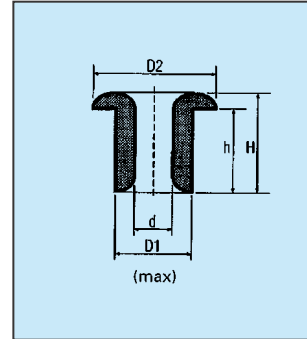


# STANDARD EYELETS

## Flanged Eyelets

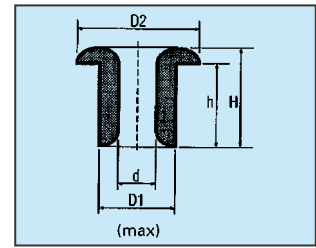
(On a minimum quantity of 5000 dimension h can be changed on most eyelets without additional tool cost)



Ref.No	D1 (max) mm	d mm	H mm	D2 mm	h mm
FT398	2.10	1.00	7.10	2.50	6.00
E002	2.10	1.00	3.00	3.10	2.00
E936	2.10	1.00	5.00	3.10	4.00
E885	2.15	1.00	2.10	3.20	1.20
E889S	2.60	1.40	3.00	3.80	2.00
E889	2.60	1.40	4.00	3.80	3.00
E136B	2.60	1.40	5.00	3.80	4.00
FT555	2.60	1.40	6.80	3.80	5.50
FT555L	2.60	1.40	8.30	3.80	7.00
E886	2.90	1.10	4.20	4.90	3.00
E952	2.90	1.50	6.50	4.80	5.00
E913	3.00	1.40	4.00	4.90	3.00
E972	3.00	1.50	7.50	4.80	6.00
E915	3.10	1.60	3.10	4.20	2.00
E001	3.10	1.70	2.00	4.20	1.00
E862	3.10	1.60	4.20	4.30	3.00
E971	3.30	1.60	3.20	5.50	2.40
E940	3.30	1.60	3.30	5.60	2.50
E951	3.30	1.70	4.75	5.70	3.50
E881	3.80	2.00	6.60	4.80	5.00
E176	3.85	2.00	5.25	5.50	3.20
E266	3.90	1.40	4.55	5.50	3.00
E868	3.90	1.90	4.00	7.00	2.50
E035	3.90	2.20	5.25	5.50	4.25
E948	3.95	2.00	4.20	5.50	3.00
E328	3.95	2.10	5.35	4.95	4.25
E839	4.00	1.90	4.30	5.55	3.00
E897	4.00	2.00	4.60	5.80	2.50
E923	4.10	2.70	5.00	5.00	4.00
E269S	4.30	2.50	5.85	5.80	4.70
E269	4.30	2.00	8.95	5.80	7.50
E843	4.30	2.50	4.35	5.80	3.00
E924	4.30	2.00	7.40	5.90	5.90
E953	4.60	1.90	3.80	6.60	2.80
E863	4.90	3.30	4.50	6.50	3.00
E865	4.90	3.30	5.60	6.50	4.00
E067	5.10	1.90	6.95	6.55	5.40
E864	5.10	1.90	3.50	6.60	2.50
E874	5.10	2.00	4.60	6.70	3.00
E979	5.20	3.30	7.00	6.80	5.00
E918	5.20	3.30	4.00	6.80	2.80
E918L	5.20	3.30	5.40	7.80	4.75
E906	5.30	2.30	4.70	7.00	3.20
E335	5.35	3.20	5.10	7.15	4.10
E911	5.40	3.30	5.20	7.00	4.00
E336	5.40	3.20	6.50	8.00	5.00
E892	5.40	3.30	7.40	7.00	6.00
E064	5.60	2.36	4.75	7.14	3.18
E305	5.60	4.00	4.70	7.00	3.20
E307	5.70	3.20	6.35	7.90	5.10
E849	5.90	2.90	5.90	7.70	4.00
E850	5.90	2.80	7.60	7.70	5.80
E942S	5.95	3.40	3.00	7.75	2.00
E166	6.00	2.85	10.00	8.00	7.75
E825	6.00	3.00	4.70	8.15	3.00

Ref.No	D1 (max) mm	d mm	H mm	D2 mm	h mm
E919	6.00	3.40	5.00	8.00	3.00
E942	6.00	3.40	6.00	7.80	4.00
E120	6.00	3.20	8.00	7.90	6.20
E980	6.00	4.00	5.00	9.00	3.00
E961	6.00	3.50	5.00	8.00	3.00
E941L	6.00	3.40	8.00	8.00	6.50
E914	6.10	3.30	3.50	7.50	2.00
E039	6.10	3.50	4.50	7.50	3.50
E004B	6.10	3.40	5.70	8.00	3.75
E941	6.10	3.40	6.50	7.80	5.00
E171	6.20	4.00	8.00	8.50	6.50
E963	6.20	4.00	10.00	10.25	7.80
E004D	6.25	2.80	5.80	7.90	4.00
E856	6.30	3.30	2.80	8.00	1.80
E857	6.40	3.50	3.50	7.90	2.50
E888	6.40	3.50	4.50	8.00	3.50
E870	6.40	3.90	8.00	8.70	6.40
E964	6.40	3.00	4.70	10.70	3.00
E329L	6.45	4.00	8.60	8.70	6.50
E177	6.45	3.00	10.36	10.60	8.40
E329S	6.50	4.00	4.60	8.70	3.00
E329	6.50	4.00	6.50	8.70	5.00
E848	6.70	3.80	7.50	8.80	6.00
E869	6.80	3.80	7.40	8.80	6.00
E815	7.00	4.50	8.00	9.00	6.80
E066	7.00	4.00	9.80	10.00	8.00
E965	7.00	4.00	11.80	10.00	10.00
E854	7.10	4.50	7.00	9.20	5.30
E937	7.10	2.70	4.50	9.20	2.80
E835	7.20	4.60	7.70	9.90	6.00
E958	7.15	3.80	7.10	9.20	5.30
E927	7.35	3.80	9.00	9.70	7.00
E982	7.35	4.80	3.00	10.00	1.50
E983	7.35	4.80	5.50	10.00	4.00
E921	7.40	3.50	11.00	9.00	9.00
E308	7.40	3.90	9.00	9.50	7.00
E308S	7.40	3.90	7.40	9.50	5.50
E070	7.50	3.25	7.14	9.90	5.10
E939	7.50	3.90	8.00	9.50	6.00
E954	7.50	5.50	9.00	9.60	6.80
E330	7.50	3.80	6.60	10.00	4.80
E330L	7.50	4.40	7.40	10.00	5.30
E038	7.60	4.50	7.00	9.50	5.00
E381	7.60	4.50	11.00	9.50	9.00
E950	7.60	5.50	15.85	9.50	13.30
E956	7.60	5.50	13.50	9.50	11.50
E823	7.70	4.90	3.00	8.45	2.00
E823L	7.70	4.90	3.70	10.70	2.00
E928	7.70	4.70	8.70	10.60	7.00
E341	7.70	4.75	5.55	10.80	3.65
E866S	8.10	4.10	6.40	10.00	4.40
E866	8.10	4.10	8.30	10.00	6.40
E946	8.10	6.00	5.00	11.00	3.00
E967	8.10	3.00	16.50	9.40	15.00
E946S	8.20	6.00	3.60	11.00	1.50

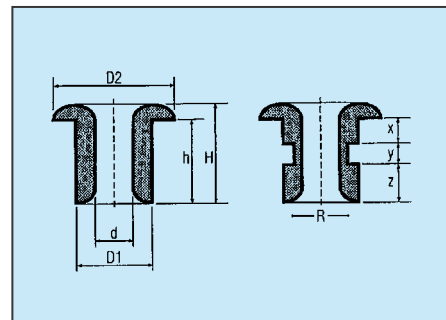
## Flanged Eyelets



Ref.No	D1 (max) mm	d mm	H mm	D2 mm	h mm
E832	8.60	4.20	7.00	9.90	5.40
E829	8.70	4.80	5.00	10.70	3.50
E859	8.70	4.60	13.90	10.75	11.80
E241	8.70	4.75	7.90	10.00	5.90
E241L	8.70	4.75	10.00	10.70	8.00
E109B	8.80	5.30	13.20	12.90	11.30
E926	8.90	4.70	10.20	10.60	8.30
E103	8.90	5.30	16.00	12.90	14.00
E321	8.90	5.00	20.00	10.60	17.00
E108	9.00	4.75	13.00	10.70	11.00
E901	9.10	4.00	7.00	13.00	5.00
E109D	9.15	5.00	12.70	11.00	10.55
E049	9.20	5.30	8.60	11.50	6.85
E955	9.50	6.20	7.90	12.00	5.50
E830	9.55	6.20	6.65	12.00	4.00
E943	9.60	4.70	9.50	12.70	6.30
E968	9.60	5.50	8.20	11.70	6.00
E975	9.60	6.60	7.80	13.20	1.80
E876	9.60	2.00	8.00	12.70	5.40
E828	9.70	6.20	9.00	12.00	7.00
E063	9.70	6.20	4.70	12.00	2.50
E062	9.70	6.20	10.50	12.00	8.35
E973	9.90	4.70	7.10	12.85	4.60
E934	9.90	5.30	25.00	14.70	22.00
E878	9.95	6.10	4.40	11.90	2.80
E959	10.00	6.00	12.80	12.00	8.80
E879L	10.00	6.10	8.50	11.90	7.00
E879	10.00	6.10	4.40	11.90	2.75
E978	10.00	6.30	15.60	13.50	11.00
E384	10.00	4.00	15.00	12.00	11.00
E385	10.00	5.00	15.00	12.00	11.00
E386	10.00	6.00	15.00	12.00	11.00
E900	10.00	7.00	11.00	12.10	9.00
E900L	10.00	7.00	12.50	12.10	9.00
E042	10.00	7.00	6.00	12.10	4.00

Ref.No	D1 (max) mm	d mm	H mm	D2 mm	h mm
E935	10.10	7.00	5.00	12.10	3.00
E212	10.10	5.00	8.60	12.00	6.40
E875	10.50	7.90	8.00	12.85	4.00
E970	11.00	6.50	9.25	14.00	6.75
E969	11.00	6.50	12.70	14.00	10.20
E909	11.05	7.50	6.60	14.00	5.00
E910	11.45	7.00	9.10	14.00	7.00
E050	11.80	7.60	10.00	15.40	7.50
E377	11.95	7.60	10.20	15.45	7.20
E301B	12.00	7.60	7.00	15.40	4.00
E949	12.00	7.50	8.50	15.50	6.25
E962	12.40	8.75	9.00	16.00	7.00
E378	12.40	8.75	10.30	16.00	7.00
E144	12.55	6.80	9.80	15.80	6.30
E143	12.65	8.75	10.30	15.90	7.15
E895	12.75	4.50	7.00	15.70	4.00
E896	12.95	8.75	10.10	18.20	8.00
E041	14.15	10.00	6.00	16.00	4.00
E041L	14.15	10.00	9.60	16.00	7.50
E820	15.45	10.00	8.40	19.50	5.40
E922	15.45	9.60	17.00	19.50	14.00
E840	15.45	9.70	13.50	19.75	10.00
E842	18.55	12.00	13.60	22.00	10.00
E836	19.80	13.90	12.50	25.70	9.10
E871	22.25	16.00	11.00	28.30	7.00
E871L	22.25	16.00	14.00	28.30	10.00
E847	22.25	13.00	14.00	28.20	9.00
E960	24.25	19.00	11.00	30.00	7.00
E925	25.85	20.00	8.00	31.50	6.00
E861	30.10	20.00	25.00	35.00	20.00
E861S	30.10	20.20	10.00	35.00	5.00
E891	35.35	24.00	11.00	38.00	8.00
E966C	40.00	30.00	10.00	44.00	6.80
E938	41.80	33.00	10.80	47.50	6.80

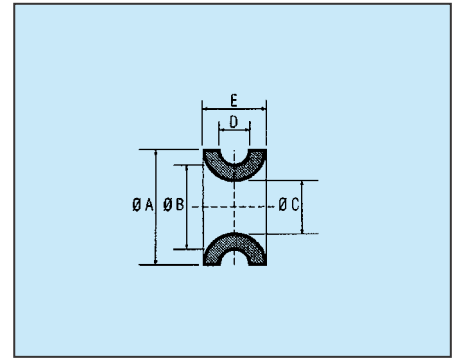
## Grooved Eyelets



Ref.No	D1 (max) mm	d mm	H mm	D2 mm	h mm	x mm	y mm	z mm	R mm
E430	4.45	1.50	4.80	5.80	3.45	1.55	0.80	1.10	3.60
E474	4.60	2.00	4.80	5.80	3.70	1.90	0.80	1.00	3.80
E487	5.90	3.00	7.00	8.30	5.00	1.00	1.30	2.70	4.50
E422	6.10	3.10	5.00	7.50	3.80	1.40	1.00	1.40	5.20
E445	6.20	3.00	10.50	8.00	7.00	4.00	1.00	2.00	5.40
E472	6.30	3.00	5.80	7.90	4.00	1.60	1.00	1.40	5.20
E494	6.60	3.80	5.80	8.70	3.95	1.40	0.75	1.80	5.60
E453	6.70	3.70	9.70	8.70	7.80	5.00	1.20	1.60	5.60
E458	7.40	4.10	8.00	10.40	6.30	3.20	1.30	1.80	6.00
E473	7.40	3.40	10.60	8.80	8.40	5.90	1.10	1.40	5.90
E467	7.60	3.50	7.10	9.00	5.00	1.85	1.10	2.15	6.50
E408	7.80	4.00	7.50	9.90	5.80	3.00	1.20	1.60	6.80
E493	7.80	4.00	8.20	9.40	6.70	3.50	1.10	2.10	6.60
E431	8.00	3.90	10.50	10.00	8.30	4.80	1.00	2.50	7.00
E424	8.00	4.50	4.70	10.00	3.30	1.20	1.00	1.10	7.00
E451	8.00	3.80	6.40	9.70	4.90	1.90	1.10	1.90	7.10
E420A	8.00	1.20	8.50	9.60	6.70	3.70	1.00	2.00	7.00

Ref.No	D1 (max) mm	d mm	H mm	D2 mm	h mm	x mm	y mm	z mm	R mm
E420B	8.00	1.50	8.50	9.60	6.70	3.70	1.00	2.00	7.00
E420C	8.00	3.60	8.50	9.60	6.70	3.70	1.00	2.00	7.00
E483	8.50	4.10	7.20	10.00	5.40	2.50	1.00	1.90	7.00
E446	8.50	4.20	7.00	10.00	5.50	2.80	1.00	1.70	6.90
E441	8.80	4.50	7.20	10.00	6.00	3.00	1.00	2.00	7.70
E433	9.50	6.20	9.10	12.00	6.60	3.40	1.50	1.70	8.00
E434	9.60	6.30	10.70	12.20	8.50	4.90	1.40	2.20	8.00
E432	9.90	6.60	8.00	13.00	6.00	3.20	1.30	1.50	8.50
E466	9.90	4.70	7.10	12.90	4.65	2.15	1.10	1.40	8.60
E435	11.90	7.60	10.20	15.60	7.00	3.00	2.00	2.00	10.00
E429	12.00	8.00	11.50	15.30	8.60	5.00	1.00	2.60	10.40
E425	12.70	4.80	10.80	15.90	7.60	3.00	2.45	2.15	10.30
E402	12.90	8.70	10.30	16.00	8.00	4.20	1.80	2.00	11.20
E427	13.70	4.20	15.30	38.60	9.90	7.00	1.50	1.40	12.00
E421	15.00	9.80	9.50	20.50	6.15	2.80	1.20	2.15	13.40
E410	18.60	12.00	16.70	22.00	13.05	9.80	1.25	2.00	16.50

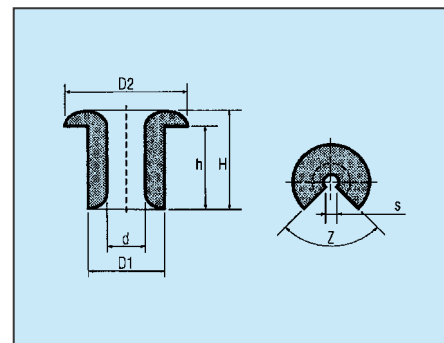
## Double Flanged Eyelets



Ref.No	A mm	B mm	C mm	D mm	E mm
DF46	4.30	3.40	2.60	1.00	2.60
DF29	5.10	3.50	1.90	2.50	4.90
DF1	5.50	4.30	2.50	1.00	3.20
DF32	5.50	4.50	3.30	1.10	2.50
DF2	7.00	5.00	3.00	1.00	3.50
DF35	7.50	6.00	3.60	3.40	6.40
DF4	8.00	6.20	3.00	1.20	4.00
DF20	8.00	6.20	3.30	1.60	4.10
DF14	8.00	6.10	3.10	1.60	4.80
DF16	8.00	6.50	3.10	0.90	4.00
DF15	8.10	5.60	3.40	1.60	6.50
DF5	8.20	6.00	4.00	1.40	3.40
DF6	8.20	6.10	4.00	2.70	5.60
DF17	8.20	7.00	4.30	4.30	7.00
DF36	8.50	6.00	4.00	2.00	5.40

Ref.No	A mm	B mm	C mm	D mm	E mm
DF7	8.50	7.40	3.10	2.70	5.80
DF33	8.60	7.50	3.10	3.20	6.50
DF8	9.10	6.80	4.80	1.20	4.00
DF22	9.10	6.10	3.30	2.60	6.50
DF13	10.30	7.00	4.80	2.50	5.30
DF9	10.40	9.10	5.00	0.90	4.00
DF18	11.10	9.30	5.00	0.80	4.50
DF12	11.90	9.00	6.00	2.00	6.20
DF21	13.00	10.00	6.50	6.50	12.00
DF28	13.25	10.60	7.25	2.50	6.00
DF25	15.00	11.50	7.90	1.50	5.50
DF47	15.00	11.50	7.80	2.50	7.00
DF26	18.50	15.00	10.00	3.00	6.00
DF37	20.00	11.50	6.00	3.60	9.00
DF11	24.50	20.50	14.60	3.50	7.20
DF38	28.50	20.80	14.30	6.30	13.50
DF27	33.20	31.00	26.10	2.00	5.30

## Split Eyelets

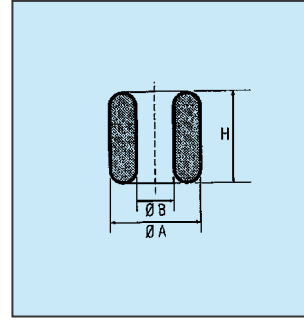
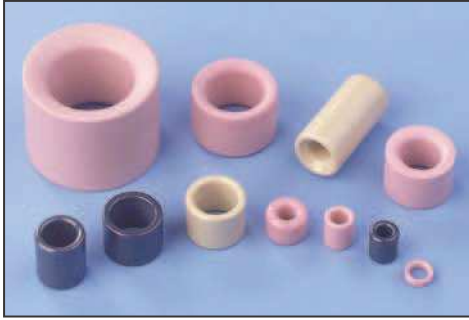


Ref.No	D1 (max) mm	d mm	H mm	D2 mm	h mm	s mm	z mm
E628	3.60	2.00	4.20	5.30	3.00	0.80	2.40
E627B	3.90	1.60	4.20	5.20	3.00	0.80	2.00
E651	6.00	3.00	2.00	10.00	1.00	1.20	5.00
E624	6.10	3.00	4.25	8.00	3.00	1.50	1.50
E653	6.60	3.00	7.60	7.80	6.40	2.60	2.60
E639	6.80	3.80	3.00	9.00	1.40	1.70	3.00
E637	6.90	3.80	6.50	9.00	5.00	1.70	3.00
E638	7.10	1.50	5.00	9.00	3.20	1.00	5.40
E617	7.40	3.80	8.00	9.60	6.50	1.00	3.00
E650	7.40	3.20	4.50	9.90	2.60	1.50	4.00
E626	7.50	5.00	5.00	10.00	3.00	2.00	2.50
E629	7.70	4.70	4.20	9.00	3.00	4.25	4.25
E642	7.80	3.10	9.80	10.20	7.20	0.90	2.50
E619B	8.10	3.20	5.50	10.50	3.50	1.00	4.50

Ref.No	D1 (max) mm	d mm	H mm	D2 mm	h mm	s mm	z mm
E619CG*	8.10	3.20	5.50	10.30	3.50	1.00	4.50
E623B	9.10	4.90	4.70	11.00	3.00	2.00	2.00
E623/90	9.10	5.00	4.50	11.00	3.00	2.00	6.50
E622	9.70	4.75	9.80	12.70	7.10	3.30	3.30
E656	9.80	5.40	5.80	14.30	3.50	1.40	5.00
E625B	10.10	6.00	4.50	12.00	3.00	2.30	2.30
E634	10.10	4.10	8.10	12.00	7.00	2.00	5.00
E655	10.10	4.10	5.50	12.00	3.60	2.00	6.00
E601	12.40	7.60	7.00	15.90	4.00	2.50	8.50
E620	13.30	4.70	12.00	17.20	9.50	1.50	7.00
E659	13.50	4.20	12.00	15.50	8.80	2.40	2.40
E603	14.40	11.00	6.00	17.40	3.00	9.00	9.00
E660	15.50	9.80	13.40	19.50	9.80	2.60	2.60
E602	19.00	9.00	27.80	28.00	21.00	5.00	5.00

\*with clip groove

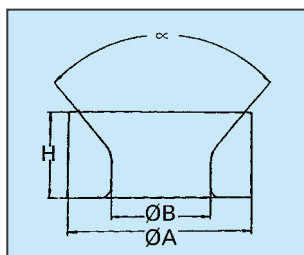
## Tube Eyelets



Ref.No	A mm	B mm	H mm
TE1	4.45	2.00	4.60
TE2	5.00	2.50	6.00
TE48	5.00	3.00	5.00
TE3	6.00	3.50	6.00
TE49	6.00	3.00	2.60
TE4	6.00	3.00	8.00
TE52	6.80	4.00	2.00
TE13	7.00	3.00	5.00
TE5	7.50	4.00	4.00
TE39	7.50	4.00	12.00
TE6	8.00	3.50	10.00
TE25	8.00	4.20	2.00
TE14	8.50	6.00	4.50
TE16	8.50	5.50	10.00

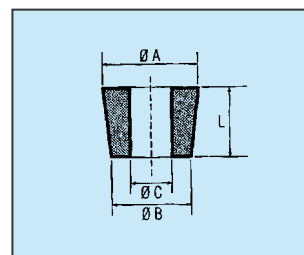
Ref.No	A mm	B mm	H mm
TE7	9.60	7.00	7.80
TE21	9.00	4.00	18.00
TE8	10.00	5.50	6.00
TE10	10.00	7.00	8.00
TE40	10.80	6.00	14.00
TE43	11.60	6.80	12.00
TE37	12.00	7.00	3.00
TE11	12.00	7.00	8.00
TE41	12.20	9.00	13.00
TE44	12.20	6.70	15.00
TE15	13.00	9.50	4.00
TE23	15.20	9.70	10.40
TE38	18.00	9.00	20.00
TE17	23.00	14.50	17.50

## Ball/Spindle Eyelets



Ref.No	A mm	B mm	H mm	a
TE18	10.60	3.00	5.00	120°
TE12	11.00	4.00	4.50	120°
TE24	12.90	4.50	5.80	100°
TE26	13.00	3.00	7.00	80°
TE30	13.00	3.50	7.00	80°
TE31	13.00	4.50	6.00	76°
TE19	13.00	5.50	6.00	80°
TE32	13.00	7.10	6.00	60°
TE27*	13.90	3.00	11.00	90° & 90°
TE33	14.00	4.50	8.00	90°
TE34	17.00	4.50	8.00	84°
TE36*	20.00	3.00	17.50	90° & R8
TE35	28.00	4.80	13.00	80°

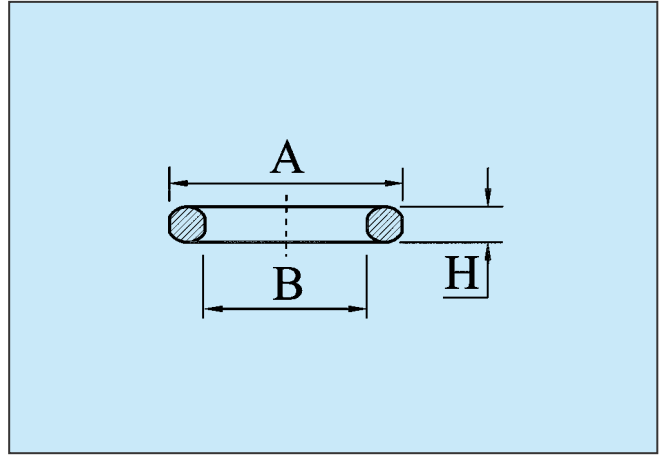
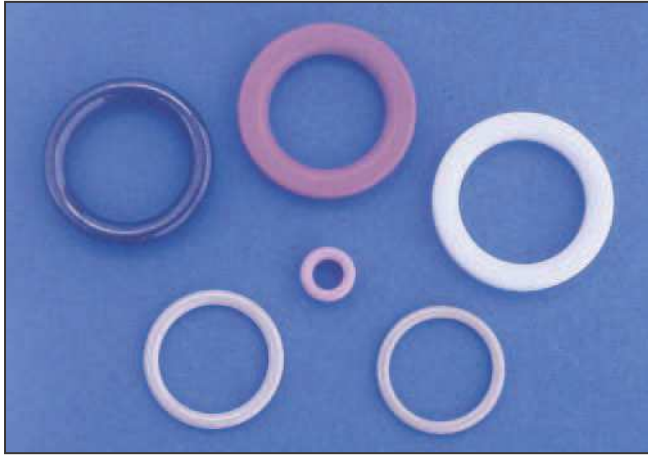
## Conical Eyelets



Ref.No	A mm	B mm	C mm	L mm
CE1	6.50	6.10	3.90	4.80
CE2	6.70	6.30	3.10	4.75
CE3	6.90	6.50	3.20	5.20
CE13	8.50	8.00	5.50	5.00
CE4	10.00	9.40	6.00	12.00
CE11	10.60	8.75	3.10	17.50
CE9	12.00	11.40	7.00	12.00
CE8	12.50	11.80	6.50	15.00
CE5	14.30	13.50	6.30	6.75
CE10	18.00	17.00	10.20	15.75
CE6	20.00	19.00	8.50	6.35
CE12	32.00	28.00	16.50	35.00

\*tapered both ends

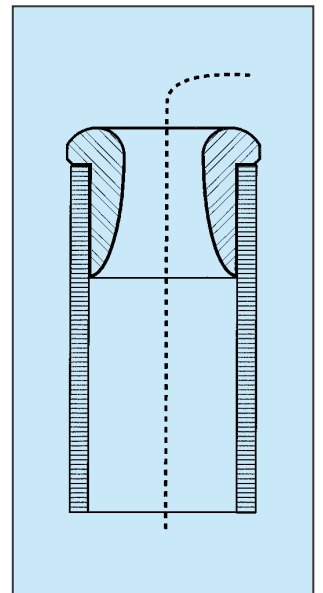
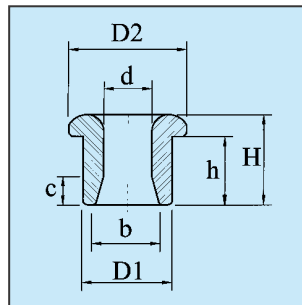
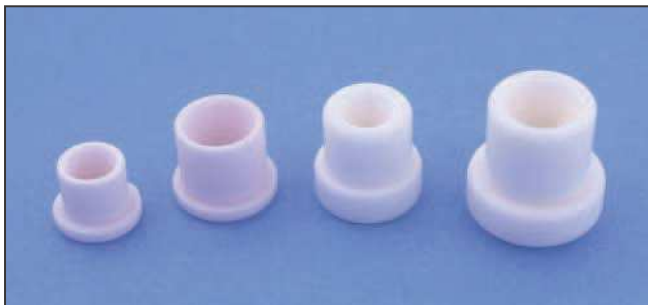
## Rings



Ref.No	A mm	B mm	H mm
R52	6.80	4.00	2.00
R37	7.20	4.50	2.00
R26	8.00	4.20	2.00
R28	10.00	7.00	3.00

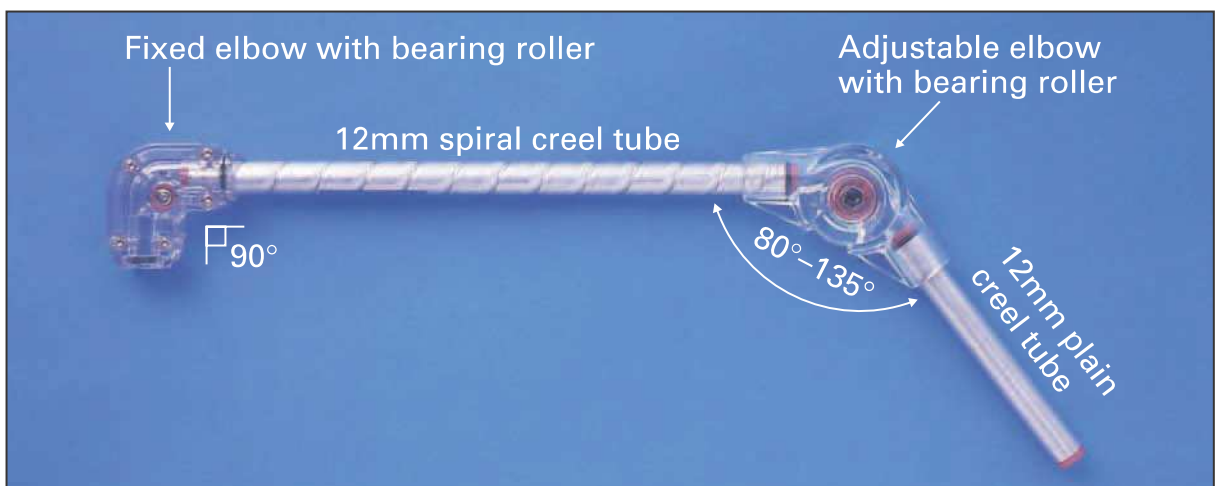
Ref.No	A mm	B mm	H mm
R19	14.00	11.00	1.30
R18	15.20	11.70	1.40
R34	18.80	13.20	3.30
R35	20.00	14.00	3.00

## Flared Eyelets – for creel tubes and spindles



Ref.No	D1 (max) mm	d mm	b mm	H mm	D2 mm	h mm	c mm
FE1	6.60	4.00	5.20	6.00	8.00	4.00	4.00
FE2	7.10	3.80	5.50	7.00	9.20	5.30	2.20
FE3	7.50	4.00	5.00	8.00	10.00	6.00	6.00
FE4	9.10	6.00	7.40	7.00	11.00	5.00	3.00
FE5	9.80	4.00	6.10	12.50	12.00	7.50	4.00
FE6	10.00	6.00	7.70	10.00	12.00	8.00	6.00
FE7	11.70	5.00	8.50	13.00	15.00	9.00	6.60

## Creel Tube System



**Rods and Tubes** can be made to any reasonable dimensions, subject to minimum batch sizes. For smaller quantities, the following standard diameters can be diamond cut to length. Many other 'non standard' diameters are usually held in stock as well.



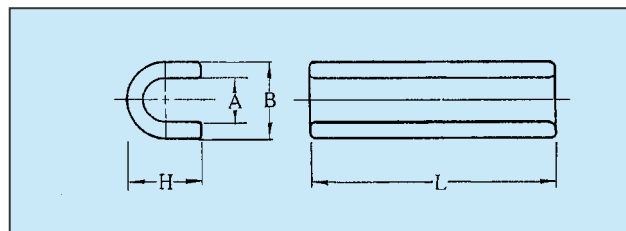
## Rods

Diameter (mm)
1.5
2.0
2.5
3.0
4.0
5.0
6.0
8.0

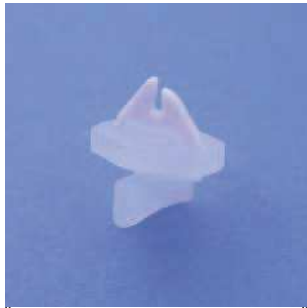
## Tubes

Outside Diameter (mm)	Inside Diameter (mm) (to clear)
2.0	1.0
2.5	1.5
3.0	2.0
4.0	2.0
5.0	3.0
6.0	3.0
8.0	5.0
10.0	5.0 (6.0) (6.8)
12.0	8.0
15.0	10.0

**Edge Protectors (Half Tubes)** can be diamond slit to length from the following standard sizes.



Ref.No	A mm	B mm	H mm	L mm max	R1 mm	R2 mm
EP1	1.3	4.0	4.0	36.0	1.5	4.0
EP2	2.0	4.0	4.0	50.0	2.0	4.0
EP3	3.2	5.2	4.1	45.0	1.6	5.2
EP4	4.0	7.0	6.5	62.0	2.0	3.5
EP5	5.0	8.0	8.0	62.0	2.5	4.0
EP6	6.0	9.0	9.5	62.0	3.0	4.5



TWG7



TWG14



TWG15



TWG25



TWG21



TWG1



TWG44



TWG65



TWG30



TWG31



TWG16



TWG17



TWG40



TWG80  
left and right hands  
available



TWG84  
left and right hands  
available



TWG67

F15 x 0.5  
F15 x 1.0  
F15 x 1.5

F44

F42A

F42B

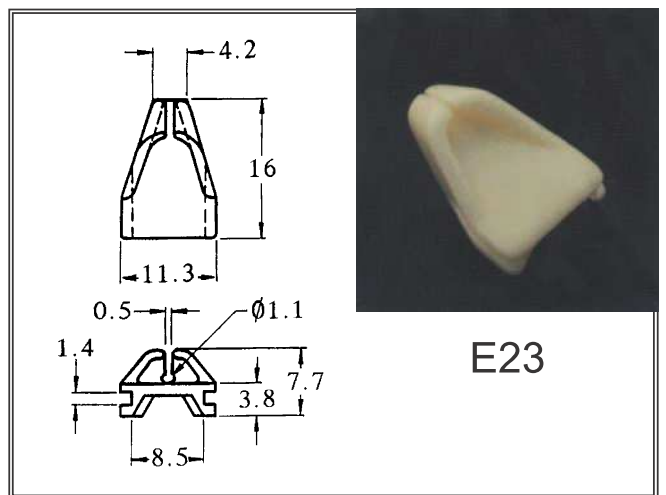
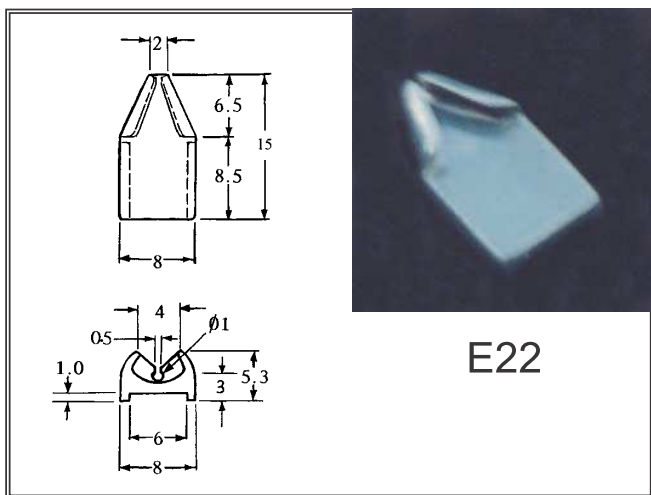
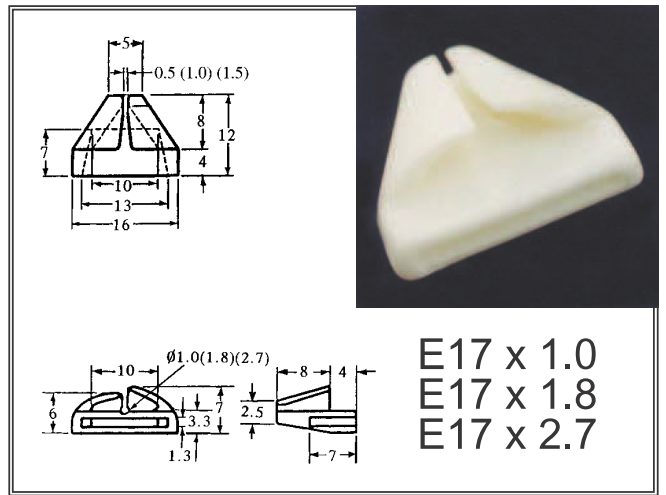
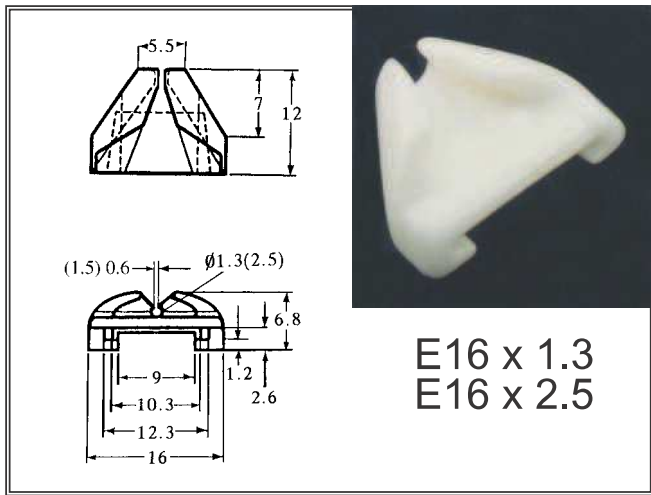
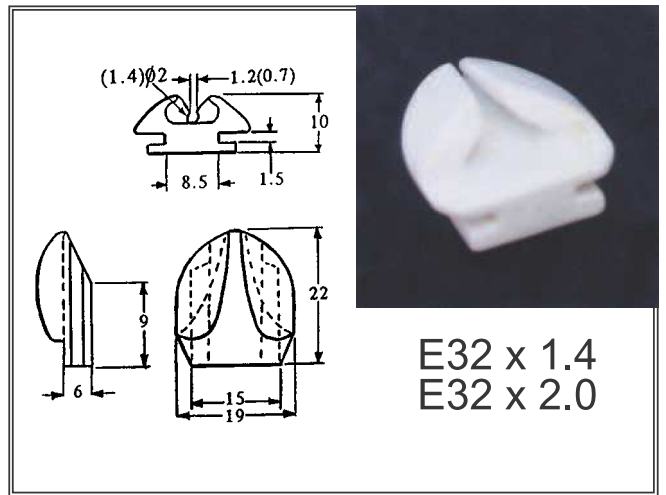
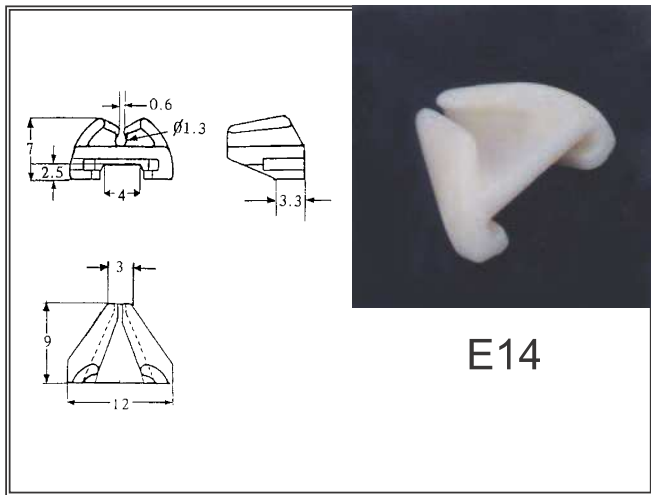
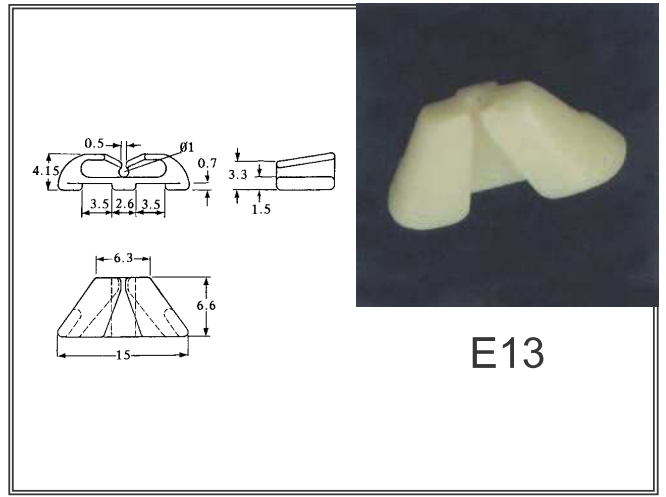
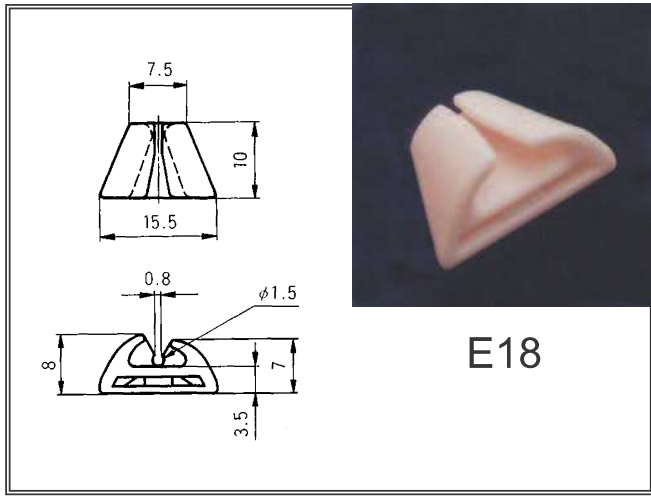
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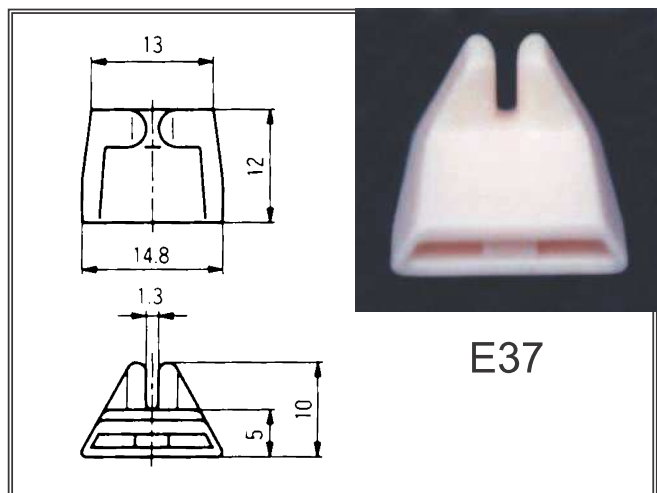
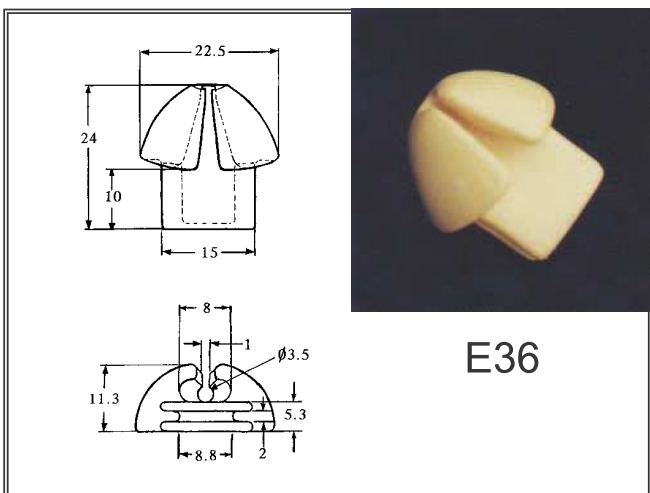
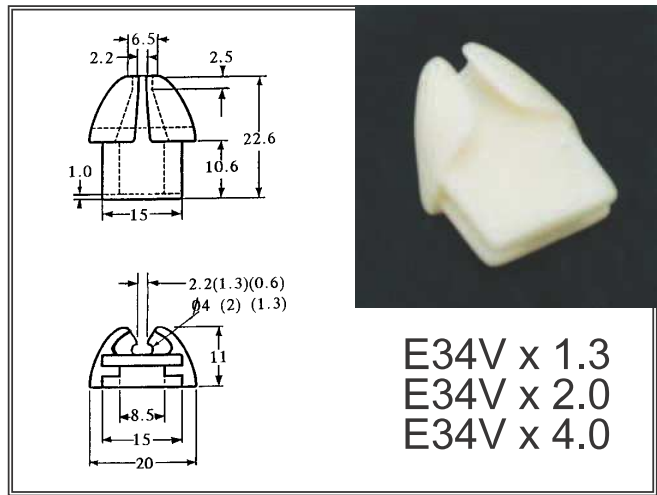
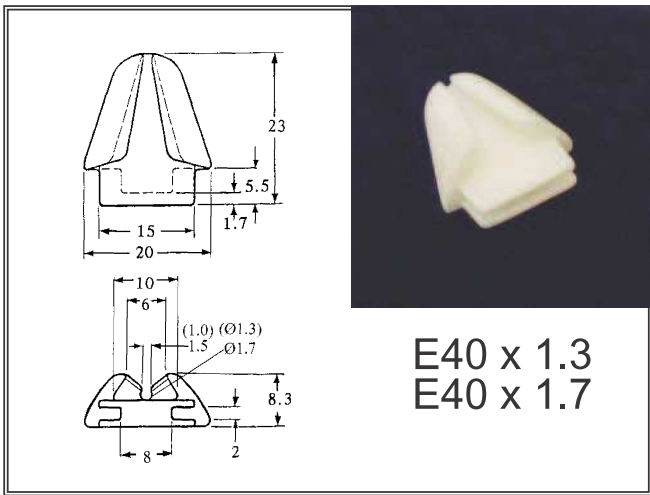
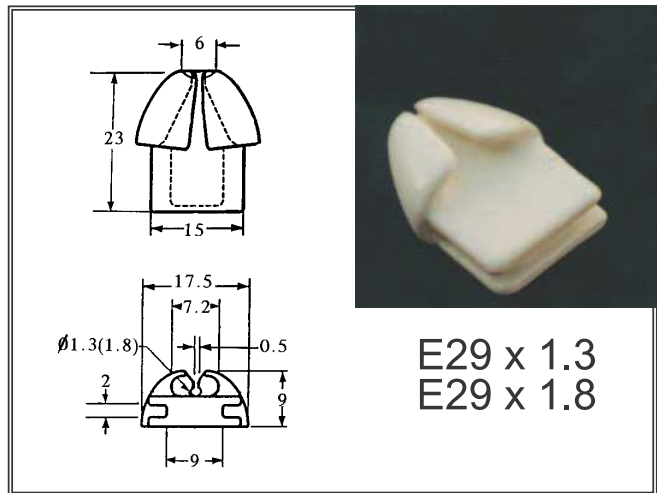
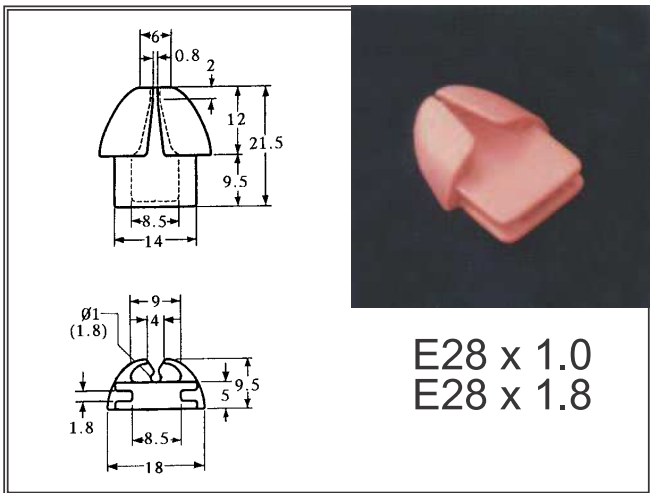
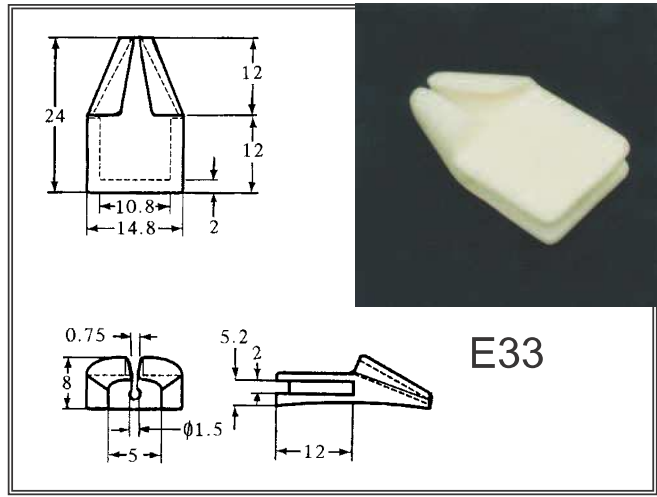
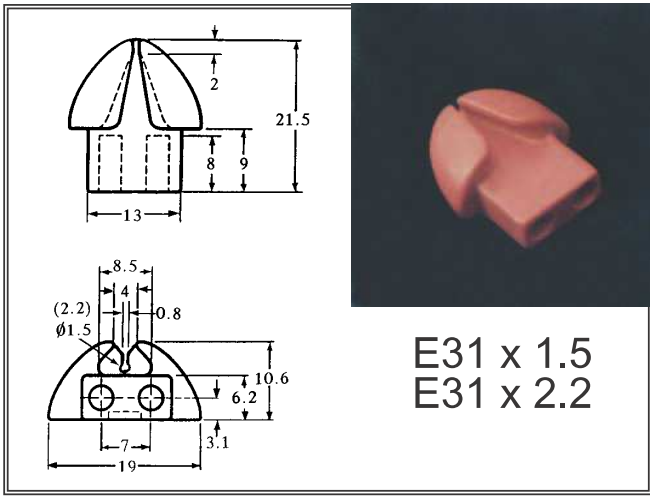
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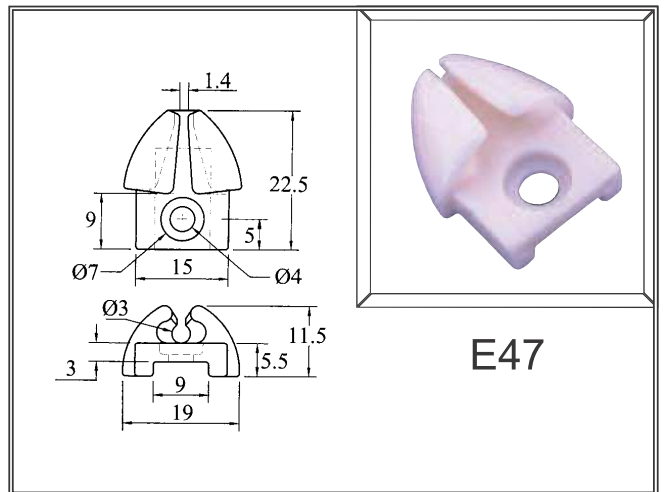
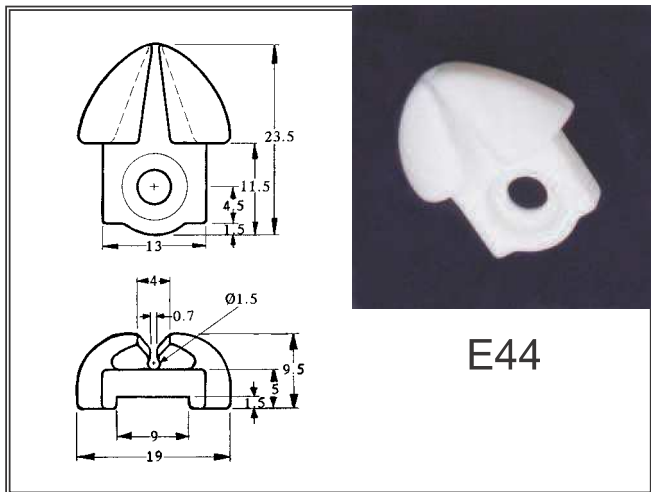
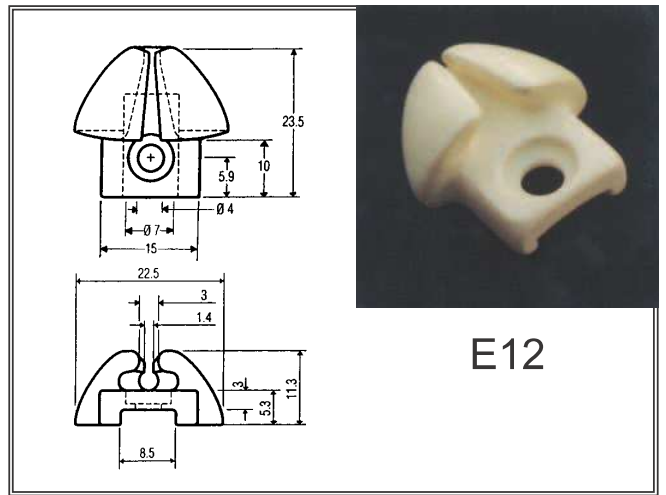
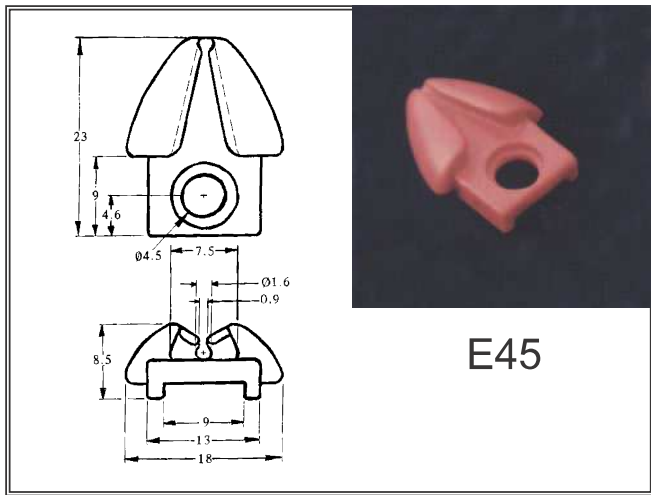
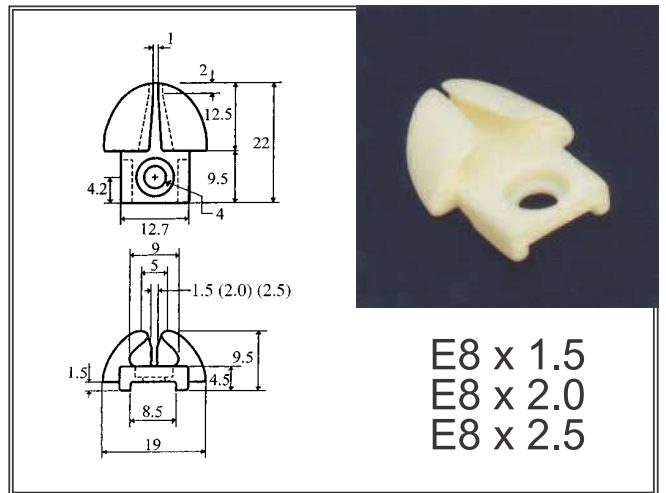
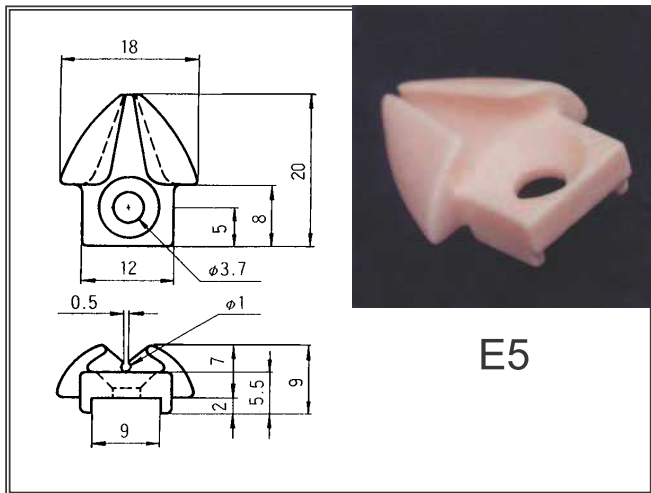
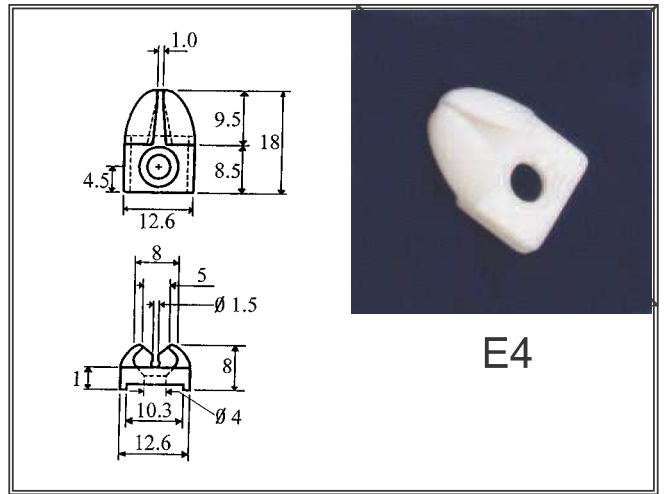
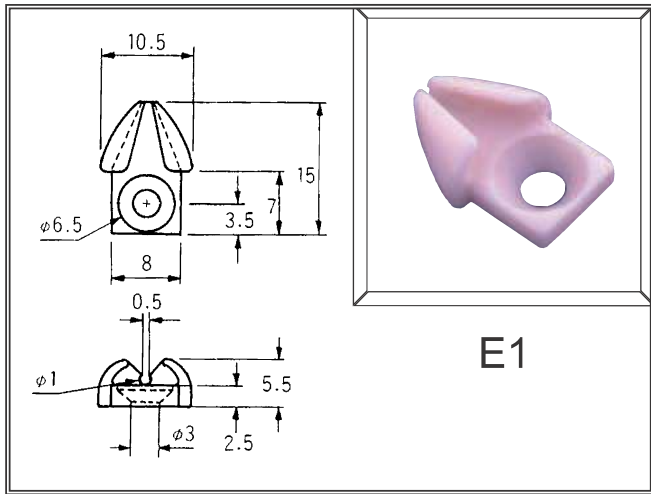
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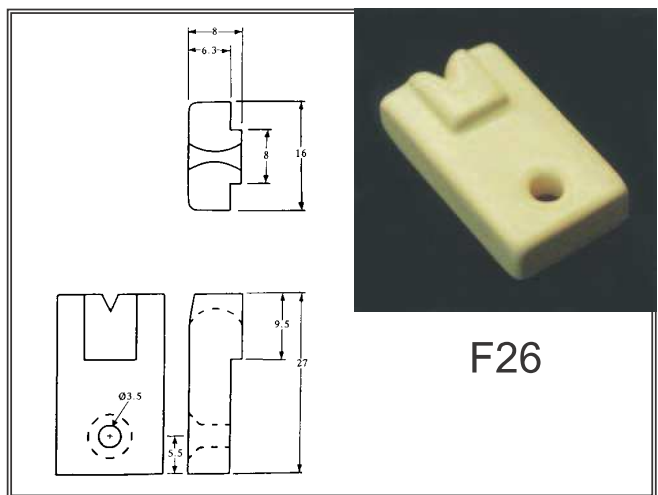
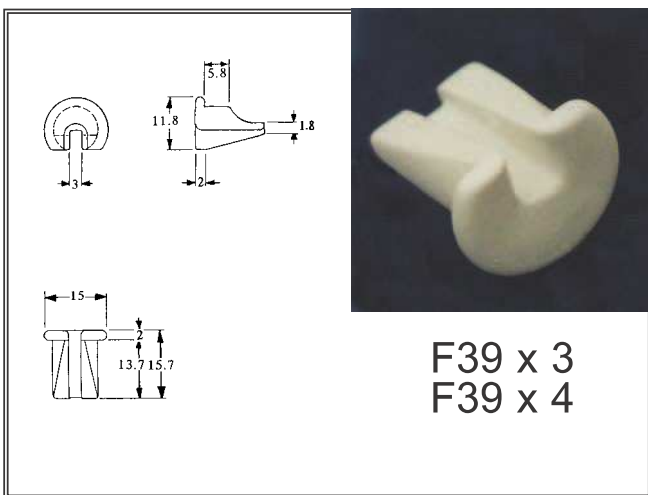
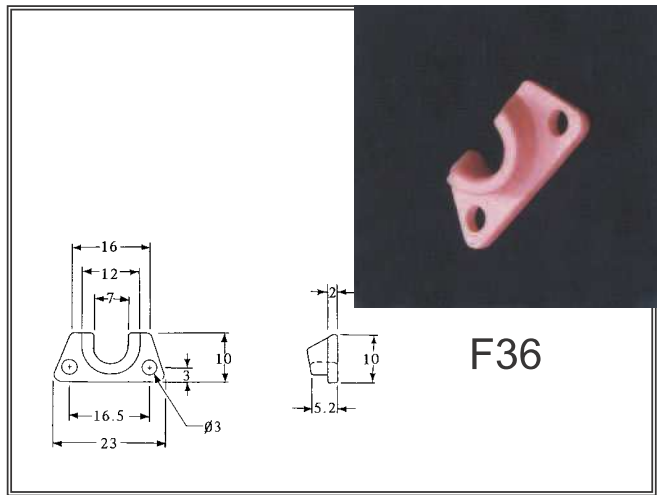
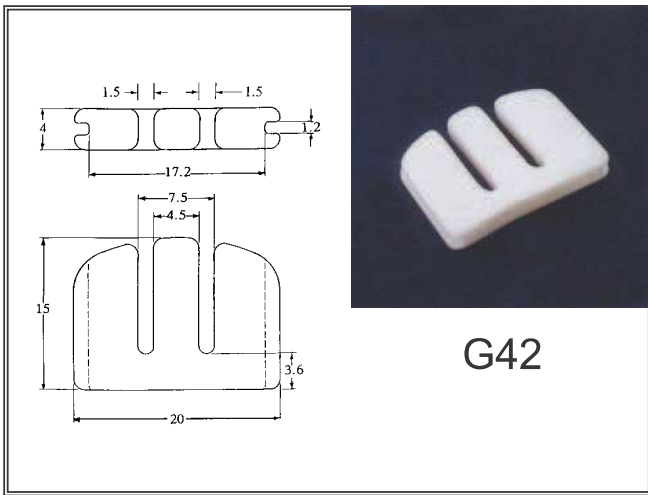
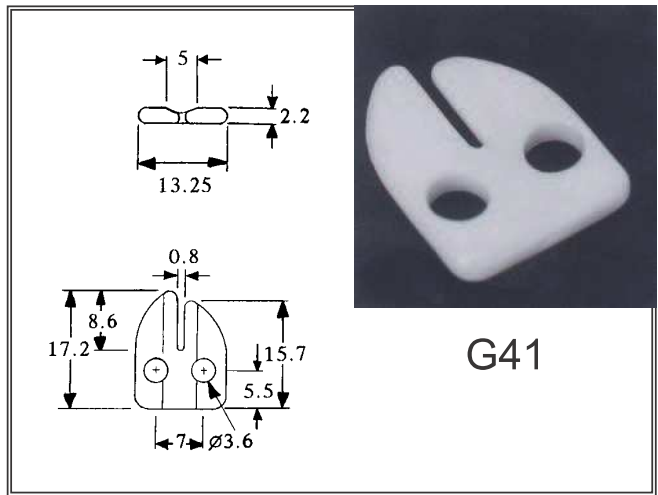
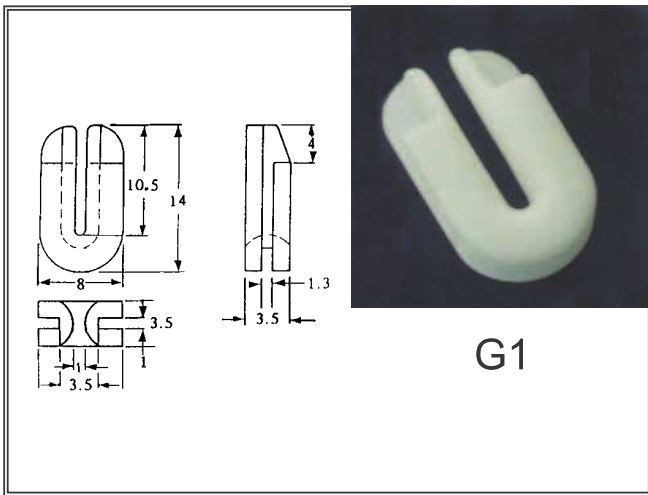
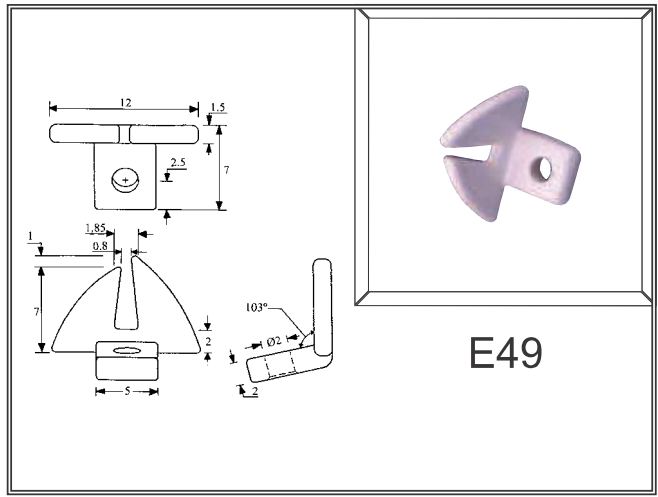
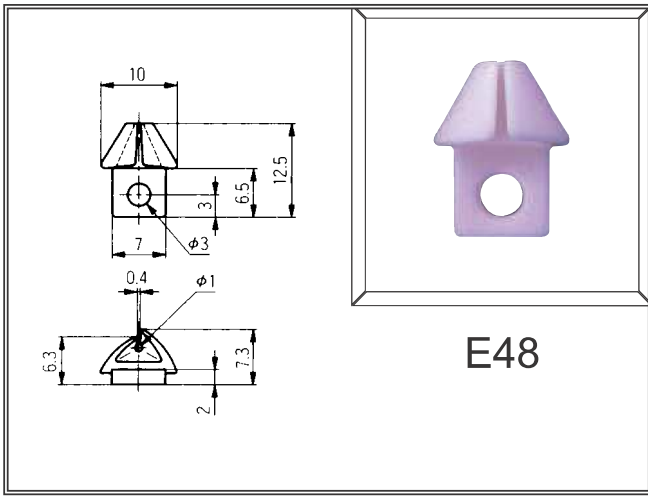
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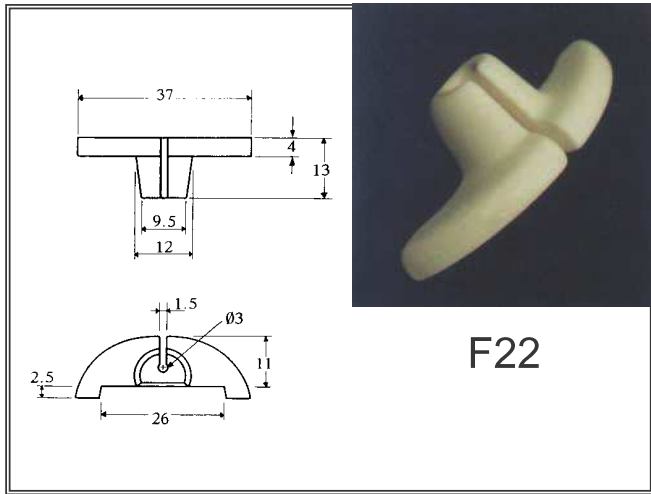




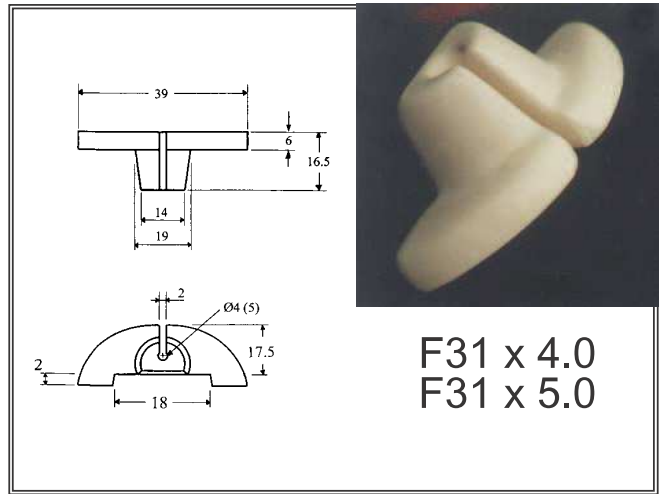




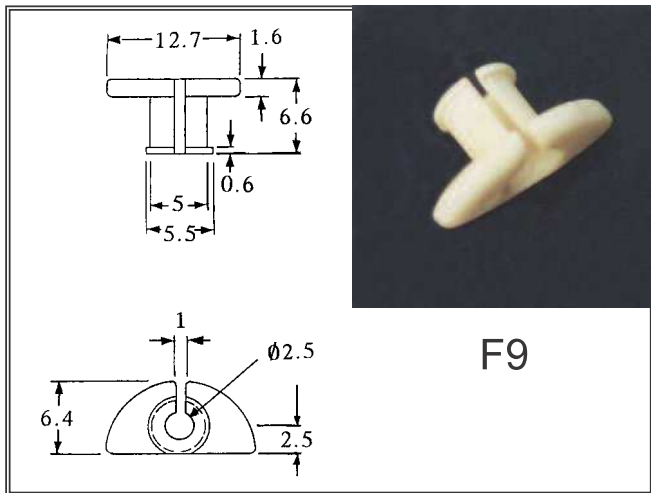




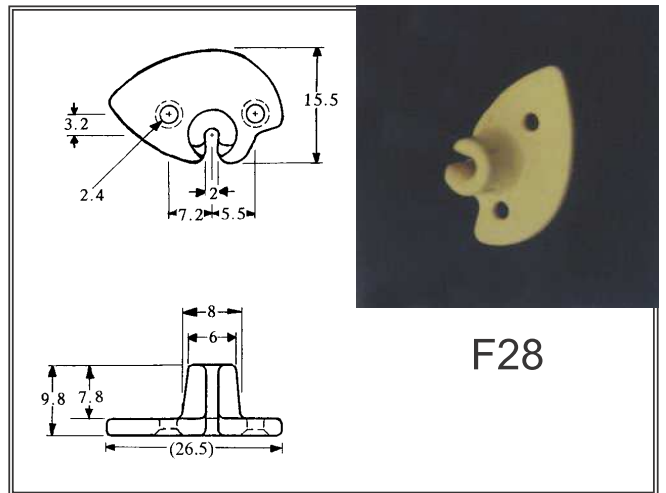
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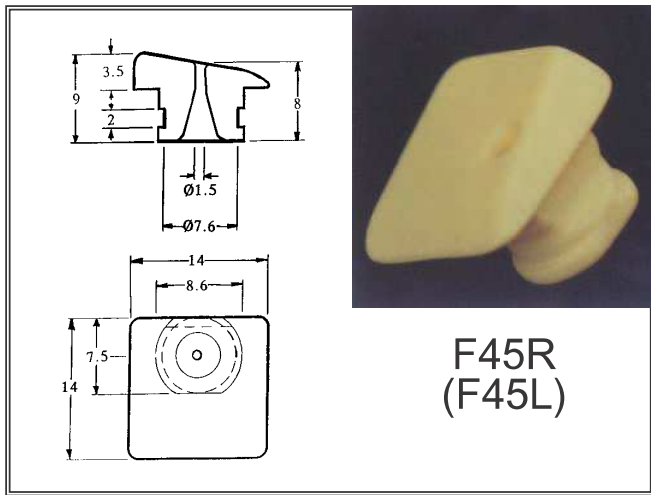
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F31 x 5.0



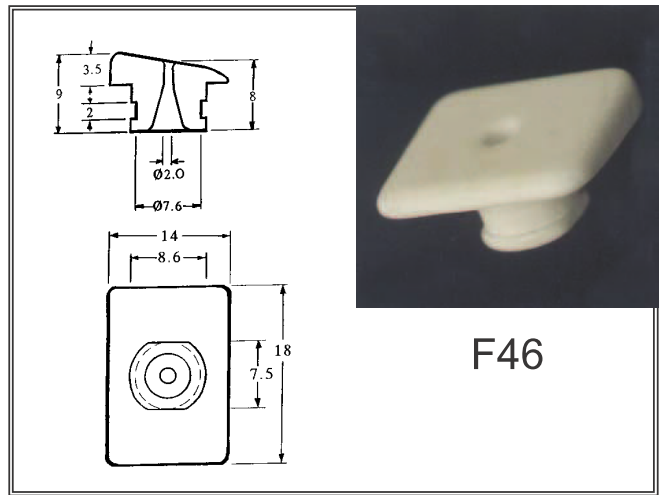
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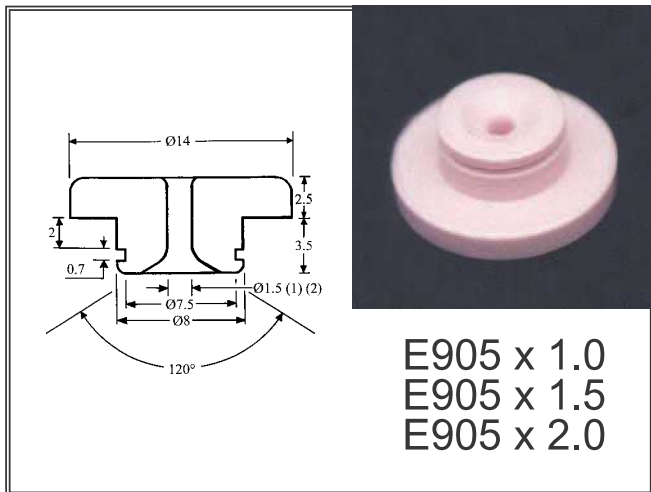
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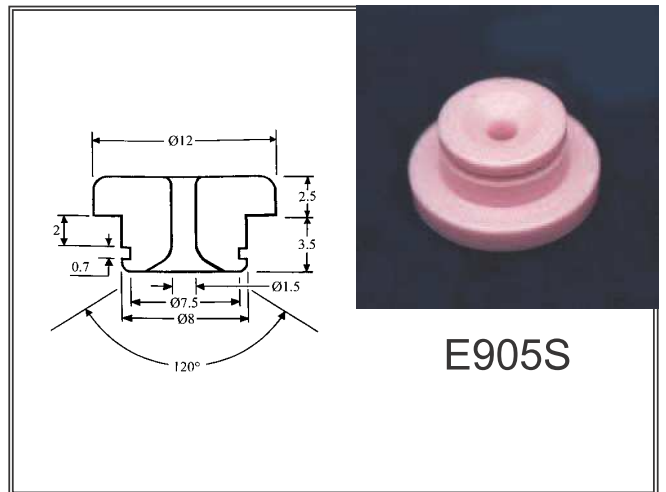
F45R  
(F45L)



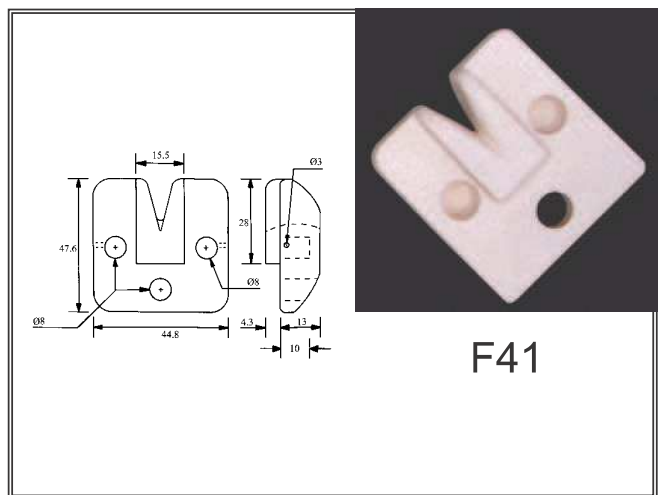
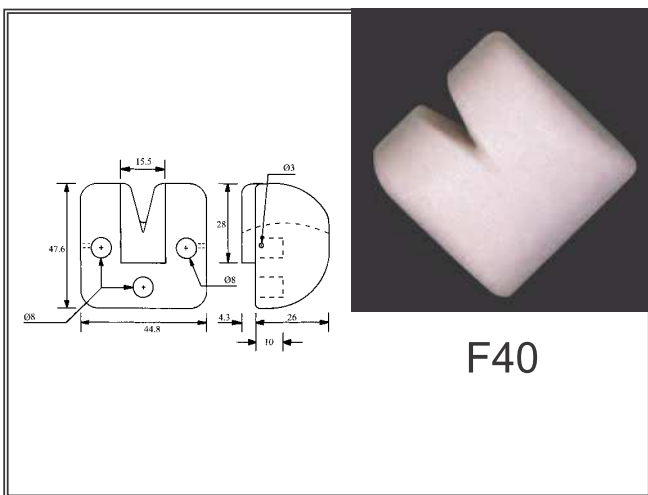
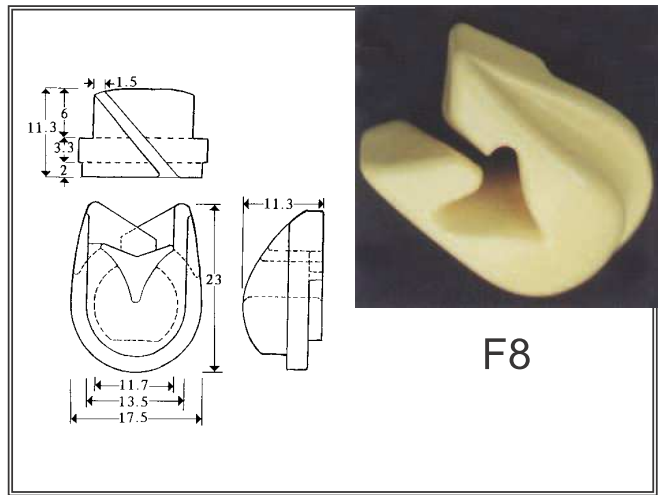
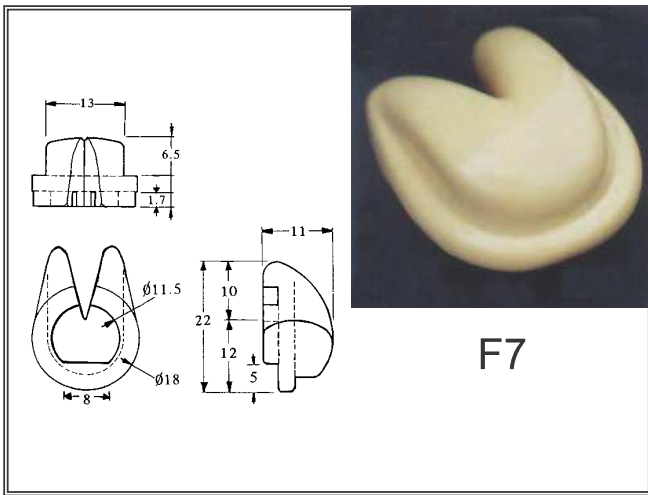
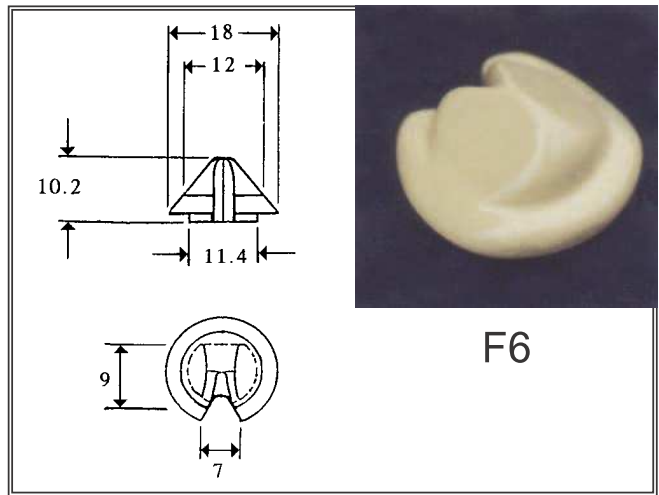
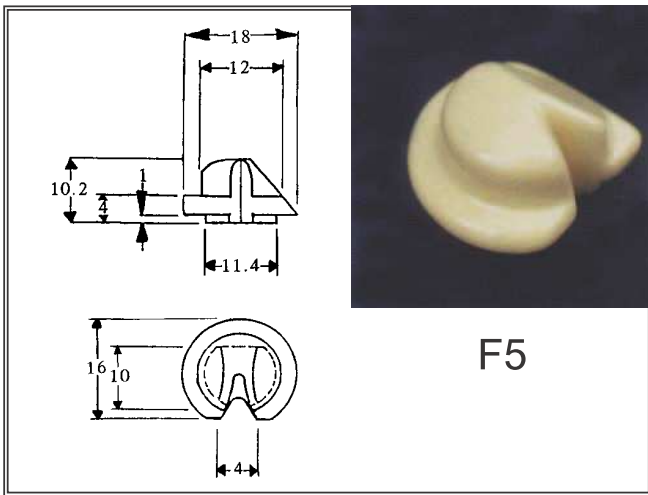
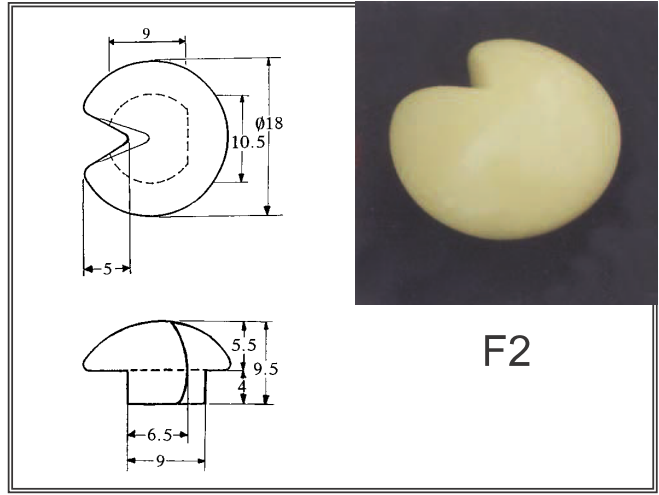
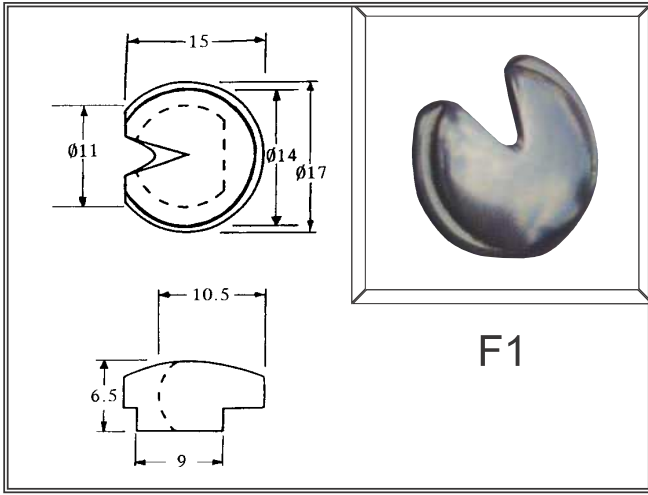
F46



E905 x 1.0  
E905 x 1.5  
E905 x 2.0



E905S



**K1**

also available in PCS

**K2**

also available in PCS

**K3**

also available in PCS

**K4**

**K5**

**K6**

**K20**

**K14**

**K19**

also available in PCS

**K19-1**

with separate hook

**K18**

also available in PCS

**K18-1**

with separate hook

**K33**

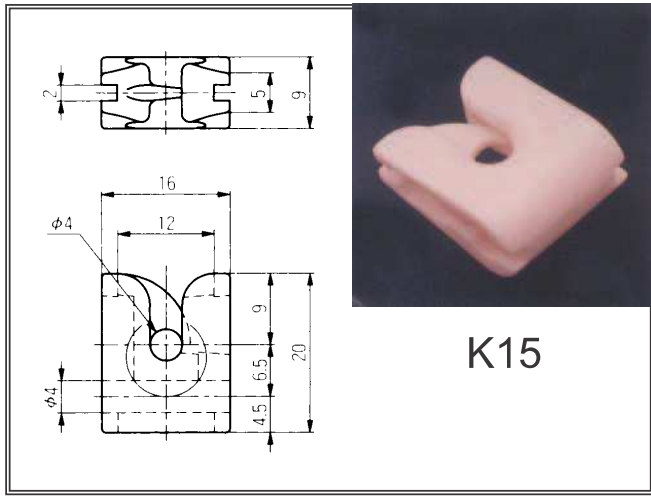
also available in PCS

**K17**

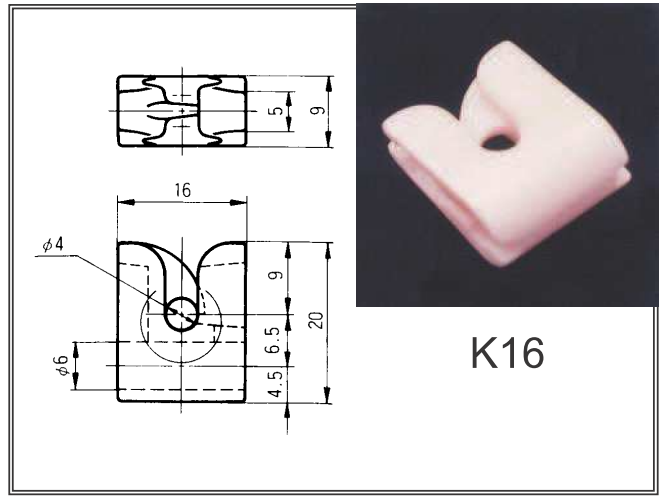
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**K25**

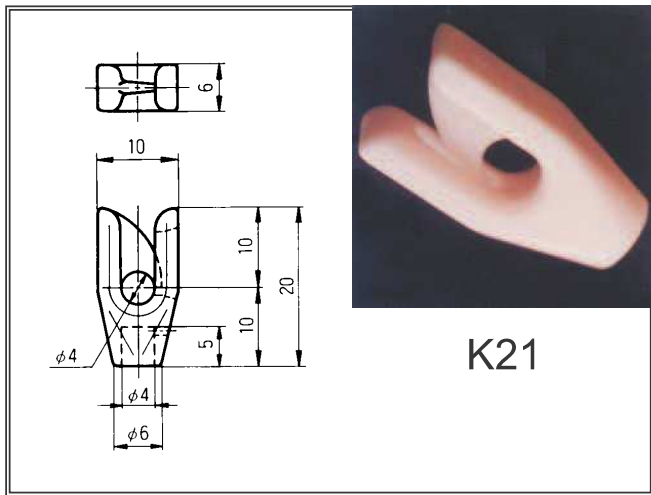




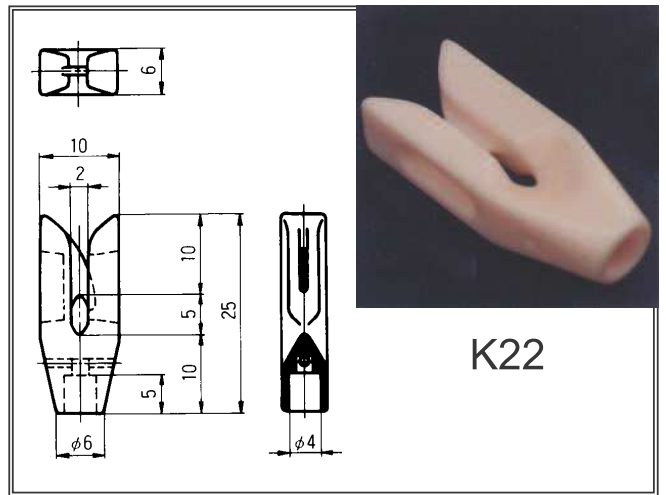
K15



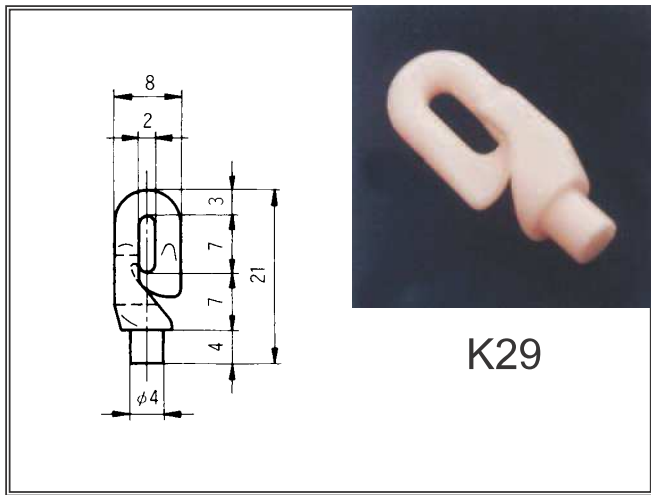
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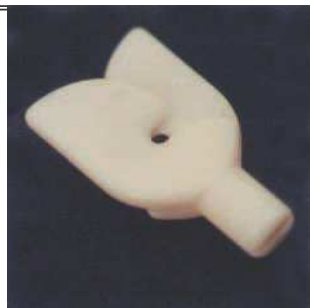
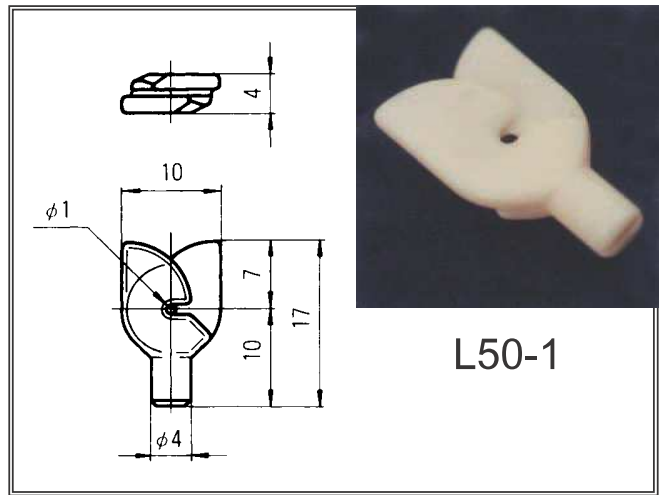
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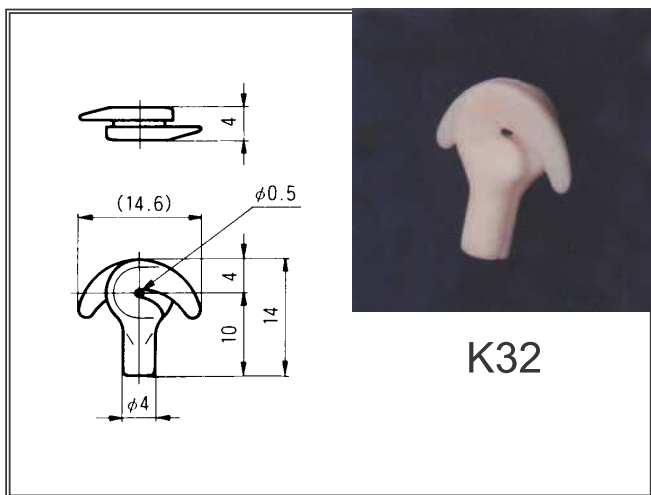
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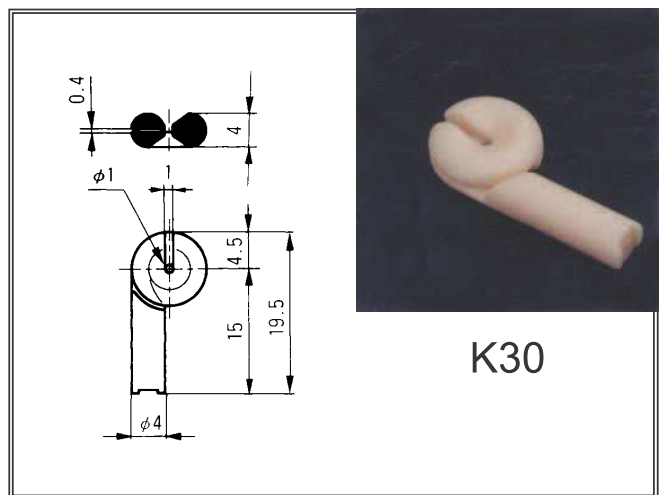
K29



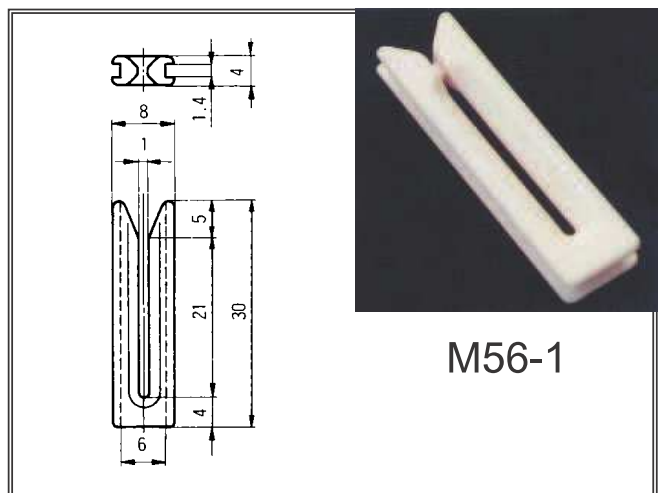
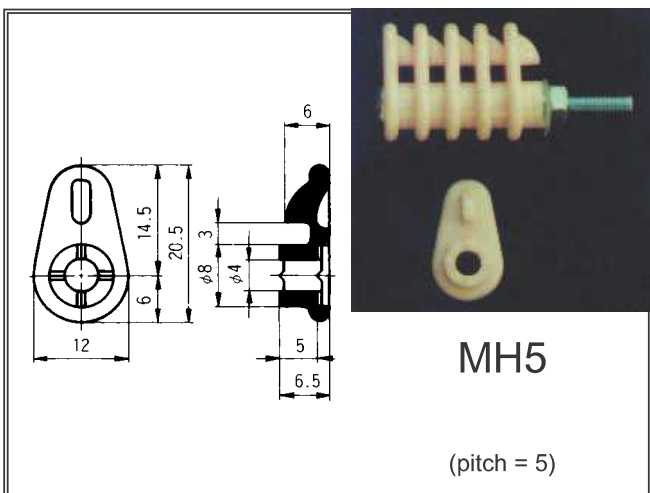
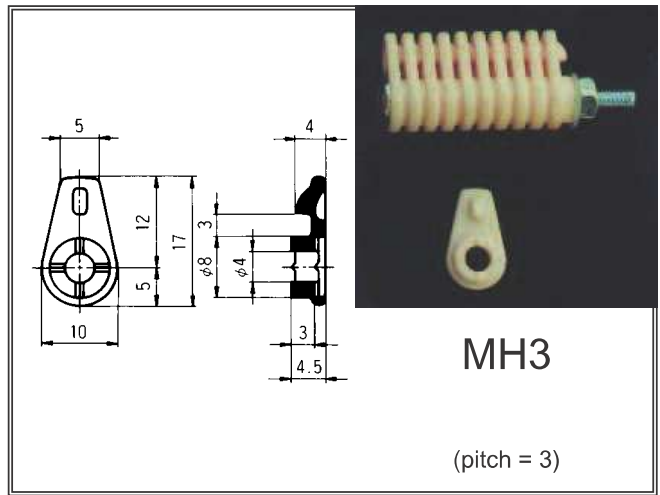
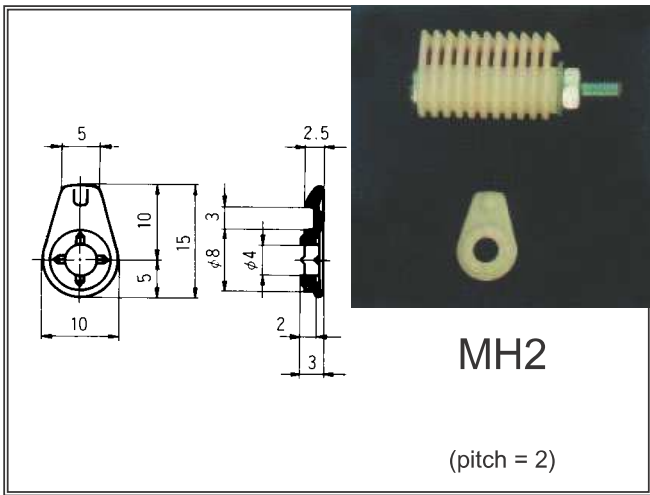
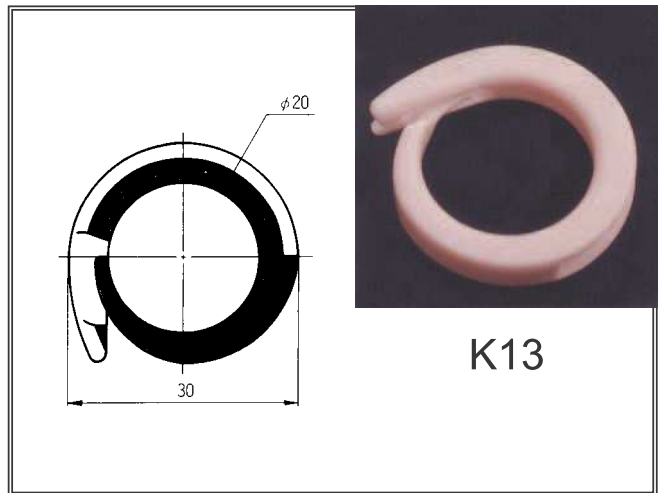
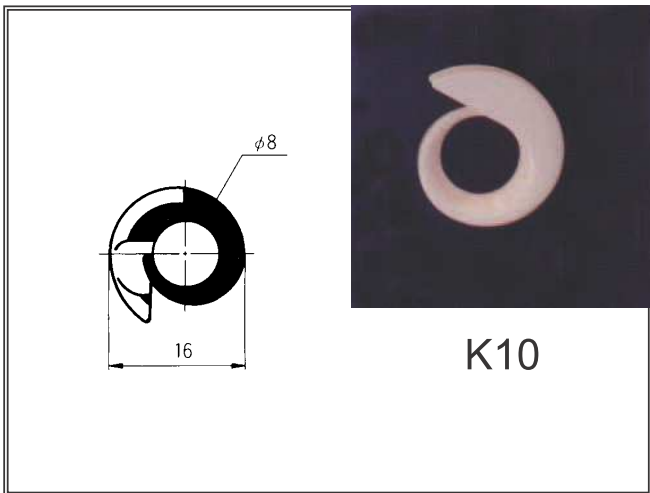
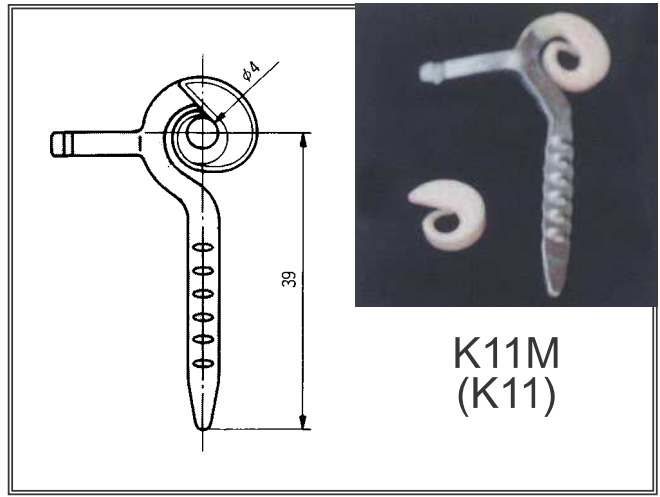
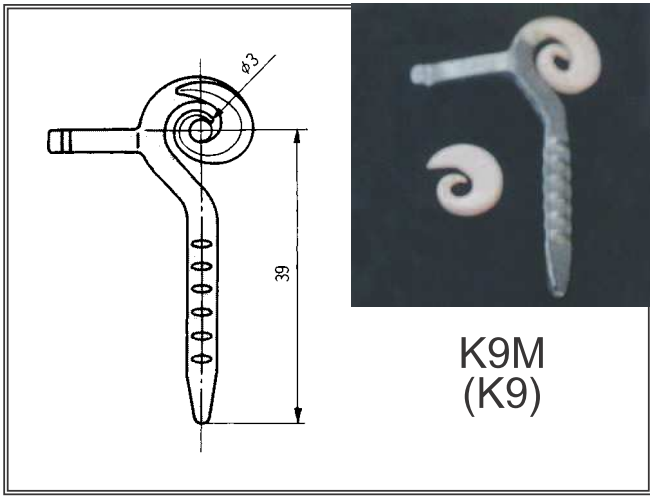
L50-1

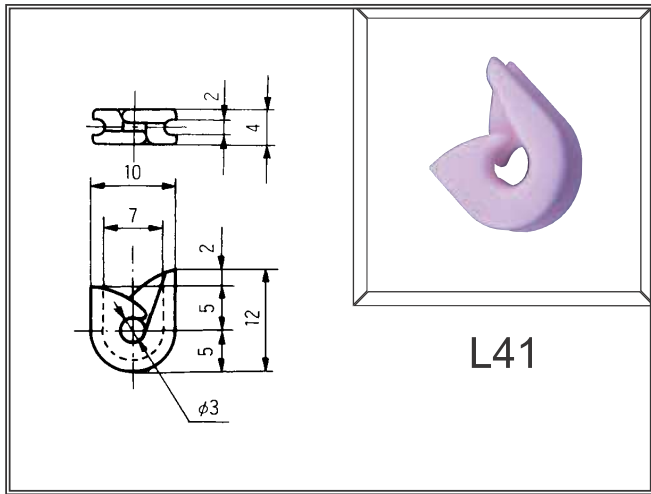


K32

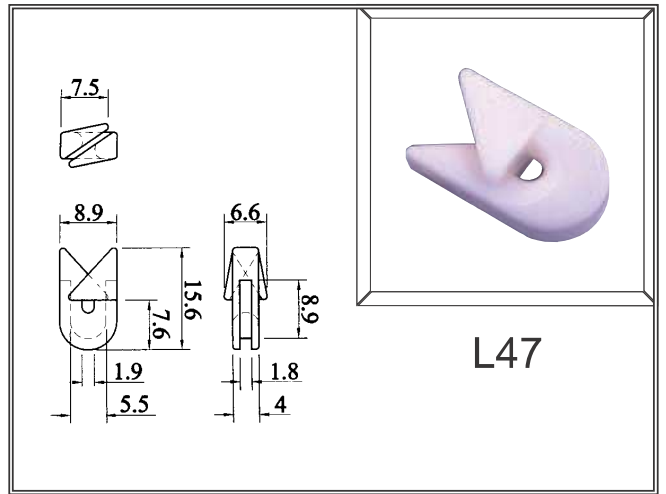


K30

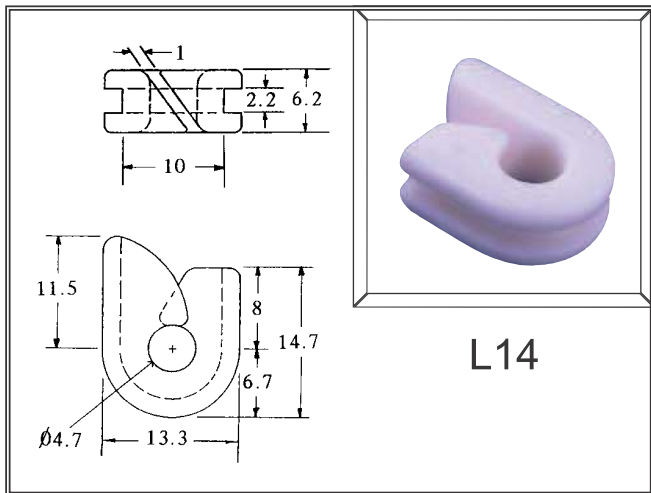




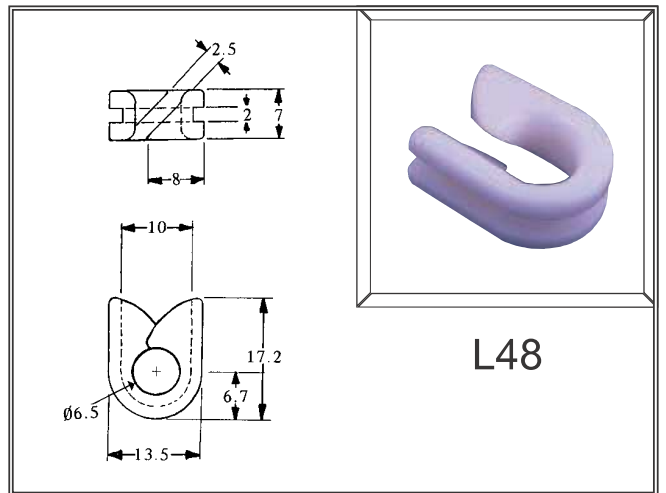
L41



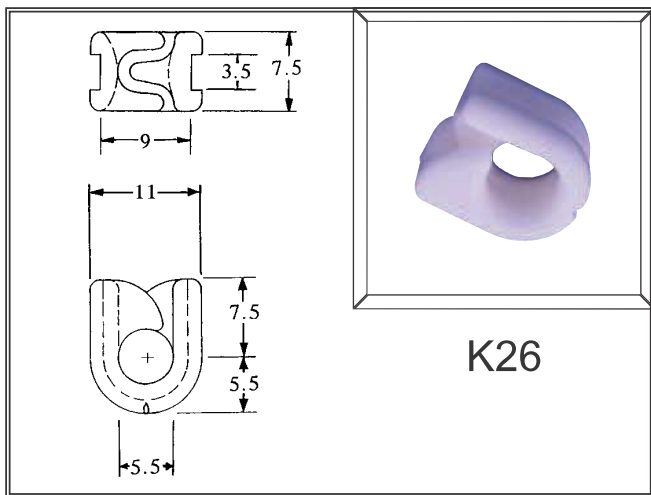
L47



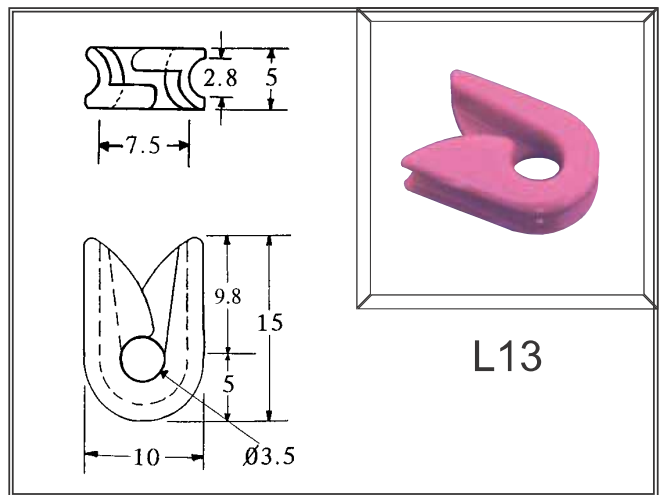
L14



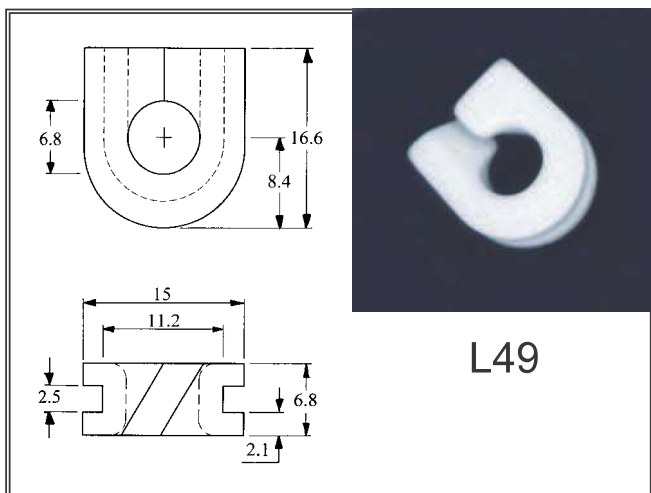
L48



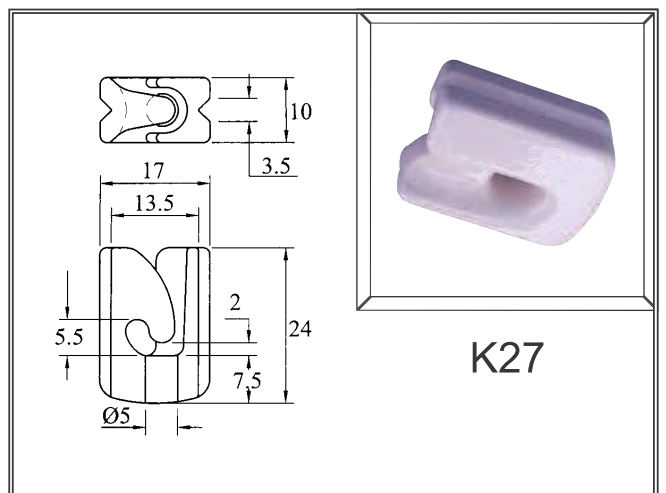
K26



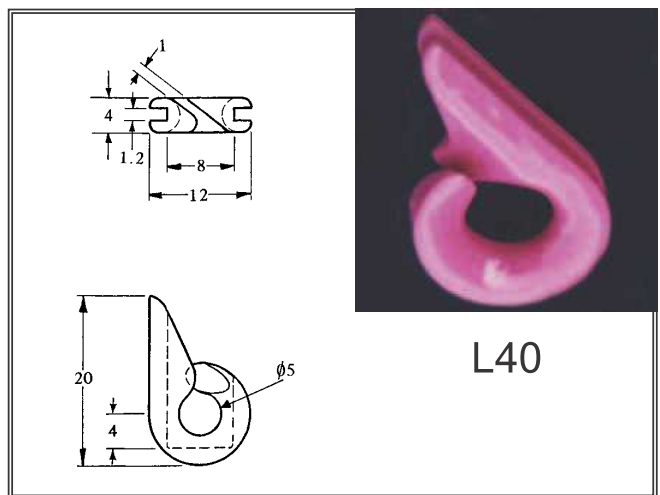
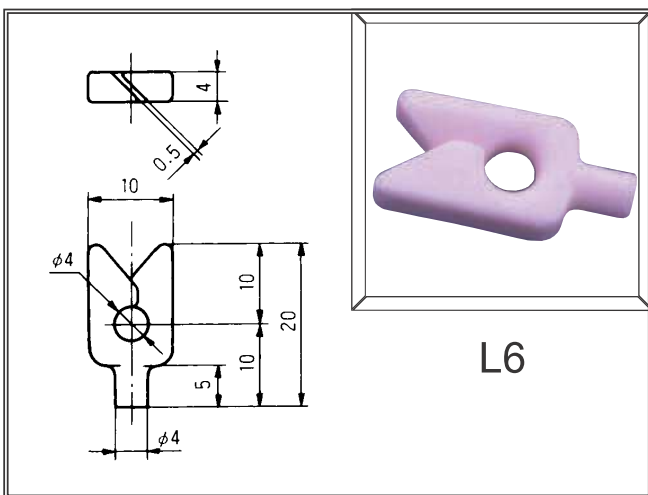
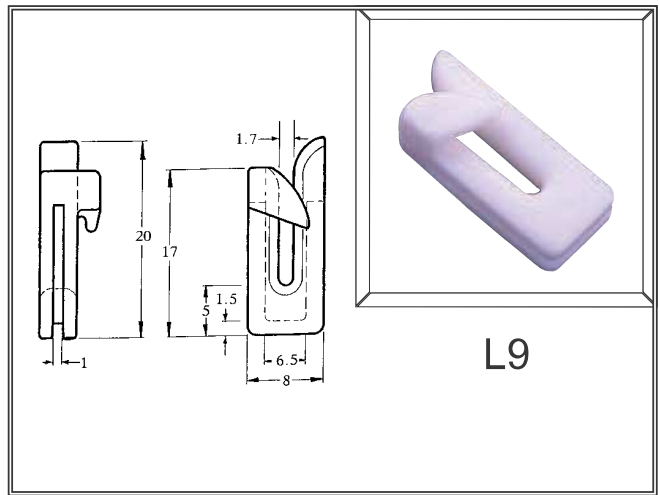
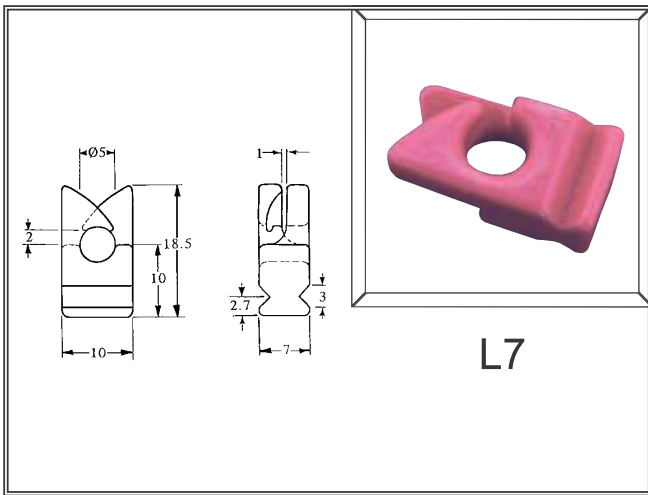
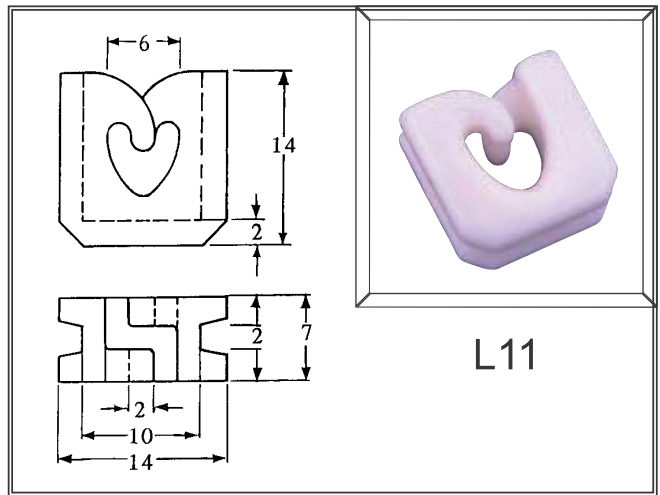
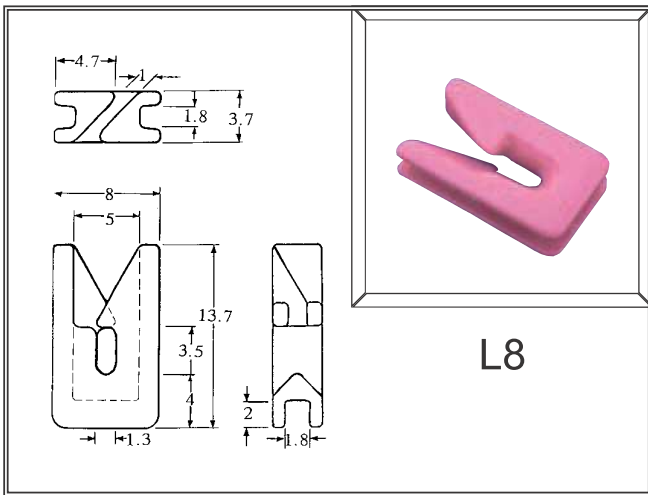
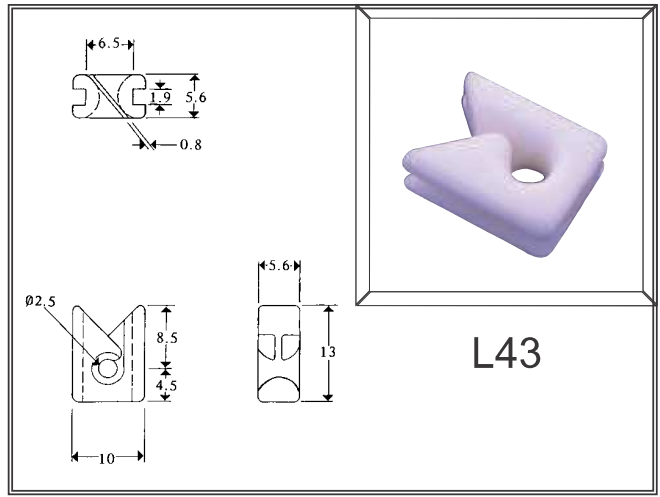
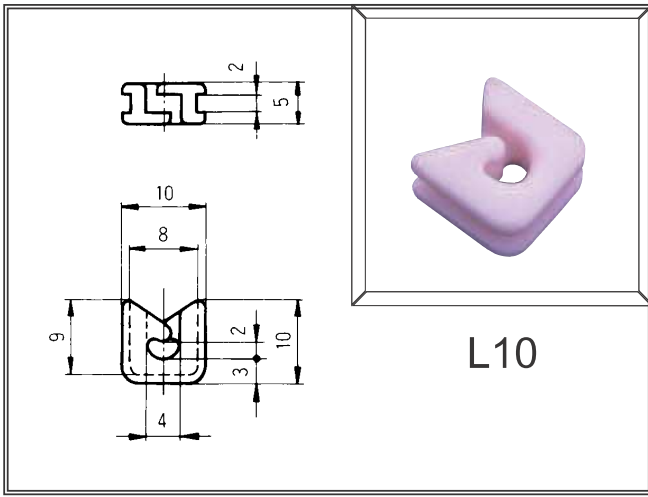
L13

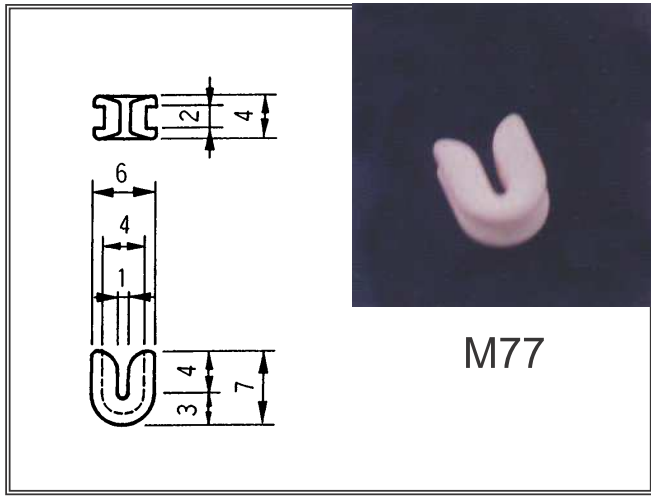


L49

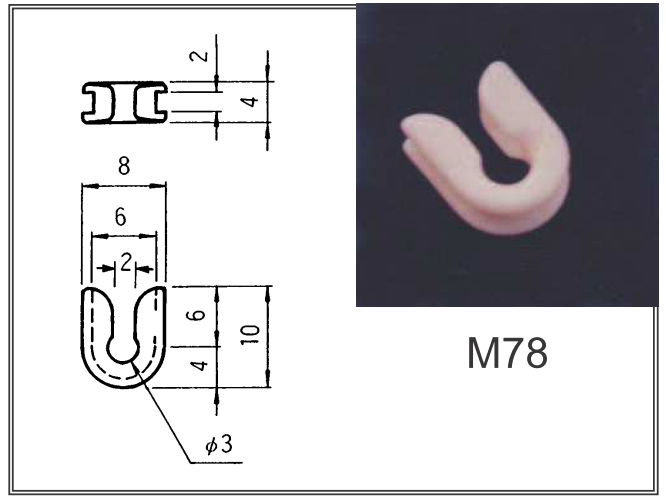


K27

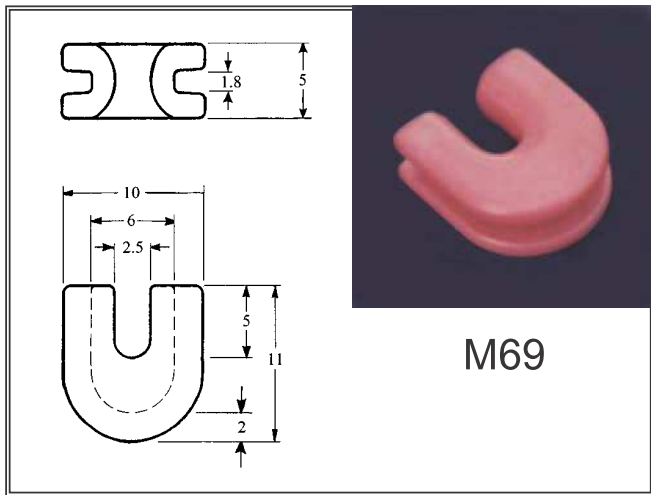




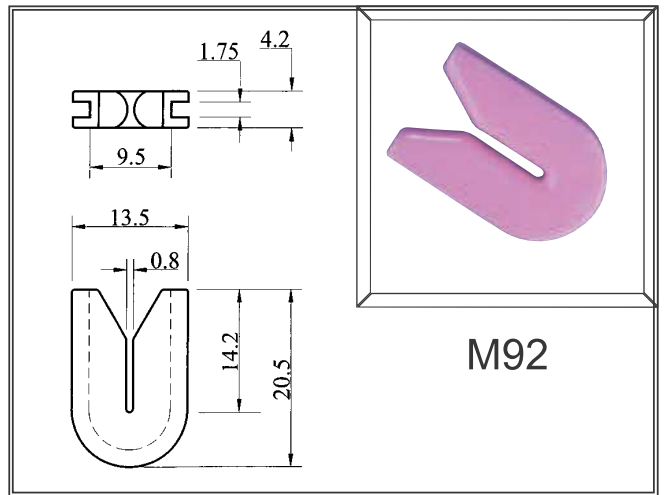
M77



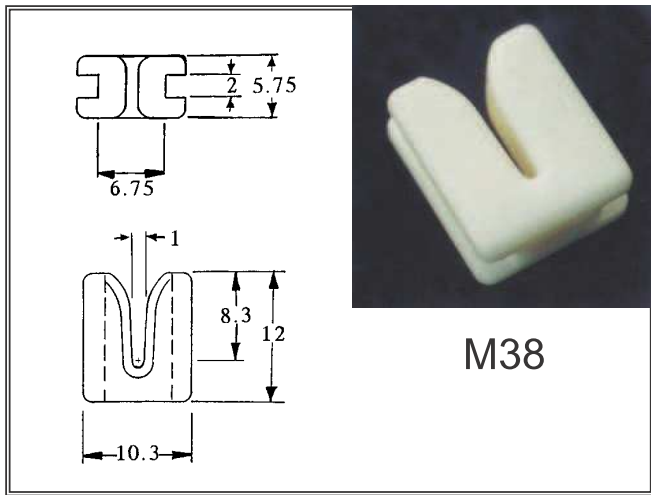
M78



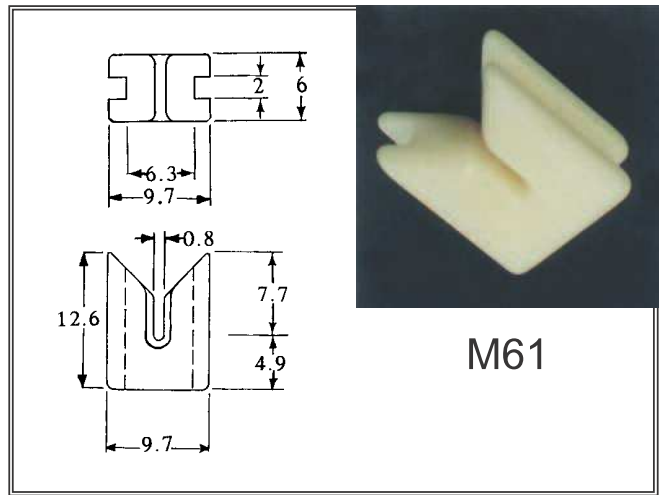
M69



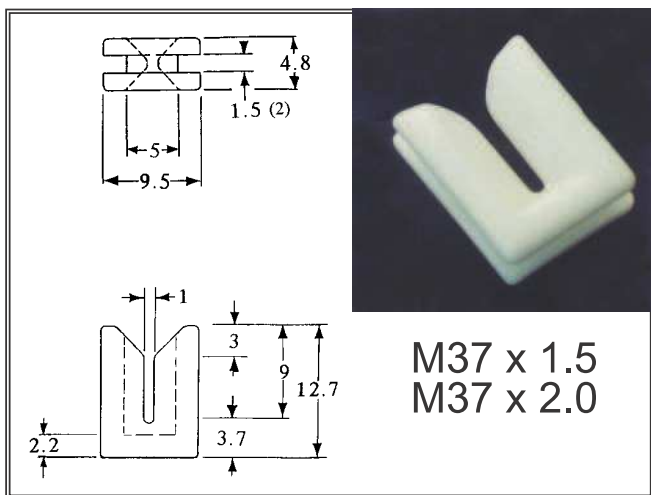
M92



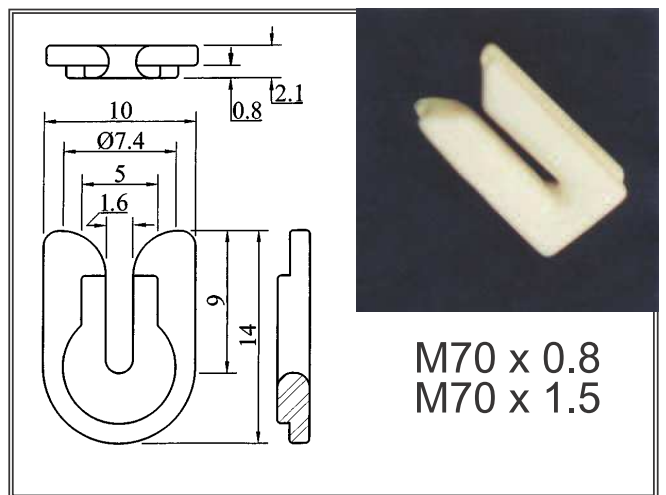
M38



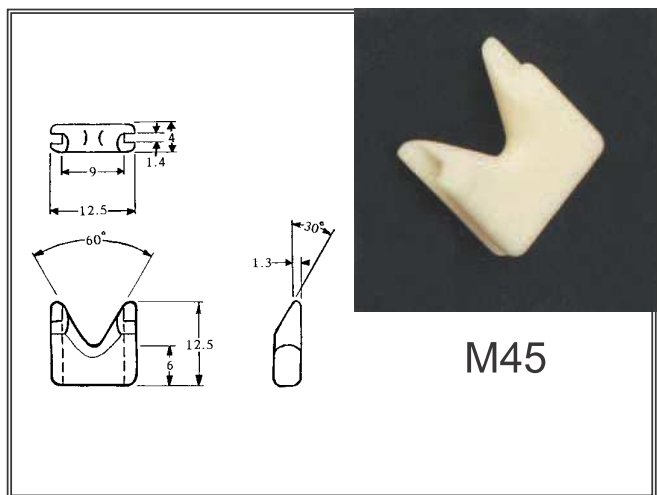
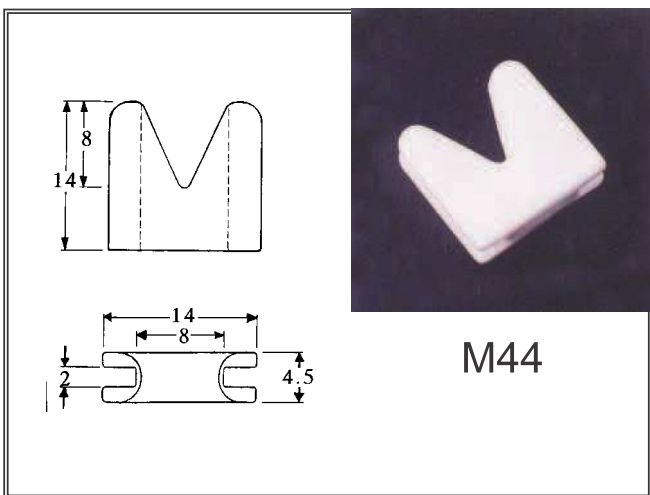
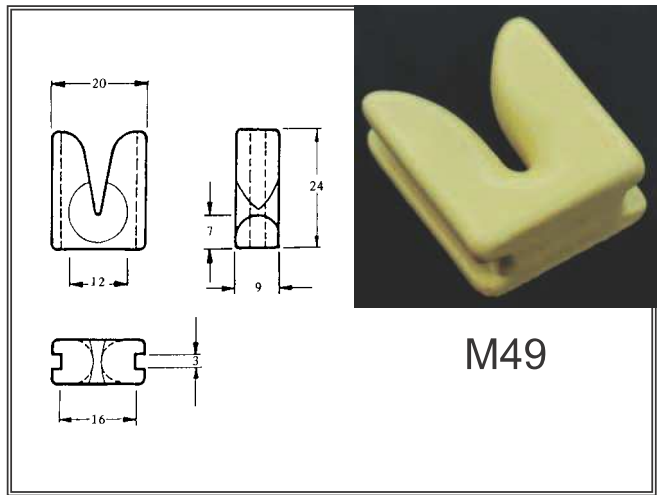
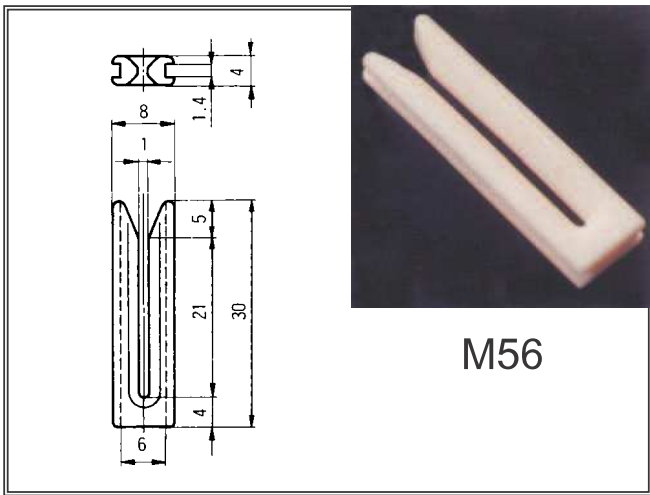
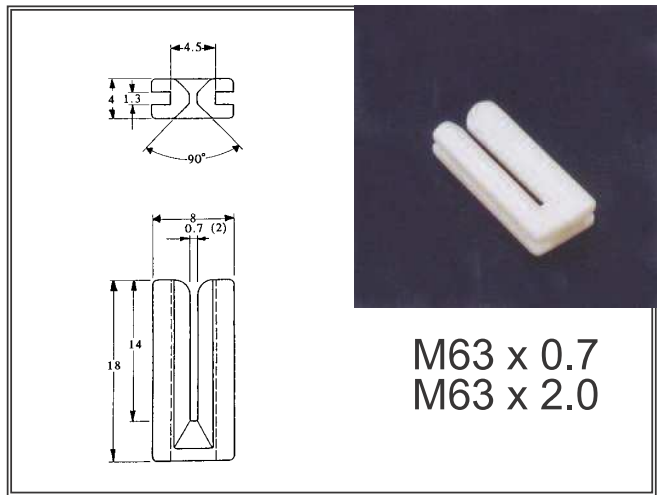
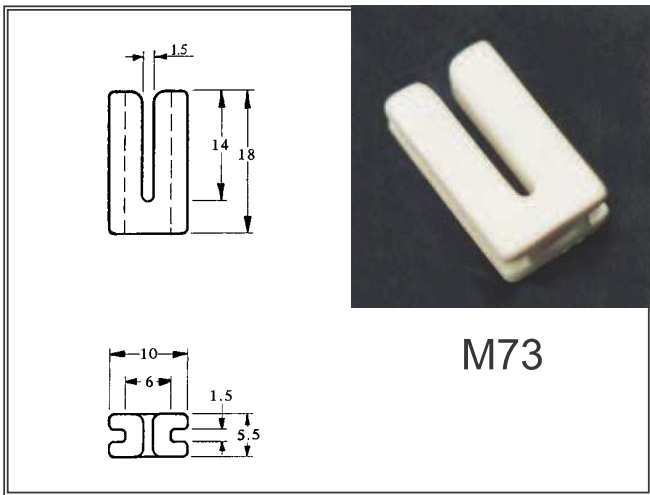
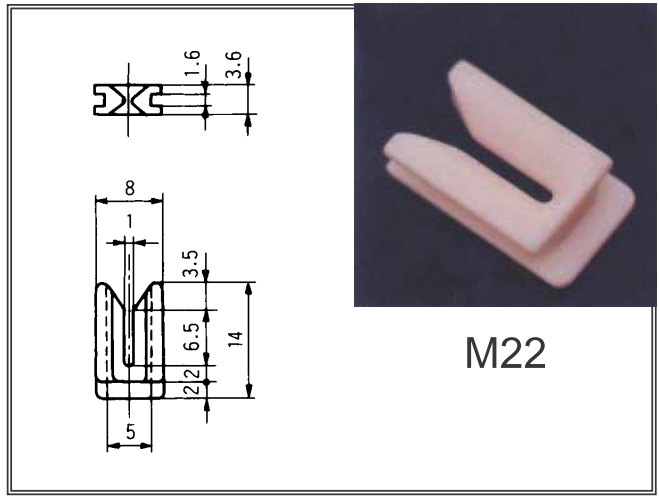
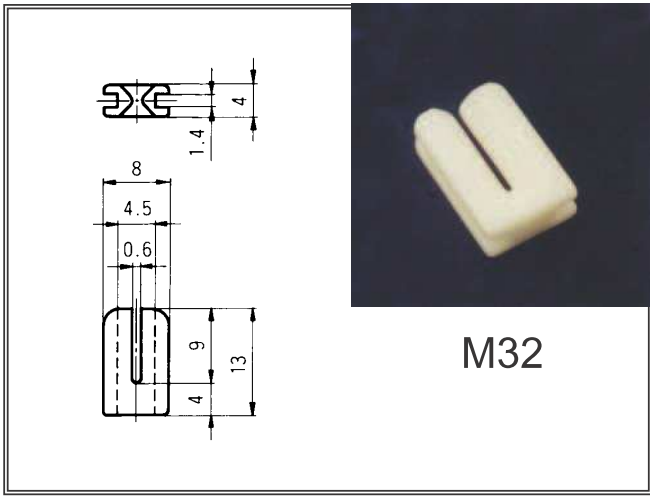
M61



M37 x 1.5  
M37 x 2.0



M70 x 0.8  
M70 x 1.5



**F32**

also available in PCS

**M42**

**M48**

**H1**

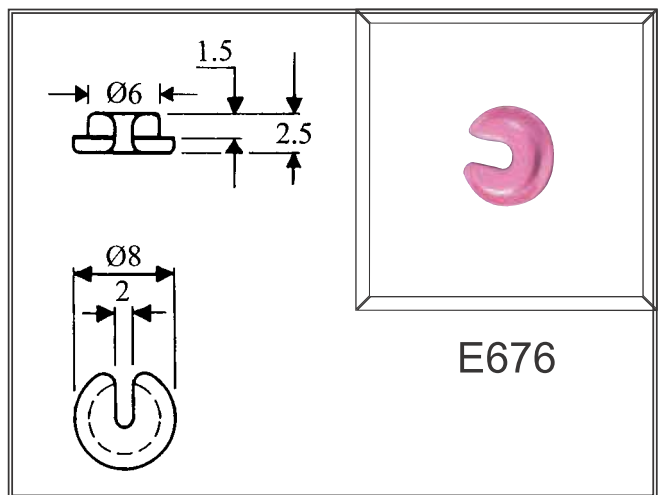
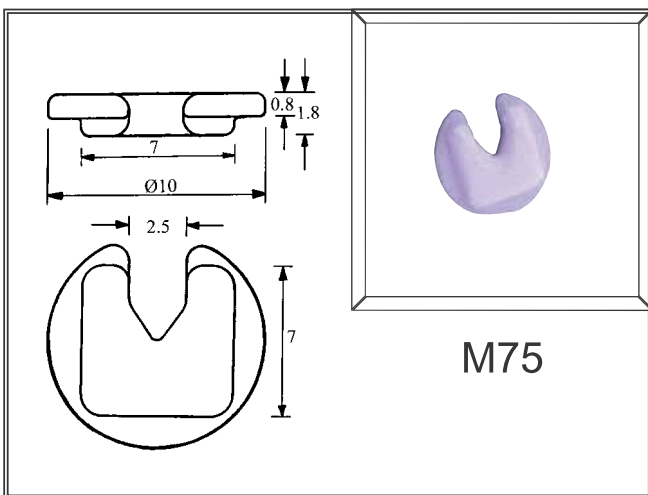
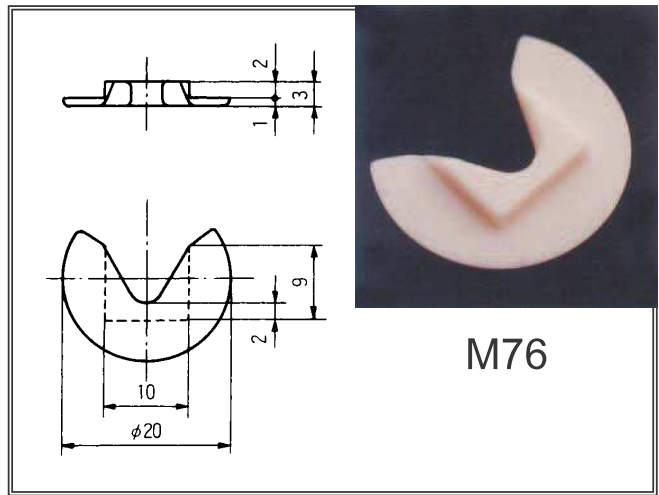
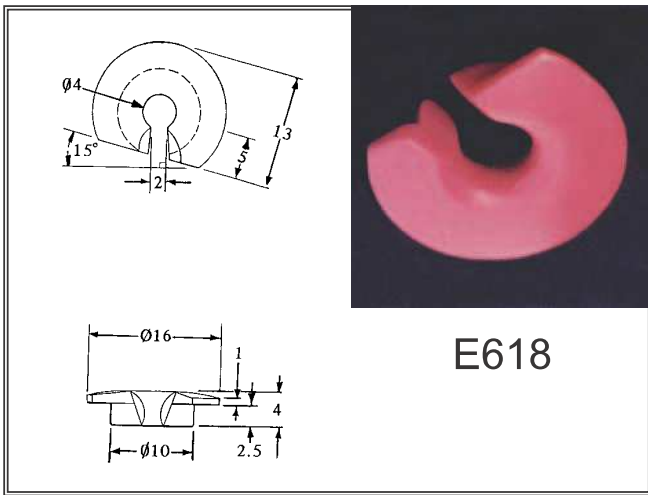
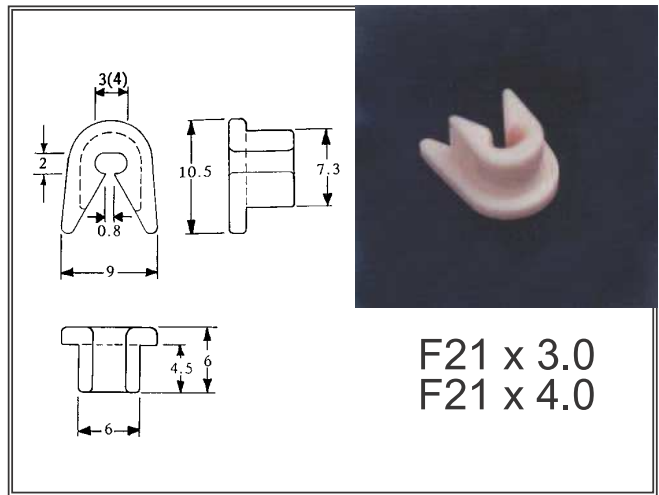
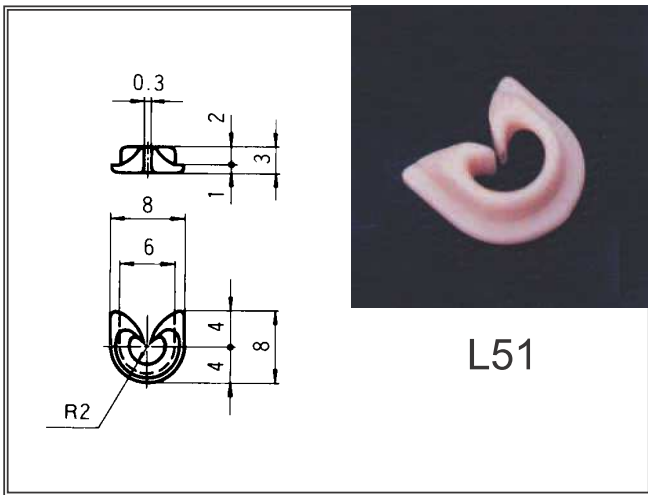
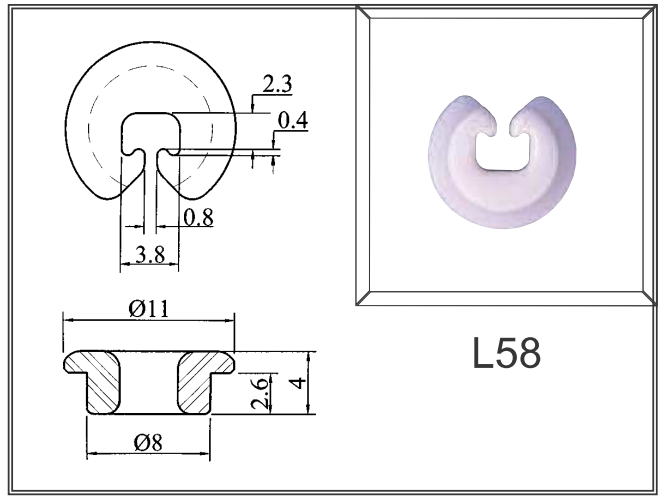
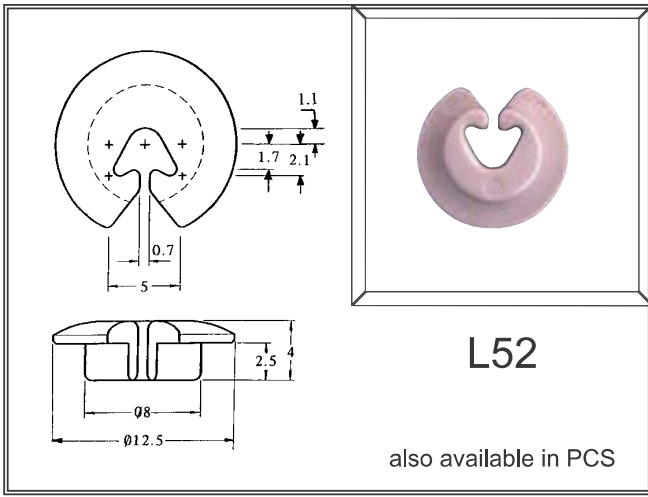
**L57**

**M90**

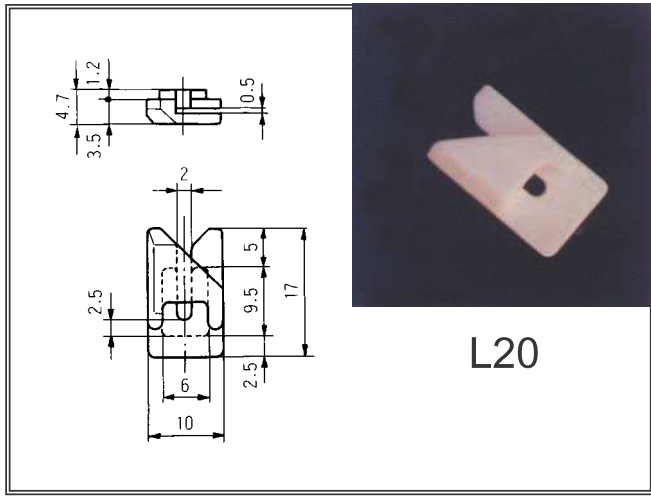
**M88**

also available in PCS

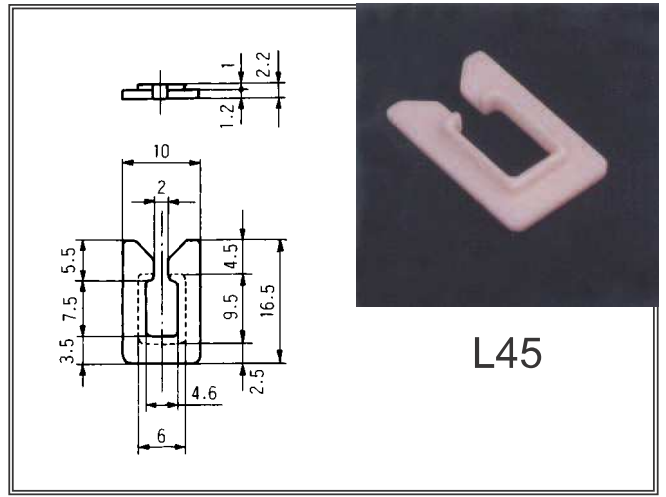
**M89**



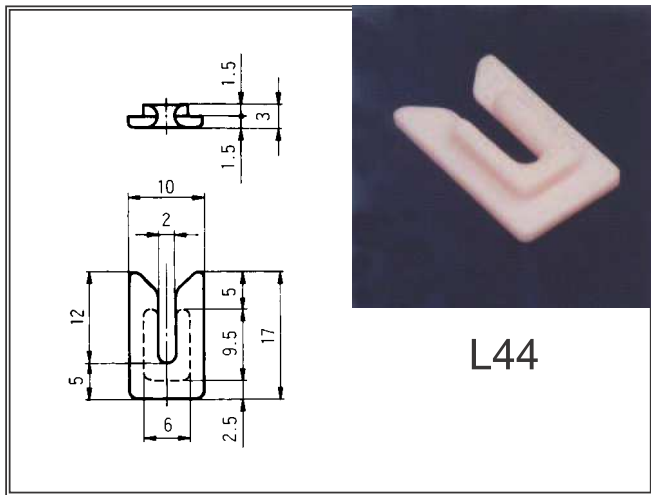




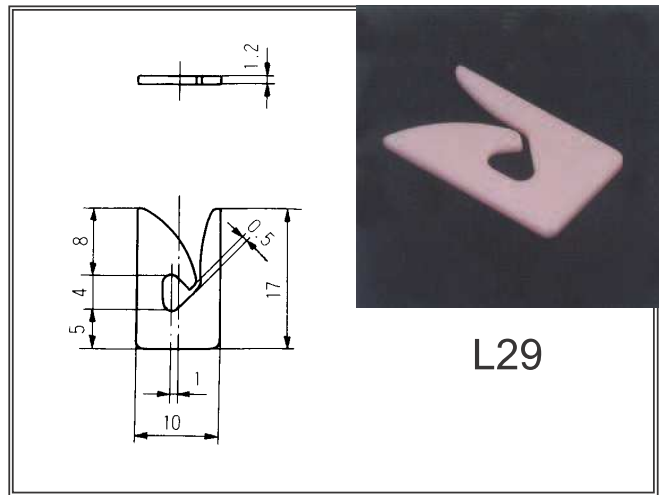
L20



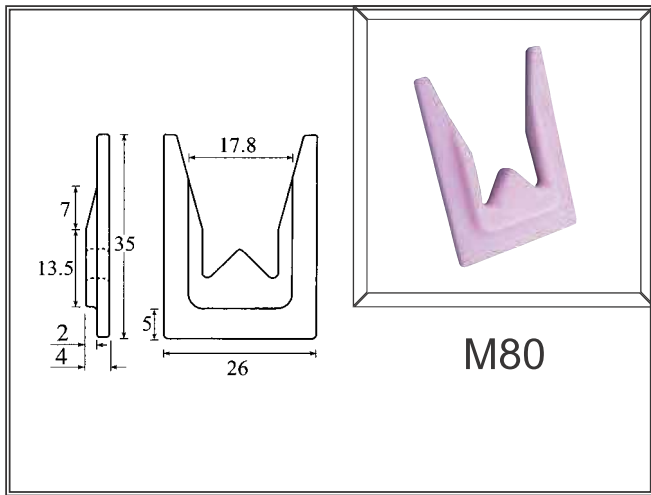
L45



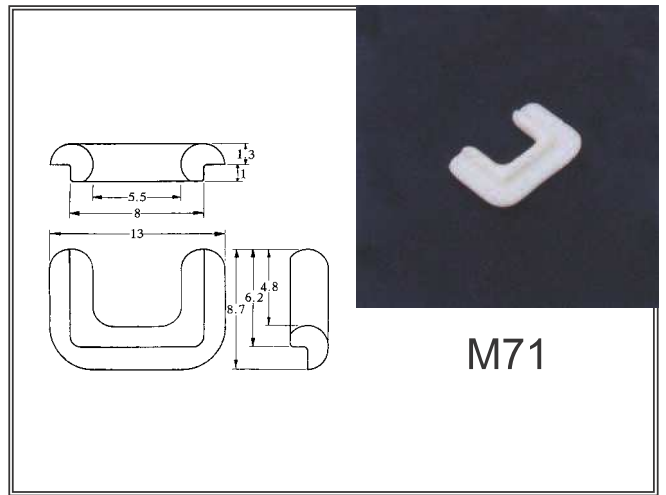
L44



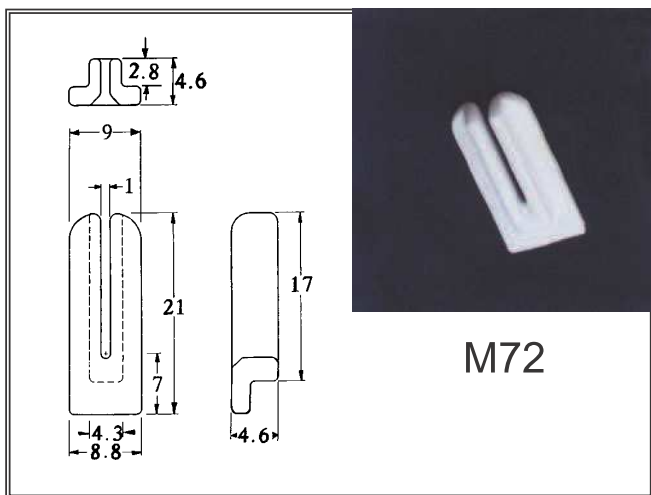
L29



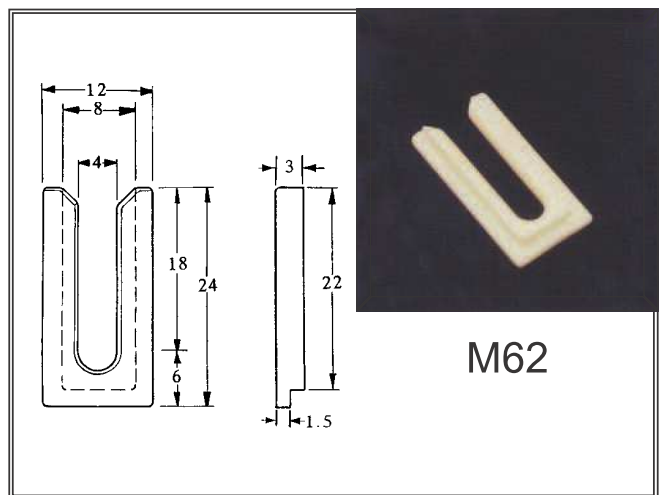
M80



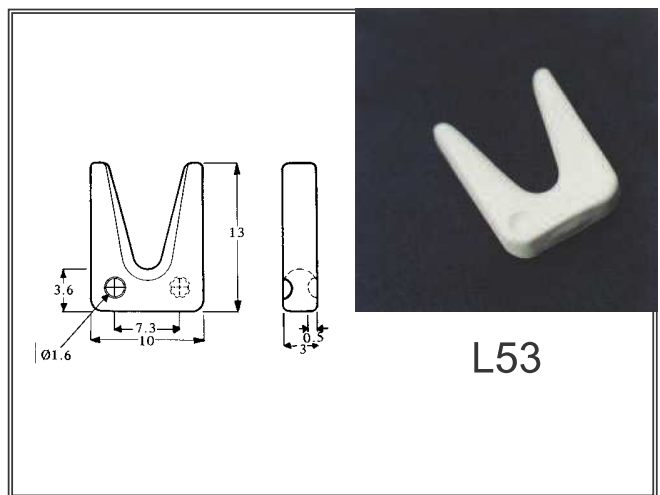
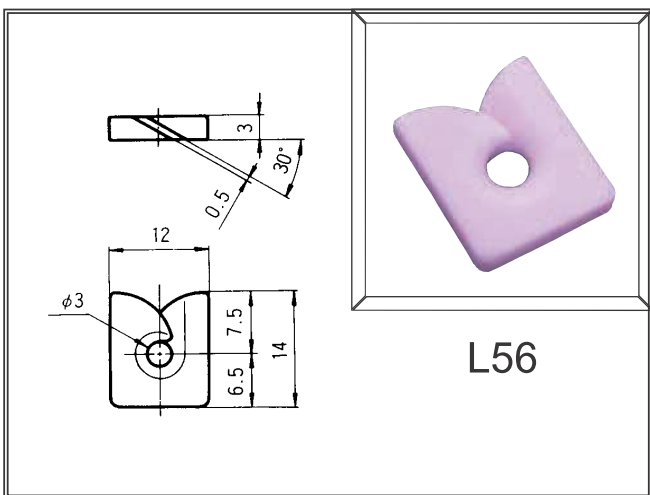
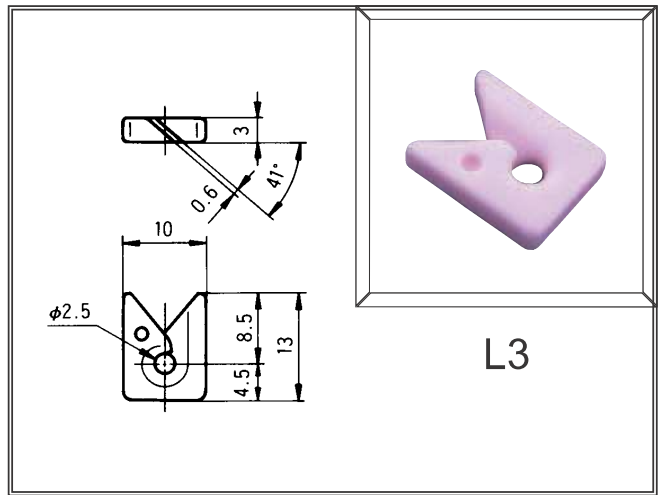
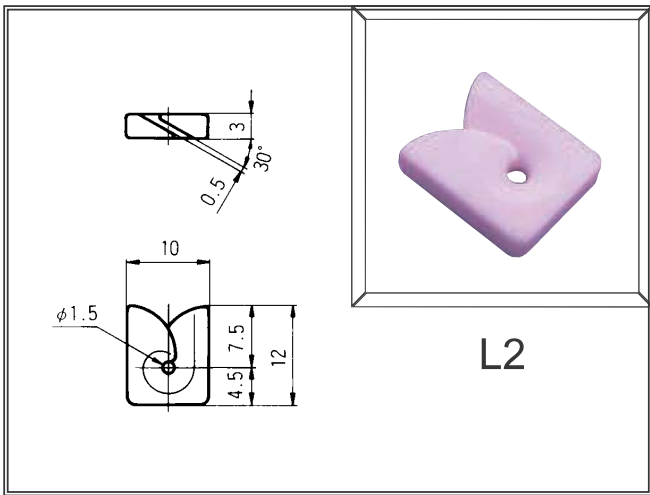
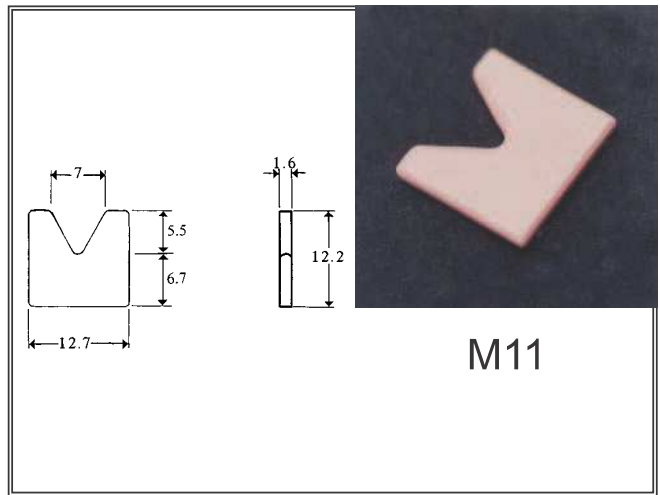
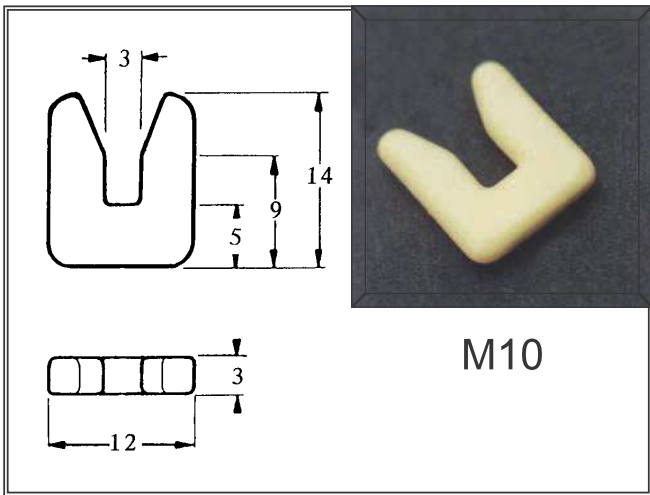
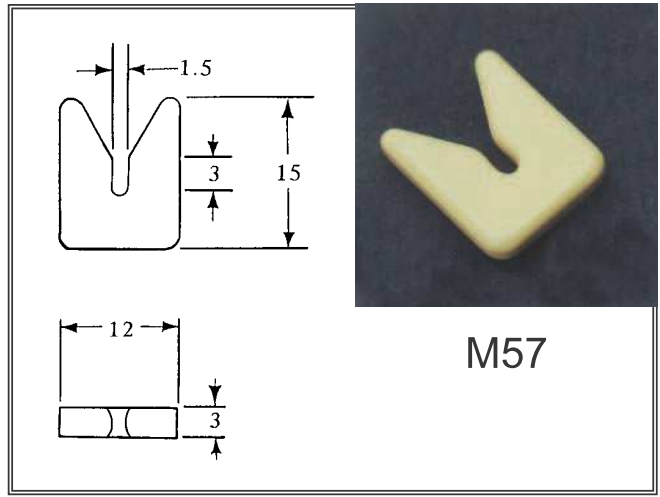
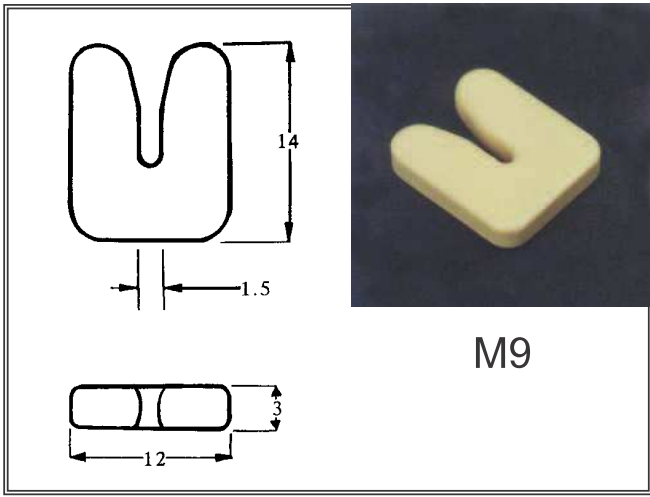
M71

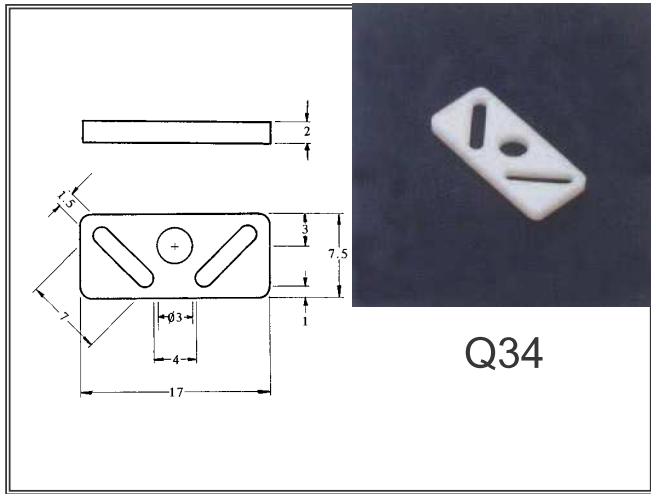


M72

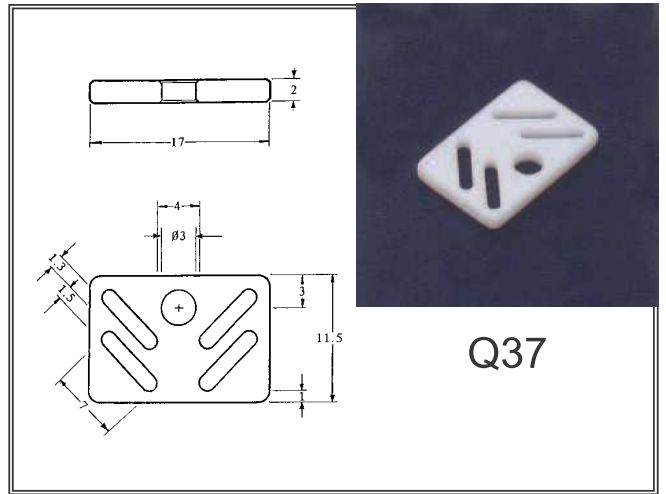


M62

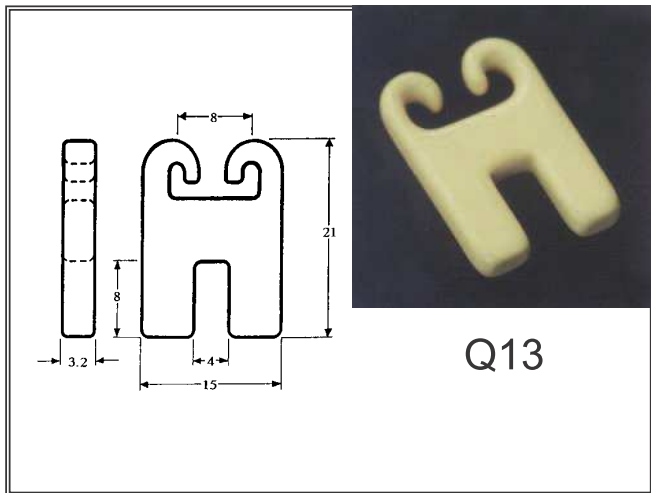




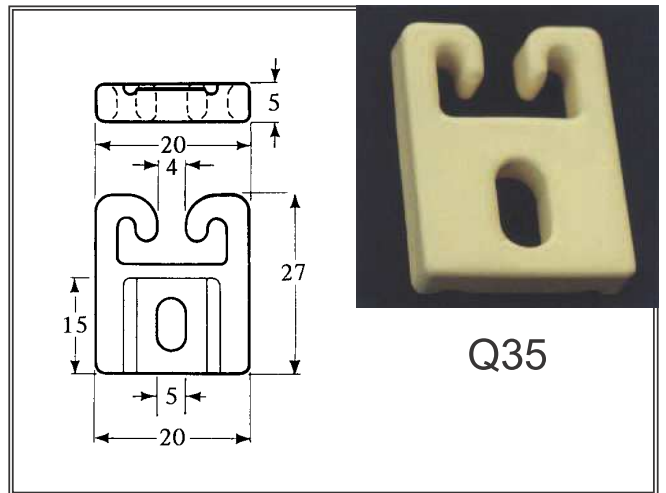
Q34



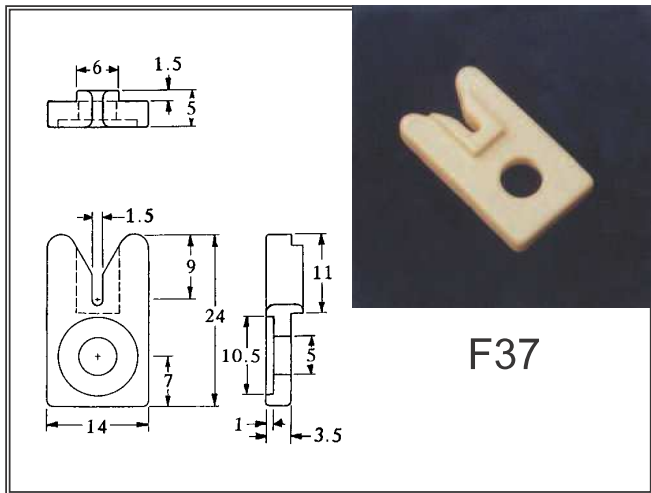
Q37



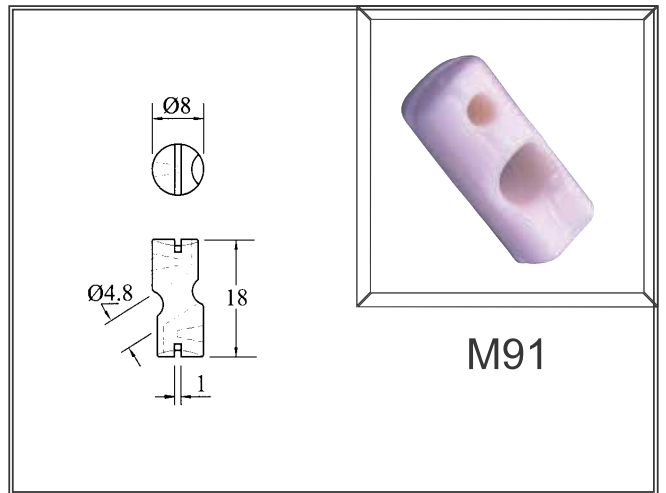
Q13



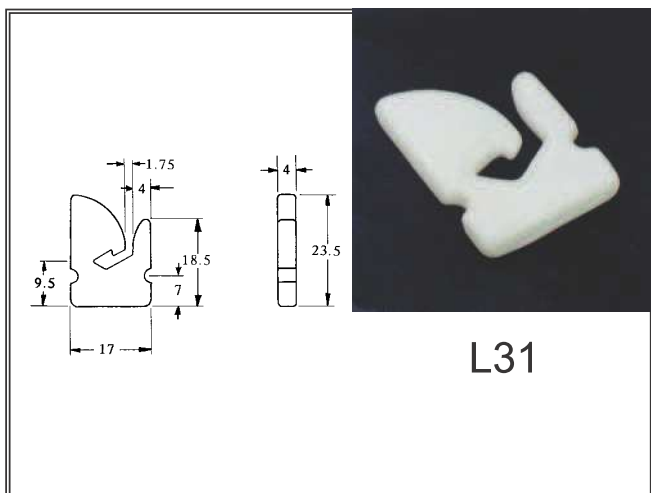
Q35



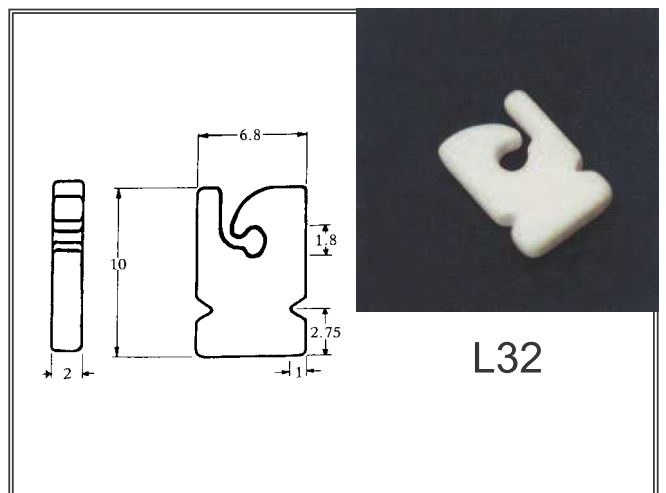
F37



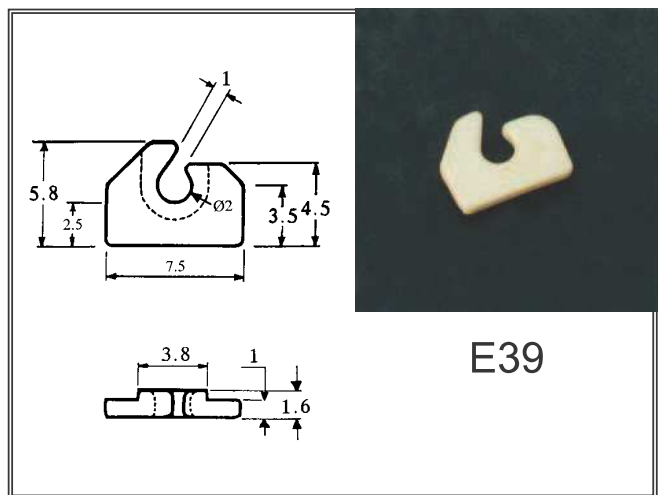
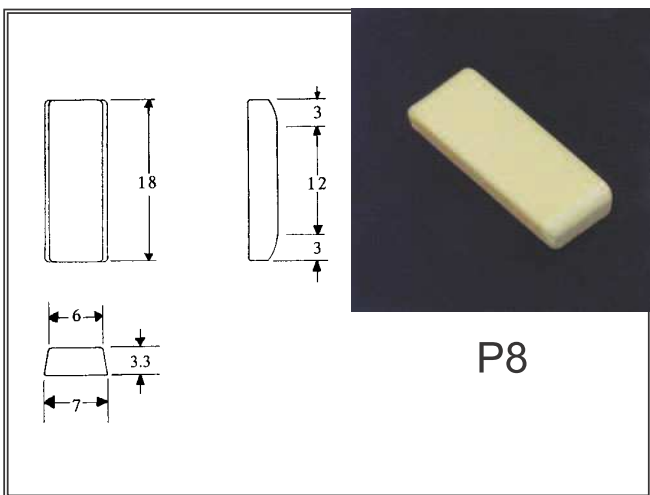
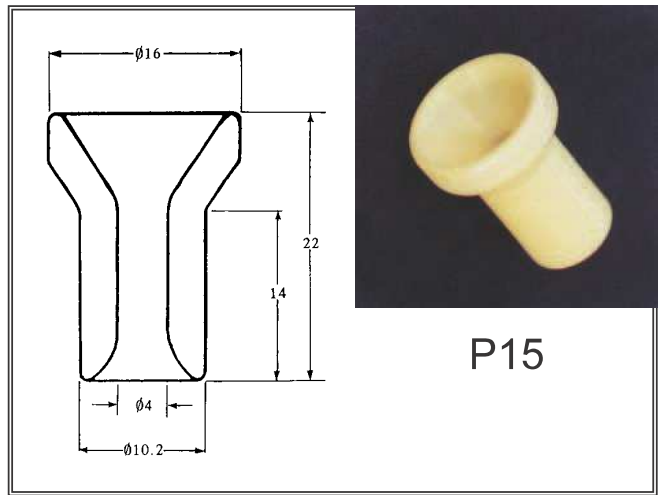
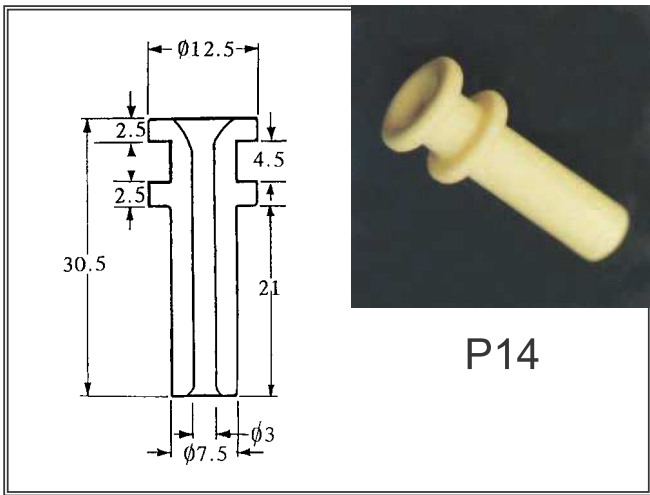
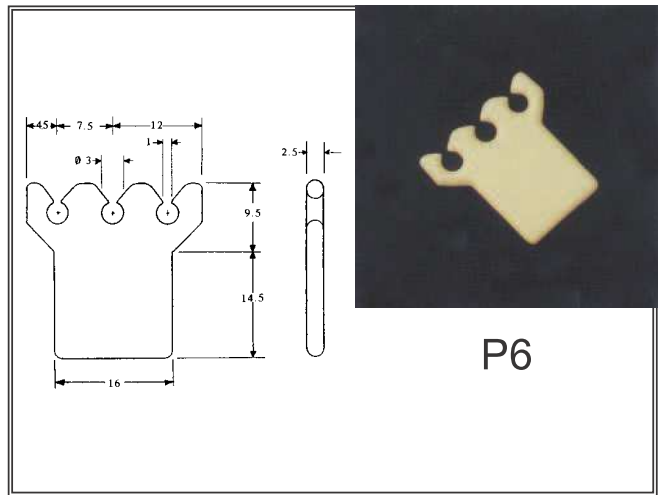
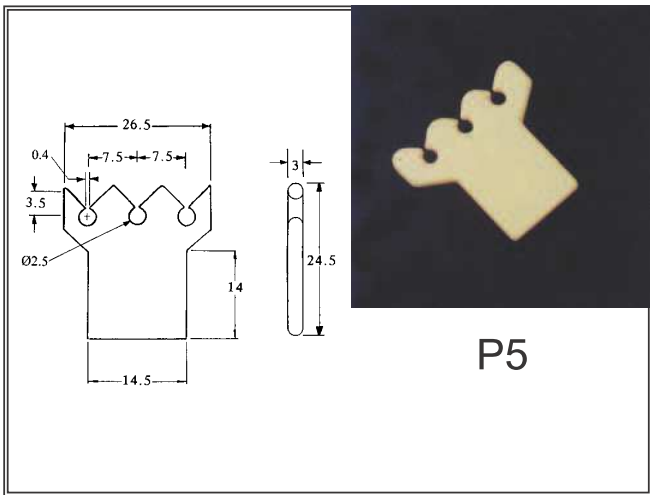
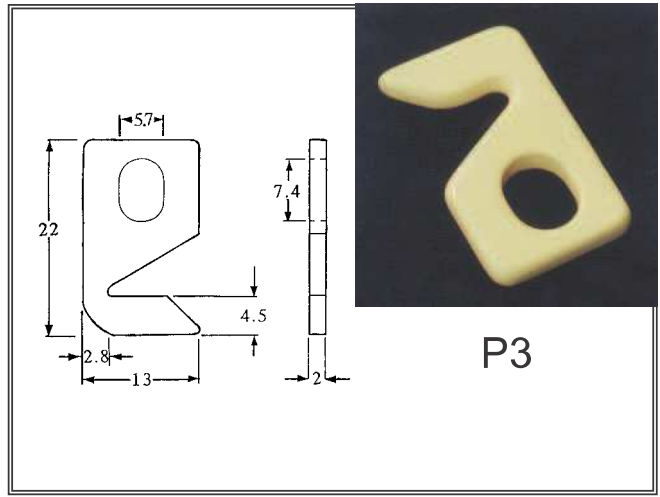
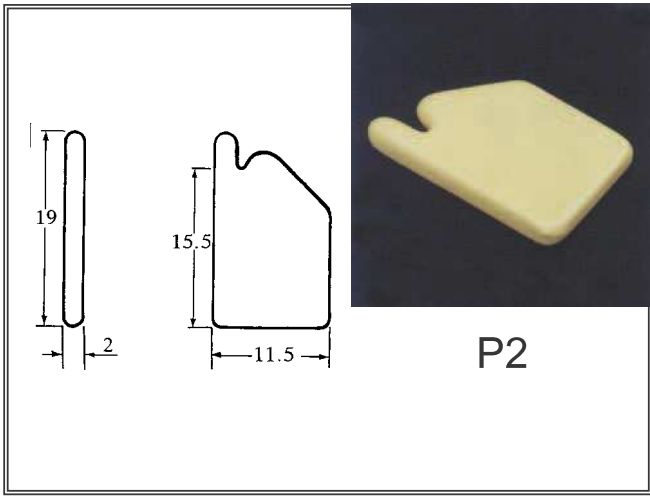
M91

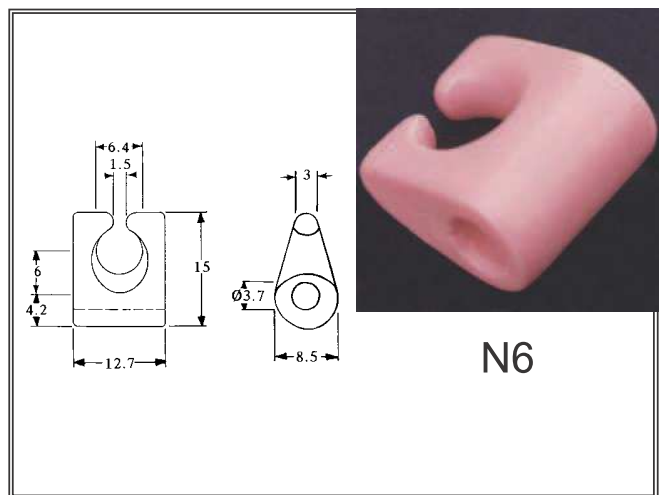
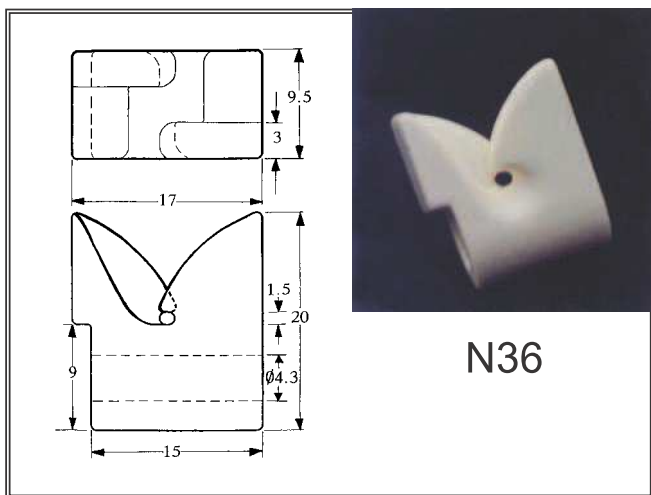
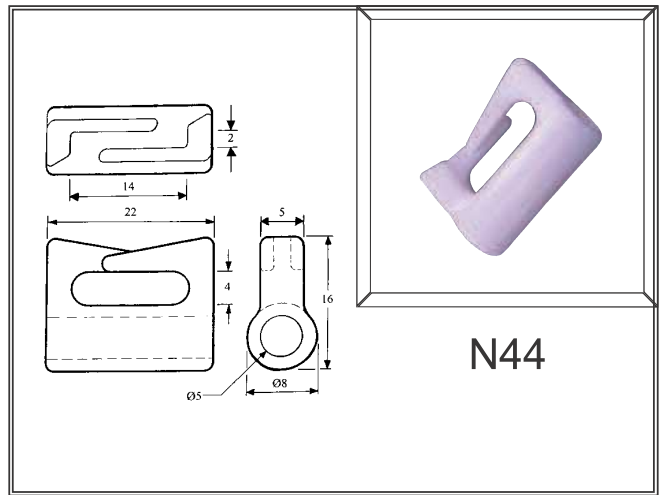
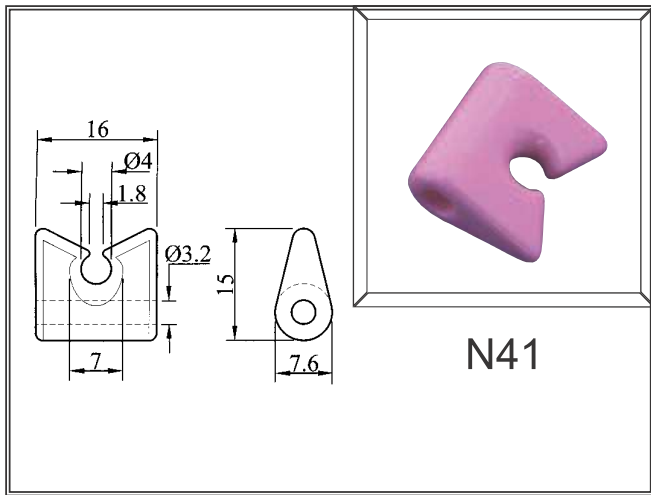
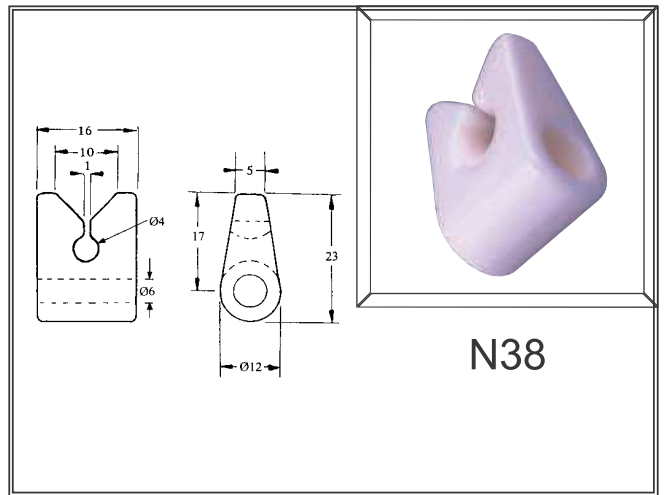
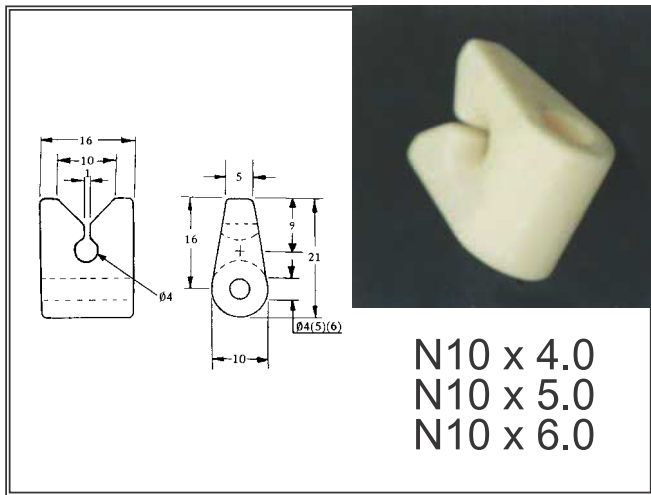
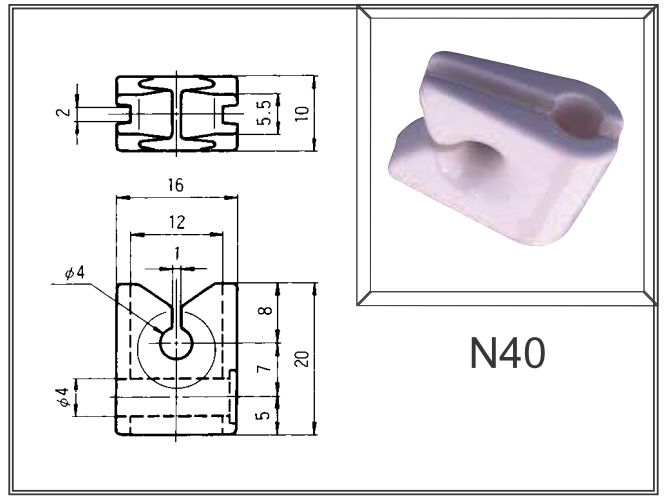
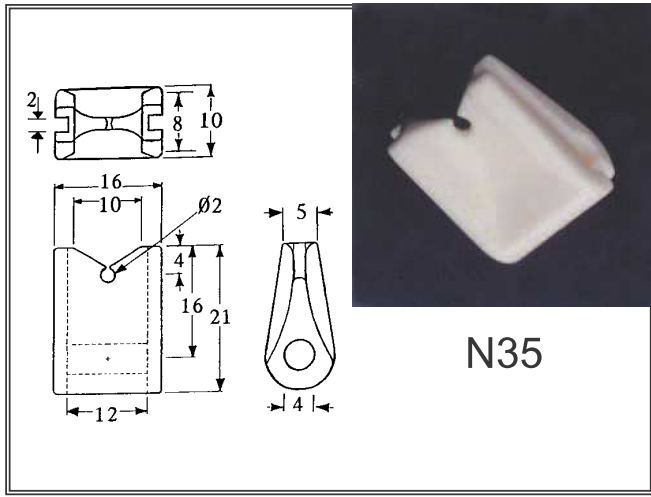


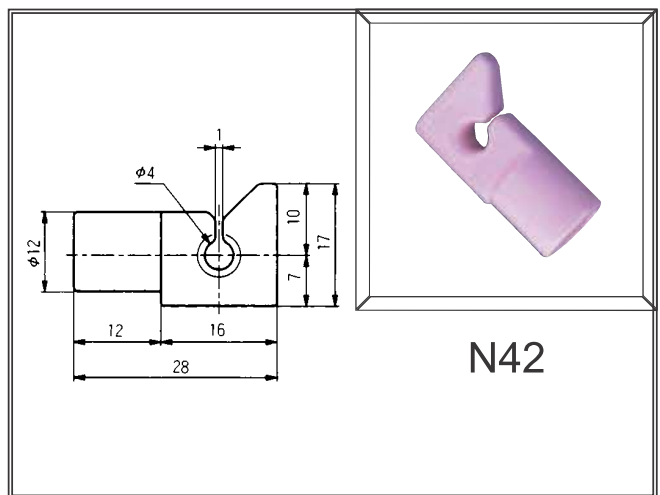
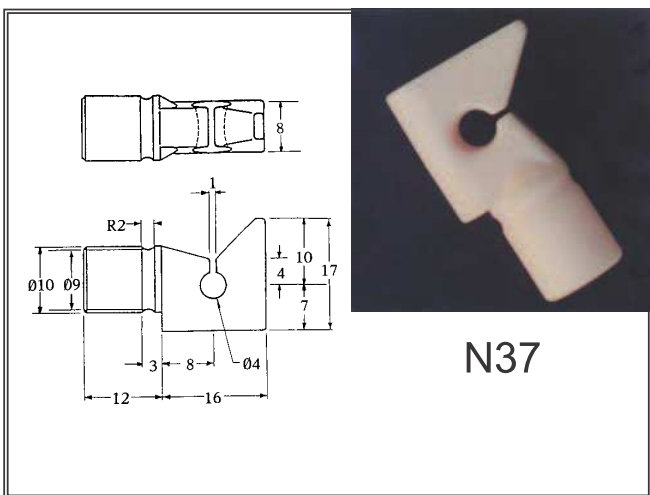
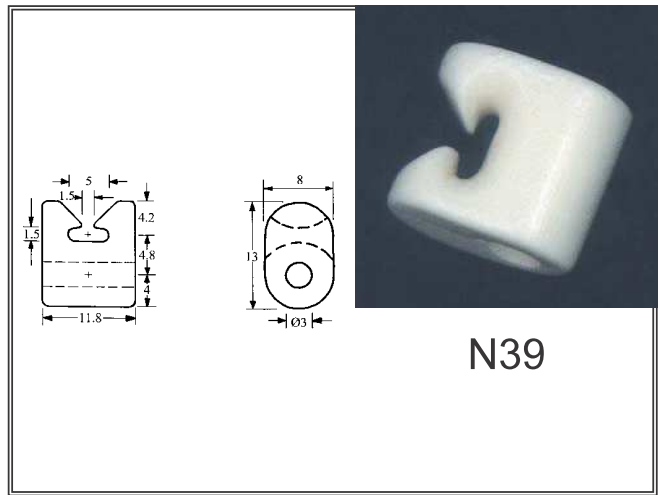
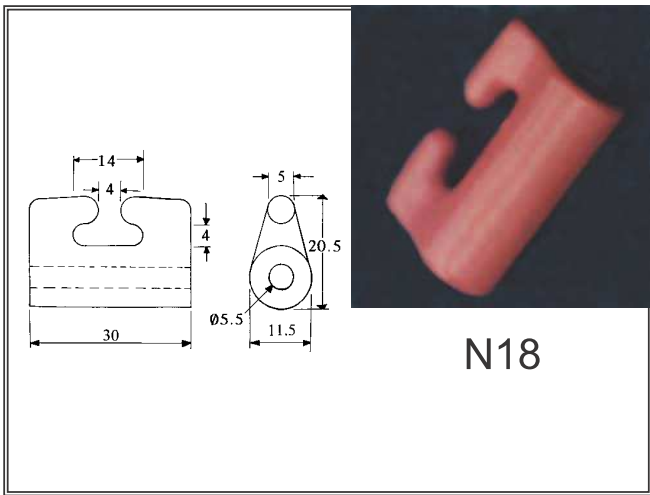
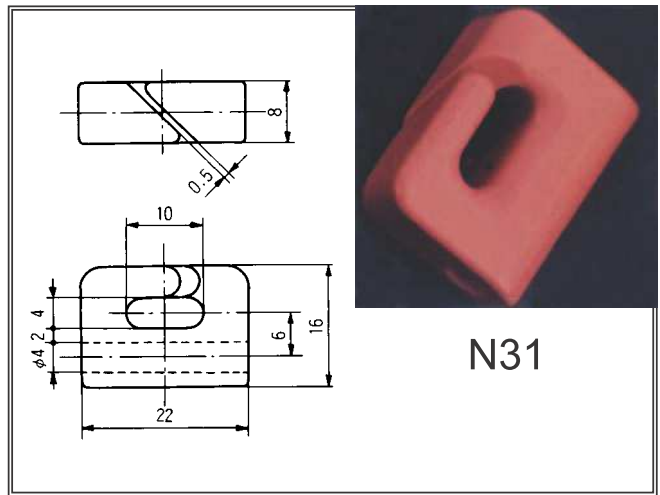
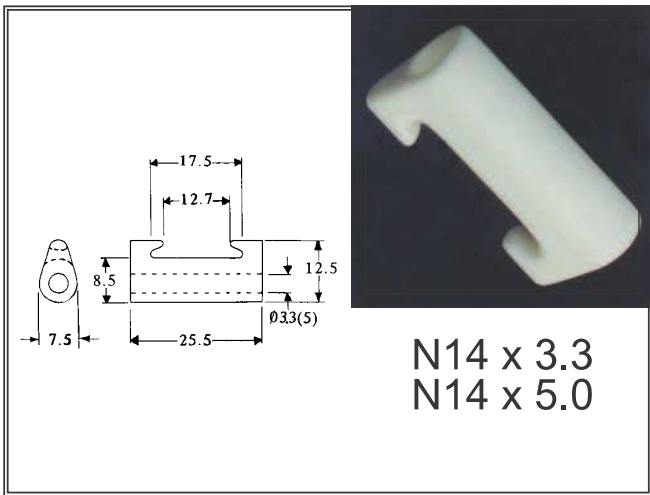
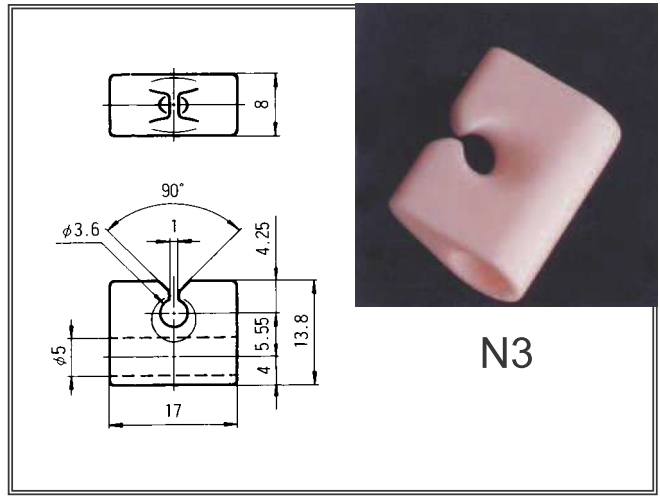
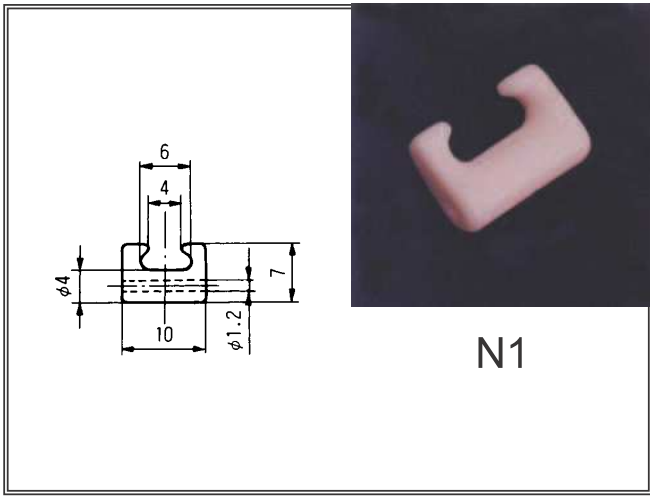
L31

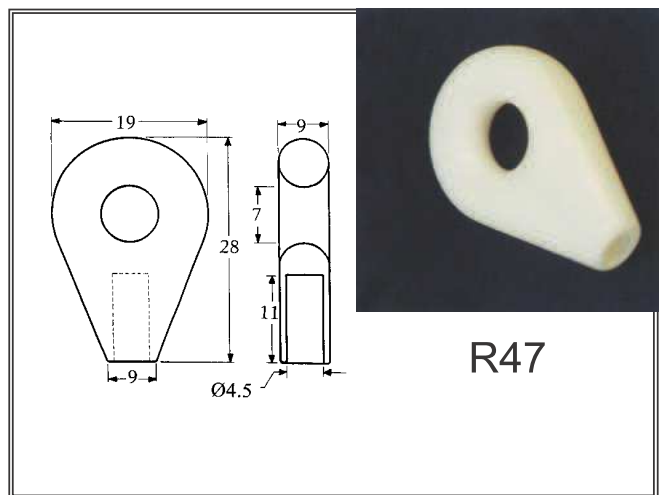
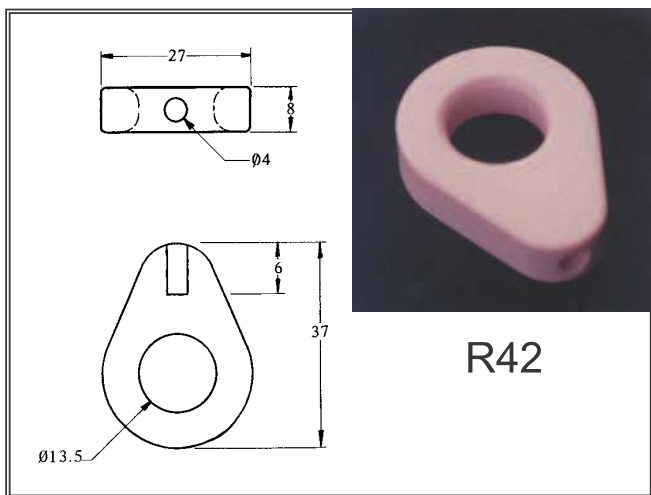
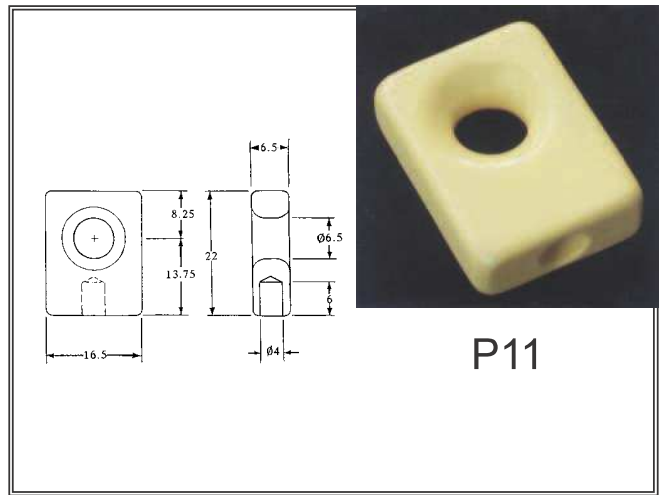
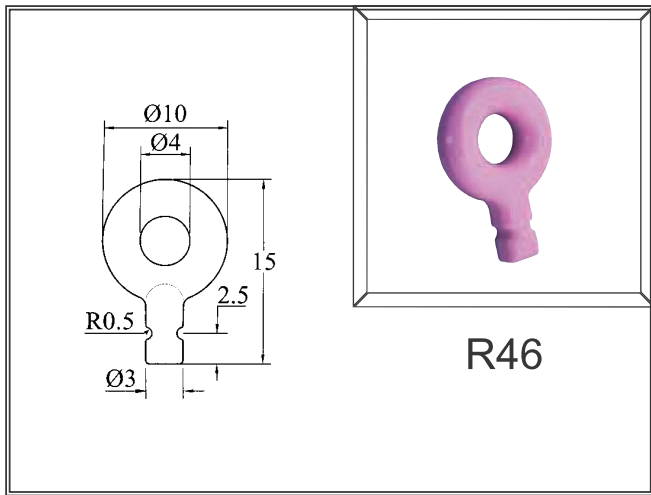
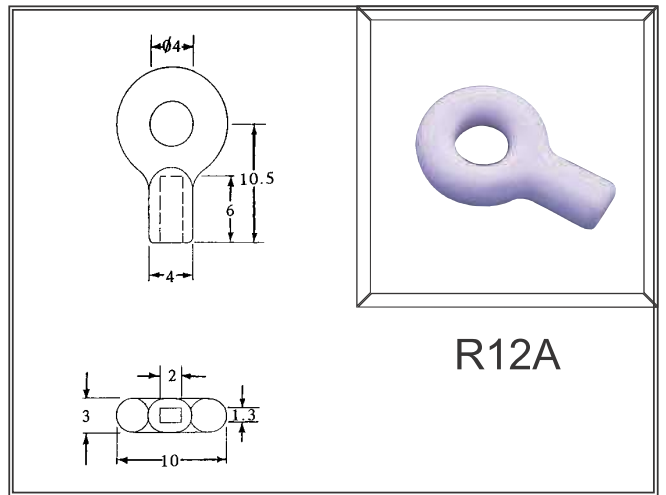
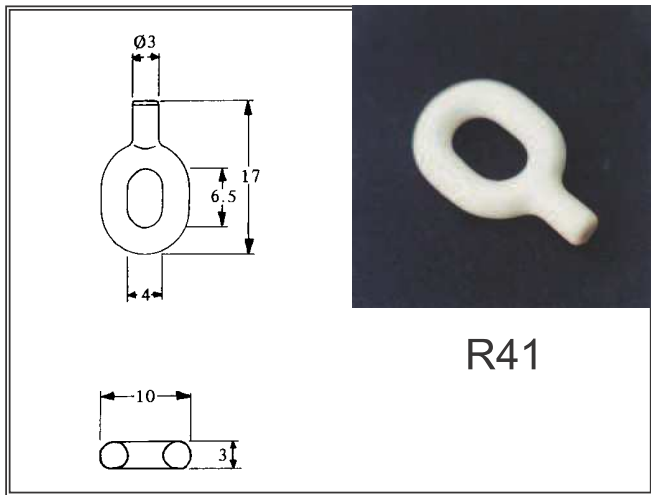
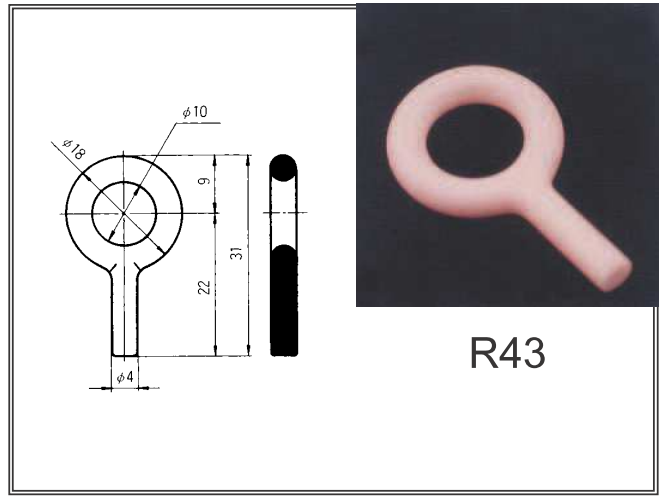
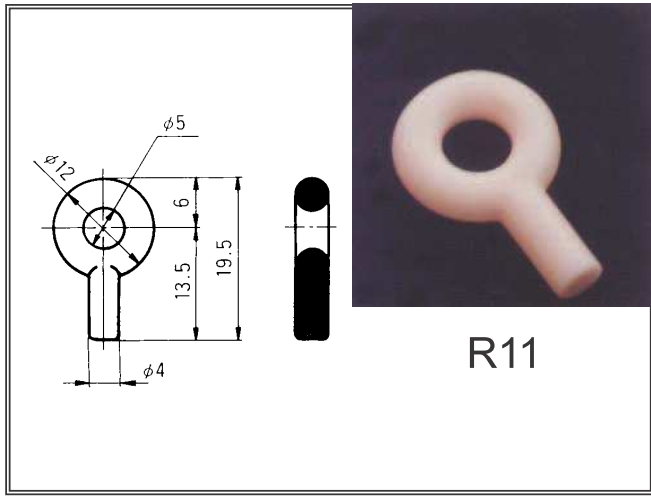


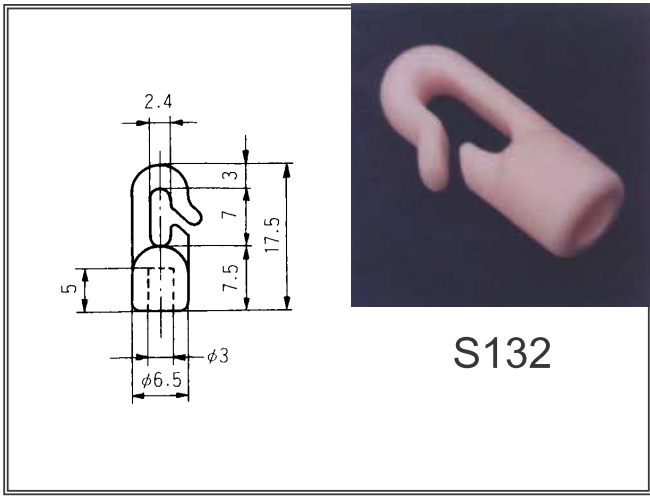
L32



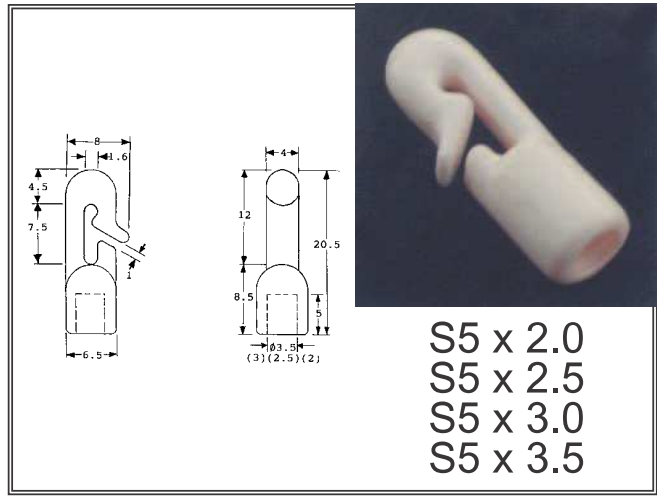




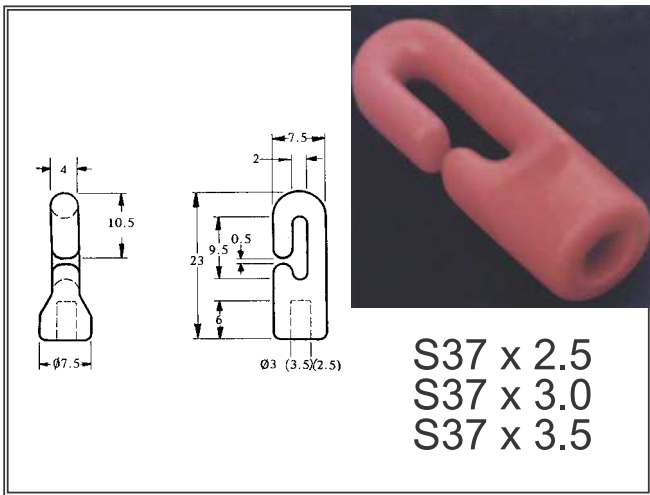




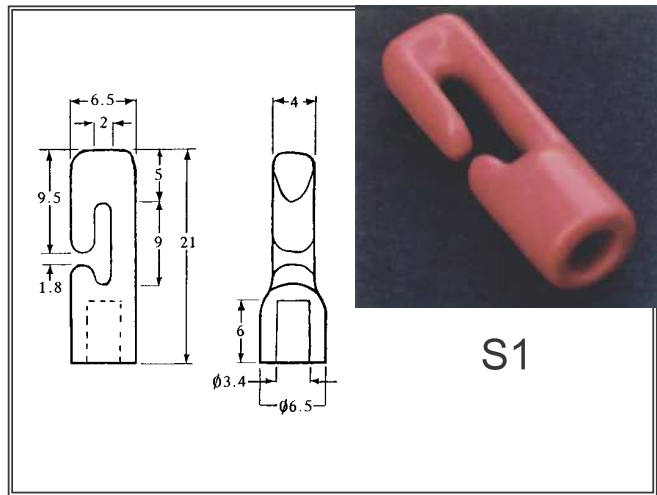
S132



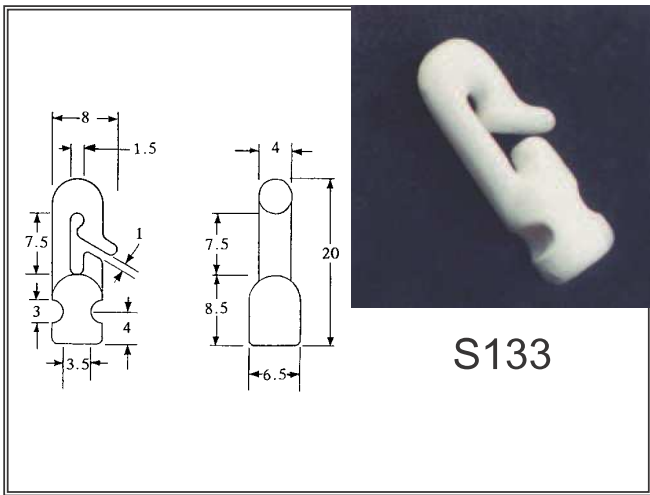
S5 x 2.0  
S5 x 2.5  
S5 x 3.0  
S5 x 3.5



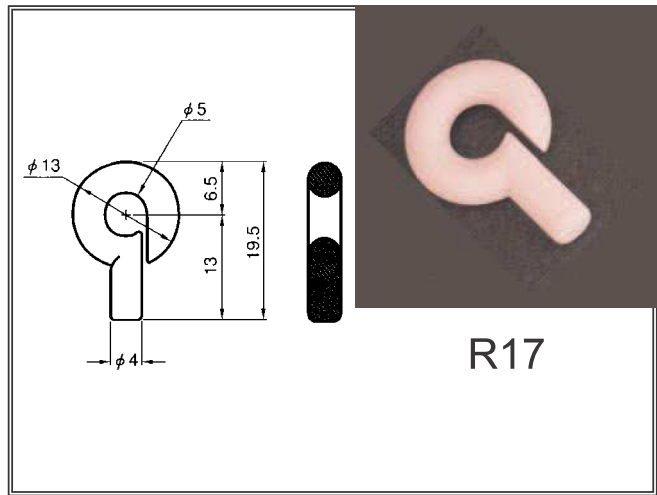
S37 x 2.5  
S37 x 3.0  
S37 x 3.5



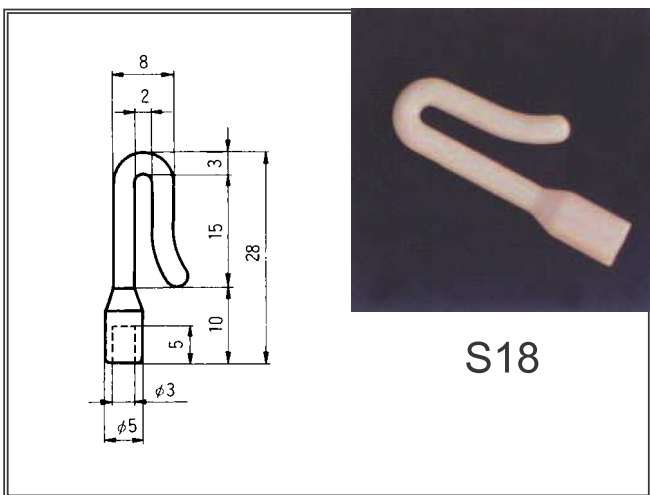
S1



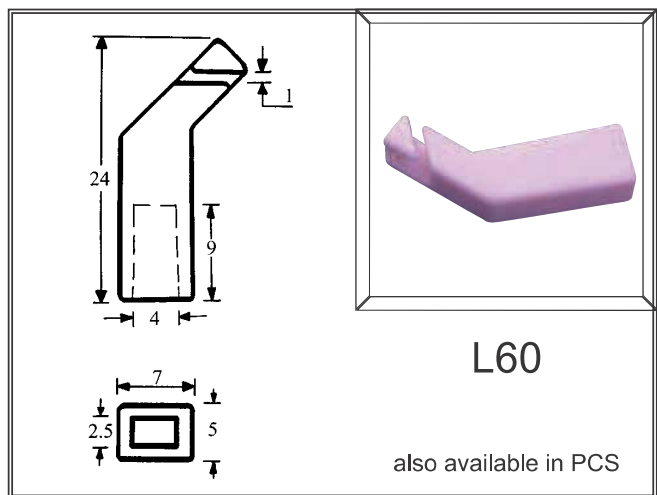
S133



R17



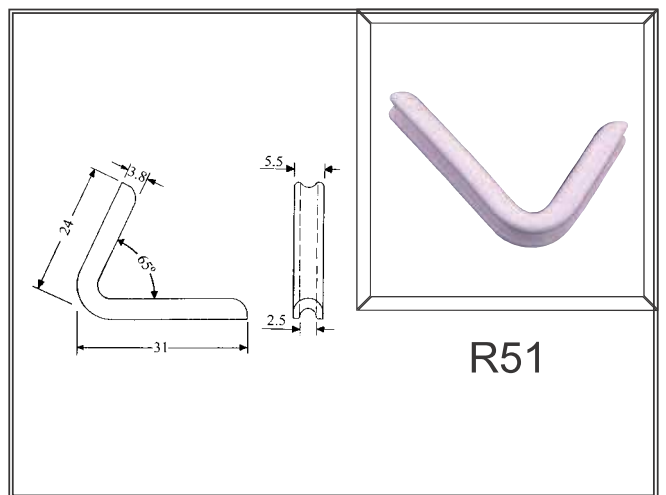
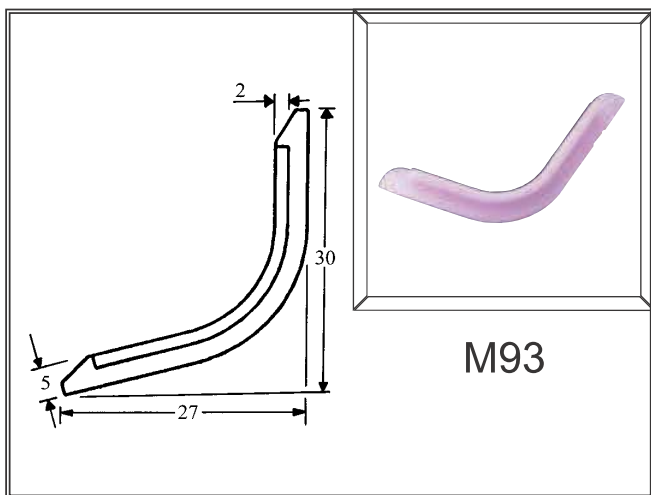
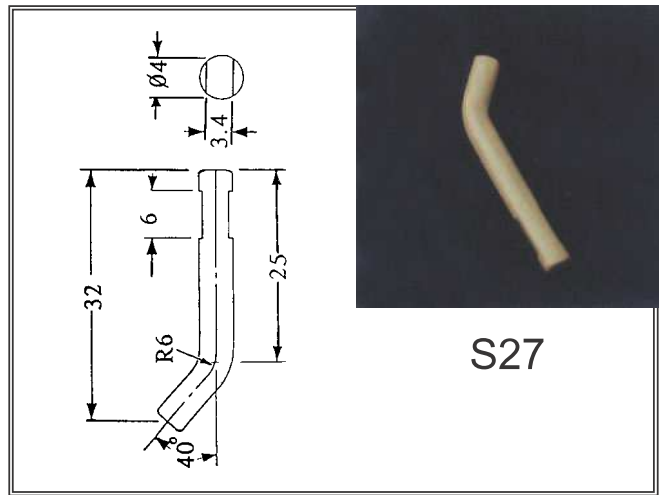
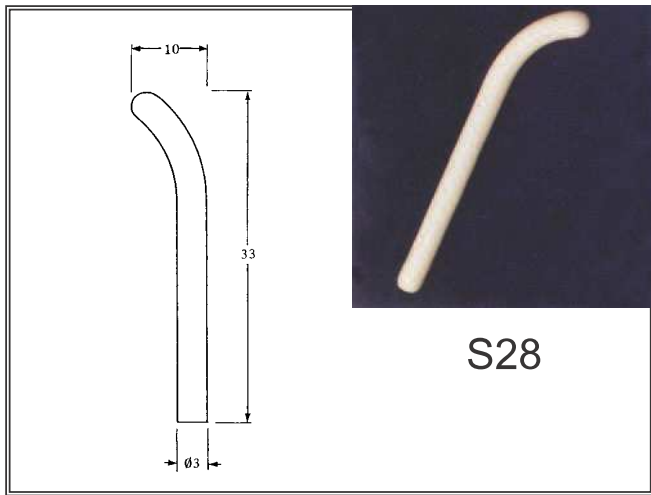
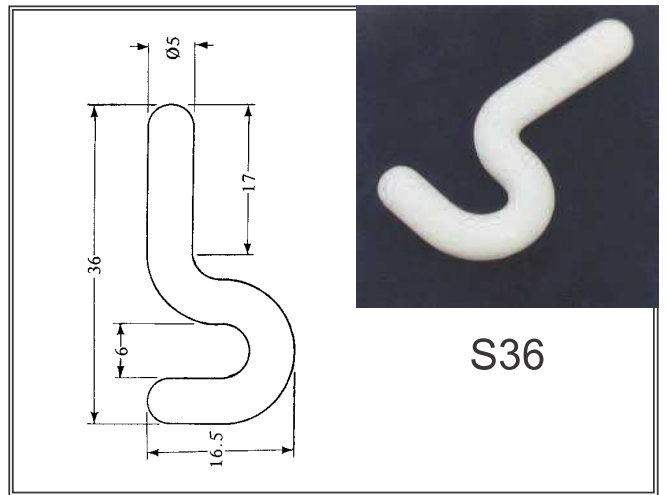
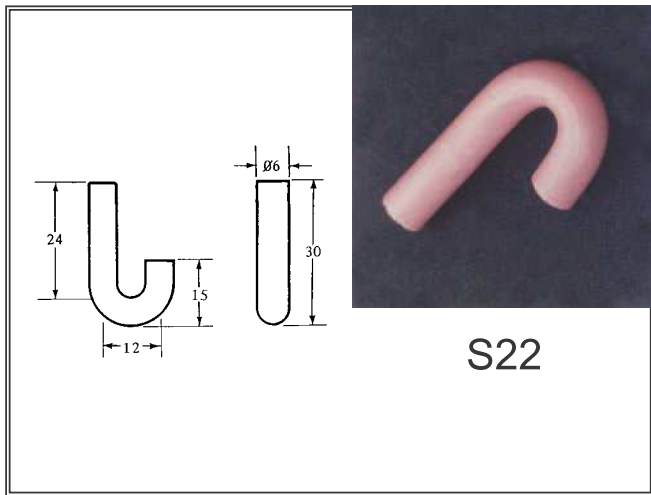
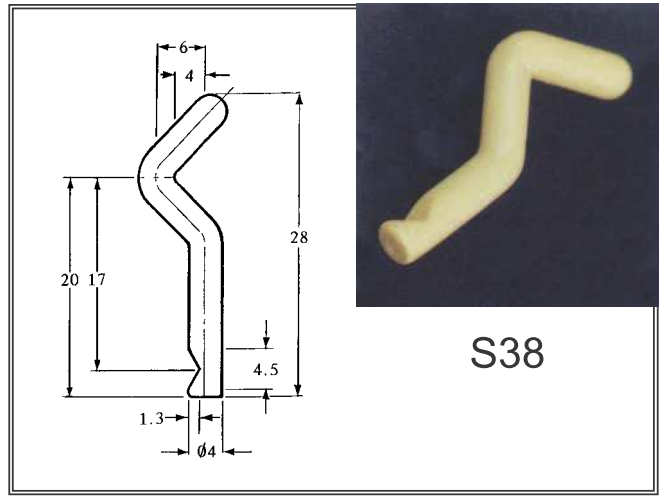
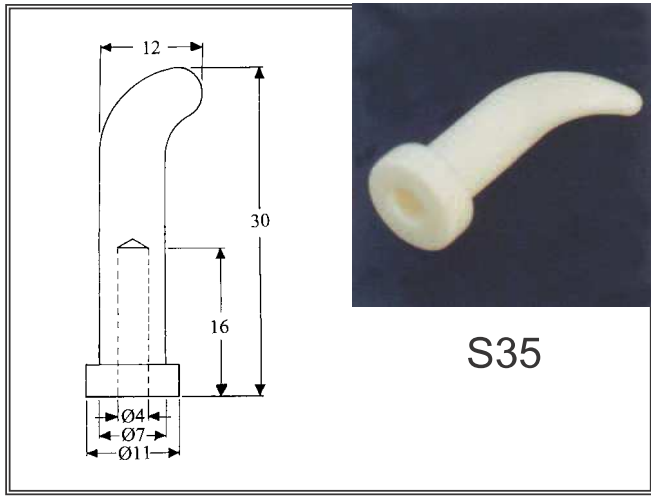
S18

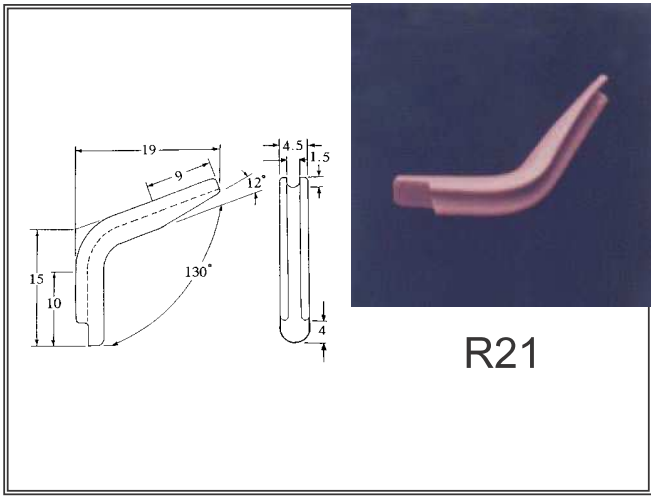


L60

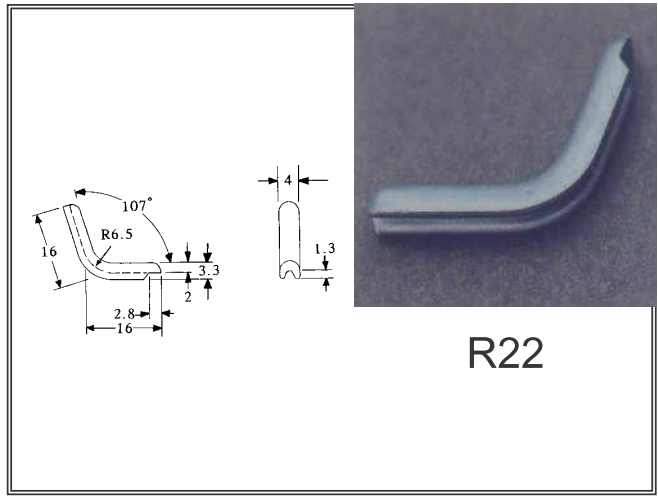
also available in PCS



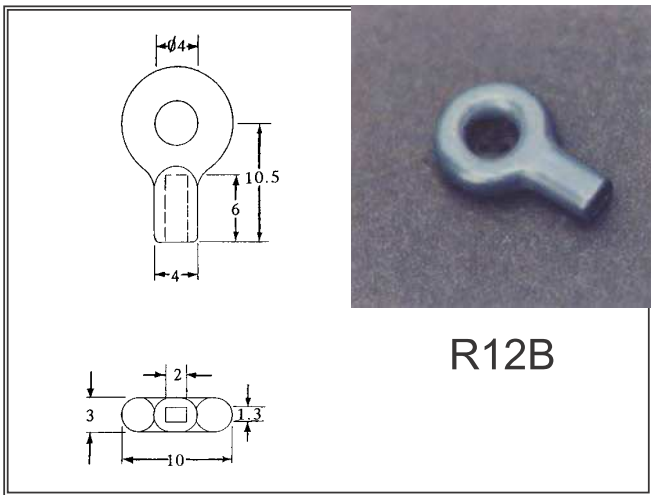




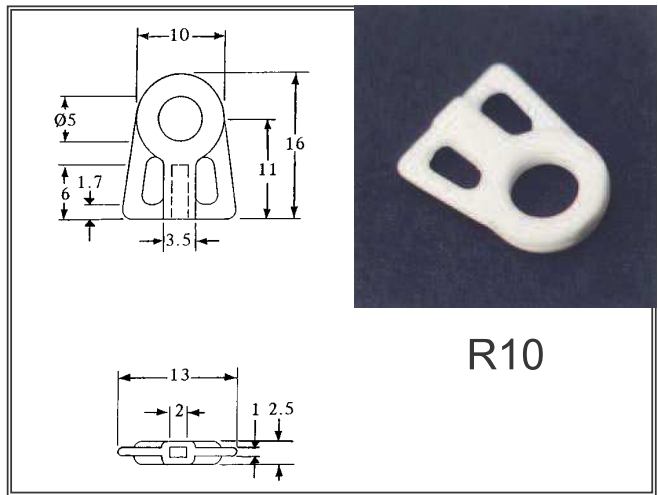
R21



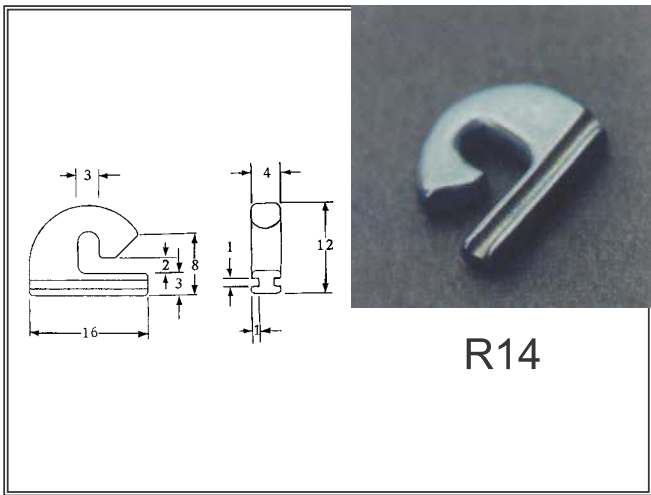
R22



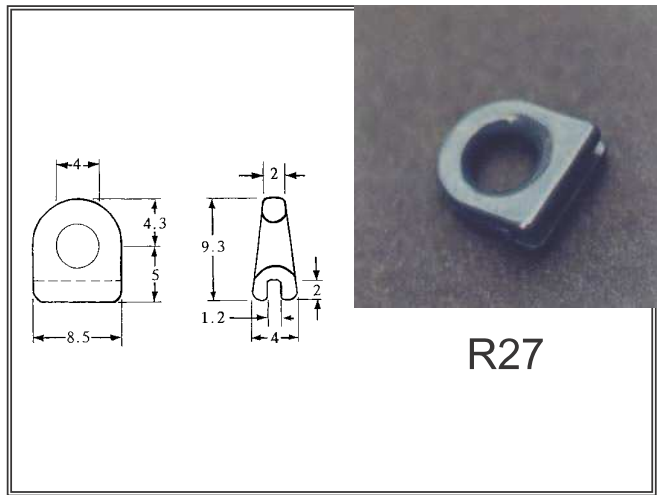
R12B



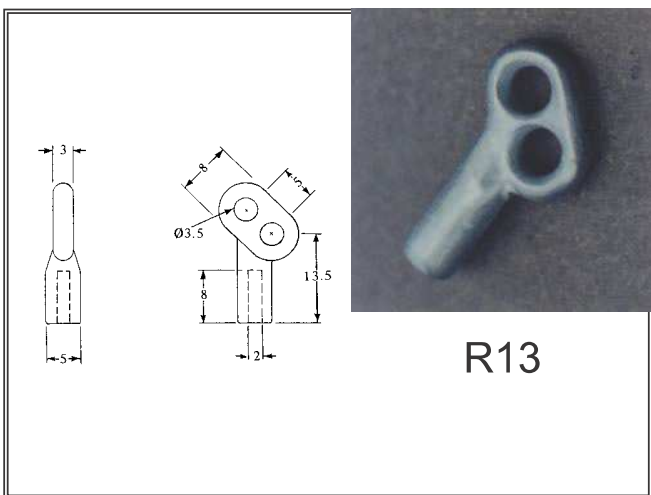
R10



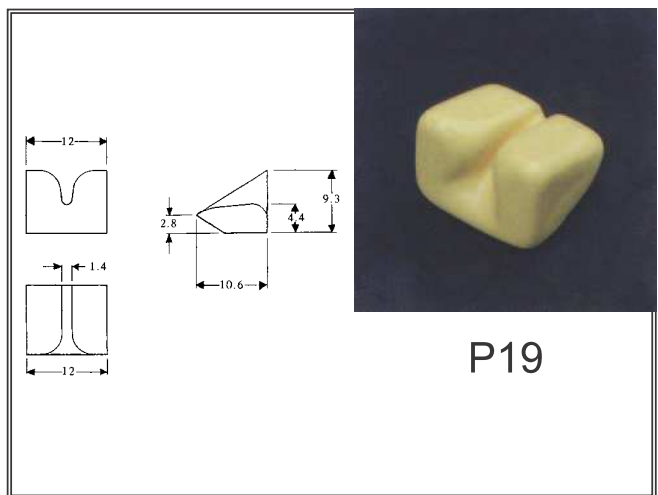
R14



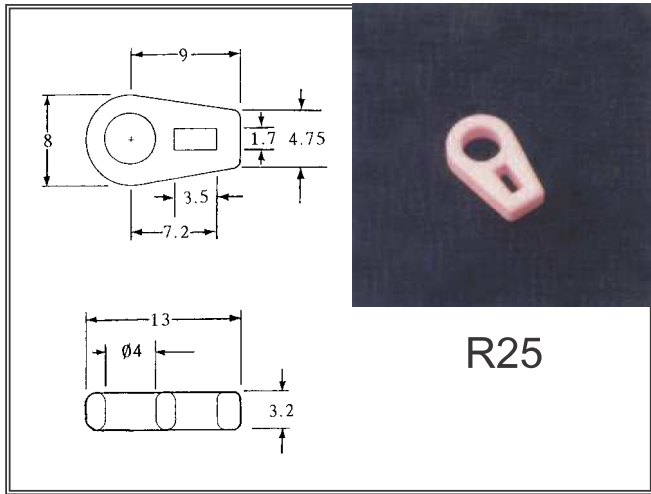
R27



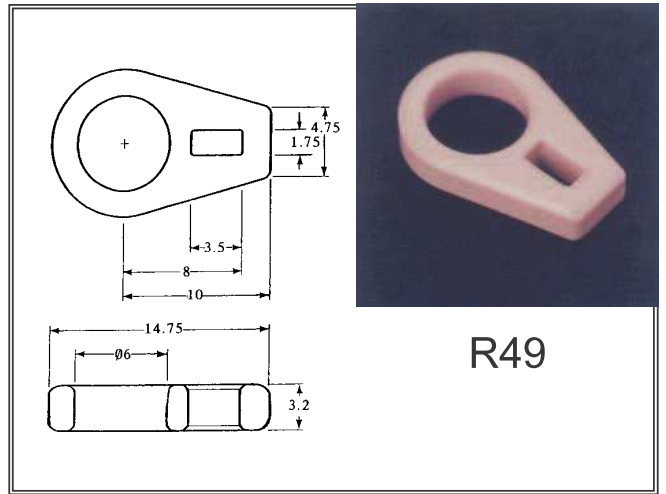
R13



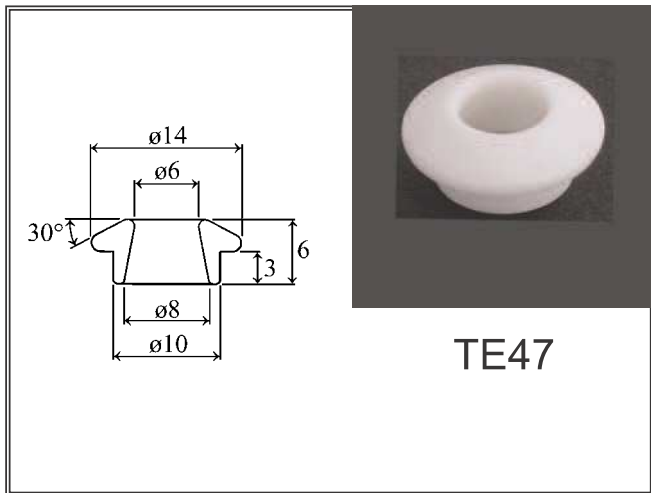
P19



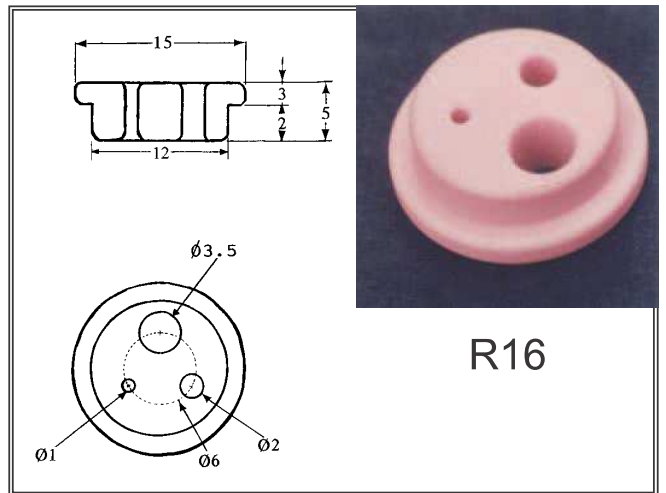
R25



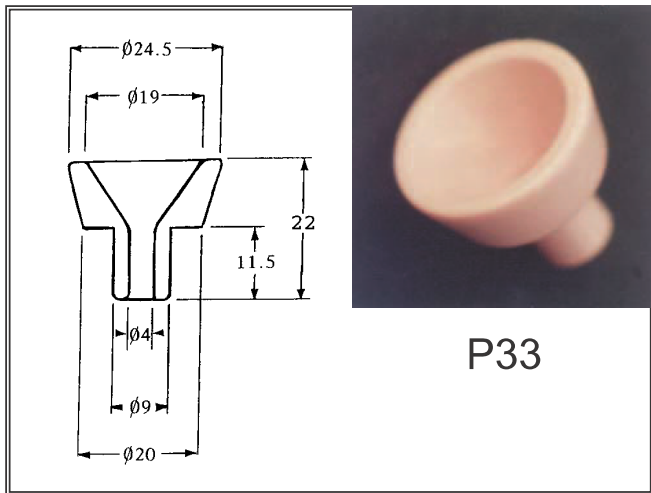
R49



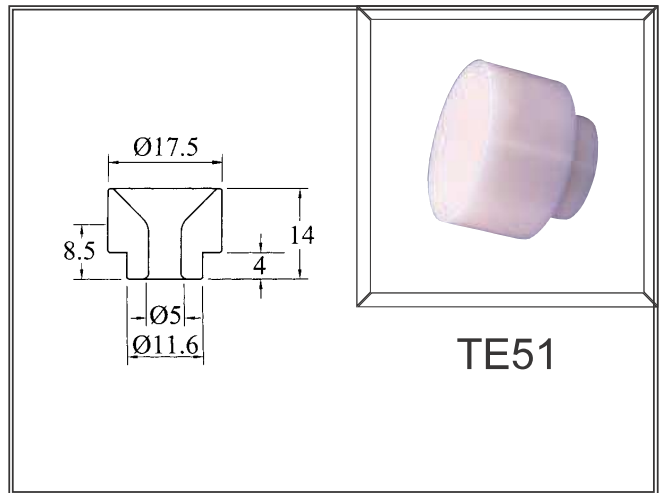
TE47



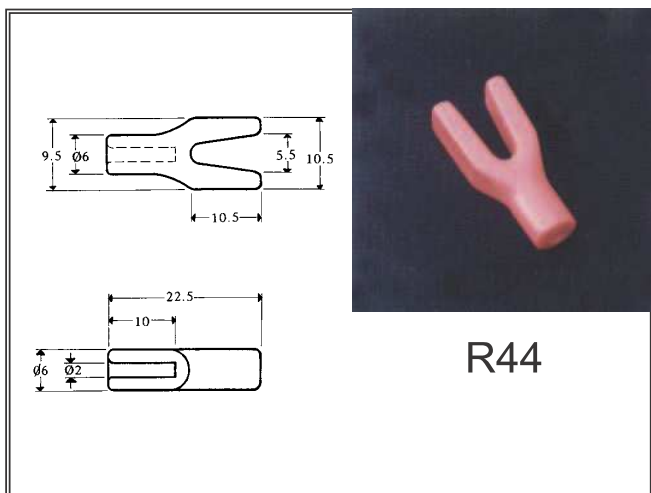
R16



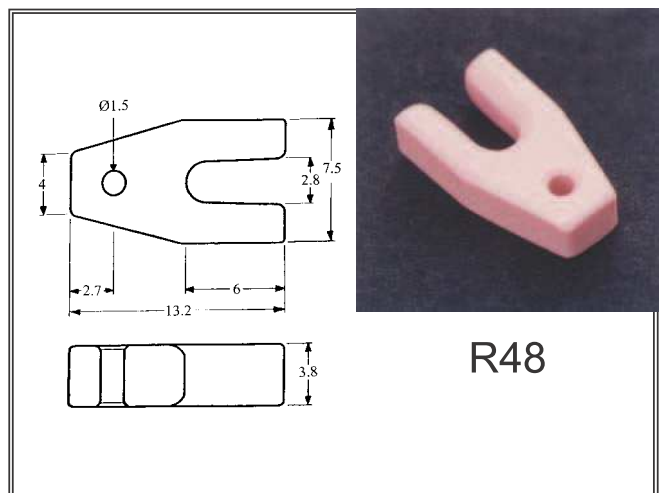
P33



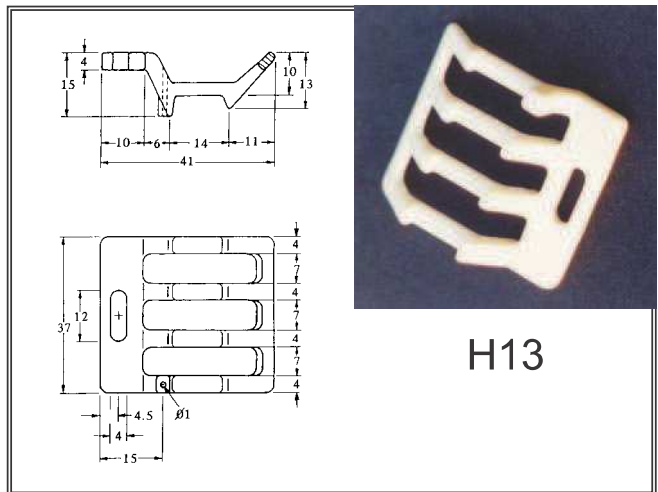
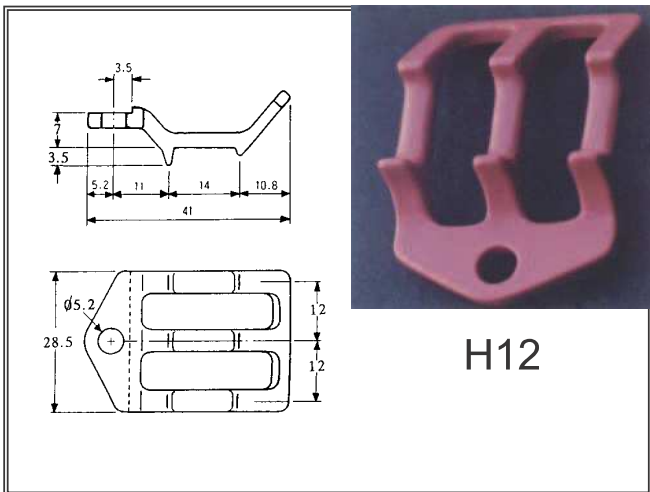
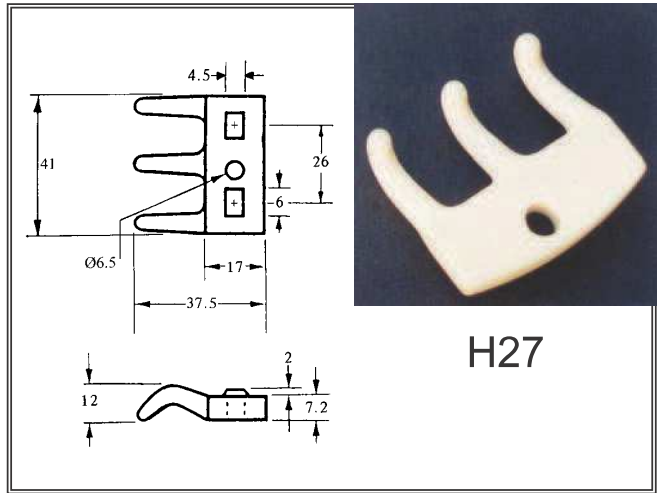
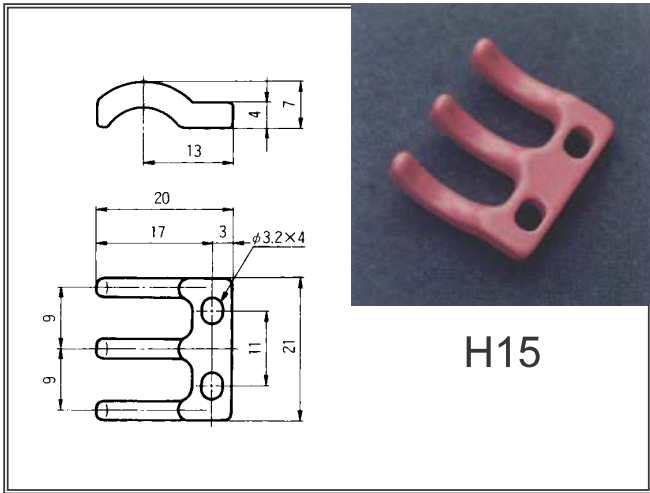
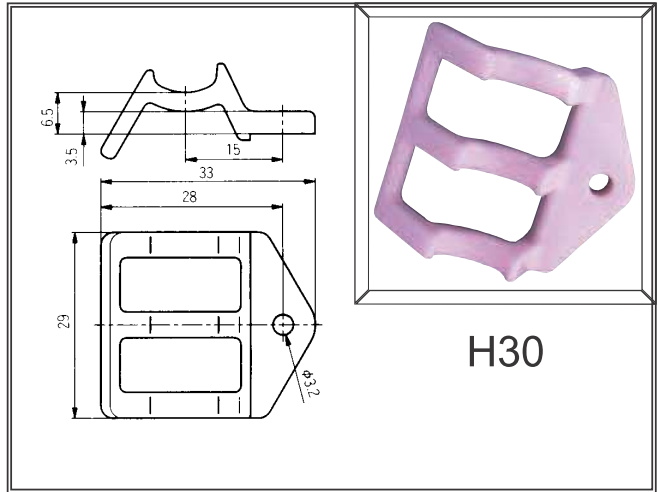
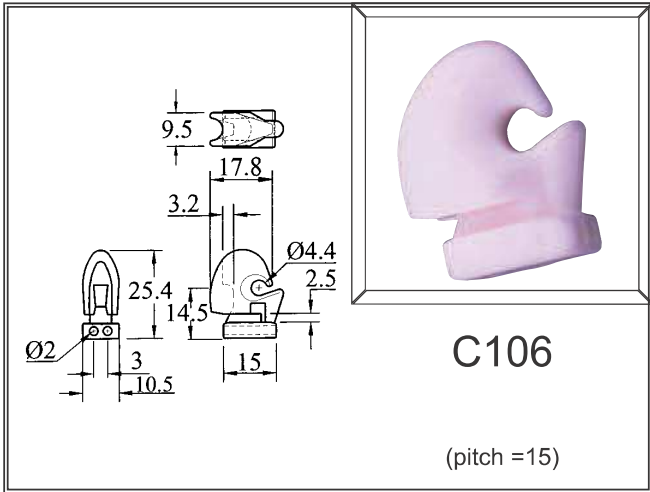
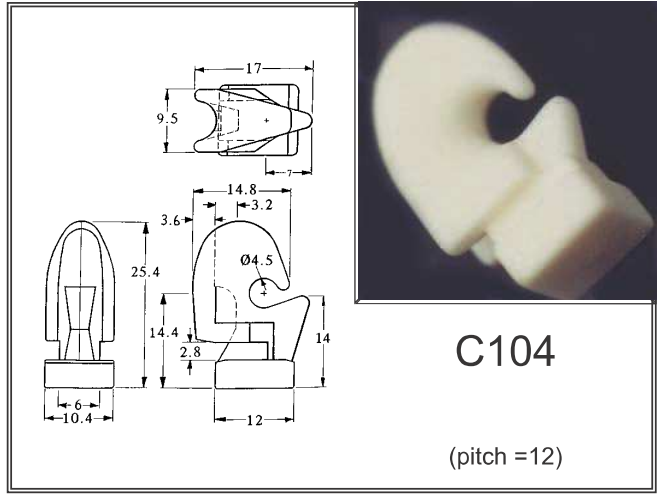
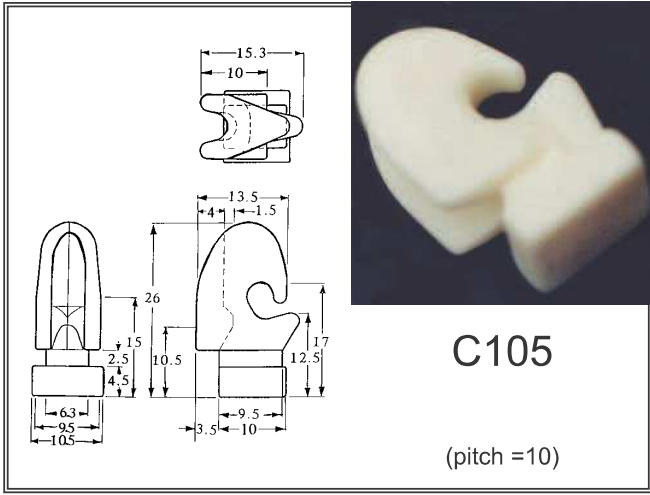
TE51



R44



R48



Yarn Slot Width

AP30	1.0
AP31	1.3
AP32	2.0

AP37

Yarn Slot Width = 1.2

AP36

Yarn Slot Width = 1.5

AP35

Yarn Slot Width = 1.0

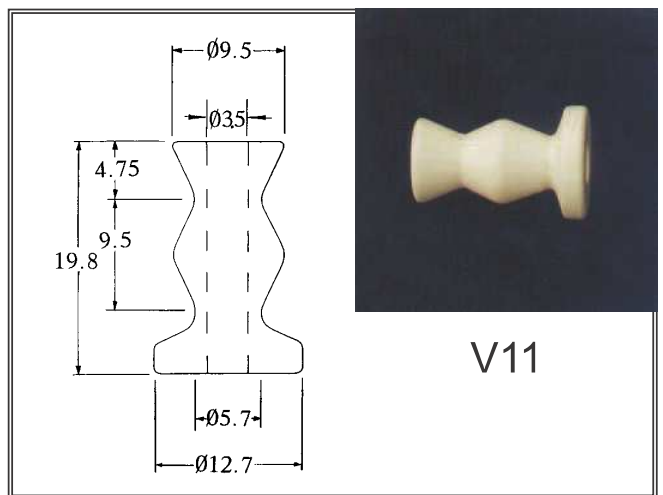
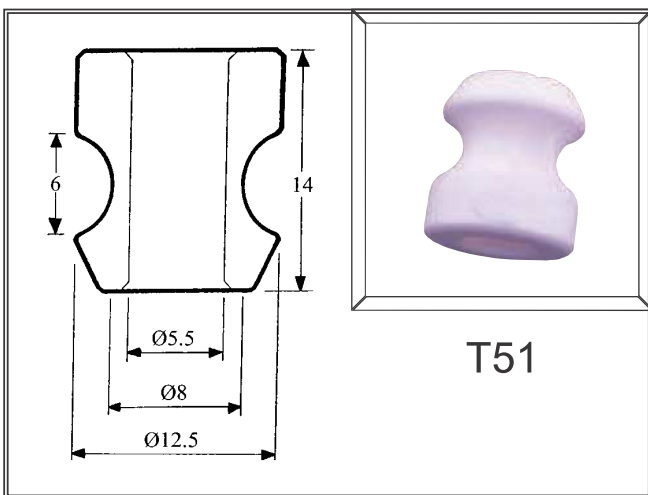
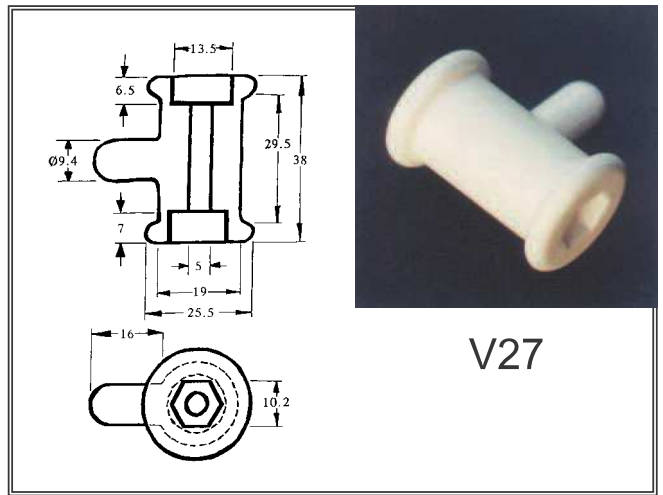
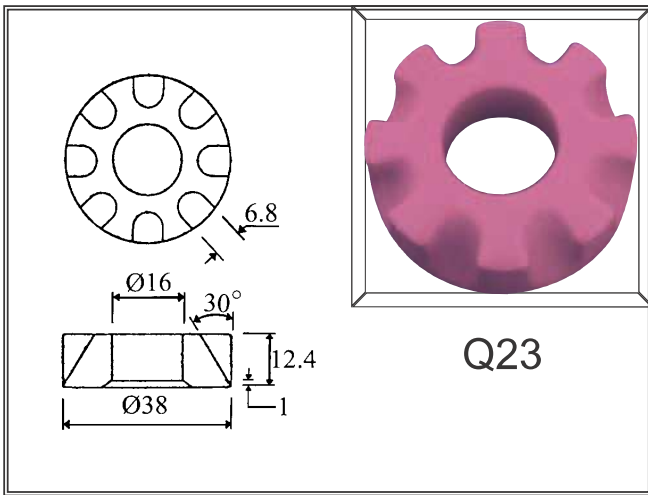
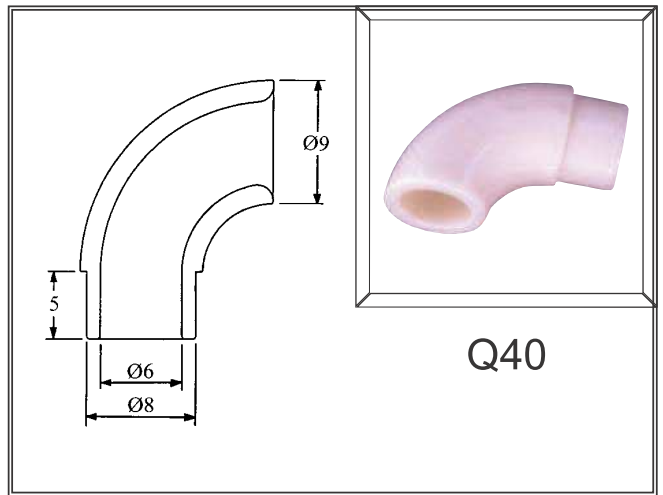
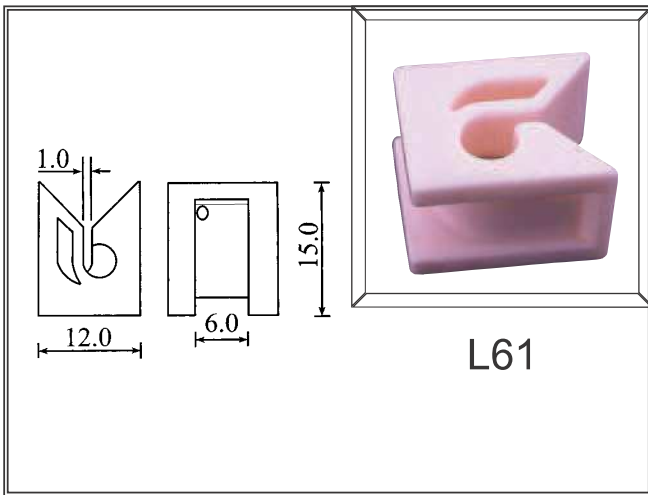
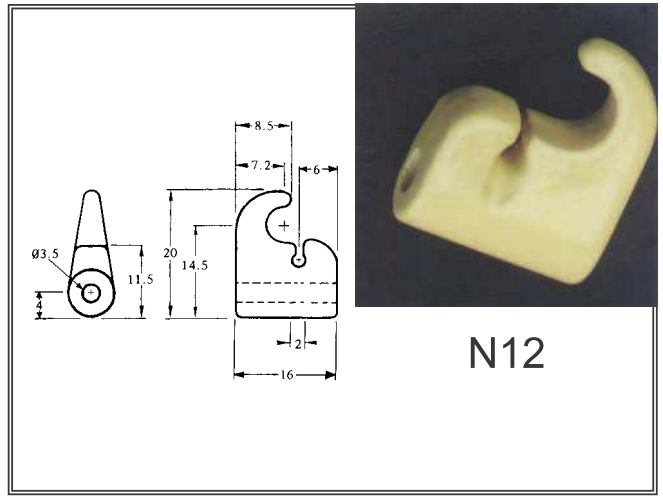
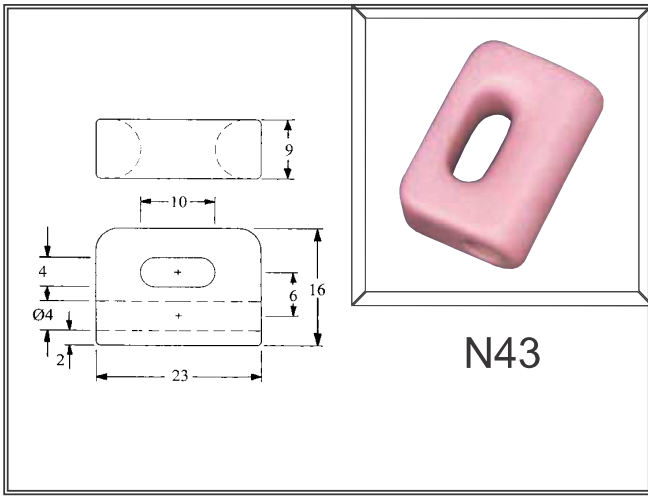
AP29

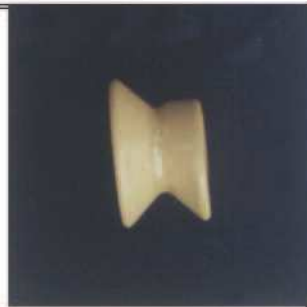
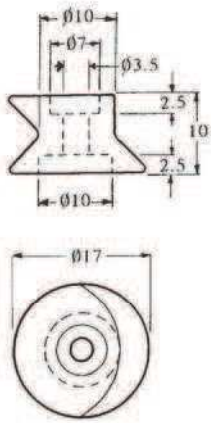
Yarn Slot Width

AP23	0.5
AP21	4.0

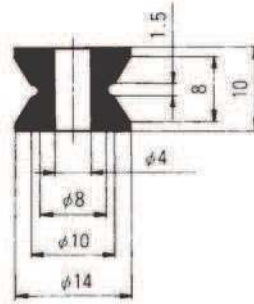
	L	X°	Y	Z
AP41	45	30	2	0.5
AP42	43	20	5	0.5
AP43	43	20	6	0.3

	A	B
AP44	31	24
AP45	34	25

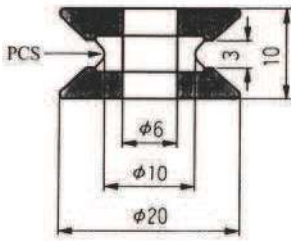




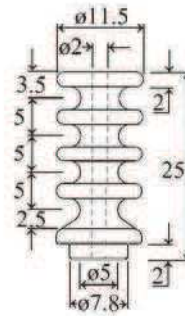
T6



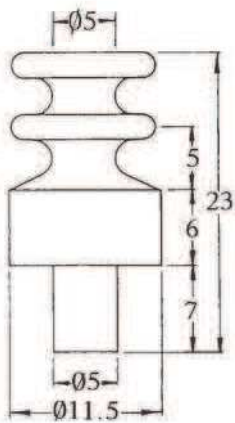
T40



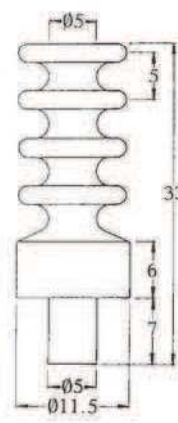
T41



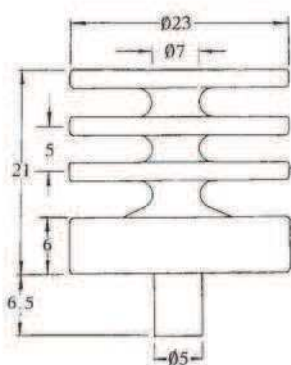
V33



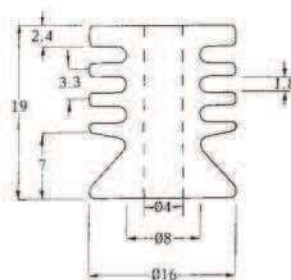
V2



V19

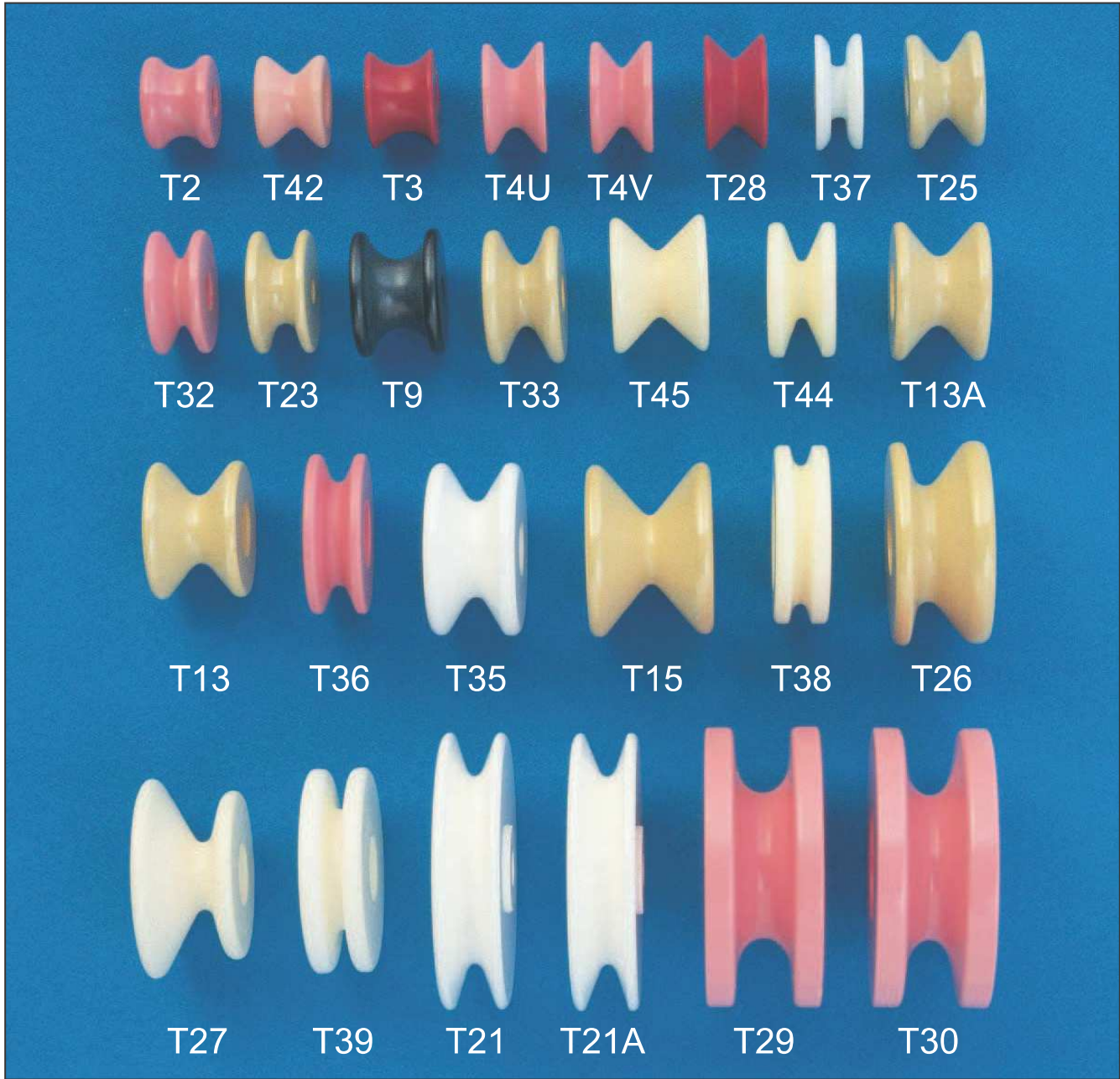


V31



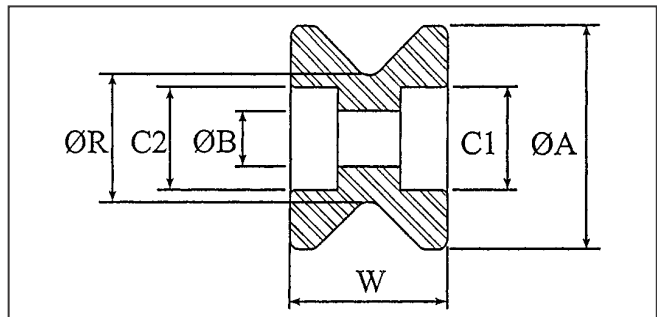
W1

# Single Groove Rollers



CS = countersunk bore for screw

Ref.	øA	øB	øR	W	øC1	øC2
T34	14.0	3.2	10.0	8.0		
T2	14.0	4.3	10.0	10.0		
T42	14.0	3.5	8.0	10.0	6.5 x 3.0	
T3	16.0	4.0	10.0	9.0		
T4U	16.5	4.0	8.5	9.0		
T4V	16.5	4.0	8.5	9.0		
T28	17.0	4.0	10.0	9.0		
T37	17.0	5.0	8.0	7.0		
T25	17.0	6.0	8.0	11.0		
T47	17.0	3.3	10.0	9.5		
T32	18.0	5.0	10.0	8.0		
T23	18.2	3.3	9.5	9.0	8.0 x 0.5	
T9	19.0	3.2	10.2	12.8		
T33	20.0	4.3	9.5	11.0	10.0 x 2.0	
T45	20.0	4.3	10.0	14.1	14.4 x 2.0	14.4 x 2.0
T44	20.0	6.0	8.0	10.0		
T13A	20.5	5.0	10.0	13.5	CS	
T13	20.5	3.0	10.0	13.6	7.8 x 3.0	
T36	23.5	9.6	15.0	8.0		
T35	24.9	6.0	14.1	13.1	9.0 x 1.5	
T15	25.0	6.0	10.0	18.0	9.0 x 1.5	
T38	25.6	4.0	20.0	7.8	15.2 x 1.3	15.2 x 1.3



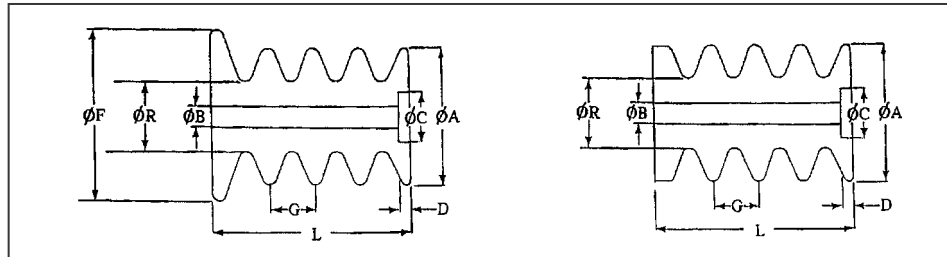
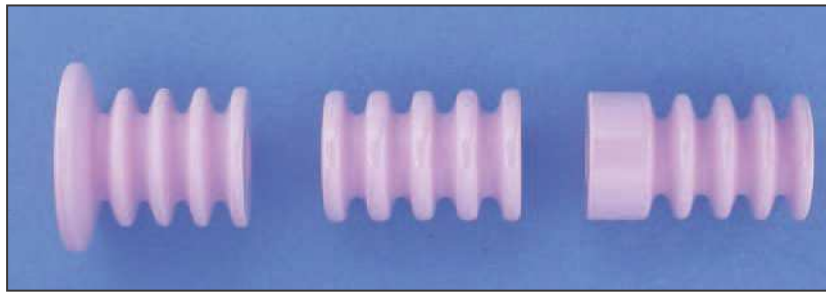
Ref.	øA	øB (to clear)	øR	W	øC1	øC2
T26*	29.3	6.0	16.5	14.0	9.0 x 1.5	9.0 x 0.8
T27*	29.3	6.0	10.0	14.0	9.0 x 1.5	9.0 x 0.8
T39	29.8	6.0	17.2	9.0	9.0 x 2.0	9.0 x 0.8
T21	38.7	4.0	26.0	9.0		
T21A	38.7	6.3	26.0	9.0		
T29	39.0	10.0	21.0	16.0		
T30	39.0	15.0	21.0	16.0		

\*asymmetric groove

Drawings available upon request



# Multi Groove Rollers

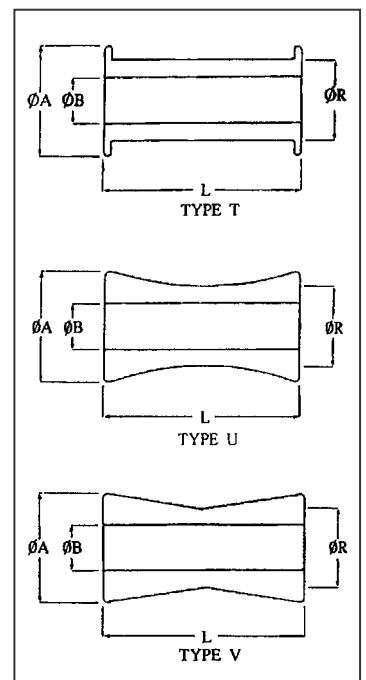


Ref	øA	øB	øR	øF	L	G	No of grooves	øC	D
W28	13.50	5.00	9.00		34.00	7.00	5		
V32	13.70	3.30	10.00		15.60	4.80	2		
W25	14.00	3.50	9.00		20.00	4.00	3	9.00	4.00
W26	14.00	3.30	6.00		21.00	4.50	3		
W27	15.00	4.30	9.00		20.00	3.60	4		
W35	15.00	5.00	8.00		26.50	3.00	8		
W6	15.75	3.18	7.60		30.30	3.50	6		
W37	15.90	6.30	9.00	20.00	22.00	4.60	4		
V13	16.00	3.50	8.00		19.00	3.50	3		
W31	16.00	5.30	10.00	21.00	34.00	6.00	5		
W3	16.00	6.20	9.50		27.00	4.80	4		
W9	16.00	3.50	9.50		36.50	6.30	5		
V29	16.50	4.50	10.50		12.50	4.70	2		
V28	16.50	4.50	10.50		15.80	4.20	3		
W29	16.50	4.50	10.50		18.00	4.00	4		
V30	16.50	4.50	10.50		24.00	6.00	4		
V9	17.00	5.00	8.00		20.00	10.00	2		
V10	17.00	6.00	8.00		23.00	12.00	2		
W21	17.60	3.50	10.00	23.80	9.00	—	1	6.00	4.00
W22	17.60	3.50	10.00	23.80	14.00	6.00	2	6.00	4.00
W23	17.60	3.50	10.00	23.80	20.00	6.00	3	6.00	4.00
W24	17.60	3.50	11.00	23.80	22.00	5.00	4	6.00	4.00
W30	21.00	5.30	8.20		20.00	9.00	2		
W36	21.00	5.30	9.00		21.00	5.00	3		
W32	29.00	6.20	16.00		26.00	12.50	2	10.00	3.00

\*Counter bore both ends

Drawings available upon request

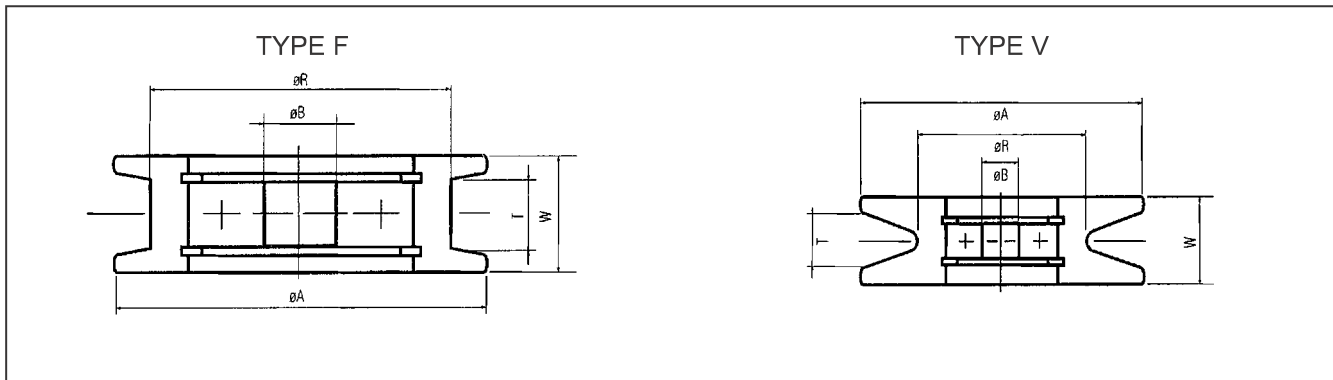
# Bobbins and Diabolos



Ref.	øA	øB	øR	L	Type
U11	4.50	2.20	3.50	25.00	U
U18	6.00	2.00	3.50	10.50	U
U16	6.50	3.10	5.40	19.00	U
U42	8.00	3.00	5.00	10.00	U
U36	8.20	4.00	6.20	10.50	U
U37	10.80	3.20	6.80	20.00	T
U32	12.00	6.00	11.50	12.00	V
U33	12.00	6.00	10.40	20.00	U

Ref.	øA	øB	øR	L	Type
U34	15.00	7.50	10.40	20.00	U
U27	15.00	4.00	8.00	15.00	V
U29	15.20	4.00	9.00	21.00	T
U35*	20.00	6.30	10.00	20.00	V
U25	20.00	6.30	10.00	25.00	V
U25C*	20.00	6.30	10.00	25.00	V
U28	20.00	6.30	10.00	25.00	U
U26#	38.00	4.50	19.00	32.00	T

# CERAMIC BEARING ROLLERS

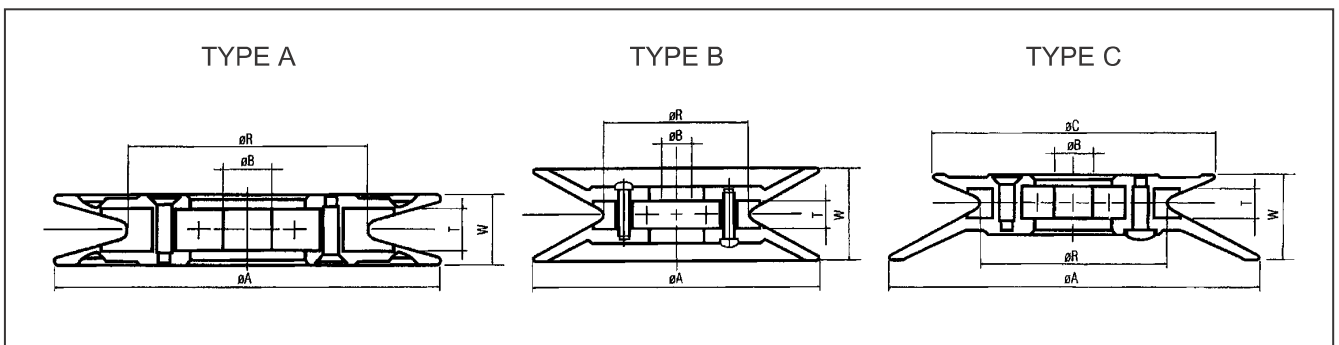


Part No	øA	øB	øR	W	T
CBR1V	8	1.5 or <u>2</u>	6	3	2.3
CBR2V	10	<u>2</u>	8	4	3
CBR3V	10.5	<u>2</u>	7	3.5	2.3
CBR4V	14	<u>3</u>	10	6	4
CBR5V	16.5	②, or <u>4</u>	13.5	7	4
CBR6V	17	<u>3</u>	13	12	7
CBR7V	20	②, <u>4</u> , 5 or 7	14	10	7
CBR8V	23	<u>3</u>	15	8	5.5
CBR9V	27	4, <u>5</u> or 6	15	11	8
CBR10V	27	4, <u>5</u> or 6	18.5	9.5	5.5
CBR11F	30	4, <u>5</u> or 8	22	10	5
CBR12F	30	<u>5</u>	20	24	10
CBR13V	30	<u>5</u>	15	11	9
CBR14V	40	4, <u>5</u> or 8	24	12	8
CBR15V	40	<u>8</u> or 10	27	24	18
CBR16F	50	<u>10</u>	40	16	10
CBR17F	50	<u>10</u>	40	24	18

②, = Special low torque bearing

Bearings (øB) underlined indicate standard sizes

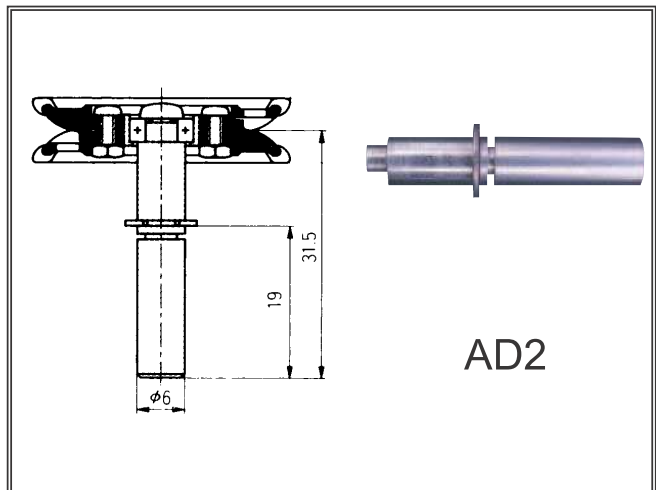
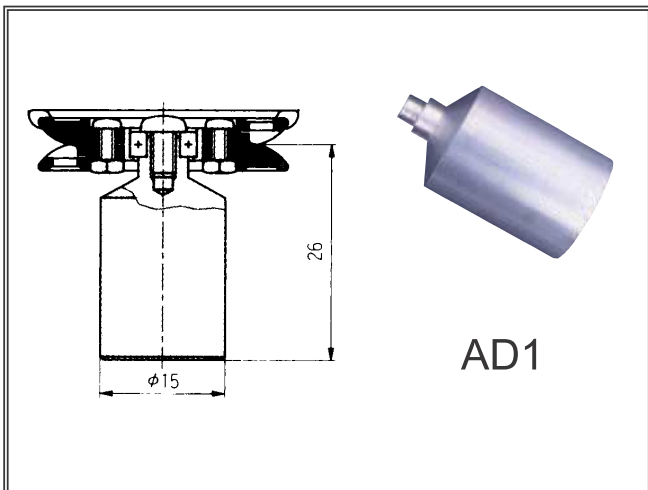
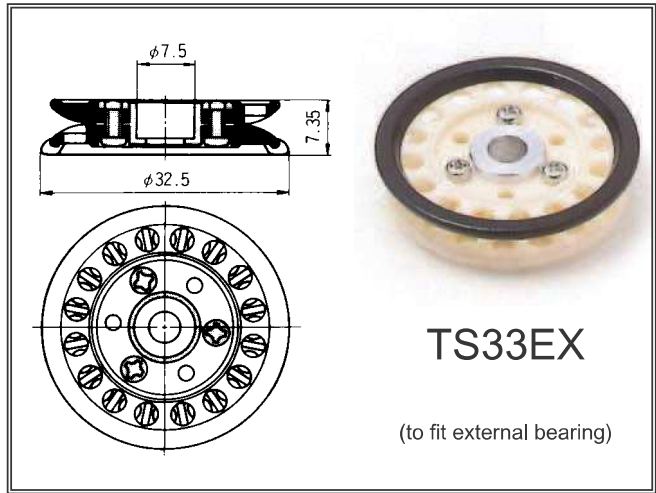
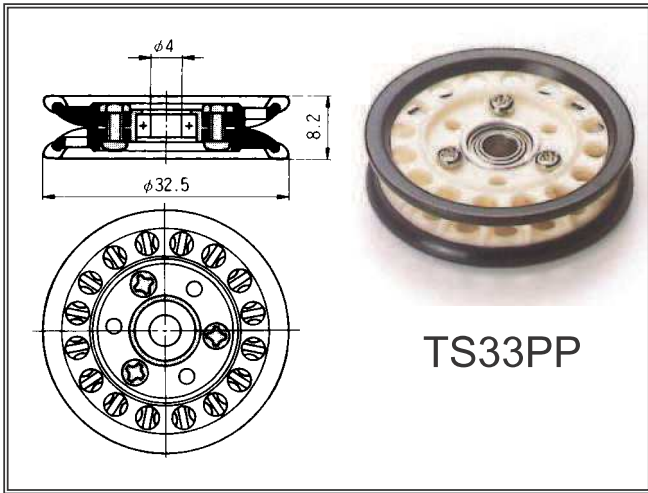
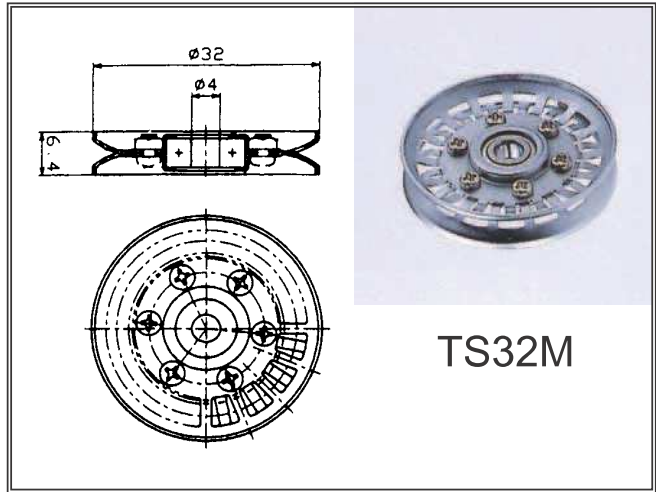
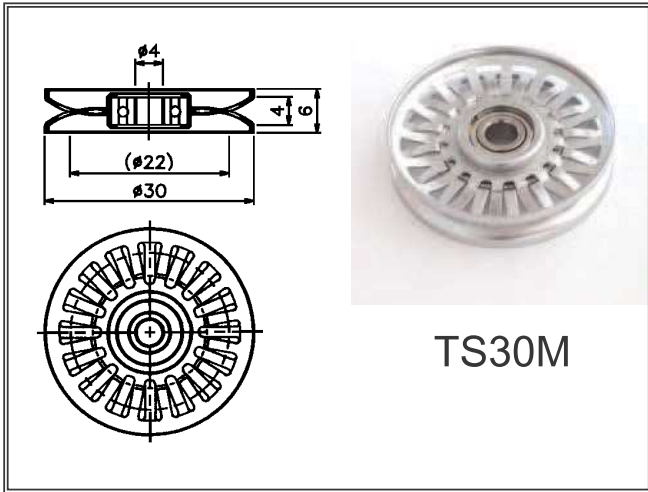
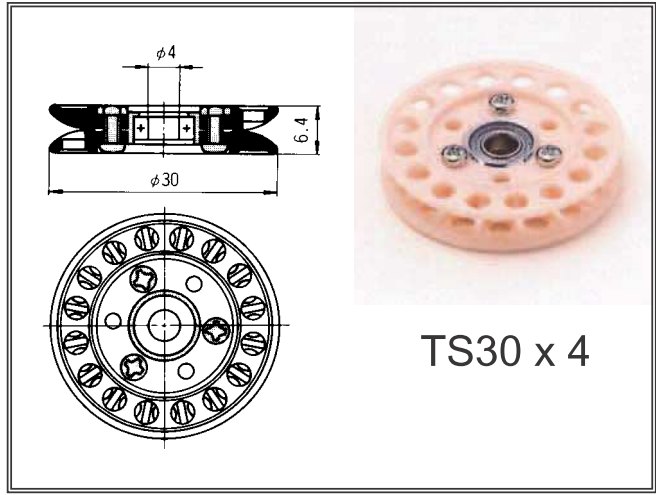
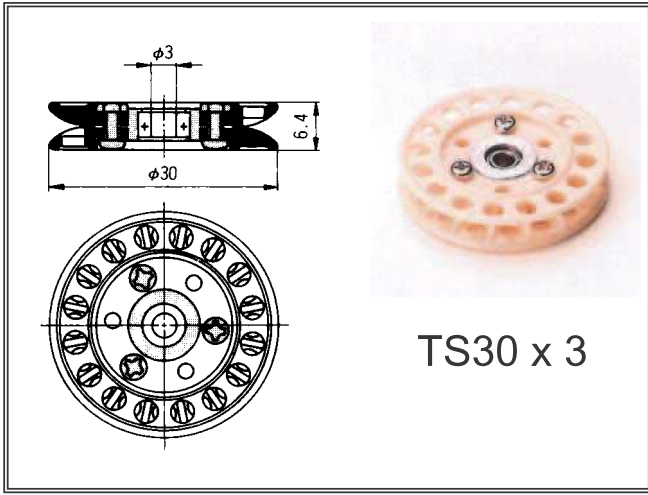
# CERAMIC BEARING ROLLERS

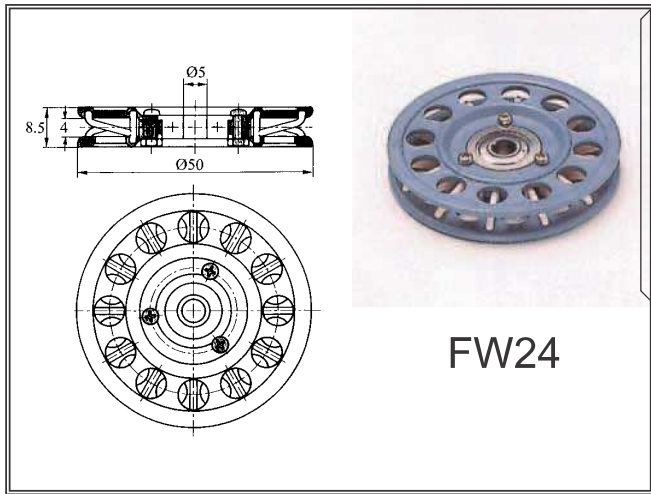


Part No	øA	øB	øC	øR	W	T
PCBR1A	20	<u>3</u>		15	4	3
PCBR2A	28.5	②, <u>4</u> or 5		20	6	4
PCBR3B	30	<u>3</u>		15	10	3
PCBR4C	30	<u>3</u>	20	15	7	3
PCBR5B	40	②, <u>4</u> or 5		20	15	4
PCBR6C	40	②, <u>4</u> or 5	28.5	20	10.5	4
PCBR7A	45	④, <u>5</u> , <u>6</u> , 7 or 8		30	10	6
PCBR8A	60	7 or <u>8</u>		40	12	6
PCBR9B	60	④, <u>5</u> , <u>6</u> , 7 or 8		30	20	6
PCBR10C	60	④, <u>5</u> , <u>6</u> , 7 or 8	45	30	15	6
PCBR11A	80	<u>10</u>		50	15	9
PCBR12B	80	<u>8</u>		40	25	6
PCBR13C	80	<u>8</u>	60	40	18.5	6
PCBR14B	100	<u>10</u>		50	30	9
PCBR15C	100	<u>10</u>	80	50	22.5	9

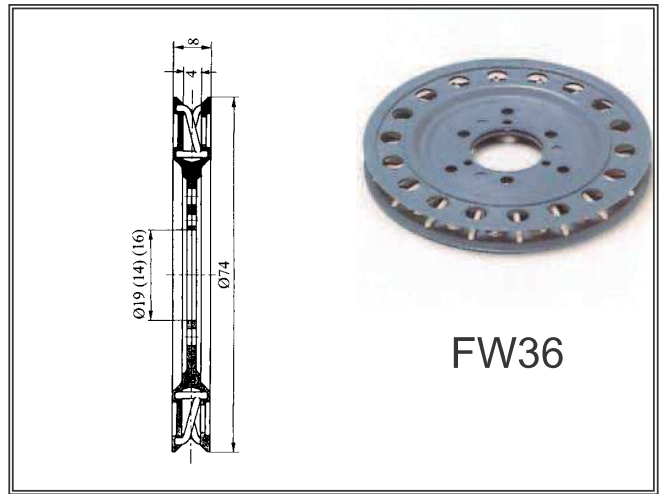
②, ④ = Special low torque bearing

Bearings (øB) underlined indicate standard sizes

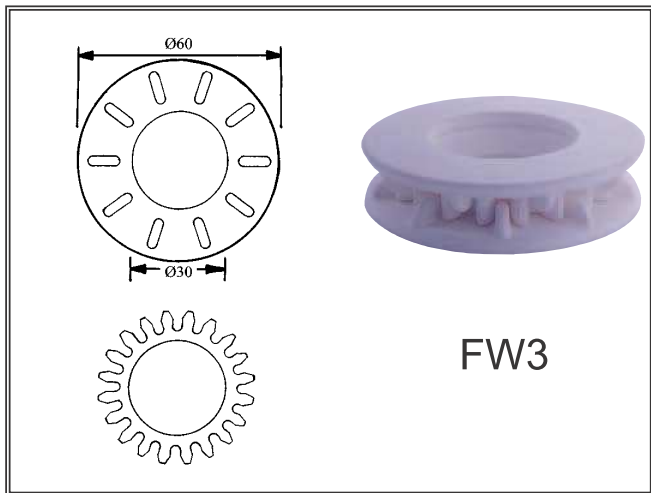




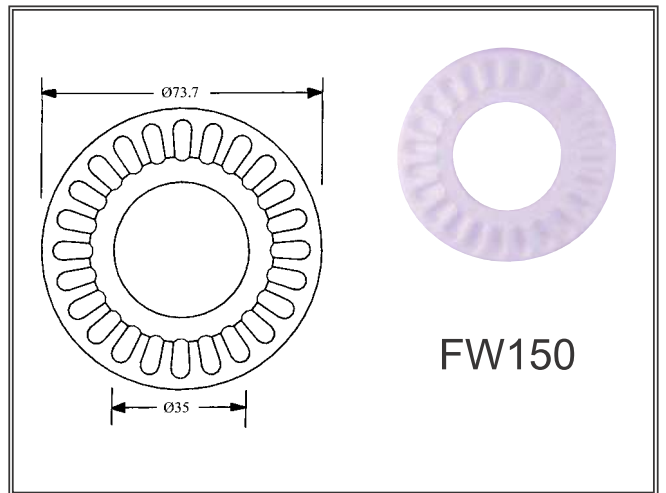
FW24



FW36



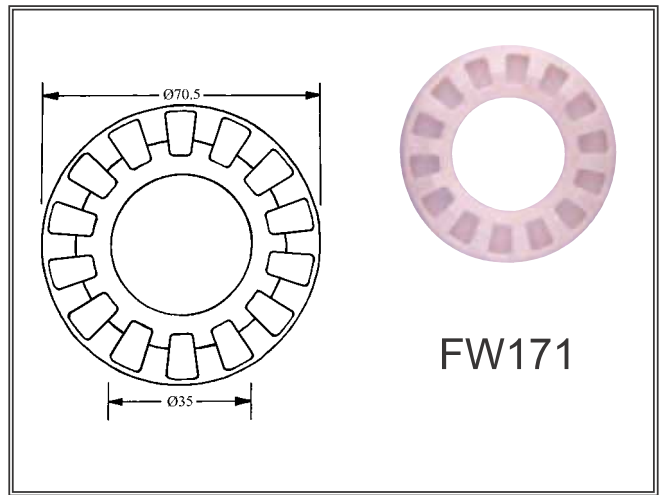
FW3



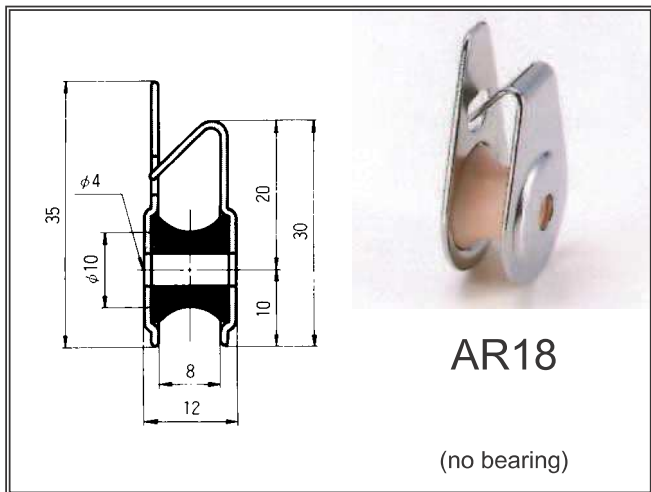
FW150



FW46

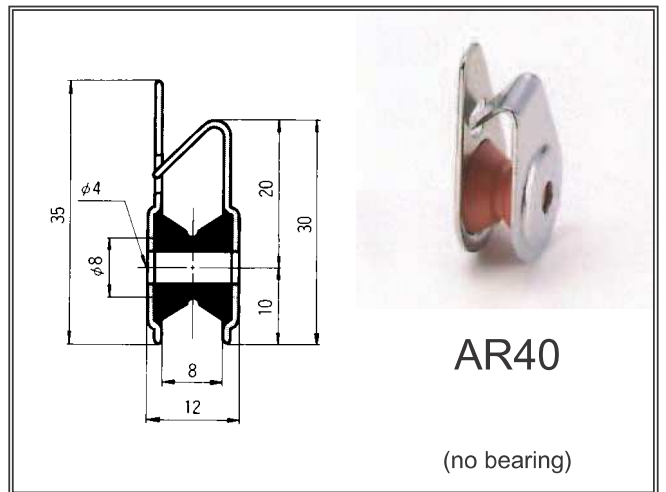


FW171



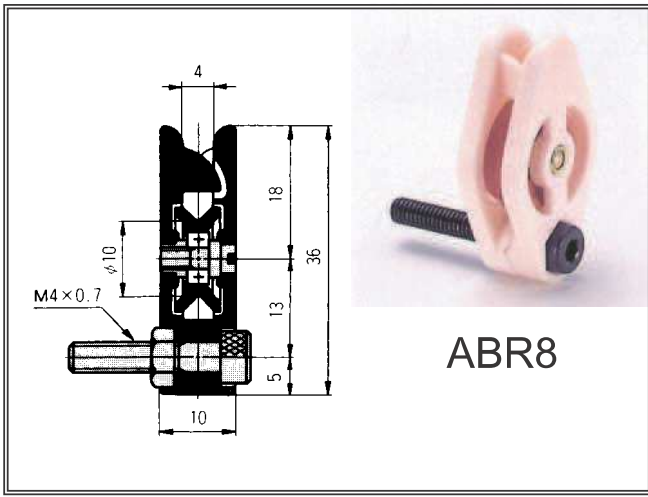
AR18

(no bearing)

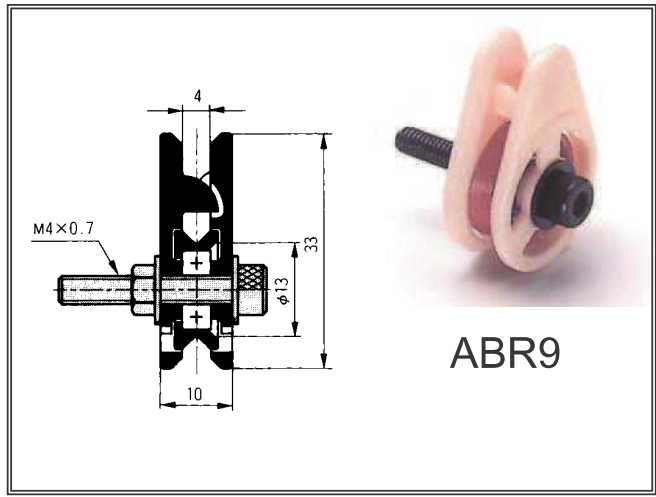


AR40

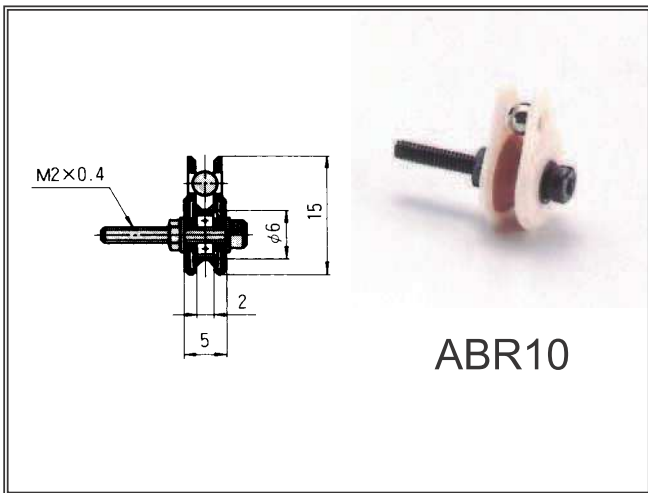
(no bearing)



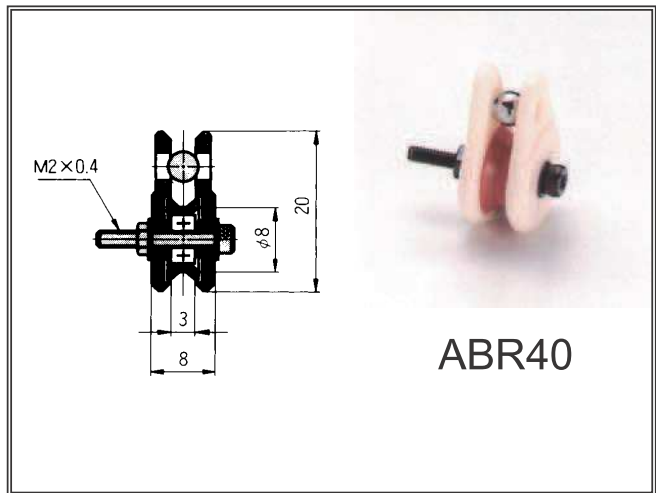
ABR8



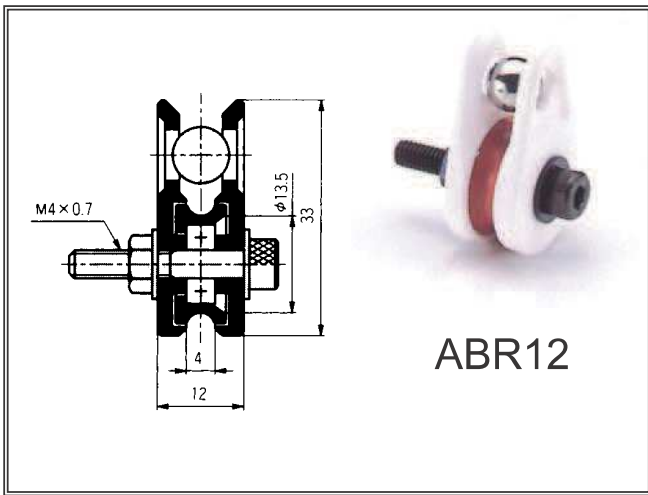
ABR9



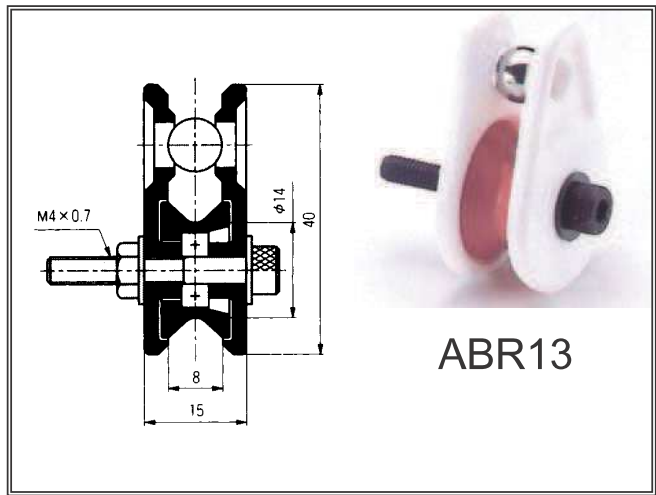
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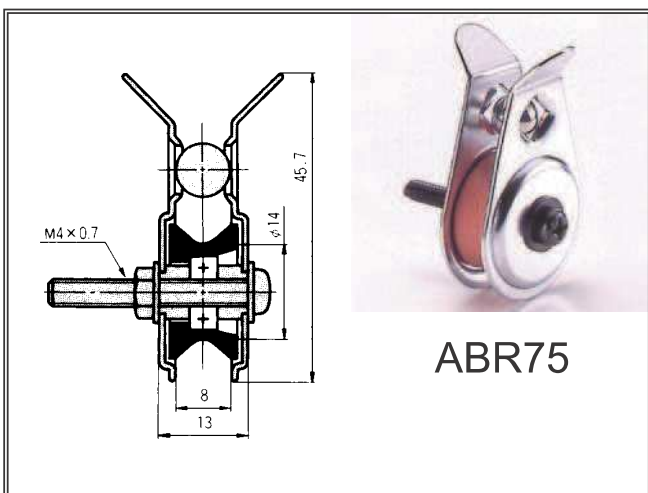
ABR40



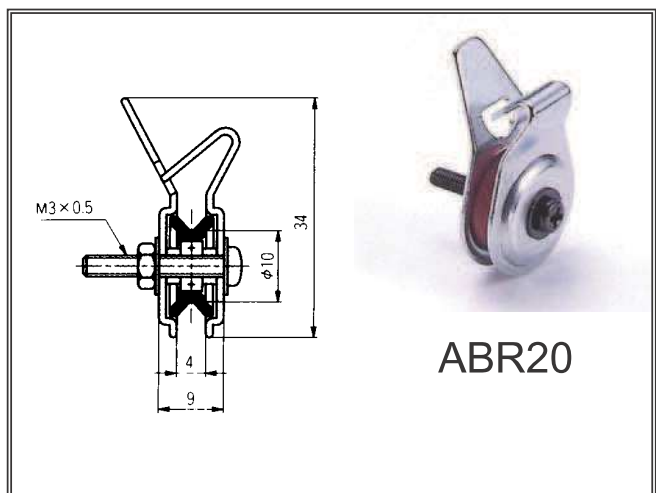
ABR12



ABR13

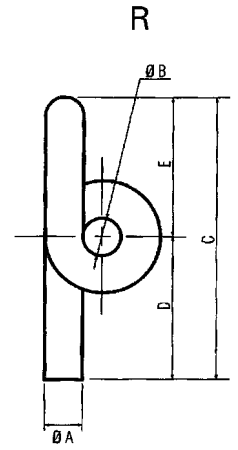
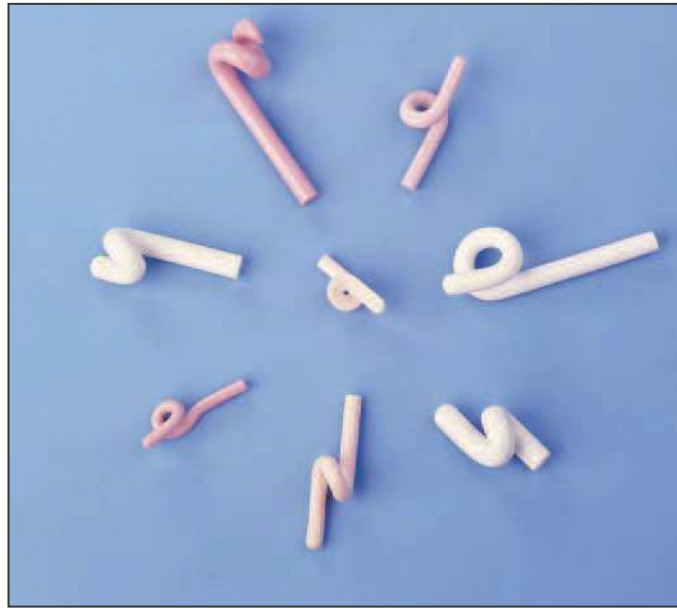
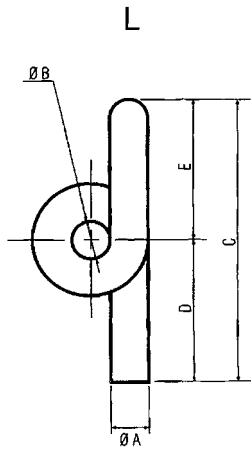


ABR75



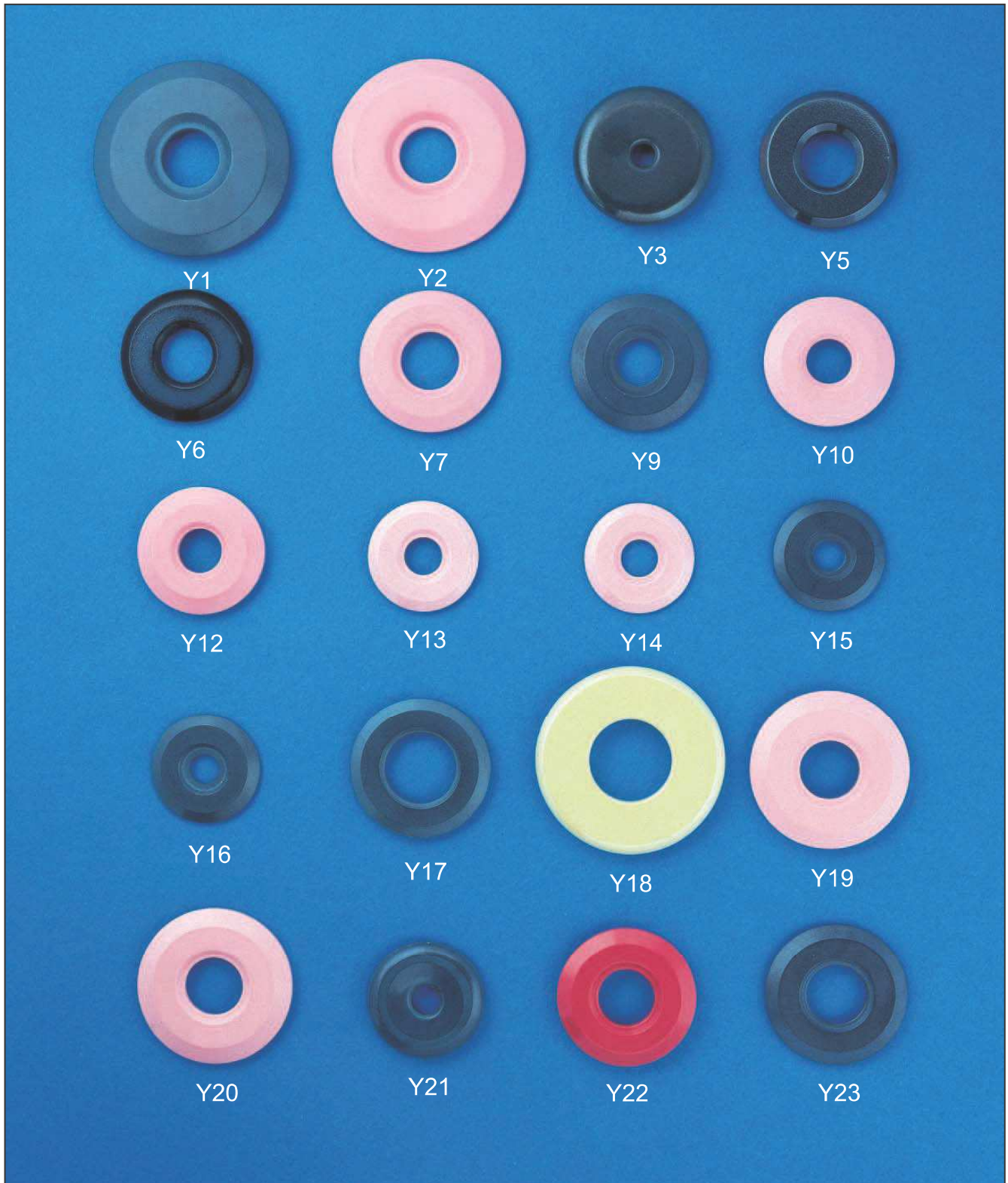
ABR20

# PIGTAILS

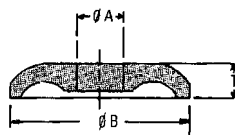


Ref.	R or L HAND	øA	øB	C	D	E	REMARKS
C50	R & L	3.0	1.0	21.5	15.0	6.5	
C52	R	3.0	2.0	22.0	17.0	5.0	
C30	R & L	3.0	3.0	25.0	14.0	11.0	
C9	R & L	3.0	2.0	27.0	20.0	7.0	
C10	R & L	3.0	3.0	27.0	20.0	7.0	Eye in line with shank
C32	R	3.2	5.5	36.0	25.0	11.0	
C36	R & L	3.2	4.0	32.0	21.0	11.0	Eye in line with shank
C2	R & L	4.0	1.0	20.0	10.0	10.0	▲Section eye
C4	R & L	4.0	1.0	30.0	15.0	15.0	▲Section eye
C31	R & L	4.0	4.0	25.0	15.0	10.0	
C13	R	4.0	3.0	28.0	20.0	8.0	
C20	R & L	4.0	4.0	35.0	20.0	15.0	
C14	R & L	4.0	3.0	28.0	20.0	8.0	Fixing hole 1.5
C15	L	4.0	4.5	33.0	22.0	11.0	
C22	R	4.0	6.0	53.0	37.0	16.0	
D8	R & L	5.0	5.0	42.0	30.0	12.0	
D16	L	5.0	5.0	50.0	38.0	–	Double coil
D11	R & L	5.0	5.0	55.0	42.0	13.0	
D12	R	5.5	5.0	46.0	31.0	15.0	
C17	R & L	6.0	1.5	25.0	10.0	15.0	Fixing hole 3.2
D17	L	6.0	3.0	25.0	15.0	10.0	Fixing hole 2.0
D15	R & L	6.0	1.5	31.0	25.0	6.0	
D18	R & L	6.0	10.0	60.0	45.0	15.0	

# STANDARD TENSION DISCS



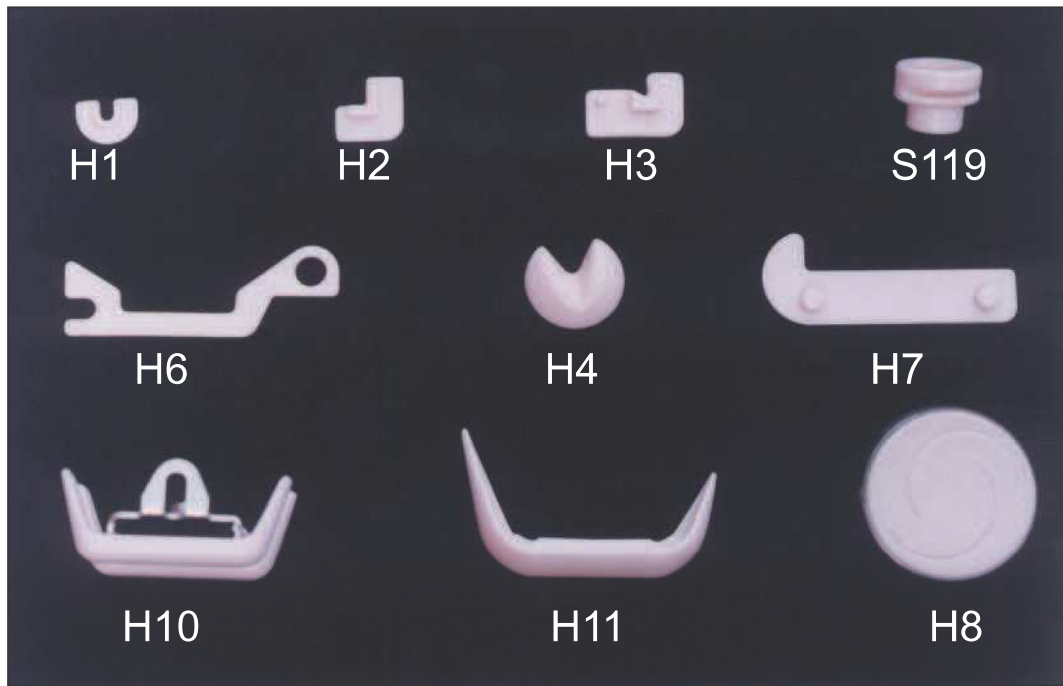
Ref.	A (to clear)	B	T	Approx. Weight (g)
Y1	10.0	37.0	4.8	11.5
Y2	10.0	36.4	3.5	7.5
Y3	4.0	25.4	4.0	7.0
Y5	10.0	25.6	4.8	6.5
Y6	10.0	25.0	3.0	2.1
Y7	10.0	24.7	3.0	3.0
Y9	8.5	26.0	2.8	3.5
Y10	8.0	24.2	3.0	3.2
Y12	8.1	24.0	3.1	3.3
Y13	6.5	20.5	2.8	2.0



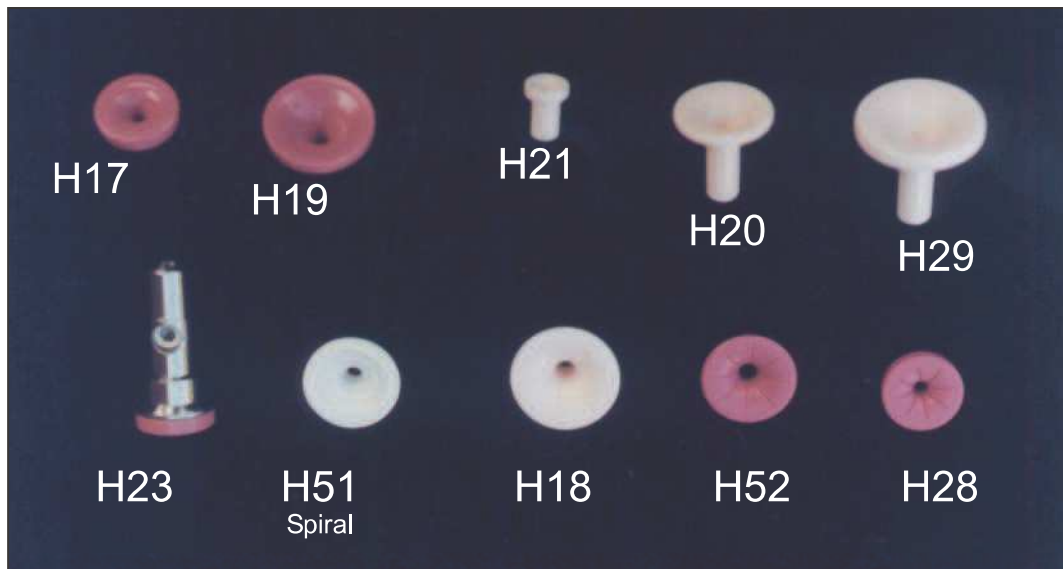
Ref.	A (to clear)	B	T	Approx. Weight (g)
Y14	6.5	20.5	2.3	1.0
Y15	5.0	20.5	2.8	2.0
Y16	5.0	20.5	2.2	1.0
Y17	12.5	26.5	2.8	3.3
Y18	15.0	35.2	3.8	11.3
Y19	10.5	29.5	4.0	5.0
Y20	10.5	29.5	3.0	3.6
Y21	5.0	22.0	3.5	3.0
Y22	10.5	26.0	4.0	5.0
Y23	10.5	26.4	2.8	3.5



## Autoconer Guides



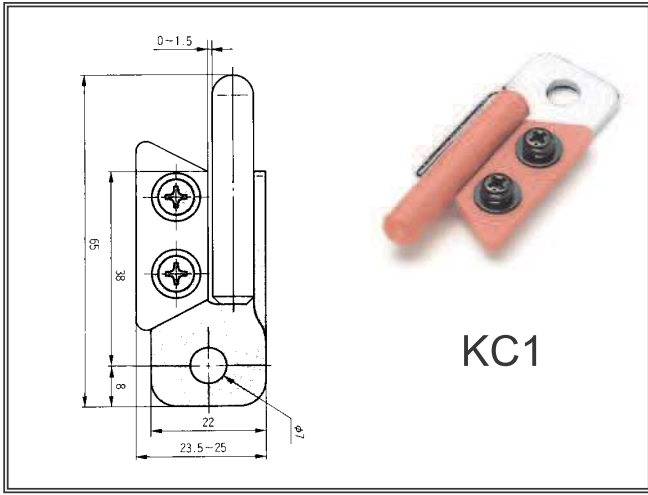
## OE Guides



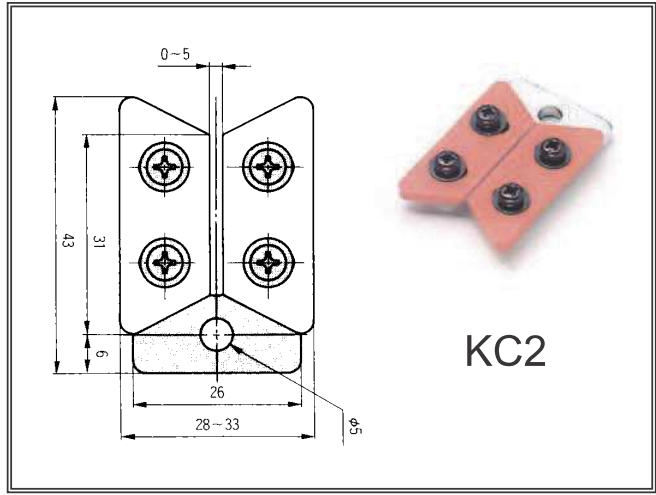
	No. of Yam Grooves
H59	0
H60	4
H63	8

Hx x M  
(standard)

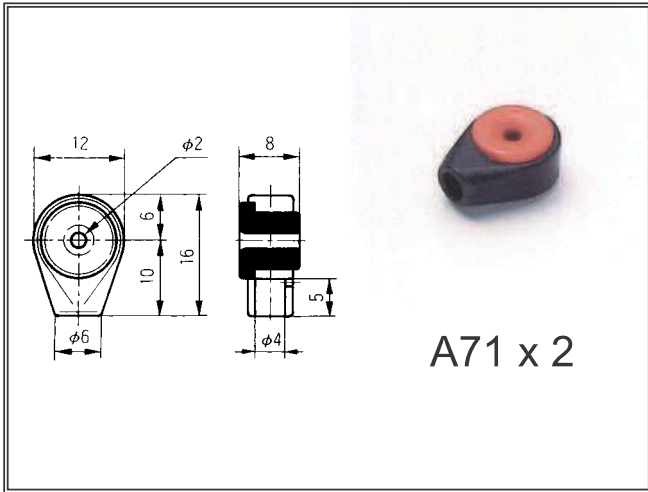
Hx x M1  
(with tube eyelet)



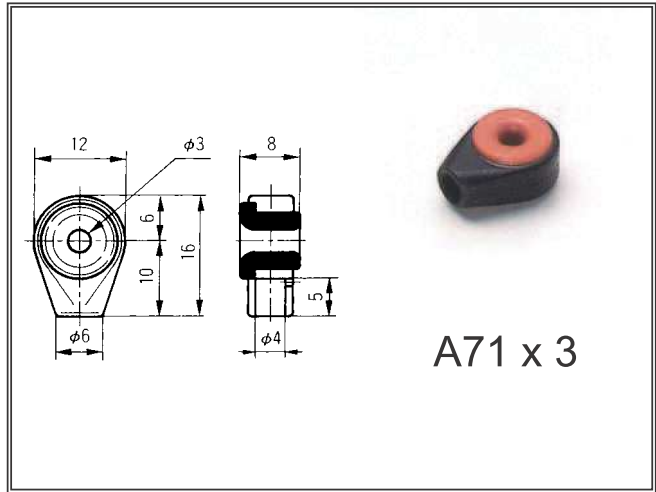
KC1



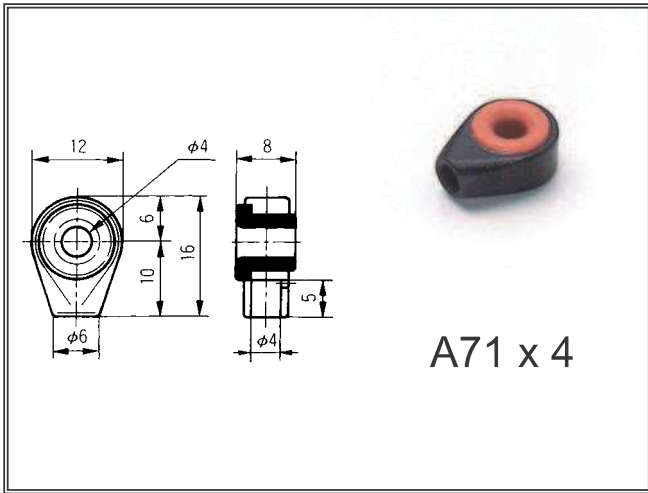
KC2



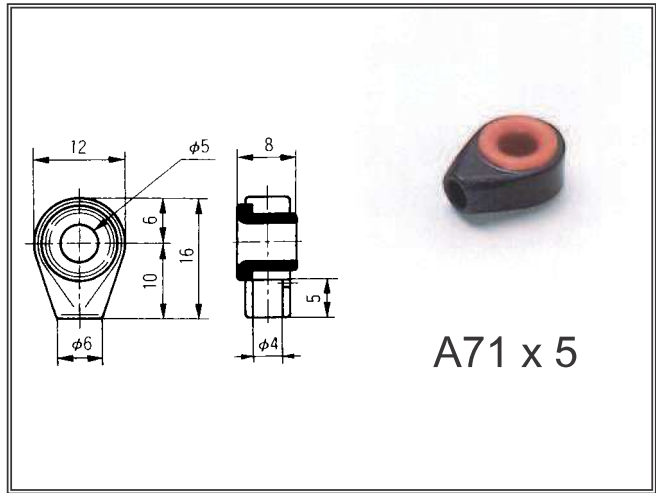
A71 x 2



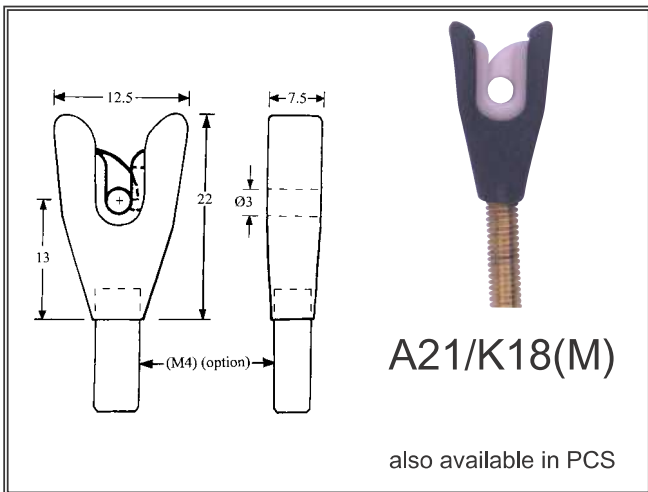
A71 x 3



A71 x 4

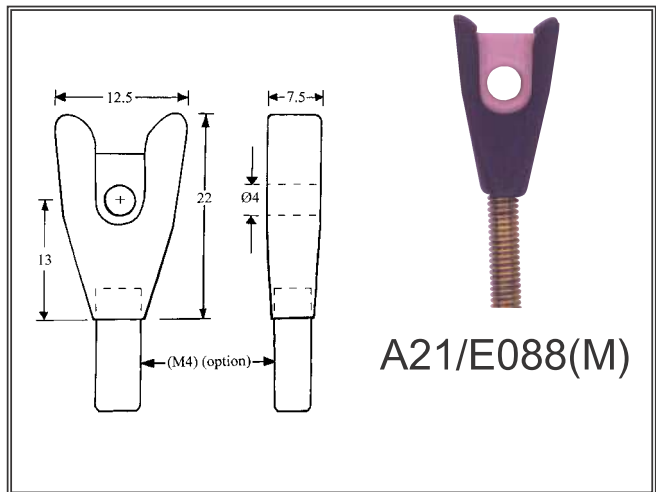


A71 x 5

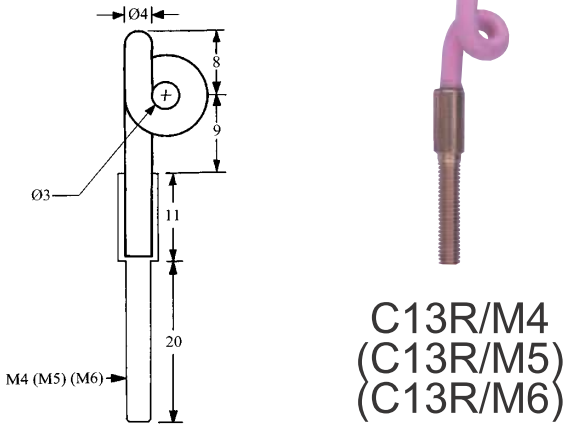


A21/K18(M)

also available in PCS

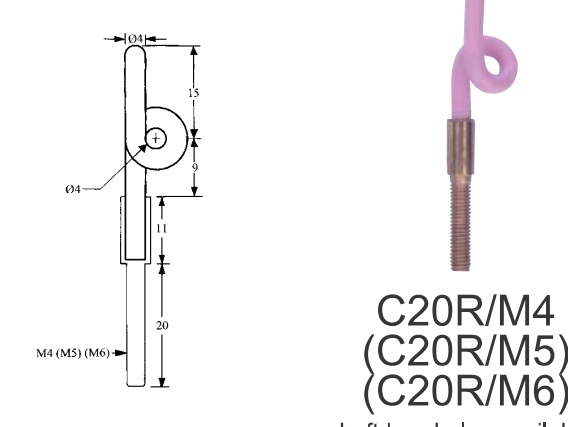


A21/E088(M)



Technical drawing of a pin with a hook-shaped head. Dimensions: head diameter  $\varnothing 4$ , head height 8, distance from head to collar 9, collar height 11, collar diameter  $\varnothing 3$ , and total length 20. Thread options: M4 (M5) (M6).

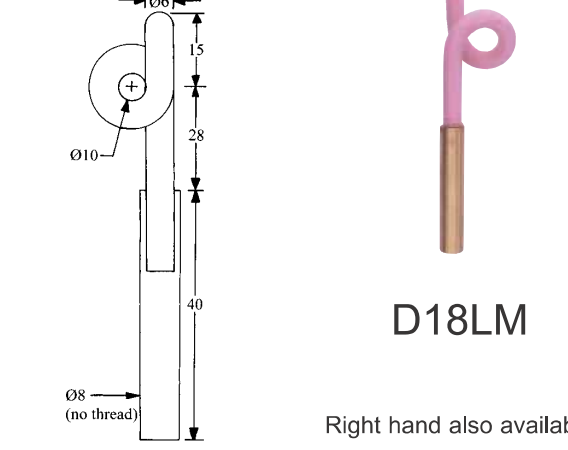
**C13R/M4**  
(C13R/M5)  
(C13R/M6)



Technical drawing of a pin with a hook-shaped head. Dimensions: head diameter  $\varnothing 4$ , head height 15, distance from head to collar 9, collar height 11, collar diameter  $\varnothing 4$ , and total length 20. Thread options: M4 (M5) (M6).

**C20R/M4**  
(C20R/M5)  
(C20R/M6)

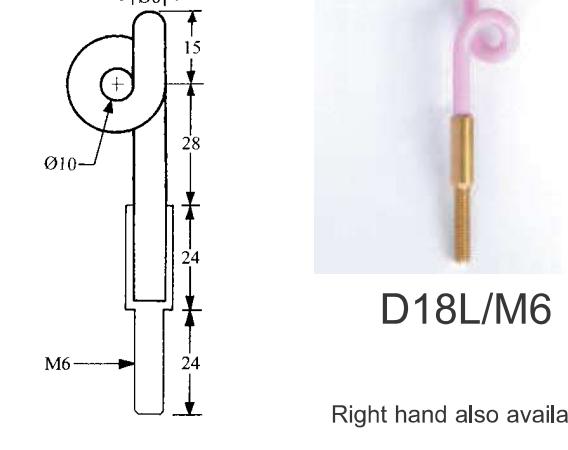
Left hand also available



Technical drawing of a pin with a hook-shaped head. Dimensions: head diameter  $\varnothing 6$ , head height 15, distance from head to collar 28, collar height 4, collar diameter  $\varnothing 8$  (no thread), and total length 40.

**D18LM**

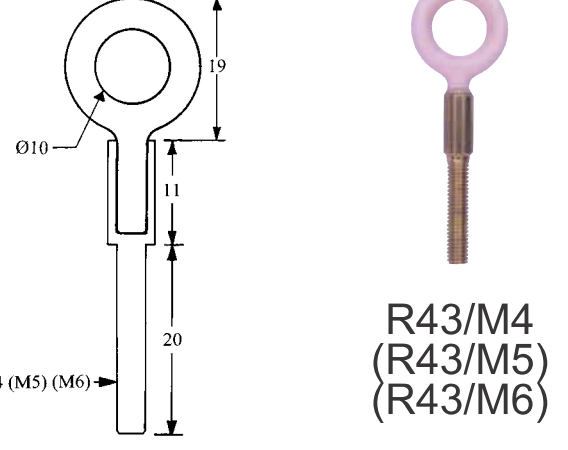
Right hand also available



Technical drawing of a pin with a hook-shaped head. Dimensions: head diameter  $\varnothing 6$ , head height 15, distance from head to collar 28, collar height 24, collar diameter  $\varnothing 10$ , and total length 24. Thread option: M6.

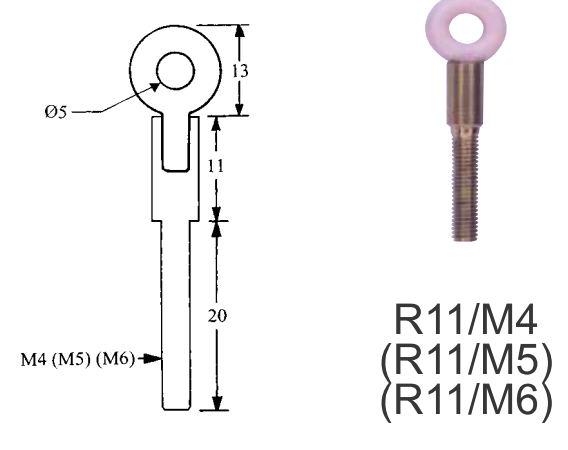
**D18L/M6**

Right hand also available



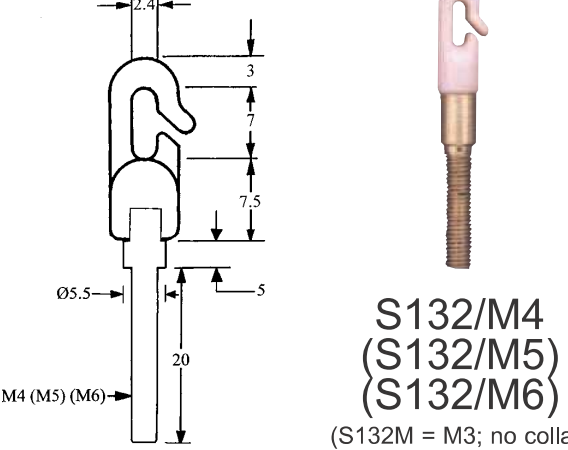
Technical drawing of a pin with a ring-shaped head. Dimensions: head diameter  $\varnothing 10$ , head height 19, distance from head to collar 11, collar height 4, collar diameter  $\varnothing 8$ , and total length 20. Thread options: M4 (M5) (M6).

**R43/M4**  
(R43/M5)  
(R43/M6)



Technical drawing of a pin with a ring-shaped head. Dimensions: head diameter  $\varnothing 5$ , head height 13, distance from head to collar 11, collar height 4, collar diameter  $\varnothing 4$ , and total length 20. Thread options: M4 (M5) (M6).

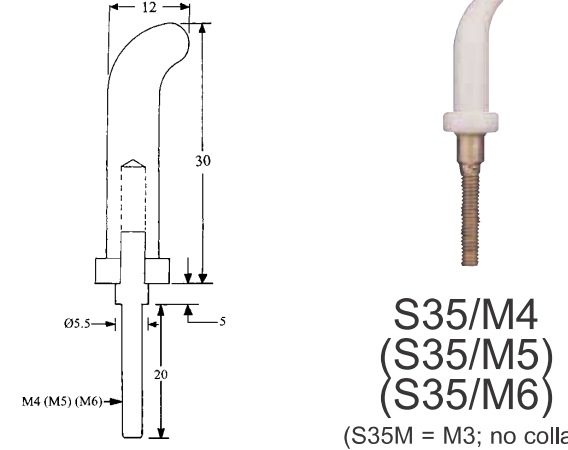
**R11/M4**  
(R11/M5)  
(R11/M6)



Technical drawing of a pin with a hook-shaped head. Dimensions: head width 2.4, head height 3, distance from head to collar 7, collar height 7.5, collar diameter  $\varnothing 5.5$ , collar width 5, and total length 20. Thread options: M4 (M5) (M6).

**S132/M4**  
(S132/M5)  
(S132/M6)

(S132M = M3; no collar)



Technical drawing of a pin with a hook-shaped head. Dimensions: head width 12, head height 30, distance from head to collar 20, collar diameter  $\varnothing 5.5$ , collar width 5, and total length 20. Thread options: M4 (M5) (M6).

**S35/M4**  
(S35/M5)  
(S35/M6)

(S35M = M3; no collar)

**A62/L2**

also available in PCS

**A62/L3**

also available in PCS

**A63/K18**

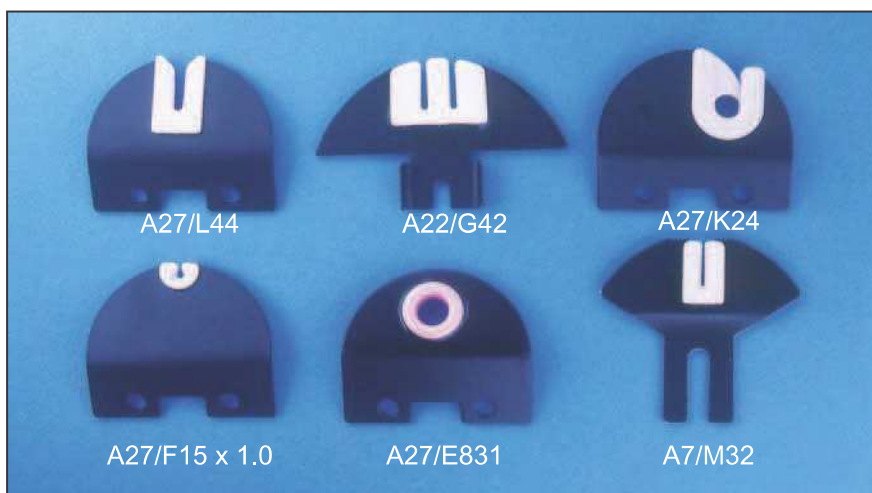
also available in PCS

**A64/K18**

also available in PCS

**X27**

**X28**



Click on page number to go there

A21/E088	60
A21/K18	60
A22/G42	62
A27/E831	62
A27/F15 x 1.0	62
A27/K24	62
A27/L44	62
A62/L2	62
A62/L3	62
A63/K18	62
A64/K18	62
A7/M32	62
A71 x 2	60
A71 x 3	60
A71 x 4	60
A71 x 5	60
ABR8	56
ABR9	56
ABR10	56
ABR12	56
ABR13	56
ABR20	56
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