

**STURMEY**  
**ARCHER**

MASTER CATALOGUE

# SPARES



# LIST

New Prices as from 1st. March, 1959

Old Part Number	New Part Number	Price	Old Part Number	New Part Number	Price	Old Part Number	New Part Number	Price	Old Part Number	New Part Number	Price	Old Part Number	New Part Number	Price
BC1F		9s. 5d.	GL229EZ		3s. 2d.	GL570	3490570	2d.	K105AZ	3730105	1s. 9d.	K411	3610411	1d.
BC1R		10s. 4d.	GL229HZ		5s. 0d.	GL572	3490572	1s. 3d.	K119	3610119	1s. 0d.	K412	3610412	1d.
BC1AR		10s. 4d.	GL234		6d.	GL574	3490574	½d.	K120	3610120	4d.	K413	3610413	4d.
BC2	3960208	5s. 9d.	GL234A		6d.	GL592A	3500592	1s. 0d.	K124Z		11d.	K414	3610414	2d.
BC3BR	3960209	9s. 4d.	GL235		6d.	GL596	3490596	2d.	K136	3610136	4s. 4d.	K415	3610415	9s. 9d.
BC3BL	3960210	9s. 4d.	GL237		6d.	GL597	3490597	5d.	K139	3610139	2s. 0d.	K416	3610416	2s. 3d.
BC3CR	3960211	9s. 4d.	GL241	3490241	1½d.	GL598	3490598	8d.	K140	3610140	7d.	K417	3610417	2½d.
BC3CL	3960212	9s. 4d.	GL316	3490316	doz. 1s. 3d.	GL599	3490599	8d.	K141	3610141	2s. 3d.	K418	3610418	8s. 3d.
GA241A	3960293	8s. 0d.	GL328	3490328	doz. 1s. 3d.	GL603AZ	3560603	15s. 6d.	K141Z	3720141	5s. 6d.	K418A	3620418	8s. 3d.
GA244B	3910251	8s. 0d.	GL328A	3500328	doz. 1s. 3d.	GL609	3490609	6½d.	K143	3610143	7d.	K425	3610425	3d.
GA246A	3910261	8s. 0d.	GL329	3490329	doz. 1s. 3d.	GL610	3490610	1d.	K158Z	3720158	9s. 3d.	K426	3610426	2d.
GA393	3960290	8s. 9d.	GL333	3490333	doz. 9d.	GL611	3490611	3s. 0d.	K159	3610159	2d.	K427AZ	3730427	1s. 9d.
GCI		8s. 9d.	GL343A	3500343	17s. 6d.	GL612	3490612	3d.	K160AZ	3730160	4s. 3d.	K428	3610428	3d.
GC3B		13s. 5d.	GL345Z	3550345	15s. 0d.	GL612A	3500612	3½d.	K162Z	3720162	1s. 7d.	K452	3610452	1s. 7d.
GC4A		13s. 5d.	GL345AZ	3560345	15s. 0d.	GL613	3490613	1½d.	K163	3610163	5d.	K456	3610456	10d.
GD431		4s. 1d.	GL347	3490347	doz. 1s. 3d.	GL618	3490618	13s. 0d.	K166	3610166	3½d.	K456A	3620456	11d.
GD433		5s. 0d.	GL349	3490349	1d.	GL618A	3500618	13s. 0d.	K167	3610167	6d.	K457AZ	3730457	4s. 3d.
GD433A		5s. 0d.	GL401SZ	3580401	4s. 0d.	GL621	3490621	1s. 1d.	K168	3610168	2d.	K458AZ	3730458	9s. 3d.
GD726	3340726	1s. 9d.	GL402	3490402	3s. 9d.	GL621A	3500621	1s. 1d.	K171	3610171	1s. 0d.	K458ZA	3750458	9s. 3d.
GD727	3340727	1s. 9d.	GL405B	3510405	doz. 1s. 3d.	GL623	3490623	4½d.	K172	3610172	1d.	K459A	3620459	2d.
GD728	3340728	2s. 8d.	GL430	3490430	1s. 3d.	GL624	3490624	13s. 0d.	K173A	3620173	doz. 3d.	K460AZ	3730460	4s. 3d.
GD729	3340729	1s. 9d.	GL431	3490431	7½d.	GL624A	3500624	13s. 0d.	K175	3610175	2d.	K462	3610462	6s. 0d.
GD1242		1s. 10d.	GL432	3490432	doz. 1s. 3d.	GL626	3490626	1s. 3d.	K206	3610206	2d.	K463	3610463	2½d.
GD1243		2s. 3d.	GL448	3490448	8d.	GL653	3490653	2½d.	K215	3610215	2s. 0d.	K464	3610464	2s. 0d.
GD1243A		2s. 3d.	GL456Z	3550456	2s. 0d.	GL654	3490654	1d.	K216	3610216	2s. 0d.	K465	3610465	2s. 0d.
GD1244		3s. 2d.	GL458AZ	3560458	3s. 7d.	GL655	3490655	8d.	K217	3610217	2s. 0d.	K466	3610466	2s. 0d.
GD1244A		3s. 2d.	GL469	3490469	doz. 1s. 3d.	GL658Z	3550658	2s. 5d.	K218	3610218	2s. 0d.	K467	3610467	2s. 0d.
GD1246		2s. 11d.	GL471	3490471	8d.	K16	3610016	11d.	K227	3610227	1½d.	K468	3610468	2s. 0d.
GD1246A		2s. 11d.	GL474	3490474	8d.	K47A	3620047	2d.	K228	3610228	5s. 0d.	K468A	3620468	2s. 0d.
GD1247		5s. 0d.	GL483	3490483	7d.	K48	3610048	1½d.	K229	3610229	3d.	K469	3610469	2s. 0d.
GD1247A		5s. 0d.	GL487B	3510487	6d.	K52Z	3720052	6s. 0d.	K230Z	3720230	11d.	K469A	3620469	2s. 0d.
GD1248		10d.	GL490A	3500490	1½d.	K52AZ	3730052	6s. 0d.	K360	3610360	2d.	K470	3610470	2s. 0d.
GD1252F		15s. 9d.	GL540	3490540	8d.	K55Z	3720055	1s. 7d.	K401	3610401	7s. 6d.	K472	3610472	2s. 0d.
GD1252R		15s. 9d.	GL541	3490541	1d.	K58	3610058	1d.	K401A	3620401	7s. 6d.	K481	3610481	5s. 9d.
GD1372	3341372	doz. 8d.	GL554A	3500554	1s. 4d.	K60	3610060	5s. 0d.	K402	3610402	3d.	K481A	3620481	5s. 9d.
GD1373	3341373	doz. 4d.	GL555	3490555	8d.	K60A	3620060	5s. 0d.	K403	3610403	9s. 9d.	K482A	3620482	5s. 3d.
GL202C	3520202	2d.	GL556ZR	3560564	3s. 7d.	K62	3610062	3d.	K404	3610404	10s. 0d.	K483A	3620483	3½d.
GL202Z	3550202	6d.	GL556ZS	3550564	3s. 7d.	K63	3610063	2½d.	K405	3610405	2s. 3d.	K484	3610484	5s. 3d.
GL228	3490228	8d.	GL566Z	3550566	4s. 0d.	K64	3610064	½d.	K406	3610406	9d.	K485Z	3720485	6s. 0d.
GL229Z		1s. 10d.	GL567	3490567	3s. 9d.	K67Z	3720067	7d.	K408	3610408	2s. 3d.	K487AZ	3730487	5s. 3d.
GL229BZ		2s. 3d.	GL568	3490568	1s. 2d.	K74	3610074	1½d.	K409	3610409	1s. 5d.	K488A	3620488	5s. 3d.
GL229CZ		2s. 11d.	GL569	3490569	4½d.	K75	3610075	½d.	K410B	3960358	set 6d.	K489A	3620489	6s. 6d.

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K490	3610490	5s. 9d.	K710A	3620710	12s. 0d.	L8A	3770008	4½d.	LB324	3840324	1s. 1d.	S433	2920433	½d.
K491	3610491	2s. 6d.	K712	3610712	9d.	L9	3760009	2s. 3d.	LB325	3840325	7d.	S443	2920443	1d.
K492Z	3720492	17s. 0d.	K713Z	3720713	1s. 11d.	L10	3760010	5s. 0d.	LB326AZ	3880326	1s. 7d.	S535	2920535	1½d.
K492AZ	3730492	17s. 0d.	K713ZA	3750713	1s. 11d.	L11	3760011	2s. 9d.	LB326BZ	3890326	1s. 7d.	S581A	2930581	3d.
K494	3610494	3s. 7d.	K714	3610714	1d.	L12	3760012	2d.	LB327A	3850327	3d.	S583	2920583	3d.
K495	3610495	3s. 4d.	K715	3610715	8s. 3d.	L13	3760013	1½d.	LB329	3840329	1s. 7d.	S584A	2930584	1d.
K496	3610496	4d.	K716	3610716	9d.	L14	3760014	4s. 6d.	LB330		6½d.	S625	3910275	17s. 6d.
K498	3610498	2d.	K718Z	3720718	19s. 0d.	L15	3760015	3d.	LB330A		6½d.	S637	2920637	3d.
K504Z	3720504	1s. 11d.	K719	3610719	2s. 0d.	L16	3760016	5s. 3d.	LB331	3840331	3d.	S638	3930630	3d.
K504AZ	3730504	1s. 11d.	K720	3610720	9s. 0d.	L17	3760017	2d.	LB332	3840332	3d.	S712	2920712	2d.
K505A	3620505	1s. 9d.	K722	3610722	4d.	L18	3760018	7s. 6d.	LB334	3840334	7½d.	X4	3930004	5d.
K506Z	3720506	1s. 9d.	K731A	3620731	1½d.	L18A	3770018	7s. 6d.	LB336	3840336	1½d.	X8	3930008	1d.
K508	3610508	1s. 2d.	K736Z	3720736	1s. 3d.	L19	3760019	4s. 8d.	LB337	3840337	7½d.	X42	3930042	1d.
K509	3610509	1½d.	K738	3610738	2d.	L20	3760020	9d.	LB338	3840338	1d.	X42A	3940042	2d.
K510	3610510	3d.	K739Z		2s. 8d.	L21Z	3820021	1s. 11d.	LB350A	3850350	3d.	X44B	3950044	4d.
K511A	3620511	6s. 0d.	K740AZ	3730740	1s. 0d.	L22	3760022	3d.	LB351Z	3870351	17s. 3d.	X48C	3960284	2s. 0d.
K511B	3630511	6s. 0d.	K744	3610744	3½d.	L23	3760023	3d.	LB352Z	3870352	17s. 3d.	X48D	3960285	2s. 0d.
K512	3610512	5½d.	K745Z	3720745	1s. 0d.	L24A	3770024	6d.	LB357AZ	3880357	1s. 9d.	X48E	3960286	2s. 0d.
K513	3610513	5d.	K745AZ	3730745	1s. 0d.	L52	3760052	2s. 0d.	LB358Z	3870358	1s. 9d.	X48F	3960287	2s. 0d.
K515	3610515	6s. 10d.	K745BZ	3740745	1s. 0d.	L53Z	3820053	1s. 3d.	LB401Z	3870401	15s. 0d.	X49	3930049	2½d.
K516	3610516	1½d.	K747	3610747	2s. 3d.	L55	3760055	4d.	LB402Z	3870402	15s. 0d.	X61	3930061	5½d.
K517	3610517	5s. 3d.	K804	3610804	9d.	L56	3760056	3d.	LB404	3840404	1d.	X62	3930062	½d.
K518	3610518	8s. 3d.	K804A	3620804	9d.	L120Z	3820120	1s. 11d.	LB405	3840405	1½d.	X69	3930069	2d.
K518A	3620518	8s. 3d.	K805A	3620805	2s. 11d.	L120AZ	3830120	1s. 11d.	LB415AZ	3880415	4s. 9d.	X69B	3950069	2d.
K519	3610519	1s. 3d.	K806	3610806	10d.	L201	3760201	5s. 9d.	LB416AZ	3880416	4s. 9d.	X78	3930078	5½d.
K520	3610520	4d.	K807Z	3720807	1s. 11d.	L201A	3770201	5s. 9d.	LB426	3840426	1s. 1d.	X78Z	3970078	1s. 8d.
K521	3610521	1½d.	K807ZA	3750807	1s. 11d.	LB111Z		1s. 0d.	LB426B	3860426	1s. 1d.	X78BZ	3990078	1s. 8d.
K526	3610526	4½d.	K808	3610808	3s. 10d.	LB112Z		1s. 0d.	M6D		3s. 9d.	X79	3930079	1d.
K526A	3620526	4½d.	K809A	3620809	2s. 3d.	LB126Z	3960386	1s. 0d.	M6R		3s. 9d.	X80	3930080	1d.
K527	3610527	9d.	K810B	3960359	6d.	LB127	3840127	4d.	M6S		3s. 9d.	X81Z to 36"		1s. 6d.
K528A	3620528	8d.	K811	3610811	1d.	LB130Z		1s. 0d.	M6T		3s. 9d.	X81Z to 58"		1s. 9d.
K529	3610529	1d.	K812	3610812	2½d.	LB145Z		1s. 0d.	N24	3910024	2½d.	X81Z to 78"		2s. 3d.
K530A	3620530	2d.	K813B*			LB149	3840149	1s. 0d.	N43Z		1s. 0d.	X90	3930090	1½d.
K530B*			K815A	3620815	4s. 5d.	LB150	3840150	1s. 0d.	N120	3910120	2d.	X109	3930109	3d.
K601Z	3720601	5s. 9d.	K816A	3620816	9d.	LB155	3840155	3d.	N190	3910190	1s. 3d.	X109B	3950109	3d.
K601AZ	3730601	5s. 9d.	K817	3610817	8s. 4d.	LB155A	3850155	3d.	N200	3910200	1s. 3d.	X110	3930110	5½d.
K602	3610602	13s. 0d.	K818	3610818	12s. 0d.	LB156	3840156	1s. 3d.	P70	2660070	½d.	X110B	3950110	5½d.
K602A	3620602	13s. 0d.	K818A	3620818	12s. 0d.	LB156A	3850156	1s. 3d.	P1056	2661056	3d.	X111	3930111	2½d.
K603	3610603	6s. 9d.	K820AZ	3730820	8s. 3d.	LB159	3840159	½d.	R62	3910273	17s. 6d.	X111A	3940111	2½d.
K604	3610604	5s. 3d.	K821	3610821	3s. 10d.	LB162	3840162	4d.	R625	3910272	17s. 6d.	<b>TOOLS</b>		
K604A	3620604	5s. 3d.	K822B	3630822	6½d.	LB166	3840166	1s. 0d.	RL6D		5s. 6d.	DD911	4542195	
K605	3610605	1½d.	K824	3610824	8s. 3d.	LB167	3840167	6d.	RL6R		5s. 6d.	DD1145	4542199	
K652	3610652	8s. 3d.	K824A	3620824	8s. 3d.	LB304	3840404	3½d.	RL6S		5s. 6d.	DD6019	4542190	
K652A	3620652	8s. 3d.	K831	3610831	9s. 6d.	LB309		1s. 8d.	RL6T		5s. 6d.	DD6839	4542191	
K653	3610653	9s. 6d.	L2Z	3820002	5s. 6d.	LB309A		1s. 8d.	S35	2920035	1d.	DD10565	4542196	
K654	3610654	2s. 3d.	L5	3760005	8½d.	LB320	3840320	10d.	S62	3910276	17s. 6d.	DD11182	4542197	
K658A	3620658	6s. 0d.	L6	3760006	4½d.	LB321	3840321	2d.	S98	2920098	1d.	DD12418	3960288	
K671	3610671	6s. 3d.	L7	3760007	9d.	LB322	3840322	2½d.	S154	2920154	4d.	DD13517	3960289	
K707	3610707	doz. 1s. 3d.	L8	3760008	4½d.	LB323	3840323	2d.	S386	2920386	1d.	GD495	3340495	
K710	3610710	12s. 0d.												

\* See K410B and K810B

Supplied for Trade  
use at special net  
prices.

RALEIGH INDUSTRIES LIMITED

Revised Prices for SPARE PARTS for August 1957

Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each
1068	6d.	B345	3/8	B512	19/-	B581 Colour	42/3	B665	68/6	FA176 (all mks)	54/9	FA297 (all mks.) Col.	189/6
1068B	6d.	B346	3/8	B512FL	20/-	B582 Colour	42/3	B666	68/6	FA176RL	55/9	FA299 (all mks.)	66/6
1070	1 1/2d.	B346D	3/8	B513	21/-	B592A White	3/3	B669	10/6	FA176/FL (RW & H)	73/3	FA299A (all mks.)	66/6
328 gr.	1/4	B347	5/3	B513A	23/3	B593A White	4/9	B672	64/-	FA176B (all mks.)	54/9	FA300 (all mks.)	68/6
328A gr.	2/-	B347/H	5/3	B513A/FL	24/4	B594	4/3	B693A	24/3	FA176/Hy. (all mks.)	55/9	FA300A (all mks.)	68/6
329 gr.	2/10	B348	5/3	B513FL	22/1	B594A/DT	4/3	B694A	24/3	FA176/Hy./RL	57/-	FA301 (all mks.)	55/3
330 gr.	4/6	B348/RW	5/3	B520AC	4/9	B595	3/3	B695A	24/3	FA176/Hy./FL (RW & H)	74/3	FA302 (all mks.)	59/6
118C Blk.	9/3	B348/H	5/3	B520AC/RW	4/9	B595A/DT	3/3	B717	4/6	FA176/DTT (all mks.)	58/-	FA303 (all mks.)	59/6
118D	7/9	B348/TH	5/3	B520AC/H	4/9	B596	18/-	B719	5/3	FA176/DTT/RL	59/-	FA303A (all mks.)	59/6
118E	11/9	B348D	5/3	B520AC/TH	4/9	B597	18/-	B720	10/-	FA176/DTT/Hy. (all mks.)	59/-	FA303B (all mks.)	59/6
118/28	12/-	B348D/RW	5/3	B520CC	5/3	B601	30/6	B721	12/-	FA176/DTT/Hy./RL	60/-	FA303C (all mks.)	59/6
118/28SS	31/6	B348D/H	5/3	B520CC/RW	5/3	B603	25/9	B722	12/10	FA197 (all mks.)	59/-	FA304 (all mks.)	63/3
118/26	12/-	B348D/TH	5/3	B520CC/H	5/3	B605A	3/8	B728	21/-	FA197/RL	60/-	FA304A (all mks.)	63/3
118/24	12/-	B354A	4/6	B520CC/TH	5/3	B606	15/-	B729A/DT	4/-	FA197/FL (RW & H)	76/6	FA305 (all mks.) Col.	115/9
118/22	12/-	B354A/RW	4/6	B520GC (all mks)	4/6	B608 Colour*	52/6	B730A/DT	5/6	FA197B (all mks.)	59/-	FA306 (all mks.)	121/-
118R/28	12/-	B354A/H	4/6	B520HC (all mks)	8/-	B608 Colour	26/4	B732	15/-	FA241 (all mks.)	72/6	FA307 (all mks.)	205/3
118R/28SS	31/6	B354A/TH	4/6	B520KC (all mks)	4/6	B609 Colour*	52/6	B733	3/3	FA266 (all mks.)	69/6	FA308 (all mks.)	59/6
118R/26	12/-	B373	32/9	B520LC (all mks)	4/6	B609 Colour	26/4	B733A/DT	3/3	FA266/RL	70/6	FA308A (all mks.)	59/6
118R/24	12/-	B377	3/5	B520MC (all mks)	4/6	B610 Colour*	52/6	B739A/DT	3/3	FA266/FL (RW & H)	88/-	FA309	225/-
118R/22	12/-	B393	32/9	B520NC (all mks)	4/6	B610 Colour	26/4	B740A/DT	4/3	FA266/531 (TH.) Colour	82/6	FA310	52/6
A8	3/2	B393A	33/3	B521	21/-	B611	15/-	BM224 (all mks.)	8/6	FA266A (all mks.)	69/6	FA311	63/-
A16	3/2	B403	19/-	B521A	23/3	B621	32/9	EA118	7/11	FA266A/RL	70/6	FA312	110/-
A16GC	3/2	B403RL	28/6	B521A/FL	24/4	B621A	33/3	EA119	7/11	FA266A/FL (RW & H)	88/-	FA313	110/-
A16N	5/-	B405	21/-	B521FL	22/1	B623	21/-	EA145	7/11	FA267 (all mks.)	71/-	FA314	65/-
A19	3/-	B405A	23/3	B534	33/8	B624	19/-	EA152	7/11	FA267/RL	72/-	F/RP 14	25/9
B268	11/7	B405A/RL	32/9	B534A	34/3	B629	32/9	EA154	7/11	FA267/FL (RW & H)	89/6	F/RP14A	28/9
B294A	4/3	B405RL	30/6	B539A	6/7	B629A	33/3	EA155	7/6	FA267/531 (TH.)	83/-	F/RP14C	28/3
B294A/RW	4/3	B406	19/-	B542 Colour	16/7	B629B	33/9	EA156	7/6	FA267A (all mks.)	71/-	F/RP14SS	50/3
B294A/H	4/3	B407	19/-	B543B Colour	3/6	B630	10/6	F4J	9/-	FA267A/RL	72/-	F/RP24	25/9
B295	3/2	B410	25/3	B543C Colour	3/6	B631	24/3	F7	8/6	FA267A/FL (RW & H)	89/6	FW2/26	25/9
B301	19/3	B410FL	26/4	B544	5/9	B632	19/-	F8	8/6	FA276	64/9	FW2/26A	28/9
B301/RW	19/3	B427A White & Blk.	4/6	B552	3/2	B633	18/-	F9	8/6	FA282A (all mks.)	63/9	FW2/26C	28/3
B301/H	19/3	B428A White & Blk.	5/6	B553	4/3	B634	18/-	F76C	12/8	FA284 (all mks.)	52/6	FW2/28	25/9
B301/TH	19/3	B428A/RW	5/6	B553/RW	4/3	B639	29/6	F76/P1047A	12/8	FA285 (all mks.)	56/6	FW2/28A	28/9
B313	19/3	B428A/H	5/6	B553/H	4/3	B640	13/-	F77	9/-	FA287 (all mks.)	50/-	FW2/28C	28/3
B313FL	24/3	B428A/TH	5/6	B555	17/11	B645	19/-	F88	9/6	FA288 (all mks.)	53/9	FW2/28SS	50/3
B316B	25/3	B467C	52/6	B556	17/11	B646	19/-	F96	18/-	FA289	237/-	FW3B	25/3
B321A	4/3	B468C	21/-	B559B	10/-	B648	4/3	F97	30/6	FA290 (all mks.)	59/-	FW4B	25/3
B322	21/-	B476	19/-	B560 Colour*	68/6	B648A/DT	4/3	F317B	12/-	FA290A (all mks.)	59/-	FW5	25/9
B324C	52/6	B484A	3/6	B560 Colour	58/-	B650	3/3	F317C	12/-	FA290/RL	60/-	FW5/17	25/9
B338	19/3	B485A	5/1	B562C	4/3	B650A/DT	3/3	F320	12/-	FA290A/RL	60/-	FW13	25/9
B338/RW	19/3	B485A/RW	5/1	B565	19/-	B659	22/3	F324	25/6	FA290/FL (RW & H)	77/6	FW13A	28/9
B338/H	19/3	B485A/H	5/1	B567	21/6	B660	22/3	F325	7/9	FA290A/FL (RW & H)	77/6	FW13C	28/3
B338/TH	19/3	B485A/TH	5/1	B567FL	22/6	B661	22/3	F329	11/9	FA294 (all mks.) Colour	40/6	FW14	25/9
B343A	5/3	B508	21/7	B577A	32/6	B662	22/3	F330	13/9	FA295 (all mks.)	48/-	FW14A	28/9
B344A	5/6	B508RL	31/-	B580 Colour	42/3	B664 Colour	68/6	F331	12/-	FA296 (all mks.)	52/-	FW14C	28/3

\* with Chrome Ends

Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each
FW32	25/9	HC31A	8 1/2 d.	M103	8 1/2 d.	M260	5 1/2 d.	M727	1 d.	P28	2 d.	P1045	4 1/2 d.	P1234A	3 1/2 d.
FW32A	28/9	HC32	8 1/2 d.	M103R	8 1/2 d.	M264	1/6	M728	3 1/2 d.	P70	1/2 d.	P1048	12/6	P1234B	3 1/2 d.
FW32C	28/3	HC32A	8 1/2 d.	M103H	8 1/2 d.	M265	1/7	M737	4 1/2 d.	P74/F4GCC	14/6	P1048A	12/6	P1235	1/2 d.
FW33	27/-	HC33	8 1/2 d.	M103RI	8 1/2 d.	M266	1/8	M828	5/9	P74/F23	15/-	P1049C	2/1	P1262	1/3
FW37	44/9	HS6	7 1/2 d.	M105 doz.	3 d.	M270 gr.	16/-	M828A	5/9	P74/F24	15/-	P1052	4 1/2 d.	P1262C	2/-
FW38	18/-	HS6C	2/6	M106 gr.	1/4	M271 gr.	6/6	M828B	5/9	P89A	1/2 d.	P1052C	9 d.	P1263	1/1
FW39	18/-	HS8	7 1/2 d.	M124C Blk.	5/6	M274T pr.	6/8	M828C	5/9	P95	1/8	P1053A	2/3	P1263A	1/1
FW40	21/-	HS8C	2/6	M124C Green	5/11	M292A	6 1/2 d.	M828D	5/9	P159	2 1/2 d.	P1053AC/F	4/3	P1263C	1/4
FW42	25/3	HS22	7 1/2 d.	M127A	5 d.	M292B	6 1/2 d.	M829A	2/6	P159A	2 1/2 d.	P1053AC/R..	4/3	P1263AC	1/4
FW43	28/-	HS22CC	2/5	M128A	5 d.	M295	1/6	M829B	3/2	P160	2 1/2 d.	P1055B	1/9	P1264C	4 1/2 d.
FW43A	30/9	HS24	7 1/2 d.	M148	1 1/2 d.	M337	7/-	M829C	3/8	P172	1 d.	P1055C	1/9	P1274	4 1/2 d.
FW44	25/9	HS24C	2/5	M150AC	13/9	M338	7/-	M839	3/2	P172A	1 d.	P1055D	1/9	P1288/532	1/4
GA395A	20/-	HS32	8 1/2 d.	M150BC	13/9	M341	7/2	M839A	3/5	P287	7 1/2 d.	P1055E	1/9	P1288/532A	1/4 1/2
GA420	6/-	HS32A	8 1/2 d.	M150CC	13/9	M355	2 d.	M841	2/1	P312	1/5	P1056 doz.	3 d.	P1294	1 d.
GD727X	1/6	HS32AC	2/9	M150EC	14/6	M367	3/8	M843	3/-	P381	3 1/2 d.	P1075C	1/1	P1312	10 1/2 d.
GD729X	1/6	HS32C	2/9	M150HC	14/11	M368	3/2	M844	3/-	P384A	2 1/2 d.	P1076	1/2 d.	P1313	10 1/2 d.
GL487B	5 1/2 d.	HS33	8 1/2 d.	M150KC	14/3	M378	3 1/2 d.	M863 pr.	3/5	P407	6 1/2 d.	P1092 doz.	3 d.	P1315 doz.	3 d.
GL540	7 1/2 d.	HS33C	2/8 1/2	M150MC	15/3	M403	1/9	M896 Grey pr.	3/2	P408	1/4	P1102	1/2 d.	P1333	2 d.
GL542Z	8/-	HS36	7 1/2 d.	M150PC	15/3	M405 Old Pat.	1/8	M896A Tan pr.	3/2	P474C	11 1/2 d.	P1118	11 1/2 d.	P1352A	7 1/2 d.
GL543Z	9/3	HS36C	2/5	M150RC	15/3	M405	1/8	M929	2/1	P524 gr.	8 d.	P1118A	11 1/2 d.	P1353	4 1/2 d.
GL701	2/3	HS37	9 1/2 d.	M150SC	16/-	M417	1/2 d.	M930	3/-	P556	2 1/2 d.	P1118C	1/2	P1353A	4 1/2 d.
H39	6/7	HS37C	2/10	M150TC	15/10	M430 pr.	1/1	M931	3/-	P568	4 1/2 d.	P1118AC	1/2	P1367A	7 1/2 d.
H39A	9/6	HS38	7 1/2 d.	M150VC	16/6	M431	7/4	M932	1/1	P568A	4 1/2 d.	P1122 doz.	3 d.	P1369	1 d.
H39A/J	10/-	HS38C	2/9	M194A	2/6	M432	12/-	M933A	2 d.	P568B	9 d.	P1124	1/6	P1379	9 1/2 d.
H39B	10/3	HS39	9 1/2 d.	M194B	3/2	M439	5 d.	M933B	6 1/2 d.	P568CC	9 d.	P1124C	2/1	P1379A	9 1/2 d.
H39C	9/9	HS39C	2/10	M194C	3/8	M457	1 d.	M934	4 1/2 d.	P592	2 1/2 d.	P1124C/J	2/2	P1379C	1/1
H39G	9/9	HS40	8 1/2 d.	M199C Blk.	1/4	M460A	3/-	M937	7/-	P593	3 1/2 d.	P1124C/LG	2/1	P1379AC	1/1
H39H	9/9	HS40C	2/9	M199C Green	3/9	M460B	3/-	M937R	7/-	P599	4 d.	P1128C	3/2	P1390AC	9 1/2 d.
H39J	9/9	HS41	9 1/2 d.	M206	9 d.	M460E	3/-	M937H	7/-	P623/F23	17/6	P1128HC	2/11	P1390CC	9 1/2 d.
H40	4/9	HS42	8 1/2 d.	M206R	9 d.	M461A	1/10	M938	6/11	P623/F24	17/6	P1130/532	1/4	P1390D	9 d.
H40A	7/11	HS42C	2/7	M206H	9 d.	M463	19/6	M939	1/-	P623/F87	17/11	P1131/532	1/4	P1390F	9 d.
H40B	7/11	HS42A	9 1/2 d.	M206RI	9 d.	M465	6 1/2 d.	M982F	10 d.	P707	6 1/2 d.	P1131/532A	1/4 1/2	P1401	1/10
H40C	8/2	HS42AC	2/10	M208	1/2 d.	M471 pr.	27/6	M982R	10 d.	P758	1/2	P1135 doz.	3 d.	P1402	1/10
H40D	7/11	K36	8 1/2 d.	M222 pr.	10/-	M474	6/4	M986A	2/6	P830	1/3	P1147C	9 1/2 d.	P1403	1/10
H41	6/10	K138A	1 d.	M223 pr.	10/6	M498 pr.	11/6	M986B	3/8	P831	1/3	P1151	5 d.	P1404	1/10
H41A	10/6	LB161Z	1/7	M223R pr.	10/6	M499 pr.	2/6	M999A	6/-	P832	2/7 1/2	P1158AC	1/5	P1425	1/1
H42	6/-	LB162	4 1/2 d.	M223H pr.	10/6	M502 pr.	2/6	M999B	6/-	P880C	1/7	P1171A	4 1/2 d.	P1425A	1/1
H42A	9/3	LB167	5 d.	M223RI pr.	10/6	M502A pr.	2/4	M1006A	3/2	P880H	1/7	P1172A	4 1/2 d.	P1425C	1/4
H42B	8/6	LB304	3 d.	M224 pr.	10/6	M526 gr.	5/9	M1006B	3/3	P891	4 1/2 d.	P1196/F23	14/3	P1425AC	1/4
H42C	9/3	LB305Z	1/7	M224R pr.	10/6	M526A gr.	5/9	M1007A	2/6	P891A	4 1/2 d.	P1196/F24	14/3	P1440/F23	14/6
H58	3/3	LB307AZ	1/7	M224H pr.	10/6	M543F	9 1/2 d.	M1007B	3/8	P891B	11 1/2 d.	P1197/F23	14/6	P1440/F24	14/6
H58A	5/9	LB308Z	1/7	M224RI pr.	10/6	M543R	9 1/2 d.	M1008A	3/2	P891CC	11 1/2 d.	P1197/F24	14/6	P1440/F76	14/9
H59	3/-	LB324	1/-	M245	7 1/2 d.	M576A	11 d.	M1008B	3/3	P922	3 1/2 d.	P1197/F76	14/9	P1440/F87	15/-
H60	3/-	LB325	6 d.	M246	8 1/2 d.	M576B	11 d.	M1036	1 d.	P973/F23	14/6	P1197/F87	15/-	P1441/F23	14/9
H61	6/6	LB350A	2 d.	M246R	8 1/2 d.	M577	9 1/2 d.	M1047	3 d.	P973/F24	14/6	P1198/F23	14/9	P1441/F24	14/9
H61A	10/6	M39	8 1/2 d.	M246H	8 1/2 d.	M586	4 d.	M1048	3 d.	P973/F76	14/9	P1198/F24	14/9	P1441/F76	15/3
HC21	8 1/2 d.	M40	9 1/2 d.	M246RI	8 1/2 d.	M588A	1/4	M1049	4 1/2 d.	P973/F87	15/-	P1198/F76	15/3	P1442	1/7
HC21A	8 1/2 d.	M61	3 1/2 d.	M247 pr.	10/6	M603C	7/11	M1050	3 d.	P975/F23	14/9	P1205	2 1/2 d.	P1444	6 1/2 d.
HC22	8 1/2 d.	M61A	3 1/2 d.	M247R pr.	10/6	M603D	12/8	M1051	4 1/2 d.	P975/F24	14/9	P1208	11 1/2 d.	P1445	3 1/2 d.
HC22A	8 1/2 d.	M68	2 1/2 d.	M247H pr.	10/6	M638 pr.	3/2	M1052	3 d.	P975/F76	15/3	P1208A	11 1/2 d.	P1448	1/2 d.
HC25A	8 d.	M68A	5 1/2 d.	M247RI pr.	10/6	M647 pr.	2/5	M1053	4 1/2 d.	P1018C	1/1	P1216	3 d.	P1460	11 1/2 d.
HC31	8 1/2 d.	M102	2 1/2 d.	M255	5/6	M725	1 d.	N.G.N.	1/11	P1033C	7 1/2 d.	P1217	4 d.	P1460A	11 1/2 d.

Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each	Part No.	Price Each
P1463	1/1	P1644	11 1/2 d.	R/RP16SS	54/3	S154C/LG	7d.	S569	2 1/2 d.	S670	1/7	S754	1d.	T235/597C/LG	2/5 1/2
P1464	10 1/2 d.	P1646	1d.	R/RP24	28/6	S166	2/2	S569C	4d.	S672A	2/2	S755	6/10	T235/P1117C	2/8 1/2
P1465	2 1/2 d.	P1647	1/2 d.	RW4/26	28/6	S166A	2/2	S574A	9 1/2 d.	S674	1/4	S756	3d.	T235/P1117JC	2/8 1/2
P1466C	2/11	P1647A	1/2 d.	RW4/26A	32/6	S172B	4 1/2 d.	S574B	9 1/2 d.	S674A	1/4	S756C	5d.	T235/P1186C	2/11
P1473	1/2	P1649	1/6	RW4/26C	30/3	S172BC	7d.	S574AC/RW	1/7	S674C	1/10	S757	6/4	T235/P1186C/LG	3/1
P1481	7 1/2 d.	P1658	6 1/2 d.	RW4/28	28/6	S173	2/2	S574AC/H	1/7 1/2	S674AC	1/10	S758	5 1/2 d.	T235/1423C	4/-
P1488	9 1/2 d.	P1659	3 1/2 d.	RW4/28A	32/6	S173A	2/2	S574BC	1/7	S675	1/5	S759	1d.	T235/1703C	4/3
P1489A	10 1/2 d.	P1663C	7d.	RW4/28C	30/3	S179A	1/1	S576	5d.	S675A	1/5	S760	5 1/2 d.	T239A	5 1/2 d.
P1489AC	2/9 1/2	P1663AC	7d.	RW4/28SS	54/3	S193	2d.	S577	8d.	S675C	1/11	S767C	11d.	T275	2/1
P1491	1d.	P1664	1/8	RW4/28H	28/9	S193C	3 1/2 d.	S577C	1/6	S675AC	1/11	S770	3d.	T275A	2/4
P1492	1/2 d.	P1665	1/8	RW4/28HA	33/-	S246	3d.	S579	1 1/2 d.	S676	1/5	S772	2d.	T275B	3/9
P1492A	1/2 d.	P1672	11 1/2 d.	RW4/28HC	30/6	S246BC	5d.	S579C	2 1/2 d.	S676A	1/5	S773	2/2	T352	7/4
P1494	1/6	P1673	11 1/2 d.	RW4/28HSS	54/6	S332A	1 1/2 d.	S580	3 1/2 d.	S676C	1/11	S773A	2/2	T352C	9/1
P1499B	12/8	P1689	1/1	RW5	28/6	S380	5 1/2 d.	S581A	1 1/2 d.	S676AC	1/11	S773C	2/8 1/2	T369	3/9
P1499C	12/11	P1690	9 1/2 d.	RW5/17	28/6	S381	1d.	S583	1 1/2 d.	S677	1/5 1/2	S773AC	2/8 1/2	T370	3/9
P1499D	12/11	P1691	2/1	RW6B	26/6	S386	1 1/2 d.	S583C	2 1/2 d.	S677A	1/5 1/2	S775	1d.	T374	2d.
P1500	5 1/2 d.	P1692	2/1	RW14	29/6	S404	1 1/2 d.	S584A	1d.	S677C	1/11 1/2	S776	2d.	T386	11/3
P1503	5 1/2 d.	P1693	6 1/2 d.	RW14A	33/9	S405	2 1/2 d.	S596	2/6 1/2	S677AC	1/11 1/2	S777A	1/10	T386A	10/3
P1511C	10 1/2 d.	P1694	6 1/2 d.	RW14C	31/3	S415	7 1/2 d.	S596C	2/11	S691A	5 1/2 d.	S778A	5 1/2 d.	T391C	30/-
P1514A	7 1/2 d.	P1695	1d.	RW16	28/6	S417	8 1/2 d.	S601	5d.	S691C	5 1/2 d.	S780	6 1/2 d.	T392C	29/6
P1514B	7 1/2 d.	P1696	5 1/2 d.	RW16A	32/6	S418	9 1/2 d.	S605	2d.	S691D	5 1/2 d.	S780C	9d.	T393C	29/-
P1514C	7 1/2 d.	P1697/F24	14/6	RW16C	30/3	S419	2d.	S606	1 1/2 d.	S691E	5 1/2 d.	S782	4/9	T403	13/8
P1516	1d.	P1698/F23	14/9	RW32	28/6	S420	2d.	S607B	8 1/2 d.	S691F	5 1/2 d.	S782A	4/9	T403A	16/1
P1521 doz.	3d.	P1698/F76	15/3	RW32A	32/6	S427A	3d.	S607BC	1/3	S691G	5 1/2 d.	S782C	5/6	T403C	14/2
P1522	1/2	P1705	1/6	RW32C	30/3	S428	6d.	S607D	9 1/2 d.	S691H	5 1/2 d.	S782AC	5/6	T403AC	17/10
P1523	3 1/2 d.	P1705C	2/3	RW37	48/6	S433	1 1/2 d.	S607DC	1/4	S692	3d.	S783	1d.	T407	3/8
P1529	6 1/2 d.	P1706	1/6	RW38	15/9	S443	1d.	S607E	10d.	S692A	2d.	S784	7 1/2 d.	T413	1/9
P1530	6 1/2 d.	P1706C	2/3	RW39	15/9	S453A	8 1/2 d.	S607EC	1/4 1/2	S693	2/2	S788	4 1/2 d.	T425	7/10
P1542	1/1	P1707	1/6	RW40	19/-	S454	11 1/2 d.	S617	2d.	S693A	2/2	S789	5 1/2 d.	T433	1/9
P1542A	1/1	P1707C	2/3	RW42	27/11	S482	5d.	S622	2 1/2 d.	S695	4d.	S790	2/3	X42	1d.
P1546	1/2 d.	P1708	2/1	RW43	31/-	S502A	3d.	S622C	3 1/2 d.	S695C	9d.	S790A	2/3	X42A	1 1/2 d.
P1552	3 1/2 d.	P1719 doz.	3d.	RW44	30/-	S502B	3d.	S622CC	3 1/2 d.	S705A	3d.	S791	1 1/2 d.	X69	1 1/2 d.
P1554	1d.	P1721	1/-	RW45	28/6	S502AC	4 1/2 d.	S624	2/3	S712	1 1/2 d.	S792	4d.	X69C	3d.
P1556	11 1/2 d.	P1730	1/8	S9	11 1/2 d.	S502BC/RW	4 1/2 d.	S624A	2/3	S725 gr.	7/3	S793	2/2	X69CC	3d.
P1556A	11 1/2 d.	P1731	1/8	S10	11 1/2 d.	S502BC/H	5d.	S626A	3d.	S726 gr.	7/3	S805	1d.	X78	5 1/2 d.
P1558	6/4	P1732	1/8	S15	2d.	S507	4d.	S627	1/2	S731	5 1/2 d.	S808	1/7	X79	1d.
P1563	7 1/2 d.	R317B	12/-	S20AC	6 1/2 d.	S510	3d.	S633	7 1/2 d.	S734	1/1	S812	1/8	X80	1d.
P1568	3 1/2 d.	R317C	12/-	S25	4d.	S523	4d.	S634	1/3 1/2	S735A	1/6	S814	2/4	X90	1d.
P1569C	2/11	R320	12/-	S31	1 1/2 d.	S524	1 1/2 d.	S635	1/2	S740	9 1/2 d.	S815	1d.	X90BC	2 1/2 d.
P1570	4d.	R324	25/6	S32	2 1/2 d.	S525	1 1/2 d.	S636A	1/4	S742	1d.	S816	2/2	Spokes	
P1571C	2/11	R329	11/9	S32A	2 1/2 d.	S525C	3d.	S636B	2/2	S743	1/1	S817	2/2	Spokes	
P1575	1/2	R330	13/9	S32B	2 1/2 d.	S533	3 1/2 d.	S637	2d.	S744	7 1/2 d.	S820	4 1/2 d.	Rustless gr.	6/3
P1575A	1/2	R331	12/-	S32C	6 1/2 d.	S533C	4 1/2 d.	S637C	4d.	S745	6 1/2 d.	S821	1d.	Spokes	
P1575C	1/5	RE232	12/-	S32AC	6 1/2 d.	S535	1d.	S637A	2 1/2 d.	S745C	9d.	S822	3 1/2 d.	Stainless	
P1575AC	1/5	RP118	12/-	S32BC	6 1/2 d.	S535C	1 1/2 d.	S637AC	4 1/2 d.	S746	6 1/2 d.	S823	4 1/2 d.	Steel gr.	21/-
P1594	4 1/2 d.	RP118SS	31/6	S35	1d.	S540A	1 1/2 d.	S638	2d.	S746C	1/2	S824	1d.	Spokes	
P1602	7 1/2 d.	RP118R	12/-	S52A	3 1/2 d.	S540AC	2 1/2 d.	S640A	2 1/2 d.	S747	1d.	S830	6 1/2 d.	Chrome gr.	15/9
P1636	11 1/2 d.	RP118RSS	31/6	S93	1d.	S545	3 1/2 d.	S641	3d.	S748	5d.	T217	3/9	Complete	
P1636A	11 1/2 d.	RP118/24	12/-	S98	1d.	S548	1/1	S641C	4 1/2 d.	S749	1/1	T235/539C	1/8	Fork Lock	9/6
P1638	11 1/2 d.	RP118R/24	12/-	S128B	4 1/2 d.	S549A	1/6	S641CC	4 1/2 d.	S750	1/1	T235/539RC	1/7	Complete	
P1640	11 1/2 d.	R/RP16	28/6	S154	4 1/2 d.	S550	2/1 1/2	S667	1/7	S751	9 1/2 d.	T235/539RJ	1/6	Frame Lock	9/6
P1641C	6 1/2 d.	R/RP16A	32/6	S154C	7d.	S552A	3 1/2 d.	S668	1/7	S752	1/7	T235/597C	2/3 1/2		
P1641AC	6 1/2 d.	R/RP16C	30/3	S154C/J	7 1/2 d.	S562	2d.	S669	1/10	S753	1/1	T235/597C	2/2 1/2		

# REPAIRS

	Junior 15½", 16", 17" 18" and 19"	26" and 28" Wheel (Detachable Backstay)	26" Wheel Spts. and S.L.R.	"531" Machines 28, 128, 328, 428, 6, 106, 306	Clubman 25, 125, 325 27, 127, 327 and 7, 107, 307
FRAMES	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Retracking and re-enamelling Black .. .. .	1 2 0	1 2 0	1 10 0	1 10 0	2 0 0
Fitting Seat Tube and re-enamelling Black .. .. .	1 5 0	1 5 0	1 12 6	2 5 0	4 5 0
Fitting Top and Bottom Tubes and re-enamelling Black .. .. .	1 7 0	1 7 0	1 17 6	2 10 0	5 0 0
Fitting one Chainstay and re-enamelling Black .. .. .	1 5 0	1 5 0	1 12 6	2 2 6	3 7 6
Fitting two Chainstays and re-enamelling Black .. .. .	1 7 0	1 7 0	1 17 6	2 5 0	4 5 0
Fitting one Backstay and re-enamelling Black .. .. .	—	—	1 12 6	2 2 6	3 7 6
Fitting two Backstays and re-enamelling Black .. .. .	—	—	1 17 6	2 5 0	4 5 0
Fitting New Chainstays and Backstays and re- enamelling Black .. .. .	—	—	2 2 6	2 10 0	5 0 0
Fitting B.B. Shell and re-enamelling Black .. .. .	1 7 0	1 7 0	1 15 0	2 10 0	5 0 0
Rebushing B.B. and re-enamelling Black .. .. .	1 5 0	1 5 0	1 12 6	1 17 6	3 7 6
Fitting New Lock (Rudge or Humber) .. .. .	—	11 0	11 0	—	—
Extra charge if complete Bicycle sent .. .. .	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0
Extra charge for Chromium Ends (when allowed) .. .. .	—	—	—	—	1 2 6
<b>FORKS</b>					
Re-setting and re-enamelling Black .. .. .	4 0	4 0	4 0	5 0	10 0
Fitting one Blade and re-enamelling Black .. .. .	8 6	8 6	10 0	11 0	17 6
Fitting two Blades and re-enamelling Black .. .. .	10 0	10 0	11 6	12 6	1 5 0
Fitting Stem and re-enamelling Black .. .. .	10 0	10 0	11 6	12 6	1 0 0
Fitting New Lock (Raleigh) .. .. .	—	11 0	11 0	—	—
Extra charge for Chromium Ends (when allowed) .. .. .	—	—	—	—	17 6
<b>WHEELS</b>					
Truing .. .. .	2 0	Add the following for Colour Finish if a colour is not stated. (Applicable to Spare Parts and Repairs).  <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p style="text-align: right;">s. d.</p> <p>Backstays .. 1 3</p> <p>Chainguards .. 1 3</p> <p>Frames, Sports 6 6</p> <p style="padding-left: 20px;">Roadster 5 6</p> <p>Forks .. .. 1 3</p> </div> <div style="width: 45%;"> <p style="text-align: right;">s. d.</p> <p>Gearcases .. 2 3</p> <p>Mudguards .. 1 0</p> <p>Frames with Peak Head .. 2 6</p> </div> </div>			
Re-building with Rustless Spokes, Front .. .. .	9 6				
Re-building with Rustless Spokes, Rear .. .. .	11 9				
Re-building with Stainless Steel Spokes, Front .. .. .	12 6				
Re-building with Stainless Steel Spokes, Rear .. .. .	15 9				
Re-building with Double Butted Spokes, Front .. .. .	12 0				
Re-building with Double Butted Spokes, Rear .. .. .	15 3				
Re-building with Double Butted Stainless Steel Spokes, Front .. .. .	14 0				
Re-building with Double Butted Stainless Steel Spokes, Rear .. .. .	18 0				
Re-building Tricycle Front or Rear .. .. .	7 0				

**STURMEY**  
**ARCHER**

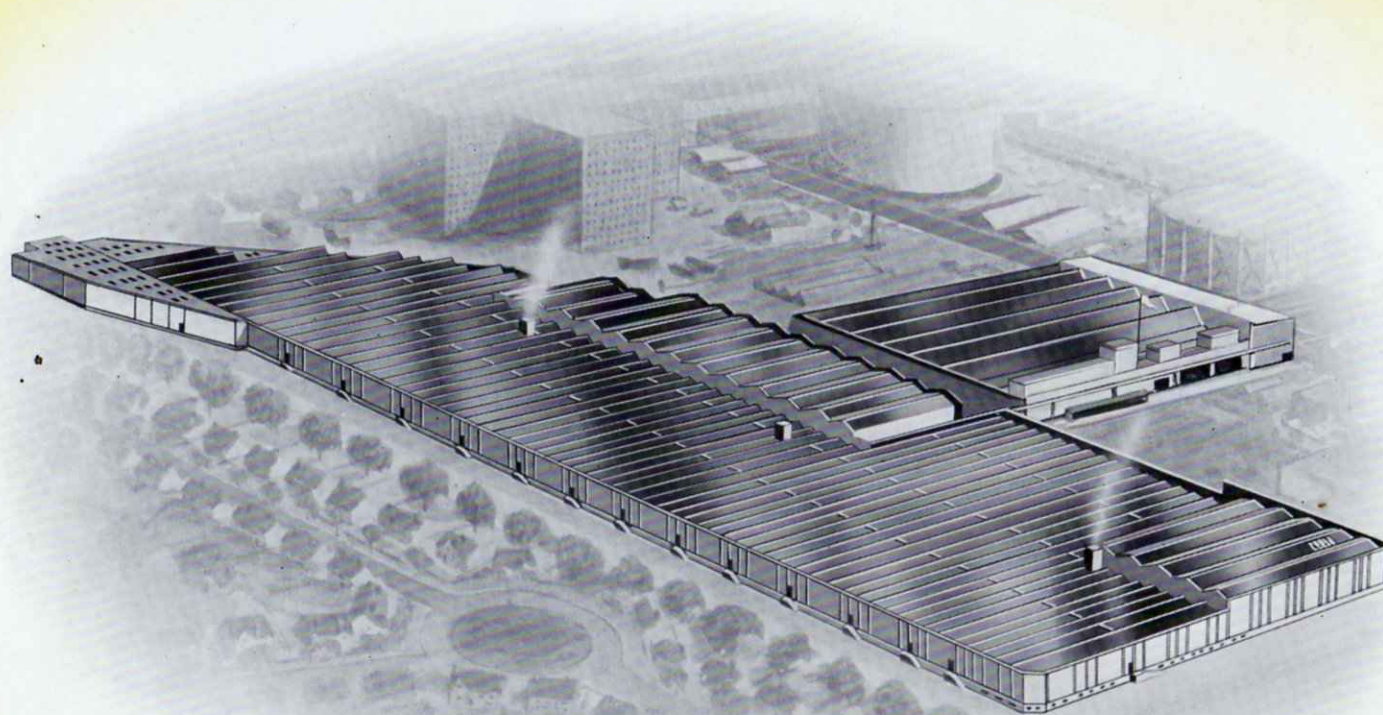
GEARS · BRAKES · LIGHTING EQUIPMENT

PRINTED IN ENGLAND

STURMEY - ARCHER GEARS LTD · NOTTINGHAM · ENGLAND



**THE NEW HOME OF STURMEY-ARCHER GEARS LIMITED**



**20 ACRE FACTORY · ORSTON DRIVE · NOTTINGHAM**

## FOREWORD

**I**N over half a century of unbroken pioneering and service to the cycle trade of the world, Sturmey-Archer has advanced to unchallenged leadership in the design, development and production of cycle hub gears, combined with brakes and lighting equipment.

The introduction of the latest and finest three-speed wide-ratio hub in the world—the 'SW'—is an appropriate moment to publish this catalogue, which is a complete book of reference for the retail trade.

The catalogue contains, first of all, a general description of all hubs and ancillary equipment now in production; then come the corresponding price lists; and finally a comprehensive service section which covers not only the hubs and equipment being manufactured today but also discontinued models which the trader may be called upon to service.

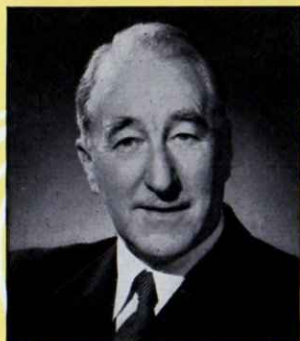
This is essentially a practical publication. It contains no theoretical explanation of epicyclic gearing or the principles underlying the generation of electricity. Such knowledge is not necessary for the use and maintenance of variable gear hubs and 'Dynohub' hub lighting equipment. Only elementary knowledge of mechanics and electric wiring is called for.

The catalogue will demonstrate the inherent simplicity of all Sturmey-Archer products. In design they are ingenious and their construction is precision engineering of the highest quality but there is nothing complicated in operation nor in their maintenance or servicing.

The Company's advertising slogan that 'No bicycle is complete without a Sturmey-Archer three- or four-speed gear' is rapidly being accepted as a fact of cycling life and the master catalogue of the Company's products now offered to the trade is conceived to help the prosecution of sales development, profitable to manufacturer and trader alike, of the completely equipped bicycle.

Sturmey-Archer is grateful for, and proud of, the support of cycle traders great and small the world over and this catalogue is dedicated to them for their faith and co-operation in the past, the present and, we hope, the future.

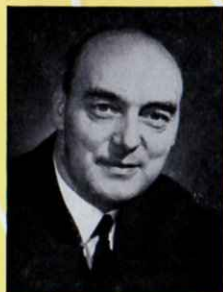
# The Sturmev-Archer Management Team . . .



**GEORGE H. B. WILSON**  
C.B.E., M.C., A.F.C., J.P.  
*Chairman and Managing Director*



**K. M. TAYLOR**  
*Home Sales Dept.*



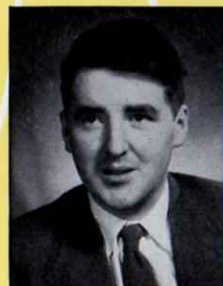
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*General Sales Manager*



**D. S. ROBINSON, O.B.E**  
*Director*



**R. W. HILL**  
*Service Dept.*



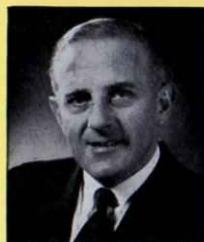
**C. G. H. WILSON**  
*Export Sales Dept.*



**G. H. PREECE**  
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**W. BROWN**  
*Director and Works Manager*



**G. A. FRYER**  
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# HOW TO USE THIS CATALOGUE

THIS CATALOGUE provides in one volume a complete and easy reference guide on the sale and service of Sturmey-Archer Gears, Brakes and Lighting Equipment.

It is in loose-leaf form to enable new data to be inserted, when necessary, into the appropriate sections and out-of-date material to be withdrawn, thereby maintaining a current catalogue.

Each main section is identified by means of a colour code and full details of contents are given on the right-hand side of this page.

Hubs which combine a gear with a brake or a gear with a lighting unit are listed under Brakes and Lighting Equipment respectively.

The Service Section has been compiled in a logical sequence to enable any aspect of service to be located easily and with particular reference to individual hubs.

Models no longer in current production are illustrated in the Discontinued Models Section. Should any current model(s) be discontinued, the respective sheet(s) should be removed from their colour section and placed in the GREY Discontinued Models Section.

## 3-speed and 4-speed gears

SW, AM, 3-SPEED TRIGGER.

FW, FM, 4-SPEED TRIGGER.

## Brake Hubs

SB, TCW, BF, BR, CABLE AND ROD CONTROLS.

## Lighting Equipment

GH6, SG, FG, HEADLAMPS, REAR LAMP.

DBU, FLEX WIRE TABLE.

## Discontinued Models

AW, AB, AG, AC, ASC, FC.

## Prices

SPARES WITH INTERCHANGEABILITY, TOOLS AND HUB PRICES.

## Service

1 FITTING AND ADJUSTMENT . . . . .	pages	1-6
2 USE AND MAINTENANCE . . . . .	"	7
3 FAULT-FINDING CHARTS . . . . .	"	9-14
4 DISMANTLING—GENERAL INSTRUCTIONS . . . . .	"	15-16
5 DISMANTLING—INDIVIDUAL HUBS . . . . .	"	17-26
6 INSPECTION . . . . .	"	27
7 RE-ASSEMBLING—GENERAL INSTRUCTIONS . . . . .	"	29-31
8 RE-ASSEMBLING—INDIVIDUAL HUBS . . . . .	"	33-64
9 SUNDRY DATA . . . . .	"	65-73
10 GUARANTEE . . . . .	"	74

# DEALER AIDS



**GENERAL GEAR POSTER** This Poster measures 19" x 14" and makes an attractive Window piece.

**WHEELCARDS** These cards are available for all types of Sturmev-Archer products. Displayed on the wheel of a Bicycle they prove valuable selling aids.

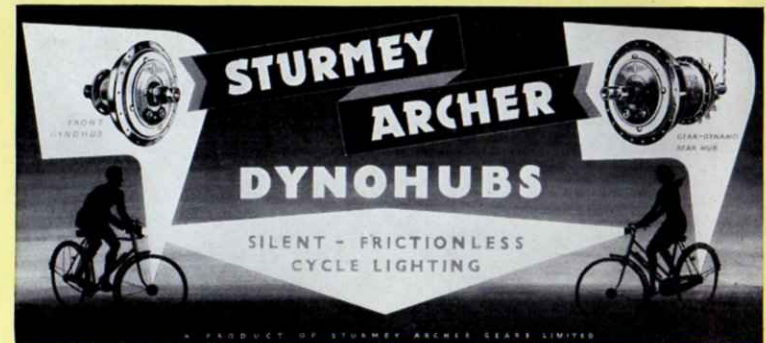
It is a policy of Sturmev-Archer Gears Limited to assist all Dealers in selling the Company's products and to this end a wide selection of leaflets, posters, display cradles, window transparencies and wheelcards is available on application to your nearest Wholesale Depot or direct from Head Office.



**'DYNOHUB' CRADLES** This display piece shows the range of Gear and 'Dynohub' Hub lighting units (AG or FG, GH6) together with the Sports and Roadster Headlamps, Rear lamp and Trigger Control. Size when assembled 15½" high x 24½" long x 10" deep. Also available are 'Dynohub' Window Bills shown bottom right—size 13" x 29".



**GENERAL HUB CRADLE** This display piece shows any Three- or Four-speed variable Hub gear together with the appropriate Trigger Control. The size when assembled 18½" x 10½". **ALSO AVAILABLE IS THE SW GEAR CRADLE** and the general Hub Window Transparency both of which are similar to the above.



# STURMEY-ARCHER MASTER CATALOGUE

## ERRATA SHEET

### BLUE SECTION

#### TRIGGER CONTROLS

On the illustration of the 3-speed trigger control the code number should read GA244B and not GA244A as printed.

### OCHRE SECTION

#### BRAKE HUB CABLE CONTROLS

Since printing of this Catalogue the following minor modifications in specification have been introduced:

**BFC.**—GD431 brake cable has been altered and differs in appearance in the following manner:

The barrel nipple at the hub end has been replaced by the LB304 swivel and the inner wire now passes through this swivel and terminates with the ball nipple S584A. As this new cable is interchangeable with the present pattern cable, production has been turned over to the new pattern cable which has the same symbol number, GD431.

**BRC, ABC.**—K460AZ brake arm has been replaced by a new brake arm K457AZ. The difference in the appearance of these two brake arms is that the new one is slotted to take the cable guide whereas the K460AZ was drilled to take the K171 wire guide.

In addition to the new brake arm, K457AZ, a new cable GD433A has been introduced. This cable includes a new guide, K143, which slides into the slot of the new brake arm. The original cable, GD433, is not interchangeable with the new cable GD433A and it is essential that the correct symbol number is quoted when ordering to ensure that the correct cable is supplied.

### CERISE SECTION

#### FLEX WIRES AND DRY BATTERY UNIT

Details shown for AG and FG also apply to SG.

#### NOTE

This Catalogue lists all 'S' range products as being in production. For a short period only AB and AG Hubs will be supplied until production of SB and SG commences.

# ERRATA SHEET

## TRIGGER CONTROLS

On the illustration of the 3-speed trigger control the code number should read GAZAH and not GAZAA as printed.

BLUE SECTION

## BRAKE HUB CABLE CONTROLS

Since printing of this Catalogue the following items mentioned in specifications have been introduced:

GREEN SECTION

BPC-GD31 brake cable has been altered and differs in appearance in the following manner:

The barrel nipple at the hub end has been replaced by the 1.1800 barrel and the inner wire now passes through this barrel and terminates with the ball nipple 2.2824. As this new cable is interchangeable with the present pattern cable, modification has been made over to the new pattern cable which has the same symbol number, GD31.

BPC, ABC-K400A brake arm has been replaced by a new brake arm K471A. The difference in the appearance of these two brake arms is that the new one is slotted to take the cable guide whereas the K400A was drilled to take the K171 wire guide.

In addition to the new brake arm K471A a new cable GD33A has been introduced. This cable includes a new guide K182, which slides into the slot of the new brake arm. The original cable, GD31, is not interchangeable with the new cable GD33A and it is essential that the correct symbol number is quoted when ordering to ensure that the correct cable is supplied.

## FLUX WIRES AND DRY BATTERY UNIT

Details shown for AG and FG also apply to SG.

BROWN SECTION

## NOTE

The Catalogue lists all 1/2" range products as being in production. For a short period only AR and AG Hobs will be supplied until production of 25 and 26 commences.

APPROVED BY STURMEY-ARGHER

**STURMEY**  
**ARCHER**

*3- and*  
*4-Speed*  
*Hubs*



## THREE-SPEED HUBS

OF THE RANGE OF VARIABLE GEARS offered by Sturmey-Archer none has proved more popular than the three-speed wide-ratio gear. Throughout the world it has earned a unique place of acceptability as the finest all-purpose hub gear on the market.

The latest addition, type SW, is of an improved and simplified design compared with its predecessor type AW, being smaller, lighter, stronger, and containing fewer working parts. As will be seen from the gear ratio tables in the 'Service' section of the catalogue, its range of gears is slightly wider than that of the AW, and ideal for the everyday cyclist.

The SW gear may be combined with an internal expanding brake hub (SB) or with a 'Dynohub' hub lighting unit (SG). A hub incorporating the AW three-speed gear mechanism and a coaster (back-pedal) brake, known as the TCW Tricoaster hub, is also available. These models are described and illustrated in the appropriate sections of the catalogue.

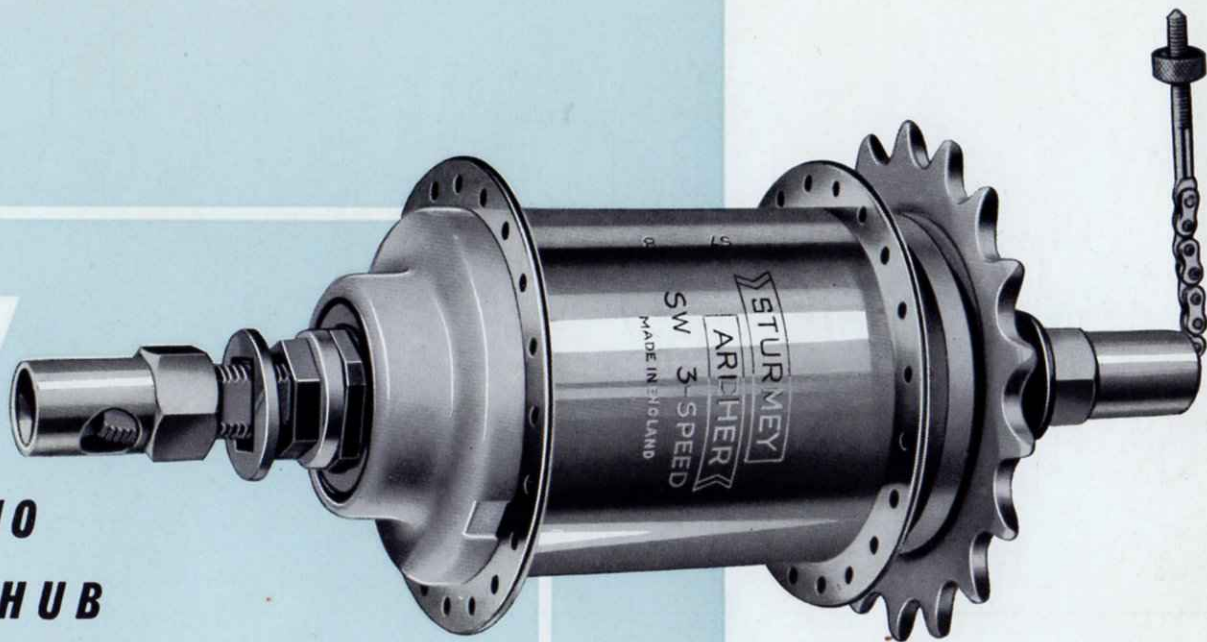
For the riders of sports machines, requiring a narrower range of gearing, the AM medium-ratio three-speed hub was first introduced in 1937 and has taken its rightful place in the progression of gearing for the discerning cyclist.

The AC ultra close-ratio three-speed hub and the ASC fixed three-speed hub are no longer in production and are referred to in the 'Discontinued Models' section.

# SW

## WIDE-RATIO 3-SPEED HUB

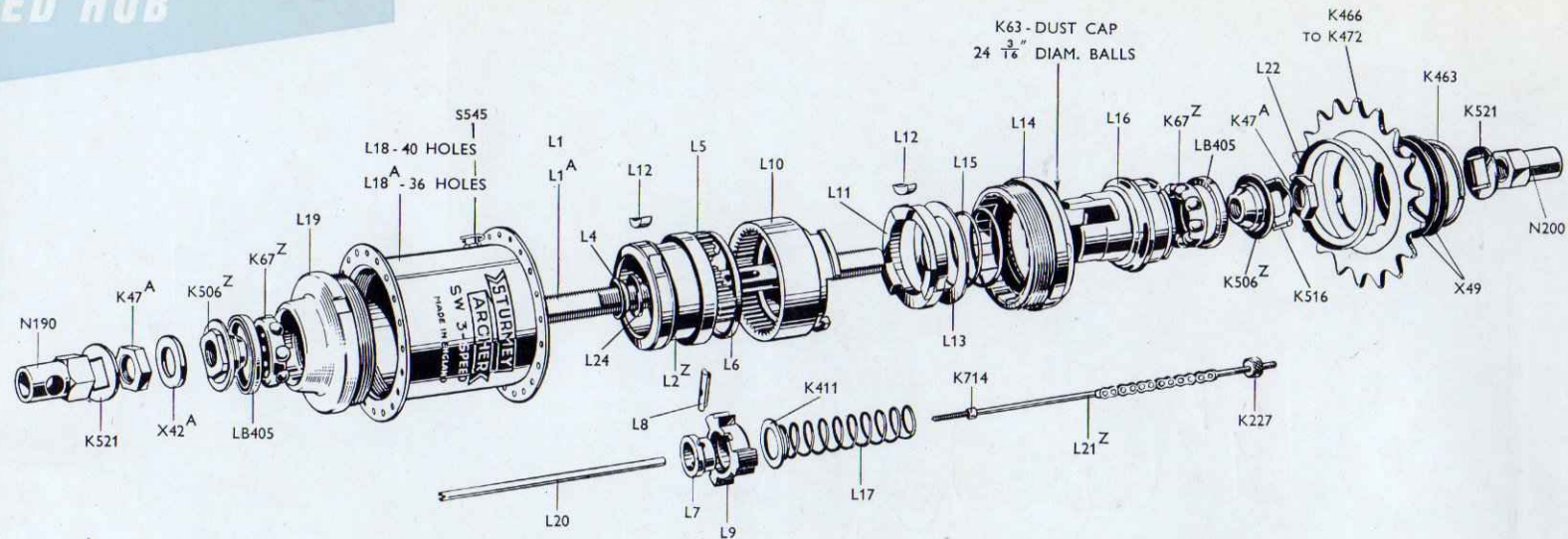
by **STURMEY**  
**ARCHER**



**SW Wide-Ratio 3-Speed Hub.**  
Revolutionary! Fewer working parts than any other wide-ratio 3-speed hub and 4 oz. lighter than its predecessor. Smaller and neater in every way with an increase of 38.4% and a decrease of 27.7% from normal. An outstanding contribution to the well-being of the everyday cyclist.

FOR DETAILS OF PARTS SEE OVER

# SW Wide-Ratio 3-SPEED HUB



## CODE No.

## DESCRIPTION

L1	Axle, 6" long
L1A	Axle, 6 $\frac{1}{4}$ " long
L2Z	Planet Cage
L4	Planet Cage Fixing Plate
L24	Planet Cage Bearing Plate
L5	Planet Pinion
L6	Pinion Retaining Ring
L7	Clutch Sleeve
L8	Axle Key
L9	Sliding Clutch
K411	Thrust Washer
L10	Gear Ring
L11	Gear Ring Pawl Ring
L12	Pawl
L13	Pawl Retaining Washer
L14	R.H. Ball Ring
329	Ball Bearings, $\frac{3}{16}$ " diam. (per set of 24)
K63	Inner Dust Cap
L15	Thrust Spring
L16	Driver
K67Z	Ball Cage with 8 $\frac{1}{4}$ " diam. balls
LB405	Outer Dust Cap
L17	Clutch Spring
K506Z	Axle Cone with Dust Cap
K516	R.H. Cone Locking Washer
L18	Shell, 40 holes

## CODE No.

## DESCRIPTION

L18A	Shell, 36 holes
S545	Lubricator
L19	L.H. Ball Cup
L20	Indicator—suits both axle lengths
L21Z	Coupling complete
K714	Collar for Coupling
K227	Connection Locknut
X42A	Axle Spacing Washer
K47A	Cone Locknut
K521	Axle Locking Washer
N190	L.H. Axle Nut
N200	R.H. Axle Nut
L22	Sprocket Dust Cap
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K469	Sprocket, 19 teeth
K470	Sprocket, 20 teeth
K472	Sprocket, 22 teeth
K468A	Sprocket, 18 teeth for $\frac{3}{16}$ " wide chain
K469A	Sprocket, 19 teeth for $\frac{3}{16}$ " wide chain
X49	Sprocket Spacing Washer
K463	Circlip
K48	Lip Washer. <i>Not illustrated.</i> Alternative to K521
X42	Axle Spacing Washer ( $\frac{1}{16}$ " thick). <i>Not illustrated</i>

# AM

**MEDIUM-RATIO  
3-SPEED HUB**

by **STURMEY  
ARCHER**



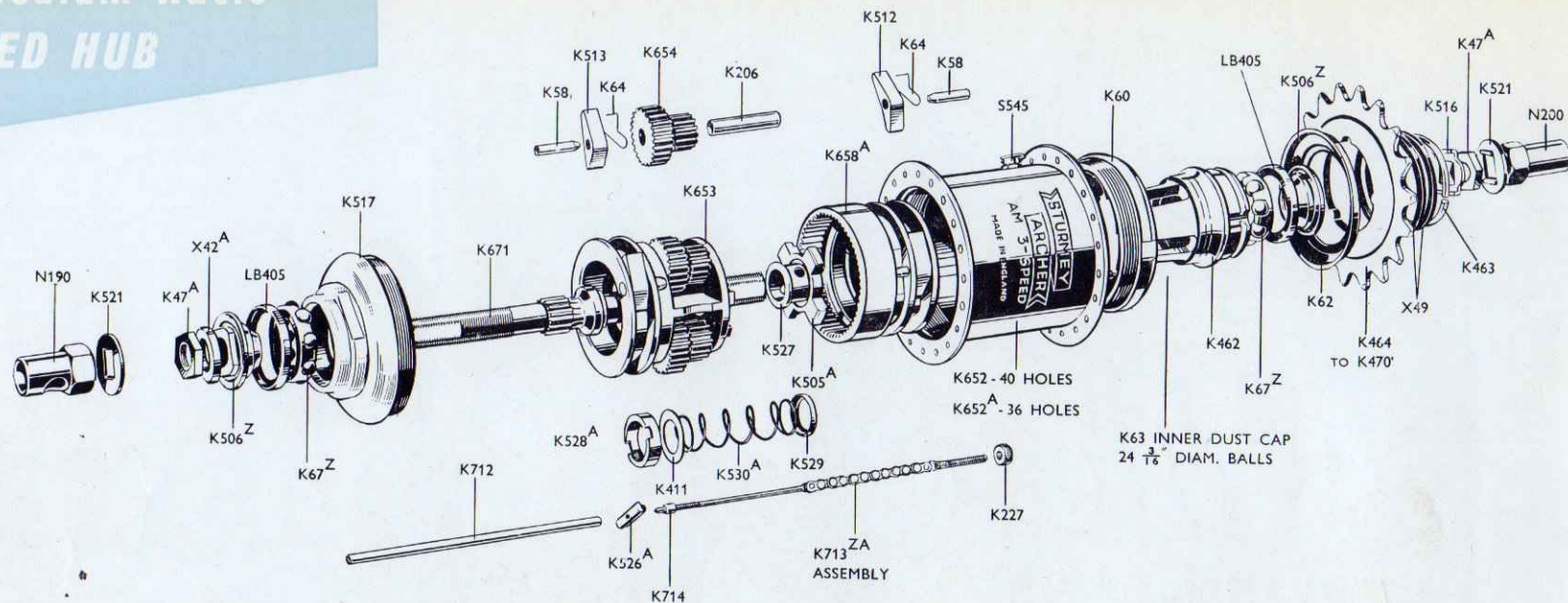
PRINTED IN ENGLAND

FOR DETAILS OF PARTS SEE OVER



**AM** Medium-Ratio 3-Speed Hub.  
15.55% increase 13.46% decrease from normal.  
Ideally suitable for Sports Machines.

# AM Medium-Ratio 3-SPEED HUB



## CODE No.

## DESCRIPTION

K671	Axle, 5 $\frac{1}{4}$ " long
K653	Planet Cage
K527	Clutch Sleeve
K505A	Sliding Clutch
K526A	Axle Key
K528A	Thrust Ring
K654	Planet Pinion
K206	Pinion Pin
K658A	Gear Ring
K512	Gear Ring Pawl
K64	Pawl Spring
K58	Pawl Pin
K60	R.H. Ball Ring
329	Ball Bearings $\frac{3}{16}$ " diam. (per set of 24)
K63	Inner Dust Cap
K411	Thrust Washer
K530A	Clutch Spring
K529	Clutch Spring Cap
K462	Driver
K67Z	Ball Cage with 8 $\frac{1}{4}$ " diam. balls
LB405	Outer Dust Cap
K506Z	Axle Cone with Dust Cap
K516	R.H. Cone Locking Washer
K513	Low Gear Pawl
K652	Shell, 40 holes
K652A	Shell, 36 holes

## CODE No.

## DESCRIPTION

S545	Lubricator
K517	L.H. Ball Cup
K712	Indicator
K713ZA	Coupling complete
K713Z	Coupling complete, quick-release type. <i>Not illustrated</i>
K740AZ	Quick-release Connection. <i>Not illustrated</i>
K714	Indicator Collar
K228	Ball Ring—alternative to K60 for 14T or 15T sprockets
K230Z	Ball Cage with $\frac{3}{16}$ " diam. balls (only used with K228)
K227	Connection Locknut
X42A	Axle Spacing Washer
K47A	Cone Locknut
K521	Axle Locking Washer
N190	L.H. Axle Nut
N200	R.H. Axle Nut
K62	Sprocket Dust Cap
K229	Sprocket Dust Cap (used with K228 Ball Ring only)
K464	Sprocket, 14 teeth
K465	Sprocket, 15 teeth
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K469	Sprocket, 19 teeth
K470	Sprocket, 20 teeth
X49	Sprocket Spacing Washer
K463	Circlip

# TRIGGER

3-SPEED CONTROL

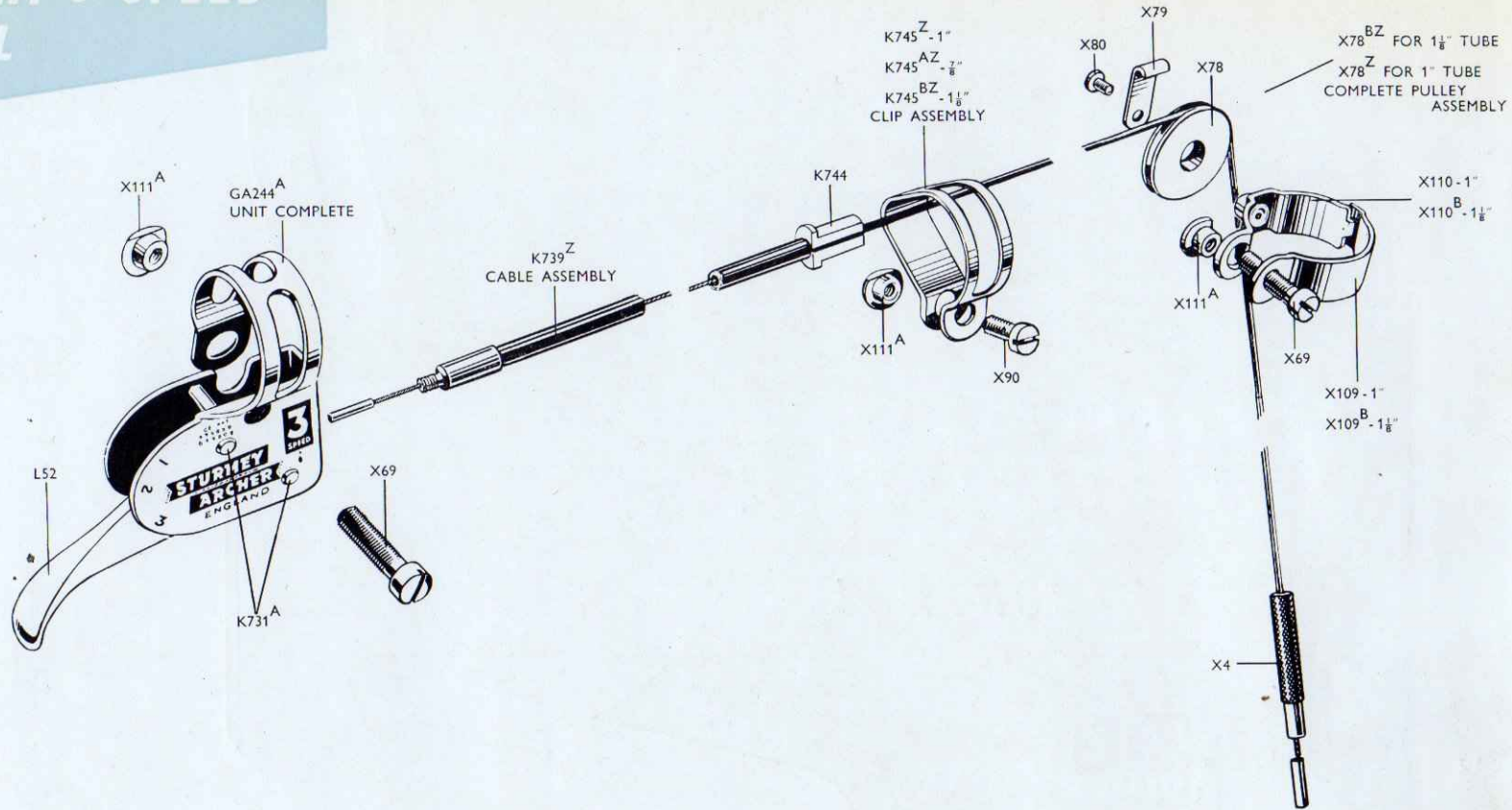
by **STURMEY**  
**ARCHER**



The Sturmev-Archer patent 'Flick' 3-Speed Trigger Control provides instantaneous change of gear by the flick of a finger. This control has recently been redesigned and is even smaller, neater and lighter than its predecessor.

FOR DETAILS OF PARTS SEE OVER

# TRIGGER: 3-SPEED CONTROL



Small Type (illustrated) CODE No.	DESCRIPTION	Old Type 'A' Range CODE No.	Small Type (illustrated) CODE No.	DESCRIPTION	Old Type 'A' Range CODE No.
GC3B	Trigger control complete—less Pulley	GC3A	K745Z	Fulcrum Clip complete for 1" bar	K745Z
GA244B	Trigger Unit complete	GA244A	K745AZ	Fulcrum Clip complete for $\frac{7}{8}$ " bar	K745AZ
L52	Trigger Lever only	K747	K745BZ	Fulcrum Clip complete for $1\frac{1}{8}$ " bar	K745BZ
K730A	Pin for Trigger Lever	K730A	X90	Clip Screw	X90
L53Z	Ratchet Plate	K736Z	X78Z	Pulley complete for 1" tubing only	X78Z
K731A	Pivot Pin	K731A	X78BZ	Pulley complete for $1\frac{1}{8}$ " tube (standard)	X78BZ
L55	Trigger Pawl	K722	X69	Clip Screw	X69
L56	Trigger Spring	K738	X78	Pulley Wheel only	X78
X69	Clip Screw	X69	X79	Pulley Arm	X79
X111A	Clip Nut	X111A	X80	Pulley Arm Screw	X80
K739Z	Trigger Wire Assembly—Give length of both Inner Wire and Outer Cable	K739Z	X110B	Clip with Pulley Stud for $1\frac{1}{8}$ " tube	X110B
K744	Fulcrum Sleeve	K744	X109B	Half Clip for $1\frac{1}{8}$ " tube	X109B

## FOUR-SPEED HUBS

THE FOUR-SPEED HUB GEAR represents a unique technical achievement, acclaimed by cyclists throughout the world, and was formally recognized by the award to Sturmey-Archer of the Cyclists' Touring Club 1939 Plaque 'as being the greatest improvement in cycle design or equipment during the year'.

In four-speed hubs the additional gear is lower than the 'low' gear obtained with the normal three-speed and it is, therefore, called the bottom gear. This combination virtually offers the advantages of two 'normal' gears.

The FW standard wide-ratio four-speed hub is designed to give maximum return for minimum effort and is an excellent unit for Roadster and Touring machines.

The FM four-speed medium-ratio hub with three fairly close ratios is the finest all-round Clubman's gear and provides the complete answer for fast touring.

The FG hub which combines the FW gear with a 'Dynohub' hub lighting unit is described in the 'Lighting Equipment' section of the catalogue.

The FC four-speed close-ratio hub which is no longer in production is referred to in the 'Discontinued Models' section.





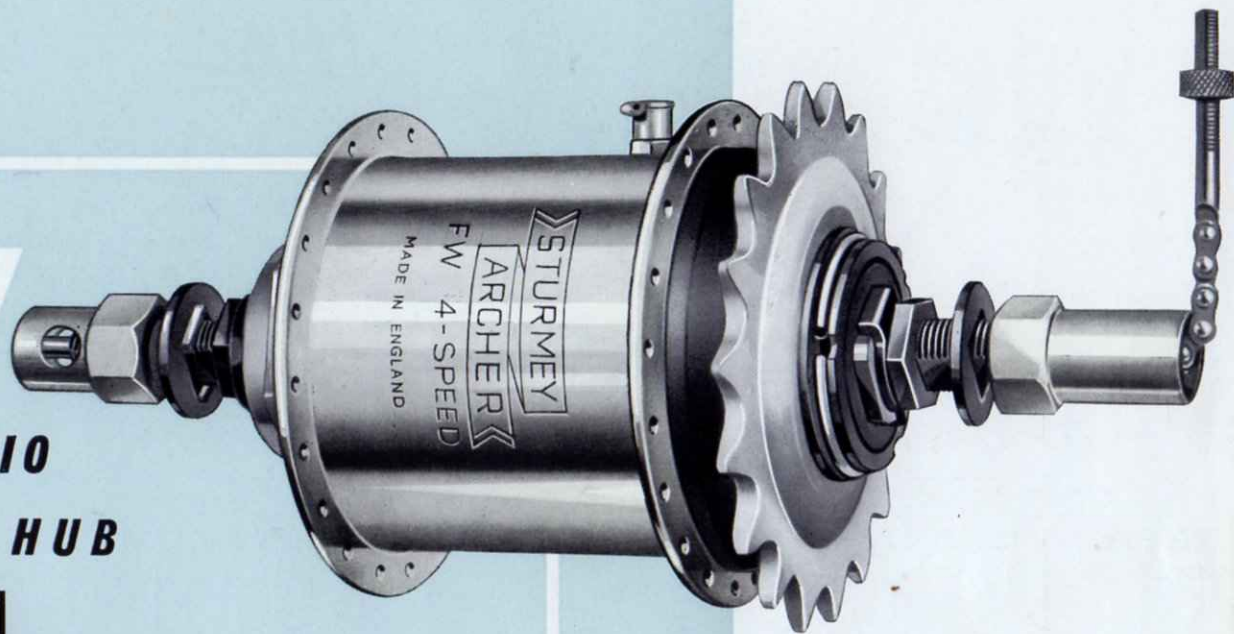
The Cyclists' Touring Club saw fit in 1939 to award its plaque to STURMEY-ARCHER GEARS LTD., for their 4-Speed Hub, considered to be the greatest improvement in Cycle Equipment during that year.

**FW**

**WIDE-RATIO**

**4-SPEED HUB**

by **STURMEY**  
**ARCHER**

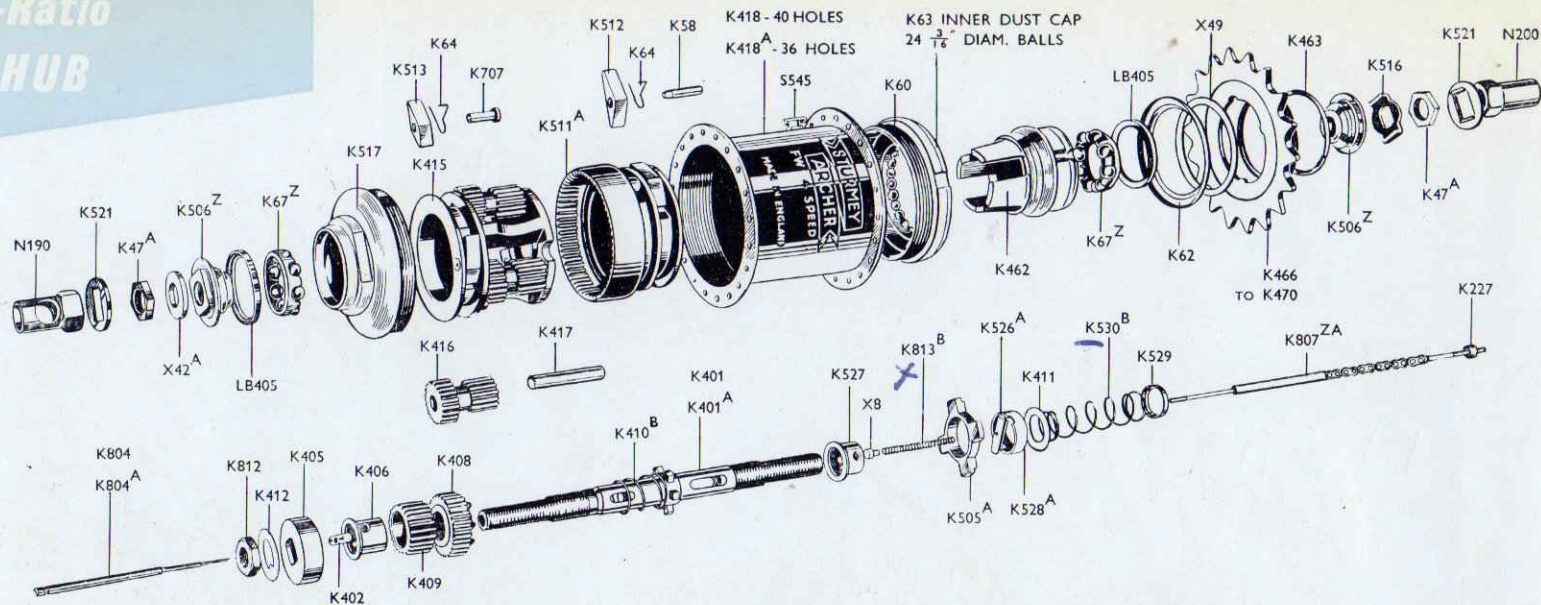


**FW Wide Ratio 4-Speed Hub.**

The great advantage of this hub against the corresponding 3-speed lies in the fact that there are two normal gears. Ratios give 26.6% increase, 21.1% and 33.3% decrease from normal.

**FOR DETAILS OF PARTS SEE OVER**

# FW Wide-Ratio 4-SPEED HUB



## CODE No.

## DESCRIPTION

K401	Axle, 5 $\frac{3}{4}$ " long
K401A	Axle, 6 $\frac{1}{4}$ " long
K410B	Low Gear Spring
K408	Primary Sun Pinion
K409	Secondary Sun Pinion
K406	Pinion Sleeve
K402	Low Gear Key
K405	Dog Ring
K412	Locking Washer
K812	Locknut
K415	Planet Cage
K513	Low Gear Pawl
K707	Low Gear Pawl Pin
K64	Pawl Spring
K416	Planet Pinion
K417	Pinion Pin
K804	Indicator for short axle
K804A	Indicator for long axle
X8	Collar for Compensator Spring
K813B	Compensator Spring
K527	Clutch Sleeve
K505A	Sliding Clutch
K526A	Axle Key
K807ZA	Coupling complete
K227	Connection Locknut
K528A	Thrust Ring
K530B	Clutch Spring
K529	Spring Cap
K511A	Gear Ring

## CODE No.

## DESCRIPTION

K512	Gear Ring Pawl
K58	Pawl Pin
K60	R.H. Ball Ring
329	Ball Bearings, $\frac{3}{16}$ " diam. (per set of 24)
K63	Inner Dust Cap
K462	Driver
K67Z	Ball Cage with 8 $\frac{1}{4}$ " balls
LB405	Outer Dust Cap
K506Z	Axle Cone with Dust Cap
K516	R.H. Cone Locking Washer
K418	Shell, 40 holes
K418A	Shell, 36 holes
S545	Lubricator
K517	L.H. Ball Cup
K411	Thrust Washer
X42A	Axle Spacing Washer ( $\frac{1}{8}$ " thick)
K47A	Cone Locknut
K521	Axle Locking Washer
N190	L.H. Axle Nut
N200	R.H. Axle Nut
K62	Sprocket Dust Cap
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K469	Sprocket, 19 teeth
K470	Sprocket, 20 teeth
X49	Sprocket Spacing Washer
K463	Circlip

# FM

## MEDIUM-RATIO 4-SPEED HUB

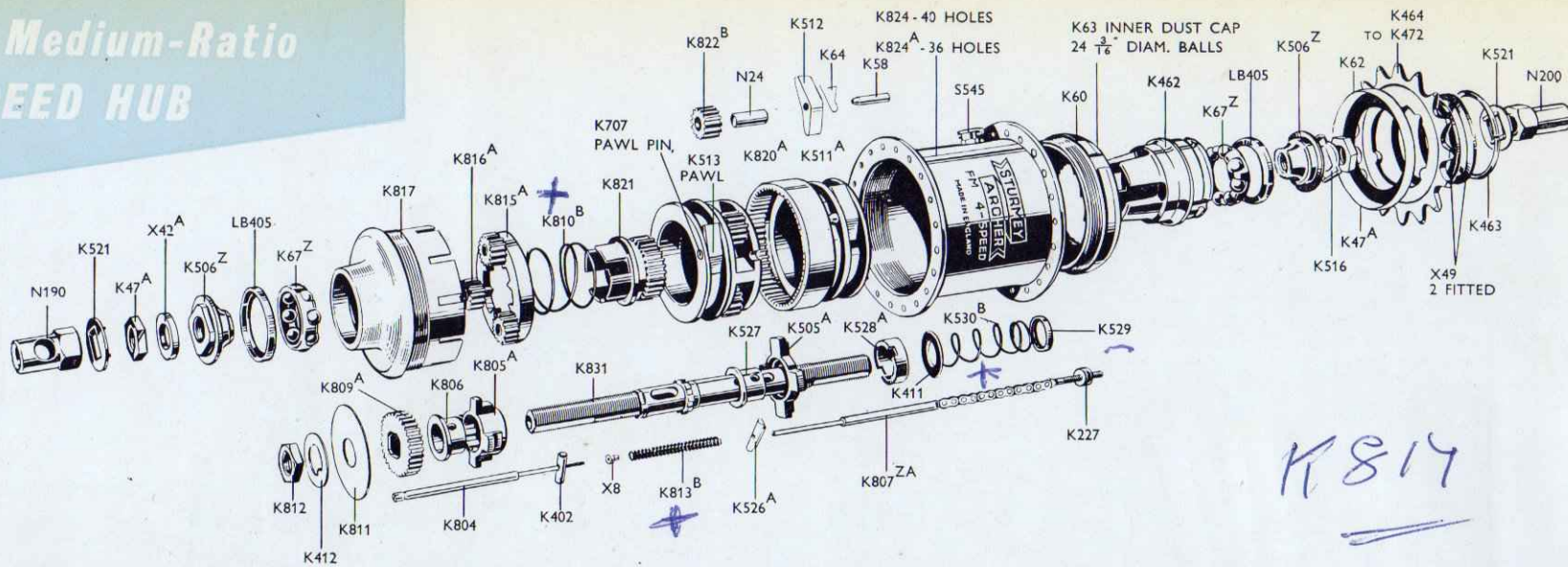
by **STURMEY**  
**ARCHER**



**FM Medium-Ratio 4-Speed Hub.**  
12.5% increase,  
14.3% and 33.3% decrease from normal.  
Unquestionably the best all round Club gear.

FOR DETAILS OF PARTS SEE OVER

# FM Medium-Ratio 4-SPEED HUB



K814

## CODE No.

## DESCRIPTION

K831	Axle, 5 $\frac{3}{4}$ " long
K805A	Low Gear Dog
K806	Dog Sleeve
K402	Low Gear Key
K809A	Secondary Sun Pinion
K811	Locating Plate
K412	Locking Washer
K812	Locknut
K815A	Secondary Planet Cage
K816A	Secondary Planet Pinion
K810B	Low Gear Spring
K821	Primary Sun Pinion
K820A	Planet Cage
K513	Low Gear Pawl
K707	Low Gear Pawl Pin
K64	Pawl Spring
K822B	Planet Pinion
N24	Pinion Pin
K804	Indicator
X8	Collar for Compensator Spring
K813B	Compensator Spring
K527	Clutch Sleeve
K505A	Sliding Clutch
K526A	Axle Key
K807ZA	Coupling complete
K807Z	Coupling complete, quick-release type. <i>Not illustrated</i>
K227	Connection Locknut
K528A	Thrust Ring
K411	Thrust Washer
K530B	Clutch Spring
K529	Spring Cap
K511A	Gear Ring

## CODE No.

## DESCRIPTION

K512	Gear Ring Pawl
K58	Pawl Pin
K60	R.H. Ball Ring
329	Ball Bearings, $\frac{3}{16}$ " diam. (per set of 24)
K63	Inner Dust Cap
K67Z	Ball Cage with 8 $\frac{1}{4}$ " diam. balls
LB405	Outer Dust Cap
K506Z	Axle Cone with Dust Cap
K516	R.H. Cone Locking Washer
K824	Shell, 40 holes
K824A	Shell, 36 holes
S545	Lubricator
K817	Ball Cup
K228	R.H. Ball Ring
K230Z	Ball Cage with balls
X42A	Axle Spacing Washer $\frac{1}{8}$ " thick
K47A	Cone Locknut
K521	Axle Locking Washer
N190	L.H. Axle Nut
N200	R.H. Axle Nut
K62	Sprocket Dust Cap
K464	Sprocket, 14 teeth
K465	Sprocket, 15 teeth
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K469	Sprocket, 19 teeth
K470	Sprocket, 20 teeth
K472	Sprocket, 22 teeth
X49	Sprocket Spacing Washer
K463	Circlip
K229	Sprocket Dust Cap when K228 used. <i>Not illustrated</i>

# TRIGGER

4-SPEED CONTROL

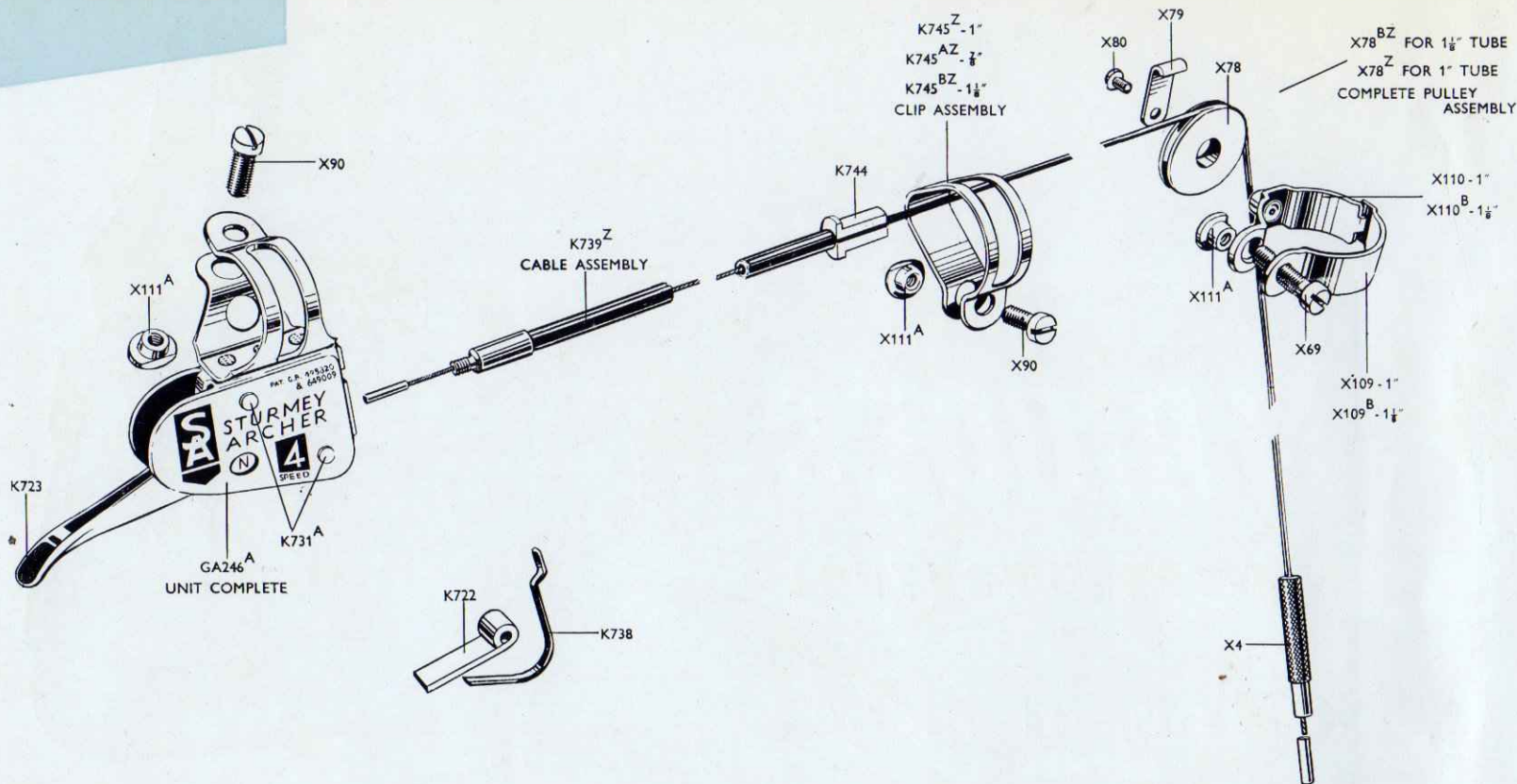
by **STURMEY**  
**ARCHER**



FOR DETAILS OF PARTS SEE OVER

Specially produced for use with our range of 4-Speed Gear Hubs this control is easy to operate and provides instantaneous change of gear.

# TRIGGER: 4-SPEED CONTROL



## CODE No.

## DESCRIPTION

GC4A	Trigger control complete—less Pulley
GA246A	Trigger Unit complete
K723	Trigger Lever only
K730A	Pin for Trigger Lever. <i>Not illustrated</i>
K736Z	Ratchet Plate. <i>Not illustrated</i>
K731A	Pivot Pin
K722	Trigger Pawl
K738	Trigger Spring
X69	Clip Screw
X111A	Clip Nut
K739Z	Trigger Wire Assembly—Give length of both Inner Wire and Outer Cable
K744	Fulcrum Sleeve

## CODE No.

## DESCRIPTION

K745Z	Fulcrum Clip complete for 1" bar
K745AZ	Fulcrum Clip complete for $\frac{3}{8}$ " bar
K745BZ	Fulcrum Clip complete for $1\frac{1}{8}$ " bar
X90	Clip Screw
X78Z	Pulley complete for 1" tubing only
X78BZ	Pulley complete for $1\frac{1}{8}$ " tube (standard)
X69	Clip Screw
X78	Pulley Wheel only
X79	Pulley Arm
X80	Pulley Arm Screw
X110B	Clip with Pulley Stud for $1\frac{1}{8}$ " tube
X109B	Half Clip for $1\frac{1}{8}$ " tube

**STURMEY**  
**ARCHER**

*Hub  
Brakes*

PRINTED IN ENGLAND

HUB BRAKES



## **HUB BRAKES**

ALTHOUGH THE NAME 'STURMEY-ARCHER' is synonymous with the variable hub gear, it must not be overlooked that no company offers a finer range of internal expanding brakes.

Front and rear single-speed brake hubs, operated by rod or cable control, have been steadily gaining acceptance throughout the world for many years, adding materially to the safety of the cycling public.

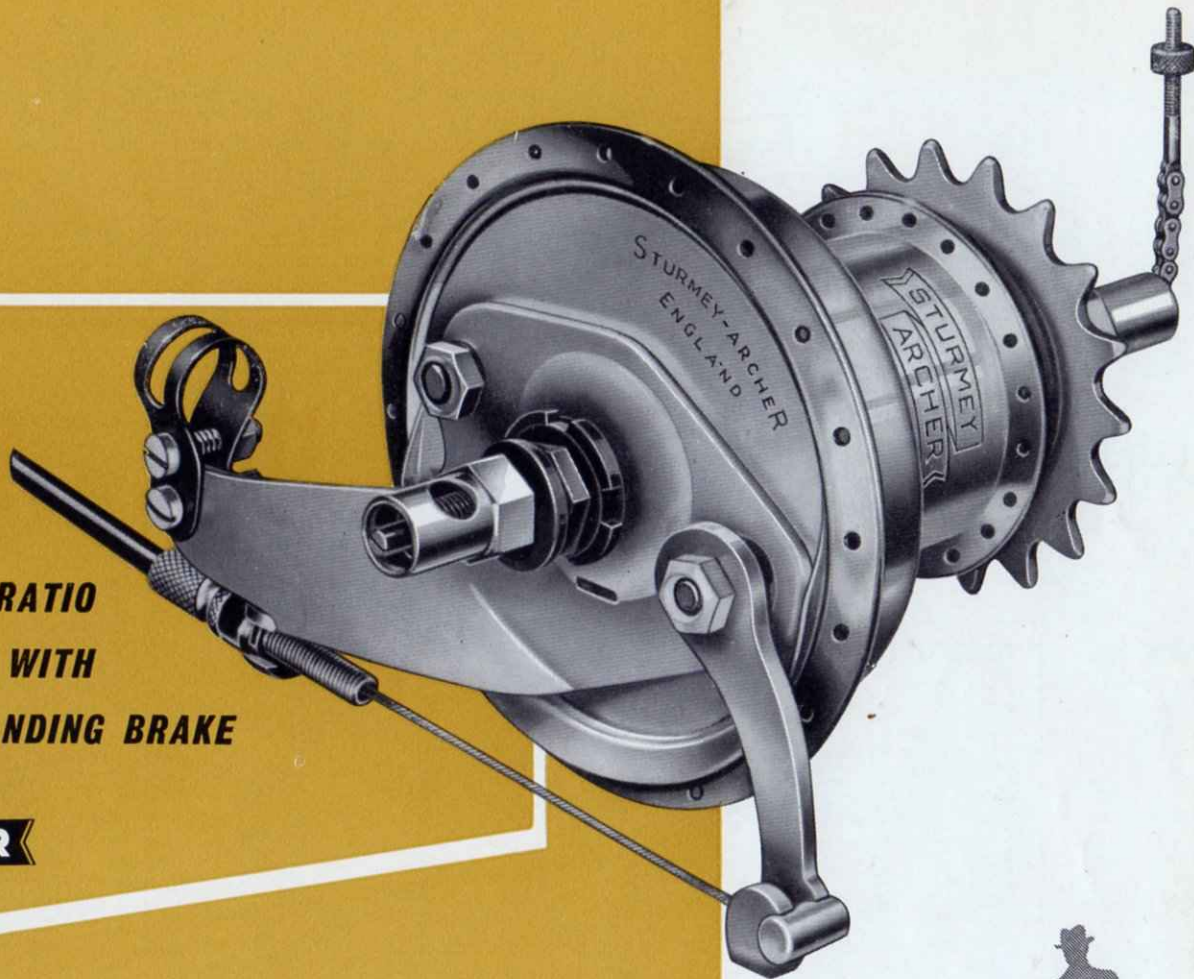
The internal expanding brake is also combined with a three-speed gear (SB, which was formerly AB). There is in addition available a three-speed gear with coaster hub, known as the 'TCW'.

Whilst the conversion from conventional to Sturmey-Archer hub braking equipment, with or without gear, is expensive to the cyclist, the extra cost to him of this equipment when he buys his bicycle originally is a comparatively small but a most worthwhile investment, which the retailer is well advised to foster.

# SB

**3-SPEED WIDE-RATIO  
HUB COMBINED WITH  
INTERNAL EXPANDING BRAKE**

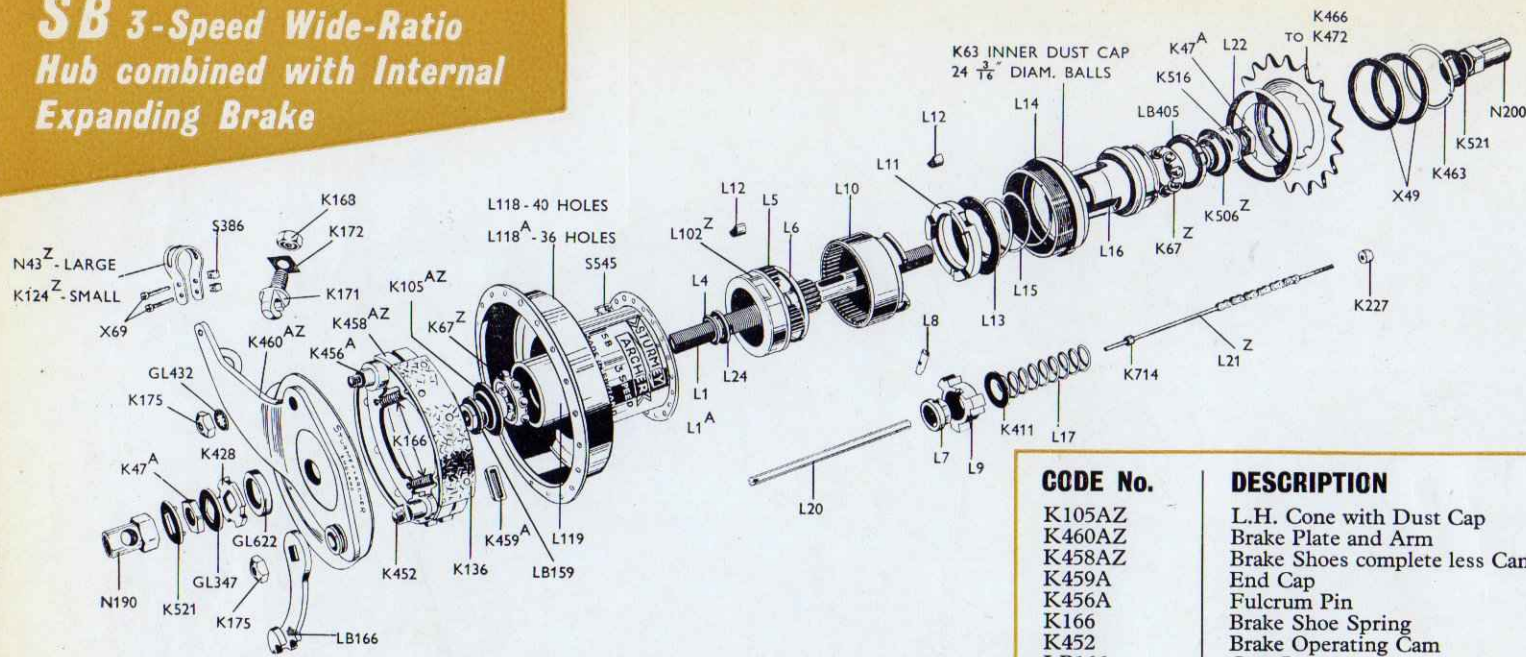
by **STURMEY  
ARCHER**



**SB** The new Wide-Ratio 3-Speed Gear combined with internal expanding brake, fitted with either cable or rod control. Ratios - 38.4% increase, 27.7% decrease from normal.

FOR DETAILS OF PARTS SEE OVER

# SB 3-Speed Wide-Ratio Hub combined with Internal Expanding Brake



## CODE No.

## DESCRIPTION

L1	Axle, 6" long
L1A	Axle, 6 1/4" long
L102Z	Planet Cage
L24	Planet Cage Bearing Plate
L4	Planet Cage Fixing Plate
L5	Planet Pinion
L6	Pinion Retaining Ring
L7	Clutch Sleeve
L8	Axle Key
L9	Sliding Clutch
K411	Thrust Washer
L10	Gear Ring
L11	Gear Ring Pawl Ring
L12	Pawl
L13	Pawl Retaining Washer
L14	R.H. Ball Ring
329	Ball Bearings, 3/16" diam. (per set of 24)
K63	Inner Dust Cap
L15	Thrust Spring
L16	Driver
K67Z	Ball Cage with 8 1/4" diam. balls
LB405	Outer Dust Cap
L17	Clutch Spring
K529	Clutch Spring Cap
K506Z	R.H. Cone with Dust Cap
K516	R.H. Cone Locking Washer
L118	Shell, 40 holes
L118A	Shell, 36 holes
S545	Lubricator
L119	L.H. Ball Cup

## CODE No.

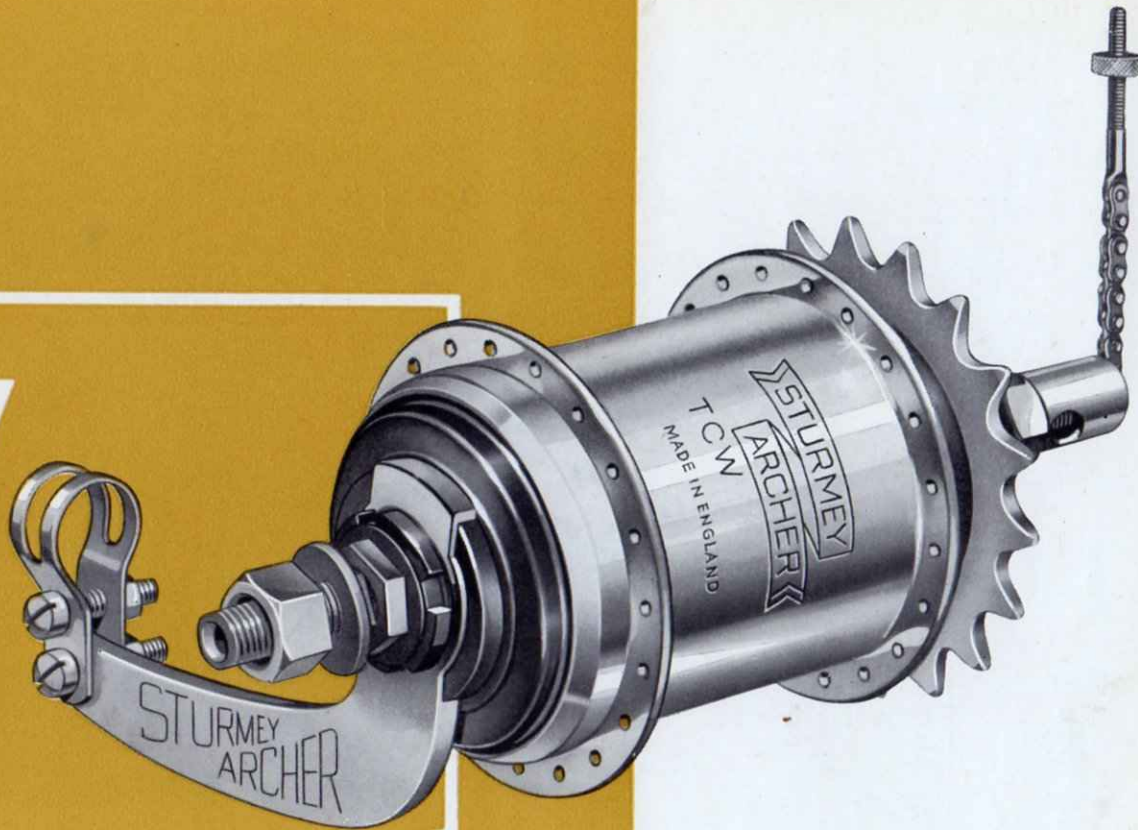
## DESCRIPTION

K105AZ	L.H. Cone with Dust Cap
K460AZ	Brake Plate and Arm
K458AZ	Brake Shoes complete less Cam (Pin type)
K459A	End Cap
K456A	Fulcrum Pin
K166	Brake Shoe Spring
K452	Brake Operating Cam
LB166	Cam Lever
K175	Fixing Nut
GL432	Lock Washer
K136	Brake Linings with Rivets (per pair)
K171	Wire Guide
K172	Lock Washer
K168	Guide Nut
L20	Indicator—suits both lengths of axle
L21Z	Coupling complete
K714	Collar for Indicator
K227	Connection Locknut
GL622	Spacing Washer
K428	Notched Cone Adjuster
GL347	Lock Washer
K47A	Cone Locknut
K521	Axle Lock Washer
N190	L.H. Axle Nut
N200	R.H. Axle Nut
X42	Spacing Washer, 1/16" thick
L22	Sprocket Dust Cap
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K468A	Sprocket, 18 teeth for 3/16" wide chain
K469	Sprocket, 19 teeth
K469A	Sprocket, 19 teeth for 3/16" wide chain
K470	Sprocket, 20 teeth
K472	Sprocket, 22 teeth
X49	Sprocket Spacing Washer
K463	Circlip
N43Z	Brake Arm Clip complete for oval tubing
K124Z	Brake Arm Clip complete for round tubing
X69	Clip Screw
S386	Clip Nut

# TCW

**COMBINED  
3-SPEED GEAR  
COASTER BRAKE**

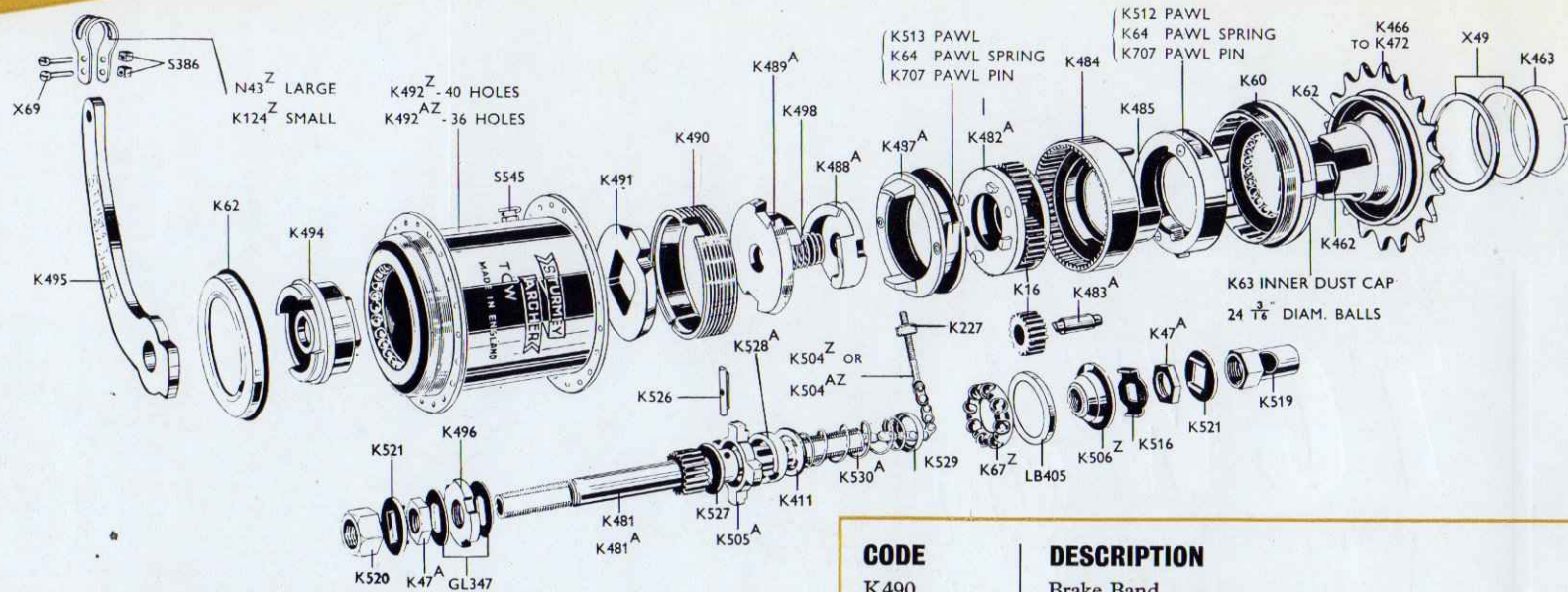
by **STURMEY  
ARCHER**



**TCW** Combined 3-Speed Gear and Coaster Brake.  
The TCW combines in one shell the famous  
AW Wide-Ratio 3-Speed Gear and a most powerful  
Coaster Brake. Ratios - 33.3% increase,  
25% decrease from normal.

FOR DETAILS OF PARTS SEE OVER

# TCW Combined 3-SPEED GEAR COASTER BRAKE



## CODE

K481  
K481A  
K482A  
K527  
K505A  
K526  
K528A  
K411  
K16  
K483A  
K484  
K485  
K512  
K64  
K707  
K60  
329  
K63  
K530A  
K529  
K462  
K67Z  
LB405  
K506Z  
K516  
K487A  
K513  
K488A  
K489A

## DESCRIPTION

Axle, 5 $\frac{3}{4}$ " long  
Axle, 6 $\frac{1}{4}$ " long  
Planet Cage  
Clutch Sleeve  
Sliding Clutch  
Axle Key  
Thrust Ring  
Thrust Washer  
Planet Pinion  
Pinion Pin  
Gear Ring  
Gear Ring Pawl Ring  
Gear Ring Pawl  
Pawl Spring  
Pawl Pin  
R.H. Ball Ring  
Ball Bearings,  $\frac{3}{16}$ " diam. (per set of 24)  
Inner Dust Cap  
Driver  
Ball Cage with 8  $\frac{1}{4}$ " diam. balls  
Outer Dust Cap  
R.H. Cone with Dust Cap  
R.H. Cone Locking Washer  
Low Gear Pawl Ring  
Low Gear Pawl  
Brake Cam  
Brake Thrust Plate

## CODE

K490  
K491  
K498  
K492Z  
K492AZ  
S545  
K494  
K495  
K504Z  
K504AZ  
K227  
GL347  
K496  
K481  
K481A  
K527  
K505A  
K411  
K530A  
K529  
K528A  
K504Z OR  
K504AZ  
K526  
K496  
K491  
K498  
K489A  
K498  
K488A  
K497A  
K482A  
K484  
K485  
K512  
K64  
K707  
K513  
K64  
K707  
K512  
K64  
K707  
K60  
K62  
K466  
TO K472  
X49  
K463  
K16  
K483A  
K47A  
K519  
K521  
K521  
K516  
K506  
K516  
K67Z  
LB405  
K506  
K516  
K521  
K519

## DESCRIPTION

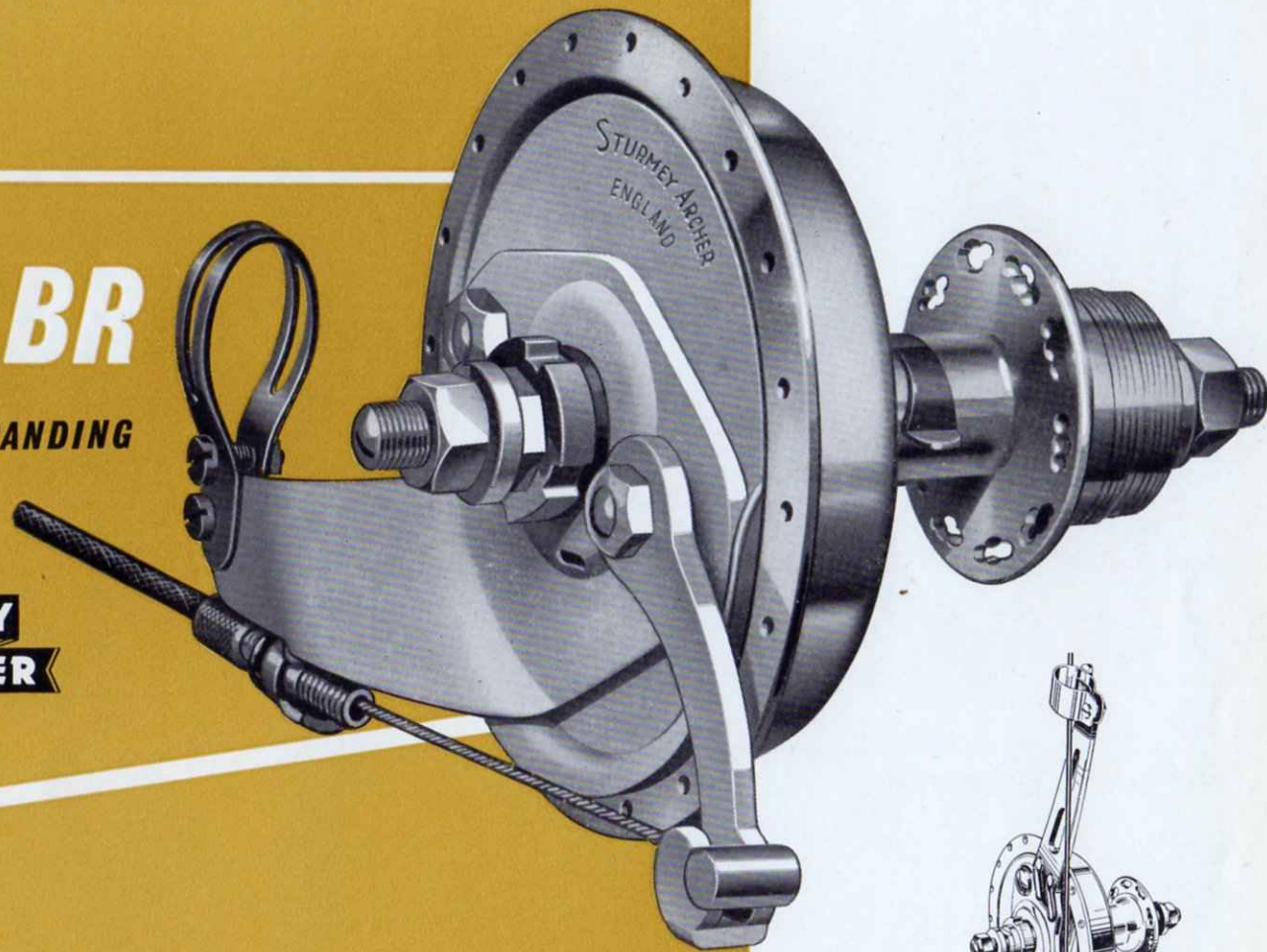
Brake Band  
Brake Plate  
Brake Cam Spring  
Shell, 40 holes with Ball Cup  
Shell, 36 holes with Ball Cup  
Lubricator  
L.H. Cone  
Brake Arm  
Indicator for short axle  
Indicator for long axle  
Connection Locknut  
Lock Washer  
Brake Arm Nut  
Axle Washer,  $\frac{1}{8}$ " thick. *Not illustrated*  
Cone Locknut  
Axle Washer,  $\frac{1}{16}$ " thick. *Not illustrated*  
R.H. Axle Nut  
L.H. Axle Nut  
Sprocket Dust Cap  
Sprocket, 16 teeth  
Sprocket, 17 teeth  
Sprocket, 18 teeth  
Sprocket, 18 teeth for  $\frac{3}{16}$ " wide chain  
Sprocket, 19 teeth  
Sprocket, 19 teeth for  $\frac{3}{16}$ " wide chain  
Sprocket, 20 teeth  
Sprocket, 22 teeth  
Sprocket Spacing Washer  
Circlip  
Brake Arm Clip complete for oval tubing  
Brake Arm Clip complete for round tubing  
Clip Screw  
Clip Nut

# **BF AND BR**

**INTERNAL EXPANDING**

**BRAKE HUBS**

by **STURMEY**  
**ARCHER**

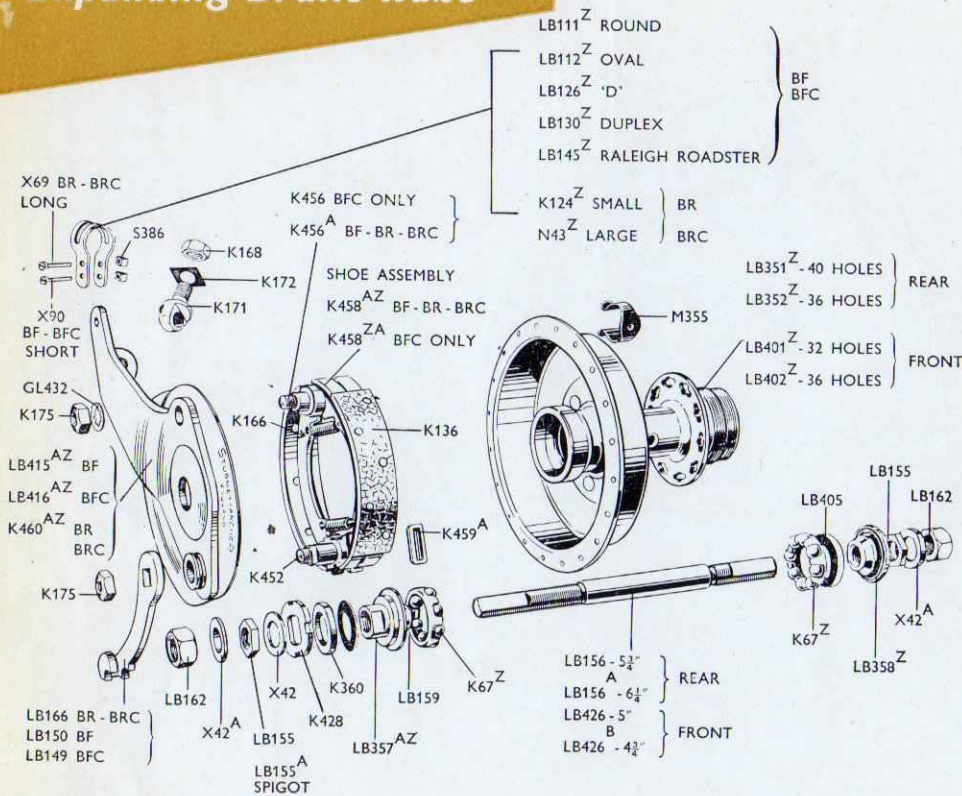


## **BF and BR**

The BR is a Rear Single-Speed Hub with an internal expanding brake fitted with either cable or rod control. The BF is a Front-Brake Hub with internal expanding brake and fitted with either cable or rod control.

FOR DETAILS OF PARTS SEE OVER

# BF and BR Internal Expanding Brake Hubs



## CODE No.

## DESCRIPTION

LB401Z	Hub Shell, 32 holes
LB402Z	Hub Shell, 36 holes
M355	Lubricator
K67Z	Ball Cage with 8 1/4" diam. balls
LB405	Outer Dust Cap
LB426	Spindle, 5" long
LB426B	Spindle, 4 3/4" long
LB358Z	R.H. Cone with Dust Cap
LB357AZ	L.H. Cone with Dust Cap
LB159	Packing Washer
LB416AZ	Brake Plate and Arm for Cable operation
LB415AZ	Brake Plate and arm for rod operation
K458AZ	Brake Shoes complete less Cam, Pin type for [rod operation]
K458ZA	Brake Shoes complete less Cam, Sleeve type for cable [operation]
K459A	Shoe End Cap
K136	Brake Linings (per pair with rivets)

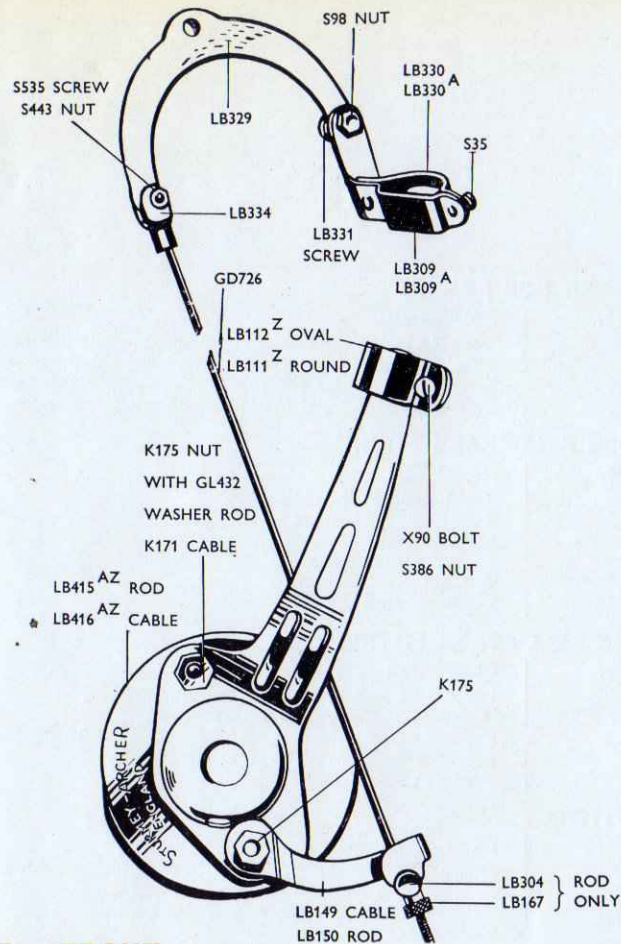
## CODE No.

## DESCRIPTION

K456	Fulcrum Sleeve—for cable operation only
K456A	Fulcrum Pin—for rod operation only
K166	Brake Shoe Spring
K452	Brake Operating Cam
K175	Cam Lever Nut—also used with K456A
GL432	Lock Washer
LB150	Cam Lever } Rod operation only
K171	Wire Guide } Cable operation only
LB149	Cam Lever }
LB111Z	Brake Arm Clip complete, round
LB112Z	Brake Arm Clip complete, oval
LB126Z	Brake Arm Clip complete, 'D'
LB130Z	Brake Arm Clip complete, Humber Duplex
LB145Z	Brake Arm Clip complete, Raleigh Roadster
X90	Clip Screw
S386	Clip Nut
K360	Spacing Washer
K428	Notched Cone Adjuster
X42A	Axle Washer, 1/8" thick
X42	Axle Washer, 1/16" thick
LB155	Cone Locknut
LB155A	Cone Locknut with spigot
LB162	Axle Nut
LB351Z	Hub Shell, 40 holes
LB352Z	Hub Shell, 36 holes
M355	Lubricator
K67Z	Ball Cage with 8 1/4" diam. balls
LB405	Outer Dust Cap
LB156	Spindle, 5 3/4" long
LB156A	Spindle, 6 1/4" long
LB358Z	R.H. Cone with Dust Cap
LB357AZ	L.H. Cone with Dust Cap
LB159	Packing Washer
K460AZ	Brake Plate and Arm
K458AZ	Brake Shoes complete less Cam
K456A	Fulcrum Pin
K459A	Shoe End Cap
K136	Brake Linings (per pair with rivets)
K166	Brake Shoe Spring
K452	Brake Operating Cam
K175	Cam Nut or Fulcrum Pin Nut
GL432	Lock Washer
LB166	Cam Lever
K171	Wire Guide } Fitted on Brake Arm
K172	Lock Washer } for
K168	Guide Nut } Cable Operation only
N43Z	Brake Arm Clip complete for oval tubing
K124Z	Brake Arm Clip complete for round tubing
X69	Clip Screw
S386	Clip Nut
K360	Spacing Washer
K428	Notched Cone Adjuster
X42A	Axle Washer, 1/8" thick
X42	Axle Washer, 1/16" thick
LB155	Cone Locknut
LB162	Axle Nut

See separate pages for Brake Control parts

**BRAKE** { **ROD - FRONT**  
**CONTROLS** { **CABLE - FRONT**  
**AND REAR**

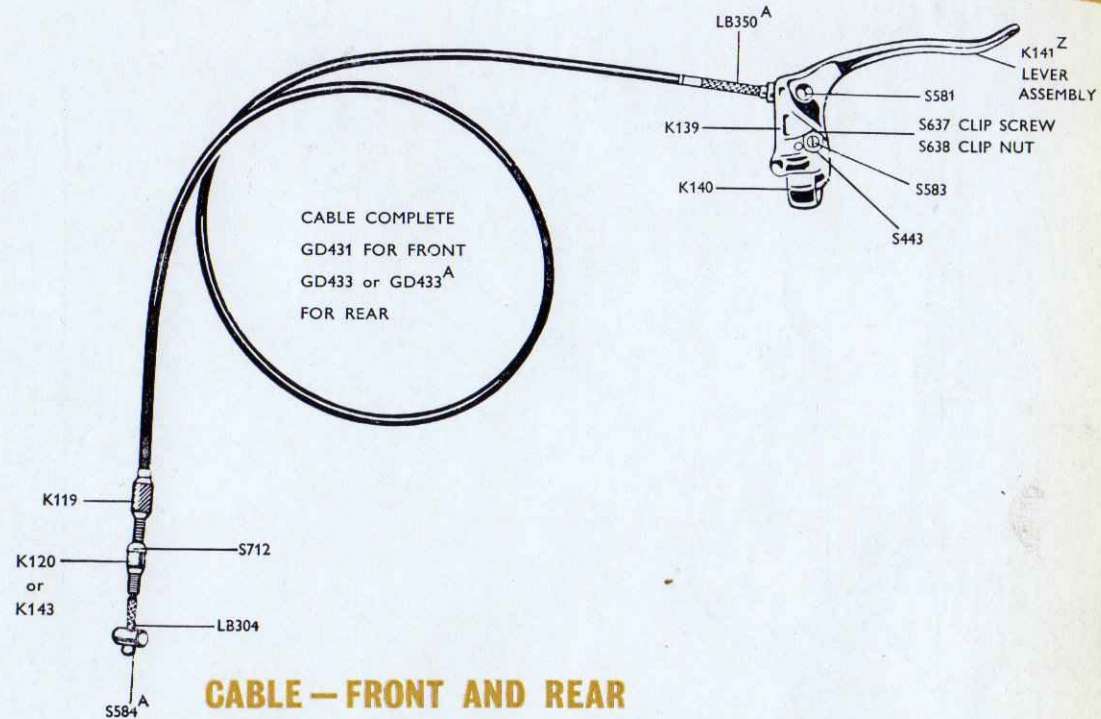


**ROD - FRONT**

**CODE No.**

**DESCRIPTION**

BC2	Front Rod fittings complete from Stirrup to Hub
LB329	Front Brake Stirrup
LB309	Inner Clip for 'D' or Duplex Forks
LB309A	Inner Clip for Oval Forks
LB330	Outer Clip for 'D' or Oval Forks
LB330A	Outer Clip for Duplex Forks only.
S35	Clip Screw
LB331	Fulcrum Screw
S98	Nut for Fulcrum Bolt
LB334	Rod Connection
S535	Connection Screw
S433	Connection Nut
GD 726	Brake Rod with top connection
LB304	Swivel Pin
LB167	Adjusting Nut



**CABLE - FRONT AND REAR**

**CODE No.**

**DESCRIPTION**

BC1F	Brake Control complete for Front Hub
BC1R	Brake Control complete for Rear Hub
K141Z	Brake Lever complete
K139	Lever Fulcrum
S583	Fulcrum Bolt
S443	Fulcrum Nut
K140	Fulcrum Clip
S637	Clip Screw
S638	Clip Nut
LB350A	Cable Guide
S581	Wire Nipple
GD431	Front Brake Cable complete
GD433	Rear Brake Cable complete to 1956 only
GD433A	Rear Brake Cable from 1957
K119	Cable Adjuster
K120	Adjuster Nut (Rear Cables to 1956 only) and all front cables
K143	Cable Adjuster for Rear Cables from 1957
S712	Locknut
LB304	Swivel for Cam Lever
S584A	Nipple (hub end)



# ROD-BRAKE CONTROLS

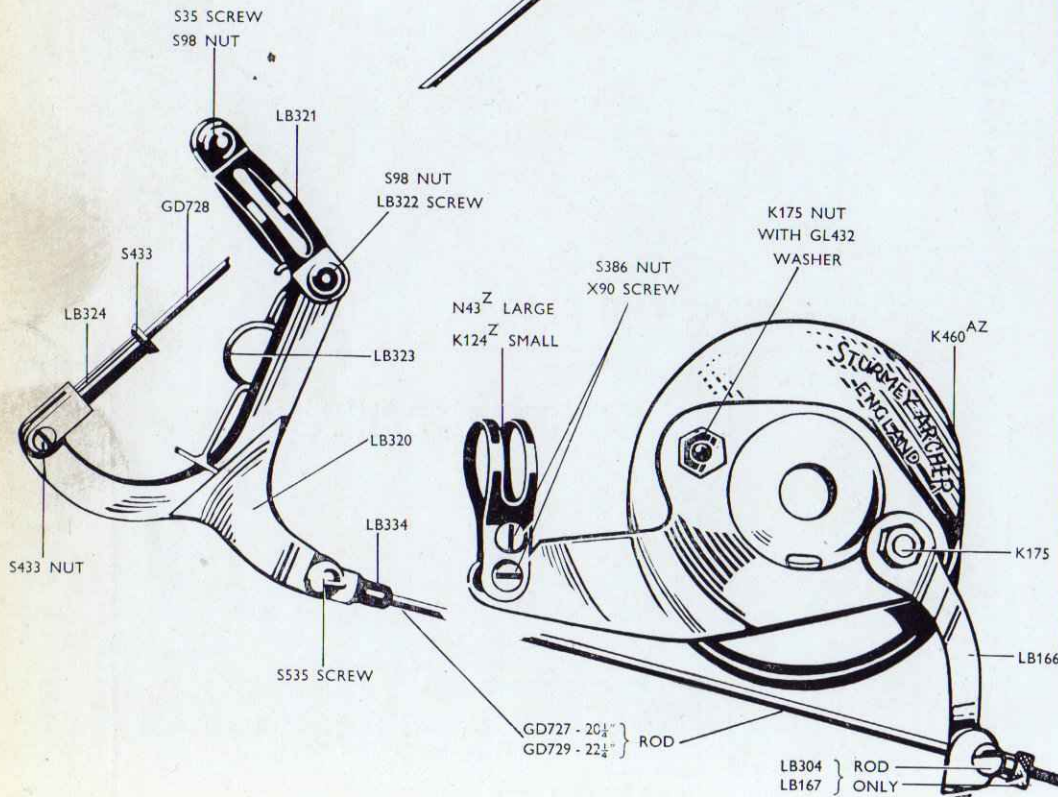
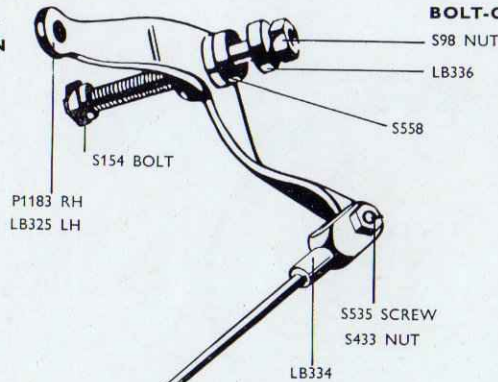
## — REAR

## REAR

### CLIP-ON PATTERN

- LB326<sup>AZ</sup> LH
- LB326<sup>BZ</sup> RH
- LB327<sup>A</sup> CLIP
- LB332 BOLT
- S443 NUT

### BOLT-ON PATTERN



### FOR REAR HUB BRAKE:

Code No.	Description
BC3BR	Rear Rod fittings, Bolt-on Bell-crank, right-hand operated
BC3BL	Rear Rod fittings, Bolt-on Bell-crank, left-hand operated
BC3CR	Rear Rod fittings, Clip-on Bell-crank, right-hand operated
BC3CL	Rear Rod fittings, Clip-on Bell-crank, left-hand operated

### BOLT-ON BELL-CRANK FITTINGS:

Code No.	Description
P1183	Right-hand Bell-crank
LB325	Left-hand Bell-crank
S154	Fulcrum Bolt
S558	Bush for Bell-crank
LB336	Washer
S98	Securing Nut

### CLIP-ON BELL CRANK FITTINGS:

Code No.	Description
LB326AZ	Left-hand Bell-crank with fulcrum
LB326BZ	Right-hand Bell-crank with fulcrum
LB327A	Fulcrum Clip
LB332	Fulcrum Bolt
S443	Fulcrum Nut

*Not illustrated*

### ROD FITTINGS

Code No.	Description
GD728	Down Tube Rod complete with connection each end
GD727	Bottom Rod complete with front connection (20 1/4" rod)
GD729	Bottom Rod complete with front connection (22 1/4" rod)
S535	Connection Screw
S433	Connection Nut
LB320	Brake Link
LB321	Brake Link Half-clip
LB323	Brake Link Spring
LB322	Swivel Bolt
S35	Brake Link Clip Screw
S98	Clip Screw Nut
LB304	Swivel Pin for Cam Lever
LB167	Adjusting Nut
LB334	Short Rod Connection
LB324	Long Rod Connection

**STURMEY**

**ARCHER**

*Lighting  
Equipment*

## **CYCLE LIGHTING EQUIPMENT**

THE 'DYNOHUB' HUB LIGHTING SET provides cycle lighting at its very best. Each set consists of a generator, headlamp, rear lamp, and connecting flexes. A dry battery unit (DBU) can be incorporated, to give light when the cycle is stationary.

The generator has no mechanical losses whatever and electrically is highly efficient, giving an output of 6 volts 34 amps at average riding speed. Other than the existing wheel bearings, it is entirely without mechanical friction or wearing parts and the effort to propel, therefore, is negligible. Troublesome contact brushes are not fitted and electrical current is continually and automatically generated without any external hand adjustments. Being gearless it is absolutely silent and its position within the hub protects it completely from damage.

Voltage regulation is such that adequate lighting is given at low speeds and there is no undue rise in voltage at high speeds, so guarding against the burning-out of bulbs.

With attractive lamps of modern design the 'Dynohub' hub lighting set is truly named—'THE WORLD'S FINEST CYCLE LIGHT'.

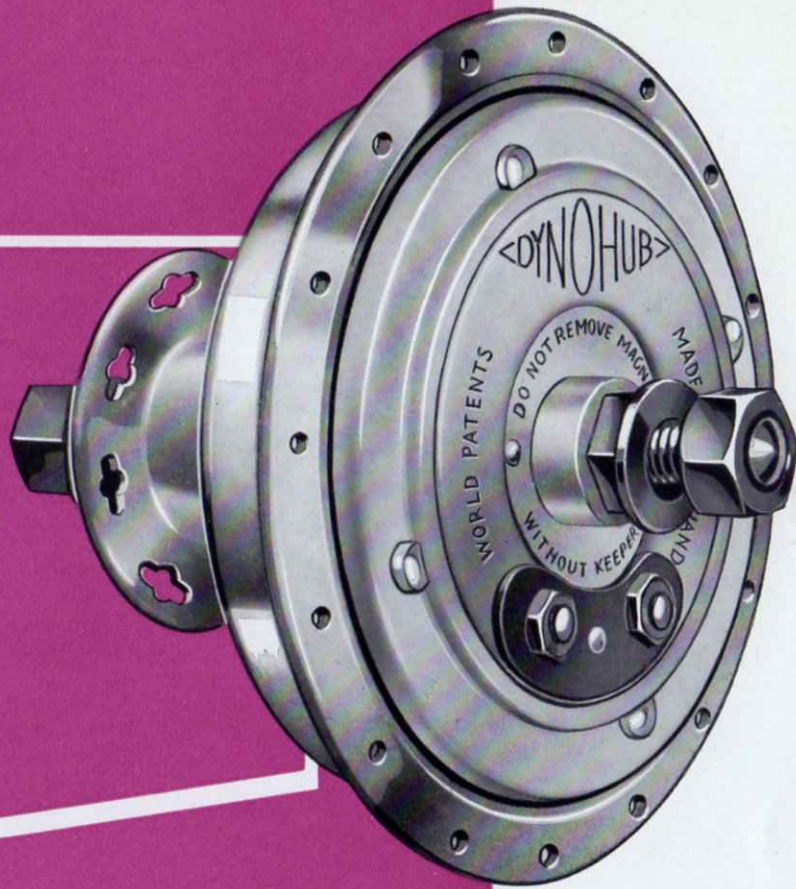
Three types of 'Dynohub' hub units are in current production. The GH6 model is a front hub with a dynamo incorporated. The SG unit combines in the rear hub an SW three-speed gear mechanism and dynamo. Similarly the FG model is a rear hub with an FW four-speed gear combined with a dynamo. By combining the gear and dynamo in one unit in this way there is a substantial saving in weight.

The AG hub (incorporating an AW three-speed gear and dynamo) is no longer in production but is described in the 'Discontinued Models' section of the catalogue.

# ***GH6***

***6V. 'DYNOHUB' HUB  
LIGHTING UNIT***

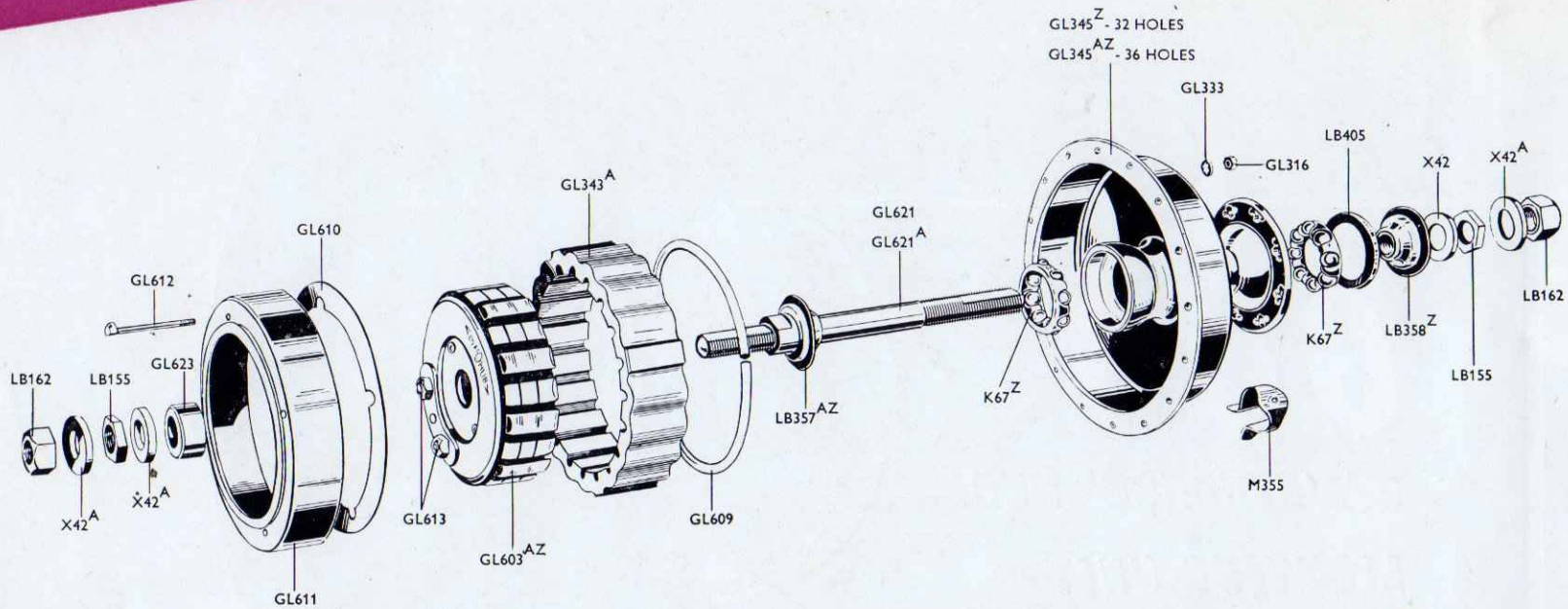
*by* **STURMEY  
ARCHER**



**GH6 Patent 6-volt 'Dynohub'  
Front Hub Lighting Set.**  
Like all our lighting sets it is  
mechanically frictionless and trouble free.

**FOR DETAILS OF PARTS SEE OVER**

# GH6 6V. 'Dynohub' Hub LIGHTING UNIT



## CODE

GL345Z  
GL345AZ  
M355  
LB405  
K67Z  
GL621  
GL621A  
LB358Z  
LB357AZ  
GL603AZ  
GL613  
GL343A

## DESCRIPTION

Shell, 32 holes  
Shell, 36 holes  
Lubricator  
Dust Cap  
Ball Cage with 8  $\frac{1}{4}$ " diam. balls  
Spindle, 5" long  
Spindle, 4 $\frac{3}{4}$ " long  
R.H. Cone with Dust Cap  
L.H. Cone with Dust Cap  
Armature complete  
Terminal Nut  
Magnet

## CODE

GL609  
GL610  
GL611  
GL612  
GL316  
GL333  
GL623  
X42A  
X42  
LB155  
LB155A  
LB162

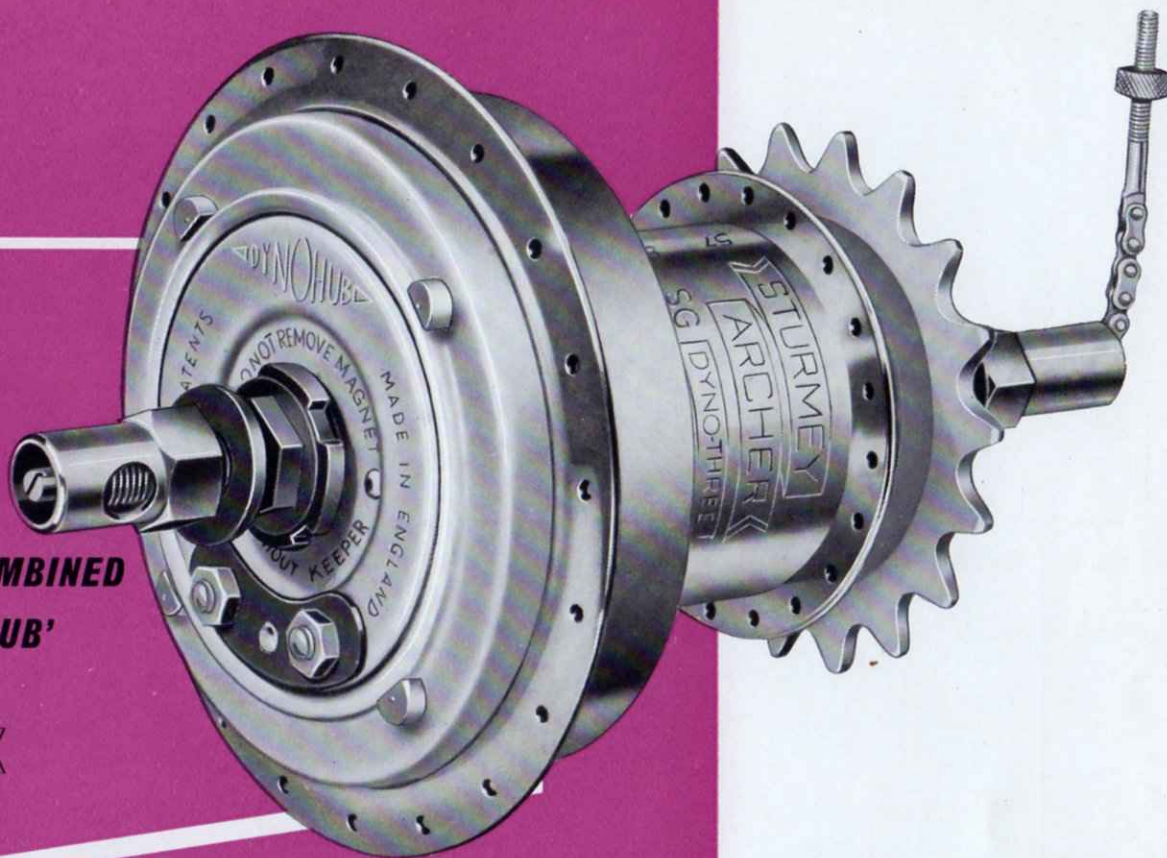
## DESCRIPTION

Magnet Spacing Ring  
Patent Number Disc  
Magnet Cover Plate  
Magnet Fixing Screw  
Nut for Magnet Fixing Screw  
Lock Washer  
Spacing Cup  
Axle Spacing Washer ( $\frac{1}{8}$ " thick)  
Axle Spacing Washer ( $\frac{1}{16}$ " thick)  
Cone Locknut  
Cone Locknut with spigot. *Not illustrated*  
Axle Nut

# SG

**WIDE-RATIO  
3-SPEED HUB COMBINED  
WITH 6V. 'DYNOHUB'**

by **STURMEY  
ARCHER**

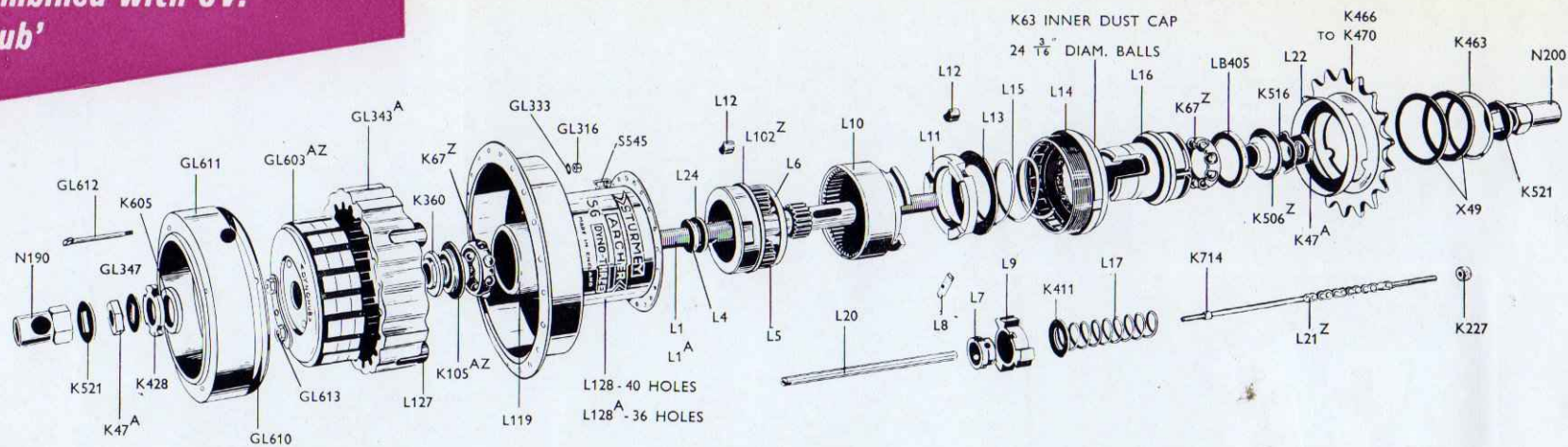


**SG** The new Wide-Ratio 3-Speed Hub, combined with patent 6-volt 'Dynohub' hub lighting set.

There is a great saving in weight by this combination. Ratios - 38.4% increase, 27.7% decrease from normal.

FOR DETAILS OF PARTS SEE OVER

**SG Wide-Ratio 3-Speed  
Hub combined with 6V.  
'Dynohub'**



**CODE No.**

**DESCRIPTION**

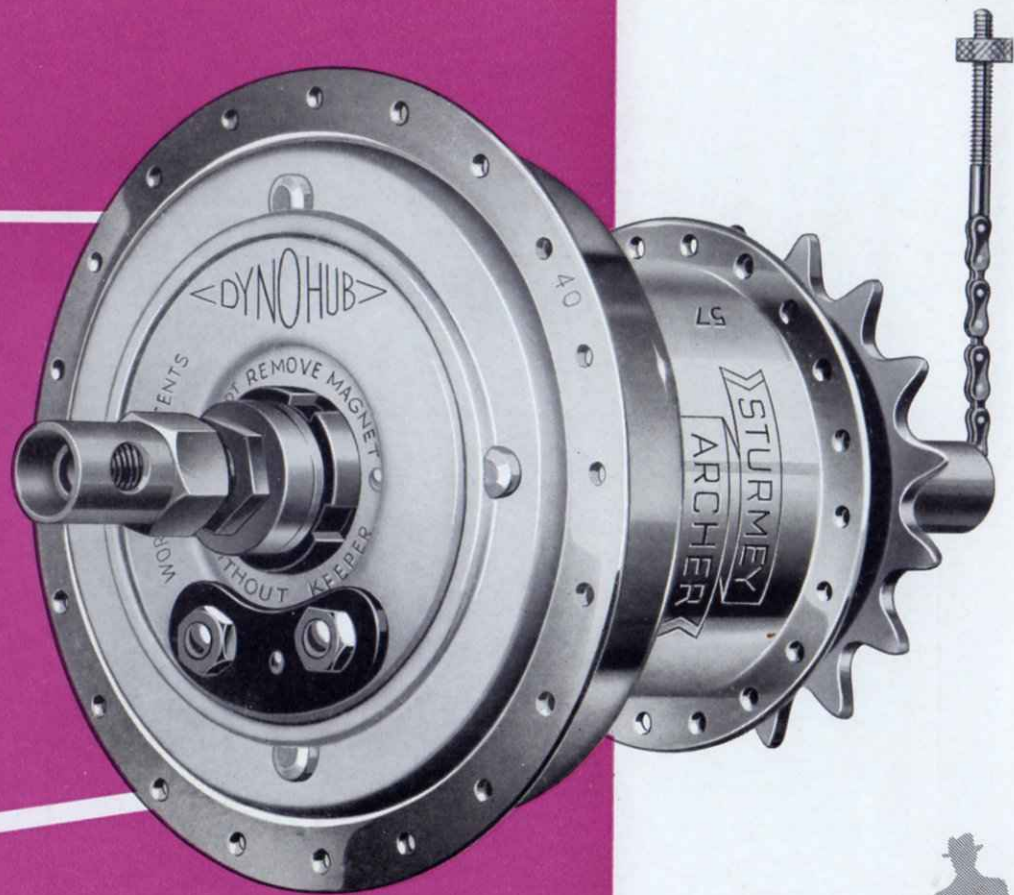
L1	Axle, 6" long
L1A	Axle, 6 $\frac{1}{2}$ " long
L102Z	Planet Cage
L24	Planet Cage Bearing Plate
L4	Planet Cage Fixing Plate
L5	Planet Pinion
L6	Pinion Retaining Ring
L7	Clutch Sleeve
L8	Axle Key
L9	Sliding Clutch
K411	Thrust Washer
L10	Gear Ring
L11	Gear Ring Pawl Ring
L12	Pawl
L13	Pawl Retaining Washer
L14	R.H. Ball Ring
329	Ball Bearings, $\frac{3}{16}$ " diam. (per set of 24)
K63	Inner Dust Cap
L15	Thrust Spring
L16	Driver
K67Z	Ball Cage with 8 $\frac{1}{4}$ " diam. balls
LB405	Outer Dust Cap
L17	Clutch Spring
K506Z	R.H. Cone with Dust Cap
K516	R.H. Cone Locking Washer
L128	Shell, 40 holes
L128A	Shell, 36 holes
S545	Lubricator
L119	L.H. Ball Cup
K105AZ	L.H. Cone with Dust Cap
K360	Packing Washer
GL603AZ	Armature complete

**CODE No.**

**DESCRIPTION**

GL613	Terminal Nut
GL343A	Magnet
L127	Magnet Spacing Piece
GL610	Patent Number Disc
GL611	Magnet Cover Plate
GL612	Magnet Fixing Screw
GL316	Magnet Fixing Screw Nut
GL333	Lock Washer
L20	Indicator—suits both lengths of axle
L21Z	Coupling complete
K714	Indicator Collar
K227	Connection Locknut
K605	Spacing Washer
K428	Notched Cone Adjuster
GL347	Locking Washer
X42	Spacing Washer ( $\frac{1}{16}$ " thick). <i>Not illustrated</i>
K47A	Cone Locknut
K521	Axle Lock Washer
K48	Lip Washer—Alternative to K521. <i>Not illustrated</i>
N190	L.H. Axle Nut
N200	R.H. Axle Nut
X42A	Axle Spacing Washer—alternative to X42. <i>Not illustrated</i>
L22	Sprocket Dust Cap
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K469	Sprocket, 19 teeth
K470	Sprocket, 20 teeth
X49	Sprocket Spacing Washer
K463	Circlip
K468A	Sprocket, 18 teeth for $\frac{3}{16}$ " wide chain
K469A	Sprocket, 19 teeth for $\frac{3}{16}$ " wide chain

**FG**  
**WIDE-RATIO**  
**4-SPEED**  
**'DYNOHUB'**  
by **STURMEY**  
**ARCHER**

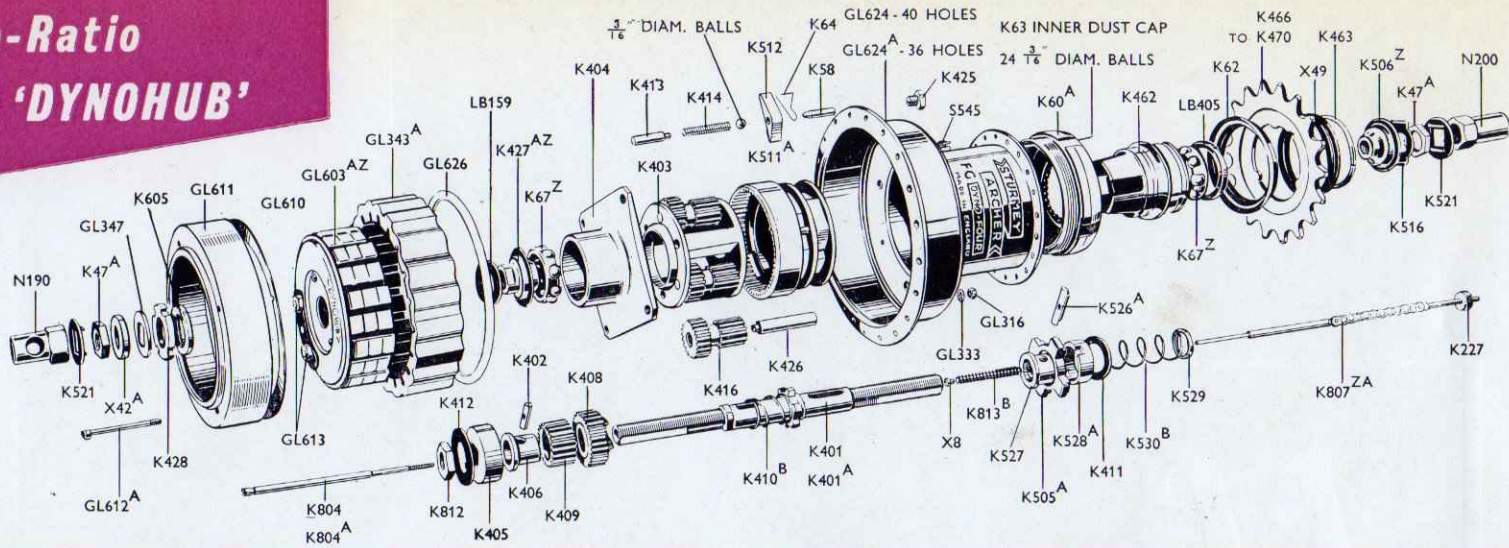


**FG** Wide-Ratio 4-Speed Hub combined with patent 6-volt 'Dynohub' hub lighting set. There is a great saving in weight by this combination. Ratios - 26.6% increase, 21.1% and 33.3% decrease from normal.

**FOR DETAILS OF PARTS SEE OVER**



# FG Wide-Ratio 4-SPEED 'DYNOHUB'



## CODE No.

## DESCRIPTION

K401A	Axle, 6 $\frac{1}{2}$ " long
K401	Axle, 5 $\frac{3}{8}$ " long
K410B	Low Gear Spring
K408	Primary Sun Pinion
K409	Secondary Sun Pinion
K406	Pinion Sleeve
K402	Low Gear Key
K405	Dog Ring
K412	Locking Washer
K812	Locknut
K403	Planet Cage
K416	Planet Pinion
K426	Pinion Pin
K813B	Compensator Spring
X8	Collar for Compensator Spring
K527	Clutch Sleeve
K505A	Sliding Clutch
K526A	Axle Key
K804A	Indicator for long axle
K804	Indicator for short axle
K807ZA	Coupling complete
K227	Connection Locknut
K511A	Gear Ring
K512	Gear Ring Pawl
K64	Pawl Spring
K58	Pawl Pin
K60A	R.H. Ball Ring
329	Ball Bearings $\frac{3}{16}$ " diam. (per set of 24)
K63	Inner Dust Cap
K528A	Thrust Ring
K411	Thrust Washer
K530B	Clutch Spring
K529	Spring Cap
K462	Driver
K67Z	Ball Cage with 8 $\frac{1}{4}$ " balls
LB405	Outer Dust Cap

## CODE No.

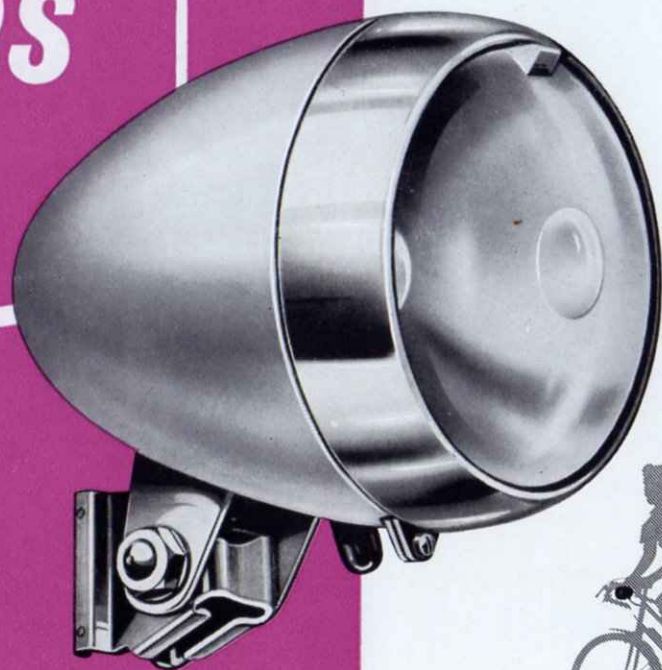
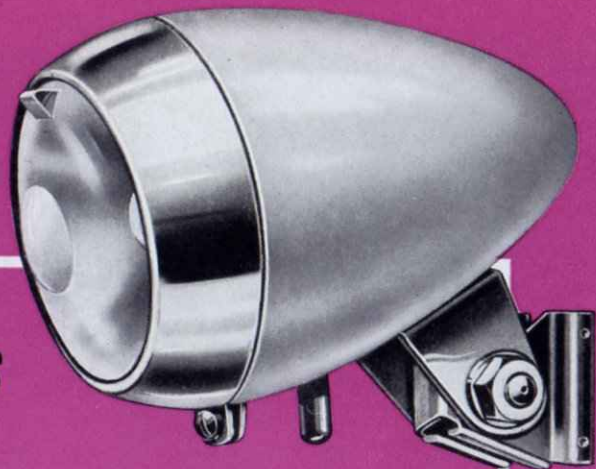
## DESCRIPTION

K506Z	R.H. Cone with Dust Cap
K516	R.H. Cone Locking Washer
GL624	Shell, 40 holes
GL624A	Shell, 36 holes
S545	Lubricator
SET OF THREE	$\frac{3}{16}$ " diam. ball bearings for K403 Planet Cage
K414	Low Gear Pawl Spring
K413	Low Gear Pawl
K404	L.H. Ball Cup
K425	Ball Cup Fixing Screws
K427AZ	L.H. Cone with Dust Cap
LB159	Packing Washer
GL603AZ	Armature complete
GL613	Terminal Nut
GL343A	Magnet
GL626	Magnet Spacing Ring
GL610	Patent Number Disc
GL611	Magnet Cover Plate
GL612A	Magnet Fixing Screw
GL316	Nut for Magnet Fixing Screw
GL333	Lock Washer
K605	Spacing Washer
K428	Notched Cone Adjuster
GL347	Locking Washer
K47A	Cone Locknut
K521	Axle Locking Washer
N190	L.H. Axle Nut
N200	R.H. Axle Nut
K62	Sprocket Dust Cap
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K469	Sprocket, 19 teeth
K470	Sprocket, 20 teeth
X49	Sprocket Spacing Washer
K463	Circlip

**SPORTS**

# **HEADLAMPS**

by **STURMEY** **ARCHER** **ROADSTER**

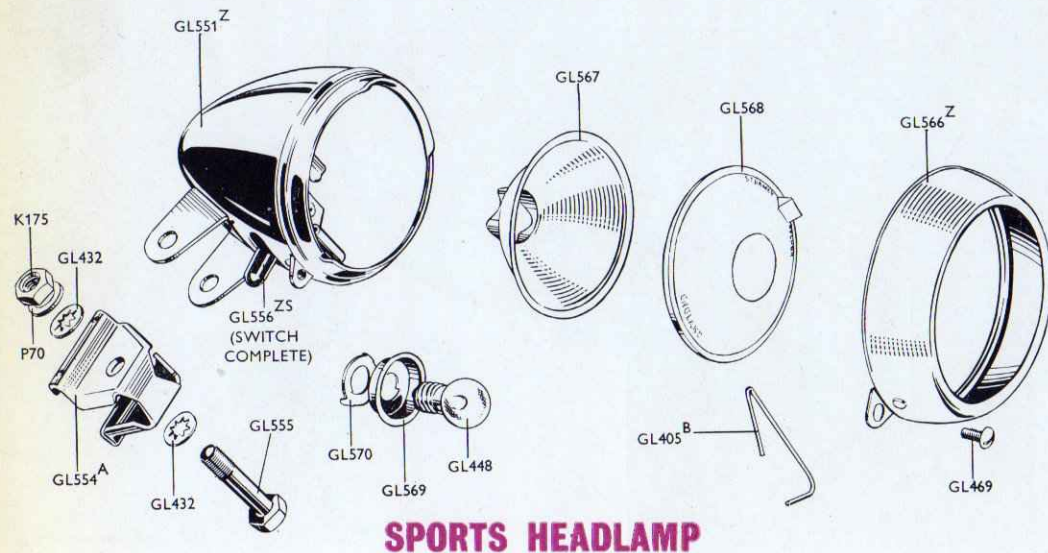
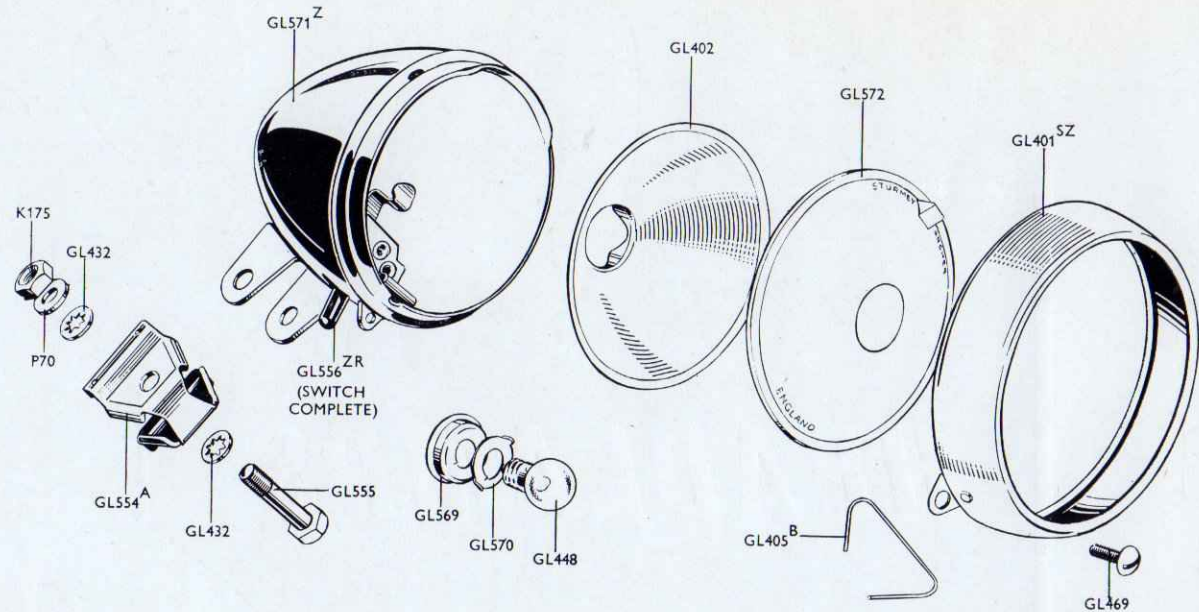


Fully enclosed and of pleasing shape the Roadster Headlamp is available in either black or silver finish and the Sports Headlamp in silver finish. Both lamps are fitted with chrome rim.

FOR DETAILS OF PARTS SEE OVER

# HEADLAMPS: ROADSTER AND SPORTS

## ROADSTER HEADLAMP



## SPORTS HEADLAMP

### Large Headlamp TYPE 'R'

R625

GL571Z  
GL556ZR  
GL401SZ  
GL572  
GL402  
GL405B  
GL569  
GL570  
GL469  
GL448  
GL554A  
GL555  
GL432  
P70  
K175

### Small Headlamp TYPE 'S'

S625

GL551Z  
GL556ZS  
GL566Z  
GL568  
GL567  
GL405B  
GL569  
GL570  
GL469  
GL448  
GL554A  
GL555  
GL432  
P70  
K175

### DESCRIPTION

Headlamp complete—state colour

Headlamp Body complete—state colour  
Switch complete  
Headlamp Rim  
Headlamp Lens  
Reflector  
Reflector Securing Spring  
Bulb Holder  
Bulb Holder Lockring  
Rim Securing Screw  
Bulb, 6v 25 amp.  
Lamp Bracket Adaptor  
Headlamp Fixing Bolt  
Spring Washer  
Washer  
Fixing Nut

# REAR LAMP

by **STURMEY**  
**ARCHER**



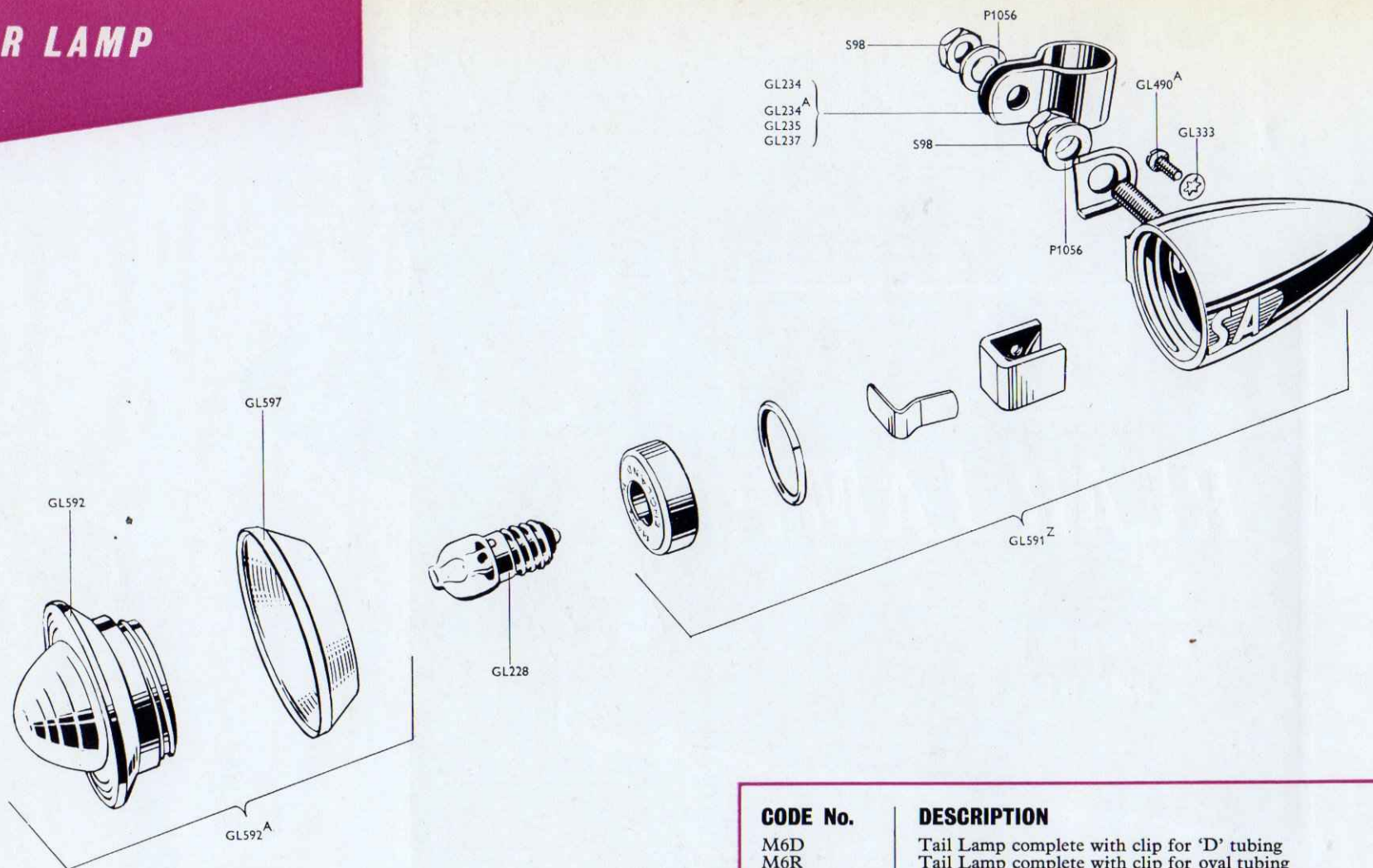
PRINTED IN ENGLAND



The Rear Lamp is all plastic—gives a wide range of visibility—unique in its simplicity and appearance and designed to comply with the new lighting regulations.

FOR DETAILS OF PARTS SEE OVER

# REAR LAMP



## CODE No.

## DESCRIPTION

M6D	Tail Lamp complete with clip for 'D' tubing
M6R	Tail Lamp complete with clip for oval tubing
M6S	Tail Lamp complete with clip for $\frac{5}{8}$ " round tubing
M6T	Tail Lamp complete with clip for $\frac{1}{2}$ " round tubing
GL234	Tail Lamp Clip, $\frac{5}{8}$ " round
GL234A	Tail Lamp Clip, $\frac{1}{2}$ " round
GL235	Tail Lamp Clip, oval
GL237	Tail Lamp Clip, 'D'
P1056	Clip Washer
S98	Clip Fixing Nut
GL490A	Tail Lamp Terminal Screw
GL333	Spring Washer
GL228	Bulb, 6v .04 amp.
GL592A	Tail Lamp Dome
GL597	Dome Cover
GL591Z	Tail Lamp Body complete less Clip and Bulb

# ***DRY BATTERY UNIT***

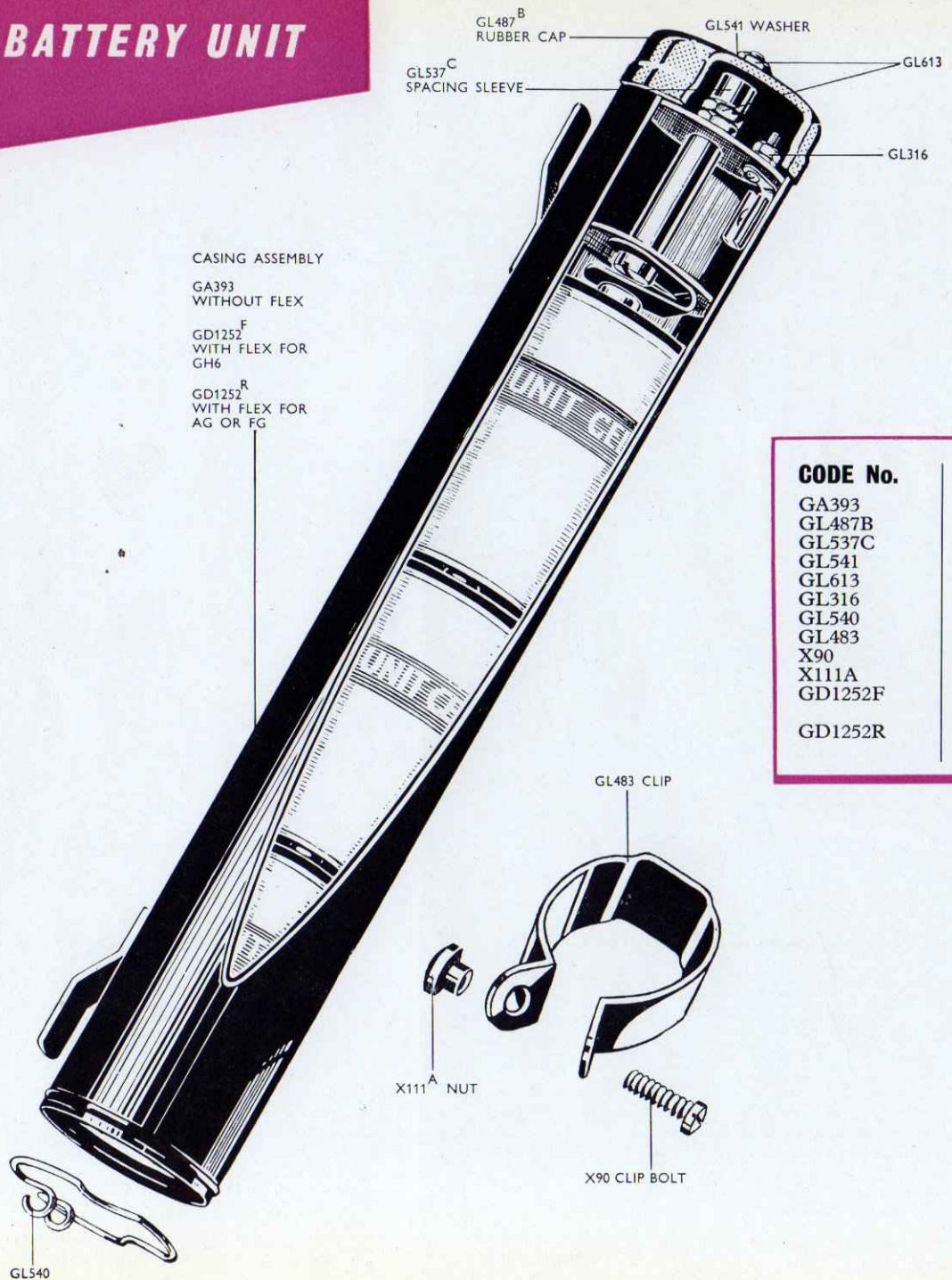
by **STURMEY**  
**ARCHER**



The Dry Battery Unit is available  
with any SturmeY-Archer lighting set.  
By means of three batteries,  
it provides a light when stationary.

FOR DETAILS OF PARTS SEE OVER

# DRY BATTERY UNIT

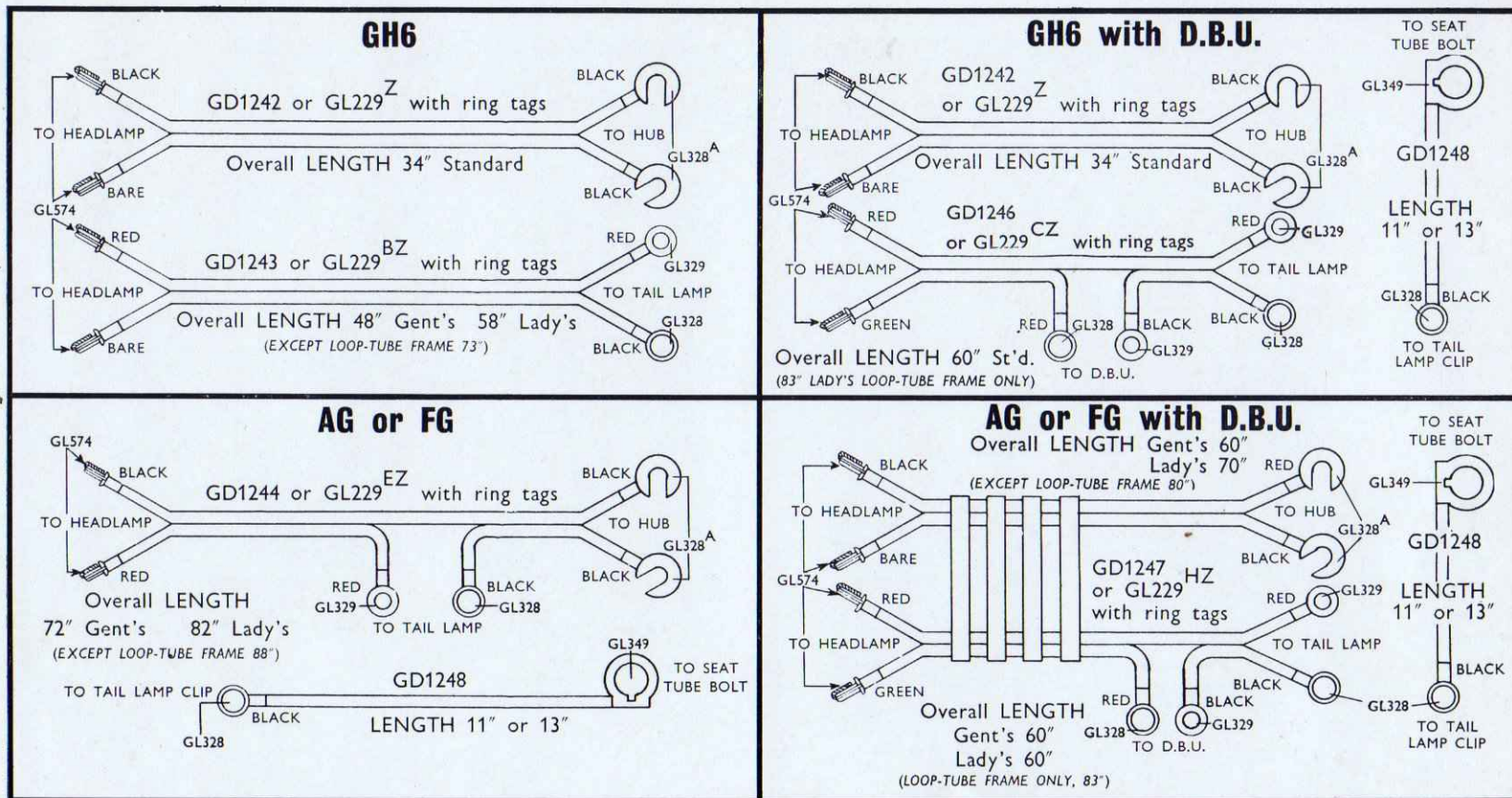


## CODE No.

## DESCRIPTION

GA393	Battery casing complete less flex	
GL487B	Rubber Cap	
GL537C	Spacing Sleeve	
GL541	Securing Washer	
GL613	Fixing Nut	
GL316	Terminal Nut	
GL540	Spring Ring	
GL483	Frame Clip	
X90	Clip Bolt	
X111A	Clip Nut	
GD1252F	Dry Battery Unit complete with flex for GH6 hub	} Less Batteries
GD1252R	Dry Battery Unit complete with flex for AG or FG	

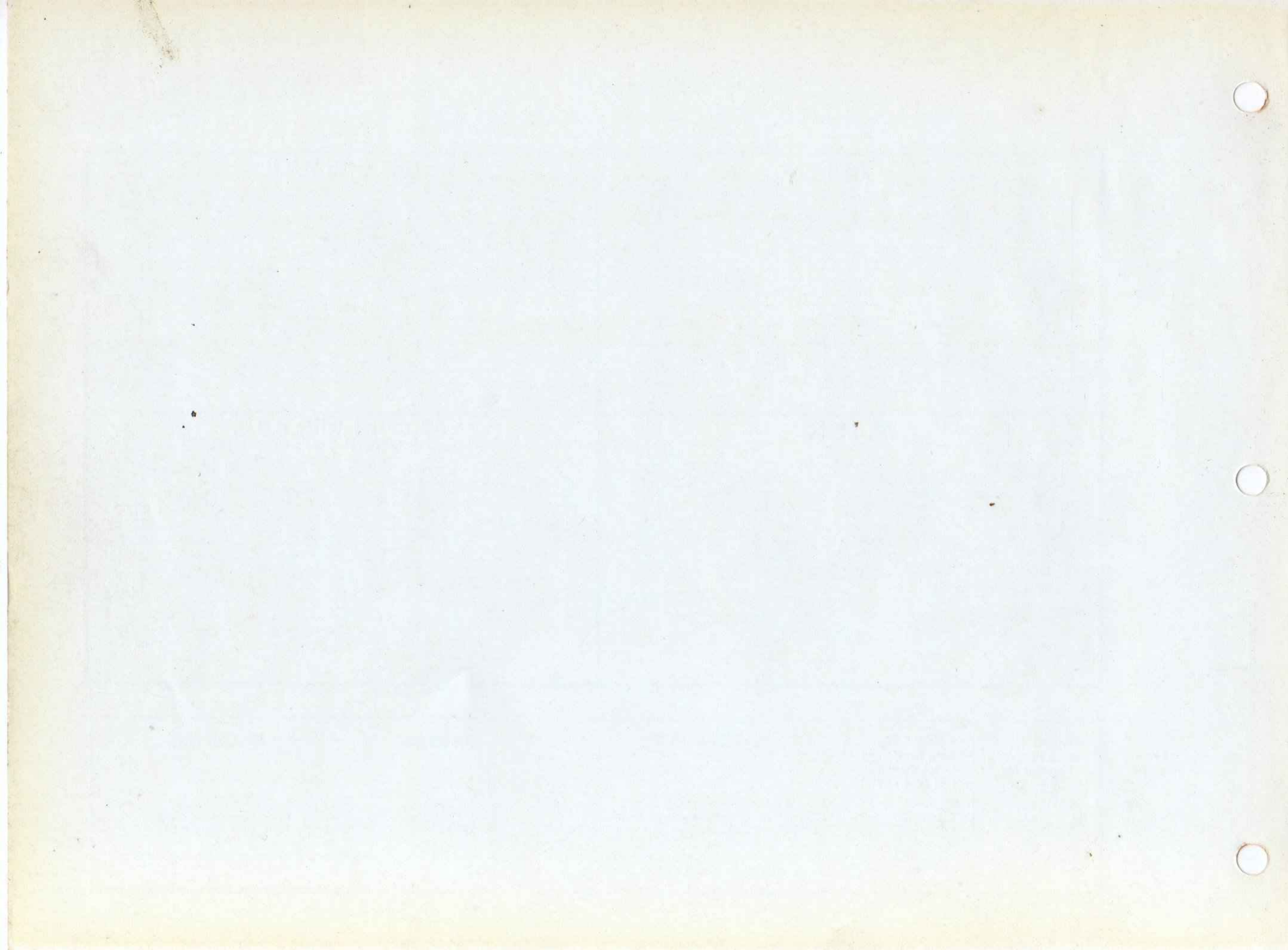
# FLEX WIRES DETAILS



PRINTED IN ENGLAND

CODE No. with Plug-in Ferrules for Switch	CODE No. with Ring Tags for Switch (old type Lamp)	DESCRIPTION	CODE No.	DESCRIPTION
GD1242	GL229Z	Flex Wire from Hub to Headlamp	GL328	Wire Tag for 2BA—Ring type
GD1243	GL229BZ	Flex Wire from Headlamp to Tail Lamp	GL328A	Wire Tag for 2 BA—Hook type
GD1244	GL229EZ	Flex Wire, Headlamp to Tail Lamp and Hub	GL329	Wire Tag for 6 BA—Ring type
GD1246	GL229CZ	Flex Wire, Headlamp to DBU and Tail Lamp	GL349	Wire Tag for Seat Bolt
GD1247	GL229HZ	Wiring Assembly for AG or FG with DBU	GL574	Plug-in Ferrule for switch connection
GD1248	GD1248	Earth Wire from Tail Lamp to Seat Lug		





**STURMEY**  
**ARCHER**

*Discontinued  
Models*

DISCONTINUED  
MODELS

## ***DISCONTINUED MODELS***

THE PRESENT RANGE OF STURMEY-ARCHER variable gears represents the result of years of development on the part of the Company related to public demand.

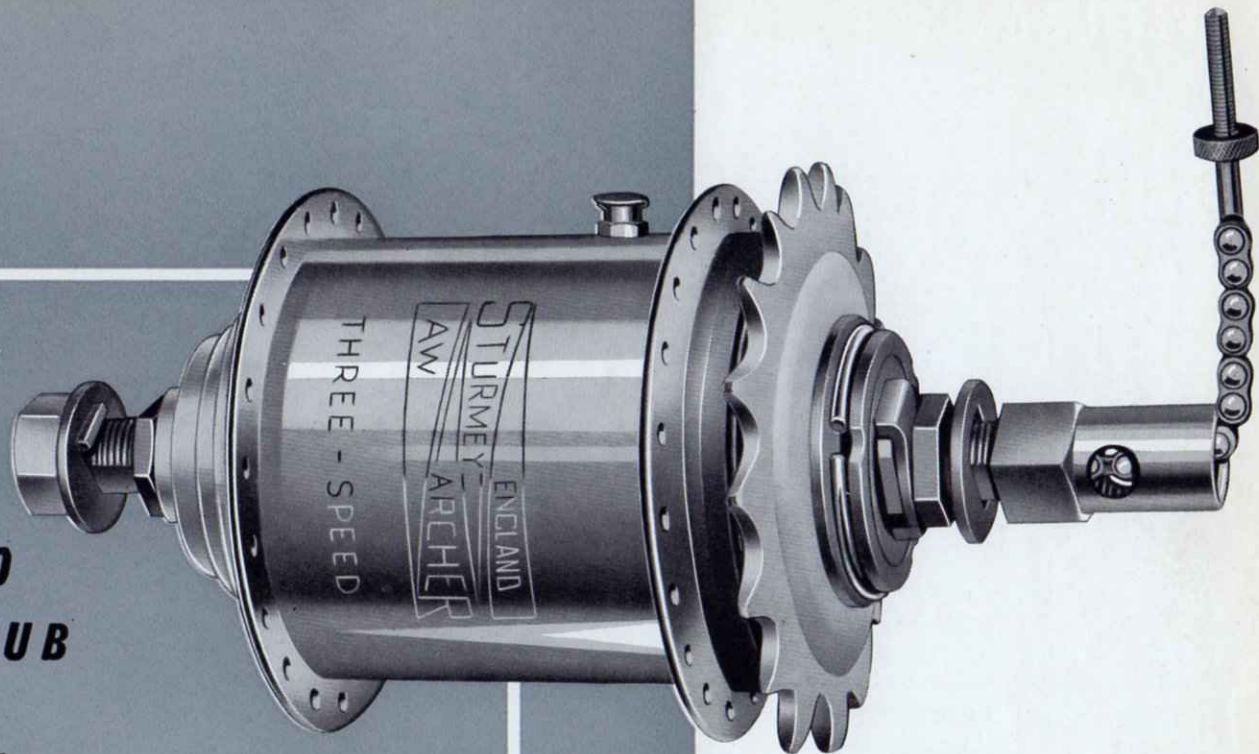
In this section will be found details of hubs which have been recently discontinued. Some of the hubs in question were developed in response to demand from very small and exclusive sections of cyclists, as in the case of the AC (three-speed close ratio); FC (four-speed close ratio); and ASC (three-speed close ratio fixed gear) models. These have recently been withdrawn from the range although ample stocks are available to take care of demand for some time to come.

In all cases of discontinued models SturmeY-Archer protects the user by ensuring that spares are available for at least a decade ahead.

# AW

**WIDE-RATIO  
3-SPEED HUB**

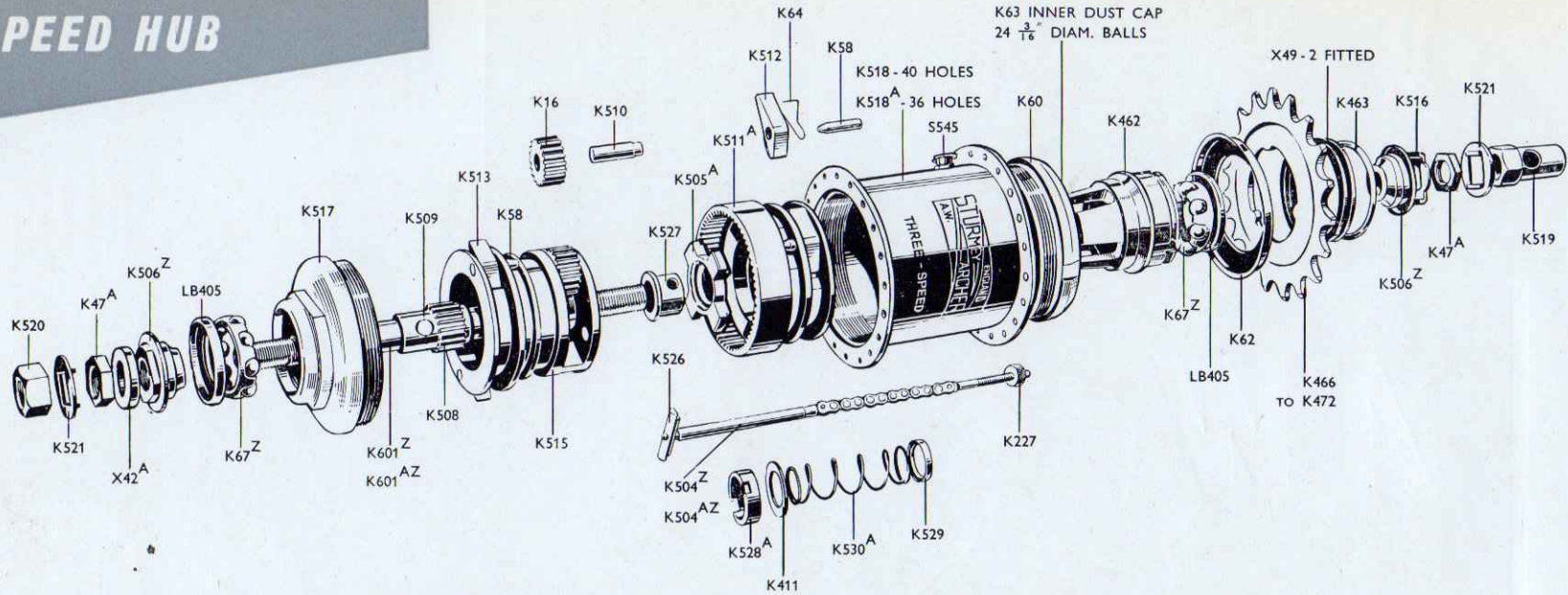
by **STURMEY  
ARCHER**



**AW Wide-Ratio 3-Speed.**  
Hub 33.3% increase,  
25% decrease from normal.  
Specially suitable for roadster machines

FOR DETAILS OF PARTS SEE OVER

# AW Wide-Ratio 3-SPEED HUB



## CODE No.

## DESCRIPTION

K601Z	Axle complete with Sun Pinion (5 $\frac{3}{4}$ " long)
K601AZ	Axle complete with Sun Pinion (6 $\frac{1}{4}$ " long)
K508	Sun Pinion only
K509	Dowel for Sun Pinion
K515	Planet Cage
K527	Clutch Sleeve
K505A	Sliding Clutch
K526	Axle Key
K528A	Thrust Ring
K411	Thrust Washer
K16	Planet Pinion
K510	Pinion Pin
K511A	Gear Ring
K512	Gear Ring Pawl
K64	Pawl Spring
K58	Pawl Pin
K60	R.H. Ball Ring
329	Ball Bearings, $\frac{3}{16}$ " diam. (per set of 24)
K63	Inner Dust Cap
K530A	Clutch Spring
K529	Clutch Spring Cap
K462	Driver
K67Z	Ball Cage with $\frac{1}{4}$ " balls
LB405	Outer Dust Cap
K506Z	Axle Cone with Dust Cap
K516	R.H. Cone Locking Washer

## CODE No.

## DESCRIPTION

K513	Low Gear Pawl
K518	Shell, 40 holes
K518A	Shell, 36 holes
S545	Lubricator
K517	L.H. Ball Cup
K504Z	Indicator for short axle (K601Z)
K504AZ	Indicator for long axle (K601AZ)
K227	Connection Locknut
X42A	Axle Spacing Washer ( $\frac{1}{8}$ " thick)
K47A	Cone Locknut
K521	Axle Washer
K48	Lip Washer
X42	Axle Washer ( $\frac{1}{16}$ " thick)
K519	R.H. Axle Nut
K520	L.H. Axle Nut
K62	Sprocket Dust Cap
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K468A	Sprocket, 18 teeth for $\frac{3}{16}$ " wide chain
K469	Sprocket, 19 teeth
K469A	Sprocket, 19 teeth for $\frac{3}{16}$ " wide chain
K470	Sprocket, 20 teeth
K472	Sprocket, 22 teeth
X49	Sprocket Spacing Washer ( $\frac{1}{16}$ " thick)
K463	Circlip

} *Not illustrated*  
} *Alternative to X42A*

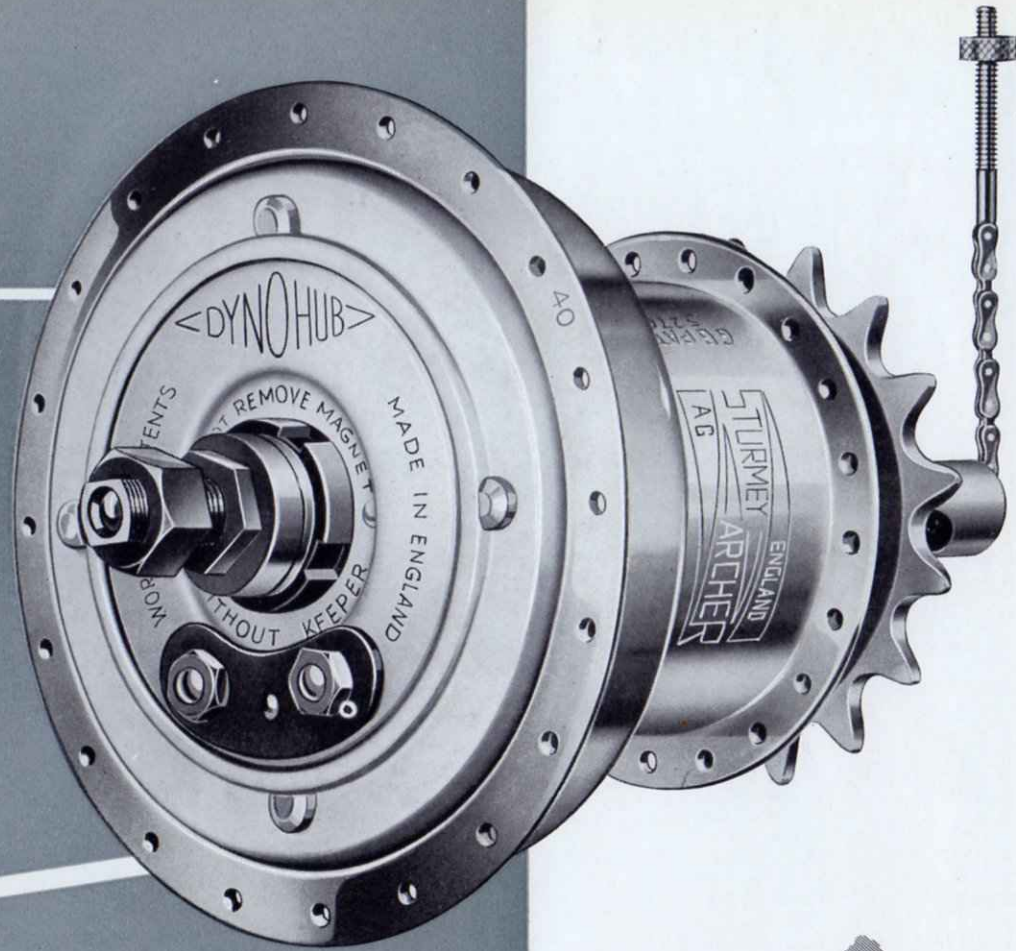
# AG

**WIDE-RATIO**

**3-SPEED HUB COMBINED**

**WITH 6V. 'DYNOHUB'**

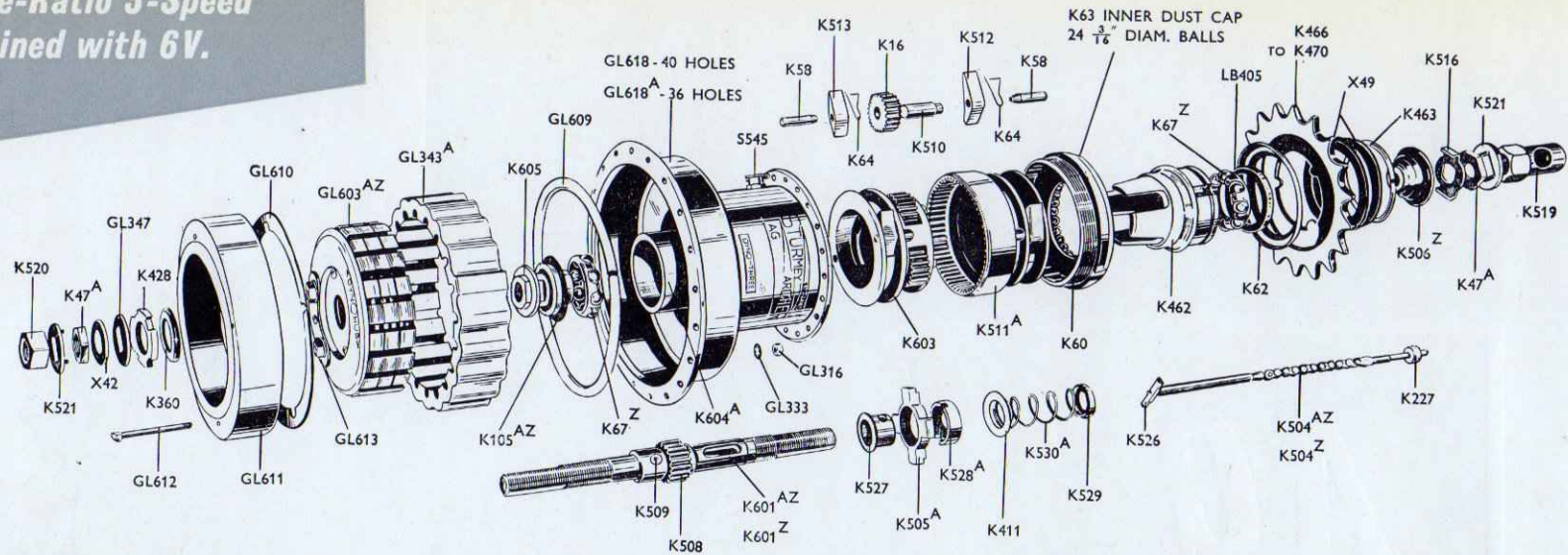
by **STURMEY**  
**ARCHER**



**AG** Wide-Ratio 3-Speed Hub, combined patent 6v. 'Dynohub' lighting unit. Ratios - 33.3% increase, 25% decrease from normal.

FOR DETAILS OF PARTS SEE OVER

# AG Wide-Ratio 3-Speed Hub combined with 6V. 'Dynohub'



## CODE No.

## DESCRIPTION

K601AZ	Axle complete with Sun Pinion (6 $\frac{1}{4}$ " long)
K601Z	Axle complete with Sun Pinion (5 $\frac{3}{4}$ " long)
K508	Sun Pinion only
K509	Dowel
K603	Planet Cage
K527	Clutch Sleeve
K505A	Sliding Clutch
K526	Axle Key
K528A	Thrust Ring
K16	Planet Pinion
K510	Pinion Pin
K511A	Gear Ring
K512	Gear Ring Pawl
K64	Pawl Spring
K58	Pawl Pin
K60	R.H. Ball Ring
329	$\frac{3}{16}$ " diam. Ball Bearings (per set of 24)
K63	Inner Dust Cap
K411	Thrust Washer
K530A	Clutch Spring
K529	Clutch Spring Cap
K462	Driver
K67Z	Ball Cage with 8 $\frac{1}{4}$ " diam. balls
LB405	Outer Dust Cap
K506Z	R.H. Cone with Dust Cap
K516	R.H. Cone Locking Washer
K513	Low Gear Pawl
GL618	Shell, 40 holes
GL618A	Shell, 36 holes
S545	Lubricator
K604A	L.H. Ball Cup
K105AZ	L.H. Cone with dust Cap
K605	Spacing Washer

## CODE No.

## DESCRIPTION

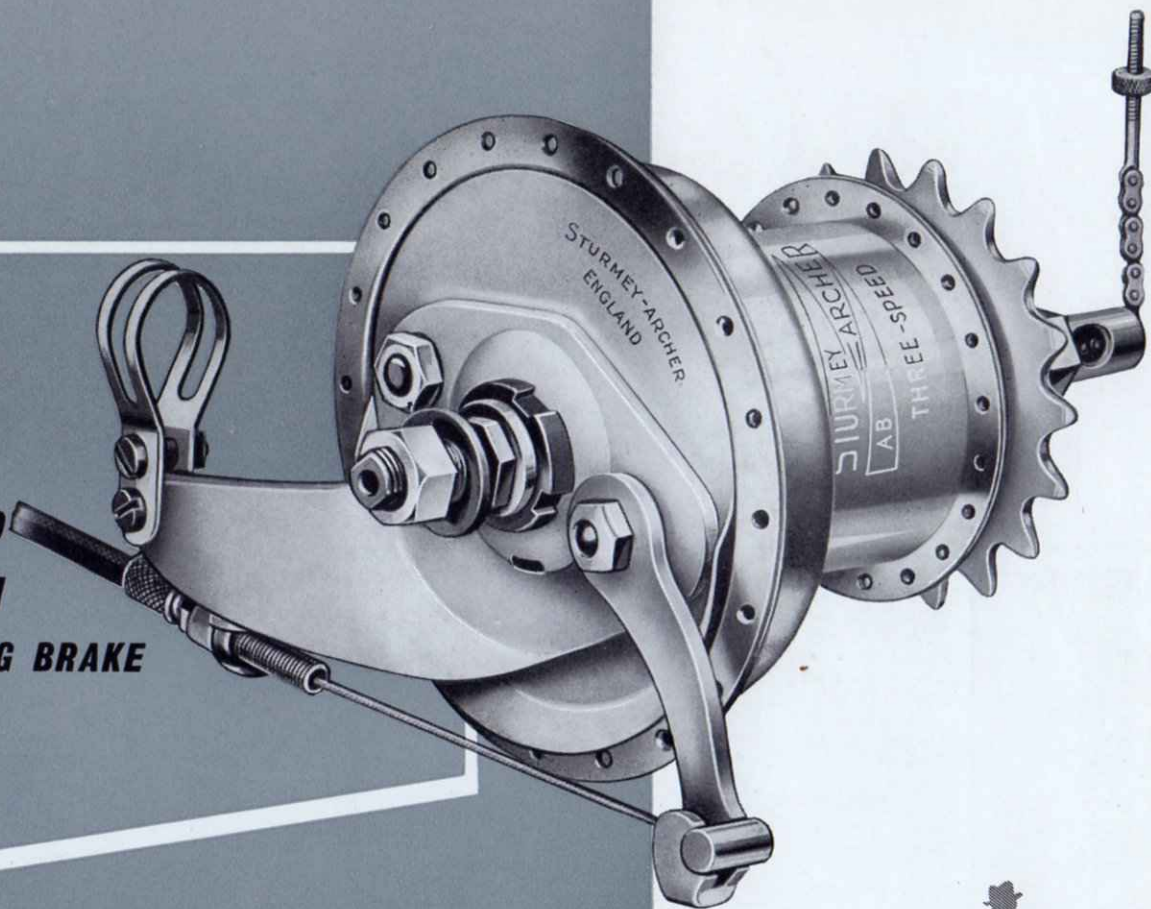
K504Z	Indicator complete for short axle
K504AZ	Indicator complete for long axle
K227	Connection Locknut
GL603AZ	Armature complete
GL613	Terminal Nut
GL343A	Magnet
GL609	Magnet Spacing Ring
GL610	Patent Number Disc
GL611	Magnet Cover Plate
GL612	Magnet Fixing Screw
GL316	Nut for Magnet Fixing Screw
GL333	Lock Washer
K360	Spacing Washer
K428	Notched Cone Adjuster
GL347	Locking Washer
X42	Spacing Washer ( $\frac{1}{16}$ " thick)
K47A	Cone Locknut
K521	Axle Locking Washer
K519	R.H. Axle Nut
K520	L.H. Axle Nut
K62	Sprocket Dust Cap
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K468A	Sprocket, 18 teeth for $\frac{3}{16}$ " wide chain
K469	Sprocket, 19 teeth
K469A	Sprocket, 19 teeth for $\frac{3}{16}$ " wide chain
K470	Sprocket, 20 teeth
K472	Sprocket, 22 teeth
X49	Sprocket Spacing Washer
K463	Circlip
X42A	Axle Spacing Washer ( $\frac{1}{8}$ " thick)
K48	Lip Washer

} Alternatives—  
Not illustrated

# AB

**3-SPEED WIDE-RATIO  
HUB COMBINED WITH  
INTERNAL EXPANDING BRAKE**

by **STURMEY  
ARCHER**

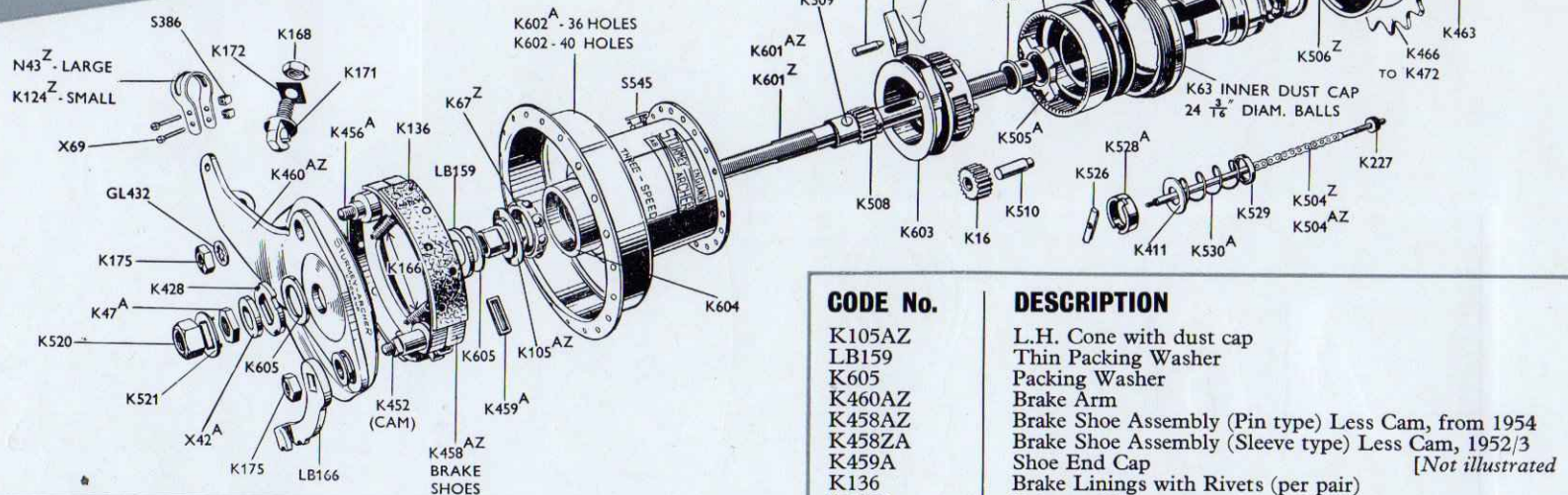


**AB** Wide-Ratio 3-Speed Hub incorporating hand operated internal expanding brake. Fitted with either cable or rod control. Ratios - 33.3% increase, 25% decrease from normal.

FOR DETAILS OF PARTS SEE OVER



# AB 3-Speed Wide-Ratio Hub combined with Internal Expanding Brake



## CODE No.

## DESCRIPTION

K601AZ	Axle complete with Sun Pinion, 6 $\frac{1}{4}$ " long
K601Z	Axle with Sun Pinion, 5 $\frac{3}{4}$ " long
K508	Sun Pinion only
K509	Dowel for Sun Pinion
K603	Planet Cage
K527	Clutch Sleeve
K505A	Sliding Clutch
K526	Axle Key
K528A	Thrust Ring
K411	Thrust Washer
K16	Planet Pinion
K510	Pinion Pin
K511A	Gear Ring
K512	Gear Ring Pawl
K64	Pawl Spring
K58	Pawl Pin
K60	R.H. Ball Ring
329	Ball Bearings $\frac{3}{16}$ " diam. (per set of 24)
K63	Inner Dust Cap
K530A	Clutch Spring
K529	Clutch Spring Cap
K462	Driver
K67Z	Ball Cage with $\frac{1}{4}$ " diam. balls
LB405	Outer Dust Cap
K506Z	R.H. Cone with dust cap
K516	Lock Washer for R.H. Cone
K513	Low Gear Pawl
K602	Shell, 40 holes
K602A	Shell, 36 holes
S545	Lubricator
K604	L.H. Ball Cup

## CODE No.

## DESCRIPTION

K105AZ	L.H. Cone with dust cap
LB159	Thin Packing Washer
K605	Packing Washer
K460AZ	Brake Arm
K458AZ	Brake Shoe Assembly (Pin type) Less Cam, from 1954
K458ZA	Brake Shoe Assembly (Sleeve type) Less Cam, 1952/3
K459A	Shoe End Cap <span style="float: right;">[Not illustrated]</span>
K136	Brake Linings with Rivets (per pair)
K456A	Fulcrum Pin
K166	Brake Shoe Spring
K452	Cam
K456	Fulcrum Sleeve, 1952/3 only. <i>Not illustrated</i>
GL432	Locking Washer
LB166	Cam Lever
K175	Cam Lever Nut
K171	Wire Guide
K172	Lock Washer
K168	Guide Nut
K504AZ	Indicator for long axle (K601AZ)
K504Z	Indicator for short axle (K601Z)
K227	Connection Locknut
K428	Notched Adjusting Washer
X42A	Spacing Washer ( $\frac{1}{8}$ " thick)
K47A	Cone Locknut
K521	Axle Washer
K519	R.H. Axle Nut
K520	L.H. Axle Nut
K62	Sprocket Dust Cap
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K468A	Sprocket, 18 teeth for $\frac{3}{16}$ " wide chain
K469	Sprocket, 19 teeth
K469A	Sprocket, 19 teeth for $\frac{3}{16}$ " wide chain
K470	Sprocket, 20 teeth
K472	Sprocket, 22 teeth
X49	Sprocket Spacing Washer ( $\frac{1}{16}$ " thick)
K463	Circlip
N43Z	Brake Arm Clip complete, for oval or D tubing
K124Z	Brake Arm Clip complete for round tubing
X69	Clip Screw
S386	Clip Nut

# AC

**ULTRA CLOSE-RATIO  
3-SPEED HUB**

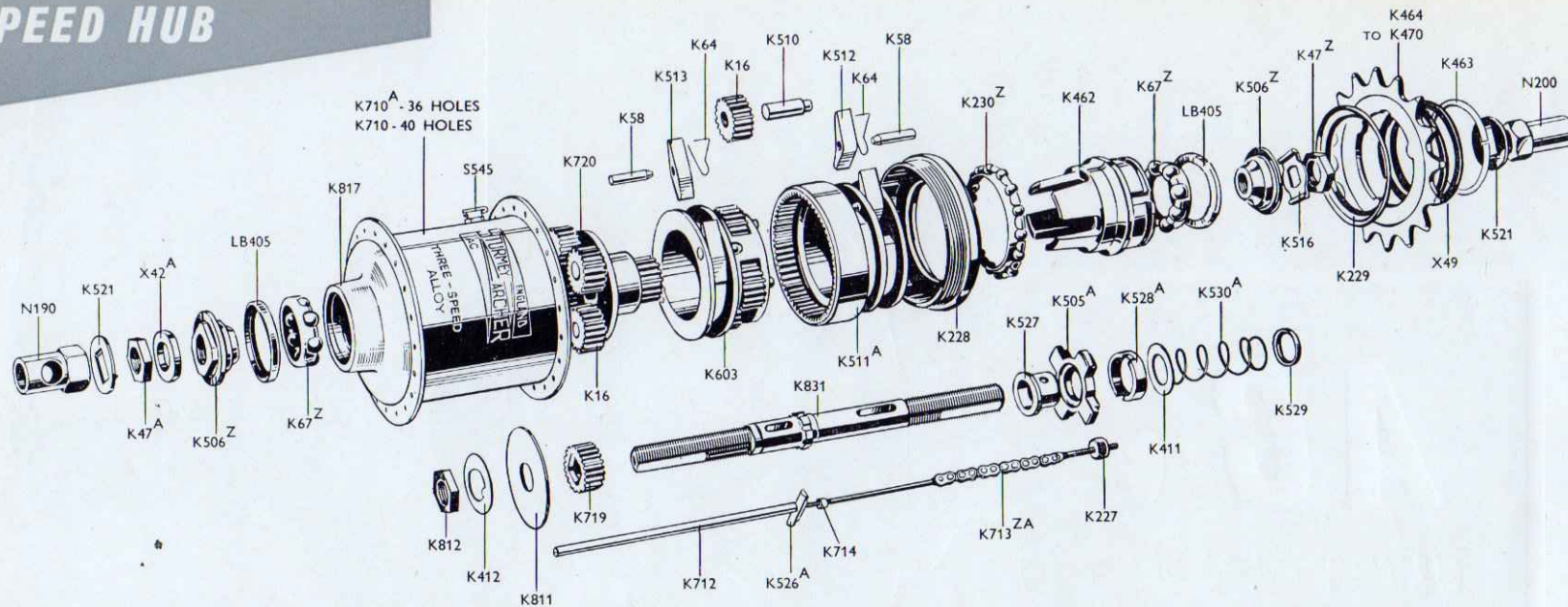
by **STURMEY  
ARCHER**



**AC Ultra Close-Ratio 3-Speed Hub.**  
6.66% increase and 7.7% decrease from normal.  
The time trial gear.

FOR DETAILS OF PARTS SEE OVER

# AG Ultra Close-Ratio 3-SPEED HUB



## CODE No.

## DESCRIPTION

K831	Axle, 5 3/4" long
K720	Compound Cage
K603	Planet Cage
K513	Low Gear Pawl
K58	Pawl Pin
K64	Pawl Spring
K16	Planet Pinion
K510	Pinion Pin
K527	Clutch Sleeve
K505A	Sliding Clutch
K526A	Axle Key
K528A	Thrust Ring
K411	Thrust Washer
K530A	Clutch Spring
K529	Spring Cap
K511A	Gear Ring
K512	Gear Ring Pawl
K228	R.H. Ball Ring
K230Z	Ball Cage with 24 3/16" balls
K462	Driver
K67Z	Ball Cage with 8 1/4" balls
LB405	Outer Dust Cap
K506Z	Axle Cone with Dust Cap
K516	R.H. Cone Locking Washer
K719	Secondary Sun Pinion
K811	Locating Plate
K412	Locking Washer

## CODE No.

## DESCRIPTION

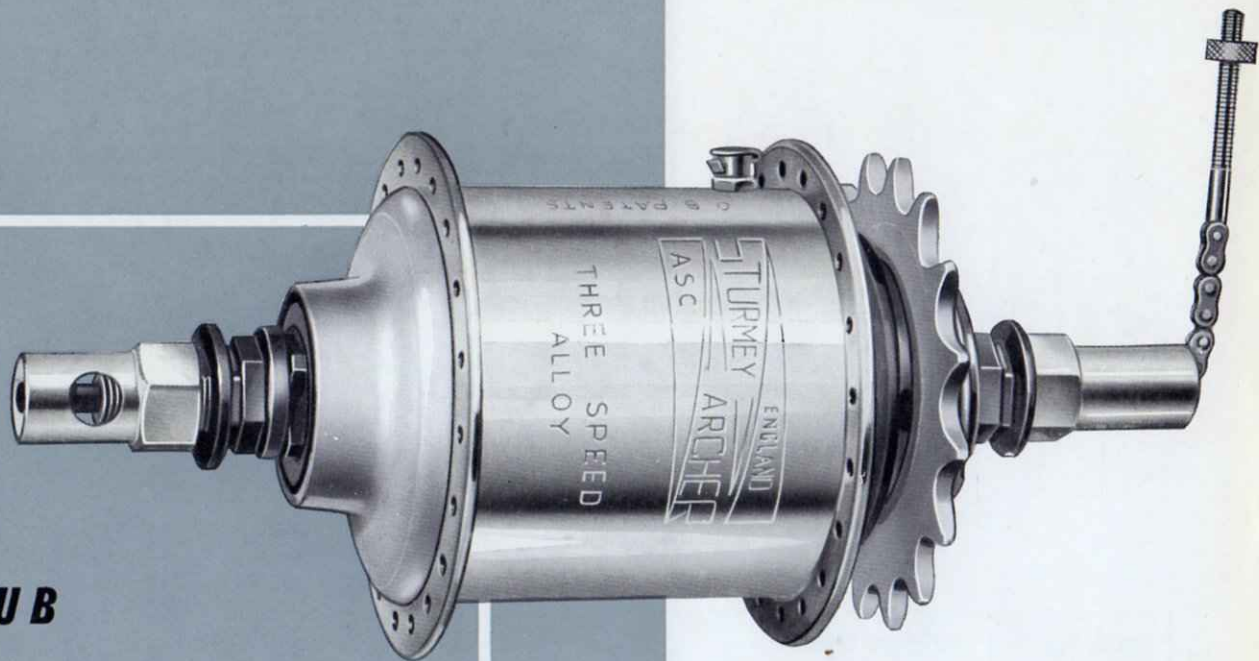
K812	Locknut
K710	Shell, 40 holes
K710A	Shell, 36 holes
S545	Lubricator
K817	L.H. Ball Cup
K712	Indicator
K713ZA	Coupling complete
K713Z	Coupling complete, quick-release type. <i>Not illustrated</i>
K740AZ	Quick-release Connection. <i>Not illustrated</i>
K714	Indicator Collar
K227	Connection Locknut
X42A	Axle Spacing Washer
K47A	Cone Locknut
K521	Axle Lock Washer
N. 90	L.H. Axle Nut
N200	R.H. Axle Nut
K229	Sprocket Dust Cap
K464	Sprocket, 14 teeth
K465	Sprocket, 15 teeth
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K469	Sprocket, 19 teeth
K470	Sprocket, 20 teeth
X49	Sprocket Spacing Washer
K463	Circlip

# ASC

**FIXED**

**3-SPEED HUB**

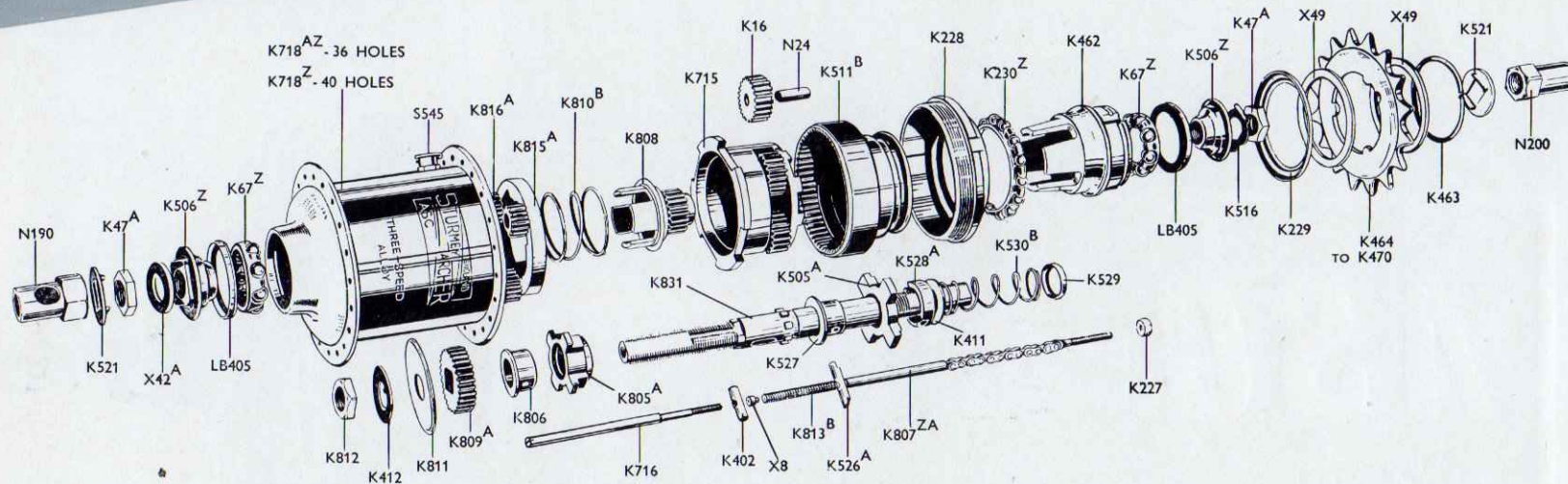
by **STURMEY**  
**ARCHER**



**ASC Fixed 3-Speed Hub.**  
10% and 25% decrease from direct drive.

FOR DETAILS OF PARTS SEE OVER

# ASC Fixed 3-SPEED HUB



## CODE No.

## DESCRIPTION

K831	Axle, 5 $\frac{1}{4}$ " long
K805A	Low Gear Dog
K806	Dog Sleeve
K402	Low Gear Key
K809A	Secondary Sun Pinion
K811	Locating Plate
K412	Locking Washer
K812	Locknut
K815A	Secondary Planet Cage
K816A	Secondary Planet Pinion
K810B	Low Gear Spring
K808	Primary Sun Pinion
K715	Planet Cage
K16	Planet Pinion
N24	Pinion Pin
K716	Indicator
X8	Collar for Compensator Spring
K813B	Compensator Spring
K527	Clutch Sleeve
K505A	Sliding Clutch
K526A	Axle Key
K807ZA	Coupling complete
K807Z	Coupling complete, quick-release type. <i>Not illustrated</i>
K740AZ	Quick Release Connection. <i>Not illustrated</i>
K528A	Thrust Ring
K411	Thrust Washer
K530B	Clutch Spring

## CODE No.

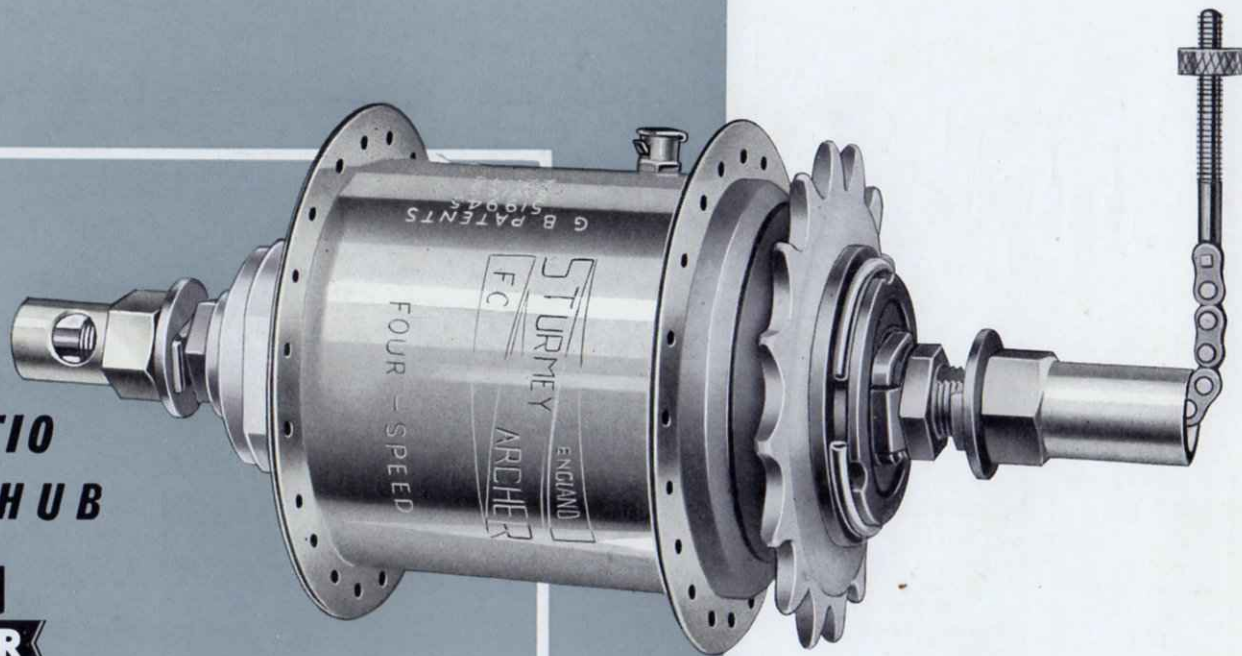
## DESCRIPTION

K529	Spring Cap
K511B	Gear Ring
K228	R H. Ball Ring
K230Z	Ball Cage with $\frac{3}{16}$ " ball bearings
K462	Driver
K67Z	Ball Cage with 8 $\frac{1}{4}$ " balls
LB405	Outer Dust Cap
K506Z	Axle Cone with Dust Cap
K516	R.H. Cone Locking Washer
K718Z	Shell, 40 holes, with Ball Cup
K718AZ	Shell, 36 holes, with Ball Cup
K227	Connection Locknut
X42A	Axle Spacing Washer
K47A	Cone Locknut
K521	Axle Locking Washer
N190	L.H. Axle Nut
N200	R.H. Axle Nut
K229	Sprocket, Dust Cap
K464	Sprocket, 14 teeth
K465	Sprocket, 15 teeth
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K469	Sprocket, 19 teeth
K470	Sprocket, 20 teeth
X49	Sprocket Spacing Washer
K463	Circlip

# FC

**CLOSE-RATIO  
4-SPEED HUB**

by **STURMEY  
ARCHER**

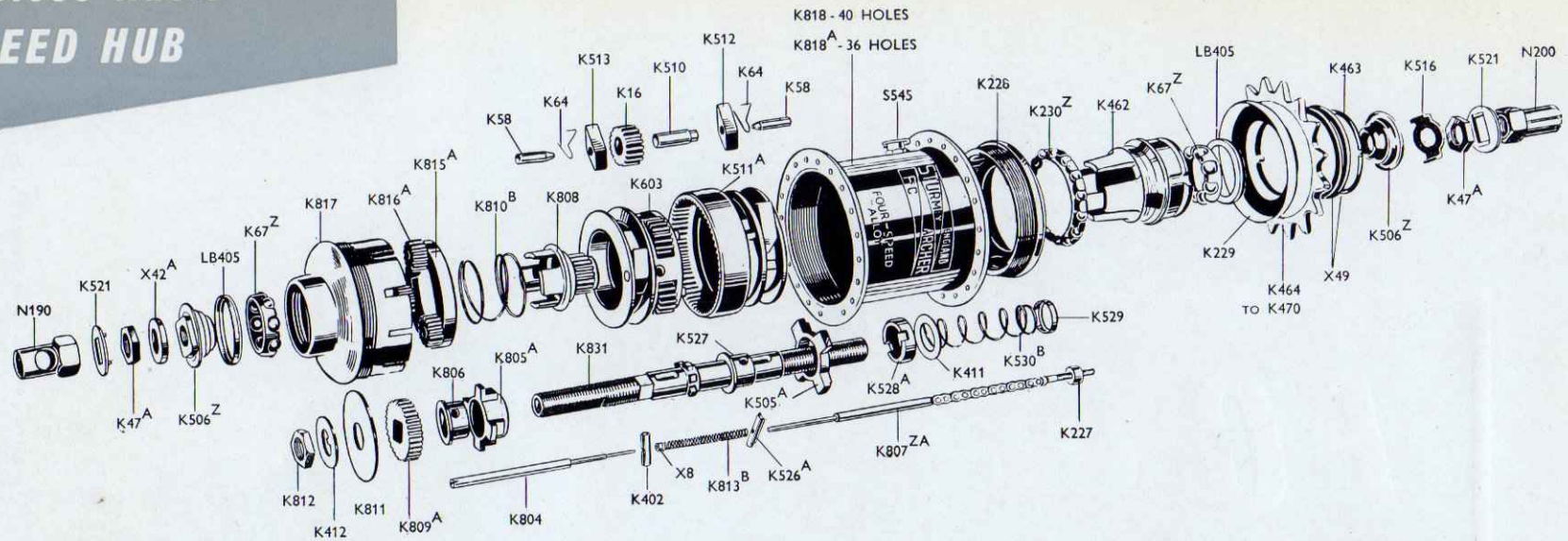


**FC** Close Ratio 4-Speed Hub.

9.1% increase, 10% and 25% decrease from normal.  
Specially designed for massed start races.

**FOR DETAILS OF PARTS SEE OVER**

# FC Close-Ratio 4-SPEED HUB



## CODE No.

## DESCRIPTION

K831	Axle, 5 $\frac{1}{4}$ " long
K805A	Low Gear Dog
K806	Dog Sleeve
K402	Low Gear Key
K809A	Secondary Sun Pinion
K811	Locating Plate
K412	Locking Washer
K812	Locknut
K815A	Secondary Planet Cage
K816A	Secondary Planet Pinion
K810B	Low Gear Spring
K808	Primary Sun Pinion
K603	Planet Cage
K513	Low Gear Pawl
K58	Pawl Pin
K64	Pawl Spring
K16	Planet Pinion
K510	Pinion Pin
K804	Indicator
X8	Collar for Compensator Spring
K813B	Compensator Spring
K527	Clutch Sleeve
K505A	Sliding Clutch
K526A	Axle Key
K807ZA	Coupling complete
K807Z	Coupling complete, quick-release type. <i>Not illustrated</i>
K740AZ	Quick-release Connection. <i>Not illustrated</i>
K528A	Thrust Ring
K411	Thrust Washer
K530B	Clutch Spring

## CODE No.

## DESCRIPTION

K529	Clutch Spring Cap
K511A	Gear Ring
K512	Gear Ring Pawl
K228	R.H. Ball Ring
K230Z	Ball Cage with $\frac{3}{16}$ " diam. balls
K462	Driver
K67Z	Ball Cage with 8 $\frac{1}{4}$ " diam. balls
LB405	Outer Dust Cap
K506Z	Axle Cone with Dust Cap
K516	R.H. Cone Locking Washer
K818	Shell, 40 holes
K818A	Shell, 36 holes
S545	Lubricator
K817	L.H. Ball Cup
K227	Connection Locknut
X42A	Axle Spacing Washer
K47A	Cone Locknut
K521	Axle Locking Washer
N190	L.H. Axle Nut
N200	R.H. Axle Nut
K229	Sprocket Dust Cap
K464	Sprocket, 14 teeth
K465	Sprocket, 15 teeth
K466	Sprocket, 16 teeth
K467	Sprocket, 17 teeth
K468	Sprocket, 18 teeth
K469	Sprocket, 19 teeth
K470	Sprocket, 20 teeth
X49	Sprocket Spacing Washer
K463	Circlip

# STURMEY ARCHER

*Prices*



THE COMPANY RESERVES THE RIGHT to alter any Prices  
or Specifications at any time without notice and all goods  
are sold subject to Prices and Conditions ruling at the  
time of delivery.

# STURMEY ARCHER LIST

(NEW PRICES AS FROM 1st AUGUST 1957)

Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
BC1F	8s. 6d.	GL328A	1d.	GL626	1s. 2d.	K403	8s. 9d.	K494	3s. 3d.
BC1R	9s. 3d.	GL329	1d.	K16	10d.	K404	8s. 9d.	K495	3s. 0d.
BC1AR	9s. 3d.	GL333	½d.	K36	8½d.	K405	2s. 1d.	K496	3½d.
BC2	5s. 3d.	GL343A	16s. 0d.	K47A	2d.	K406	8½d.	K498	2d.
BC3BR	8s. 6d.	GL345Z	13s. 6d.	K48	1½d.	K408	2s. 1d.	K504Z	1s. 11d.
BC3BL	8s. 6d.	GL345AZ	13s. 6d.	K52Z	5s. 6d.	K409	1s. 4d.	K504AZ	1s. 11d.
BC3CR	8s. 6d.	GL347	1d.	K52AZ	5s. 6d.	K410B	set 6d.	K505A	1s. 7d.
BC3CL	8s. 6d.	GL349	1d.	K55Z	1s. 7d.	K411	1d.	K506Z	1s. 7d.
DU96	1½d.	GL401SZ	3s. 9d.	K58	1d.	K412	1d.	K508	1s. 1d.
GA241A	7s. 3d.	GL402	3s. 9d.	K60	4s. 9d.	K413	4d.	K509	1½d.
GA244A	7s. 3d.	GL405B	1d.	K60A	4s. 9d.	K414	2d.	K510	3d.
GA244B	7s. 3d.	GL430	1s. 3d.	K62	3d.	K415	8s. 9d.	K511A	5s. 6d.
GA246A	7s. 3d.	GL431	7½d.	K63	2d.	K416	2s. 1d.	K511B	5s. 6d.
GA393	8s. 9d.	GL432	1d.	K64	½d.	K417	2d.	K512	5d.
GC1	8s. 0d.	GL448	8d.	K67Z	6½d.	K418	8s. 3d.	K513	4½d.
GC2A	10s. 9d.	GL456Z	2s. 0d.	K74	1½d.	K418A	8s. 3d.	K515	6s. 3d.
GC3A	10s. 9d.	GL458AZ	3s. 3d.	K75	½d.	K425	3d.	K516	1½d.
GC3B	10s. 9d.	GL469	1d.	K105AZ	1s. 7d.	K426	2d.	K517	4s. 9d.
GC4A	10s. 9d.	GL471	8d.	GL119	11d.	K427AZ	1s. 7d.	K518	8s. 3d.
GD431	3s. 8d.	GL483	4½d.	K120	2½d.	K428	3d.	K518A	8s. 3d.
GD433	4s. 5d.	GL487B	5½d.	K124Z	10d.	K452	1s. 5d.	K519	1s. 1d.
GD433A	4s. 5d.	GL490A	1½d.	K136	pair 4s. 0d.	K456	10d.	K520	4d.
GD726	1s. 6d.	GL540	7½d.	K139	1s. 10d.	K456A	11d.	K521	1½d.
GD727	1s. 6d.	GL541	1d.	K140	6½d.	K457AZ	4s. 3d.	K526	4d.
GD728	2s. 5d.	GL554A	1s. 3d.	K141Z	5s. 0d.	K458AZ	8s. 3d.	K526A	4d.
GD729	1s. 6d.	GL555	7½d.	K158Z	8s. 3d.	K458ZA	8s. 3d.	K527	8d.
GD1242	1s. 10d.	GL556ZR	3s. 3d.	K159	2d.	K459A	2d.	K528A	7½d.
GD1243 to 58"	2s. 3d.	GL556ZS	3s. 3d.	GL160AZ	4s. 3d.	K460AZ	4s. 3d.	K529	1d.
GD1243 to 82"	2s. 3d.	GL566Z	3s. 6d.	K162Z	1s. 4d.	K462	5s. 9d.	K530A	2d.
GD1244	3s. 2d.	GL567	3s. 6d.	K166	3d.	K463	2d.	K530B	} see K410B and K810B
GD1246	2s. 11d.	GL568	1s. 1d.	K167	4d.	K464	1s. 10d.	K530B	
GD1247	5s. 0d.	GL569	4d.	K168	2d.	K465	1s. 10d.	K601Z	5s. 3d.
GD1248	10d.	GL570	1½d.	K171	10d.	K466	1s. 10d.	K601AZ	5s. 3d.
GD1252F	15s. 0d.	GL572	1s. 1d.	K172	1d.	K467	1s. 10d.	K602	12s. 0d.
GD1252R	15s. 0d.	GL574	½d.	K175	2d.	K468	1s. 10d.	K602A	12s. 0d.
GD1372	per doz. 8d.	GL592A	9d.	K206	2d.	K469	1s. 10d.	K603	6s. 3d.
GD1373	per doz. 4d.	GL596	2d.	K215	1s. 10d.	K470	1s. 10d.	K604	4s. 9d.
GL202C	2d.	GL597	4d.	K216	1s. 10d.	K472	1s. 10d.	K604A	4s. 9d.
GL202Z	6d.	GL603AZ	14s. 6d.	K217	1s. 10d.	K481	5s. 3d.	K605	1½d.
GL228	8d.	GL609	6d.	K218	1s. 10d.	K481A	5s. 3d.	K652 alloy	12s. 0d.
GL229Z	1s. 10d.	GL610	1d.	K227	1½d.	K482A	4s. 9d.	K652 steel	8s. 3d.
GL229BZ	2s. 3d.	GL611	2s. 6d.	K228	4s. 9d.	K483A	3d.	K652A alloy	12s. 0d.
GL229BZ	2s. 3d.	GL612	3d.	K229	3d.	K484	4s. 6d.	K652A steel	8s. 3d.
GL229CZ	2s. 11d.	GL612A	3d.	K230Z	10½d.	K485	5s. 0d.	K653	8s. 9d.
GL229EZ	3s. 2d.	GL613	1d.	K360	1½d.	K487A	4s. 3d.	K654	2s. 1d.
GL229HZ	5s. 0d.	GL618	12s. 0d.	K401	7s. 3d.	K488A	4s. 3d.	K658A	5s. 6d.
GL234	5d.	GL618A	12s. 0d.	K401A	7s. 3d.	K489A	5s. 10d.	K671	5s. 9d.
GL234A	5d.	GL621	1s. 0d.	K402	3d.	K490	5s. 3d.	K707	1d.
GL235	5d.	GL621A	1s. 0d.			K491	2s. 3d.		
GL237	5d.	GL623	4d.			K492Z	15s. 6d.		
GL316	1d.	GL624	12s. 0d.			K492AZ	15s. 6d.		
GL328	1d.	GL624A	12s. 0d.						

# SPARES **STURMEY** ARCHER LIST

(NEW PRICES AS FROM 1st AUGUST 1957)

Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
K710	12s. 0d.	L1A	5s. 3d.	LB166	11d.	S98	1d.
K710A	12s. 0d.	L2Z	5s. 6d.	LB167	5d.	S154	4½d.
K712	9d.	L4	1d.	LB168A	3d.	S386	½d.
K713ZA	1s. 11d.	L5	8½d.	LB304	3d.	S433	½d.
K713Z	1s. 11d.	L6	4d.	LB309	1s. 6d.	S535	1d.
K714	1d.	L7	8d.	LB309A	1s. 6d.	S545	3d.
K715	7s. 6d.	L8	4d.	LB320	10d.	S558	1d.
K716	9d.	L9	2s. 1d.	LB321	2d.	S581A	1½d.
K718Z	19s. 0d.	L10	4s. 6d.	LB322	2d.	S583	1½d.
K718ZA	19s. 0d.	L11	2s. 6d.	LB323	2d.	S584A	1d.
K719	1s. 10d.	L12	1½d.	LB324	1s. 0d.	S625	17s. 6d.
K720	8s. 6d.	L13	1d.	LB325	6d.	S637	2d.
K722	4d.	L14	4s. 3d.	LB326AZ	1s. 7d.	S638	2d.
K731A	1d.	L15	3d.	LB326BZ	1s. 7d.	S712	1½d.
K738	2d.	L16	4s. 9d.	LB327A	3d.	X4	5d.
K739Z	2s. 8d.	L17	2d.	LB329	1s. 7d.	X8	1d.
K740AZ	1s. 0d.	L18	7s. 6d.	LB330	6½d.	X42	1d.
K744	3d.	L18A	7s. 6d.	LB330A	6½d.	X42A	1½d.
K745Z	10d.	L19	4s. 3d.	LB331	2½d.	X48	1s. 10d.
K745AZ	10d.	L20	9d.	LB332	2½d.	X48C	1s. 10d.
K745BZ	10d.	L21Z	1s. 11d.	LB334	7½d.	X48D	1s. 10d.
K747	2s. 0d.	L22	3d.	LB336	1½d.	X48E	1s. 10d.
K804	9d.	L24	2d.	LB350A	2d.	X48F	1s. 10d.
K804A	9d.	L52	—	LB351Z	15s. 9d.	X49	2d.
K805A	2s. 8d.	L53Z	—	LB352Z	15s. 9d.	X61	5½d.
K806	9d.	L55	—	LB357AZ	1s. 7d.	X62	½d.
K807Z	1s. 11d.	L56	—	LB358Z	1s. 7d.	X69	1½d.
K807ZA	1s. 11d.	L102Z	5s. 6d.	LB401Z	13s. 6d.	X78	5½d.
K808	3s. 6d.	L118	12s. 0d.	LB402Z	13s. 6d.	X78BZ	1s. 6d.
K809A	2s. 1d.	L118A	12s. 0d.	LB404	1d.	X79	1d.
K810B	set 6d.	L119	4s. 3d.	LB405	1½d.	X80	1d.
K811	1d.	L127	—	LB415AZ	4s. 3d.	X81Z to 36"	1s. 6d.
K812	2d.	L128	12s. 0d.	LB416AZ	4s. 3d.	X81Z to 58"	1s. 9d.
K813B	—	L128A	12s. 0d.	LB426	11d.	X81Z to 79"	2s. 3d.
K815A	4s. 0d.	LB111Z	10d.	LB426B	11d.	X90	1d.
K816A	7d.	LB112Z	10d.	M6R	3s. 9d.	X109	3d.
K817	7s. 4d.	LB121	—	M6D	3s. 9d.	X110	5½d.
K818 alloy	12s. 0d.	LB126Z	10d.	M6S	3s. 9d.	X111A	2½d.
K818 steel	8s. 3d.	LB127	4d.	M6T	3s. 9d.		
K818A alloy	12s. 0d.	LB130Z	10d.	M355	2d.		
K818A steel	8s. 3d.	LB138AZ	5s. 3d.	N24	2d.	<b>TOOLS</b>	
K820A	7s. 6d.	LB140Z	10d.	N43Z	10d.	DD6019	
K821	3s. 6d.	LB145Z	10d.	N120	2d.	DD6839	
K822B	6d.	LB147AZ	5s. 3d.	N190	1s. 1d.	GD495	
K824 alloy	12s. 0d.	LB149	11d.	N200	1s. 1d.	DD11241	
K824 steel	8s. 3d.	LB150	11d.	P70	½d.	DD10565	
K824A alloy	12s. 0d.	LB155	3d.	P1056	½d.	X44B	
K824A steel	8s. 3d.	LB155A	3d.	P1183	6d.	DD911	
K831	8s. 9d.	LB156	11d.	R625	17s. 6d.	DD11182	
L1	5s. 3d.	LB156A	1s. 1d.	S35	1d.	DD1145	
		LB159	½d.			DD12418	
		LB162	4d.			DD12403	
						DD12987	

Supplied for Trade use at special net prices.

# SPARES **STURMEY** LIST

## ARCHER

(IN ALPHABETICAL AND NUMERICAL ORDER)

Part No.	Description	Price	Price Amendment	Quantity Per Carton	Hub Types
BC1F	Front Cable Brake Control complete	8s. 3d.			BF
BC1R	Rear Cable Brake Control complete	9s. 0d.			BR, AB
BC1AR	Rear Cable Brake Control (for K457AZ slotted Brake Arm)	9s. 0d.			BR, SBC
BC2	Front Rod Brake Control Fittings	5s. 0d.			BF
BC3BR	Rear Rod Brake Control Bolt-on R.H.	8s. 3d.			BR, AB, SB
BC3BL	Rear Rod Brake Control Bolt-on L.H.	8s. 3d.			BR, AB, SB
BC3CR	Rear Rod Brake Control Clip-on R.H.	8s. 3d.			BR, AB, SB
BC3CL	Rear Rod Brake Control Clip-on L.H.	8s. 3d.			BR, AB, SB
DU96	Cable Fixing Band	1½d.		12	GH6, AG, SG, FG
GA241A	Trigger Unit for GC2A	7s. 0d.			ASC
GA244A	Trigger Unit for GC3A. To 1956	7s. 0d.		6	AW, AB, AC, AM, AG, TCW
GA244B	Small Trigger Unit. For GC3B	7s. 0d.		6	SW, SB, SG
GA246A	Trigger Unit for GC4A	7s. 0d.		6	FW, FM, FC, FG
GA393	Battery Casing complete less clips	8s. 3d.		1	DBU
GC1	T.T. Control complete	7s. 9d.		1	All 3-Speed Hubs except ASC
GC2A	Trigger Control less Pulley	10s. 0d.		1	ASC
GC3A	Trigger Control less Pulley, 3-Speed	10s. 0d.		1	AW, AB, AC, AM, AG, TCW
GC3B	Trigger Control less Pulley, 3-Speed	10s. 0d.		1	SW, SB, SG
GC4A	Trigger Control less Pulley, 4-Speed	10s. 0d.		1	FW, FM, FC, FG
GD431	Front Brake Cable (Black or Silver)	3s. 6d.		3	BF
GD433	Rear Brake Cable (Black or Silver)	4s. 3d.		3	BR, AB
GD433A	Rear Brake Cable (Black or Silver) to suit K457AZ slotted Brake Arm	4s. 3d.		3	SB
GD726	Front Brake Rod 16½" and 1 Connection	1s. 4d.			BF
GD727	Bottom Brake Rod 20¼" and 1 Connection	1s. 4d.			BR, AB, SB
GD728	Down Tube Brake Rod 20¼" and 2 Connections	2s. 3d.			BR, AB, SB
GD729	Bottom Brake Rod 22" and 1 Connection	1s. 4d.			BR, AB, SB
GD1242	Flex Wire, Hub to Headlamp	1s. 10d.		6	GH6
GD1243	Flex Wire, Headlamp to Tail Lamp. 48" or 58"	2s. 2d.		6	GH6
GD1243	Flex Wire, Headlamp to Tail Lamp. 73" or 82"	2s. 2d.		4	GH6
GD1244	Flex Wire, Headlamp to Tail Lamp and Hub	3s. 0d.		4	AG, SG, FG
GD1246	Flex Wire, Headlamp to DBU and Tail Lamp	2s. 10d.		4	GH6
GD1247	Flex Wire Assembly	4s. 9d.		2	AG, SG, FG
GD1248	Earth Wire, Tail Lamp to Seat Lug. 11" or 13"	10d.		6	GH6, AG, SG, FG
GD1252F	DBU Casing with Clips and Flex	14s. 3d.		1	GH6
GD1252R	DBU Casing with Clips and Flex	14s. 3d.		1	AG, SG, FG
GD1372	8BA Screw for Headlamp Switch	per doz. 8d.			Headlamp Service Switch
GD1373	8BA Nut for Headlamp Switch	per doz. 4d.			Headlamp Service Switch
GL202C	Terminal Nut	2d.		24	Headlamp and Tail Lamp
GL202Z	Terminal complete	6d.		24	Headlamp and Tail Lamp
GL228	Bulb 6v .04 amp (Purchase Tax extra)	8d.		10	Tail Lamp
GL229Z	Twin Flex, Hub to Headlamp	1s. 10d.		6	GH6
GL229BZ	Twin Flex, Headlamp to Tail Lamp. 48" or 54"	2s. 2d.		6	GH6
GL229BZ	Twin Flex, Headlamp to Tail Lamp. 73" or 82"	2s. 2d.		4	GH6
GL229CZ	Twin Flex, Headlamp to DBU and Tail Lamp	2s. 10d.		4	GH6
GL229EZ	Twin Flex, Headlamp to Tail Lamp and Hub	3s. 0d.		4	AG or FG
GL229HZ	Wiring Assembly for DBU. (Replaces GL229GZ)	4s. 9d.		2	AG, FG
GL234	Tail Lamp Clip for ⅝" diam. round tube	4d.		6	Tail Lamp
GL234A	Tail Lamp Clip for ½" diam. round tube	4d.		6	Tail Lamp
GL235	Tail Lamp Clip for oval tube	4d.		3	Tail Lamp
GL237	Tail Lamp Clip for 'D' shaped tube	4d.		3	Tail Lamp
GL316	Nut for Magnet Fixing Screw, etc.	1d.		72	GH6, AG, SG, FG
GL328	Ring Tag 2BA	1d.		24	GH6, AG, SG, FG

# SPARES **STURMEY** LIST

## ARCHER

(IN ALPHABETICAL AND NUMERICAL ORDER)

Part No.	Description	Price	Price Amendment	Quantity Per Carton	Hub Types
GL328A	Hook Tag 2BA	1d.		24	GH6, AG, SG, FG
GL329	Ring Tag 6BA	1d.		24	GH6, AG, SG, FG
GL333	Spring Washer for GL316	$\frac{1}{2}$ d.		36	GH6, AG, SG, FG
GL343A	Magnet (Keeper Ring extra)	15s. 0d.		1	GH6, AG, SG, FG
GL345Z	Steel Shell, 32 Holes	12s. 6d.		1	GH6
GL345AZ	Steel Shell, 36 Holes	12s. 6d.		1	GH6
GL347	Lock Washer	1d.		6	TCW, SB, SG
GL349	Earth Tag for Seat Bolt	1d.		6	GH6, AG, FG, SG
GL401SZ	Lamp Rim with Screw	3s. 6d.		6	Headlamp
GL402	Reflector	3s. 6d.		6	Headlamp
GL405B	Reflector Securing Spring	1d.		24	Headlamp
GL430	Lamp Bracket Adaptor	1s. 2d.		6	Headlamp. Type HF
GL431	Bracket Fixing Bolt	7d.		6	Headlamp. Type HF
GL432	Spring Washer	1d.		6	Headlamp. BF, BR, AB, SB
GL448	Bulb 6v .25 amp (Purchase Tax extra)	8d.		10	GH6, AG, SG, FG
GL456Z*	Headlamp Bulb Holder complete	1s. 10d.		2	Headlamp. Type HF
GL458AZ	Switch Assembly complete	3s. 0d.		3	Headlamp. Type HF
GL469	Rim Fixing Screw	1d.		12	Headlamp
GL471	Headlamp Bulb 6v. .3 amp (Purchase Tax extra)	8d.		10	GH6
GL483	Case Fixing Clip	4d.		6	DBU
GL487B	Rubber Cover for Battery Case	5d.		4	GH6, AG, SG, FG
GL490A	Tail Lamp Terminal Screw	1 $\frac{1}{2}$ d.		6	Tail Lamp. Type M6
GL540	Spring Ring for Battery Casing	7d.		6	DBU
GL541	Washer for Rubber Cap	1d.		6	DBU
GL554A	Bracket Adaptor	1s. 2d.		3	Headlamp. Types R and S
GL555	Fixing Bolt	7d.		3	Headlamp. Types R and S
GL556ZR	Switch Assembly. Type R	3s. 0d.		2	Headlamp. Type R
GL556ZS	Switch Assembly. Type S	3s. 0d.		2	Headlamp. Type S
GL566Z	Headlamp Rim. Type S	3s. 3d.		3	Headlamp. Type S
GL567	Reflector	3s. 3d.		3	Headlamp. Type S
GL568	Headlamp Dome	1s. 0d.		3	Headlamp. Type S
GL569	Bulb Holder	4d.		3	Headlamp. Types R and S
GL570	Bulb Holder Lockring	1 $\frac{1}{2}$ d.		3	Headlamp. Types R and S
GL572	Headlamp Dome	1s. 0d.		3	Headlamp. Types R and HF
GL574	Ferrule for Flex Wire	$\frac{1}{2}$ d.		24	GH6, AG, SG, FG
GL592A	Tail Lamp Dome	7d.		6	Tail Lamp. M6
GL596	Locking Plate for Tail Lamp	2d.		6	Tail Lamp. M6
GL597	Cover for Tail Lamp Dome (GL592A)	4d.		6	Tail Lamp. M6
GL603AZ	Armature complete	13s. 6d.		1	GH6, AG, SG, FG
GL609	Magnet Spacing Ring	5d.			GH6, AG
GL610	Patent Number Disc	1d.			GH6, AG, SG, FG
GL611	Cover Plate	2s. 3d.		2	GH6, AG, SG, FG
GL612	Magnet Fixing Screw	3d.		12	GH6, AG, SG
GL612A	Magnet Fixing Screw	3d.		12	FG
GL613	2BA Terminal Nut	1d.		12	GH6, AG, SG, FG and DBU
GL618	Hub Shell, 40 Holes	11s. 6d.		1	AG
GL618A	Hub Shell, 36 Holes	11s. 6d.		1	AG
GL621	Axle, 5" long	11d.		12	GH6
GL621A	Axle, 4 $\frac{1}{4}$ " long	11d.		12	GH6
GL623	Spacing Cup	3 $\frac{1}{2}$ d.		4	GH6
GL624	Hub Shell, 40 Holes	11s. 6d.		1	FG
GL624A	Hub Shell, 36 Holes	11s. 6d.		1	FG

# SPARES **STURMEY** LIST

## ARCHER

( IN ALPHABETICAL AND NUMERICAL ORDER )

Part No.	Description	Price	Price Amendment	Quantity Per Carton	Hub Types
GL626	Magnet Spacing Ring	1s. 0d.			FG
K16	Planet Pinion 20T	9d.		24	AW, AB, ASC, AC, AG, FC, TCW
K36	Sprocket Lockring	8d.			AM, ASC, AC, FM, FC
K47A	Cone Locknut	2d.		24	All gear hubs
K48	Lip Washer (Alternative to K521)	1½d.			All gear hubs
K52Z	Top Tube Quadrant 1"	5s. 3d.		6	All 3-Speed except ASC
K52AZ	Top Tube Quadrant ¾"	5s. 3d.		6	All 3-Speed except ASC
K55Z	Top Tube Quadrant Lever	1s. 6d.		6	All 3-Speed except ASC
K58	Pawl Pin	1d.		24	All A and F range except ASC
K60	R.H. Ball Ring. (See also K228)	4s. 6d.		3	AW, AB, AM, AG, FW, FM, TCW
K60A	R.H. Ball Ring	4s. 6d.		2	FG
K62	R.H. Outer Dust Cap. (See also K229)	3d.		12	AW, AB, AM, AG, FW, FM, TCW
K63	R.H. Inner Dust Cap	2d.		6	AW, AB, AM, AG, FW, FM, TCW, SW, SB, SG
K64	Pawl Spring	½d.		36	All A and F range except ASC
K67Z	Ball Retainer	6d.		24	All hubs
K74	Quadrant Stud	1½d.			3-Speed top tube control
K75	Circlip	½d.			3-Speed top tube control
K105AZ	L.H. Cone	1s. 6d.		12	AB, AG, SB, SG
K119	Wire Stop Screw	10½d.		12	BF, BR, AB, SB
K120	Cable Adjuster Nut	2½d.		24	BF, BR, AB, SB
K124Z	Brake Arm Clip complete	9d.		6	BF, BR, AB, SB
K136	Brake Lining and Rivets	pair 4s. 0d.		pairs 6	BF, BR, AB, SB
K139	Brake Lever Fulcrum (Cable)	1s. 9d.		2	BF, BR, AB, SB
K140	Fulcrum Clip for ¾" Bar (Cable)	6d.		3	BF, BR, AB, SB
K141Z	Cable Brake Lever complete	4s. 9d.		6	BF, BR, AB, SB
K158Z	Brake Shoe Assembly (to 1951). (See also K458Z)	7s. 9d.			BF, BR, AB
K159	Brake Shoe End Cap (to 1951)	1½d.			BF, BR, AB
K160AZ	Rear Steel Brake Arm (to 1951). (See also K460AZ)	4s. 0d.			BR, AB
K162Z	Brake Shoe Cam with Washer (to 1951). (See also K452)	1s. 3d.			BF, BR, AB
K166	Brake Shoe Spring	3d.		12	BF, BR, AB, SB
K167	Fulcrum Sleeve (to 1951). (See also K456)	4d.			BF, BR, AB
K168	Wire Guide Nut	2d.		24	BR, AB
K171	Wire Guide for Front and Rear Brake Hub	9d.		12	BR, AB
K172	Locking Washer	1d.		24	BR, AB
K175	Nut	2d.		24	BF, BR, SB, AB. Headlamp
K206	Pinion Pin	2d.		3	AM
K215	Sprocket 15T, 12 splines	1s. 9d.		6	AC, ASC, AM, FM, FC
K216	Sprocket 16T, 12 splines	1s. 9d.	See X48 for screwed and	6	AC, ASC, AM, FM, FC
K217	Sprocket 17T, 12 splines	1s. 9d.	K464/472 for 3 splines	6	AC, ASC, AM, FM, FC
K218	Sprocket 18T, 12 splines	1s. 9d.		6	AC, ASC, AM, FM, FC
K227	Locknut	1½d.		24	All gear hubs
K228	R.H. Ball Ring	4s. 6d.			AC, ASC, FC
K229	R.H. Dust Cap	3d.			AC, ASC, FC
K230Z	Ball Retainer	10d.		6	AC, ASC, FC
K360	Packing Washer	1½d.		12	BF, BR, SG
K401	Axle, 5½" long	7s. 0d.		6	FW, FG
K401A	Axle, 6½" long	7s. 0d.		6	FW, FG
K402	Low Gear Key	3d.		24	FW, FM, FC, FG, ASC

# SPARES **STURMEY** ARCHER LIST

(IN ALPHABETICAL AND NUMERICAL ORDER)

Part No.	Description	Price	Price Amendment	Quantity Per Carton	Hub Types
K403	Planet Cage	8s. 3d.		1	FG
K404	Ball Cup	8s. 0d.			FG
K405	Dog Ring	2s. 0d.		6	FW, FG
K406	Pinion Sleeve	8d.		6	FW, FG
K408	Primary Sun Pinion 30T	2s. 0d.		12	FW, FG
K409	Secondary Sun Pinion 24T	1s. 3d.		12	FW, FG
K410B	Low Gear Spring (with K530B and K813B)	set 6d.		sets 6	FW, FG
K411	Washer	1d.		6	All gears
K412	Tab Washer	1d.		12	AC, ASC, FW, FM, FC, FG
K413	Low Gear Pawl	4d.		12	FG
K414	Pawl Spring	2d.		12	FG
K415	Planet Cage	8s. 3d.		3	FW
K416	Planet Pinion (21T × 14T)	2s. 0d.		12	FW or FG
K417	Pinion Pin	2d.		12	FW
K418	Shell, 40 Holes	7s. 9d.		1	FW
K418A	Shell, 36 Holes	7s. 9d.		1	FW
K425	Fixing Screw for Ball Cup	2½d.		4	FG
K426	Pinion Pin	2d.		12	FG
K427AZ	L.H. Cone	1s. 6d.		3	FG, SG
K428	Notched Washer	3d.		12	AB, BF, BR, AG, FG, GH6, SB, SG
K452	Brake Operating Cam. (See also K162)	1s. 4d.		3	AB, BF, BR, SB
K456	Fulcrum Sleeve (for Brake Shoes). (See also K167)	9d.			BFC only
K456A	Fulcrum Pin	10d.			BF, BR, BRC, AB, SB
K457AZ	Brake Arm complete—Slotted (from 1956). (See also K460AZ)	4s. 0d.			AB, BR, SB
K458AZ	Brake Shoe Assembly—Pin Type	7s. 9d.		1	AB, BF, BR, SB
K458ZA	Brake Shoe Assembly—Sleeve Type. (See also K158Z)	7s. 9d.		1	BFC only
K459A	Brake Shoe End Cap	2d.		6	AB, BF, BR, SB
K460AZ	Rear Brake Arm complete. (See also K160AZ and K457AZ)	4s. 0d.			AB, BR
K462	Driver (3-splined type)	5s. 6d.		6	All gear hubs except 'S' range
K463	Spring Ring	2d.		6	All gear hubs
K464	Sprocket 14T, 3 splines	1s. 9d.		6	AC, ASC, FC
K465	Sprocket 15T, 3 splines	1s. 9d.		6	AC, ASC, FC
K466	Sprocket 16T, 3 splines	1s. 9d.		6	All gear hubs
K467	Sprocket 17T, 3 splines	1s. 9d.		6	All gear hubs
K468	Sprocket 18T, 3 splines	1s. 9d.		6	All gear hubs
K469	Sprocket 19T, 3 splines	1s. 9d.		6	All gear hubs
K470	Sprocket 20T, 3 splines	1s. 9d.		6	All gear hubs
K472	Sprocket 22T, 3 splines	1s. 9d.		6	All gear hubs
K481	Axle, 5½" long	5s. 0d.		6	TCW
K481A	Axle, 6¼" long	5s. 0d.		6	TCW
K482A	Planet Cage	4s. 6d.		3	TCW
K483A	Pinion Pin	3d.		12	TCW
K484	Gear Ring	4s. 3d.		6	TCW
K485	Gear Ring Pawl Ring	4s. 9d.		6	TCW
K487A	Planet Cage Pawl Ring	4s. 0d.		3	TCW
K488A	Brake Cam	4s. 0d.		6	TCW
K489A	Brake Thrust Plate	5s. 6d.		6	TCW
K490	Brake Band	5s. 0d.		3	TCW
K491	Brake Plate	2s. 0d.		6	TCW
K492Z	Shell and Ball Cup, 40 Holes	15s. 0d.		1	TCW
K492AZ	Shell and Ball Cup, 36 Holes	15s. 0d.		1	TCW

# SPARES **STURMEY** LIST

## ARCHER

( IN ALPHABETICAL AND NUMERICAL ORDER )

Part No.	Description	Price	Price Amendment	Quantity Per Carton	Hub Types
K494	L.H. Cone	3s. 0d.		6	TCW
K495	Brake Arm	2s. 9d.		6	TCW
K496	Brake Arm Nut	3d.		12	TCW
K498	Brake Cam Spring	2d.		12	TCW
K504Z	Indicator for K601Z	1s. 10d.		12	AW, AB, AG, TCW
K504AZ	Indicator for K601AZ	1s. 10d.		6	AW, AB, AG, TCW
K505A	Sliding Clutch	1s. 6d.		12	All gear hubs except 'S' range
K506Z	Axle Cone	1s. 6d.		12	All gear hubs
K508	Sun Pinion. 20T	1s. 0d.		12	AW, AB, AG
K509	Dowel for Sun Pinion	1½d.		24	AW, AB, AG
K510	Planet Pinion Pin	3d.		24	AW, AB, AC, AG, FC
K511A	Gear Ring	5s. 3d.		4	AW, AB, AC, AG, FC, FM, FG
K511B	Gear Ring	5s. 3d.			ASC
K512	Gear Ring Pawl	4½d.		24	All gear hubs except ASC and 'S' range
K513	Low Gear Pawl	4d.		24	AW, AB, AC, AM, AG, FW, FM, FC, TCW
K515	Planet Cage	6s. 0d.		3	AW
K516	Cone Locking Washer	1½d.		24	All gear hubs
K517	L.H. Ball Cup	4s. 6d.		2	AW, AM, FW
K518	Shell, 40 Holes	7s. 9d.		1	AW
K518A	Shell, 36 Holes	7s. 9d.		1	AW
K519	R.H. Nut	1s. 0d.		12	AW, AB, AG, TCW
K520	L.H. Nut	4d.		24	AW, AB, AG, TCW
K521	Axle Lockwasher	1d.		24	All gear hubs
K526	Axle Key	3½d.		24	AW, AB, AG, TCW
K526A	Axle Key	3½d.		24	AM, ASC, AC, FW, FM, FC, FG
K527	Clutch Sleeve	7d.		6	All gear hubs except 'S' range
K528A	Thrust Ring	7d.		6	All gear hubs except 'S' range
K529	Cap for Clutch Spring	1d.		12	All gear hubs except 'S' range
K530A	Clutch Spring	2d.		12	AW, AM, AG, AB, TCW
K530B	Clutch Spring (See K810B sets)			with K410B or K810B	AC, ASC, FM, FC
K530B	Clutch Spring (See K410B sets)				
K601Z	Axle, 5¾" long	5s. 0d.		6	AW, AB, AG
K601AZ	Axle, 6¼" long	5s. 0d.		6	AW, AB, AG
K602	Shell, 40 Holes	11s. 6d.		1	AB
K602A	Shell, 36 Holes	11s. 6d.		1	AB
K603	Planet Cage	6s. 0d.		2	AB, AC, FC, AG
K604	L.H. Ball Cup (Flatted type)	4s. 6d.		3	AB
K604A	L.H. Ball Cup (Slotted type)	4s. 6d.		3	AG
K605	Packing Washer, ¼" thick	1½d.		12	AB, GH6
K652	Shell, 40 Holes (Alloy)	11s. 6d.		1	AM
K652	Shell, 40 Holes (Steel)	7s. 9d.		1	AM
K652A	Shell, 36 Holes (Alloy)	11s. 6d.		1	AM
K652A	Shell, 36 Holes (Steel)	7s. 9d.		1	AM
K653	Planet Cage	8s. 3d.		3	AM
K654	Planet Pinion (25T × 14T)	2s. 0d.		12	AM
K658A	Gear Ring	5s. 3d.		1	AM
K671	Axle, 5¾" long	5s. 6d.		6	AM
K707	L.H. Pawl Pin	1d.		12	FW, TCW, FM

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# SPARES **STURMEY** LIST

## ARCHER

(IN ALPHABETICAL AND NUMERICAL ORDER)

Part No.	Description	Price	Price Amendment	Quantity Per Carton	Hub Types
K710	Shell, 40 Holes (Alloy)	11s. 6d.		1	AC
K710A	Shell, 36 Holes (Alloy)	11s. 6d.		1	AC
K712	Indicator Rod for K671 or K801 Axle	9d.		6	AM, AC
K713ZA	Coupling Spindle complete	1s. 10d.		6	AM
K713Z	Coupling Spindle complete. Quick release type	1s. 10d.		6	AM, AC
K714	Collar for Coupling Spindle K713Z	1d.			AM, AC
K715	Primary Planet Cage	7s. 0d.			ASC
K716	Indicator Rod	9d.			ASC
K718Z	Hub Shell and Ball Cup, 40 Holes	18s. 6d.		1	ASC
K718ZA	Hub Shell and Ball Cup, 36 Holes	18s. 6d.		1	ASC
K719	Secondary Sun Pinion, 20T	1s. 9d.			AC
K720	Compound Cage	8s. 0d.			AC
K722	Pawl	4d.		6	Trigger Control Unit (GA244A and 246A)
K731A	Pivot Pin	1d.		12	All Trigger Controls
K738	Pawl Spring	2d.		24	Trigger Control Unit (GA244A and 246A)
K739Z	Trigger Cable	2s. 6d.		3	Trigger Control
K740AZ	Quick Release Connection (to 1955)	10d.		3	AC, ASC, AM, FM, FC
K744	Fulcrum Sleeve for K745Z	3d.		12	All Trigger Controls
K745Z	Fulcrum Clip complete, 1"	10d.		6	All Trigger Controls
K745AZ	Fulcrum Clip complete, $\frac{7}{8}$ "	10d.		6	All Trigger Controls
K745BZ	Fulcrum Clip complete, $1\frac{1}{8}$ "	10d.		6	All Trigger Controls
K747	Trigger Lever for 3-Speed. (See also L52)	2s. 0d.			GA244A Unit
K804	Indicator Rod for K401 or K801 Axles	9d.		6	FW, FM, FC, FG
K804A	Indicator Rod for K401A Axle	9d.		6	FW, FG
K805A	Low Gear Dog	2s. 6d.		3	ASC, FM, FC
K806	Dog Sleeve	8d.			ASC, FM, FC
K807Z	Coupling Spindle (Quick Release type)	1s. 10d.		6	ASC, FM, FC
K807ZA	Coupling Spindle complete	1s. 10d.		6	FW, FG
K808	Primary Sun Pinion, 20T	3s. 3d.		2	ASC, FC
K809A	Secondary Sun Pinion, 30T	2s. 0d.		6	ASC, FM, FC
K810B	Low Gear Spring with K530B and K813B	set 6d.		sets 3	ASC, FM, FC
K811	Locating Plate for K809A	1d.		3	ASC, AC, FM, FC
K812	Locknut	2d.		6	ASC, AC, FW, FM, FC, FG
K813B	Compensating Spring. (See K410B and K810B sets)				
K815A	Secondary Planet Cage	3s. 9d.			ASC, FM, FC
K816A	Secondary Planet Pinion, 14T	6d.		3	ASC, FM, FC
K817	L.H. Ball Cup	7s. 0d.		1	FM, FC, AC
K818	Shell, 40 Holes (Alloy)	11s. 6d.		1	FC
K818	Shell, 40 Holes (Steel)	7s. 9d.		1	FC
K818A	Shell, 36 Holes (Alloy)	11s. 6d.		1	FC
K818A	Shell, 36 Holes (Steel)	7s. 9d.		1	FC
K820A	Primary Planet Cage	7s. 0d.		3	FM
K821	Primary Sun Pinion, 30T	3s. 3d.		2	FM
K822B	Planet Pinion, 14T	6d.		3	FM
K824	Shell, 40 Holes (Alloy)	11s. 6d.		1	FM
K824	Shell, 40 Holes (Steel)	7s. 9d.		1	FM
K824A	Shell, 36 Holes (Alloy)	11s. 6d.		1	FM
K824A	Shell, 36 Holes (Steel)	7s. 9d.		1	FM
K831	Axle, $5\frac{3}{4}$ " long	8s. 3d.		6	AC, ASC, FM, FC
L1	Axle, 6" long	5s. 0d.		6	SW, SB, SG

# SPARES **STURMEY** LIST

## **ARCHER**

vii

( IN ALPHABETICAL AND NUMERICAL ORDER )

Part No.	Description	Price	Price Amendment	Quantity Per Carton	Hub Types
L1A	Axle, 6 $\frac{1}{4}$ " long	5s. 0d.		6	SW, SB, SG
L2Z	Planet Cage (with L3 Pawl Cup)	5s. 3d.		2	SW
L4	Planet Cage Fixing Plate	1d.		12	SW, SB, SG
L5	Planet Pinion, 16T	8d.		12	SW, SB, SG
L6	Pinion Retaining Ring	4d.		2	SW, SB, SG
L7	Clutch Sleeve	7d.		6	SW, SB, SG
L8	Axle Key	3 $\frac{1}{2}$ d.		12	SW, SB, SG
L9	Sliding Clutch	2s. 0d.		6	SW, SB, SG
L10	Gear Ring	4s. 3d.		6	SW, SB, SG
L11	R.H. Pawl Ring	2s. 3d.		4	SW, SB, SG
L12	Pawl	1 $\frac{1}{2}$ d.		24	SW, SB, SG
L13	Pawl Retaining Washer	1d.		3	SW, SB, SG
L14	R.H. Ball Ring	4s. 0d.		2	SW, SB, SG
L15	Thrust Spring	3d.		6	SW, SB, SG
L16	Driver	4s. 6d.		3	SW, SB, SG
L17	Clutch Spring	2d.		6	SW, SB, SG
L18	Shell, 40 Holes	7s. 0d.		1	SW
L18A	Shell, 36 Holes	7s. 0d.		1	SW
L19	L.H. Ball Cup	4s. 0d.		2	SW
L20	Indicator Rod for L1 or L1A Axle	9d.		6	SW, SB, SG
L21Z	Coupling Spindle complete	1s. 10d.		6	SW, SB, SG
L22	Sprocket Dust Cap	2d.		6	SW, SB, SG
L24	Planet Cage Bearing Plate	2d.		6	SW, SB, SG
L52	Trigger Lever for 3-Speed. (See also K747)	—			GA244B Trigger Unit
L53Z	Ratchet Plate Assembly	—			GA244B Trigger Unit
L55	Trigger Pawl	—			GA244B Trigger Unit
L56	Trigger Pawl Spring	—			GA244B Trigger Unit
L102Z	Planet Cage	5s. 3d.			SB, SG
L118	Shell, 40 Holes	11s. 6d.		1	SB
L118A	Shell, 36 Holes	11s. 6d.		1	SB
L119	L.H. Ball Cup	4s. 0d.			SB, SG
L127	Magent Spacing Piece	—			SG
L128	Shell, 40 Holes	11s. 6d.		1	SG
L128A	Shell, 36 Holes	11s. 6d.		1	SG
LB111Z	Brake Arm Clip for Round Fork	9d.		6	BF
LB112Z	Brake Arm Clip for Oval Fork	9d.		6	BF
LB121	Washer (now replaced by K428 with X42 Washer)	—			BF, BR, AB
LB126Z	Brake Arm Clip for 'D' Fork	9d.			BF
LB127	Fulcrum Screw for Brake Shoe (discontinued from 1953)	4d.		12	BF, BR, AB
LB130Z	Brake Arm Clip Duplex Forks	9d.			BF
LB138AZ	Front Brake Plate (Rod) to 1951. (See also LB415AZ)	5s. 0d.			BF
LB140Z	Brake Arm Clip, $\frac{3}{8}$ " diam., Taper Forks	9d.			BF
LB145Z	Brake Arm Clip for Raleigh small section Taper Forks	9d.			BF
LB147AZ	Front Brake Plate (Cable) to 1951. (See also LB 416AZ)	5s. 0d.			BF
LB149	Cam Lever (Cable)	10d.		6	BF
LB150	Cam Lever (Rod)	10d.		6	BF
LB155	Locknut	3d.		24	BF, BR, GH6
LB155A	Locknut (Spigot)	3d.		24	BF, GH6
LB156	Axle, 5 $\frac{3}{8}$ " long	10d.		6	BR
LB156A	Axle, 6 $\frac{1}{4}$ " long	1s. 0d.		12	BR
LB159	Spacing Washer	$\frac{1}{2}$ d.		6	BF, BR, AB, FG
LB162	Axle Nuts	4d.		12	BF, BR, GH6

# SPARES **STURMEY** ARCHER LIST

(IN ALPHABETICAL AND NUMERICAL ORDER)

Part No.	Description	Price	Price Amendment	Quantity Per Carton	Hub Types
LB166	Cam Lever	10d.		6	BR, AB, SB
LB167	Brake Rod Adjusting Nut	4d.		24	BF, BR, AB, SB
LB168A	Roller Nipple for Brake Cable	3d.		24	BF, BR, AB
LB304	Swivel Pin	3d.		24	BF, BR, AB, SB
LB309	Inner Clip for 'D' or Duplex Fork	1s. 3d.		6	BF
LB309A	Inner Clip for Oval Fork	1s. 3d.		6	BF
LB320	Bottom Bracket Brake Link	9d.			BR, AB, SB
LB321	Seat Tube Clip	2d.			BR, AB, SB
LB322	Swivel Bolt for Brake Link	2d.			BR, AB, SB
LB323	Brake Link Spring	2d.			BR, AB, SB
LB324	Long Connection for Brake Rod	10d.			BR, AB, SB
LB325	L.H. Side Action Bellcrank	6d.			BR, AB, SB
LB326AZ	L.H. Bellcrank with Fulcrum	1s. 6d.			BR, AB, SB
LB326BZ	R.H. Bellcrank with Fulcrum	1s. 6d.			BR, AB, SB
LB327A	Fulcrum Half Clip for LB326A	3d.			BR, AB, SB
LB329	Front Stirrup for Rod Control	1s. 6d.			BF
LB330	Outer Clip for 'D' or Oval Forks	6d.			BF
LB330A	Outer Clip for Duplex Forks	6d.			BF
LB331	Fulcrum Bolt	2½d.		6	BF
LB332	Fulcrum Bolt for Bellcrank	2½d.			BR, AB, SB
LB334	Top Connection for Brake Rod	7d.			BF, BR, AB, SB
LB336	Washer for S154 Bolt	1½d.			AB, BR, SB
LB350A	Cable Guide	2d.			BF, BR, AB, SB
LB351Z	Shell, 40 Holes	14s. 9d.		1	BR
LB352Z	Shell, 36 Holes	14s. 9d.		1	BR
LB357AZ	L.H. Cone	1s. 6d.		12	BF, BR, GH6
LB358Z	R.H. Cone	1s. 6d.		12	BF, BR, GH6
LB401Z	Shell, 32 Holes	12s. 6d.		1	BF
LB402Z	Shell, 36 Holes	12s. 6d.		1	BF
LB404	Cone Dust Cap	1d.		12	All hubs
LB405	Dust Cap	1½d.		12	All hubs
LB415AZ	Front Brake Arm (Rod). (See also LB138AZ)	4s. 0d.			BF
LB416AZ	Front Brake Arm (Cable). (See also LB147AZ)	4s. 0d.			BF
LB426	Axle, 5" long	10d.		12	BF, GH6
LB426B	Axle, 4¾" long	10d.		12	BF, GH6
M6R	Tail Lamp with Oval Clip	3s. 3d.		4	Tail Lamp
M6D	Tail Lamp with 'D'-shaped Clip	3s. 3d.		4	Tail Lamp
M6S	Tail Lamp with ⅝" Round Clip	3s. 3d.		4	Tail Lamp
M6T	Tail Lamp with ½" Round Clip	3s. 3d.		4	Tail Lamp
M355	Lubricator Cover	2d.		6	BF, BR, GH6
N24	Pinion Pin	2d.		6	FM, ASC
N43Z	Brake Arm Clip complete	9d.		6	BR, AB, SB, TCW
N120	Quadrant Lever Spring	2d.			Top Tube Controls
N190	L.H. Nut	1s. 0d.		12	FW, FG, FM, FC, AC, AM, ASC, SW, SB, SG
N200	R.H. Nut	1s. 0d.		12	FW, FG, FM, FC, AC, AM, ASC, SW, SB, SG
P70	Plain Washer for Headlamp Fixing Bolt	½d.			Headlamp
P1056	Washer for Tail Lamp Clip	½d.			Tail Lamp
P1183	R.H. Side Action Bellcrank	5d.			BR, AB, SB
R625	Headlamp, large, with 6v. 25 amp Bulb	16s. 6d.		1	AG, FG, SG, GH6
S35	Clip Screw	1d.			BF, BR, AB, SB

( IN ALPHABETICAL AND NUMERICAL ORDER )

Part No.	Description	Price	Price Amendment	Quantity Per Carton	Hub Types
S98	Nut for Fulcrum Bolt	1d.			BF, BR, AB, SB
S154	Fulcrum Bolt for Rear Rod Bellcrank	4d.			BR, AB, SB
S386	Nut for Clip Screw	½d.			BF, BR, AB, SB
S433	Nut for Brake Rod Connection	½d.			BF, BR, AB, SB
S535	Screw for Brake Rod Connection	1d.			BF, BR, AB, SB
S545	Lubricator	3d.		36	All gear hubs
S558	Bush for Bolt-on Bellcrank	1d.			BR, AB, SB
S581A	Nipple for Brake Wire	1½d.			BF, BR, AB, SB
S583	Bolt for Fulcrum Clip	1½d.			BF, BR, AB, SB
S584A	Ball Nipple for Brake Wire	1d.			SB
S625	Headlamp, small, with 6v. .25 amp Bulb	16s. 6d.		1	AG, FG, SG, GH6
S637	Clip Bolt for ¾" Handlebar	2d.			BF, BR, AB, SB
S638	Nut for Clip Bolt	2d.			BF, BR, AB, SB
S712	Locknut for Brake Cable Adjuster	1½d.		24	BF, BR, AB, SB
X4	Knurled Connection	5d.		24	All gear hubs
X8	Collar for K813B Spring	1d.		12	ASC, FW, FM, FC, FG
X42	Axle Nut Spacing Washer, ⅜" thick	1d.		24	All hubs
X42A	Axle Nut Spacing Washer, ⅜" thick	1d.		24	All hubs
X48	Sprocket 18T, Screwed	1s. 9d.		6	AW, AB, AG, FW, FG
X48C	Sprocket 17T, Screwed	1s. 9d.		6	AW, AB, AG, FW, FG
X48D	Sprocket 19T, Screwed	1s. 9d.		6	AW, AB, AG, FW, FG
X48E	Sprocket 16T, Screwed	1s. 9d.		6	AW, AB, AG, FW, FG
X48F	Sprocket 20T, Screwed	1s. 9d.		6	AW, AB, AG, FW, FG
X49	Sprocket Washer, ⅜" thick	1½d.		12	All gear hubs
X61	Quadrant Connection	5d.			Top Tube Control
X62	Quadrant Connection Pin	½d.			Top Tube Control
X69	Clip Bolt	1d.			All gear controls
X78	Pulley Wheel	5d.		6	All gear controls
X78BZ	Pulley complete, 1½"	1s. 5d.		6	All gear controls
X79	Pulley Arm	1d.		12	All gear controls
X80	Pulley Arm Screw	1d.		12	All gear controls
X81Z	T.T. Control Wire, 32", 34" or 36"	1s. 5d.		12	Top Tube Controls
X81Z	T.T. Control Wire, 54" or 58"	1s. 8d.		6	Top Tube Controls
X81Z	T.T. Control Wire, 79"	2s. 2d.		6	Top Tube Controls
X90	Clip Bolt	1d.			All gear controls
X109	Pulley Half Clip	3d.		6	All gear controls
X110	Pulley Clip with Bush	5d.		6	All gear controls
X111A	Clip Bolt Nut (Chrome)	2½d.		12	All gear controls
<b>TOOLS</b>					
DD6019	Tube Spanner (6BA)				All Dyno Units
DD6839	Spanner for tightening fixed cone				All Hubs
GD495	Keeper Ring				All Dyno Units
DD11241	Box Spanner for Ball Cup Fixing Screws				FG
DD10565	Tool for removing L.H. Ball Cup (3-Speed), Slotted type				AG
X44B	Spanner for Axle Nuts and Plain Cones				All Hubs
DD911	Tool for removing L.H. Ball Cup (3-Speed)				AB
DD11182	Tool for removing L.H. Ball Cup (4-Speed)				FM, FC
DD1145	'C' Spanner for R.H. Ball Ring				AW, AB, AM, AG, ASC, AC, FW, FM, FC, FG
DD12418	'C' Spanner				SW, SB, SG
DD12403	Hollow Punch				SW, SB, SG
DD12987	Tool for removing L.H. Ball Cup				SB, SG

 Supplied for Trade use  
at special net prices.

# HUB STURMEY ARCHER LIST

<i>Model</i>	<i>Specification</i>	<i>Loose Trade</i>	<i>Loose Retail</i>	<i>Extra New Machine—Trade</i>	<i>Extra New Machine—Retail plus Purchase Tax</i>
SW	Standard Wide Ratio 3-Speed Hub with 'Flick' Trigger Control	32s. 3d.	44s. 6d.	27s. 5d.	45s. 10d.
AM	Medium Ratio 3-Speed Hub with 'Flick' Trigger Control	32s. 3d.	44s. 6d.	27s. 5d.	45s. 10d.
FM	Medium Ratio 4-Speed Hub with 'Flick' Trigger Control	40s. 3d.	55s. 6d.	34s. 2d.	57s. 1d.
FW	Standard Wide Ratio 4-Speed Hub with 'Flick' Trigger Control	35s. 0d.	48s. 3d.	29s. 9d.	49s. 9d.
SB	SW Hub with Internal Expanding Brake and Rod Control	45s. 0d.	62s. 0d.	38s. 3d.	63s. 10d.
SBC	SW Hub with Internal Expanding Brake and Cable Control	45s. 0d.	62s. 0d.	38s. 3d.	63s. 10d.
BF	Front Hub with Internal Expanding Brake and Rod Control	21s. 0d.	29s. 0d.	16s. 6d.	25s. 5d.
BFC	Front Hub with Internal Expanding Brake and Cable Control	21s. 0d.	29s. 0d.	16s. 6d.	25s. 5d.
BR	Rear Single-Speed Hub with Internal Expanding Brake and Rod Control	21s. 9d.	30s. 0d.	17s. 9d.	27s. 3d.
BRC	Rear Single-Speed Hub with Internal Expanding Brake and Cable Control	21s. 9d.	30s. 0d.	17s. 9d.	27s. 3d.
SG	SW Hub with Patent 6-volt 'Dynohub' hub lighting set	65s. 6d.	90s. 4d.	56s. 7d.	94s. 6d.
FG	FW Hub with Patent 6-volt 'Dynohub' hub lighting set	70s. 7d.	97s. 4d.	59s. 11d.	100s. 0d.
GH6	Patent 6-volt Front 'Dynohub' hub lighting set	39s. 9d.	54s. 9d.	33s. 9d.	56s. 4d.
SG DBU	SW Hub with Patent 6-volt 'Dynohub' hub lighting set and Dry Battery Unit (less batteries)	71s. 11d.	99s. 1d.	64s. 1d.	106s. 11d.
FG DBU	FW Hub with Patent 6-volt 'Dynohub' hub lighting set and Dry Battery Unit (less batteries)	77s. 0d.	106s. 1d.	67s. 5d.	112s. 5d.
GH6 DBU	Patent 6-volt Front 'Dynohub' hub lighting set and Dry Battery Unit (less batteries)	46s. 2d.	63s. 6d.	41s. 3d.	68s. 9d.
TCW	AW Hub with Coaster Brake	49s. 3d.	67s. 9d.	41s. 10d.	69s. 11d.
DBU	Dry Battery Unit (less batteries) for use with either GH6, SG or FG	6s. 5d.	8s. 9d.	7s. 6d.	—

**STURMEY**

**ARCHER**

*Service*

PRINTED IN ENGLAND

SERVICE

## ***SERVICE SECTION***

THE AIM IN THIS SECTION has been to provide, for each product in the Sturmey-Archer range, complete service data without any need for the cross-referencing which is frequently found in service manuals. Thus in the section will be found, under the heading for each model, complete information to enable the product to be easily dis-assembled, examined and repaired as necessary.

If any difficulty is encountered in servicing a Sturmey-Archer product, contact should be made with the Company's nearest Depot (see introductory pages).

At Lenton Boulevard, Nottingham, a speedy and efficient Service Department within the factory is at the immediate disposal of the trade. This Department is used less and less, however, because very little can go wrong with Sturmey-Archer gears, brakes or lighting equipment today which the trade is incapable of handling.

The directions in this service section of the catalogue should help still further to assist the trade to handle simply and efficiently problems referred to them by Sturmey-Archer users.

# The FITTING AND ADJUSTMENT OF STURMEY-ARCHER EQUIPMENT

## CYCLE FRAME

Before fitting a Sturmey-Archer variable gear hub to any cycle frame make sure that the chainstay ends are parallel. If they are not, the hub axle will be strained when the nuts are tightened, and the internal mechanism may be seriously damaged.

## HUB WIDTH

The over-all width of Sturmey-Archer rear hubs over the cone locknuts, as supplied from the Works, is  $4\frac{5}{16}$ ". If necessary, it can be reduced to  $4\frac{1}{16}$ " by removing the spacing washer on the left-hand side and the cone locknut on the right-hand side. Unless the same amount is removed from both sides the chain line will be affected.

## CHAIN LINE

The chain line is the distance from the centre line of the bicycle to the centre line of the teeth on the sprocket and is best measured as follows:

1. First see that the hub has the necessary spacing washers and locknuts to make up the proper width for the fork ends to which it is to be fitted.
2. Measure the distance over the cone locknuts and divide it by two.
3. Measure the distance from the outside of the right-hand cone locknut to the centre of the sprocket teeth and deduct it from the figure obtained in 2 above. The result is the chain line measurement.

With the hub, as supplied from the Works, it is possible to obtain any chain line between  $1\frac{1}{2}$ " and  $1\frac{3}{4}$ " in  $\frac{1}{16}$ " steps as follows:

- $1\frac{1}{2}$ ". With the dished face of the sprocket facing inwards, and both washers outside of the sprocket.
- $1\frac{9}{16}$ ". With the dished face of the sprocket facing inwards and one washer each side of the sprocket.
- $1\frac{5}{8}$ ". With the dished face of the sprocket facing outwards and both washers outside.
- $1\frac{11}{16}$ ". With the dished face of the sprocket facing outwards, one washer inside the sprocket and one outside.
- $1\frac{3}{4}$ ". With the dished face of the sprocket facing outwards and both washers inside the sprocket.

The dust cap behind the sprocket must always be fitted centrally to avoid rubbing against the right-hand ball ring, otherwise the hub may run noisily.

## SPROCKETS

Modern sprockets, as fitted to all Sturmey-Archer hubs, have three small semi-circular splines, corresponding to grooves in the driver, and these splines are secured in position by a spring ring (circlip) which clips into a narrow groove cut round the outside of the driver boss. The sprocket slides into position, with two  $\frac{1}{16}$ " spacing washers which are always used, and the circlip is then sprung into the groove. (By varying the position of the washers and the dishing of the sprocket, the chain line may be modified as previously explained.)

To remove a sprocket, prise off the circlip with a thin screwdriver at the spline groove nearest the gap in the circlip, so that the spacing washers and sprocket may be lifted off.

For all hubs, sprockets are supplied in sizes from 16-tooth to 20-tooth as well as 22-tooth for  $\frac{1}{2}$ " by  $\frac{1}{8}$ " chains, and 18-tooth and 19-tooth for  $\frac{1}{2}$ " by  $\frac{3}{16}$ " chains. For the 'A' range of sports hubs 14-tooth and 15-tooth sprockets can also be used providing that the K228 right-hand ball ring and K229 dust cap are fitted.

The screwed driver (K507) and the 12-splined driver (K657) are no longer available. Hubs in which they were used must be converted by fitting the (K462) 3-splined driver and sprocket as a complete unit (including spacing washers and circlip).

## GEAR RANGES

Gear ranges may be raised by changing the sprocket for a smaller one or lowered by changing the sprocket for a larger one. The effect of the change may be calculated by multiplying each existing gear by the number of teeth on the original sprocket and dividing the result by the number of teeth on the proposed new sprocket. For example, a gear of 66.4 obtained with an 18-tooth sprocket becomes 74.7 when a 16-tooth sprocket is fitted.

$$\left( \frac{66.4 \times 18}{16} = 74.7 \right)$$



## HUB GEAR CONTROLS

The gear-control mechanism of Sturmey-Archer hubs is either a trigger control or else a small lever in a quadrant, connected by means of a wire cable to the indicator coupling which protrudes from the hub itself.

Before 1953 the type of *trigger control* known as the GC2 was used for both three- and four-speed gears. It can be recognized by the words '3- or 4-speed' on the medallion, and by the cable guide or ferrule which is part of the control wire and unscrews from the casing. Later models of that type (also known as the GC2) have a small window in the outside casing, through which letters on the control lever, showing the gear in use, are seen.

Since 1953 separate models have been supplied for three-speed (the GC3A) and four-speed hubs (GC4A). They are similar to the earlier GC2 except that the number of steps on the control lever is different and, of course, the medallions show whether they are designed for three-speed or four-speeds. The latest type of GC4A have the numbers 1, 2, 3, 4, stamped on the outer edge of the medallion, to indicate the gear position.

The latest and slightly smaller three-speed control known as the GC3B has the numbers 1, 2, 3, stamped on the outer edge of the medallion, to indicate the gear positions. It also has a rather shorter lever and a different pawl spring and pawl.

The GC2A control, for *ASC hubs only*, has the same pawl, pawl spring, and lever as the GC2, but the *other internal parts are not interchangeable*. It can be recognized by the letters 'ASC' on the medallion.

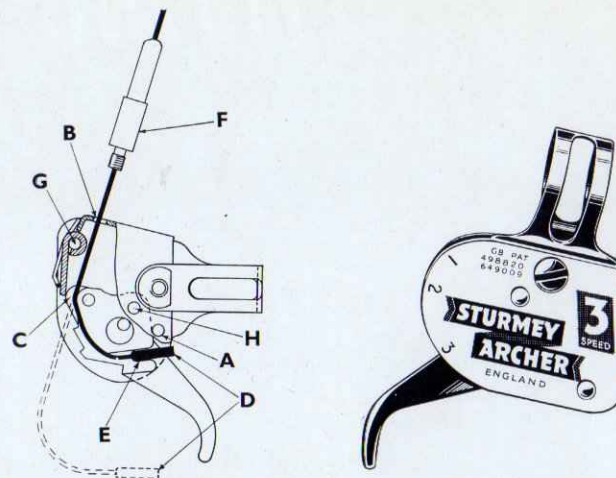
### To remove the wire from a trigger control

The control itself need not be detached from the handlebar, if the lever can be pulled far enough back to allow the cable nipple to pass between the pawl and the ratchet plate.

1. Detach the inner wire from the indicator chain at the hub.
2. Detach the outer casing from the fulcrum clip and pull the cable ferrule (F) upwards until the screw thread engages with that of the control casing at B, and then unscrew the ferrule.
3. Pull the lever right back beyond the bottom gear position to stop A, and push the inner wire through to detach the nipple from the ratchet plate.
4. Pull the wire out between the pawl and the ratchet plate at C and through threaded hole B.

### To fit a wire to the trigger control

1. Pull the lever right back beyond the bottom gear position to stop A.
2. Insert the wire through the threaded hole B and between the pawl and the ratchet plate at C.



3. Fit wire nipple (D) into notch E.
4. Screw cable ferrule (F) into control casing at B until it rotates freely.
5. Keeping tension on the wire, push the lever forward into the top-gear position.
6. Control is now ready for re-connection to hub.

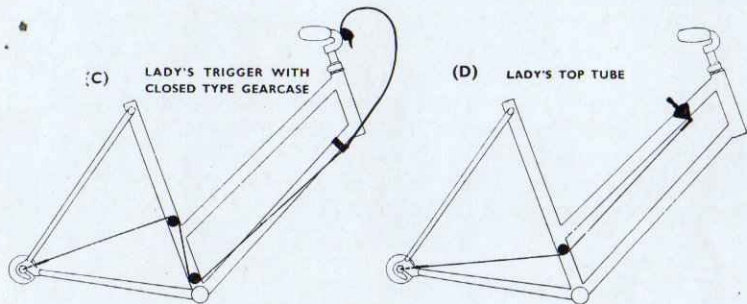
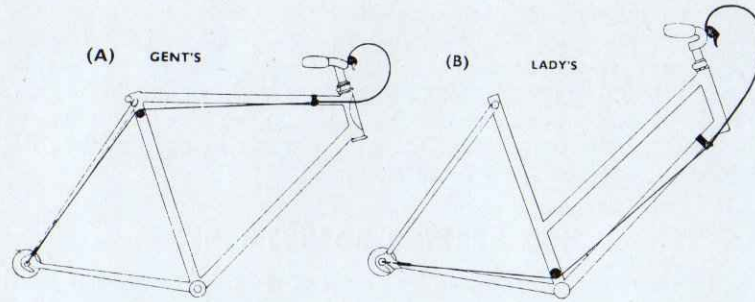
The pawl and pawl spring are designed so that they cannot drop out if the control wire breaks or when it is being removed or replaced. Normally, they should not need to be renewed and so they are not easily detachable. If a new part has to be fitted, both rivets (G and H) must be removed and the complete trigger mechanism withdrawn. New rivets will have to be used when the new part has been fitted.

## HUB GEAR CONTROLS

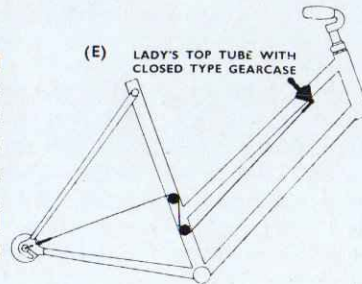
1. *Trigger Control.* The outer cable should be long enough to allow full movement of the handlebar but otherwise it should be kept as short as possible, because it tends to compress in low gears, and any length over 21½" may adversely affect the gear adjustment. Control wires are supplied in various lengths but the general standard for handlebar controls is a 54½" inner wire with a 17½" outer cable which is suitable for most frame sizes. Longer wires, up to 58½" and outer cables up to 21½", are available for special cases, and shorter wires can be supplied for very small frames.

Diagrams A and B show the best method of arranging the control wire on diamond and open frames. If the open frame is fitted with a gear-case, however, an extra guide pulley may be needed as shown in diagram C.

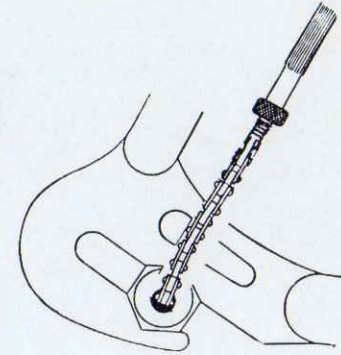
2. *Top Tube Control.* The wire should run parallel to the tube to which the quadrant is fitted. If the tube is curved the wire should be parallel to the section of tube to which the control is fitted. The wire lengths offered for Top Tube controls are 32", 34" and 36".



For Top Tube controls on diamond frames, the quadrant should be attached in the position shown for the fulcrum in diagram A. On open frames where a gearcase is fitted, the method is shown in diagram E, but it is less efficient and should not be used if the method shown in diagram D is possible.



There should be no difficulty in joining up the control wire to the indicator chain except with the AW, AB, AG and TCW hubs. In these cases the indicator must be screwed up fully but not over-tightened. The effect of over-tightening is shown in the illustration. The indicator must be unscrewed to line up; it should be noted particularly that it need never be unscrewed more than half a turn. Unscrewing more than half a turn will detrimentally affect gear engagement. This only applies on AW, AB, AG and TCW hubs because in all other types the indicator rod is free to revolve and line itself up automatically.



### BRAKE HUB CONTROLS

It is very important that the brake-arm clips are fitted as tightly as possible to the cycle frame or the fork. It is also important that the brake plate should not be strained when a rear-wheel brake is being connected to the anchor clip, which must be fixed so that it engages easily. The arm of a front hub should be a tight fit in its clip.

Brakes on machines that have been laid up for some time should be cleaned and one or two drops of oil should then be applied between the cam lever and the brake plate, to prevent sticking, but care should be taken to see that no oil penetrates into the brake drum.

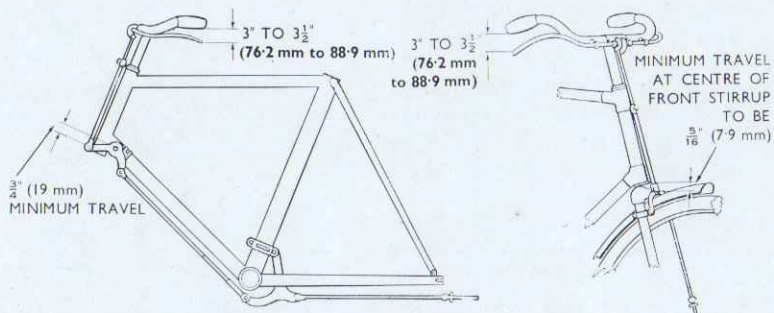
All rear-wheel brake hubs have axles with flatted ends, to prevent them from turning in the frame slots. This is especially important with combined brake-and-variable-gear hubs, for which special lip washers are provided, to engage in the frame slots.

To allow ample room for movement of the rod operating a rear-wheel brake, there should be half an inch of clearance between the brake link and the bottom bracket.

In the case of the front hub brakes it is not possible to interchange rod and cable control without exchanging the brake arms, but all rear hubs use the same brake arm for either rod or cable control.

Handlebar fittings for rod-operated brake hubs must provide the minimum movement as shown in the diagrams overleaf, at the stirrup (for front-wheel brakes) and at the bell crank (for rear-wheel brakes). Hubs are supplied with fittings up to and including those parts, but the handlebar fittings and brake tubes are supplied by the cycle manufacturers. When a cycle is being converted from rim brakes to hub

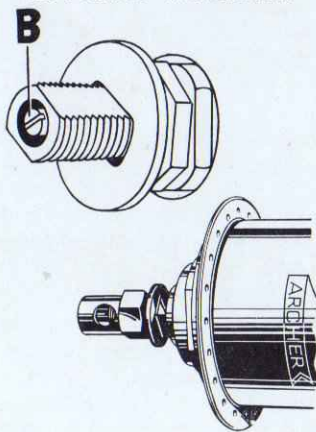
brakes, a longer tab may be required for the roller lever operating the rear brake in order to provide the minimum movement required.



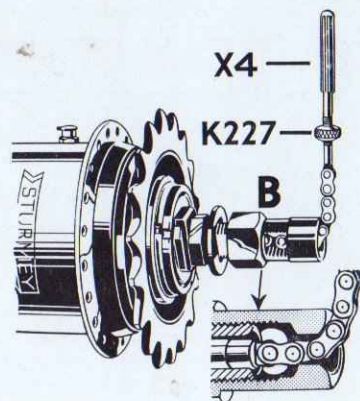
### HUB GEAR INDICATOR ADJUSTMENT

The indicator rod of three-speed hubs should be adjusted when the control lever is in the normal gear position, i.e., No. 2. The small locknut above the chain is first slackened off and then the knurled wire connection is rotated so as to bring the rod into the required position. With SW, SB, SG, AM, ASC and AC hubs the required position has been obtained when the end of the indicator rod is level with the end of the axle on the left-hand side of the hub. With AW, AB, AG and TCW hubs it is brought into position by bringing the outer shoulder of the indicator rod level with the end of the axle on the right-hand (sprocket) side. (See B in illustrations.)

#### LEFT-HAND INDICATION



#### RIGHT-HAND INDICATION



For four-speed hubs, FW, FM, FC and FG, adjustment is made when the control lever is in the low gear, i.e., No. 2 position (the one next to the bottom gear position). The locknut is slackened off and the knurled wire connection is revolved to bring the end of the indicator rod level with the end of the axle on the left-hand side. (See B in illustration.)

In all cases the locknut must be tightened again after adjustment.

If the knurled wire connection cannot be turned enough to give the required adjustment of the indicator rod, the position of the fulcrum (in the case of trigger controls), or the quadrant (in the case of top tube controls) should be moved along the top tube in the required direction, so that the final adjustment may be made on the wire connection as described. At the first sign of the gear slipping in any position, the indicator adjustment must be checked.

### HUB BEARING ADJUSTMENT

The hub bearings are adjusted by means of the cone on the left-hand side (opposite side to the sprocket) which automatically adjusts all the hub bearings. It should be adjusted so that there is a barely perceptible sideways movement of the wheel rim.

With brake hubs the left-hand cone projects through the brake plate and is fitted with a slotted adjustment washer. With a rear 'Dynohub' the left-hand cone projects through the armature and is fitted with a slotted adjustment washer. Turning the washer adjusts the cone, which must be locked again with the locknut after adjustment.

When a dynamo is incorporated in the hub the pull of the magnet disguises the adjustment and if this point is not kept in mind the wheel may be over-tightened and the ball races damaged. The position of the armature terminals should be carefully located before the cone locknut is finally tightened.

For all hubs fitted to roadster cycles, the terminals should be parallel to one of the flats on the end of the axle but with forward drop-out lugs they should be turned clockwise through 30° away from a position parallel with the flats.

GH6 lighting sets should have the terminals parallel with the axle flats. The notched washer has not been fitted to GH6 hubs since 1954 when the adjusting cone was transferred to the side away from the 'Dynohub'.

Before spinning a wheel to test the output of the 'Dynohub', ensure that the axle nuts are tight, otherwise the terminals may foul the front fork and be damaged if the axle revolves.

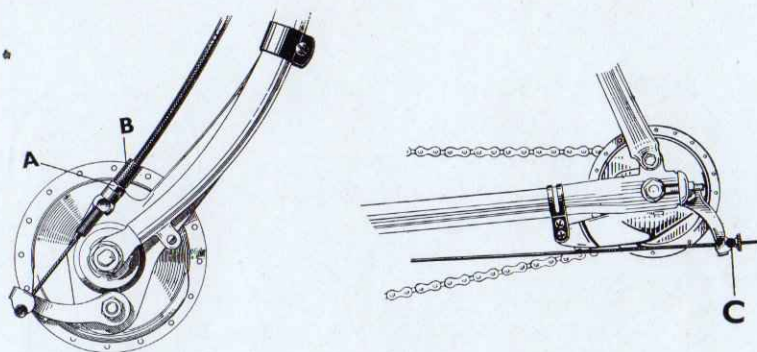
The right-hand cone (on the sprocket side) is fixed in position when the hub is assembled and must not be disturbed for wheel adjustment in the normal way. When re-assembling the hub after dismantling for inspection or repair, the right-hand cone should be screwed home until it is finger-tight, then unscrewed half a turn and finally locked with the

special lockwasher and locknut. On no account should it be unscrewed more than half a turn as this will upset the setting of the gears. Wheel adjustment is then made in the normal way with the left-hand cone. If the right-hand cone races are being inspected without removing the internals from the hub shell, the left-hand cone must first be screwed well back so that it does not interfere with the re-setting of the right-hand cone.

### HUB (BRAKE) ADJUSTMENT

When brakes are new they may have to be adjusted frequently (until the shoes have become properly bedded in).

With cable-operated brakes the small locknut (A in the diagram) is first slackened off and then the knurled adjuster (B in diagram) is tightened until the brake shoes are felt to be rubbing on the inner surface of the hub shell. The adjuster is then slackened just enough to allow the wheel to revolve without friction, and the locknut is tightened up again.



With rod-operated brakes the adjuster (C in the diagram) is turned until the brake shoes rub on the inside of the drum, and then slackened off just enough to allow the wheel to revolve without friction. The adjuster is self-locking.

This is the only point at which the brake should be adjusted. The handlebar brake tubes are only provided to allow up-and-down adjustment of the handlebars.

### HEADLAMPS S625 and R625

Two types of headlamp are available.

1. Type S with 2" diameter dome for sports models in silver finish only.
2. Type R with 3¼" diameter dome for roadster models in black and silver finish.

Both are fitted to the lamp bracket by means of a single clamping bolt. The angle of the lamp may be adjusted but first the clamping bolt should be loosened.

The front of the lamp is detachable by unscrewing the small screw at the bottom of the lamp rim and this will give access to the bulb and switch sockets. The switch itself is riveted at the base of the lamp body and the switch lever has three positions, which, viewed from the riding position, are: Battery—left, 'Dynohub'—right, Off—central. When a Dry Battery Unit is not fitted, the left-hand position may be used as 'Off' and the switch treated as an ordinary two-way switch.

The bulb-holder is a push fit into the base of the reflector, and a lock-ring is provided to secure the bulb which allows it to be focused. Correctly adjusted, the bulb need not be touched again except to re-focus or replace with a new bulb.

### REAR LAMP M6

The rear lamp is fixed to the rear stay by a suitable clip. Four types of clip are available to fit ⅝" diameter round, ½" diameter round, and oval or 'D'-shaped tubing. Prior to the present lighting regulations a 1¼" diameter dome was fitted but the current dome is 1½", behind which is fitted a loose metal backing piece which can be fitted into the existing size lamp body. The dome is unscrewed to give access to the bulb.

### BULBS

Head: 6v. .25 amp. Symbol No. GL448. } Correct bulbs  
Rear: 6v. .04 amp. Symbol No. GL228.- } must be used.

### DRY BATTERY UNIT (DBU) GA393

The Dry Battery Unit is fitted to the seat tube. The unit takes three 1½ volt dry cells which are fitted from the lower end of the unit and secured in position with a spring ring which fits into a groove inside the base of the container. This groove forms the earth connection for the spring ring and must be kept clean. It is suggested that the groove and spring ring be smeared with vaseline as a precaution against corrosion. Batteries are not re-chargeable and should be replaced with new cells when exhausted or removed from the container to avoid corrosion on the inside surface of the container. If the batteries are removed without replacing with new ones the 'Dynohub' lighting will still function normally but the parking light will not function. The most common type of batteries used are Drydex T20, Ever Ready U2 or Ray-O-Vac, but any similar size battery is suitable.

There are two terminals fitted in the head of the battery container and as these are of different sizes the wires cannot be wrongly connected. The battery cap is of rubber with a small hole in the top through which the centre terminal passes. The sides of the battery cap should be pulled well down over the flex wires to prevent rain or mud penetrating

into the container and the cap should be secured in position by means of a plated washer (GL541) and terminal nut (GL613).

### WIRING

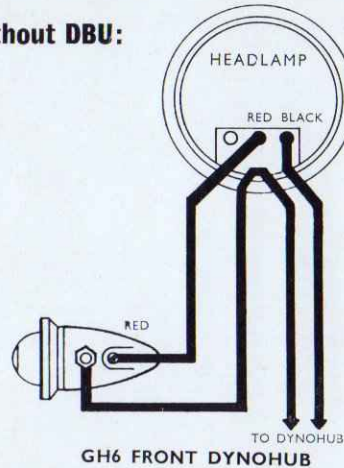
Wiring connections are inside lamp; wires enter the lamp through a hole in the fixing bracket. To reach the connections the lamp front must be removed.

#### (1) For GH6 front 'Dynohub' without DBU:

**Headlamp End.** Black wire to upper right-hand switch connection. Red wire to centre switch connection. Two bare wires to lower switch connection.

**'Dynohub'.** Two hook connections to hub terminals.

**Rear Lamp.** Black wire (large tag) to clip screw. Red wire (small tag) to recessed screw.



#### (2) For GH6 front 'Dynohub' with DBU:

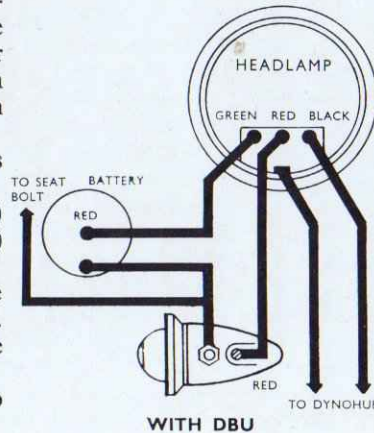
**Headlamp End.** Black wire to upper right-hand switch connection. Bare wire to lower centre connection. Red wire to upper centre switch connection. Green wire to upper left-hand switch connection.

**'Dynohub'.** Two hook connections to hub terminals.

**Rear Lamp.** Black wire (large tag) to clip screw. Red wire (small tag) to recessed screw.

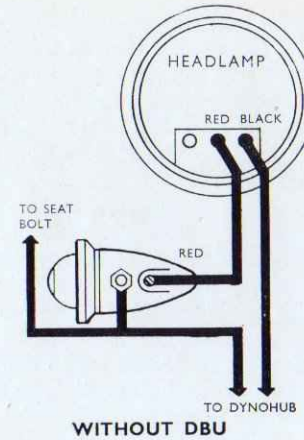
**Battery Container.** Red wire (large tag) to centre terminal. Black wire (small tag) to side terminal.

**Earth Wire.** Rear lamp clip to seat bolt.



#### (3) For SG, AG or FG rear 'Dynohub' without DBU:

One hub connection to upper right-hand switch connection. Upper centre connection to rear lamp recessed screw. Other hub connection to rear lamp clip screw. Earth wire—Rear lamp clip screw to seat bolt.



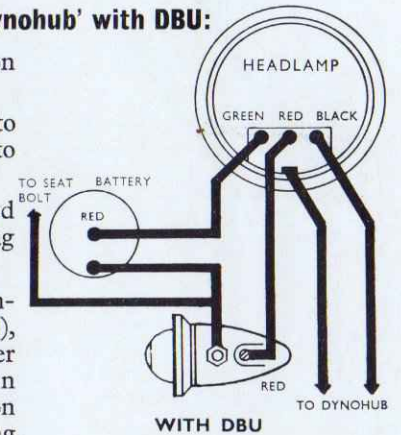
#### (4) For SG, AG or FG rear 'Dynohub' with DBU:

**'Dyno-hub'.** Two large hook-on tags to the two hub terminals.

**Rear Lamp.** Small tag (red) to recessed screw, large tag (black) to clip screw.

**Battery Cap.** Large tag (red sleeve) to centre terminal, small tag (black sleeve) to other terminal.

**Headlamp.** (1st pair) Bare connection to base connection (earth), the other connection to upper right-hand switch connection (black). (2nd pair) Red connection to centre connection, the remaining connection (green) to upper left-hand switch connection. (Any surplus wire should be coiled inside Headlamp.) Earth wire—Rear lamp clip screw to seat bolt.



*N.B.—All illustrations show switch plate as seen in headlamp with front removed.*

# The **USE AND MAINTENANCE** OF **STURMEY-ARCHER EQUIPMENT**

**Sturmey-Archer hubs have been designed and built to give a life-time of trouble-free service on the understanding that regular attention is given to correct care and maintenance as outlined below.**

## CHANGING GEAR

In use, Sturmey-Archer variable gear hubs are the easiest, cleanest and most convenient means of making a change of gear. The change may be made while the cycle is in motion or when it is stationary, which is a great advantage to cyclists riding in traffic where stops and gear changes are frequent.

If the change is made while the bicycle is moving, the rider should continue to pedal but gently ease the pressure on the pedals as he makes the change which should be carried out smartly.

Should it be necessary to change gear whilst stationary, the weight of the foot should be allowed to rest on higher pedal during change, so that internal gears will rotate and engage easily.

## ADJUSTMENT

See previous section of this catalogue under the headings of :

	<i>page</i>
Hub Gear Indicator Adjustment	4
Hub Bearing Adjustment	4
Hub (Brake) Adjustment	5

## LUBRICATION

Only thin good quality oil should be used for the lubrication of Sturmey-Archer hubs. Thick oils or grease must not be used, but when a hub is dismantled a small amount of grease or vaseline may be put on the ball races only.

The ideal rule for lubrication should be 'a little but often'. Two or three drops of oil every week will maintain the hub in first class running order. *A new hub should always be oiled before use* because the oil put in at the factory may have evaporated in the interval between leaving the factory and being put to use on the road.

TCW (tricoaster) hubs need more oil than other hubs because in their case the oil is used not only for lubrication but also to dissipate heat generated by the brake.

Internal expanding brake hubs have a drainage hole in the brake plate to allow surplus oil to drain away. If this is not kept clear oil will seep through to the linings and reduce the efficiency of the brake.

Since 'Dynohub' hub lighting sets have no bearings of their own, the only lubrication needed is for the hub bearings and gear mechanism. Oil will not harm the dynamo, so there is no risk of damage in oiling the hub.

The moving parts of the trigger unit need an occasional drop of oil to ensure easy action, but as surplus oil will attract dirt, oiling at this point should be done carefully and sparingly.

Occasionally the outer casing of the control cable should be removed from the fulcrum clip so that the inner wire may be exposed and lubricated.

**STURMEY**  
**ARCHER**

**END OF SUB-SECTION 2.—SERVICE SECTION—STURMEY-ARCHER MASTER CATALOGUE**

# FAULT-FINDING CHARTS

## FOR STURMEY-ARCHER EQUIPMENT

If a Sturmey-Archer variable gear hub is not working satisfactorily, first of all check the indicator adjustment, as explained in the chapter on 'The Fitting and Adjustment of Sturmey-Archer Hubs'.

If the trouble is sluggishness or stiffness in the gear-change, the cause may be lack of lubrication, so oil the hub and the control mechanism before continuing with the investigation.

If the hub is correctly adjusted and adequately lubricated but still does not work properly, look for the trouble in the following tables, where you will also find the cause and cure. If the cure is re-adjustment of the hub, refer to the chapter on 'The Fitting and Adjustment of Sturmey-Archer Hubs'. If new parts have to be fitted, consult the lists of spare parts and prices.

### FAULT-FINDING CHART FOR SW, SB and SG HUBS

<i>Symptom</i>	<i>Fault</i>	<i>Remedy</i>
Slipping in low gear.	1. Planet Cage Pawls and/or L.H. Ball Cup teeth worn.	1. Replace.
Clicking in low gear.	1. Faulty Indicator adjustment.	1. Re-adjust.
Slipping in normal gear only.	1. Gear Ring Splines and/or Clutch Dogs rounded off.	1. Replace.
Slipping in high gear.	1. Planet Cage Pins and/or Clutch Dogs rounded off.	1. Replace.
Slipping in both normal and high gears.	1. Gear Ring Pawls and R.H. Ball Ring teeth worn. 2. Pawl Ring and Gear Ring Dogs worn.	1. Replace. 2. Replace.
Hub runs stiffly.	1. L.H. Cone too tight. 2. R.H. Cone not correctly set. (See Assembly Notes.) 3. Chainstays not parallel. 4. Cycle Chain too tight. 5. Dust Caps rubbing. 6. Corrosion through wrong oil or lack of oil. 7. Too many balls in Ball Ring.	1. Adjust. 2. Adjust. 3. Correct. 4. Adjust 5. Replace. 6. Clean and re-oil. 7. Reduce to only 24 balls.
Sluggish Gear Change.	1. Bent Axle. 2. Worn Toggle Chain. 3. Guide Pulley out of line. 4. Frayed or corroded Control Wire. 5. Flick Trigger Unit not oiled.	1. Replace. 2. Replace. 3. Set correctly. 4. Replace. 5. Oil working parts.



## FAULT-FINDING CHART FOR AW, AB, TCW and AG HUBS

<i>Symptom</i>	<i>Fault</i>	<i>Remedy</i>
No low gear (1st).	<ol style="list-style-type: none"> <li>1. Low gear pawls upside down or pointing in wrong direction.</li> <li>2. Sliding clutch thrust collar not seating over axle key.</li> <li>3. Incorrect axle spring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-assemble pawls correctly.</li> <li>2. Fit thrust collar correctly.</li> <li>3. Fit correct axle spring.</li> </ol>
Slipping in low gear (1st).	<ol style="list-style-type: none"> <li>1. Sliding clutch 'nosed' off, due to bad adjustment.</li> <li>2. Indicator not screwed home fully.</li> <li>3. R.H. cone wrongly adjusted.</li> <li>4. Bad trigger cable ends or kinks in trigger wire.</li> <li>5. Twisted indicator chain through over-tightening.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit new sliding clutch and adjust correctly.</li> <li>2. Screw indicator home.</li> <li>3. Re-adjust R.H. cone.</li> <li>4. Fit new control cable.</li> <li>5. Replace or refit as required.</li> </ol>
Fluctuating between low gear (1st) and normal gear (2nd).	<ol style="list-style-type: none"> <li>1. Faulty or worn gear ring pawls.</li> </ol>	<ol style="list-style-type: none"> <li>1. Change both gear ring pawls.</li> </ol>
Slipping in normal gear (2nd).	<ol style="list-style-type: none"> <li>1. Gear ring dogs and/or sliding clutch 'nosed' off due to bad adjustment.</li> <li>2. Indicator not screwed home fully.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit new gear ring and/or sliding clutch.</li> <li>2. Screw indicator home.</li> </ol>
Slipping in top gear (3rd).	<ol style="list-style-type: none"> <li>1. Pinion pins or sliding clutch badly worn due to bad adjustment.</li> <li>2. Very weak or distorted axle spring.</li> <li>3. Incorrect R.H. cone adjustment.</li> <li>4. Grit between clutch sleeve and axle.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit necessary new parts, and check adjustment.</li> <li>2. Fit new spring.</li> <li>3. Re-adjust.</li> <li>4. Clean away grit.</li> </ol>
Hub runs stiffly. Drag on pedals when free-wheeling.	<ol style="list-style-type: none"> <li>1. Too many balls in ball ring.</li> <li>2. Cones excessively tight.</li> <li>3. Chainstay ends not parallel.</li> <li>4. Corrosion due to inferior oil or lack of lubrication.</li> <li>5. Distorted dust caps.</li> </ol>	<ol style="list-style-type: none"> <li>1. 24 balls only should be fitted.</li> <li>2. Re-adjust cones.</li> <li>3. Correct chainstay ends. It is essential that the ends are parallel, otherwise the axle will be strained when the nuts are tightened and the internals may be seriously affected.</li> <li>4. Clean hub thoroughly and use only a good quality thin oil.</li> <li>5. Check dust caps and replace those showing distortion, or signs of binding.</li> </ol>
Sluggish gear change.	<ol style="list-style-type: none"> <li>1. Distorted axle spring.</li> <li>2. Bent axle.</li> <li>3. Worn toggle chain link.</li> <li>4. Guide pulley out of line so that wire tends to ride up side of pulley flange.</li> <li>5. Lack of lubrication of 'Flick' control, or frayed control wire.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace spring.</li> <li>2. Replace axle.</li> <li>3. Replace indicator and chain.</li> <li>4. Correct alignment of pulley on frame.</li> <li>5. Lubricate control or replace wire.</li> </ol>

## FAULT-FINDING CHART FOR FW, FC, FM, FG, ASC, AC and AM HUBS

<i>Symptom</i>	<i>Fault</i>	<i>Remedy</i>
No bottom gear.	<ol style="list-style-type: none"> <li>1. Thrust collar not seated correctly on axle key.</li> <li>2. Low gear pawls upside down or reversed.</li> <li>3. Bottom gear pawls stuck down (FG only).</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit thrust collar correctly.</li> <li>2. Re-assemble low gear pawls (not ASC).</li> <li>3. Remove, clean, and lubricate.</li> </ol>
Difficulty in engaging bottom gear. NOTE.—This must not be confused with the fact that a stronger pull on the control wire is necessary to engage low gear than for high and middle gears.	<ol style="list-style-type: none"> <li>1. Compensator spring bent and binding in the axle bore.</li> <li>2. No lubricant on wire inside trigger cable.</li> <li>3. Faulty coiling or distorted low gear spring.</li> <li>4. Axle key bent.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit new spring (not AM or AC).</li> <li>2. Lubricate</li> <li>3. Fit new set of springs (not AM or AC).</li> <li>4. Fit new key.</li> </ol>
Slips in bottom gear.	<ol style="list-style-type: none"> <li>1. Bad trigger cable ends or kinks in trigger wire.</li> <li>2. Compensator spring bent.</li> <li>3. Faulty coiling of low gear spring.</li> <li>4. Incorrectly fitted pawl springs.</li> <li>5. Worn dogs on axle and inside low gear dog clutch (FM, FC, ASC) only.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit new control cable.</li> <li>2. Fit new spring which should not be less than <math>1\frac{3}{16}</math>" over-all (not AM or AC).</li> <li>3. Fit new set of springs (not AM or AC).</li> <li>4. Fit pawl springs correctly.</li> <li>5. Fit new axle and low gear dog.</li> </ol>
Slips in 2nd gear in 4-speeds.	<ol style="list-style-type: none"> <li>1. Compensator spring set too short.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit new set of springs.</li> </ol>
Alternates between bottom or low gear and normal.	<ol style="list-style-type: none"> <li>1. Faulty gear ring pawls.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit new pawls (not ASC).</li> </ol>
Slips in low and top gears.	<ol style="list-style-type: none"> <li>1. Dog ring locknut loose (FW and FG only).</li> <li>2. Secondary sun pinion locknut loose (FM, FC, ASC and AC only).</li> <li>3. Weak low gear spring (FW only).</li> <li>4. Dog ring teeth worn (FW only).</li> </ol>	<ol style="list-style-type: none"> <li>1. Examine dog ring teeth for damage. Tighten locknut.</li> <li>2. Tighten locknut.</li> <li>3. Fit new set of springs (K410B).</li> <li>4. Fit new dog ring.</li> </ol>
Slips in normal gear.	<ol style="list-style-type: none"> <li>1. Gear ring and sliding clutch worn due to bad adjustment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit new parts, and check clutch spring.</li> </ol>
Slips in top gear.	<ol style="list-style-type: none"> <li>1. Planet cage dogs and clutch worn due to bad adjustment or very weak clutch spring.</li> <li>2. Incorrect R.H. cone adjustment.</li> <li>3. Tight clutch spring or dirt clogging spring action.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fit new parts, check clutch spring and re-adjust.</li> <li>2. Re-adjust correctly.</li> <li>3. Clean hub and/or fit new set of springs.</li> </ol>
Hub runs stiffly. Drag on pedals when free-wheeling.	<ol style="list-style-type: none"> <li>1. Planet pinions not 'timed' correctly.</li> <li>2. Too many balls fitted in ball ring.</li> <li>3. Bad cone adjustment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-time pinions. (See page 47 (FW, FG and AM only).)</li> <li>2. Fit 24 balls only.</li> <li>3. Re-adjust both cones.</li> </ol>

**FAULT-FINDING CHART FOR FW, FC, FM, FG, ASC, AC and AM HUBS—cont.**

<i>Symptom</i>	<i>Fault</i>	<i>Remedy</i>
Hub runs stiffly. Drag on pedals when free-wheeling.— <i>cont.</i>	4. Chainstay ends not parallel.  5. Corrosion due to inferior oil or lack of lubrication or dirty internals. 6. Distorted dust caps. NOTE.—The gear internals are rotated during free-wheeling in FM, FC, and AC hubs; therefore, providing cones are properly adjusted, a slight pull on the pedals and possibly rotation during free-wheeling is in order.	4. Correct chainstay ends. It is essential that the ends are parallel, otherwise the axle will be strained when the nuts are tightened and the internals may be seriously affected. 5. Clean hub thoroughly and use only a good quality thin oil. 6. Check dust caps and replace those showing distortion or signs of binding.
No gear at all.	1. Indicator rod broken or very nearly unscrewed. 2. Pawls stuck by incorrect oil.	1. Fit indicator rod and re-adjust (not AM or AC). 2. Lubricate.
Sluggish gear change.	1. Distorted axle spring. 2. Bent axle. 3. Worn toggle chain link. 4. Guide pulley out of line so that wire tends to ride up side of pulley flange. 5. Lack of lubrication of 'Flick' control or frayed control wire.	1. Fit new set of springs. 2. Replace axle. 3. Replace indicator and chain. 4. Correct alignment of pulley on frame.  5. Lubricate control or replace wire.

**FAULT-FINDING CHART FOR HUB BRAKES**

<i>Symptom</i>	<i>Fault</i>	<i>Remedy</i>
Inefficient brake	1. Oil-soaked or Greasy linings. 2. Incorrect adjustment. 3. Worn linings—rivet heads protruding and contacting drum surface.	1. Fit new linings. 2. Re-adjust. See notes on fitting and adjustment. 3. Fit new linings.
Squealing brake.	1. Loose brake-arm clip. 2. Lining not tapered off at front edge causing vibration. 3. Loose rivets in linings.	1. Secure clip properly. 2. Fit linings correctly.  3. Secure rivets firmly.
Jerky brake.	1. Hub drum pulled out of shape during wheel building.	1. Re-true wheel or re-build as necessary.
Knocking or clicking noise.	1. Loose hub shell rivets. 2. Scored brake drum surface.	1. Fit new hub shell. 2. Fit new hub shell.

## FAULT-FINDING CHART FOR LIGHTING UNITS

To test whether 'Dynohub' is generating, remove wires from armature terminals, re-tighten terminal nuts and connect a bulb known to be in good condition across the armature terminals; then spin wheel smartly. If bulb does not light satisfactorily, the armature may be faulty.

Connect one lead from a test meter to one of the armature terminals and touch the other lead on any of the armature laminations. If any reading is obtained, this indicates a short circuit between armature winding and the body. Test each armature terminal in turn.

### Electrical Faults:

<i>Fault</i>	<i>Cause</i>	<i>Remedy</i>
Total failure.	<ol style="list-style-type: none"> <li>1. Faulty armature.</li> <li>2. Broken wire in twin flex.</li> <li>3. Burnt out bulb or broken filament.</li> <li>4. Incorrect wiring connections.</li> </ol>	<ol style="list-style-type: none"> <li>1. Return armature for repair under Service Replacement scheme.</li> <li>2. Test each wire for continuity.</li> <li>3. Test each bulb with battery known to be in good condition or test for continuity of filament.</li> <li>4. Check wiring against appropriate diagrams.</li> </ol>
Low output. (Dim lights.)	<ol style="list-style-type: none"> <li>1. Magnet de-magnetized.</li> <li>2. Bulbs which have been in use for a long time may not be 100 per cent efficient.</li> <li>3. Incorrect bulbs.</li> <li>4. Incorrect wiring connections.</li> <li>5. Corroded Connections.</li> </ol>	<ol style="list-style-type: none"> <li>1. Return magnet to works for re-magnetizing. This can only be done at Works and unless keeper ring or armature is sent with magnet, a keeper will have to be supplied in order to return magnet.</li> <li>2. Test bulbs with battery against new ones.</li> <li>3. Check bulb ratings and see that they are correct.</li> <li>4. Check wiring against appropriate diagram.</li> <li>5. Inspect all Terminal and wire tags.</li> </ol>
Partial Failure.	<ol style="list-style-type: none"> <li>1. Loose bulb or bulbs.</li> <li>2. Frayed ends of twin flex.</li> <li>3. Terminal nuts loose.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check if bulbs are screwed fully home.</li> <li>2. Check each terminal point.</li> <li>3. Check nuts for tightness but be careful not to use too much force.</li> </ol>
Frequent burning out of bulbs.	<ol style="list-style-type: none"> <li>1. Loose contacts.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check all Terminals in Headlamp and Rear Lamp for tightness and ensure bulbs make firm contact.</li> </ol>

### Mechanical Faults:

<i>Faults:</i>	<i>Cause</i>	<i>Remedy</i>
Rubbing.	<ol style="list-style-type: none"> <li>1. Usually caused by grit between cover plate and inner dust cap.</li> <li>2. Loose cones may permit armature and magnet to rub.</li> <li>3. Dirt between armature and magnet.</li> <li>4. The omission of the card disc carrying the patent numbers which must be fitted between magnet and cover plate.</li> </ol>	<ol style="list-style-type: none"> <li>1. The groove should be cleaned and filled with light grease.</li> <li>2. Correct adjustment of cones will cure this fault.</li> <li>3. The hub should be dismantled and cleaned if this is the cause.</li> <li>4. Ensure that disc is fitted.</li> </ol>

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**END OF SUB-SECTION 3.—SERVICE SECTION—STURMEY-ARCHER MASTER CATALOGUE**

# **GENERAL DISMANTLING** *Instructions* **FOR STURMEY-ARCHER HUBS**

When gear and brake controls and flex wires have been disconnected and the wheel removed from the cycle frame, dismantling of the hub begins with the removal of the left-hand locknut, the washers (if any) and the left-hand cone. A note should always be made of their order and number so that they may be put back correctly when the hub is re-assembled. Next, unscrew the right-hand ball ring but because it has a two-start thread and must be replaced in its original position, that position must be marked. String or adhesive tape may be attached to the spoke nearest to the letters 'SA' which are stamped in one of the notches on the ring. The whole internal can now be withdrawn from the hub shell.

Where a brake is incorporated in the hub, the brake unit must be removed before the left-hand cone can be unscrewed. The last washer to be taken off before coming to the brake plate is the notched adjusting washer which fits over the flats on the end of the cone for normal wheel adjustment purposes. When this notched washer has been taken off, lift out the brake arm and shoes as a complete unit, and then proceed to unscrew the left-hand cone. Similarly, the generator must first be removed from hubs incorporating a 'Dynohub' lighting unit. The procedure is explained in detail in the appropriate chapters of this section of the catalogue.

Removal of the right-hand ball ring in the case of the TCW is described in the chapter headed 'To Dismantle the TCW Hub.'

In all other cases, the right-hand ball ring, which has a right-hand thread, is loosened by means of a 'C' spanner or a hammer and square-ended punch against one of the notches.

If it is required to remove the sprocket, insert a thin screwdriver in the groove of the driver which comes nearest to the opening in the circlip and prise off the circlip. The spacing washers, sprocket and outer dust cap may then be lifted off the driver. There must always be two  $\frac{1}{16}$ " washers. Careful note should be made of their position and also whether the sprocket offset is facing inwards or outwards, as they must all be put back in the same way in order to maintain the original chain line.



**END OF SUB-SECTION 4.—SERVICE SECTION—STURMEY-ARCHER MASTER CATALOGUE**

# INDIVIDUAL DISMANTLING Instructions

## FOR STURMEY-ARCHER HUBS

### TO DISMANTLE THE SW HUB

Proceed as follows:

1. Remove the hub internal as described in the general instructions but hold the hub vertically with the sprocket end uppermost and withdraw the internals complete, taking care not to tilt them until the three low-gear pawls have been removed, because they are loose in the planet cage.
2. While holding a small screwdriver in the left-hand end of the indicator rod, unscrew the coupling spindle at the other end and remove both from the axle.
3. Put the left-hand end of the axle in a vice and remove the right-hand locknut, washers if any, cone lock washer, and right-hand cone whilst carefully noting the order in which they are fitted.
4. Lift off, in the following order, the clutch spring, the driver, the thrust spring, the right-hand ball ring, the pawl retaining washer, the pawl ring with three pawls, the gear ring, the axle thrust washer and the sliding clutch.
5. Push out the axle key and remove the clutch sleeve.
6. Remove the pinion retaining ring and the pinions, leaving the planet cage attached to the axle.
7. If necessary, as a result of a worn bearing surface or ratchets, the left-hand ball cup may now be removed from the hub shell in the same way as the right-hand ball ring, but it has a left-hand thread.
8. The dust caps on the cones are pressed into position and need not be removed unless they are damaged. Each cap faces inwards and the back of it should be level with the square on the cone.
9. The dust caps in the driver and the left-hand ball cup can be prised out with a screwdriver for examination of the ball tracks and ball cages. If distorted by removal they should be replaced by new ones.
10. The dust cap on the right-hand ball ring can be prised off with a screwdriver to examine the ball track and balls. There should be exactly 24 balls of  $\frac{3}{16}$ " diameter.
11. It should not be necessary to remove the planet cage pawl cup.
12. The planet cage, together with the hardened bearing plate, is secured by a special fixing plate which fits in the shallow groove in the axle. To remove it, fit the gear ring on the planet cage and stand

the assembly on a partly open vice with the gear ring downwards. Fit an axle nut half way to protect the thread. A sharp blow on the nut will release the fixing plate. A new fixing plate must be used when replacing the planet cage and care should be taken to remove any metal from the axle groove.

### TO DISMANTLE THE SB HUB

Proceed as follows:

1. Remove the internal from the hub shell as described in the general instructions, but care should be taken not to lose the inner spacing washer on the left-hand cone when lifting out the brake unit.
2. While holding a small screwdriver in the left-hand end of the indicator rod, unscrew the coupling spindle at the other end and remove both from the axle.
3. Put the left-hand end of the axle in a vice and remove the right-hand locknut, washers, if any, cone lock washer, and right-hand cone whilst carefully noting the order in which they are fitted.
4. Lift off, in the following order, the clutch spring, the driver, the thrust spring, the right-hand ball ring, the pawl retaining washer, the pawl ring with three pawls, the gear ring, the axle thrust washer and the sliding clutch.
5. Push out the axle key and remove the clutch sleeve.
6. Remove the pinion retaining ring and the pinions leaving the planet cage attached to the axle.
7. If necessary, as a result of a worn bearing surface or ratchets, the left-hand ball cup may now be removed from the hub shell with tool DD12987. It has a left-hand thread.
8. The dust caps on the cones are pressed into position and need not be removed unless they are damaged. Each cap faces inwards and the back of it should be level with the square on the cone.
9. The dust caps in the driver and the left-hand ball cup can be prised out with a screwdriver for examination of the ball tracks and ball cages. If distorted by removal they should be replaced by new ones.
10. The dust cap on the right-hand ball ring can be prised off with a screwdriver to examine the ball track and balls. There should be exactly 24 balls of  $\frac{3}{16}$ " diameter.



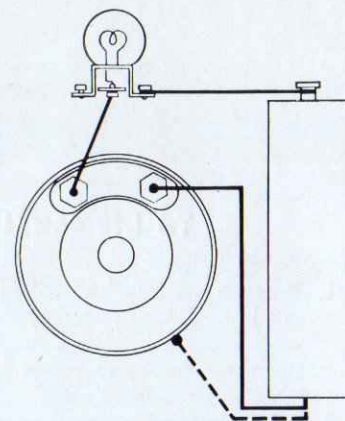
11. It should not be necessary to remove the planet cage pawl cup.
12. The planet cage, together with the hardened bearing plate, is secured by a special fixing plate which fits in the shallow groove in the axle. To remove it, fit the gear ring on the planet cage and stand the assembly on a partly open vice with the gear ring downwards. Fit the axle nut half way to protect the thread. A sharp blow on the nut will release the fixing plate. A new fixing plate must be used when replacing the planet cage and care should be taken to remove any metal from the axle groove.
13. If the shoes have to be removed from the brake arm, unscrew the nut which secures the cam lever and pull the cam lever from the square-ended end of the cam. Then remove the nut and spring washer which secures the fulcrum pin and lift the shoes away.

### TO DISMANTLE THE SG HUB

Proceed as follows:

1. Unscrew and remove the indicator rod from the axle. Then extract the 'Dynohub' unit as follows:
  - a. Remove the four magnet-fixing nuts and lock washers from the back of the hub shell and then remove the four magnet-fixing screws.
  - b. Remove the dynamo cone locknut, adjusting washers and spacing washers (if any), making a note of their arrangement so that they can be replaced in their original positions.
  - c. Hold the wheel parallel to the workbench and with a mallet tap the end of the spindle and this will cause the complete 'Dynohub' unit to drop out. There is a shim washer between the cone and the armature and it must be replaced when the hub is re-assembled.
  - d. The four magnet spacing pieces L127 can now be lifted out of the hub shell. Care should be taken to ensure that these parts are not lost.
  - e. Unless it is essential to do so, the armature and magnet should never be separated. If they are to be separated, a keeper ring should be used as otherwise the magnet will rapidly lose its magnetism. Even a moment's separation will cause loss of magnetism and a spanner placed across the magnet is useless as a substitute for a keeper ring.  
To separate the magnet and the armature, hold the 'Dynohub' unit in the left hand with the terminal plate across the palm. Then fit a keeper ring over the armature and lightly tap the keeper with the palm of the right hand. The magnet will then slide off the armature on to the keeper.
  - f. At this stage it is wise to test the armature for continuity with a test meter. If there is no reading it is certain that there is a break in the winding. If a test meter is not available, a battery

and bulb may be connected as shown in the diagram, and if the bulb does not light a break in the armature winding is indicated. A second test is to disconnect the lead from one of the armature terminals and touch the outer edges of the armature with the bare lead. If the bulb lights this indicates a short circuit.



2. Now unscrew right-hand ball ring from hub shell and withdraw gear internals as described in the general instructions.
3. Put the left-hand end of the axle in a vice and remove the right-hand locknut, washers if any, cone lock washer, and right-hand cone whilst carefully noting the order in which they are fitted.
4. Lift off, in the following order, the clutch spring, driver, thrust spring, right-hand ball ring, pawl retaining washer, pawl ring with three pawls, gear ring, axle thrust washer and sliding clutch.
5. Push out the axle key and remove the clutch sleeve.
6. Remove the pinion retaining ring and the pinions, leaving the planet cage attached to the axle.
7. If necessary, as a result of a worn bearing surface or ratchets, the left-hand ball cup may be removed from the hub shell with tool DD12987. It has a left-hand thread.
8. The dust caps on the cones are pressed into position and need not be removed unless they are damaged. Each cap faces inwards and the back of it should be level with the square on the cone.
9. The dust caps in the driver and the left-hand ball cup can be prised out for examination of the ball tracks and ball cages. If distorted by removal they should be replaced by new ones.
10. The dust cap on the right-hand ball ring can be prised off with a screwdriver to examine the ball track and balls. There should be exactly 24 balls of  $\frac{3}{16}$ " diameter.
11. It should not be necessary to remove the planet cage pawl cup.
12. The planet cage, together with bearing plate, is secured by a special fixing plate which fits in the shallow groove in the axle. To remove it, fit the gear ring on the planet cage and stand the assembly on a partly open vice with the gear ring downwards. Fit the axle nut half way to protect the thread. A sharp blow on the nut will release the fixing plate. A new fixing plate must be used when replacing the planet cage and care should be taken to remove any metal from the axle groove.

### TO DISMANTLE THE AW HUB

Proceed as follows:

1. Remove the hub internal as described in the general instructions.
2. Remove the low gear pawls, pins and springs. The pawl pins are easily pushed out of the planet cage to release the pawls and springs.
3. Place the left-hand end of the axle in a vice and remove the right-hand locknut, washers if any, cone lock washer and cone, making a note of their arrangement so that they can be replaced in their original positions.
4. Lift off in the following order, the clutch spring and cap, the driver, the right-hand ball ring and the gear ring.
5. Remove the gear ring pawls, pins and springs. The pawl pins are easily pushed out of the gear ring to release the pawls and springs.
6. Remove the thrust ring and washer, and unscrew the indicator rod.
7. Push out the axle key and remove the sliding clutch and sleeve.
8. Lift off the planet cage complete.
9. Take out the pinion pins and remove the pinions from the planet cage.
10. If necessary, because of a worn bearing surface or ratchets, the left-hand ball cup may be removed from hub shell. It has a left-hand thread and is removed by gripping the outside flat surfaces in a vice and turning the wheel in a clockwise direction.
11. The channel-section dust cap in the left-hand ball cup similar to that in the driver, is a press-in fit and may be prised out with a wide screwdriver to avoid damage. If a new ball retainer and balls have to be fitted it is recommended that a new dust cap is fitted at the same time.

### TO DISMANTLE THE AB HUB

Proceed as follows:

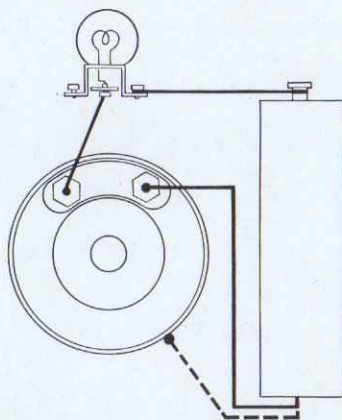
1. Remove the internal from the hub shell as described in the general instructions, but when lifting out the brake unit care should be taken not to lose the inner spacing washer on the left-hand cone.
2. Remove the low gear pawls, pins and springs. The pawl pins are easily pushed out of the planet cage to release the pawls and springs.
3. Place the left-hand end of the axle in a vice and remove the right-hand locknut, washers if any, cone lock washer and cone, making a note of their arrangement so that they can be replaced in their original positions.
4. Lift off, in the following order, the clutch spring and cap, the driver, the right-hand ball ring and the gear ring.
5. Remove the gear ring pawls, pins and springs. The pawl pins are easily pushed out of the gear ring to release the pawls and springs.

6. Remove thrust washer and thrust ring and unscrew the indicator rod.
7. Push out the axle key and remove the sliding clutch and sleeve.
8. Lift off the planet cage complete.
9. Take out the pinion pins and remove the pinions from the planet cage.
10. If necessary, because of a worn bearing surface or ratchets, the left-hand ball cup which has a left-hand thread may be removed from the hub shell by a special box spanner (DD911) which is available for this purpose.
11. If it is necessary to remove the shoes from the brake arm, unscrew the nut which secures the cam lever and pull the cam lever from the squared end of the cam. Then remove the nut and spring washer which secures the fulcrum pin and lift the shoes away.

### TO DISMANTLE THE AG HUB

Proceed as follows:

1. Unscrew and remove the indicator rod from the axle. Then extract the 'Dynohub' unit as follows:
  - a. Remove the dynamo cone locknut, adjusting washers and spacing washers (if any), making a note of their arrangement so that they can be replaced in their original positions.
  - b. Remove the four magnet-fixing nuts and lock washers from the back of the hub shell and then remove the four magnet-fixing screws.
  - c. Hold the wheel parallel to the workbench and with a mallet tap the end of the spindle. This will cause the complete 'Dynohub' unit to drop out. There is a shim washer between the cone and the armature, and it must be replaced when the hub is re-assembled.
  - d. The magnet spacing ring can now be lifted out of the hub shell.
  - e. Unless it is essential to do so, the armature and magnet should never be separated. If they are to be separated, a keeper ring should be used as otherwise the magnet will rapidly lose its magnetism. Even a moment's separation will cause loss of magnetism and a spanner placed across the magnet is useless as a substitute for a keeper ring.  
To separate the magnet and the armature, hold the 'Dynohub' unit in the left hand with the terminal plate across the palm. Then fit a keeper ring over the armature and lightly tap the keeper with the palm of the right hand. The magnet will then slide off the armature on to the keeper.
  - f. At this stage it is wise to test the armature with a test meter. If there is no reading on the test meter there is a break in the



winding. If a test meter is not available, a battery and bulb may be connected as shown in the diagram, and if the bulb does not light a break in the armature winding is indicated. A second test is to disconnect the lead from one of the armature terminals and touch the outer edges of the armature with the bare lead. If the bulb lights, this indicates a short circuit.

2. Unscrew right-hand ball ring from the hub shell and withdraw the gear internals as described in the general instructions.
3. Remove the low gear pawls, pins and springs. The pawl pins are easily pushed out of the planet cage to release the pawls and springs.
4. Place the left-hand end of the axle in a vice and remove the right-hand locknut, washers if any, cone lock washer and cone, making a note of their arrangement so that they can be replaced in their original positions.
5. Lift off, in the following order, the clutch spring and cap, the driver, the right-hand ball ring and the gear ring.
6. Remove the gear ring pawls, pins and springs. The pawl pins are easily pushed out of the gear ring to release the pawls and springs.
7. Pull off the thrust washer and thrust ring.
8. Push out the axle key and remove the sliding clutch and sleeve.
9. Lift off the planet cage complete.
10. Take out the pinion pins and remove the pinions from the planet cage.
11. If necessary, because of a worn bearing surface or ratchets, the left-hand ball ring may be removed from the shell by means of special tool (DD10565).

## TO DISMANTLE THE TCW HUB

Proceed as follows:

1. Place the sprocket end of the axle in a vice.
  2. Remove the left-hand locknut and lock washer, the brake arm nut and lock washer, and finally lift off the brake arm and pull out the left-hand cone, which is not threaded.
  3. Make a mark on the right-hand ball ring and the hub shell. The ball ring has a two-start thread, and if the marks are not in their original positions when the hub is re-assembled, the ring must be unscrewed and started again. If the hub is left with the ball ring in the wrong position it may be necessary to re-true the wheel.
  4. Remove the wheel from the vice and loosen the right-hand ball ring by using the 'C' spanner (DD1145), or insert a square-ended punch in one of the notches and give it a sharp blow with a hammer. It has a right-hand thread.
  5. Hold the wheel in a vertical position with the right hand gripping the ball ring and holding the left-hand end of the axle in the left hand. By turning the ball ring towards the body and the axle away from the body, the ball ring may be released without applying the brake.
  6. When the ball ring is free, turn the wheel into the horizontal position and withdraw the internal.
  7. Remove the brake plate, the brake band, the brake thrust plate, the planet cage pawl ring, the cam spring and the brake cam.
  8. Place the left-hand end of the axle in a vice and remove the right-hand locknut, any other washers, the cone lock washer and the right-hand cone, making a careful note of their arrangement so that they may be replaced in their original positions.
  9. Lift off, in the following order, the clutch spring and cap, the driver with sprocket attached, the right-hand ball ring, the gear ring pawl ring and the gear ring.
  10. Remove the thrust washer and thrust ring and unscrew the indicator rod.
  11. Push out the axle key and remove the sliding clutch and sleeve.
  12. Lift off the planet cage complete and take out the pinion pins and remove the pinions.
- NOTE.—The left-hand ball cup, which is a press-in fit in the hub shell, cannot be removed. To attempt to do so would undoubtedly damage both cup and shell.
13. The channel-section dust cap in the driver is pressed into position and may be prised out with a wide screwdriver to avoid damage. If a new ball retainer and balls have to be fitted it is best to fit a new dust cap in addition.
  14. If it is necessary to remove the pawl pins from the pawl rings of the gear ring or planet cage, they should be drilled out because they are riveted in position.

## TO DISMANTLE THE AM HUB

Proceed as follows:

1. Remove indicator from hub and remove the internal from the hub shell as described in the general instructions.
2. Place the left-hand end of the axle in a vice and remove the right-hand locknut, washers if any, the cone lock washer and the right-hand cone, making a note of their arrangement so that they can be replaced in their original positions.
3. Lift off, in the following order, the clutch spring and cap, the driver, the right-hand ball ring and the gear ring.
4. Remove the thrust washer and ring. Push out the axle key and remove the clutch sleeve and sliding clutch.
5. Push out the pinion pins and remove the pinions and planet cage. The pawl pins and springs can now be removed.
6. If necessary, because of a worn bearing surface or ratchets, the left-hand ball cup may be removed from hub shell. It has a left-hand thread and is removed by gripping the outside flat surfaces in a vice and turning the wheel in a clockwise direction.
7. The channel-section dust caps in the driver and the left-hand ball cup are pressed into position and can be prised out with a wide screwdriver. It is recommended that a new dust cap be fitted if a new ball retainer and balls have to be fitted.

## TO DISMANTLE THE AC HUB

Proceed as follows:

1. Remove the internal from the hub shell as described in the general instructions.
2. Unscrew and withdraw the indicator rod and chain.
3. Place the left-hand end of the axle in a vice and remove the right-hand locknut, any other washers, the cone lock washer and the right-hand cone, making a note of their arrangement so that they can be replaced in their original positions.
4. Lift off, in the following order, the clutch spring and cap, the driver, the ball ring and gear ring.
5. Remove the pawls, pins and springs from the gear ring. The pins are not fixed in position and can easily be pushed out.
6. Remove the thrust ring and washer.
7. Push out the axle key and remove the clutch sleeve and sliding clutch.
8. Lift off the planet cage assembly and compound cage and pinions.
9. Remove pawls, pins and springs from the planet cage. These are not fixed and may easily be pushed out.
10. Place the right-hand end of the axle in a vice, straighten the edges

of the tab washer and remove the left-hand locknut, the tab washer, the locating plate and the secondary sun pinion.

11. If necessary, because of a worn bearing surface or ratchets, the left-hand ball cup may now be removed. It has a left-hand thread and is removed with a special tool (DD11182), which enters from the right-hand end, thus avoiding the need to remove the dust cap and ball cage from the cup. The teeth of both the tool and the cup must be in full engagement.
12. The channel dust caps in the driver and the left-hand ball cup are pressed into position and can be prised out with a wide screwdriver. It is recommended that a new dust cap be fitted if a new ball retainer and balls have to be fitted.

## TO DISMANTLE THE ASG HUB

Proceed as follows:

1. Remove the internal from the hub shell as described in the general instructions.
2. Unscrew and withdraw the indicator rod and chain.
3. Place the left-hand end of the axle in a vice and remove the right-hand locknut, any other washers, the cone lock washer and the right-hand cone, making a note of their arrangement so that they can be replaced in their original positions.
4. Lift off, in the following order, the clutch spring and cap, the driver, the ball ring and the gear ring.
5. Remove the thrust ring and washer.
6. Push out the axle key and remove the clutch sleeve and sliding clutch.
7. Lift off, in the following order, the planet cage assembly, the sun pinion, the low gear spring, the low gear clutch and the intermediate planet cage and pinions.
8. Remove the axle from the vice and slip the compensator spring, complete with collar, out of the axle.
9. Place the right-hand end of the axle in a vice, straighten the edges of the tab washer and remove the left-hand locknut, the tab washer, the locating plate, the secondary sun pinion, the low gear key and the clutch sleeve.
10. The left-hand ball cup is pressed into position and *on no account should it be removed from the hub shell.*
11. The channel dust caps in the driver and the left-hand ball cup are pressed into position and can be prised out with a wide screwdriver. It is recommended that a new dust cap be fitted if a new ball retainer and balls have to be fitted.

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## TO DISMANTLE THE FW HUB

Proceed as follows:

1. Remove the indicator from the hub and remove the internal from the hub shell as described in the general instructions.
2. Place the left-hand end of the axle in a vice and remove the right-hand locknut, washers if any, the cone lock washer and the right-hand cone, making a note of their arrangement so that they can be replaced in their original positions.
3. Lift off, in the following order, the clutch spring and cap, the driver, the right-hand ball ring and the gear ring.
4. Remove the thrust washer and ring. Push out the axle key and remove the clutch sleeve and sliding clutch.
5. Push out the pinion pins and remove the pinions and planet cage.
6. The low gear pawl pins are riveted in position. If they have to be removed, file the riveted part flat and knock out the pins with a small punch. The pawls and springs can then be removed.
7. Remove axle from vice. The internal compensating spring, complete with collar, can now be taken out of the right-hand end of the axle.
8. Place the right-hand end of the axle in a vice, straighten the edges of the tab washer, and remove the nut and tab washer holding the internally toothed dog ring. Remove the dog ring.
9. Push the two sun pinions along the axle so that the larger one engages with the axle dogs and move the sleeve under the smaller one in the opposite direction in order to expose the second axle key. Push out this axle key.
10. Slide the two sun pinions, sleeve and spring off the axle.
11. If necessary, because of a worn bearing surface or ratchets, the left-hand ball cup may be removed. It has a left-hand thread and is removed by gripping the outside flat surfaces in a vice and spinning the wheel in a clockwise direction.
12. The channel-section dust caps in the driver and the left-hand ball cup are pressed into position and can be prised out with a wide screwdriver. It is recommended that a new dust cap be fitted if a new ball retainer and balls have to be fitted.

## TO DISMANTLE THE FG HUB

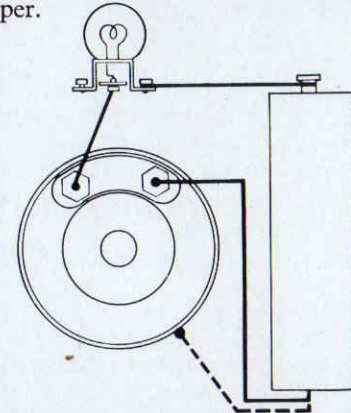
Proceed as follows:

1. Before the internal can be removed from the shell as described in the general instructions the generator must be extracted as follows:
  - a. Remove the dynamo cone locknut, adjusting washers and spacing washers (if any), making a note of their arrangement so that they can be replaced in their original positions.
  - b. Remove the four magnet-fixing nuts and lock washers from the back of the hub drum, and then remove the four magnet-fixing screws. Also remove indicator and coupling from axle.
  - c. Hold the wheel, with the dynamo downwards, just above the workbench. A few light taps with a mallet on the end of the

spindle will cause the dynamo unit to drop out complete.

- d. The magnet spacing ring can now be lifted out of the hub drum.
- e. Unless it is essential to do so, the armature and magnet should never be separated. If they are to be separated, a keeper ring is absolutely necessary, because the magnet will lose its magnetism unless there is always iron inside it. Even a moment's separation will cause loss of magnetism, and a spanner placed across the magnet is useless as a substitute for a keeper ring. To separate the magnet and the armature, hold the dynamo unit in the left hand, with the terminal plate against the palm. Then fit a keeper over the armature and lightly tap the keeper with the palm of the right hand. The magnet will slide off the armature and on to the keeper.

- f. At this stage it is wise to test the armature with a test meter. If there is no reading on the test meter there is a break in the winding. If a test meter is not available, a battery and bulb may be connected as shown in the diagram, and if the bulb does not light, a break in the armature winding is indicated. A second test is to disconnect the lead from one of the armature terminals and touch the outer edges of the armature with the bare lead. If the bulb lights, this indicates a short circuit.



2. Remove the internal from the hub shell as described in the general instructions. The low-gear pawls take the form of plungers operated by coil springs and the holes for them are drilled in the webs of the planet cage. Although these holes are drilled right through, the hole is very slightly smaller at the end away from the ball cup. At this end is fitted a  $\frac{3}{16}$ " ball bearing. The coil springs fit on these balls and the ends of the pawls fit into the opposite ends of the coil springs. These pawls, springs and ball bearings should now be removed.
3. Place the left-hand end of the axle in a vice and remove the right-hand locknut, washer if any, the cone lock washer and the right-hand cone, making a note of their arrangement so that they can be replaced in their original positions.
4. Lift off, in the following order, the clutch spring and cap, the driver, the right-hand ball ring and the gear ring.
5. Remove the thrust washer and ring. Push out the axle key and remove the clutch sleeve and sliding clutch.

6. Push out the pinion pins and remove the planet pinions from the planet cage.
7. Remove axle from vice. The internal compensating spring, complete with collar, can now be taken out of the right-hand end of the axle.
8. Place the right-hand end of the axle in a vice, straighten the edges of the tab washer, and remove the nut and tab washer holding the internally toothed dog ring. Remove the dog ring.
9. Push the two sun pinions along the axle so that the larger one engages with the axle dogs and move the sleeve under the smaller one in the opposite direction in order to expose the second axle key. Push out this axle key.
10. Slide the two sun pinions, sleeve and spring off the axle.
11. If necessary, because of a worn bearing surface or ratchets, the left-hand ball cup may be removed by unscrewing four screws (K425) whose hexagon heads are at the back of the drum on the hub shell. A special box spanner (DD11241) is supplied for this purpose.
12. The channel-section dust cap in the driver is pressed into position and can be prised out with a wide screwdriver. It is recommended that a new dust cap be fitted if a new ball retainer and balls have to be fitted.

#### **TO DISMANTLE THE FM HUB**

Proceed as follows:

1. Remove the internal from the hub shell as described in the general instructions.
2. Unscrew and withdraw the indicator rod and chain.
3. Place the left-hand end of the axle in a vice and remove the right-hand locknut, any other washers, the cone lock washer and the right-hand cone, making a note of their arrangement so that they can be replaced in their original positions.
4. Lift off, in the following order, the clutch spring and cap, the driver, the ball ring and the gear ring.
5. Remove the pawls, pins and springs from the gear ring. The pins are not fixed in position and can easily be pushed out.
6. Remove the thrust ring and washer.
7. Push out the axle key and remove the clutch sleeve and sliding clutch.
8. Lift off, in the following order, the planet cage assembly, the sun pinion, the low gear spring, the low gear clutch and the intermediate planet cage and pinions.
9. The low gear pawl pins are riveted in position in the latest models. If they must be removed file the riveted ends flat and knock out the pins with a small punch. The pawls and spring can then be removed. With earlier models the pins are not fixed in position and can easily be pushed out, but the pawl pins should be riveted up when the planet cage is re-assembled.
10. Remove the axle from the vice and slip the compensator spring, complete with collar, out of the axle.
11. Place the right-hand end of the axle in a vice, straighten the edges of the tab washer and remove the left-hand locknut, the tab washer,

the locating plate, the secondary sun pinion, the low gear key and the clutch sleeve.

12. If necessary, because of a worn bearing surface or ratchets, the left-hand ball cup may be removed with a special tool (DD11182), which enters from the right-hand end, thus avoiding the need to remove the dust cap and ball cage from the cup. The teeth of this tool and the cup must be in full engagement.
13. The channel dust caps in the driver and the left-hand ball cup are pressed into position and can be prised out with a wide screwdriver. It is recommended that a new dust cap be fitted if a new ball retainer and balls have to be fitted.

#### **TO DISMANTLE THE FC HUB**

Proceed as follows:

1. Remove the internal from the hub shell as described in the general instructions.
2. Unscrew and withdraw the indicator rod and chain.
3. Place the left-hand end of the axle in a vice and remove the right-hand locknut, and other washers, the cone washer and the right-hand cone, making a note of their arrangement so that they can be replaced in their original positions.
4. Lift off, in the following order, the clutch spring and cap, the driver, the ball ring and the gear ring.
5. Remove the pawls, pins and springs from the gear ring. The pins are not fixed in position and can easily be pushed out.
6. Remove the thrust ring and washer.
7. Push out the axle key and remove the clutch sleeve and sliding clutch.
8. Lift off, in the following order, the planet cage assembly, the sun pinion, the low gear spring, the low gear clutch and the intermediate planet cage and pinions.
9. Remove the pawls, pins and springs from the planet cage. These are not fixed and may easily be pushed out.
10. Remove the axle from the vice and slip the compensator spring, complete with collar, out of the axle.
11. Place the right-hand end of the axle in a vice, straighten the edges of the tab washer, and remove the left-hand locknut, the tab washer, the locating plate, the secondary sun pinion, the low gear key and the clutch sleeve.
12. If necessary, because of a worn bearing surface or ratchets, the left-hand ball cup may be removed with a special tool (DD11182), which enters from the right-hand end, thus avoiding the need to remove the dust cap and ball cage from the cup. The teeth of this tool and the cup must be in full engagement.
13. The channel dust caps in the driver and the left-hand ball cup are pressed into position and can be prised out with a wide screwdriver. It is recommended that a new dust cap be fitted if a new ball retainer and balls have to be fitted.

## TO DISMANTLE THE BF, BFC, BR or BRC HUB

Proceed as follows:

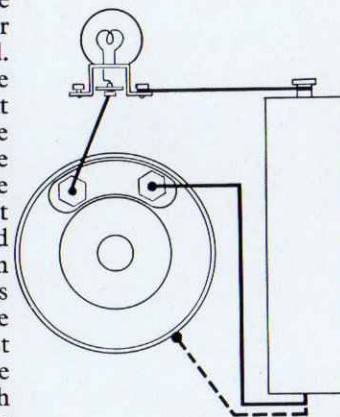
1. Remove the left-hand locknut, the notched cone adjusting washer, and any other washers on the brake side of the hub, making a note of their arrangement so that they can be replaced in their original positions.
2. Remove the brake arm complete with shoes.
3. Remove the inner spacing washer and the (left-hand) cone.
4. Lift out the ball cage.
5. The spindle may now be pulled out from the other side. If the right-hand cone bearing surface is in good condition and the spindle threads are sound, there is no need to remove the right-hand locknut and cone.
6. The channel-section dust cap in the right-hand hub cup is just a press-in fit and can be prised out with a wide screwdriver (to avoid damage). The ball cage may be lifted out for examination of the hub bearing surface. If a new ball retainer and balls have to be fitted, it is usually best to fit a new dust cap as well. Both hub cups are part of the hub shell, and if either is worn a complete new shell must be fitted.
- \*7. If the shoes have to be removed from the brake arm, unscrew the nut which secures the cam lever and pull the cam lever from the squared end of the cam. Then remove the fulcrum nut and spring washer (or screw in the case of the BFC hub). The shoes, complete with the fulcrum and the cam can now be lifted off.

## TO DISMANTLE THE GH6 HUB

Proceed as follows:

1. Remove the dynamo-side locknut and washers, making a note of their arrangement so that they can be replaced in their original positions.
2. Remove the four magnet-fixing nuts and lock washers from the back of the hub drum, and then remove the four magnet-fixing screws.
3. Hold the wheel, with the dynamo downwards, just above the work-bench. A few light taps with a mallet on the end of the spindle will cause the dynamo unit to drop out complete.
4. The magnet spacing ring can now be lifted out of the hub drum.
5. Unless it is essential to do so, the armature and magnet should never be separated. If they are to be separated, a keeper ring is absolutely necessary, because the magnet will lose some of its magnetism unless there is always iron inside it. Even a moment's separation will cause loss of magnetism, and a spanner placed across the magnet is useless as a substitute for a keeper ring. To separate the magnet and the armature, hold the dynamo unit in the left hand,

with the terminal plate against the palm. Then fit a keeper over the armature and lightly tap the keeper with the palm of the right hand. The magnet will slide off the armature and on to the keeper. At this stage it is wise to test the armature with a test meter. If there is no reading on the test meter there is a break in the winding. If a test meter is not available, a battery and bulb may be connected as shown in the diagram, and if the bulb does not light a break in the armature winding is indicated. A second test is to disconnect the lead from one of the armature terminals and touch the outer edges of the armature with the bare lead. If the bulb lights, this indicates a short circuit.



6. Remove the cone locknut on the left-hand side and unscrew the left-hand cone.
7. The channel-section dust cap is just a press-in fit and can be prised out with a wide screwdriver (to avoid damage). The ball cage may be lifted out for examination of the hub bearing surface. If a new ball-retainer and balls have to be fitted, it is usually best to fit a new dust cap as well. Both hub cups are part of the hub shell, and if either is worn a complete new shell must be fitted.
8. The spindle may now be pulled out from the dynamo side, together with the right-hand cone. If the bearing surface is in good condition and the spindle threads are sound, there is no need to remove the cone.
9. The ball cage may be lifted out for examination of the hub bearing surface.

**SPECIAL NOTE.**—GH6 hubs prior to 1952 had the adjusting cone on the dynamo side. This cone is extended to pass through the armature body and is flatted at the outer end to take (K428) notched adjuster washer, by means of which the cone may be turned.

Dismantling instructions from 1 to 5 remain exactly the same as for the current model.

For paragraph 6 read 'Unscrew the dynamo-side cone and lift the ball cage out of the hub shell. The spindle may now be pulled out from the other side, together with the fixed cone.'

All further comments apply equally to all GH6 hubs.



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**END OF SUB-SECTION 5.—SERVICE SECTION—STURMEY-ARCHER MASTER CATALOGUE**

# The INSPECTION

## OF STURMEY-ARCHER HUBS

Whenever a Sturmey-Archer hub is dismantled the component parts should be inspected as follows:

### Variable Gear Hubs

1. Slide the clutch up and down the driver prongs to see that the movement is free.
2. See that there are exactly 24 balls ( $\frac{3}{16}$ " diameter) in the right-hand ball ring.
3. Examine the gear ring for cracks, chipping, or signs of wear on the internal splines and teeth.
4. Check the truth of the axle between centres.
5. Examine all ball races for pitting or signs of wear.
6. Examine the sliding clutch for signs of wear (rounding off at the points of engagement).
7. Examine all pinion teeth for signs of wear or chipping.
8. Examine the pinion pin ends or planet cage dogs for wear.
9. Examine the pawl ring dogs and their engagement with the gear ring (SW, SB, SG) for signs of wear.
10. Examine the pawls and pawl ratchets for signs of wear.
11. *FW, FG, FM, FC and ASC hubs only.*—See that compensator spring drops freely through the axle.
12. *FW, FG, FM, FC and ASC hubs only.*—See that the compensator spring is at least  $1\frac{9}{16}$ " long (without the collar).

13. *FM, FC and ASC hubs only.*—Examine the low-gear dog splines for signs of wear.
14. *FW, FG, FM, FC and ASC hubs only.*—Examine the axle dogs for signs of wear (rounding off).
15. *FW, FG, FM, FC and ASC hubs only.*—Fix an (X8) collar on to the indicator rod and screw the rod and chain together, to make sure that the parts are mating correctly. This should be done inside the axle because the slender threaded portion is easily bent. The two parts should not be screwed together without the collar. After this test, it is important to refit the (X8) collar into the end of the compensator spring. It must be a tight fit.

### Brake Hubs

16. See that the leading edge of each brake lining is tapered off for the first quarter of an inch. (If they are not, the ends may lift and cause a squeal.)
17. See that all rivets are below the lining surface and cannot touch the hub drum.
18. Examine the linings for signs of wear or oil.

### 'Dynohubs'

19. Test the armature for continuity of winding.

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**END OF SUB-SECTION 6.—SERVICE SECTION—STURMEY-ARCHER MASTER CATALOGUE**

# GENERAL RE-ASSEMBLING Instructions

## FOR STURMEY-ARCHER HUBS

7

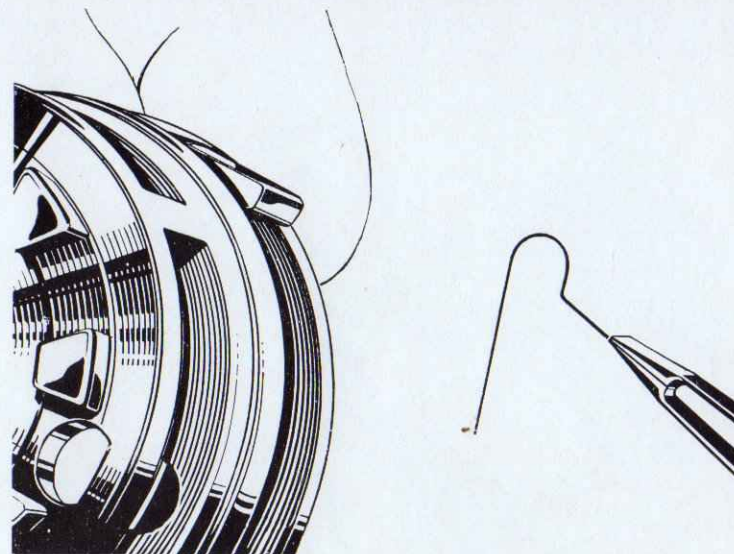
Broadly speaking, dismantled Sturmeley-Archer hubs are re-assembled by reversing the sequence of operations carried out when taking them to pieces. But it is more convenient to begin by first reconstructing certain minor combinations of components and then proceed to re-assemble the mechanism as a whole.

The methods of preparing some of these 'sub-assemblies' are less obvious than the processes by which they were taken apart, and as they apply equally to several hubs they are described here and not repeated in detail in the sub-sections devoted to the individual hubs.

*Drivers and Sprockets.* The screwed driver (K507) and the 12-splined driver (K657) are no longer available. Hubs in which they were used must be converted by fitting the (K462) 3-splined driver and sprocket as a complete unit (including spacing washers and circlip).

*To replace pawls and springs in the planet cage of AW, AB, AG, AM, AC and FC Sturmeley-Archer variable-gear hubs* hold the planet cage in the left-hand, with flanges (in which the pawls fit) away from the body. Place a pawl between the flanges, with the flat top surface pointing towards the right, and insert a pawl pin through the outside flange and half-way through the pawl. With tweezers or thin-nosed pliers\* grip the bent leg of the pawl spring in the right hand and pass the spring along the side of the pawl until the loop of the spring is in line with the hole through the pawl and both legs of the spring are between the pawl and the planet cage. The pawl pin can now be pushed right in. It will enter the spring and keep it in position, and the bent leg of the spring will press against the pawl and so keep it projecting towards the right. If the job has been done correctly, the pawls will be pointing towards the right, with the flat surface uppermost, when the planet cage is held so that the dogs or pinion pins are facing the body.

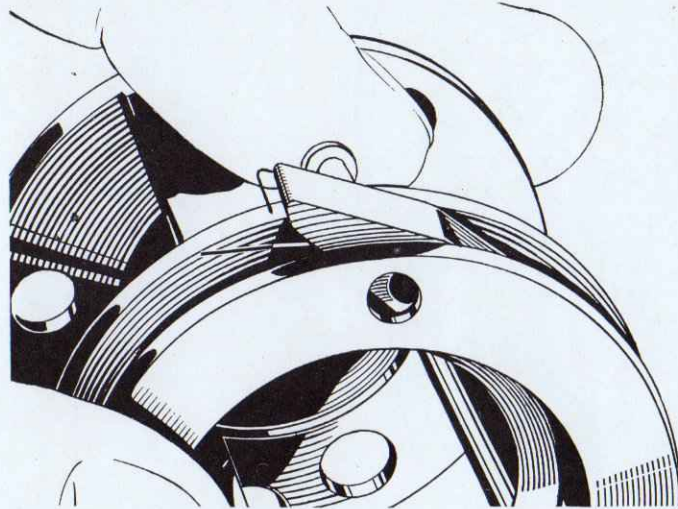
\*If tweezers are not available, the spring can be pushed into position with a small rod, about  $\frac{1}{8}$ " in diameter. (It is easy after a little practice.)



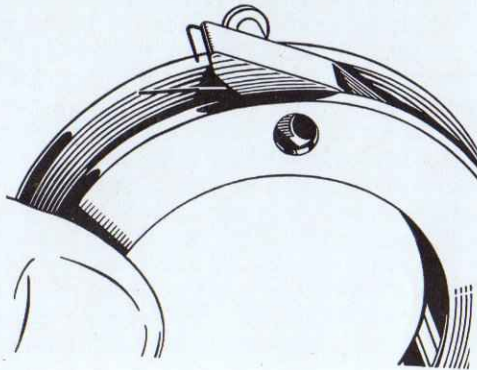
*To replace pawls and springs in the planet cage of a Sturmeley-Archer FW or FM variable-gear hub*, hold the planet cage in the left hand, with the flanges (in which the pawls fit) away from the body, or in the case of a TCW hold the planet cage pawl ring in the left hand, with the recess for the pawl pin heads towards the body. Place a pawl between the flanges, with the flat top surface pointing towards the right but with the hole in the pawl to the left of the holes in the flanges. Push a pawl pin through the hole in the inner flange and, with the thumb of the left hand over the pin head, hold it in contact with the side of the pawl. With the right hand take the foot of the pawl spring between thumb and forefinger and thread the straight leg under the pawl pin from the rear and pull it forward until the loop of the spring encircles the pawl pin. With a finger of the right hand, hold the foot of the spring under the nose of the pawl and, with a finger of the left hand, advance

the pawl until the hole in it is in line with the holes in the flanges, and the pawl pin can be pushed home. If the job has been done correctly when the planet cage is held so that the dogs are facing the body. The pawl pin must now be riveted over lightly and without distorting the pin head, which may cause serious damage if it projects inwards and fouls the teeth of the planet pinions. Support the pawl pin head on a piece of flat steel held in a vice (for the FW hub) or by means of a short steel rod (in the case of the FM hub).

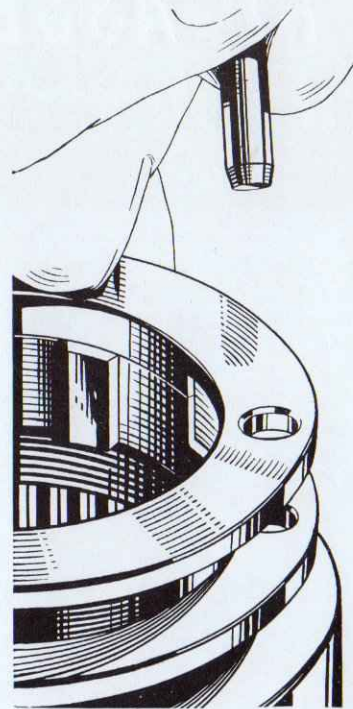
File off any projections caused by the riveting in the case of TCW because if the face is not smooth there will be unnecessary friction when the hub is in use.



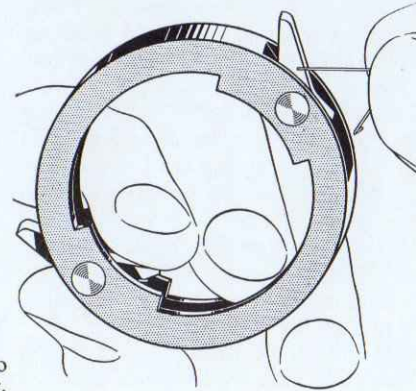
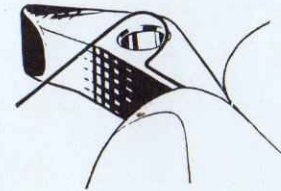
Fitting pawl and spring to planet cage pawl ring—TCW.



Fitting spring to gear ring pawl ring.



To replace pawls and springs in the gear ring of a Sturmey-Archer variable-gear hub AW, AB, AG, AM, AC, FW, FG, FM or FC, place the gear ring, with the teeth downwards, on a flat surface. Place a pawl spring along the side of a pawl so that the loop is over the pin hole and the foot is under the long nose of the pawl. While holding a pawl pin ready in the left hand, grip the nose of the pawl and the foot of the spring between the thumb and forefinger of the right hand and slide the pawl, tail first, between the flanges of the gear ring. When the hole in the pawl and the loop in the spring coincide with the holes in the flanges, push the pawl pin into position.



To replace pawls and springs in the gear ring of a Sturmey-Archer TCW variable-gear (tricoaster) hub, first fit a pawl and pawl pin into the pawl ring and rivet the pawl pin into position. File the pawl-pin head so that it does not project beyond the face of the pawl ring. Turn the pawl back as far as it will go, and insert the tail of a spring between the pawl ring and the pawl pin, at the same time fitting the bent end of the spring under the outer end of the pawl. Then turn back the pawl to its correct position.

**Brake Shoe Assembly.** The diagram alongside clearly illustrates the correct assembling of the brake shoes, but the following points should be specially noted:

It is important that brake shoes are re-assembled with the side of the brake cam with the largest flat on the inside—towards the axle. (See letter 'A' of diagram.)

To allow both brake shoes to be applied evenly the cam is slightly off-set and if not fitted correctly will allow one shoe only to operate with consequent loss of braking efficiency. It is also important to ensure that the flange which carries the brake springs fits next to the brake arm plate.

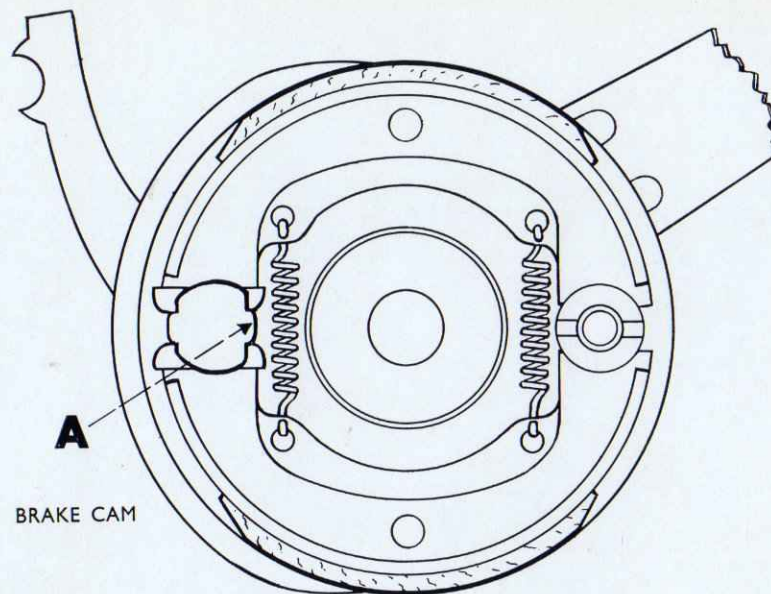
Brake shoe assemblies consist of the shoes with fulcrum and springs. As two different types of fulcrum are in use a symbol number for each assembly is provided to ensure that they are correctly supplied.

1. K458AZ. Brake shoe assembly with pin-type fulcrum (K456A).  
For all brake hubs except BFC. (See Fig. 1.)
2. K458ZA. Brake shoe assembly with sleeve-type fulcrum (K456) threaded internally.  
For BFC hubs only. (See Fig. 2.)

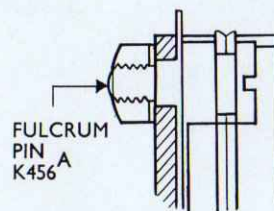
The appropriate symbol number must be quoted when ordering.

*Steel brake shoes* were re-designed in 1951, and only the code numbers of the latest patterns are used in this catalogue. The original parts to which they correspond are:

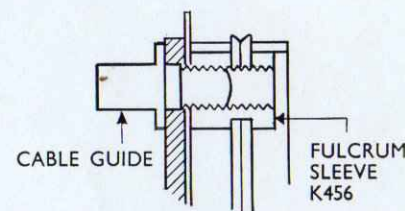
- K162Z. Brake shoe cam (now K452).
- K167. Fulcrum sleeve (now K456).
- K158Z. Brake shoes (now K458AZ) or (K458ZA).
- K159. Shoe end cap (now K459A).
- K160AZ. Brake arm (rear) (now K460AZ) or K457AZ.



BRAKE CAM



(1) FOR AB/ABC, BR/BRC and BF  
K458<sup>AZ</sup> (SHOES)



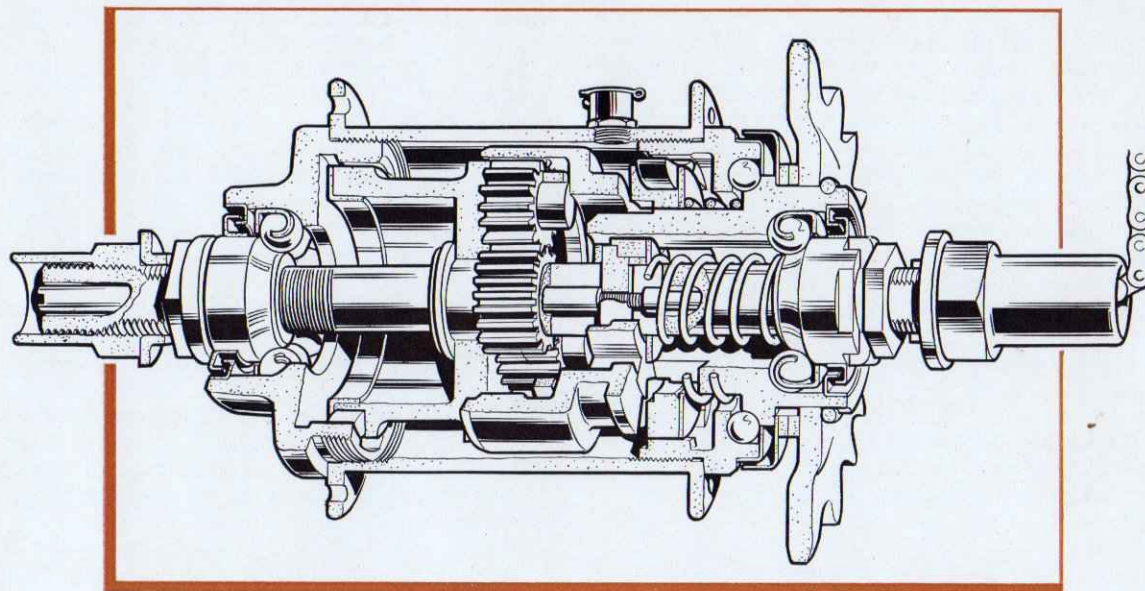
(2) FOR BFC ONLY  
K458<sup>ZA</sup> (SHOES)

**STURMEY**  
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# INDIVIDUAL RE-ASSEMBLING Instructions

## FOR STURMEY-ARCHER HUBS

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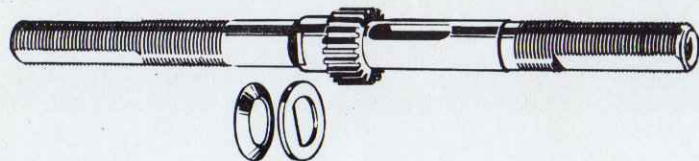
### TO RE-ASSEMBLE THE SW HUB

Proceed as follows:

1. If the left-hand ball cup has been removed from the hub shell, replace it by screwing anti-clockwise (it has a *left-hand thread*). Make sure that the position marks put on it and the hub flange before dismantling are in proper register.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the left-hand ball cup, with the ring of the ball retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new.
  - b. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap should be new. If the sprocket has been removed see No. 22 below.
  - c. Fit the balls (only 24) and the inner dust cap into the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.
  - d. Smear grease in the channels of the dust caps of the left-hand ball cup and the driver and in the recess of the right-hand ball ring.



3. Screw a cone on to the right-hand end of the axle as far as the flats (to protect the threads) and then fix the axle, with the slotted end

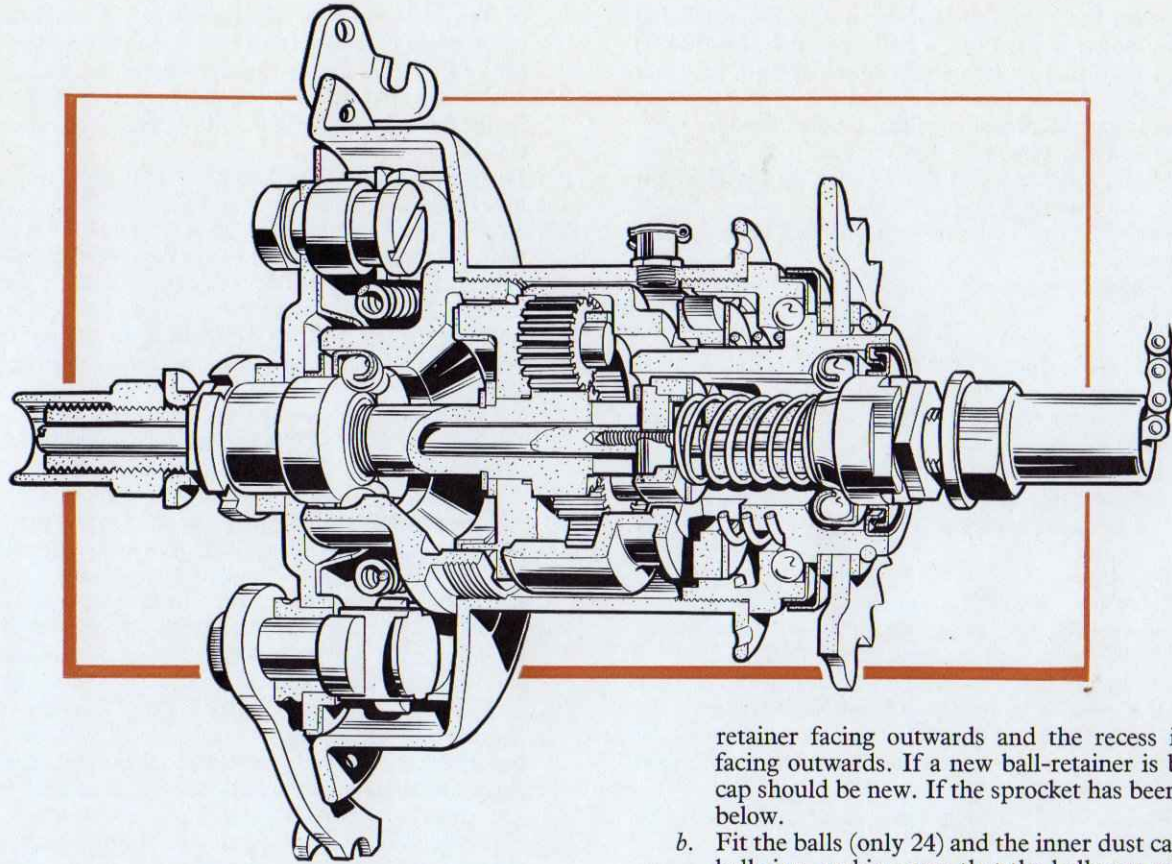


downwards, in a vice, and fit the planet cage, with the pins downwards. Fit the bearing plate, making sure that it engages the flat on the small shoulder on the axle, followed by a new conical fixing plate, also pointing downwards. Place a hollow punch (DD12403) over the axle, and with one or two sharp blows from a hammer flatten the plate into the axle groove to hold the planet cage in position. Make sure that the planet cage can revolve freely.

4. Remove the axle from the vice, take the cone off the right-hand end and re-fix the axle, left-hand end downwards, in the vice. Fit the planet pinions and retaining ring.
5. Fit the clutch sleeve, with the flange downwards, and the axle key, with the flats upwards.
6. Fit the sliding clutch, with the recess downwards, so that it engages with the axle-key flats.
7. Fit the thrust washer.
8. Fit the gear ring and make sure that it can rotate freely.
9. Fit the pawl ring, with the projections downwards.
10. Smear the pawl ring pockets with light grease and fit the pawls and pawl-retaining washer.
11. Fit the right-hand ball ring.
12. Fit the large thrust spring over the prongs of the driver, making sure that the end of the spring comes to the centre of one of the prongs.
13. Fit the driver and the spring.

14. While holding the driver down (to compress the thrust spring), fit the clutch spring over the axle and screw on the right-hand cone far enough to hold the assembled mechanism in place.
15. Screw up the right-hand cone *finger-tight*. Then slacken it back no more than half a turn. The assembled mechanism should be quite free to revolve on the axle. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
16. Fit the cone lock-washer and packing washers (if any), and core locknut. Fasten the locknut securely.
17. Lubricate the assembled mechanism with about two teaspoonfuls of good quality thin oil.
18. Smear the planet-cage pawl pockets with light grease and fit the pawls.
19. Hold the cycle wheel in the left hand, with the open (right-hand) end of the hub shell facing downwards, and insert the assembled mechanism carefully from below, to prevent the pawls from falling out of position. Screw the right-hand ball ring finger-tight only.
20. Make sure that the position marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
21. Fit the left-hand cone, washers (if any), and locknut in the arrangement noted when dismantling, and adjust the hub bearing as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
22. If the sprocket has been removed from the driver, smear grease in the inside of the dust cap and fit it over the driver, making sure that it is properly centred on the flange of the driver. Replace the sprocket and washers in the arrangement noted when dismantling, and add the circlip.
23. Insert the indicator rod in the left-hand end of the axle, and the coupling and toggle-chain in the right-hand end of the axle, and screw them tightly together, *but do not over-tighten*.
24. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

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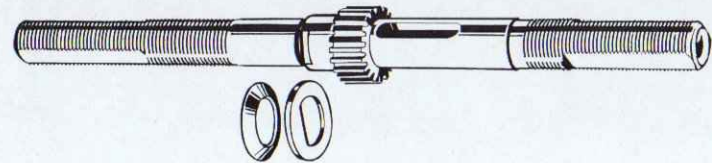
### TO RE-ASSEMBLE THE SB HUB

Proceed as follows:

1. If the left-hand ball cup has been removed from the hub shell, use the special tool (DD12987) to replace it, and remember that it must be screwed anti-clockwise because it has a left-hand thread. The joint between the ball cup and the hub shell must be cemented with a good sealing compound to prevent oil from leaking through to the brake shoes. Either the slight recess in the shell or the face of the shoulder on the ball cup which makes contact with the shell should be well painted over with sealing compound before the ball cup is screwed home.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the driver, with the ring of the ball-

retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap should be new. If the sprocket has been removed see No. 24 below.

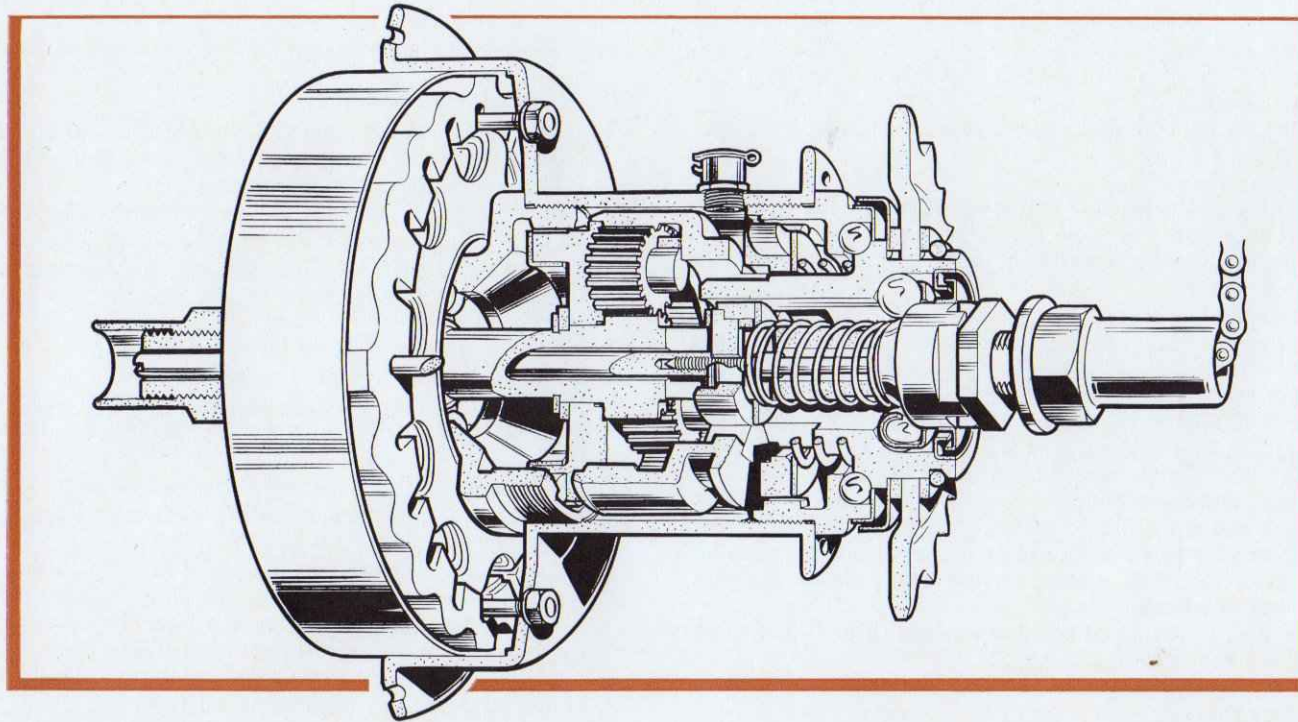
- b. Fit the balls (only 24) and the inner dust cap into the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.
  - c. Smear grease in the channels of the dust cap, the driver, and in the recess of the right-hand ball ring.
3. Screw a cone on to the right-hand end of the axle as far as the flats (to protect the threads) and then fix the axle, with the slotted end downwards, in a vice, and fit the planet cage, with the pins downwards. Fit the bearing plate, making sure that it engages the flat on



- the small shoulder on the axle, followed by a new conical fixing plate, also pointing downwards. Place a hollow punch (DD12403) over the axle, and with one or two sharp blows from a hammer flatten the plate into the axle groove to hold the planet cage in position. Make sure that the planet cage can revolve freely.
4. Remove the axle from the vice, take the cone off the right-hand end and refix the axle, left-hand end downwards, in the vice. Fit the planet pinions and retaining ring.
  5. Fit the clutch sleeve, with the flange downwards, and the axle key, with the flats upwards.
  6. Fit the sliding clutch, with the recess downwards, so that it engages with the axle-key flats.
  7. Fit the thrust washer.
  8. Fit the gear ring and make sure that it can rotate freely.
  9. Fit the pawl ring, with the projections downwards.
  10. Smear the pawl ring pockets with light grease and fit the pawls and pawl-retaining washer.
  11. Fit the right-hand ball ring.
  12. Fit the large thrust spring over the prongs of the driver, making sure that the end of the spring comes to the centre of one of the prongs.\*
  13. Fit the driver and spring.
  14. While holding the driver down (to compress the thrust spring), fit the clutch spring over the axle and screw on the right-hand cone far enough to hold the assembled mechanism in place.
  15. Screw up the right-hand cone *finger-tight*. Then slacken it back no more than half a turn. The assembled mechanism should be quite free to revolve on the axle. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
  16. Fit the cone lockwasher and packing washers (if any), and cone locknut. Fasten the locknut securely.
  17. Lubricate the assembled mechanism with about two teaspoonfuls of good quality thin oil.
  18. Smear the planet-cage pawl pockets with light grease and fit the pawls.
  19. Hold the cycle wheel in the left hand, with the open (right-hand) end

- of the hub shell facing downwards, and insert the assembled mechanism carefully from below, to prevent the pawls from falling out of position. Screw the right-hand ball ring finger-tight only.
20. Make sure that the position marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
  21. Drop a ball cage into left-hand ball cup (ring of cage outwards) and fit the left-hand cone and shim washer.
  22. Replace the brake anchor plate complete with shoes. (If the shoes have been removed, make sure when replacing them that the longer of the two short arms on the cam spindle is pointing towards the drum surface and the shorter one towards the hub axle; otherwise only one shoe will be brought into action when the brake is operated.) If the brake shoe assembly has been dismantled see general instructions.
  23. Fit the outer washers, the notched cone-adjusting washer, and the left-hand locknut in the arrangement noted when dismantling the hub. Adjust the hub bearing, as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
  24. If the sprocket has been removed from the driver, fit the dust cap over the driver, making sure that it is properly centred on the flange of the driver. Replace the sprocket and washers in the arrangement noted when dismantling, and add the circlip.
  25. Insert the indicator rod in the left-hand end of the axle, and the coupling and toggle-chain in the right-hand end of the axle, and screw them tightly together, *but do not over-tighten*.
  26. Replace the wheel in the cycle frame. The axle is flatted to prevent it from turning in the slots of the cycle frame—a very important point, especially with combined gear-and-brake hubs, and special lipped washers are supplied, to engage in the frame slots. See that the brake plate is not strained when being connected to the anchor clip, which must be fixed so that it engages easily, and make sure that the clip is tight on the frame. If the machine is being laid up, put one or two drops of oil between the brake plate and the cam lever, but not enough to penetrate into the brake drum.
  27. Adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

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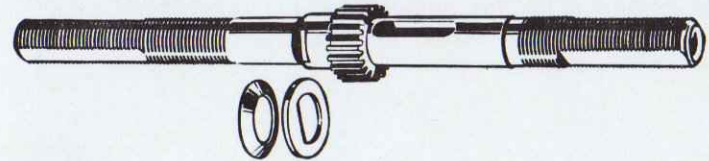


### TO RE-ASSEMBLE THE SG HUB

Proceed as follows:

1. If the left-hand ball cup has been removed from the hub shell, replace it by screwing anti-clockwise (it has a *left-hand thread*), using tool DD12987. Make sure that the position marks put on it and the hub shell before dismantling are in proper register.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap should be new. If the sprocket has been removed see No. 32 below.
  - b. Fit the balls (only 24) and the inner dust cap into the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.
  - c. Smear grease in the channels of the dust cap of the driver and in the recess of the right-hand ball ring.

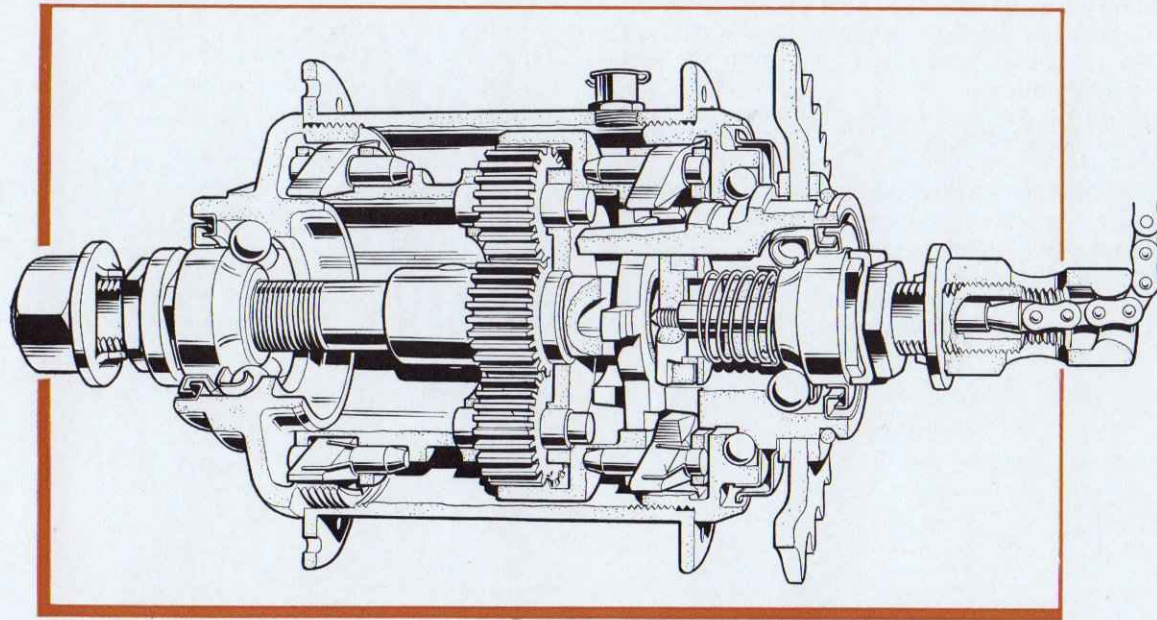
3. Screw a cone on to the right-hand end of the axle as far as the flats (to protect the threads) and then fix the axle, with the slotted end downwards, in a vice, and fit the planet cage, with the pins downwards. Fit the bearing plate, making sure that it engages the flat



on the small shoulder on the axle, followed by a new conical fixing plate, also pointing downwards. Place a hollow punch (DD12403) over the axle, and with one or two sharp blows from a hammer flatten the plate into the axle groove to hold the planet cage in position. Make sure that the planet cage can revolve freely.

4. Remove the axle from the vice, take the cone off the right-hand end and refix the axle, left-hand end downwards, in the vice. Fit the planet pinions and retaining ring.
5. Fit the clutch sleeve, with the flange downwards, and the axle key, with the flats upwards.
6. Fit the sliding clutch, with the recess downwards, so that it engages with the axle-key flats.
7. Fit the thrust washer.
8. Fit the gear ring and make sure that it can rotate freely.
9. Fit the pawl ring, with the projections downwards.
10. Smear the pawl ring pockets with light grease and fit the pawls and pawl-retaining washer.
11. Fit the right-hand ball ring.
12. Fit the large thrust spring over the prongs of the driver, making sure that the end of the spring comes to the centre of the prongs.
13. Fit the driver and the spring.
14. While holding the driver down (to compress the thrust spring), fit the clutch spring over the axle and screw on the right-hand cone far enough to hold the assembled mechanism in place.
15. Screw up the right-hand cone *finger-tight*. Then slacken it back no more than half a turn. The assembled mechanism should be quite free to revolve on the axle. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
16. Fit the cone lock washers and packing washers (if any), and cone locknut. Fasten the locknut securely.
17. Lubricate the assembled mechanism with about two teaspoonfuls of good quality thin oil.
18. Smear the planet-cage pawl pockets with light grease and fit the pawls.
19. Hold the cycle wheel in the left hand, with the open (right-hand) end of the hub shell facing downwards, and insert the assembled mechanism carefully from below, to prevent the pawls from falling out of position. Screw the right-hand ball ring finger-tight only.
20. Make sure that the position marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
21. Drop a ball cage into the left-hand ball cup (ring of cage outwards), then screw up the left-hand cone.
22. If the magnet and armature have been separated, take the magnet and keeper ring in the left hand and, with the right hand, lay the armature alongside it.
23. While holding the magnet with the chamfer facing outwards, push the armature and the keeper through, so that the magnet slides from the keeper on to the armature.
24. Fit the card disc (carrying patent numbers) inside the cover plate, with its notches opposite the magnet notches.
25. Fit the cover plate over the magnet, making sure that the four holes in the cover plate are in line with the notches in the card and the magnet.
26. Fit the four spacing pieces into the hub shell.
27. Fit the shim washer on the cone.
28. Push the complete dynamo unit into the hub shell, making sure that the holes in the cover plate are in line with those in the hub shell.
29. Fit the magnet fixing screws, washers, and nuts.
30. Fit the spacing washers, adjusting washers and dynamo cone locknut in the arrangement noted when dismantling.
31. Adjust the hub bearing as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.' (A correctly adjusted wheel must have a slight trace of play at the rim. The pull of the magnet disguises the wheel adjustment, and if this point is not watched the ball races may be damaged through over-tightening.)
32. If the sprocket has been removed from the driver, smear light grease in the inside of the dust cap and fit over the driver, making sure it is properly centred on the flange of the driver. Replace the sprocket and washers in the arrangement noted when dismantling, and add the circlip.
33. Insert the indicator rod in the left-hand end of the axle, and the coupling and toggle-chain in the right-hand end of the axle, and screw them tightly together, but do not over-tighten.
34. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

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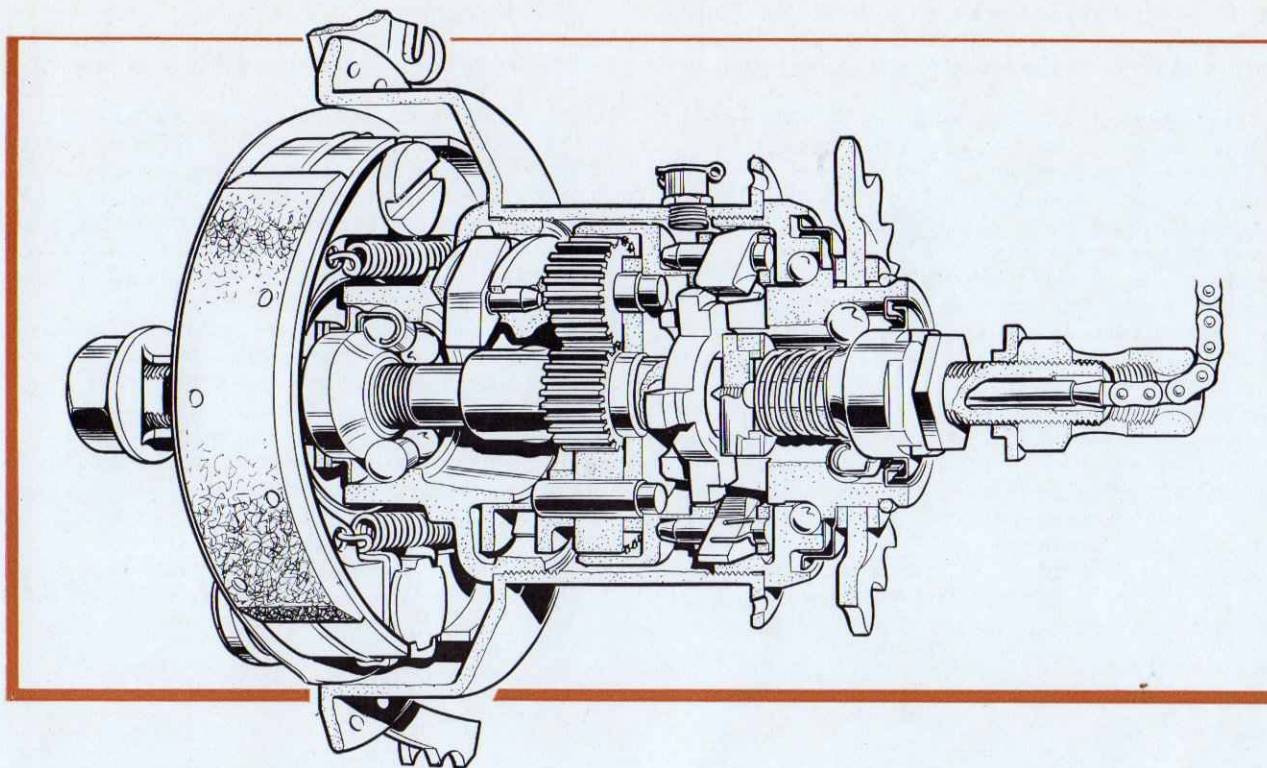
### TO RE-ASSEMBLE THE AW HUB

Proceed as follows:

1. If the left-hand ball cup has been removed from the hub shell, replace it by screwing anti-clockwise (it has a *left-hand thread*).
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the left-hand ball cup, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new.
  - b. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed, see No. 17 below.
  - c. Fit the balls (only 24) and the inner dust cap to the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.
  - d. Fit the pawls, pins, and springs into the gear ring as described in the general instructions to 'The Re-assembling of Sturmey-Archer Hubs.' (The planet-cage pawls, pins and springs are not fitted at this stage.)
- e. Smear grease in the channels of the dust caps of the left-hand ball cup and the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*
3. Hold the left-hand end of the axle in a vice, so that the slot for the axle key is above the sun pinion, and fit the planet cage.
4. Add the planet pinions and pins. (The small ends of the pins protrude.)
5. Fit the sleeve (flange first), the sliding clutch with recess on the flange of the sleeve, and the axle key (with the flat of the key facing upwards), and screw in the indicator rod to hold them in that position.
6. Fit the thrust ring and washer, making sure that the flatted ends of the key engage properly in the slots of the thrust ring.
7. Fit the previously prepared gear-ring sub-assembly.
8. Fit the previously prepared right-hand ball-ring sub-assembly.
9. Fit the previously prepared driver sub-assembly.
10. Drop the clutch spring over the axle.

11. Fit the cap and screw up the right-hand cone *finger-tight*. Then slacken it back half a turn and lock it in that position with the special washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
12. Invert the assembly in the vice and fit the planet-cage pawls as described in the general instructions to 'The Re-assembling of Sturmey-Archer Hubs.'
13. Remove the assembled mechanism from the vice and, while holding it with the planet cage uppermost, pour about two teaspoonfuls of a good quality thin oil into the cage.
14. Hold the cycle wheel in the left hand, with the open (right-hand) end of the hub shell facing downwards, and insert the assembled mechanism from below, screwing up the right-hand ball ring finger-tight only.
15. Make sure that the position marks made on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
16. Fit the left-hand cone, washers (if any), and locknut in the arrangement noted when dismantling, and adjust the hub bearings as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
17. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Replace the sprocket and spacing washers in the arrangement noted when dismantling, and add the circlip.
18. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

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### TO RE-ASSEMBLE THE AB HUB

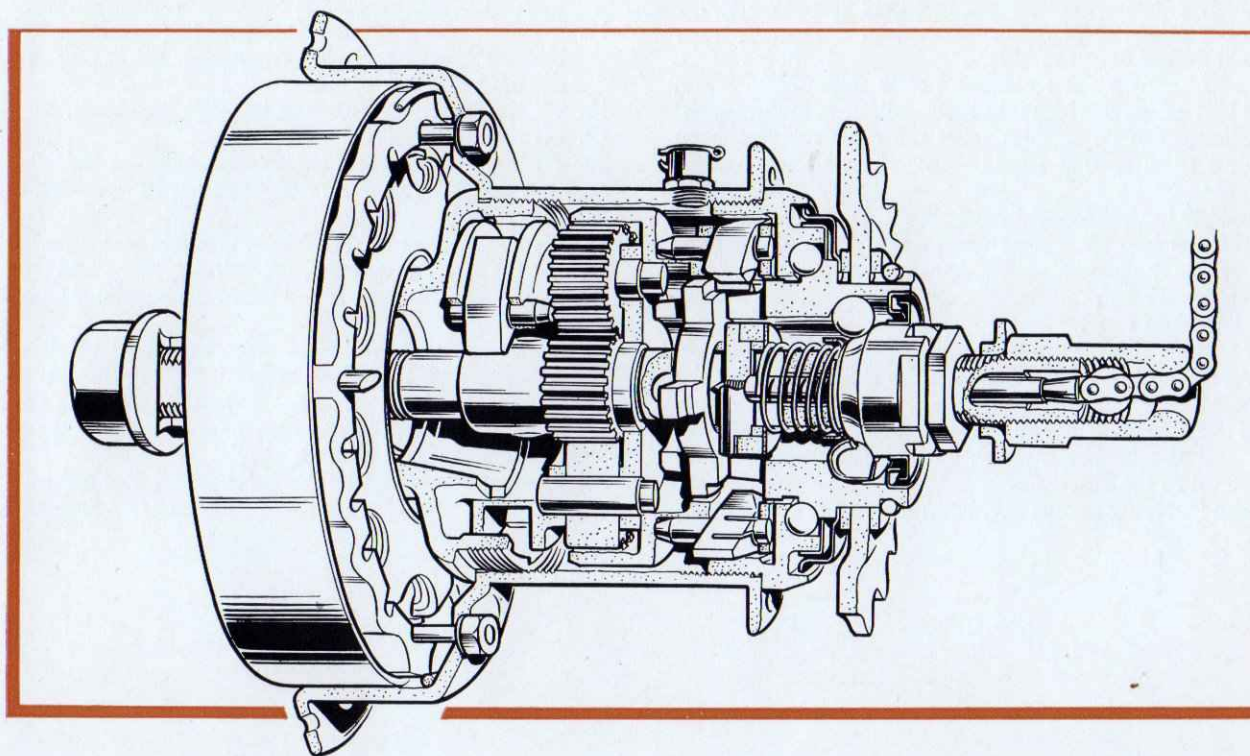
Proceed as follows:

1. If the left-hand ball cup has been removed from the hub shell, use the special tool (box spanner DD911) to replace it, and remember that it must be screwed anti-clockwise because it has a *left-hand thread*. The joint between the ball cup and the hub shell must be cemented with a good sealing compound to prevent oil from leaking through to the brake shoes. Either the slight recess in the shell or the face of the shoulder on the ball cup which makes contact with the shell should be well painted over with sealing compound before the ball cup is screwed home.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed, see No. 19 below.
  - b. Fit the balls (only 24) and the inner dust cap to the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.
  - c. Fit the pawls, pins and springs into the gear ring as described in the general instructions to 'The Re-assembling of Sturmev-Archer Hubs.' (The planet-cage pawls, pins and springs are not fitted at this stage.)
  - d. Smear grease in the channels of the dust caps of the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*
3. Hold the left-hand end of the axle in a vice, so that the slot for the axle key is above the sun pinion, and fit the planet cage.
4. Add the planet pinions and pins. (The small ends of the pins protrude.)



5. Fit the sleeve (flange first), the sliding clutch with the recess over the flange of the sleeve, and the axle key (with the flat of the key facing upwards), and screw in the indicator rod to hold them in that position.
6. Fit the thrust ring and washer, making sure that the flatted ends of the key engage properly in the slots of the thrust ring.
7. Fit the previously prepared gear-ring sub-assembly.
8. Fit the previously prepared right-hand ball-ring sub-assembly.
9. Fit the previously prepared driver sub-assembly.
10. Drop the clutch spring over the axle.
11. Fit the cap and screw up the right-hand cone *finger-tight*. Then slacken it back half a turn and lock it in that position with the special washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
12. Invert the assembly in the vice and fit the planet-cage pawls as described in the general instructions to 'The Re-assembling of Sturmey-Archer Hubs.'
13. Remove the assembled mechanism from the vice and, while holding it with the planet cage uppermost, pour about two teaspoonfuls of a good quality thin oil into the cage.
14. Hold the cycle wheel in the left hand, with the open (right-hand) end of the hub shell facing downwards, and insert the assembled mechanism from below, screwing up the right-hand ball ring finger-tight only.
15. Make sure that the position marks made on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
16. Fit the left-hand cone and spacing washer.
17. Replace the brake anchor plate complete with shoes. (If the shoes have been removed, make sure when replacing them that the longer of the two short arms on the cam spindle is pointing towards the drum surface and the shorter one towards the hub axle; otherwise only one shoe will be brought into action when the brake is operated.) If the brake shoe assembly has been dismantled, see general instructions.
18. Fit the outer washers, the notched cone-adjusting washer, and the left-hand locknut in the arrangement noted when dismantling the hub. Adjust the hub bearing as described in 'The Fitting Adjustment of Sturmey-Archer Hubs.'
19. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Replace the sprocket and spacing washers in the arrangement noted when dismantling, and add the circlip.
20. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

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### TO RE-ASSEMBLE THE AG HUB

Proceed as follows:

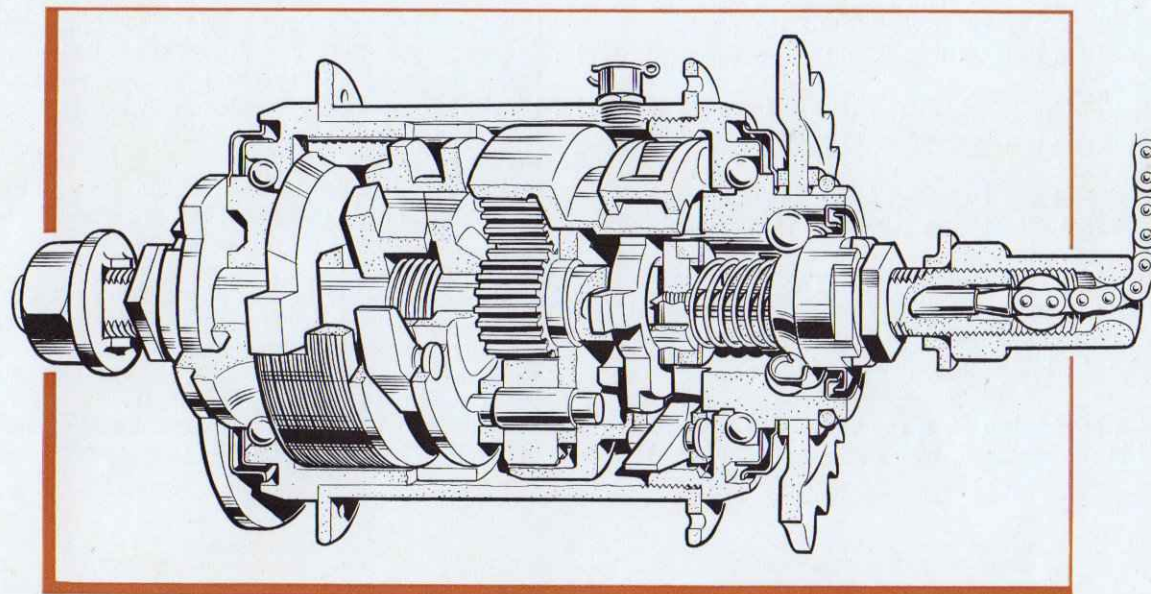
1. If the left-hand ball cup has been removed from the hub shell, replace it by screwing anti-clockwise (it has a *left-hand thread*).
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed, see No. 23 below.
  - b. Fit the balls (only 24) and the inner dust cap to the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.
  - c. Fit the pawls, pins and springs into the gear ring as described in the general instructions to 'The Re-assembling of Sturmey-

Archer Hubs.' (The planet-cage pawls, pins and springs are not fitted at this stage.)

- d. Smear grease in the channels of the dust cap of the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*
3. Hold the left-hand end of the axle in a vice, so that the slot for the axle key is above the sun pinion, and fit the planet cage.
4. Add the planet pinions and pins. (The small ends of the pins protrude.)
5. Fit the sleeve (flange first), the sliding clutch with the recess over the flange of the sleeve and the axle key (with the flat of the key facing upwards), and screw in the indicator rod to hold them in that position.
6. Fit the thrust ring and washer, making sure that the flatted ends of the key engage properly in the slots of the thrust ring.
7. Fit the previously prepared gear ring sub-assembly.

8. Fit the previously prepared right-hand ball-ring sub-assembly.
9. Fit the previously prepared driver sub-assembly.
10. Drop the clutch spring over the axle.
11. Fit the cap and screw up the right-hand cone *finger-tight*. Then slacken it back half a turn and lock it in that position with the special washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
12. Invert the assembly in the vice and pour about two teaspoonfuls of good quality thin oil into the planet cage, then fit the planet cage pawls as described in the general instructions to 'The Re-assembling of Sturmey-Archer Hubs'.
13. Screw up the left-hand cone.
14. If the magnet and armature have been separated, take the magnet and keeper ring in the left hand and, with the right hand, lay the armature alongside it.
15. While holding the magnet with the chamfer facing outwards, push the armature and the keeper through so that the magnet slides from the keeper on to the armature.
16. Fit the card disc (carrying patent numbers) inside the cover plate, with its notches opposite the magnet notches.
17. Fit the cover plate over the magnet, chamfer inwards, making sure that the four holes in the cover plate are in line with the notches in the card and the magnet.
18. Fit the metal spacing ring into the hub shell.
19. Fit the shim washer.
20. Push the complete dynamo unit into the hub shell, making sure that the holes in the cover plate are in line with those in the hub shell.
21. Fit the magnet fixing screws, washers and nuts.
22. Fit the spacing washers, adjusting washers and dynamo cone locknut in arrangement noted when dismantling. Check wheel adjustment.
23. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Replace the sprocket and spacing washers in the arrangement noted when dismantling, and add the circlip.
24. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs'.

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### TO RE-ASSEMBLE THE TCW HUB

Proceed as follows:

1. Prepare the following preliminary sub-assemblies:

- a. Fit the ball cage into the driver, with the ring of the ball retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed, see No. 21 below.
- b. Fit the balls (only 24) and the retainer cap into the left-hand ball cap, making sure that they can revolve freely with the dust cap in place.
- c. Fit the balls (only 24) and the inner dust cap to the right-hand ball ring, making sure that they can revolve freely with the dust cap in place.
- d. Fit the pawls, pins and springs into the gear ring pawl ring and rivet the pins as described in the general instructions to 'The Re-assembling of Sturmey-Archer Hubs.'
- e. Fit the pawls, pins and springs into the planet cage pawl ring and rivet the pins as described in the general instructions to 'The Re-assembling of Sturmey-Archer Hubs.'
- f. Smear grease in the channel of the driver dust cap, in the recess

of the right-hand ball ring, and in the recess of the left-hand ball cup.

2. Hold the left-hand end of the axle in a vice, so that the slot for the axle key is above the sun pinion, and fit the planet cage.
3. Add the planet pinions and pins, making sure that the flattened ends of the pins are facing downwards.
4. Fit the sleeve (flange first), the sliding clutch with the recess over the flange of the sleeve and the axle key (with the flat of the key facing upwards), and screw in the indicator rod to hold them in the correct position.
5. Fit the thrust ring and washer, making sure that the flattened ends of the key engage properly in the slots of the thrust ring.
6. Fit the gear ring and the previously prepared gear-ring pawl ring sub-assembly, making sure that the heads of the pawl pins are facing upwards. NOTE.—A K511A gear ring must *never* be substituted for the correct combination of K484 gear ring and K485 gear-ring pawl ring.
7. Fit the previously prepared right-hand ball-ring sub-assembly.
8. Fit the previously prepared driver sub-assembly.
9. Drop the clutch spring over the axle.
10. Fit the cap and screw up the right-hand cone *finger-tight*. Then

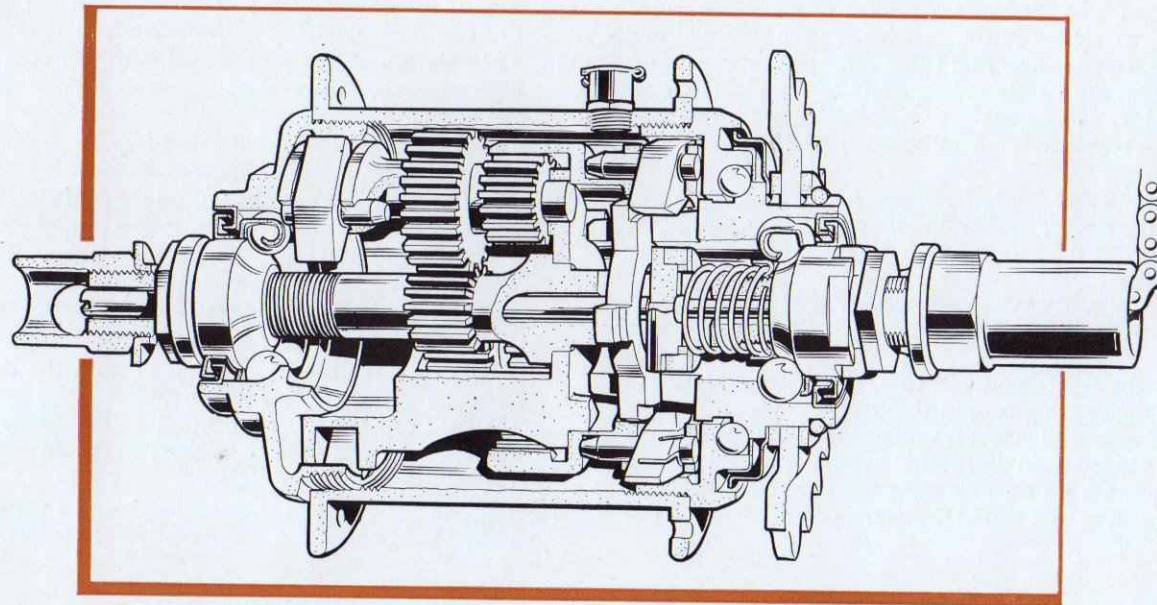
slacken it back half a turn and lock it in that position with the special washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.

11. Remove the assembled mechanism from the vice and replace it the other way up. Pour about two teaspoonfuls of good quality thin oil into the planet cage.
12. Fit the brake cam. (This part may be smeared with a light grease.)
13. Fit the previously prepared planet cage pawl-ring sub-assembly (over the flats on the pinion pins).
14. Fit the cam spring and the brake thrust plate. The cam spring must come between the brake cam and the brake thrust plate. It is important not to fit it in any other position by mistake.
15. Fit the brake band and the brake plate. (These may be smeared with a light grease.)
16. Remove the assembled mechanism from the vice.
17. Hold the cycle wheel in the left hand, with the open (right-hand)

end facing downwards, and insert the assembled mechanism from below, screwing the right-hand ball ring finger-tight only.

18. Make sure that the marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tight.
19. Fit the left-hand cone, making sure that the square on it engages with the square in the brake plate.
20. Fit the outer dust cap, the brake arm, the lock washer, the brake-arm nut, the lock washer and locknut. Then adjust the hub bearing (as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs'), so that just the slightest amount of play can be felt at the wheel rim.
21. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Replace the sprocket and spacing washers in the arrangement noted when dismantling, and add the circlip.
22. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs'.

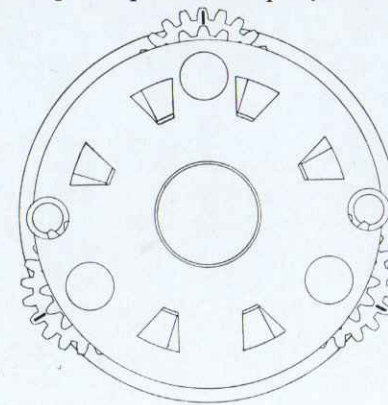
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### TO RE-ASSEMBLE THE AM HUB

Proceed as follows:

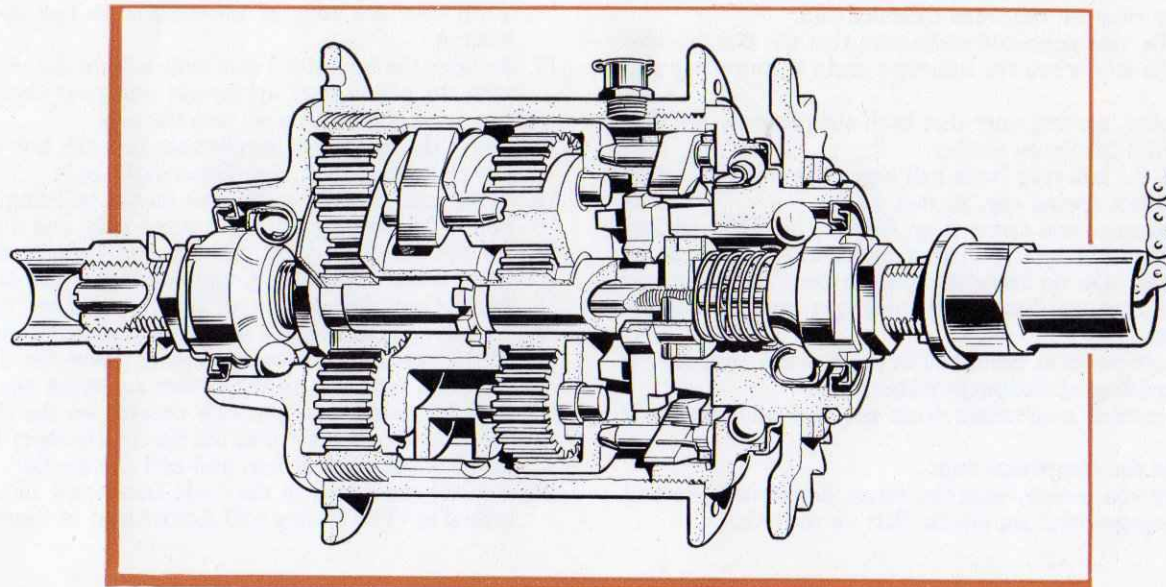
1. If the left-hand ball cup has been removed from the hub shell, replace it by screwing anti-clockwise because it has a *left-hand thread*.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the left-hand ball cup, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new.
  - b. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed, see No. 15 below.
  - c. Fit the balls (only 24) and the inner dust cap to the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.
  - d. Fit the pawls, pins and springs into the gear ring as described in the general instructions to 'The Re-assembling of Sturmeyster-Archer Hubs.'
  - e. Smear grease in the channels of the dust caps of the left-hand ball cup and the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*
3. Hold the axle vertically in a vice by the flats on the left-hand end and put the planet cage in place.
4. Add the double planet pinions and pins, so that they engage with



the two sun pinions. The marked teeth must in each case point radially outwards, as shown in the drawing, or the hub will not be correctly timed. (Notice also that three teeth on the small end of each planet pinion are visible over the end of the planet cage). To check the timing, engage the gear ring with the pinions and rotate several times. It should rotate quite freely. Remove gear ring after testing.

5. Fit the clutch sleeve (flange first), the sliding clutch with the recess over the flange of the sleeve, the key and the thrust ring and thrust washer. The notches on the thrust ring must engage with the flats on the key.
6. Remove the axle from the vice, and insert the indicator and coupling into the right-hand end, threading it through the axle key.
7. Fit the gear ring, the right-hand ball ring, the driver, the clutch spring, and the clutch-spring cap, in that order.
8. Fit the right-hand cone and screw it up *finger-tight*. Then slacken it back half a turn and lock it in that position with the special locking washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
9. Fit the planet-cage pawls as described in the general instructions to 'The Re-assembly of Sturmey-Archer Hubs.'
10. Hold the assembled mechanism with the planet cage uppermost and pour about two teaspoonfuls of a good quality thin oil into the cage.
11. Insert the assembled mechanism into the hub shell and screw up the right-hand ball ring finger-tight only.
12. Make sure that the marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
13. Fit the left-hand cone, washer and locknut in the arrangement noted when dismantling, and adjust the hub bearings as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
14. Fit any special washers noted when dismantling the hub.
15. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Fit the sprocket and spacing washers in the arrangement noted when dismantling and add the circlip.
16. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs'.

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### TO RE-ASSEMBLE THE AC HUB

Proceed as follows:

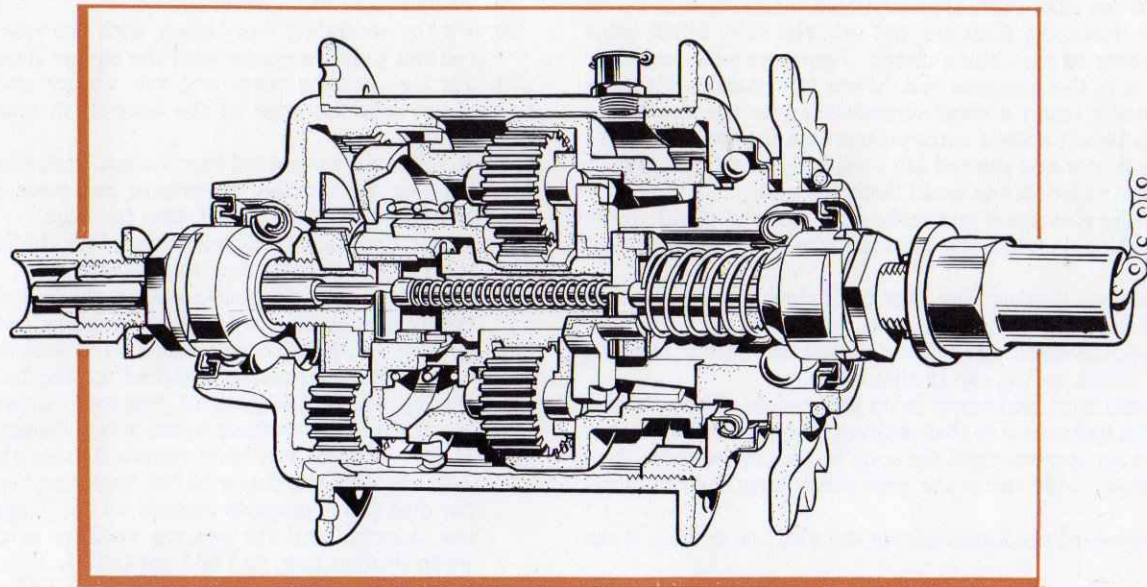
1. If the left-hand ball cup has been removed from the hub shell, replace it by screwing anti-clockwise because it has a *left-hand thread*, using the special tool, DD11182, which enters from the right-hand end. The teeth of the tool and the cup must be in full engagement.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the left-hand ball cup, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new.
  - b. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed see No. 22 below.
  - c. Fit the pawls, pins and springs into the gear ring as described in the general instructions to 'The Re-assembling of Sturmeyster-Archer Hubs.'
  - d. Fit the pawls, pins and springs to the planet cage as described
  - e. Smear grease in the channels of the dust caps of the left-hand ball cup and the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*
3. Hold the axle in the vice with the longer slot uppermost and fit the compound cage, followed by the primary planet cage assembly.
4. Fit the clutch sleeve (flange first) and the sliding clutch with the recess over the flange of the sleeve.
5. Lift the clutch sleeve and the clutch up to the top of the long axle slot, then fit axle key through the clutch sleeve, making sure that the two flats on the key are facing upwards.
6. Fit the indicator coupling by passing the rod down the axle, through the axle key.
7. Remove the axle from the vice and push the indicator rod into the left-hand end of the axle. Press the assembled mechanism down on a flat surface to force the indicator rod into the axle, at the same time pressing down on the sliding clutch. Then rotate the indicator chain to screw it to the indicator rod. When the chain is felt to be fully screwed home, insert a *small* screwdriver into the slot of the indicator and exert a *slight* extra pressure on the chain, to make

in the general instructions to 'The Re-assembling of Sturmeyster-Archer Hubs.'



- sure that the indicator and the rod are both fully screwed together, taking care not to twist off the small threaded end.
8. Fix the axle in the vice again and make sure that the clutch slides quite freely on the axle when the indicator chain is moved up and down.
  9. Fit the thrust collar, making sure that both slots fit over the flats of the axle key. Add the thrust washer.
  10. Fit the gear ring, the ball ring (with ball cage), the driver, the axle spring and the clutch spring cap, in that order.
  11. Fit the right-hand cone and screw it up *finger-tight*. Then slacken it back half a turn and lock it in that position with the special washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
  12. Fit the planet cage pawls as described in the general instructions to 'The Re-assembling of Sturmey-Archer Hubs'.
  13. Remove the assembled mechanism from the vice and replace it the other way.
  14. Fit the pinions to the compound cage.
  15. Fit the secondary sun pinion, with the recess downwards, so that the sun pinion engages with the square flats on the axle.
  16. Fit the locating plate and tab washer and tighten the locknut. Turn over the edge of the washer on two opposite sides of the locknut.
  17. Remove the assembled mechanism from the vice, hold it vertically with the planet cage uppermost and pour about two teaspoonfuls of a good quality thin oil into the cage.
  18. Insert the assembled mechanism into the hub shell and screw up the right-hand ball ring finger-tight only.
  19. Make sure that the marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
  20. Fit the left-hand cone, washer and locknut in the arrangement noted when dismantling, and adjust the hub as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
  21. Fit any special washers noted when dismantling the hub.
  22. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Replace the sprocket and the spacing washers in the arrangement noted when dismantling, and add the circlip.
  23. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

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### TO RE-ASSEMBLE THE ASC HUB

Proceed as follows:

Prepare the following preliminary sub-assemblies:

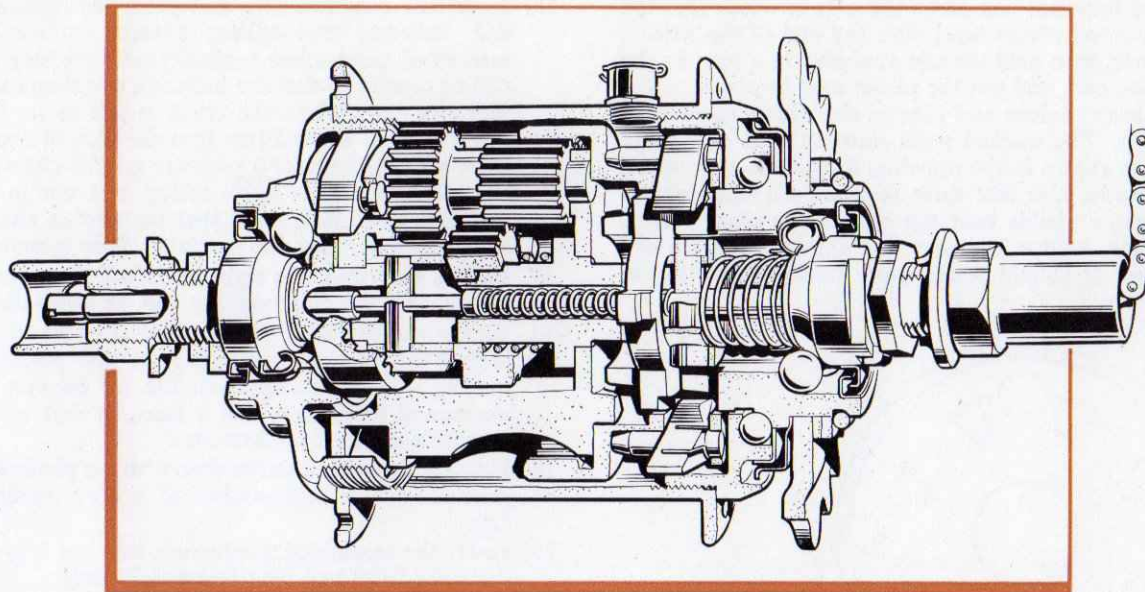
1. *a.* Fit the ball cage into the left-hand ball cup, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new.
  - b.* Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed see No. 27 below.
  - c.* Smear grease in the channels of the dust cap of the left-hand ball cup and the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*
2. Hold the axle in a vice, with the smaller slot uppermost, and fit the low-gear clutch sleeve with its flange on top.
  3. Slip the small low-gear key through the holes of the low-gear clutch sleeve, making sure that the hole through the key is in line with the bore of the axle. Hold the key temporarily in position by dropping the indicator rod down the axle through the key.

4. Holding the indicator rod in position with one finger, remove the axle from the vice and hold it the other way up. Fit the low-gear clutch on to the axle, with the four dogs pointing downwards.
5. Fit the large low-gear spring and the primary sun pinion, with its four large legs pointing downwards and so engaging the low-gear clutch. (The low-gear spring, the compensating spring, and the clutch spring must be of the same series. If one has to be replaced, the other two must be.)
6. Slip the indicator rod out of the axle (the low-gear clutch key will now stay in position) and put the axle back in the vice.
7. Fit the primary planet cage complete.
8. Drop the compensating spring down the axle, collar first.
9. Fit the clutch sleeve (flange first) and the sliding clutch with the recess over the flange of the sleeve.
10. Lift the clutch sleeve and the clutch up to the top of the long axle slot and insert axle key through the clutch sleeve, making sure that the two flats on the key are facing upwards.
11. Fit the indicator coupling by passing the rod down the axle, through the axle key and into the compensator spring. Note that the indicator coupling must always be fitted before the indicator rod.
12. Remove the axle from the vice and push the indicator rod into the

ASC

- left-hand end of the axle. Press the assembled mechanism down on a flat surface to force the indicator rod into the axle, at the same time pressing down on the sliding clutch. Then rotate the indicator chain to screw it to the indicator rod. When the chain is felt to be fully screwed home insert a *small* screwdriver into the slot of the indicator rod and exert a *slight* extra pressure on the chain, to make sure that the indicator and the rod are both fully screwed together, taking care not to twist off the small threaded end.
13. Fix the axle in the vice again and make sure that the clutch slides quite freely on the axle when the indicator chain is moved up and down.
  14. Fit the thrust collar, making sure that both slots fit over the flats of the axle key. Add the thrust washer.
  15. Fit the gear ring, the ball ring (with ball cage), the driver, the axle spring and the clutch spring cap in that order.
  16. Fit the right-hand cone and screw it up *finger-tight*. Then slacken it back half a turn and lock it in that position with the special washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
  17. Remove the assembled mechanism from the vice and replace it the other way up.
  18. Fit the secondary planet cage, with the pins upwards and the slots engaging the limbs of the low-gear dog.
  19. Fit the secondary planet pinion.
  20. Fit the secondary sun pinion, with the recess downwards, so that the sun pinion engages with the square flats on the axle.
  21. Fit the locating plate and tab washer and tighten the locknut. Turn over the edge of the washer on two opposite sides of the locknut.
  22. Remove the assembled mechanism from the vice, hold it vertically with the planet cage uppermost and pour about two teaspoonfuls of a good quality thin oil into the cage.
  23. Insert the assembled mechanism into the hub shell and screw up the right-hand ball ring finger-tight only.
  24. Make sure that the marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
  25. Fit the left-hand cone, washer and locknut in the arrangement noted when dismantling, and adjust the hub as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
  26. Fit any special washers noted when dismantling the hub.
  27. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Replace the sprocket and the spacing washers in the arrangement noted when dismantling, and add the circlip.
  28. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

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### TO RE-ASSEMBLE THE FW HUB

Proceed as follows:

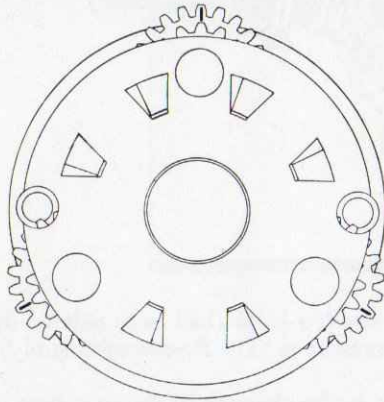
1. If the left-hand ball cup has been removed from the hub shell, replace it by screwing anti-clockwise because it has a *left-hand thread*.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the left-hand ball cup, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new.
  - b. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed, see No. 19 below.
  - c. Fit the balls (only 24) and the inner dust cap to the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.
  - d. Fit the pawls, pins and springs into the gear ring as described in the general instructions to 'The Re-assembling of Sturmey-Archer Hubs.'
  - e. Fit the pawls, pins and springs into the planet cage and rivet

the pins on the left-hand (ball cup) side as described in the general instructions to 'The Re-assembling of Sturmey-Archer Hubs.'

- f. Smear grease in the channels of the dust caps of the left-hand ball cup and the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*
3. Working from the left-hand (short slot) side of the axle, slide the low gear spring, the primary sun pinion, and the secondary sun pinion and sleeve on to the axle in that order, and push them along until the dogs engage. (The low-gear spring, the compensating spring, and the clutch spring of a four-speed hub must be of the same series. If one has been replaced, the other two must be.)
4. Holding the pinions in position, withdraw the secondary sun pinion sleeve until the low-gear keyhole is exposed, and insert the low-gear key making sure that the hole through the key is in line with the bore of the axle. Release the pinions, so that they can spring back and secure the key. Use the indicator rod to check that the hole in the low-gear key is still in line with the axle bore.
5. Fit the dog ring so that it engages on the axle square, and secure it with the washer and nut, spanner-tight. Then turn down the edge of the lock washer over two opposite sides of the locknut, to secure it. (Earlier models of this hub may not be fitted with tab lock

washers.) Drop the indicator rod down the axle to check that the end of the indicator rod comes level with the end of the axle.

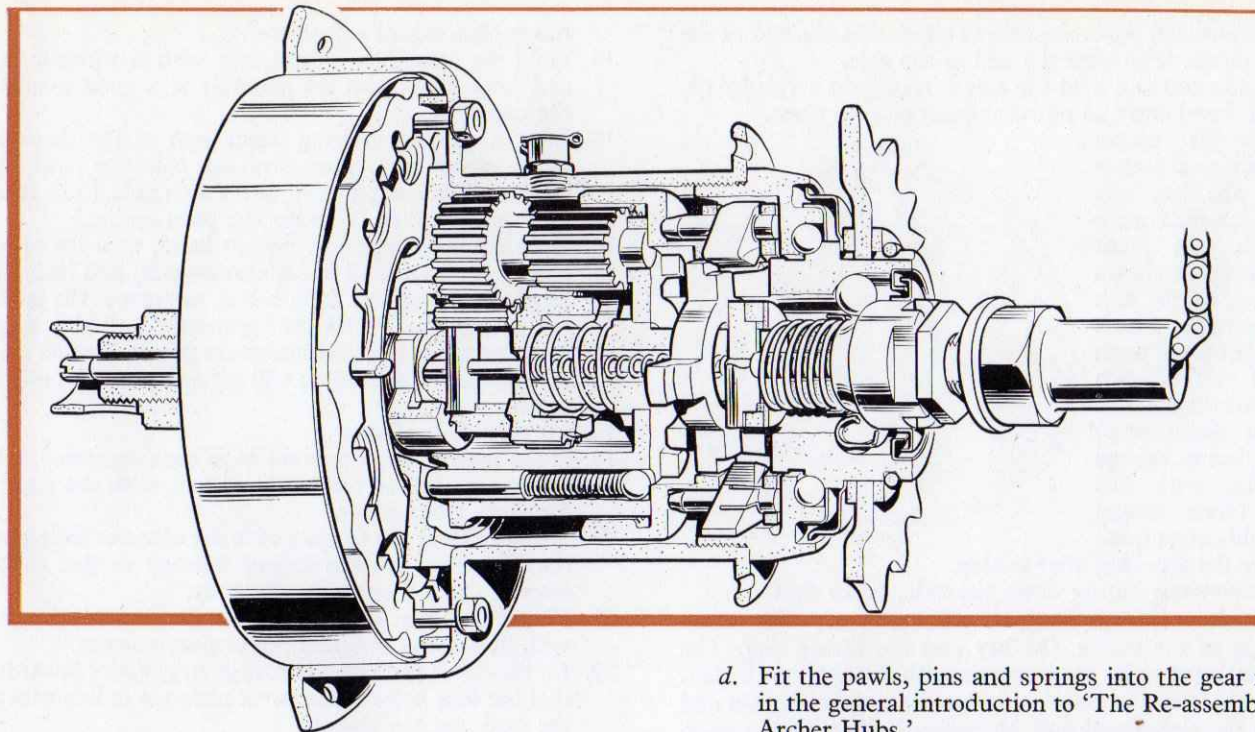
6. Remove the indicator, then hold the axle vertically in a vice by the flats on the left-hand end, and put the planet cage in place.
7. Add the double planet pinions and pins so that they engage with the two sun pinions. The marked teeth must in each case point radially outwards, as shown in the drawing, or the hub will not be correctly timed. (Notice also that three teeth on the small end of each planet pinion are visible over the end of the planet cage.) To check the timing, engage the gear ring with the pinions and rotate several times. It should rotate quite freely. Remove gear ring after testing.



8. Drop the compensator spring down the axle, collar first.
9. Fit the clutch sleeve (flange first), the sliding clutch with the recess over the flange of the sleeve, the key and the thrust ring and thrust washer. The notches on the thrust ring must engage with the flats on the key.
10. Remove the axle from the vice and insert the indicator chain and coupling into the right-hand end, threading it through the main key and the compensator spring collar.

11. Insert the indicator rod, and press the left-hand end of the axle and indicator rod against a solid surface while holding the assembled mechanism vertically and pressing downwards on the sliding clutch, so that the indicator coupling can be screwed to the indicator rod. When the chain is felt to be fully screwed home insert a *small* screwdriver into the slot of the indicator rod and exert a slight (rotatory) pressure on the chain, to make sure that the indicator rod is tight, taking care not to twist off the small threaded end. Make sure that the sliding clutch is free to move along the axle when the indicator chain is moved up and down.
12. Fit the gear ring, the right-hand ball ring, the driver, the clutch spring, and the clutch-spring cap, in that order.
13. Fit the right-hand cone and screw it up *finger-tight*. Then slacken it back half a turn and lock it in that position with the special locking washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
14. Hold the assembled mechanism with the planet cage uppermost and pour about two teaspoonfuls of a good quality thin oil into the cage.
15. Insert the assembled mechanism into the hub shell and screw up the right-hand ball ring finger-tight only.
16. Make sure that the marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
17. Fit the left-hand cone, washer and locknut in the arrangement noted when dismantling, and adjust the hub bearing as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
18. Fit any special washers noted when dismantling the hub.
19. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Fit the sprocket and spacing washers in the arrangement noted when dismantling and add the circlip.
20. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

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### TO RE-ASSEMBLE THE FG HUB

Proceed as follows:

1. If the left-hand ball cup has been removed from the hub shell replace it and screw up tight the four hexagonal-headed screws, which are inserted into the drum wall from the outside and screw into the square flange of the ball cup.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the left-hand ball cup, with the ring of the retainer facing outwards.
  - b. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed see No. 29 on next page.
  - c. Fit the balls (only 24) and the inner dust cap to the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.

d. Fit the pawls, pins and springs into the gear ring as described in the general introduction to 'The Re-assembling of Sturmev-Archer Hubs.'

e. Smear grease in the channel of the dust cap of the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*

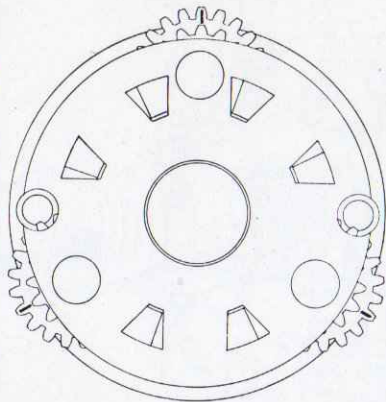
3. Working always from the left-hand (short slot) side of the axle, slide the low-gear spring, the primary sun pinion, and the secondary sun pinion and sleeve on to the axle in that order, and push them along until the dogs engage. (The low-gear spring, the compensator spring, and the clutch spring of a four-speed hub must be of the same series. If one has been replaced the other two must be.)
4. Holding the pinions in position, withdraw the secondary sun pinion sleeve until the low-gear key hole is exposed, and insert the low-gear key, making sure that the hole through the key is in line with the bore of the axle.

Release the pinions so that they can spring back and secure the key. Use the indicator rod to check that the hole in the low-gear key is still in line with the axle bore.

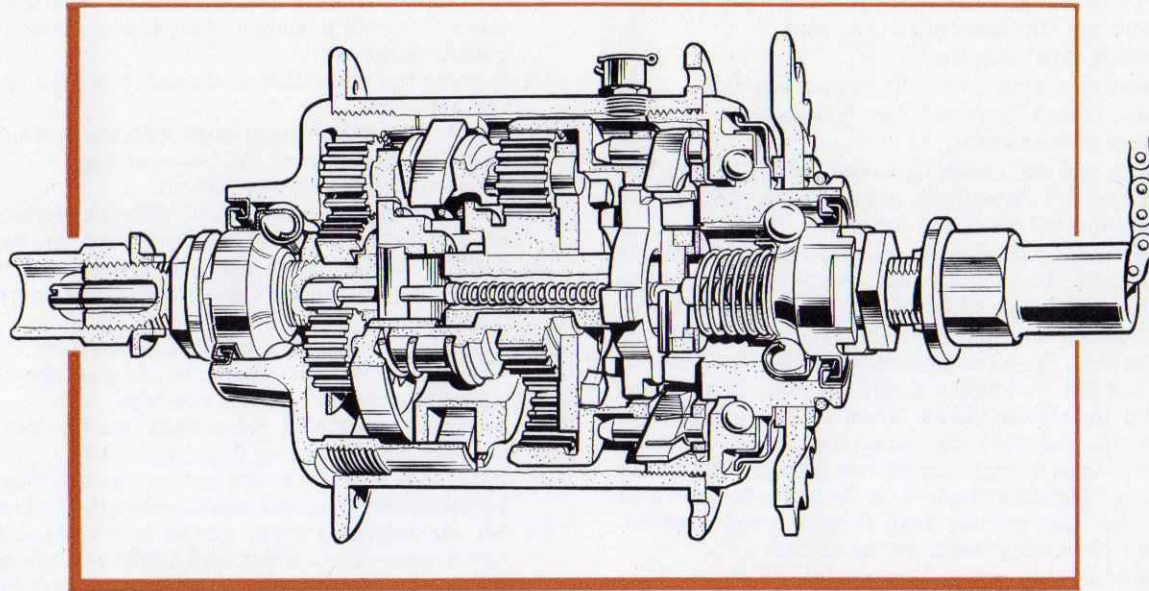
5. Fit the dog ring so that it engages on the axle square, and secure it with the washer and nut, spanner-tight. Then turn down the edge of the lock washer over two opposite sides of the locknut, to secure it. (Earlier models of this hub may not be fitted with tab lock washers.)

Drop the indicator rod down the axle to check that the end of the indicator rod comes level with the end of the axle.

6. Remove indicator rod and hold the axle vertically in a vice by the flats at the left-hand end and put the planet cage in place.
7. Add the double planet pinions and pins so that they engage with the two sun pinions. The marked teeth must in each case point radially outwards, as shown in the drawing, or the hub will not be correctly timed. (Notice also that three teeth on the small end of each planet pinion are visible over the end of the planet cage.) To check the timing, engage the gear ring with the pinions and rotate several times. It should rotate quite freely. Remove the gear ring after testing.
8. Drop the compensator spring down the axle, collar first.
9. Fit the clutch sleeve (flange first), the sliding clutch with recess over the flange of the sleeve, the key and the thrust ring. The notches on the thrust collar must engage with the flats on the key.
10. Remove the axle from the vice and insert the indicator chain and coupling into the right-hand end, threading it through the main key and the compensator spring. Insert indicator rod in left-hand end of axle, threading it through low-gear key and compensator spring collar.
11. Press the left-hand end of the axle and indicator rod against a solid surface while holding the assembled mechanism vertically and pressing down on the sliding clutch so that the indicator coupling can be screwed to the indicator rod. When the chain is felt to be fully screwed home insert a *small* screwdriver into the slot of the indicator rod and exert a slight extra (rotatory) pressure on the chain to make sure that the indicator rod is tight, taking care not to twist off the small threaded end. Make sure that the sliding clutch is free to move along the axle when the indicator chain is moved up and down.
12. Fit the gear ring, the right-hand ball ring, the driver, the clutch spring, and the clutch-spring cap, in that order.
13. Fit the right-hand cone and screw it up *finger-tight*. Then slacken it back half a turn and lock it in that position with the special locking washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear



- mechanism out of adjustment.
14. Hold the assembled mechanism with the planet cage uppermost and pour about two teaspoonfuls of a good quality thin oil into the cage.
15. Drop a  $\frac{3}{16}$ " ball bearing down each of the three pawl-pin holes in the planet cage. Then drop one coil-type pawl spring, followed by one plunger-type pawl, down each hole. (The inner end of each pawl is shaped to fit inside the pawl spring.)
16. Hold the cycle wheel in the left hand, with the open (right-hand) end of the hub shell facing downwards, and insert the assembled mechanism carefully from below, to prevent the pawls from falling out of position. Screw the right-hand ball ring finger-tight only.
17. Make sure that the position marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
18. Fit the left-hand cone.
19. If the magnet and armature have been separated, take the magnet and keeper ring in the left hand and, with the right hand, lay the armature alongside it.
20. While holding the magnet with the chamfer facing outwards, push the armature and the keeper through so that the magnet slides from the keeper on to the armature.
21. Fit the card disc (carrying patent numbers) inside the cover plate, with its notches opposite the magnet notches.
22. Fit the cover plate over the magnet, chamfer inwards, making sure that the four holes in the cover plate are in line with the notches in the card and the magnet.
23. Fit the metal spacing ring into the hub shell.
24. Fit the shim washer on the cone.
25. Push the complete dynamo unit into the hub shell, making sure that the holes in the cover plate are in line with those in the hub shell.
26. Fit the magnet fixing screws, washers and nuts.
27. Fit the spacing washers, adjusting washer and dynamo cone locknut in the arrangement noted when dismantling.
28. Adjust the hub bearing as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.' (A correctly adjusted wheel must have a slight trace of play at the rim. The pull of the magnet disguises the wheel adjustment, and if this point is not watched, the ball races may be damaged through over-tightening.)
29. If the sprocket has been removed from the driver, fit the outer dust cap over the driver, making sure that it is properly centred on the flange of the driver. Replace the sprocket and washers in the arrangement noted when dismantling, and add the circlip.
30. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'



### TO RE-ASSEMBLE THE FM HUB

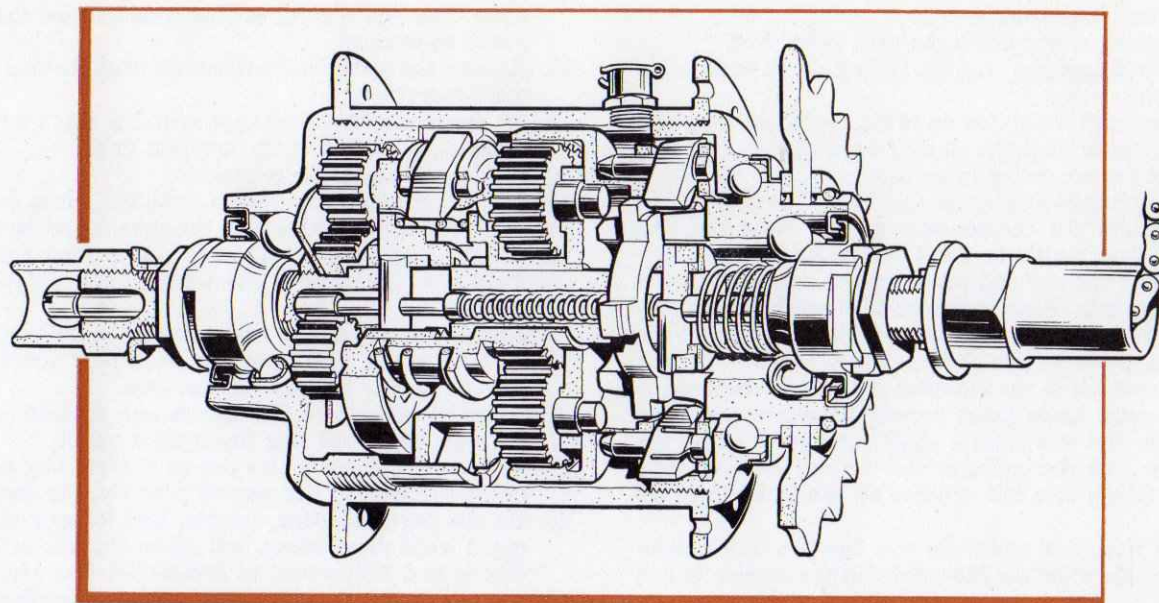
Proceed as follows:

1. If the left-hand ball cup has been removed from the hub shell, replace it by screwing anti-clockwise because it has a left-hand thread, using the special tool, DD11182, which enters from the right-hand end. The teeth of the tool and the cup must be in full engagement.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the left-hand ball cup, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new.
  - b. Fit the ball cage into the driver, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed see No. 28 below.
  - c. Fit the balls (only 24) and the inner dust cap into the right-hand ball ring, making sure that the balls can revolve freely with the dust cap in place.
  - d. Fit the pawls, pin and springs into the gear ring as described in the general instructions to 'The Re-assembling of Sturmeyster-Archer Hubs.'
  - e. Fit the pawls, pins and springs to the planet cage as described in the general instructions to 'The Re-assembling of Sturmeyster-Archer Hubs.'
  - f. Smear grease in the channels of the dust caps of the left-hand ball cup and the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*
3. Hold the axle in a vice, with the smaller slot uppermost, and fit the low-gear clutch sleeve, with its flange on top.
4. Slip the small low-gear key through the holes of the low-gear clutch sleeve, making sure that the hole through the key is in line with the bore of the axle. Hold the key temporarily in position by dropping the indicator rod down the axle through the key.
5. Holding the indicator rod in position with one finger, remove the axle from the vice and hold it the other way up. Fit the low-gear clutch on to the axle, with the four dogs pointing downwards.
6. Fit the large low-gear spring and the primary sun pinion, with its four large legs pointing downwards and so engaging the low-gear clutch. (The low-gear spring, the compensating spring and the clutch spring must be of the same series. If one has to be replaced, the other two must be.)



7. Slip the indicator rod out of the axle (low-gear clutch key will now stay in position) and put the axle back in the vice.
8. Fit the primary planet cage complete.
9. Drop the compensating spring down the axle, collar first.
10. Fit the clutch sleeve (flange first) and the sliding clutch with the recess over the flange of the sleeve.
11. Lift the clutch sleeve and the clutch up to the top of the long key slot and insert the axle key through the clutch sleeve, making sure that the two flats on the key are facing upwards.
12. Fit the indicator coupling by passing the rod down the axle, through the axle key, and into the compensator spring. Note that the indicator coupling must always be fitted before the indicator rod.
13. Remove the axle from the vice and push the indicator rod into the left-hand end of the axle. Press the assembled mechanism down on a flat surface to force the indicator rod into the axle. At the same time press down on the sliding clutch. Then rotate the indicator chain to screw it to the indicator rod. When the chain is felt to be fully screwed home insert a *small* screwdriver into the slot of the indicator and exert a *slight* extra pressure on the chain, to make sure that the indicator and the rod are both fully screwed together, taking care not to twist off the small threaded end.
14. Fix the axle in the vice again and make sure that the clutch slides quite freely on the axle when the indicator chain is moved up and down.
15. Fit the thrust collar, making sure that both slots fit over the flats of the axle key. Add thrust washer.
16. Fit the gear ring, the ball ring, the driver, the axle spring and the clutch spring cap, in that order.
17. Fit the right-hand cone and screw it up *finger-tight*. Then slacken it back half a turn and lock it in that position with the special washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
18. Remove the assembled mechanism from the vice and replace it the other way up.
19. Fit the secondary planet cage, with the pins upwards and the slots engaging the limbs of the low-gear dog.
20. Fit the secondary planet pinions.
21. Fit the secondary sun pinion, with the recess downwards, so that the sun pinion engages with the square flats on the axle.
22. Fit the locating plate and tab washer and tighten the locknut. Turn over the edge of the washer on two opposite sides of the locknut.
23. Remove the assembled mechanism from the vice, hold it vertically with the planet cage uppermost and pour about two teaspoonfuls of a good quality thin oil into the cage.
24. Insert the assembled mechanism into the hub shell and screw up the right-hand ball ring finger-tight only.
25. Make sure that the marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
26. Fit the left-hand cone, washer and locknut in the arrangement noted when dismantling, and adjust the hub as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
27. Fit any special washers noted when dismantling the hub.
28. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Replace the sprocket and the spacing washers in the arrangement noted when dismantling, and add the circlip.
29. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

**STURMEY**  
**ARCHER**



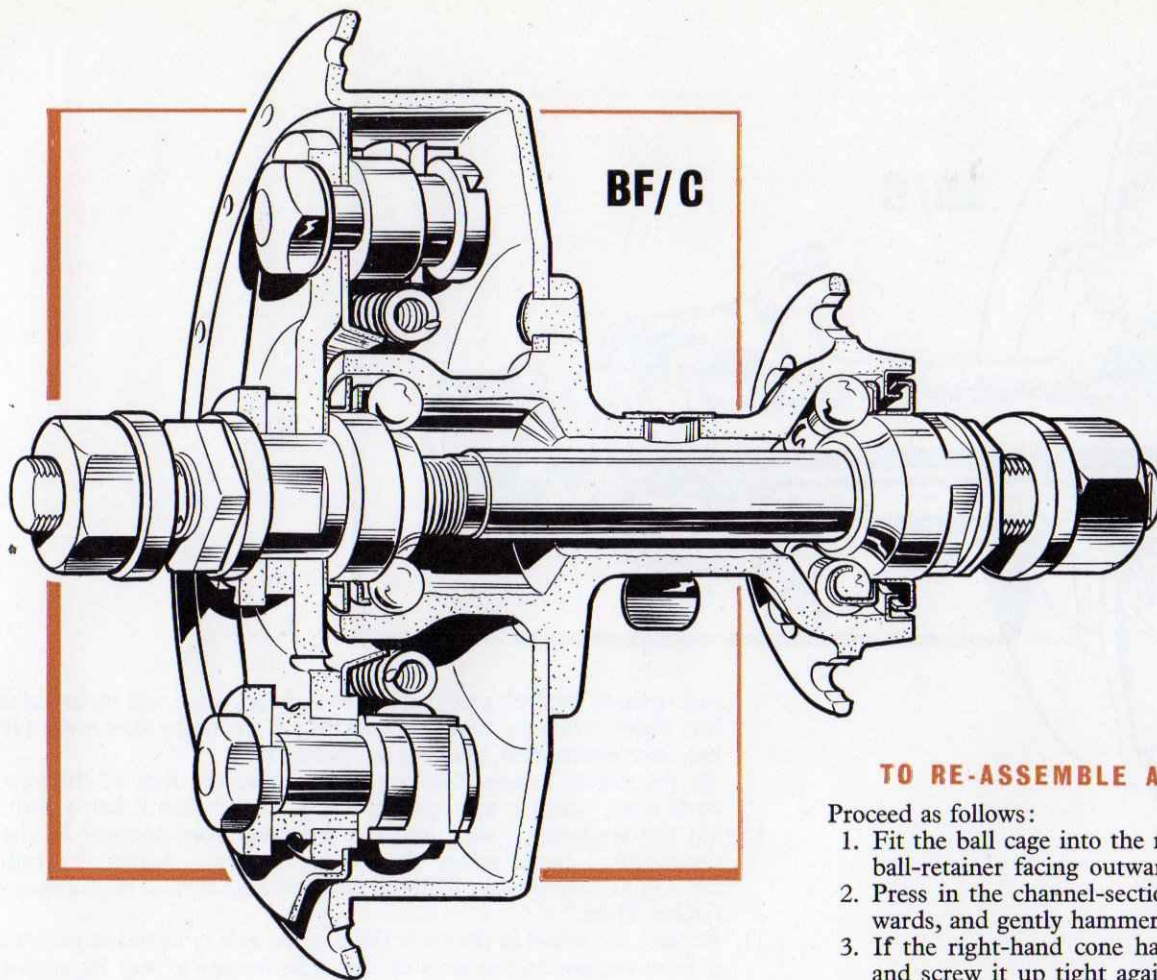
### TO RE-ASSEMBLE THE FC HUB

Proceed as follows:

1. If the left-hand ball cup has been removed from the hub shell, replace it by screwing anti-clockwise because it has a left-hand thread, using the special tool, DD11182, which enters from the right-hand end. The teeth of the tool and the cup must be in full engagement.
2. Prepare the following preliminary sub-assemblies:
  - a. Fit the ball cage into the left-hand ball cup, with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new.
  - b. Fit the ball cage into the driver with the ring of the ball-retainer facing outwards and the recess in the dust cap also facing outwards. If a new ball-retainer is being fitted, the dust cap also should be new. If the sprocket has been removed see No. 28 below.
  - c. Fit the pawls, pins and springs into the gear ring as described in the general instructions to 'The Re-assembly of Sturmey-Archer Hubs.'
  - d. Fit the pawls, pins and springs to the planet cage as described in the general instructions to 'The Re-assembly of Sturmey-Archer Hubs.'
  - e. Smear grease in the channels of the dust caps of the left-hand ball cup and the driver and in the recess of the right-hand ball ring. *Do not use grease anywhere else.*
3. Hold the axle in a vice, with the smaller slot uppermost, and fit the low-gear clutch sleeve, with its flange on top.
4. Slip the small low-gear key through the holes of the low-gear clutch sleeve, making sure that the hole through the key is in line with the bore of the axle. Hold the key temporarily in position by dropping the indicator rod down the axle and through the key.
5. Holding the indicator rod in position with one finger, remove the axle from the vice and hold it the other way up. Fit the low-gear clutch on to the axle, with the four dogs pointing downwards.
6. Fit the large low-gear spring and the primary sun pinion, with its four large legs pointing downwards and so engaging the low-gear clutch. (The low-gear spring, the compensating spring, and the clutch spring must be of the same series. If one has to be replaced, the other two must be.)
7. Slip the indicator rod out of the axle (the low-gear clutch key will now stay in position) and put the axle back in the vice.

8. Fit the primary planet cage complete.
9. Drop the compensating spring down the axle, collar first.
10. Fit the clutch sleeve (flange first) and the sliding clutch with recess over the flange of the sleeve.
11. Lift the clutch sleeve and the clutch up to the top of the long axle slot and insert axle key through the clutch sleeve, making sure that the two flats on the key are facing upwards.
12. Fit the indicator coupling by passing the rod down the axle, through the axle key, and into the compensator spring. Note that the indicator coupling must always be fitted before the indicator rod.
13. Remove the axle from the vice and push the indicator rod into the left-hand end of the axle. Press the assembled mechanism down on a flat surface to force the indicator rod into the axle, at the same time pressing down on the sliding clutch. Then rotate the indicator chain to screw it to the indicator rod. When the chain is felt to be fully screwed home insert a *small* screwdriver into the slot of the indicator rod and exert a *slight* extra pressure on the chain, to make sure that the indicator and the rod are both fully screwed together, taking care not to twist off the small threaded end.
14. Fix the axle in the vice again and make sure that the clutch slides quite freely on the axle when the indicator chain is moved up and down.
15. Fit the thrust collar, making sure that both slots fit over the flats of the axle key. Add the thrust washer.
16. Fit the gear ring, the ball ring (with ball cage), the driver, the axle spring and the clutch spring cap, in that order.
17. Fit the right-hand cone and screw it up *finger-tight*. Then slacken it back half a turn and lock it in that position with the special washer and locknut. On no account must the cone be unscrewed more than half a turn, as that would throw the gear mechanism out of adjustment.
18. Remove the assembled mechanism from the vice and replace it the other way up.
19. Fit the secondary planet cage, with the pins upwards and the slots engaging the limbs of the low-gear dogs.
20. Fit the secondary planet pinions.
21. Fit the secondary sun pinion, with the recess downwards, so that the sun pinion engages with the square flats on the axle.
22. Fit the locating plate and tab washer and tighten the locknut. Turn over the edge of the washer on two opposite sides of the locknut.
23. Remove the assembled mechanism from the vice, hold it vertically with the planet cage uppermost and pour about two teaspoonfuls of good quality thin oil into the cage.
24. Insert the assembled mechanism into the hub shell and screw up the right-hand ball ring finger-tight only.
25. Make sure that the marks put on the ball ring and the hub flange before dismantling will register properly, and then screw up tightly.
26. Fit the left-hand cone, washer, and locknut in the arrangement noted when dismantling, and adjust the hub as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
27. Fit any special washers noted when dismantling the hub.
28. If the sprocket has been removed from the driver, fit the outer dust cap over the driver before replacing the sprocket, and see that the dust cap is properly centred on the flange of the driver. Replace the sprocket and the spacing washers in the arrangement noted when dismantling, and add the circlip.
29. Replace the wheel in the cycle frame and adjust the gear as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'

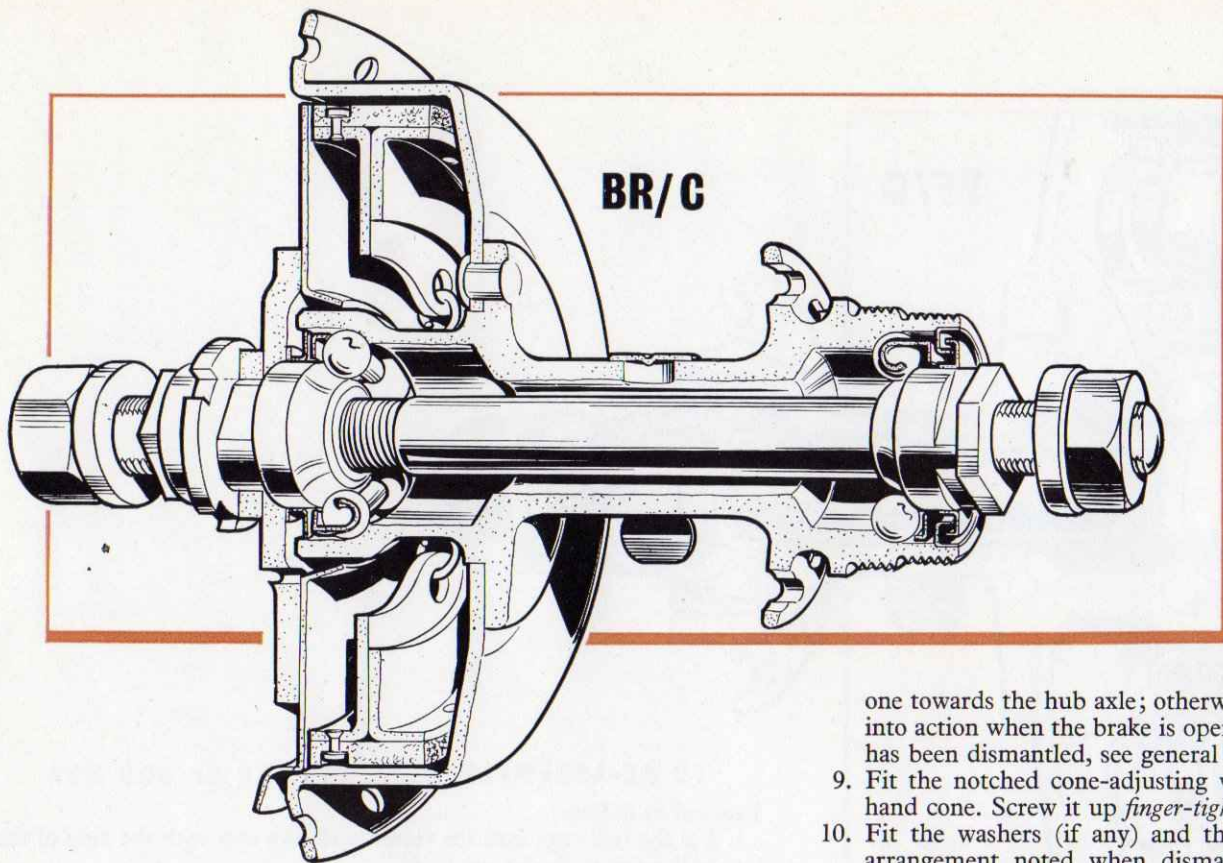
**STURMEY**  
**ARCHER**



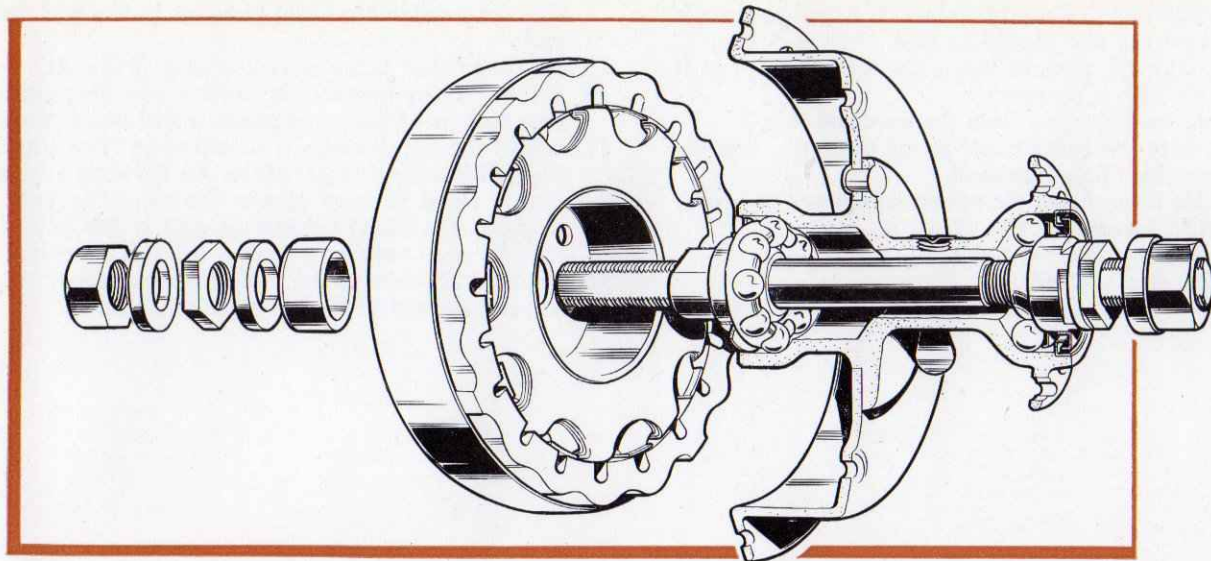
#### TO RE-ASSEMBLE A BF, BFC, BR or BRC HUB

Proceed as follows:

1. Fit the ball cage into the right-hand hub cup with the ring of the ball-retainer facing outwards.
2. Press in the channel-section dust cap, with the recess facing outwards, and gently hammer it home.
3. If the right-hand cone has been removed, replace it on the axle and screw it up tight against the shoulder.
4. Fit the right-hand spacing washers (if any) and cone locknut.
5. Pass the spindle through the hub shell, from the right-hand side.
6. Fit the ball cage into the left-hand hub cup, with the ring of the ball-retainer facing outwards.
7. Fit the (left-hand) cone and spacing washers.
8. Replace the brake anchor plate, complete with shoes, over the end of the left-hand cone. (If the shoes have been removed, make sure when replacing them that the longer of the two short arms on the cam spindle is pointing towards the drum surface and the shorter



- one towards the hub axle; otherwise only one shoe will be brought into action when the brake is operated.) If the brake shoe assembly has been dismantled, see general instructions.
9. Fit the notched cone-adjusting washer over the flats of the left-hand cone. Screw it up *finger-tight* and then slacken it half a turn.
  10. Fit the washers (if any) and the left-hand cone locknut in the arrangement noted when dismantling the hub, adjust the hub bearing as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'
  11. Replace the wheel in the cycle frame. The axle is flatted to prevent it from turning in the slots of the cycle frame—a very important point—and special lipped washers are supplied with BR/BRC hubs to engage in the frame slots. See that the brake plate of a rear brake is not strained when being connected to the anchor clip, which must be fixed so that it engages easily. The arm of a front brake must be a good fit in the clip. Brake arm clips must be tight on the frame or fork. If the machine is being laid up, put one or two drops of oil between the brake-plate and the cam lever, but not enough to penetrate into the brake drum.



### TO RE-ASSEMBLE THE GH6 HUB

Proceed as follows (see notes at end if hub was supplied before April 1952):

1. Fit the ball cage with the ball-retainer ring facing outwards, into the cup on the left-hand (the smaller) end of the hub shell. If a new ball-retainer is being fitted, the dust cap also should be new.
2. Fit the dust cap, with the channel facing outwards, and press it home (or tap lightly with a hammer).
3. If the dynamo-side cone has been removed from the spindle, replace it (LB357AZ) on the spindle and screw it up tight against the shoulder on the spindle.
4. Fit the ball cage, with the ball retainer ring facing outwards, into the cup on the dynamo-side of the hub shell.
5. Insert the spindle into the hub shell from the dynamo-side.
6. Fit the left-hand cone and adjust the hub bearings as described in 'The Fitting and Adjustment of Sturmev-Archer Hubs.' (A correctly adjusted wheel must have a slight trace of play at the rim.)
7. Fit the cone locknut and screw it up tight against the left-hand cone.
8. If the magnet and armature have been separated, take the magnet and keeper ring in the left hand and, with the right hand, lay the armature alongside it.
9. While holding the magnet with the chamfer facing outwards, push the armature and the keeper through so that the magnet slides from the keeper on to the armature.
10. Fit the card disc (carrying patent numbers) inside the cover plate, with its notches opposite the magnet notches.
11. Fit the cover plate over the magnet, chamfer inwards, making sure that the four holes in the cover plate are in line with the notches in the card and the magnet.
12. Fit the metal spacing ring into the hub shell.
13. Fit the shim washer over the cone.
14. Push the complete dynamo unit into the hub shell, making sure that the holes in the cover plate are in line with those in the hub shell.
15. Fit the magnet fixing screws, washers and nuts.
16. Fit the spacing cup, washer (if any) and dynamo cone locknut in the arrangement noted when dismantling.

### GH6 LIGHTING SETS ISSUED BEFORE APRIL 1952

Hubs supplied before April 1952 had the adjusting cone on the dynamo-side of the hub. These are assembled as follows:

1. Fit the left-hand cone (LB358Z) on the spindle and screw it up tight against the shoulder on the spindle.
2. Fit the cone locknut and screw it up tight against the cone.
3. Fit the ball cage, with the ball-retainer ring into the cup on the

left-hand (the smaller) end of the hub shell. If a ball-retainer is being fitted, the dust cap also should be new.

4. Fit the dust cap, with the channel facing outwards, and press it home (or tap lightly with a hammer).
5. Fit the spindle into the hub shell, from the left-hand side.
6. Fit the ball cage, with the ball-retainer facing outwards, into the cup on the dynamo-side of the hub shell.
7. Fit the dynamo-side cone. Assemble armature, magnet and cover plate as described in paragraphs 8 to 11 above.
12. Fit the metal spacing ring into the hub shell.
13. Fit the shim washer over the cone.
14. Push the complete dynamo unit into the hub shell, making sure

that the holes in the cover plate are in line with those in the hub shell.

15. Fit the magnet fixing screws, washers and nuts.
16. Fit the spacing washers, the notched adjusting washer and dynamo cone locknut in the arrangement noted when dismantling.
17. Adjust the hub bearing as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.' (A correctly adjusted wheel must have a slight trace of play at the rim. The pull of the magnet disguises the wheel adjustment, and if this point is not watched the ball races may be damaged through over-tightening.)
18. Replace the wheel in the cycle frame as described in 'The Fitting and Adjustment of Sturmey-Archer Hubs.'



**END OF SUB-SECTION 8.— SERVICE SECTION — STURMEY-ARCHER MASTER CATALOGUE**

# **SUNDRY DATA**

## **SPECIAL REPAIRS · GEAR RATIOS · AXLES INDICATORS AND TOOLS**

### **SPECIAL REPAIR FACILITIES**

To cover the few instances where repair work requires special tools or equipment which dealers cannot be expected to have available, a Service Replacement Scheme is operated through the Company's depots and provides prompt and efficient service at a low cost to the customer.

THE ITEMS COVERED BY THIS SCHEME ARE:

#### **1. RE-MAGNETIZING OF MAGNETS**

If a magnet only is received by us, it is necessary to fit a keeper ring for its return. A charge is made for this keeper ring which is returnable for credit at any time.

#### **2. REPLACEMENT OF ARMATURES**

All armatures are re-built with current pattern parts.

#### **3. TRIGGER CONTROLS**

Current pattern parts are used to replace obsolete trigger parts.

#### **4. RE-LINING OF BRAKE SHOES**

We recommend that brake shoes be returned to us for re-lining to ensure accurate setting.



# GEAR RATIO TABLES

## SW, SB, SG

Chain Wheel	Sprocket	26-inch Wheel			28-inch Wheel		
		1 <i>Low</i>	2 <i>Normal</i>	3 <i>High</i>	1 <i>Low</i>	2 <i>Normal</i>	3 <i>High</i>
<b>40</b>	16	47.0	65.0	90.0	50.6	70.0	96.9
	17	44.2	61.2	84.7	47.6	65.9	91.2
	18	41.8	57.8	80.0	44.9	62.2	86.1
	19	39.5	54.7	75.7	42.5	58.9	81.5
	20	37.6	52.0	72.0	40.5	56.0	77.5
	22	34.2	47.3	65.5	36.8	50.9	70.4
<b>44</b>	16	51.6	71.5	99.0	55.6	77.0	106.6
	17	48.6	67.3	93.2	52.4	72.5	100.3
	18	45.9	63.6	88.0	49.4	68.4	94.7
	19	43.5	60.2	83.3	46.8	64.8	89.7
	20	41.3	57.2	79.2	44.5	61.6	85.3
	22	37.6	52.0	72.0	40.5	56.0	77.5
<b>46</b>	16	54.0	74.7	103.4	58.2	80.5	111.4
	17	50.8	70.3	97.3	54.8	75.8	104.9
	18	48.0	66.4	91.9	51.6	71.5	99.0
	19	45.4	62.9	87.1	49.0	67.8	93.8
	20	43.2	59.8	82.8	46.5	64.4	89.1
	22	39.3	54.4	75.3	42.3	58.6	81.1
<b>48</b>	16	56.3	78.0	108.0	60.7	84.0	116.3
	17	53.1	73.5	101.7	57.1	79.1	109.5
	18	50.1	69.3	95.9	54.0	74.7	103.4
	19	47.5	65.7	90.9	51.1	70.7	97.9
	20	45.1	62.4	86.4	48.5	67.2	93.0
	22	41.0	56.7	78.5	44.1	61.1	84.6

## AW, AB, AG and TCW

Chain Wheel	Sprocket	26-inch Wheel			28-inch Wheel		
		1 <i>Low</i>	2 <i>Normal</i>	3 <i>High</i>	1 <i>Low</i>	2 <i>Normal</i>	3 <i>High</i>
<b>40</b>	16	48.8	65.0	86.7	52.5	70.0	93.3
	17	45.9	61.2	81.6	49.4	65.9	87.9
	18	43.4	57.8	77.1	46.6	62.2	82.9
	19	41.0	54.7	72.9	44.2	58.9	78.5
	20	39.0	52.0	69.3	42.0	56.0	74.7
	22	35.4	47.3	63.1	38.2	50.9	67.9
<b>44</b>	16	53.6	71.5	95.3	57.8	77.0	102.7
	17	50.5	67.3	89.8	54.4	72.5	96.7
	18	47.7	63.6	84.8	51.3	68.4	91.2
	19	45.2	60.2	80.3	48.6	64.8	86.4
	20	42.9	57.2	76.3	46.2	61.6	82.1
	22	39.0	52.0	69.3	42.0	56.0	74.7
<b>46</b>	16	56.0	74.7	99.6	60.4	80.5	107.3
	17	52.7	70.3	93.7	56.9	75.8	101.1
	18	49.8	66.4	88.5	53.6	71.5	95.3
	19	47.2	62.9	83.9	50.9	67.8	90.4
	20	44.9	59.8	79.7	48.3	64.4	85.9
	22	40.9	54.5	72.7	43.9	58.6	78.1
<b>48</b>	16	58.5	78.0	104.0	63.0	84.0	112.0
	17	55.1	73.5	98.0	59.3	79.1	105.5
	18	52.0	69.3	92.4	56.0	74.7	99.6
	19	49.3	65.7	87.6	53.0	70.7	94.3
	20	46.8	62.4	83.2	50.4	67.2	89.6
	22	42.5	56.7	75.6	45.8	61.1	81.5

# GEAR RATIO TABLES

## AM

Chain Wheel	Sprocket	26-inch Wheel			27-inch Wheel		
		1 <i>Low</i>	2 <i>Normal</i>	3 <i>High</i>	1 <i>Low</i>	2 <i>Normal</i>	3 <i>High</i>
<b>40</b>	14	64.3	74.2	85.6	66.9	77.1	88.8
	15	60.0	69.3	80.2	62.4	72.0	83.2
	16	56.4	65.0	75.1	58.5	67.5	77.9
	17	53.1	61.2	70.6	55.0	63.5	73.4
	18	50.1	57.8	66.8	52.1	60.0	69.3
	19	47.2	54.7	63.3	49.0	56.8	65.8
	20	45.0	52.0	60.2	46.6	54.0	62.4
	22	40.9	47.3	54.7	42.5	49.1	56.8
<b>44</b>	14	70.7	81.7	94.2	73.6	84.8	97.9
	15	66.2	76.3	87.9	68.7	79.2	91.3
	16	62.1	71.5	82.6	64.3	74.2	86.6
	17	58.3	67.3	77.7	60.7	69.9	80.8
	18	55.2	63.6	73.5	57.2	66.0	76.2
	19	51.1	60.2	69.6	54.0	62.5	72.3
	20	49.5	57.2	66.2	51.5	59.4	68.8
	22	45.0	52.0	60.7	46.7	54.0	62.4
<b>46</b>	14	74.0	85.4	98.6	77.0	88.7	102.5
	15	69.1	79.7	92.0	71.8	82.8	95.6
	16	64.8	74.7	86.2	67.3	77.6	89.5
	17	61.2	70.3	81.3	63.3	73.0	84.2
	18	57.6	66.4	76.8	59.8	69.0	79.6
	19	54.3	62.9	72.7	56.5	65.4	75.6
	20	51.8	59.8	69.2	53.8	62.1	71.9
	22	47.2	54.4	62.0	48.9	56.5	65.3
<b>48</b>	14	77.4	89.1	103.0	80.3	92.5	107.0
	15	72.1	83.2	96.0	75.0	86.4	100.0
	16	67.7	78.0	90.0	70.2	81.0	93.5
	17	63.7	73.5	85.0	66.1	76.2	88.0
	18	60.0	69.3	80.2	62.5	72.0	83.2
	19	56.8	65.7	76.0	59.0	68.2	78.9
	20	54.0	62.4	72.2	55.9	64.8	74.9
	22	49.1	56.7	65.6	51.9	58.9	68.1

## ASC

Chain Wheel	Sprocket	26-inch Wheel			27-inch Wheel		
		1 <i>Low</i>	2 <i>Normal</i>	3 <i>High</i>	1 <i>Low</i>	2 <i>Normal</i>	3 <i>High</i>
<b>40</b>	14	55.7	66.8	74.2	57.8	69.4	77.1
	15	52.0	62.4	69.3	54.0	64.8	72.0
	16	48.8	58.5	65.0	50.7	60.8	67.5
	17	45.9	55.1	61.2	47.7	57.2	63.5
	18	43.4	52.0	57.8	45.0	54.0	60.0
	19	41.0	49.2	54.7	42.6	51.1	56.8
	20	39.0	46.8	52.0	40.5	48.6	54.0
	22	35.4	42.6	47.3	36.8	44.2	49.1
<b>44</b>	14	61.3	73.5	81.7	63.6	76.3	84.8
	15	57.3	68.7	76.3	59.4	71.2	79.2
	16	53.6	64.3	71.5	55.7	66.8	74.2
	17	50.5	60.6	67.3	52.4	62.9	69.9
	18	47.7	57.2	63.6	49.5	59.4	66.0
	19	45.2	54.2	60.2	46.8	56.2	62.5
	20	42.9	51.5	57.2	44.5	53.4	59.4
	22	39.0	46.8	52.0	40.5	48.6	54.0
<b>46</b>	14	64.0	76.9	85.4	66.5	79.9	88.7
	15	59.8	71.7	79.7	62.1	74.5	82.8
	16	56.0	67.2	74.7	58.2	69.8	77.6
	17	52.7	63.3	70.3	54.8	65.7	73.0
	18	49.8	59.8	66.4	51.7	62.1	69.0
	19	47.2	56.6	62.9	48.9	58.8	65.4
	20	44.9	53.0	59.8	46.5	55.9	62.1
	22	40.9	49.0	54.4	42.4	50.9	56.5
<b>48</b>	14	66.8	80.1	89.1	69.3	83.2	92.5
	15	62.4	74.9	83.2	64.8	77.8	86.4
	16	58.5	70.2	78.0	60.7	72.9	81.0
	17	55.1	66.1	73.5	57.1	68.6	76.2
	18	52.0	62.4	69.3	54.0	64.8	72.0
	19	49.3	59.1	65.7	51.1	61.4	68.2
	20	46.8	56.2	62.4	48.6	58.3	64.8
	22	42.5	51.0	56.7	44.2	53.0	58.9

# GEAR RATIO TABLES

## AC

Chain Wheel	Sprocket	26-inch Wheel			27-inch Wheel		
		1 Low	2 Normal	3 High	1 Low	2 Normal	3 High
40	14	68.5	74.2	79.1	71.2	77.1	82.2
	15	64.0	69.3	73.9	66.4	72.0	76.8
	16	60.0	65.0	69.3	62.3	67.5	72.0
	17	56.5	61.2	65.2	58.6	63.5	67.7
	18	53.4	57.8	61.6	55.2	60.0	64.0
	19	50.5	54.7	58.3	52.4	56.8	60.6
	20	48.0	52.0	55.4	49.8	54.0	57.6
	22	43.7	47.3	50.5	45.5	49.1	52.4
	44	14	75.4	81.7	87.1	78.3	84.8
15		70.4	76.3	81.4	73.1	79.2	84.4
16		66.0	71.5	76.2	68.5	74.2	79.1
17		62.1	67.3	71.8	64.5	69.9	74.6
18		58.7	63.6	67.8	60.9	66.0	70.4
19		55.6	60.2	64.2	57.7	62.5	66.6
20		52.8	57.2	61.0	54.8	59.4	63.3
22		48.0	52.0	55.5	49.8	54.0	57.6
46		14	78.8	85.4	91.0	81.8	88.7
	15	73.6	79.7	85.0	76.4	82.8	88.3
	16	69.0	74.7	79.6	71.6	77.6	82.8
	17	64.9	70.3	75.0	67.4	73.0	77.8
	18	61.3	66.4	70.8	63.7	69.0	73.6
	19	58.1	62.9	67.0	60.4	65.4	69.7
	20	55.2	59.8	63.8	57.3	62.1	66.2
	22	50.3	54.4	58.1	52.2	56.5	60.3
	48	14	82.2	89.1	95.0	85.4	92.5
15		76.8	83.2	88.7	79.7	86.4	92.2
16		72.0	78.0	83.2	74.8	81.0	86.4
17		67.8	73.5	78.4	70.3	76.2	81.3
18		64.0	69.3	73.9	66.4	72.0	76.8
19		60.6	65.7	70.0	62.9	68.2	72.7
20		57.6	62.4	66.5	59.8	64.8	69.1
22		52.3	56.7	60.5	54.4	59.9	62.9

## FW and FG

Chain Wheel	Sprocket	26-inch Wheel				28-inch Wheel			
		1 Bot'm	2 Low	3 N'mal	4 High	1 Bot'm	2 Low	3 N'mal	4 High
40	14	49.5	58.7	74.3	84.1	53.3	63.2	80.0	101.3
	15	46.2	54.7	69.3	87.7	49.8	59.0	74.7	94.6
	16	43.3	51.3	65.0	82.3	46.7	55.3	70.0	88.6
	17	40.8	48.3	61.2	77.5	43.9	52.1	65.9	83.4
	18	38.5	45.7	57.8	73.2	41.5	49.1	62.2	78.7
	19	36.5	43.2	54.7	69.2	39.3	46.5	58.9	74.6
	20	34.7	41.1	52.0	65.8	37.3	44.2	56.0	70.9
	22	31.5	37.4	47.3	59.9	33.9	40.2	50.9	64.4
	44	14	54.4	64.5	81.7	103.5	58.6	69.5	88.0
15		50.8	60.3	76.3	96.6	54.7	64.9	82.1	104.0
16		47.7	56.5	71.5	90.5	51.3	60.8	77.0	97.5
17		44.9	53.2	67.3	85.2	48.3	57.3	72.5	91.8
18		42.4	50.2	63.6	80.5	45.6	54.0	68.4	86.6
19		40.1	47.6	60.2	76.2	43.2	51.2	64.8	82.0
20		38.1	45.2	57.2	72.4	41.1	48.6	61.6	78.0
22		34.7	41.1	52.0	65.8	37.3	44.2	56.0	70.9
46		14	56.9	67.5	85.4	108.1	61.3	72.7	92.0
	15	53.1	63.0	79.7	100.9	57.2	67.9	85.9	108.7
	16	49.8	59.0	74.7	94.5	53.7	63.6	80.5	101.9
	17	46.9	55.5	70.3	89.0	50.5	59.9	75.8	95.9
	18	44.3	52.5	66.4	84.0	47.7	56.5	71.5	90.5
	19	41.9	49.7	62.9	79.6	45.2	53.6	67.8	85.8
	20	39.9	47.2	59.8	75.7	42.9	50.9	64.4	81.5
	22	36.3	43.1	54.5	69.0	39.1	46.3	58.6	74.2
	48	14	59.3	70.4	89.1	112.8	64.0	75.8	96.0
15		55.4	65.7	83.2	105.3	59.7	70.8	89.6	113.4
16		52.0	61.6	78.0	98.7	56.0	66.4	84.0	106.3
17		49.0	58.0	73.5	93.0	52.7	62.5	79.1	100.2
18		46.2	54.7	69.3	87.7	49.8	59.0	74.7	94.6
19		43.8	51.9	65.7	83.2	47.1	55.8	70.7	89.5
20		41.6	49.3	62.4	79.0	44.8	53.1	67.2	85.0
22		37.8	44.8	56.7	71.8	40.7	48.3	61.1	77.3

# GEAR RATIO TABLES

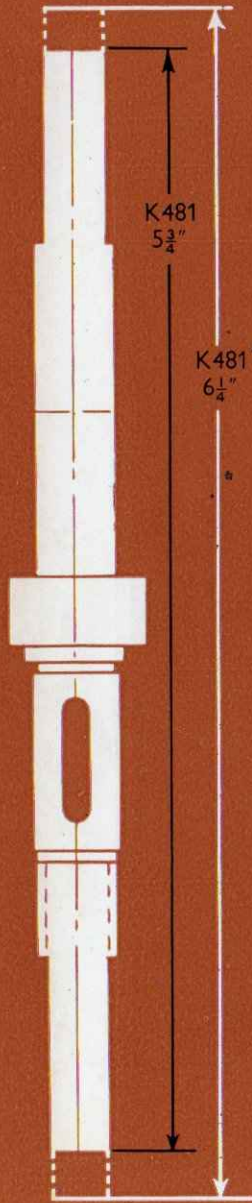
## FM

Chain Wheel	Sprocket	26-inch Wheel				27-inch Wheel			
		1	2	3	4	1	2	3	4
		Bot'm	Low	N'mal	High	Bot'm	Low	N'mal	High
<b>40</b>	14	49.5	63.6	74.2	83.4	51.4	66.0	77.1	86.7
	15	46.2	59.4	69.3	77.9	48.0	61.8	72.0	81.0
	16	43.3	55.7	65.0	73.1	45.0	57.8	67.5	75.9
	17	40.8	52.5	61.2	68.9	42.3	54.4	63.5	71.4
	18	38.5	49.6	57.8	65.0	40.0	51.4	60.0	67.5
	19	36.5	46.5	54.7	61.5	37.9	48.6	56.8	63.6
	20	34.7	44.6	52.0	58.5	36.0	46.2	54.0	60.7
	22	31.5	40.4	47.3	53.3	32.7	42.1	49.1	58.3
	<b>44</b>	14	54.5	70.1	81.7	91.9	56.5	72.6	84.8
15		50.9	65.4	76.3	85.8	52.8	67.8	79.2	89.1
16		47.7	61.3	71.5	80.4	49.5	63.6	74.2	83.5
17		44.9	57.7	67.3	75.7	46.6	59.9	69.9	78.6
18		42.4	54.5	63.6	71.5	44.0	56.5	66.0	74.2
19		40.1	51.6	60.2	68.2	41.7	53.6	62.5	70.3
20		38.1	49.1	57.2	64.3	39.6	50.9	59.4	66.8
22		34.7	44.6	52.0	58.5	36.0	46.2	54.0	60.8
<b>46</b>		14	56.9	73.2	85.4	96.1	59.1	76.0	88.7
	15	53.1	68.4	79.7	89.7	55.2	70.9	82.8	93.1
	16	49.8	64.1	74.7	84.0	51.7	66.5	77.6	87.3
	17	46.9	60.3	70.3	79.1	48.7	62.4	73.0	81.9
	18	44.3	56.9	66.4	74.7	46.0	59.1	69.0	77.6
	19	41.6	53.9	62.9	70.8	43.6	55.8	65.4	73.3
	20	39.9	51.3	59.8	67.3	41.4	53.2	62.1	69.8
	22	36.3	46.7	54.4	61.3	37.7	48.4	56.5	63.6
	<b>48</b>	14	59.4	76.4	89.1	100.2	61.7	79.3	92.5
15		55.5	71.3	83.2	93.6	57.6	74.0	86.4	97.2
16		52.0	66.9	78.0	87.7	54.0	69.4	81.0	91.0
17		49.0	63.0	73.5	82.7	50.8	65.3	76.2	85.0
18		46.2	59.4	69.3	78.0	48.0	61.7	72.0	81.0
19		43.8	56.3	65.7	73.9	45.5	58.4	68.2	76.7
20		41.6	53.5	62.4	70.2	43.2	55.5	64.8	72.9
22		37.8	48.6	56.7	63.8	39.8	50.4	58.9	66.3

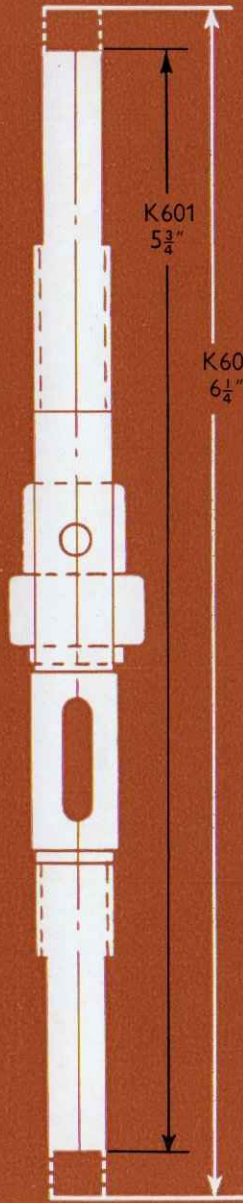
## FC

Chain Wheel	Sprocket	26-inch Wheel				27-inch Wheel			
		1	2	3	4	1	2	3	4
		Bot'm	Low	N'mal	High	Bot'm	Low	N'mal	High
<b>40</b>	14	55.7	66.8	74.2	81.4	57.8	69.4	77.1	84.1
	15	52.0	62.4	69.3	75.7	54.0	64.8	72.0	78.6
	16	48.8	58.5	65.0	70.9	50.7	60.8	67.5	73.6
	17	45.9	55.1	61.2	66.8	47.7	57.2	63.5	69.3
	18	43.4	52.0	57.8	63.2	45.0	54.0	60.0	65.4
	19	41.0	49.2	54.7	59.7	42.6	51.1	56.8	62.0
	20	39.0	46.8	52.0	56.7	40.5	48.6	54.0	58.9
	22	35.4	42.6	47.3	51.6	36.8	44.2	47.1	53.6
	<b>44</b>	14	61.3	73.5	81.7	89.2	63.6	76.3	84.8
15		57.3	68.7	76.3	83.3	59.4	71.2	79.2	86.5
16		53.6	64.3	71.5	78.1	55.7	66.8	74.2	80.9
17		50.5	60.6	67.3	73.4	52.4	62.9	69.9	76.2
18		47.7	57.2	63.6	69.3	49.5	59.4	66.0	72.0
19		45.2	54.2	60.2	65.7	46.8	56.2	62.5	68.2
20		42.9	51.5	57.2	62.4	44.5	53.4	59.4	64.8
22		39.0	46.8	52.0	56.7	40.5	48.6	54.0	58.9
<b>46</b>		14	64.0	76.9	85.4	93.2	66.5	79.9	88.7
	15	59.8	71.7	79.7	87.0	62.1	74.5	82.8	90.4
	16	56.0	67.2	74.7	81.5	58.2	69.8	77.6	84.7
	17	52.7	63.3	70.3	76.8	54.8	65.7	73.0	79.7
	18	49.8	59.8	66.4	72.4	51.7	62.1	69.0	75.3
	19	47.2	56.6	62.9	68.6	48.9	58.8	65.4	71.4
	20	44.9	53.0	59.8	65.3	46.5	55.9	62.1	67.8
	22	40.9	49.0	54.4	59.4	42.4	50.9	56.5	61.6
	<b>48</b>	14	66.8	80.1	89.1	97.2	69.3	83.2	92.5
15		62.4	74.9	83.2	90.8	64.8	77.8	86.4	94.3
16		58.5	70.2	78.0	85.1	60.7	72.9	81.0	88.5
17		55.1	66.1	73.5	80.2	57.1	68.6	76.2	83.1
18		52.0	62.4	69.3	75.6	54.0	64.8	72.0	78.5
19		49.3	59.1	65.7	71.7	51.1	61.4	68.2	74.4
20		46.8	56.2	62.4	68.1	48.6	58.3	64.8	70.7
22		42.5	51.0	56.7	61.8	44.2	53.0	58.9	64.3

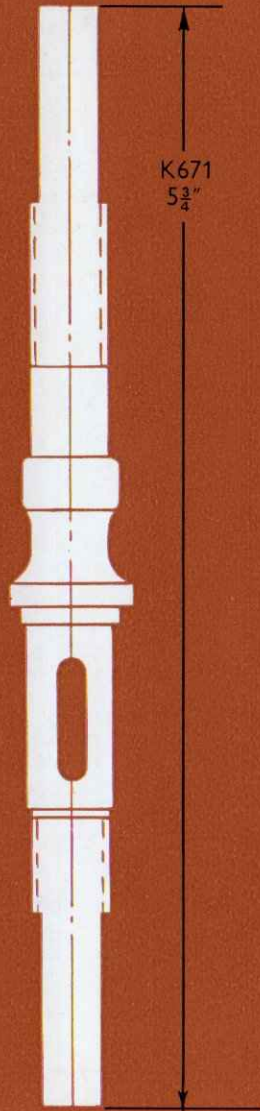
# AXLE CHART FOR 3- AND 4-SPEED HUBS



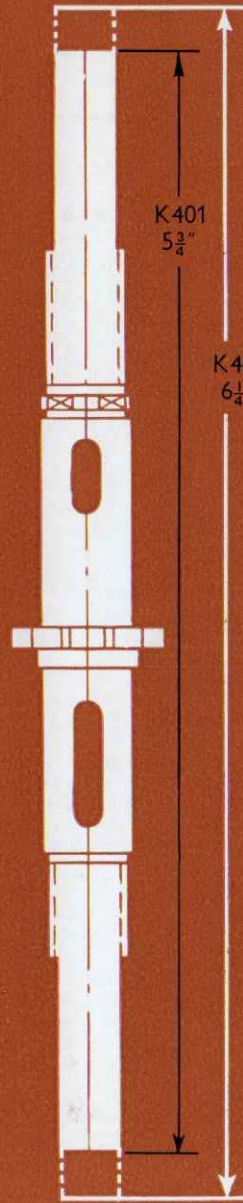
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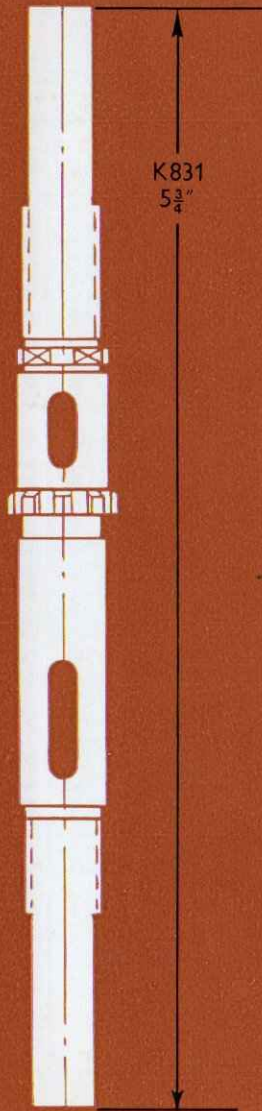
AW AB AG



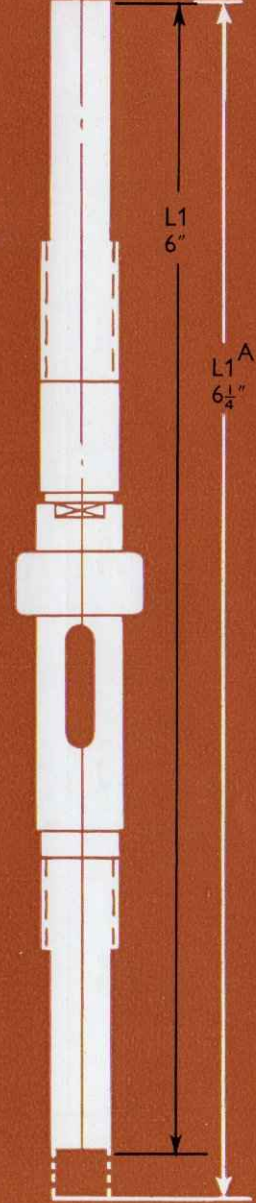
AM



FW FG



AC ASC FC FM



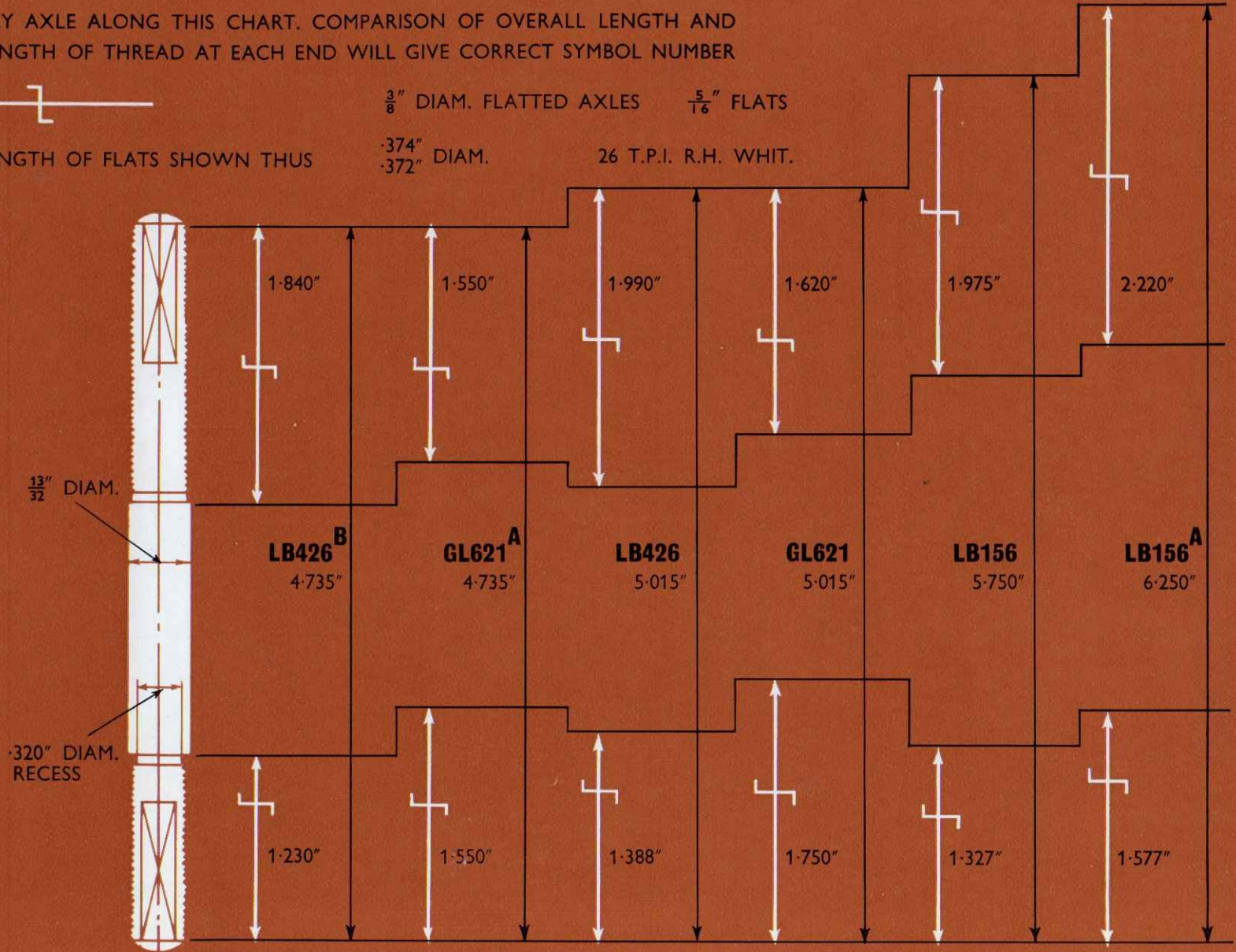
SW SB SG

# AXLE CHART FOR BRAKES AND DYNOHUBS—TYPE BF, BR AND GH6

LAY AXLE ALONG THIS CHART. COMPARISON OF OVERALL LENGTH AND LENGTH OF THREAD AT EACH END WILL GIVE CORRECT SYMBOL NUMBER

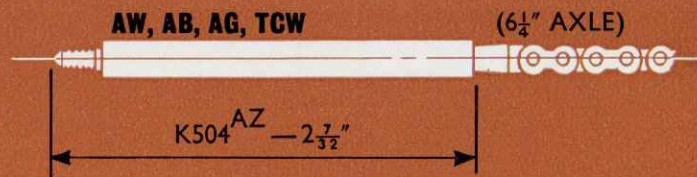
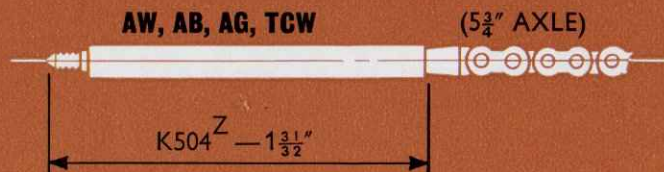
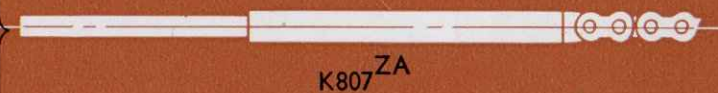
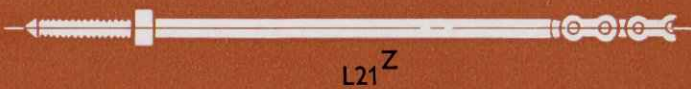
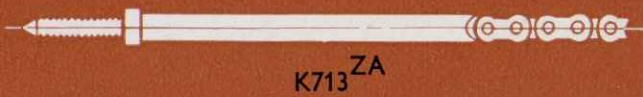
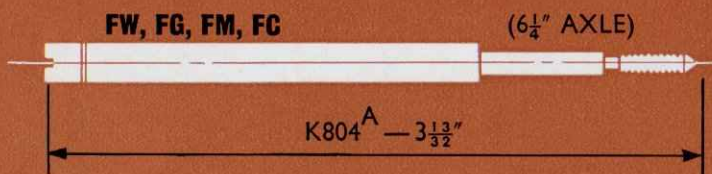
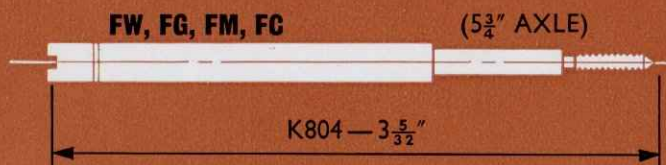
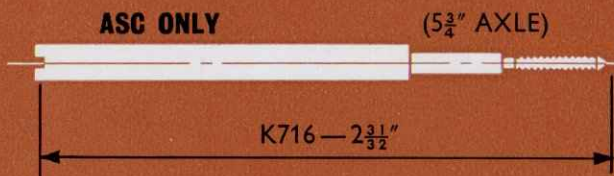
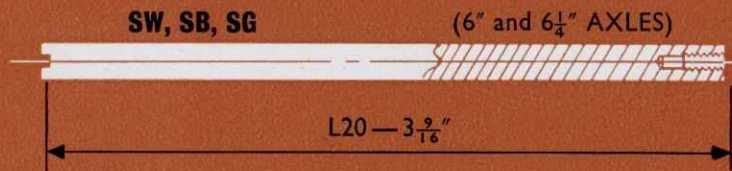
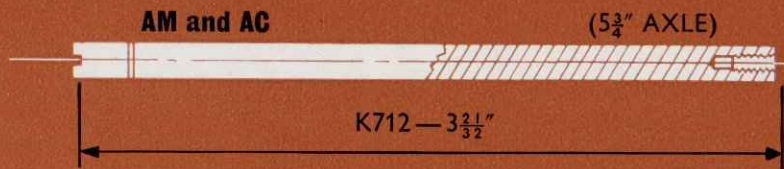
  
 LENGTH OF FLATS SHOWN THUS

$\frac{3}{8}$ " DIAM. FLATTED AXLES     $\frac{5}{16}$ " FLATS  
 $\cdot 374$ " DIAM.    26 T.P.I. R.H. WHIT.



# INDICATOR

# COUPLING



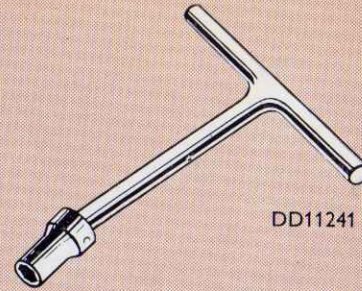
# TOOLS



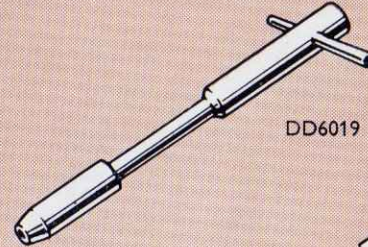
DD10565



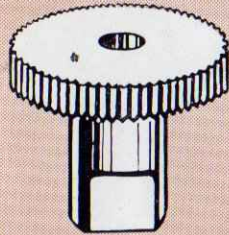
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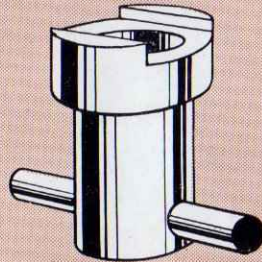
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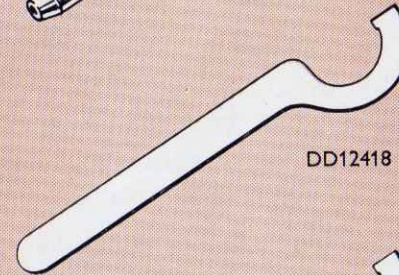
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DD11182



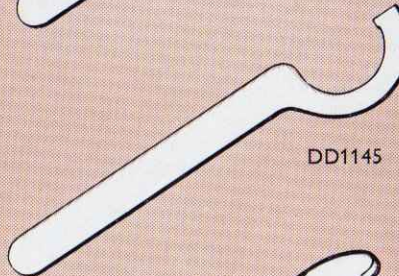
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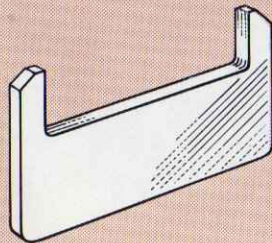
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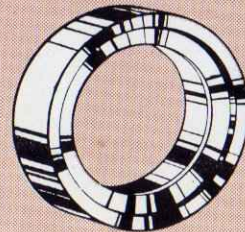
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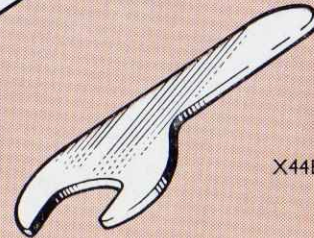
DD1145



DD12987



GD495



X44B

## 'DYNOHUB'

- DD6019 Tube Spanner (6 B.A.)
- DD6839 Spanner for tightening fixed cone
- GD495 Keeper Ring
- DD11241 Box Spanner for Ball Cup Fixing Screws, FG
- DD10565 Tool for removing Left-Hand Ball Cup (3-speed) slotted AG type

## 3- and 4-SPEED GEARS

- X44B Spanner for Axle Nuts and Plain Cones
- DD911 Tool for removing Left-Hand Ball Cup (3-speed)
- DD11182 Tool for removing Left-Hand Ball Cup (4-speed)
- DD1145 "C" Spanner for Right-Hand Ball Ring, A Range
- DD12403 Hollow Punch, S Range
- DD12418 "C" Spanner, S Range
- DD12987 Tool for removing Left-Hand Ball Cup SB and SG



## **GUARANTEE**

**S**TURMEY-ARCHER products are guaranteed against defects of manufacture for a period of 12 months from the date of sale provided they remain during that period the property of the first retail purchaser. This guarantee does not apply to damage caused by wear and tear, misuse or neglect.

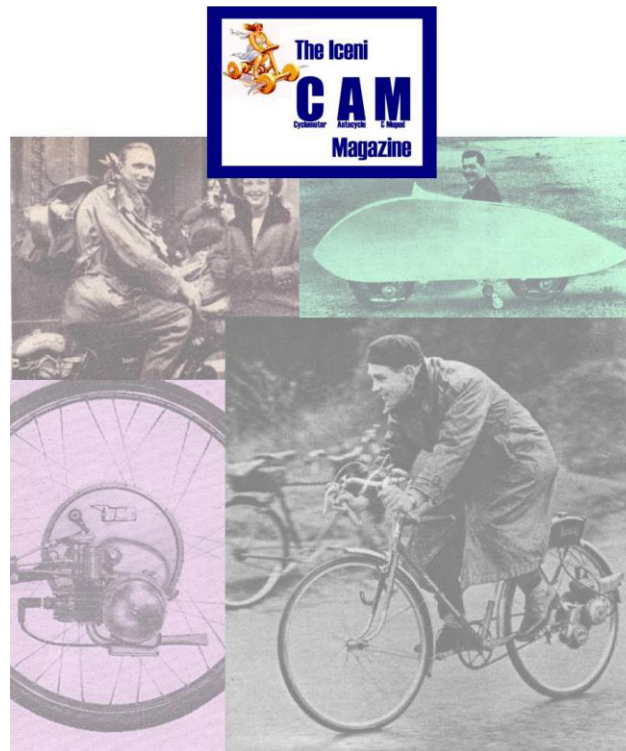
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This guarantee extends only to those of our products which are purchased either direct from us or from one of our duly appointed dealers.

**STURMEY-ARCHER GEARS LIMITED.**

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