
	18.0	10.0	
	18.0	15.0	
	18.0	20.0	
	18.0	25.0	
	18.0	30.0	
	18.0	3.0	
	18.0	5.0	
10.4	15.0	7.5	250
	15.0	10.0	
	15.0	15.0	
	15.0	20.0	
	22.0	5.0	
	22.0	10.0	
13.3	22.0	15.0	250
	22.0	20.0	
	18.0	3.0	
	18.0	5.0	
	18.0	7.5	
	18.0	10.0	
13.3	18.0	15.0	250
	18.0	20.0	
	18.0	25.0	
	25.0	5.0	
	25.0	10.0	
	25.0	15.0	
13.3	25.0	20.0	250
	25.0	20.0	

#	POSSIBLE LENGTHS
A	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
B	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30
C	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40
D	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

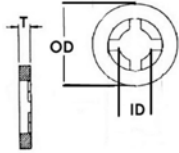
IMPERIAL SIZES ALSO AVAILABLE.



ANTI-LOSS / RETAINING WASHERS

METRIC (Millimetres)

NATURAL NYLON



Size	I.D.	O.D.	Thick	Pack
M3	2.4	7.0	1.0	1000
M4	3.4	9.0	1.0	
M5	4.5	10.0	1.0	
M6	5.5	12.5	1.5	
M8	7.0	16.0	1.5	
M10	10.5	21.0	2.5	

IMPERIAL (Inches)

NATURAL NYLON

Size	I.D.	O.D.	Thick	Pack
8-032	0.235	0.391	0.032	1000
8-062	0.235	0.391	0.062	
10-032	0.277	0.453	0.032	
10-062	0.277	0.453	0.062	
250-032	0.375	0.594	0.032	
250-062	0.375	0.594	0.062	
312-032	0.470	0.734	0.032	
312-062	0.470	0.734	0.062	
375-032	0.564	0.891	0.032	
375-062	0.564	0.891	0.062	



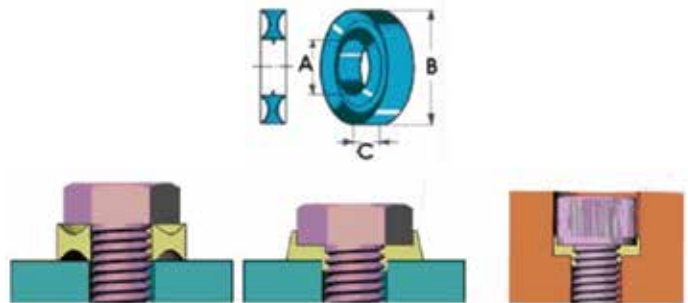
DOUBLE RETAINING WASHERS - 'DUBO'

**METRIC (Millimetres)
 IMPERIAL (Inches) EQUIVALENT**

NATURAL NYLON

Size	Imperial Equivalent	ID (A)	OD (B)	Th. (C)	Pack
M 3	1/8	3.1	8.0	2.5	500
M 4	5/32	4.2	10.0	2.8	
M 5	3/16	5.2	10.7	3.0	
M 6	1/4	6.2	12.7	3.8	
M 8	5/16	8.2	16.2	4.2	250
M 10	3/8	10.2	20.0	5.0	
M 12	7/16	12.2	24.0	5.2	
M 14	x	14.2	26.0	5.6	
M 16	5/8	16.2	30.0	5.9	100
M 18	11/16	18.2	34.0	5.4	
M 20	3/4	20.3	36.0	6.8	

**M22 UP TO M52 ALSO AVAILABLE ON REQUEST,
 MINIMUM ORDER NUMBERS APPLY.**



ADVANTAGES

When using 'The Dubo' washer are; Locks nuts, Bites into thread, Gives 100% sealing of penetration hole, Centers the fastener, Absorbs vibration, Suppresses noise, Reduces dynamic load on fasteners, Enables separation of different metals, Prevents moisture penetration, Protects against electrolytic corrosion, Offers non-problematic assembly.

APPLICATIONS

'The Dubo' washer is suitable for a wide variety of uses. These include; Automation Industry, Automotive Industry, Construction Industry, Electrical Manufacturing, Electronic Equipment, Food Production, Furniture Manufacturing, Hydraulic Industry, Marine Industry, Mining Equipment, Power Tool Assembly, Tele-communication Industry, Thermal Insulation.

SUPREME FASTENERS & COMPONENTS
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THREADED ROD

METRIC		
NATURAL NYLON		
D (MM)	Pitch	L (MM)
M3	0.5	1000
M4	0.7	
M5	0.8	
M6	1.0	
M8	1.25	
M10	1.5	
M12	1.75	
M14	2.0	
M16	2.0	
M18	2.5	
M20	2.5	
M24	3.0	
M30	3.5	

IMPERIAL (Inches)

NATURAL NYLON		
D (inches)	Thread	L (inches)
1/4	BSW	39.5
	UNC	24
5/16	BSW	39.5
	UNC	24
3/8	BSW	39.5
	UNC	24
1/2	BSW	39.5
	UNC	24
5/8	BSW	39.5
	UNC	24
3/4	BSW	39.5
	UNC	24
1	BSW	39.5
	UNC	24

VERSATILE THREADED ROD STOCK IS EASILY CUT TO SIZE, RESISTANT TO MOST CHEMICALS, ELECTRICALLY INSULATING, NON-MAGNETIC, LIGHTWEIGHT, HAS LOW THERMAL CONDUCTIVITY, AND IS VIBRATION AND ABRASION RESISTANT. STOCK LENGTHS ARE 1 METER (METRIC) OR 39.5 INCHES & 24 INCHES (IMPERIAL).

METRIC		
BLACK NYLON		
D (MM)	Pitch	L (MM)
M6	1.0	1000
M8	1.25	
M10	1.5	
M12	1.75	
M16	2.0	
M20	2.5	
M24	3.0	

METRIC		
POLYPROPYLENE		
D (MM)	Pitch	L (MM)
M6	1.0	1000
M8	1.25	
M10	1.5	
M12	1.75	
M16	2.0	
M20	2.5	
M24	3.0	

OTHER MATERIALS AVAILABLE:
 POM (ACETAL) – PTFE – PVC IN GREY OR RED
 ALSO AVAILABLE:
 BLACK NYLON
 MINIMUM ORDER LEVELS APPLY



MUSHROOM HEAD SCREWS - SPECIAL MATERIALS

METRIC			
POLYCARBONATE			
Dia.	Length	Length	Pack
M5	10MM	16MM	500
	30MM		
M6	10MM	16MM	500
	30MM		
M8	16MM	25MM	500
	35MM		

OTHER SIZES M2, M3, M4 ON REQUEST.



POLYCARBONATE SCREWS
 Polycarbonate Screws are also available in a wide range of Head Styles including Countersunk – both Cross Recessed and Slot, Hex Head, Hex Slot and Hexagonal Socket Head.
 (Minimum Purchase Quantities apply)

HEXAGONAL HEAD SET SCREWS - SPECIAL MATERIALS

METRIC DIN 933

POLYPROPYLENE				P.D.V.F.				PTFE (TEFLON)			
Dia.	Length	Length	Pack	Dia.	Length	Length	Pack	Dia.	Length	Length	Pack
M4	10MM	16MM	250	M4	10MM	16MM	*	M6	20MM	25MM	*
	20MM				20MM	30MM			30MM	40MM	
M5	12MM	16MM	250	M5	12MM	16MM	*	M8	16MM	20MM	*
	20MM	25MM			20MM	25MM			25MM	30MM	
	30MM				30MM				40MM	50MM	
M6	16MM	20MM	250	M6	10MM	12MM	*	M10	20MM	25MM	*
	25MM	40MM			16MM	20MM			30MM	40MM	
M8	20MM	30MM	100		25MM	40MM			*	M12	
	40MM	60MM		20MM	30MM	40MM	50MM				
M10	20MM	60MM	100	M8	40MM	60MM	*	60MM	70MM		*
M12	40MM	60MM	100	M10	20MM	40MM	*	*SPECIAL ORDERS: MINIMUM ORDER LEVELS APPLY			
				M12	50MM	60MM	*				
POLYPROPYLENE SCREWS ALSO AVAILABLE IN CHEESE HEAD.				M12	40MM		*				

HEXAGONAL NUTS - SPECIAL MATERIALS

METRIC DIN 934

POLYPROPYLENE				P.D.V.F.				PEEK			
Size	H	A/F	Pack	Size	H	A/F	Pack	Dia.	Length	Length	Pack
M4	3.2	7.0	250	M4	3.2	7.0	*	M6	20MM	25MM	*
M5	4.2	8.0		M5	4.2	8.0			30MM	40MM	
M6	5.0	10.0		M6	5.0	10.0			50MM		
M8	6.5	13.0	100	M8	6.5	13.0	*	M8	20MM	25MM	*
M10	8.0	17.0		M10	8.0	17.0			30MM	40MM	
M12	10.8	18.0		M12	10.8	18.0			50MM		
M16	14.8	24.0		M16	14.8	24.0		M12	20MM	25MM	*
									30MM	40MM	
									50MM		
PEEK				PTFE (TEFLON)				*SPECIAL ORDERS: MINIMUM ORDER LEVELS APPLY			
Size	H	A/F	Pack	Size	H	A/F	Pack	PEEK SCREWS PEEK Screws are also available in other Head Styles including Cross Recessed Pan, Hex Socket Grub and Cross Recessed Countersunk. (Sizes range from M2 to M12) Minimum Purchase Quantities apply.			
M4	3.2	7.0	*	M4	3.2	7.0	*				
M5	4.2	8.0		M5	4.2	8.0					
M6	5.0	10.0		M6	5.0	10.0					
M8	6.5	13.0	*	M8	6.5	13.0	*				
M10	8.0	17.0		M10	8.0	17.0					
M12	10.0	19.0		M12	10.0	19.0					

WE WORK WITH OVER 200 HIGH PERFORMANCE PLASTIC MATERIALS ... THE MAJOR ONES BEING

PA 6.6 (Nylon)

Our standard polymer. The best trade-off against cost for mechanical, temperature and ageing resistance.

Supplied in a Natural Colour (which may vary slightly according to material used) most items are available in **black** by dyeing the original item after manufacture.

PA 6.6 (Black Nylon)

All the enhancements of Natural PA 6.6 but with increased outdoor stability and weatherability.

30% GF Nylon (Glass Filled)

Compared with virgin PA 66 this 30% glass fibre reinforced nylon grade offers increased strength, stiffness, creep resistance and dimensional stability whilst retaining an excellent wear resistance. It also allows higher maximum service temperatures.

TPR (Thermoplastic Rubber)

Excellent UV resistance especially in high ozone areas. Extremely pliable without deforming its shape.

PP (Polypropylene) and PE (Polyethylene)

For good chemical resistance and pliability. Complies with Food standards. Both materials are available in a wide range of densities.

PC (Polycarbonate)

Highest impact strength over a wide range of temperatures. The best product when transparency is required.

PTFE (Teflon)

High chemical resistance and good resistance to weathering. Known for its "slipperiness".

PEEK

Heat resistance (up to 180 degrees Celsius) and impenetrable to most chemicals. A high strength alternative to most polymers.

PVDF (Polyvinylidene Fluoride)

Combines excellent cold and hot mechanical strength with universal chemical resistance.

POM (Acetal)

Acetal products are characterised by their strength, stiffness and hardness and are stable over a wide range of temperatures, humidity, environments and stress. High load bearing characteristics – absorbs little moisture.

TABLE OF RESISTANCE TO LIQUIDS

Material	Cold Water	Hot Water	Diluted acid	Concentrated acid	Oxidized acid	Hydrofluoric acids	Diluted potassium	Concentrated potassium	Inorganic bases	Dry halogen	Hydrocarbons	Hydrocarbons (chlorinated)	Alcohols	Ester	Cetone	Ether	Aldehyde	Amino acids	Organic acids	Aromatic hydrocarbons	Petrol	Mineral oils	Greases and oils	Hydrocarbons (non-saturated chlorinated)	Oil of turpentine	Humidity absorption % to ASTM D 570
PA 6.6	Good	Limited	Not	Not	Not	Not	Good	Limited	Good	Not	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	Good	1.3 to 1.9
PE - HD	Good	Good	Good	Not	Not	Limited	Good	Good	Good	Not	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	Not	< 0.01
PE - LD	Good	Good	Good	Not	Not	Limited	Good	Good	Good	Not	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	Not	< 0.01
PP	Good	Good	Good	Not	Not	Limited	Good	Good	Good	Not	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	Not	0.01 to 0.03
PVC - U	Good	Limited	Good	Not	Not	Limited	Good	Good	Good	Not	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	Not	0.04 to 0.4
PVC - P	Good	Limited	Good	Not	Not	Limited	Good	Good	Good	Not	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	Not	0.15 to 0.75
PC	Good	Limited	Good	Not	Not	Limited	Good	Good	Good	Not	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	Not	0.1 to 0.2
PTFE	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	0
POM	Good	Good	Limited	Not	Not	Limited	Good	Good	Good	Not	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	Not	0.22 to 0.25
TPR	Good	Good	Good	Not	Not	Limited	Good	Good	Good	Not	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	Not	0.1 to 0.3
PEEK	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	0.1
PVDF	Good	Good	Good	Good	Good	Good	Good	Limited	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Not	0.03

Good resistance Limited resistance Not resistant

Note: The above information is given according to the raw materials manufacturer's data.

MATERIAL PROPERTIES

	UNITS	PA 6-6	TPR	PP	PVDF	PEEK	HDPE	PC	PTFE
PHYSICAL PROPERTIES									
Density (RH 0*)		1.14	0.96-1.03	0.90	1.78	1.32	0.95	1.20	2.16
Moisture Absorption (cold water 24 hrs at 23°C) (RH 0*)	%	1-2	1.03	0.01	0.04	0.15	0.01	0.1	0.01
MECHANICAL PROPERTIES									
TENSILE STRENGTH									
Stress	MPa	60-80	60-80	20-40	40-50	100	30-35	60-70	26.9
Elongation	%	80-180	80-180	150-160	50-300	35	700-1000	110-120	300
Modulus of elasticity	MPa	1500-2000	1500-2000	1100-1600	1500-2500	3800	400-1200	2300-2500	550
BENDING STRENGTH									
Stress	MPa	50-75	50-75	1000-1500	94	165	1200-1500	90	-
Modulus	MPa	1200-1600	1200-1600	1000-1500	1000-2500	4100	1200-1500	2400-2500	480
COMPRESSION									
Stress	MPa	100-110	100-110	100-110	85	120	100-110	100-110	25
Modulus	MPa	2000-2100	2000-2100	2000-2100	2900	4500	2000-2100	2000-2100	500
Charpy test un-notched	kJ/m ²	No break	No break	No break	7-10	-	No break	No break	No break
Charpy test notched	kJ/m ²	12-16	12-16	12-16	7-10	-	12-16	12-16	4.7
IZOD test un-notched	kJ/m ²	No break	No break	No break	10-20	-	No break	No break	4.7
IZOD test notched	kJ/m ²	8-12	8-12	8-12	10-20	-	8-12	8-12	-
Rockwell hardness A		R100-R115	R100-R115	R80-R85	R110-R115	R126	R80-R85	6-7	-
SHORE hardness D		77-82	77-82	60-70	77-82	100	60-70	80-90	50
THERMAL PROPERTIES									
Heat distortion under load (RH 0*)	°C	75-95	75-95	50-60	100-120	100-120	45-55	130-150	-
Method A - 1.85 MPa	°C	200-200	200-200	95-100	150	150	100-120	150-160	-
Method B - 0/45 MPa	°C	250	250	140-150	150	150	120-130	140-150	-
Vicat softening point	°C	250	250	80-85	150	150	120-130	140-150	-
Method A - 1 daN	°C	250	250	140-150	150	150	120-130	140-150	-
Method B - 5 daN	°C	250	250	80-85	150	150	120-130	140-150	-
Melting point	°C	255-260	255-260	165-170	165-178	340	130-140	230-250	335
Service temperature:	°C	-20 to +120	-40 to 135	-10 to +120	-50 to +160	-20 to +200	-60 to +110	-100 to +120	-
Flammability rating (RH 0*)	UL94	V-2	HB	HB	V-0	V-0	HB	V-2-V-0	V-0
ELECTRICAL PROPERTIES									
Resistance									
Transversal	Ohm.cm	1.10 ¹⁴	1.10 ¹⁴	10 ¹⁶	5.10 ¹⁴	-	10 ¹⁶	2.10 ¹⁶	-
Surface	Ohm	2.10 ¹²	2.10 ¹²	10 ¹⁶	10 ¹³	-	10 ¹⁶	2.10 ¹⁶	-
Dielectric strength	kV/mm	26.3-45	26.3-45	26.3-45	26.3-45	-	26.3-45	26.3-45	-
Other polymers and their properties:									
<p>The use of specific formulations with their different physical, mechanical, thermal, electrical and other properties can enhance the properties sought.</p> <p>The above information, which has the benefit of our current knowledge, is given solely by way of guidance in your choice of material and to indicate possible applications.</p> <p>The manufacturers of the following raw materials have indicated their properties.</p> <p>We cannot give any absolute guarantee for the properties for a specific usage.</p> <p>An appropriate feasibility study may be deemed necessary.</p> <p>RH 0* = Humidity 0%</p> <p>Other measures = Humidity 50%</p> <p>V-1 NON-FLAMMABLE</p> <p>V-0 SELF EXTINGUISHING</p> <p>V-2 = FLAMMABILITY DIFFICULT</p> <p>HB = SLOW BURNING</p>									
<p>Polyamide 6-6</p> <p>Currently offers the best value for money in terms of reliability.</p> <p>Excellent mechanical properties; tensile strength, fatigue, impact strength, friction and abrasion resistance.</p> <p>Very good solvent resistance: oil, lubricants, petrol, benzol, acetone, trichloroethylene, white spirit.</p> <p>Resists most diluted acids.</p> <p>Combustion difficult to self extinguishing.</p>									
<p>TPR</p> <p>Thermoplastic elastomers have replaced rubber in many applications, especially in the automotive industry.</p> <p>Ability to be repeatedly stretched without permanently deforming the shape of the part.</p> <p>Suitable for outdoor use because they offer good weather resistance and UV properties.</p> <p>Chemical resistance is also high against a broad range.</p>									
<p>Polypropylene</p> <p>Excellent fatigue and bending properties (hinge effect).</p> <p>No cracking under load and good impact resistance.</p> <p>Chemically inert.</p> <p>Good acoustically, withstands vibrations.</p> <p>Suitable for food use.</p>									
<p>Polyethylene fluoride</p> <p>Meets today's most stringent criteria.</p> <p>Outstanding chemical inertia.</p> <p>Good mechanical properties, excellent abrasion resistance - friction coefficient low.</p> <p>Very high dielectric constants, radiation stability.</p> <p>Very large service temperature range, inflammable and self extinguishing.</p> <p>Suitable for use in food and medical sectors.</p>									
<p>PEEK</p> <p>Good chemical and water resistance especially at high temperatures. Can be used continuously to 230 Degrees (Celsius) and in hot water or steam without permanent loss of physical properties.</p> <p>Low smoke and toxic gas emission when exposed to flame.</p>									
<p>High density polyethylene</p> <p>Excellent electrical insulation properties and rigidity, low loss factor.</p> <p>Suitable for food use.</p> <p>Friction coefficient low.</p>									
<p>Polycarbonate</p> <p>The best transparent material.</p> <p>Excellent mechanical properties, particularly impact resistance between -100° and +120°C.</p> <p>Electrical insulation properties, retains dimensional stability even in humid environment.</p> <p>Self extinguishing, suitable for food and medical use (can be sterilised), can be US welded.</p> <p>Gas permeable.</p>									
<p>PTFE (Teflon)</p> <p>High chemical resistance, low and high chemical capability with good resistance to weathering.</p> <p>Low friction with excellent electrical and thermal insulation properties, retains dimensional stability even in humid environment.</p> <p>"Slipperiness".</p>									

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