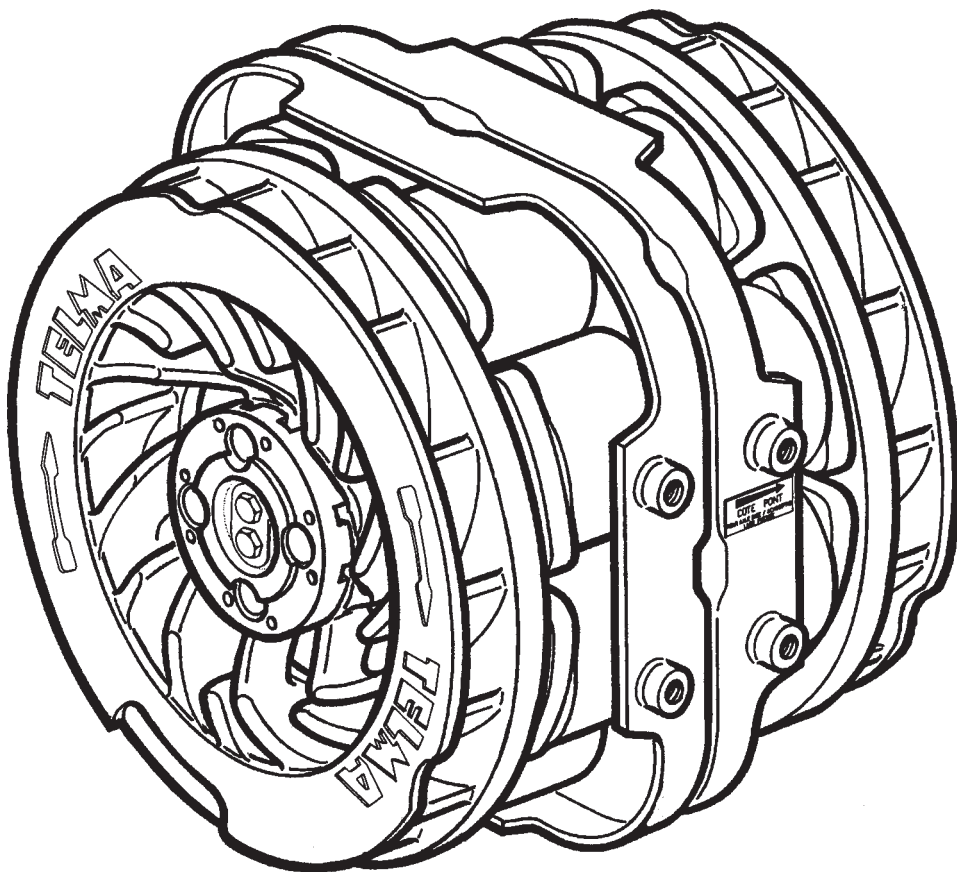


# Telma

## SPARE PARTS CATALOGUE AC – SERIES AXIAL RETARDER INSULATED EARTH RETURN



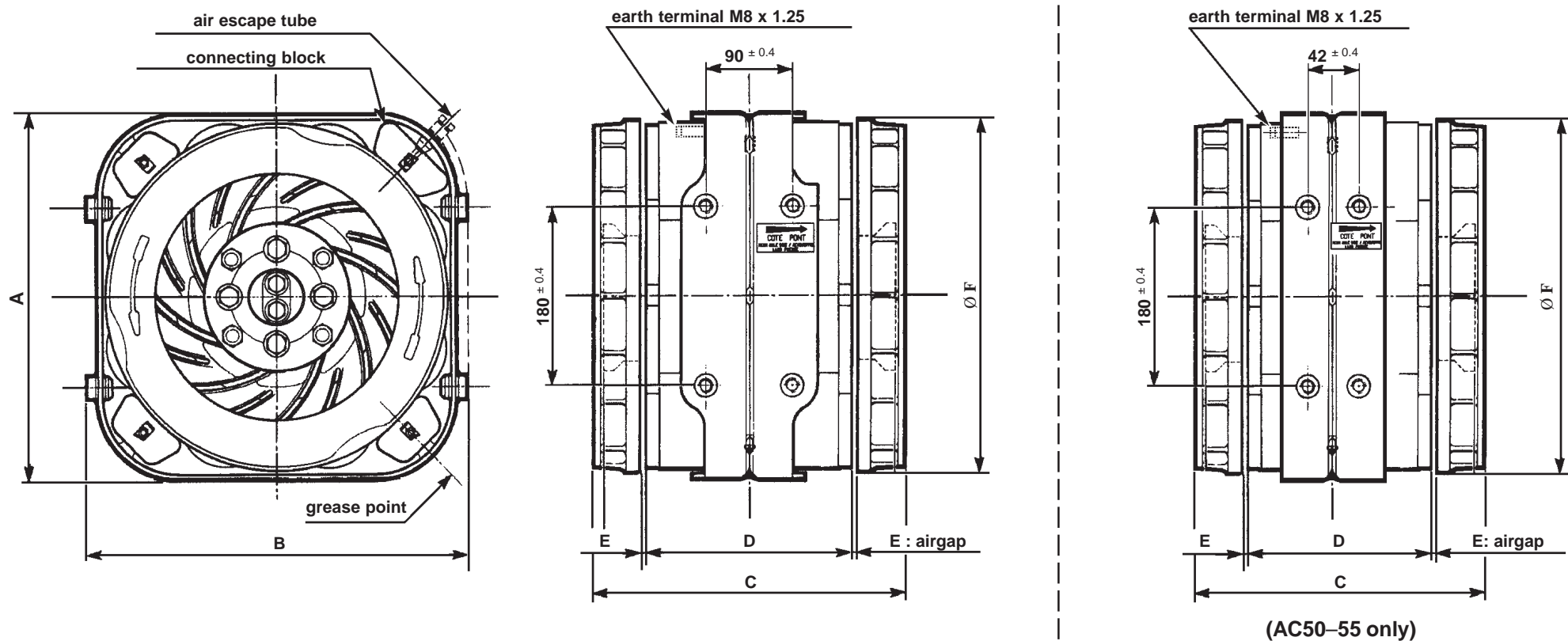
# TABLE OF CONTENTS

Technical specifications of the AC series retarders .....	2
Identification of the retarders by their dimensions (mm) .....	3
Indexes, designation and dimensions for identification of the coupling flanges .....	4-5
Stator assembly .....	6-8
Coil assembly .....	9
Retarder shaft assembly .....	10-12
SAE coupling flanges with metric fasteners .....	13-14
SAE coupling flanges with anglo-american .....	15
70° cross-serrated coupling flanges and SCANIA yokes .....	16
DIN flat coupling flanges .....	17-18
12 V and 24 V wiring diagrams – Insulated earth return .....	19-22
Junction block assembly – VD 407 390 .....	23
Connecting block and earth terminal – VD 408 573 .....	24
Greasing .....	25
Crimping tool .....	25
Wiring repair kit .....	25
Protection of terminals against corrosion .....	25
Replacement of a coil .....	26

## Technical specifications of the AC series retarders

RETARDER MODEL		AC50-55	AC50-65	AC50-80	AC51-00	AC61-25	AC61-25	AC61-35	AC61-60	AC72-00	AC82-70	AC83-00	AC83-31	
RETARDER CODE		CN20	CN23	CP23	CM23	CE36	CE37	CE23	CF23	CH23	CU23	CT23	CL23	
MAXIMUM BRAKING TORQUE	Nm	500	650	800	1000	1250	1250	1350	1600	2000	2700	3000	3300	
	lb-ft	368	479	589	737	921	921	995	1179	1474	1990	2211	2432	
TOTAL MASS	kg	104	134	134	153	172	192	229	229	278	333	380	395	
	lb	229	295	295	337	379	423	505	505	613	734	838	871	
Stator mass	kg	72	100	100	119	122	142	162	162	194	247	294	309	
	lb	158	220	220	262	269	313	357	357	428	544	647	680	
Rotors mass (with flanges)	kg	32	34	34	34	50	50	67	67	84	86	86	86	
	lb	70	75	75	75	110	110	148	148	185	190	190	190	
AIR-GAP <sup>0</sup> <sub>-0.15 mm / -.006 inch</sub>	mm	0.8	1.5	0.8	0.8	1	1	1.9	1.2	1.2	1.2	1.5	1.5	
	inch	.031	.059	.031	.031	.039	.039	.075	.047	.047	.047	.059	.059	
RESISTANCE PER STAGE ± 5% at 20 °C (68 °F)	12 V	Ω	0.65	0.3	0.3	0.27	0.24	0.4	0.19	0.19	0.19	0.18	/	
	24 V	Ω	2.6	1.2	1.2	1.08	0.97	1.6	0.75	0.75	0.75	0.7	0.6	0.57
RESISTANCE PER COIL ± 5% at 20 °C (68 °F)		Ω	0.65	1.2	1.2	1.08	0.97	1.6	0.75	0.75	0.75	0.7	0.6	0.57
AMPERAGE PER STAGE ± 5% at 20 °C (68 °F)	12 V	A	18.2	40	40	45.6	48.8	30	63	63	63.6	67.5	80	/
	24 V	A	9.1	20	20	22.8	24.4	15	31.5	31.5	31.8	33.8	40	42
INSULATION RESISTANCE (Retarder dry)		MΩ	≥ 1	≥ 1	≥ 1	≥ 1	≥ 1	≥ 1	≥ 1	≥ 1	≥ 1	≥ 1	≥ 1	

# Identification of the retarders by their dimensions (mm)



Dimension	RETARDER											
	AC50-55 CN20. ...	AC50-65 CN23. ...	AC50-80 CP23. ...	AC51-00 CM23. ...	AC61-25 CE36. ...	AC61-25 CE37. ...	AC61-35 CE23. ...	AC61-60 CF23. ...	AC72-00 CH23. ...	AC82-70 CU23. ...	AC83-00 CT23. ...	AC83-31 CL23. ...
A	363	363	363	363	470	470	470	470	495	530	530	530
B	383	383	383	383	496	496	496	496	519	554	554	554
C	220	321	321	321	266	266	358	358	383	418	418	418
D	124	219.5	219.5	219.5	154	154	220	220	239	280.2	280.2	280.2
E	0.8	1.5	0.8	0.8	1	1	1.9	1.2	1.2	1.2	1.5	1.5
$\varnothing F$	352	352	352	352	424	424	446	446	480	500	500	500

Note : all the dimensions are given in millimeters 1mm = .039 inch.

# Indexes, designation and dimensions for identification of the coupling flanges

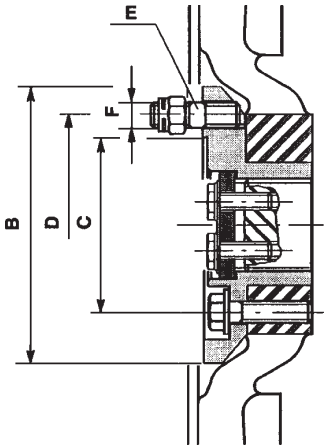


Figure I

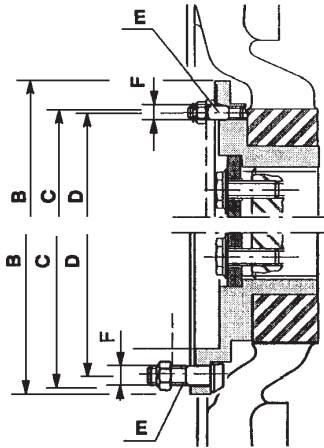


Figure II

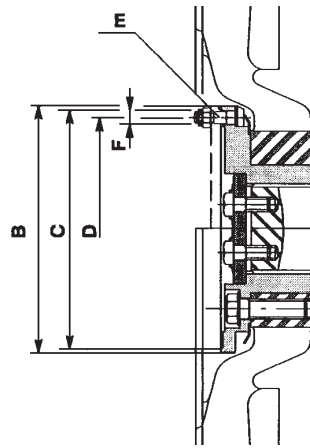


Figure III

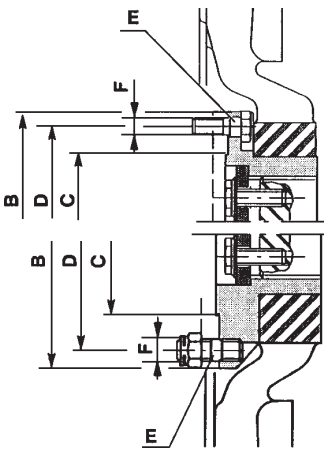


Figure IV

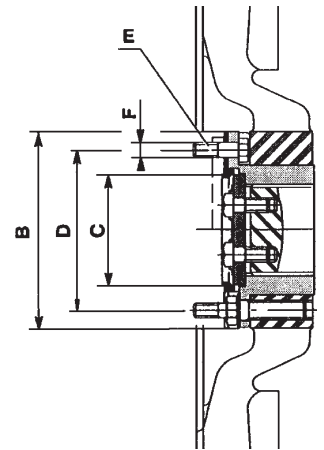


Figure V

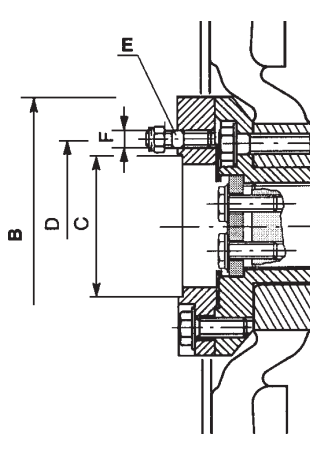


Figure VI

Ind.	Description	Fig.	B	C	D	E	F
103	SAE 1300, metric fasteners	I	151	60.32	79.37	4	10
104	SAE 1400, metric fasteners	I	151	69.85	95.25	4	12
105	SAE 1500, metric fasteners	I	151	95.25	120.67	4	14
106	SAE 1600, metric fasteners	II	174.6/203.2	168.22	155.52	8	10
107	SAE 1700, metric fasteners	III	203.2	196.85	184.12	8	10
108	SAE 1800, metric fasteners	III	203.2	196.85	184.12	12	11
110*	SAE 1800, metric fasteners	III	203.2	196.85	184.12	12	11
117	DIN Ø 150	IV/V	150	90	130	8	12
120	DIN Ø 180	IV	180	110	155.5	8	14
123	Mercedes-Benz Ø 120	VI	150	82.5	101.6	6	10
124	Mercedes-Benz Ø 130	I	130	82.56	112	8	10
134	DIN Ø 120	IV	130	75	101.5	8	10
139	DIN Ø 180	IV	180	110	155.5	8	16
140	DIN Ø 180	IV	180	110	155.5	10	16
141	DIN Ø 165	IV	165	95	140	8	16
145	SAE 1700 R reinforced	III	203.2	196.85	184.12	12	10
152	SAE 1710	III	203.2	196.85	184.12	8	9.52
154	SAE 1350/1410	I	151	69.85	95.25	4	11.1
155	SAE 1480/1550	I	151	95.25	120.67	4	12.7
157	SAE 1760/1810	III	203.2	196.85	184.12	12	11.1
158	SAE 1550/1610	II	174.6/203.2	168.25	155.52	8	9.52

**\* Index 110 :**

Similar to index 108, but rear propshaft securing is offset by 45°, anti-clockwise, in relation to front propshaft.

**Dimensions (mm)**

- B** external diameter of the retarder coupling flange
- C** centering diameter
- D** drilling diameter (P.C.D.) or distance between fasteners
- E** number of securing screws or holes
- F** diameter of securing screws or studs

# Indexes, designation and dimensions for identification of the coupling flanges

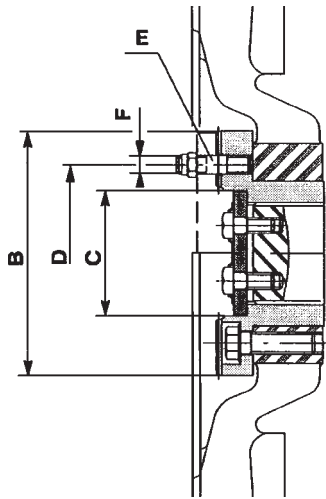


Figure VII

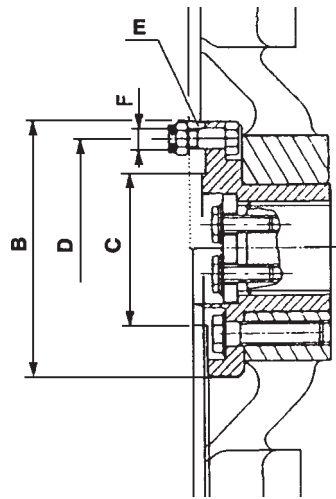


Figure VIII

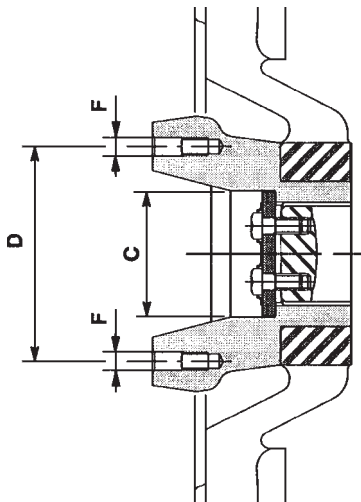


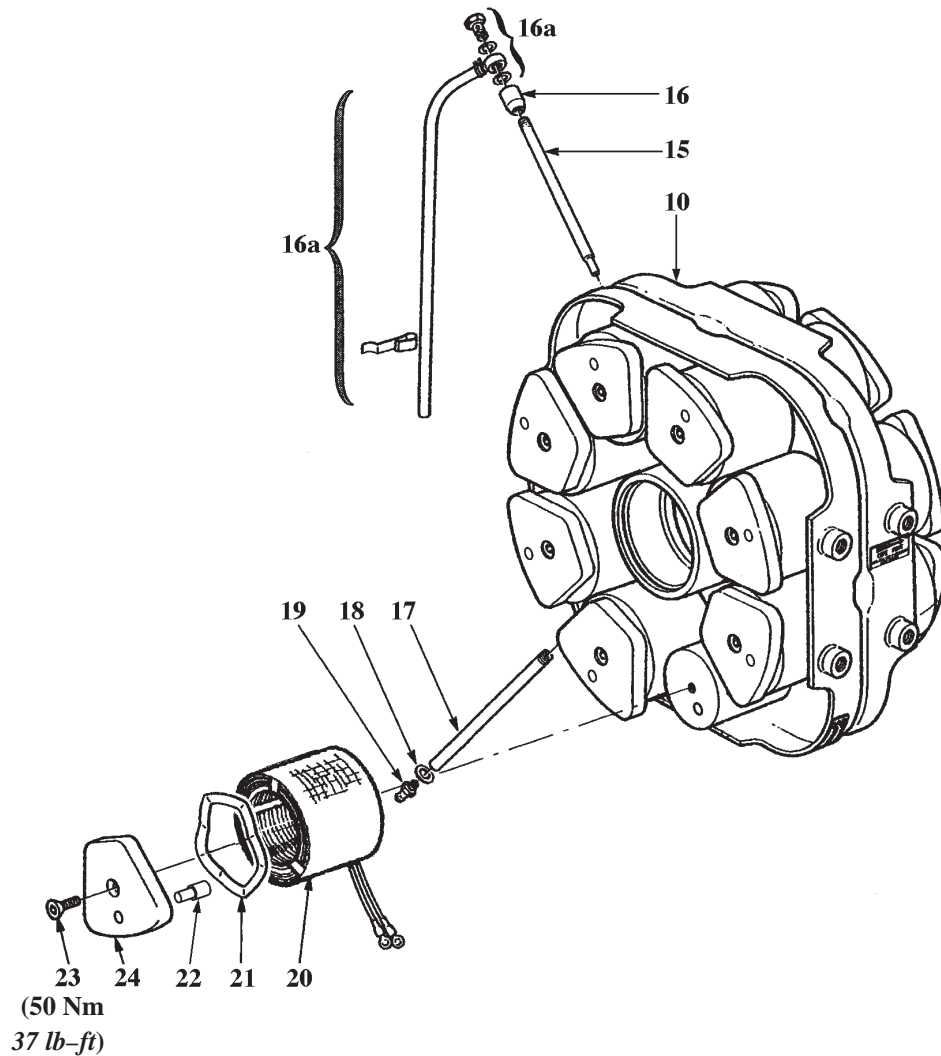
Figure IX

Ind.	Description	Fig.	B	C	D	E	F
128	Cross-serration Ø 120	VII	150 (AC50-65 to AC51-00) 165 (AC61-35 / AC61-60)		100	4	10
129	Cross-serration Ø 150	VII	150 (AC50-65 to AC51-00) 165 (AC61-25 to AC61-60) 180 (AC72-00 to AC83-00)		130	4	12
135	Nissan diesel Ø 165	VIII	165	90	80 x 116	4	16
136	SCANIA P40/P400	IX			131.9x85	4	12
137	SCANIA P50/P500	IX			125.7x95	4	12
138	Cross-serration Ø 180	VII	180		150	4	14

## Dimensions (mm)

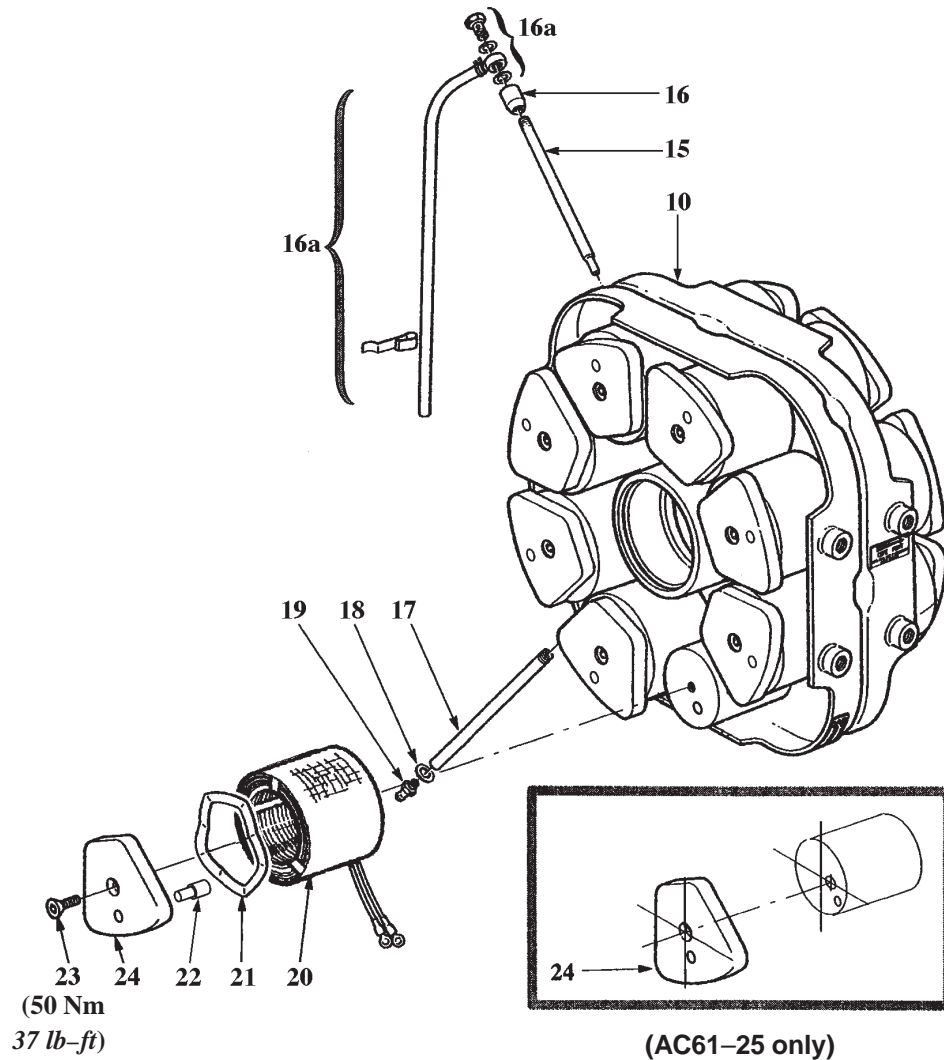
- B** external diameter of the retarder coupling flange
- C** centering diameter
- D** drilling diameter (P.C.D.) or distance between fasteners
- E** number of securing screws or holes
- F** diameter of securing screws or studs

# Stator assembly



Item	Description	Qty	RETARDER CODE		
			AC50-55 CN20. ...	AC50-65 AC50-80 CN23. ... CP23. ...	AC51-00 CM23. ....
10	Stator assembly 12 Volts 24 Volts	1	VB107714 VB107715	VB107716 VB107717	VB107718 VB107719
15	Air escape tube	1	VB500320	VB500320	VB500320
16	Threaded bush	1	VB501150	VB501150	VB501150
16a	Set air escape tube extension	1	JZ100110	JZ100110	JZ100110
17	Lubricating tube	1	VB500220	VB500220	VB500220
18	Flat washer	1	VF200100	VF200100	VF200100
19	Grease nipple	1	VF500100	VF500100	VF500100
20	Coil or coil assembly (see details on page 9)	16	VD310594	VD210120	VD210380
21	Pressure washer	16	VB501430	VB501430	VB501430
22	Locating dowel	16	VF210650	VF210650	VF210650
23	90° countersunk cap socket screw (internal hexagonal head screw)	16	VF109100	VF109100	VF109100
24	Pole shoe	16	VB514786	VB506990	VB506990
	Wiring assembly	1	see pages 21 and 22	see pages 19 and 20	see pages 19 and 20
	Connecting block and earth terminal	1	see page 24	see page 24	see page 24
	Junction block assembly	3	see page 23	see page 23	see page 23

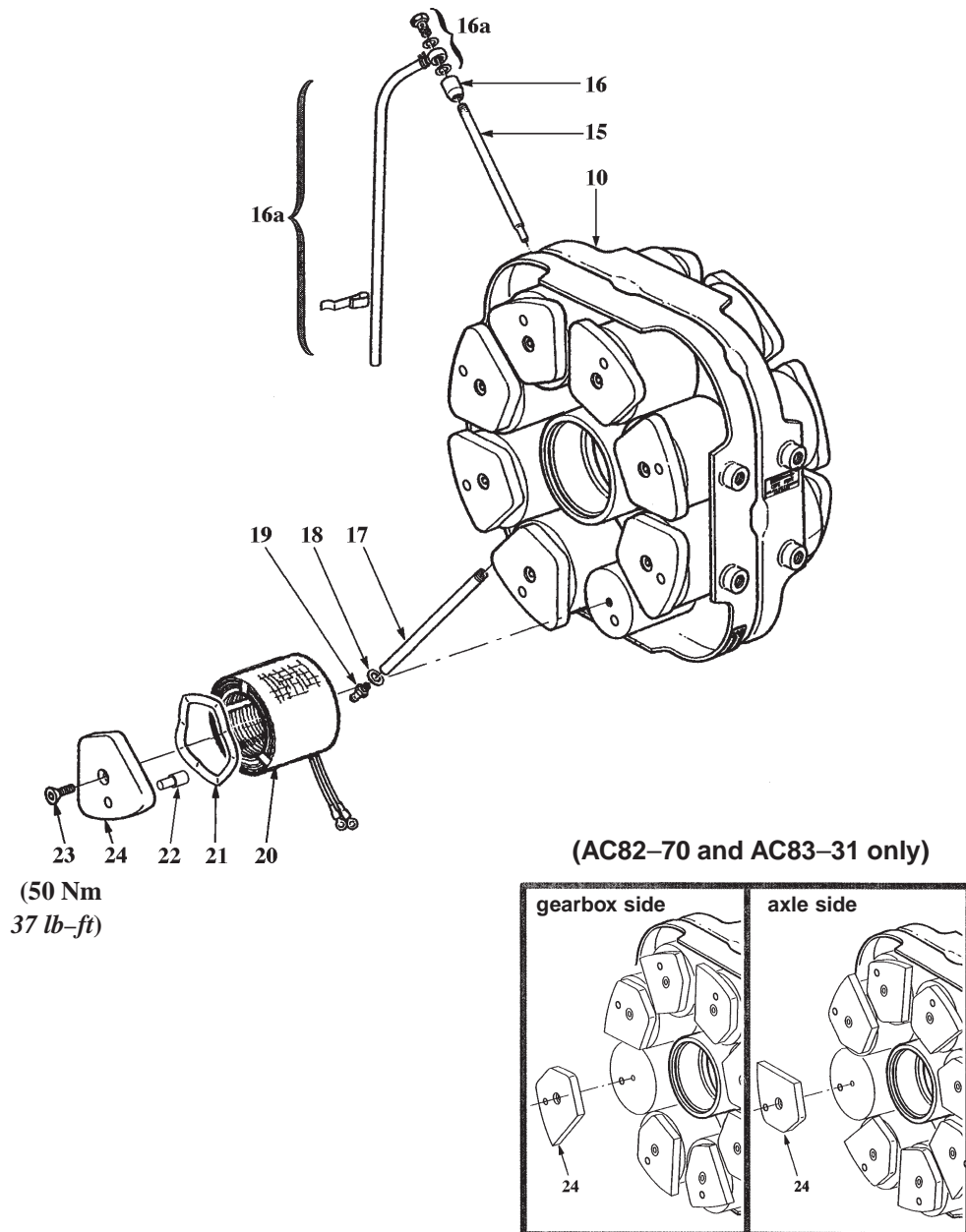
# Stator assembly



Item	Description	Qty	RETARDER CODE		
			AC61-25 CE36. ...	AC61-25 CE37. ...	AC61-35 AC61-60 CE23. ... CF23. ...
10	Stator assembly 12 Volts 24 Volts	1	VB107720 VB107721	VB107723	VB107724 VB107725
15	Air escape tube	1	VB500330	VB500330	VB500330
16	Threaded bush	1	VB501150	VB501150	VB501150
16a	Set air escape tube extension	1	JZ100110	JZ100110	JZ100110
17	Lubricating tube	1	VB500260	VB500260	VB500260
18	Flat washer	1	VF200100	VF200100	VF200100
19	Grease nipple	1	VF500100	VF500100	VF500100
20	Coil or coil assembly (see details on page 9)	16	VD310495	VD310485	VD210130
21	Pressure washer	16	VB501470	VB501470	VB501470
22	Locating dowel	16	VF210650	VF210650	VF210650
23	90° countersunk cap socket screw (internal hexagonal head screw)	16	VF109100	VF109100	VF109100
24	Pole shoe	16	VB515076	VB515076	VB500520
	Wiring assembly	1	see pages 19 and 20	see pages 19 and 20	see pages 19 and 20
	Connecting block and earth terminal	1	see page 24	see page 24	see page 24
	Junction block assembly	3	see page 23	see page 23	see page 23



# Stator assembly



Item	Description	Qty	RETARDER CODE			
			AC72-00 CH23. ...	AC82-70 CU23. ...	AC83-00 CT23. ...	AC83-31 CL23. ...
10	Stator assembly 12 Volts 24 Volts	1	VB107726 VB107727	VB107728 VB107729	VB107730 VB107731	VB107733
15	Air escape tube	1	VB500340	VB512520	VB512520	VB512520
16	Threaded bush	1	VB501150	VB501150	VB501150	VB501150
16a	Set air escape tube extension	1	JZ100110	JZ100110	JZ100110	JZ100110
17	Lubricating tube	1	VB500250	VB512510	VB512510	VB512510
18	Flat washer	1	VF200100	VF200100	VF200100	VF200100
19	Grease nipple	1	VF500100	VF500100	VF500100	VF500100
20	Coil or coil assembly (see details on page 9)	16	VD210140	VD310484	VD310435	VD310596
21	Pressure washer	16	VB501440	VB509770	VB509770	VB509770
22	Locating dowel	16	VF210650	VF210650	VF210650	VF210650
23	90° countersunk cap socket screw (internal hexagonal head screw)	16	VF109100	VF109100	VF109100	VF109100
24	Pole shoe	16	VB500530		VB500540	
	gearbox side	8		VB515311		VB515311
	axle side	8		VB515312		VB515312
	Wiring assembly	1	see pages 19 and 20	see pages 19 and 20	see pages 19 and 20	see pages 19 and 20
	Connecting block and earth terminal	1	see page 24	see page 24	see page 24	see page 24
	Junction block assembly	3	see page 23	see page 23	see page 23	see page 23

# Coil assembly

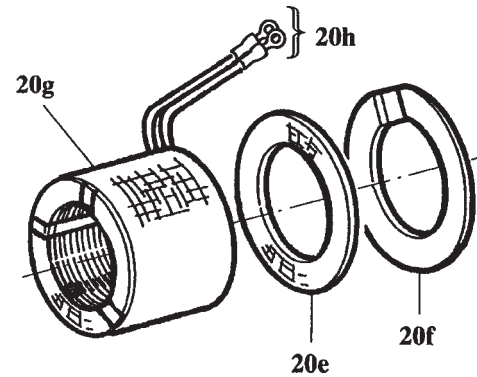


Figure I

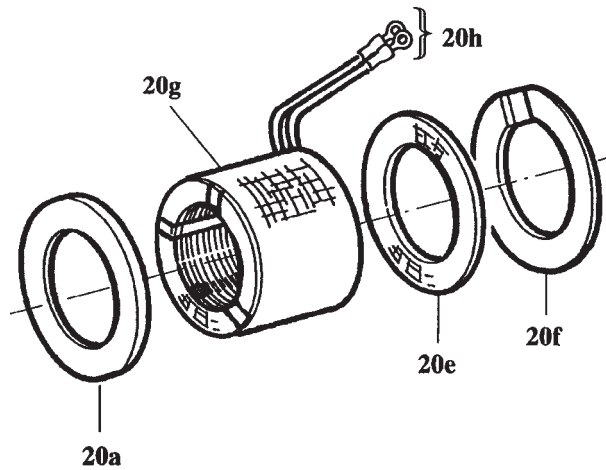
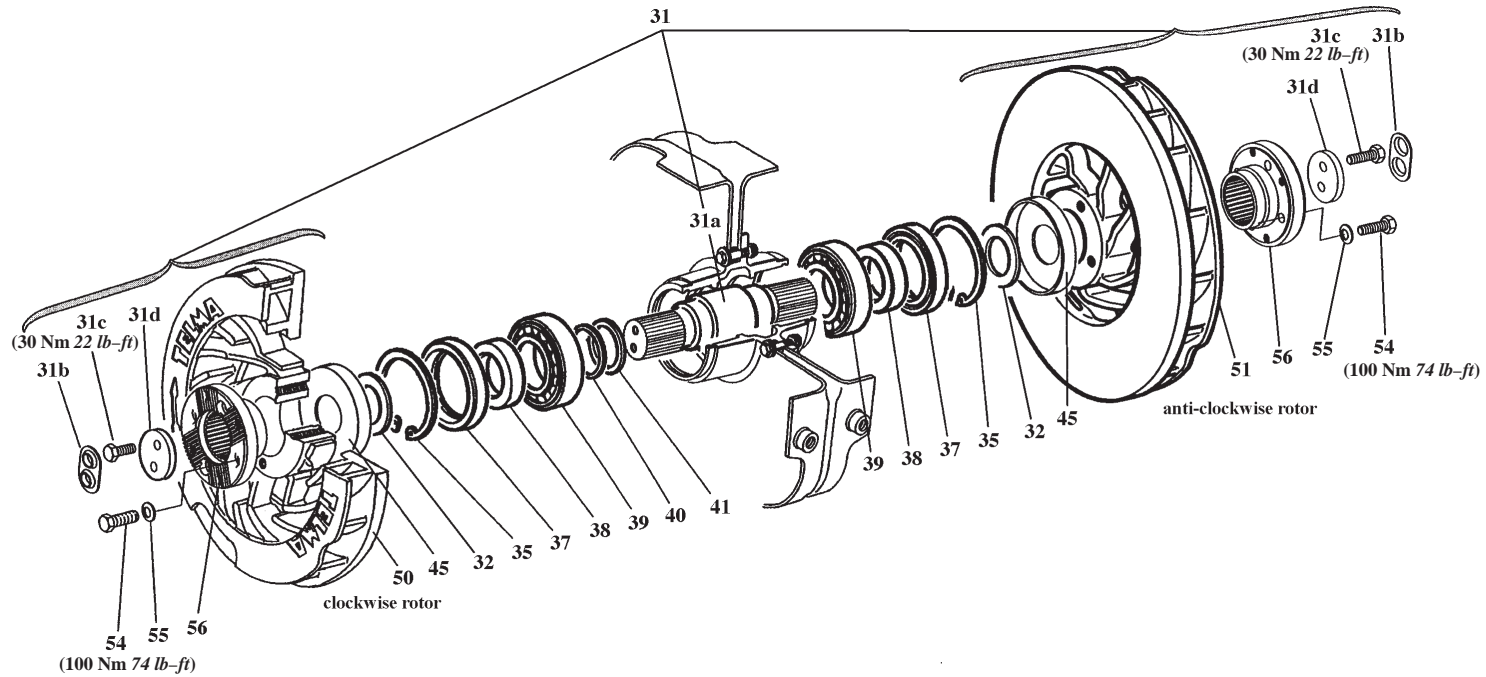


Figure II

RETARDER	Fig.						
		Coil assembly including items 20a to 20h	Coil end protective cover item 20a	Coil end insulator item 20e	Protective washer on housing side item 20f	External protective sleeve item 20g	Set of 16 terminals item 20h
AC50-55	I	VD310594		VD503582	VD503699	VB202036 *	VD407872
AC50-65 AC50-80	I	VD210120		VD503582	VD503699	VB202036 *	VD407872
AC51-00	I	VD210380		VD503582	VD503699	VB202036 *	VD407872
AC61-25 Type 36	I	VD310495		VD503589	VD503611	VB202036 *	VD407872
AC61-25 Type 37	I	VD310485		VD503589	VD503611	VB202036 *	VD407872
AC61-35 AC61-60	I	VD210130		VD503589	VD503611	VB202036 *	VD407872
AC72-00	I	VD210140		VD500360	VD503763	VB202036 *	VD407872
AC82-70	I	VD310484		VD503613	VD503545	VB202036 *	VD407872
AC83-00	II	VD310435	VD503559	VD503614	VD503545	VB202036 *	VD407872
AC83-31	II	VD310596	VD503753	VD503613	VD503545	VB202036 *	VD407872

\* set of 8 pieces, to be cut to the dimensions of the coils.

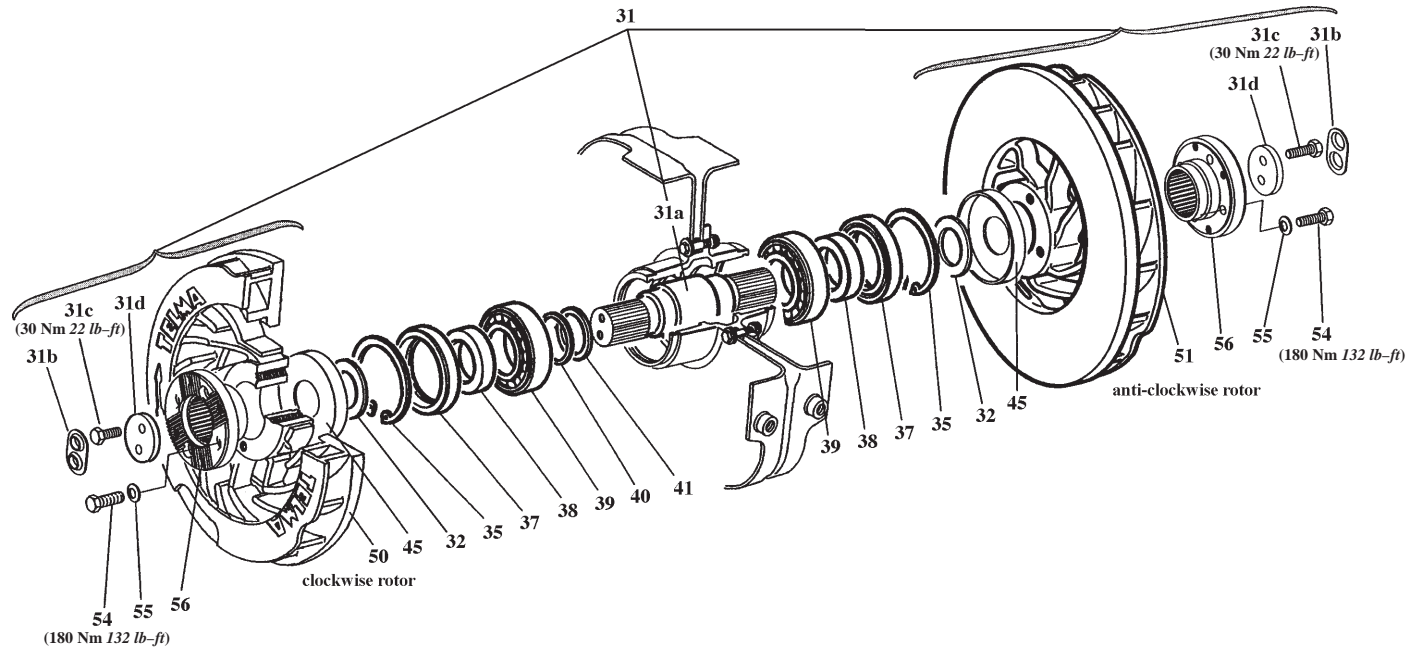
# Retarder shaft assembly



Item	Description	Qty	RETARDER	
			AC50-55	AC50-65 AC50-80 AC51-00
31	Shaft assembly, including :	1	VB107300	VB107301
31a	shaft with countersunk holes	1	supplied under the assembly part number	supplied under the assembly part number
31b	tab washer	2	VB515160	VB515160
31c	shaft end screw	4	VF100380	VF100380
31d	plate	2	VB515157	VB515157
32	Set of air-gap adjusting shims	1	VB100150	VB100150
35	Snap ring for bore	2	VF220110	VF220110
37	Double lip seal	2	VF400330	VF400330
38	Spacer ring	2	VB514808	VB507100

Item	Description	Qty	RETARDER	
			AC50-55	AC50-65 AC50-80 AC51-00
39	Tapered roller bearing	2	VF310150	VF310150
40	Set of bearing adjusting shims	1	VB201920	VB201920
41	Spacer ring	1	VB201920	VB201920
45	Dust	2	VB515167	VB515167
50	Clockwise rotor	1	VB514788	VB501810
51	Anti-clockwise rotor	1	VB514789	VB501820
54	Coupling flange securing screw to rotor	8	VF100540	VF100500
55	Spring washer for flange securing screw	8	VF200600	VF200600
56	Coupling flange	2	see pages 13 to 18	see pages 13 to 18
	Grease (see page 25)	1	VJ200340	VJ200340

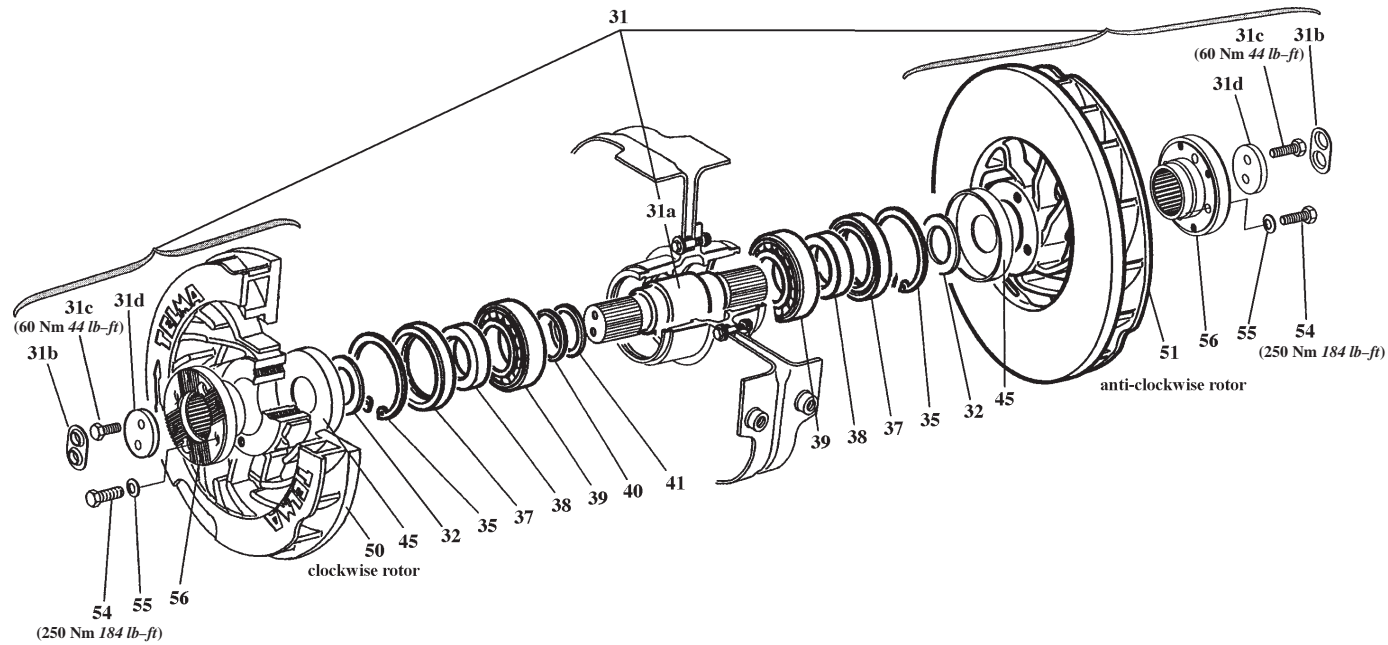
# Retarder shaft assembly



Item	Description	Qty	RETARDER	
			AC61-25	AC61-35 AC61-60
31	Shaft assembly, including :	1	VB107303	VB107304
31a	shaft with countersunk holes	1	supplied under the assembly part number	supplied under the assembly part number
31b	tab washer	2	VB515160	VB515160
31c	shaft end screw	4	VF100380	VF100380
31d	plate	2	VB515158	VB515158
32	Set of air-gap adjusting shims	1	VB100160	VB100160
35	Snap ring for bore	2	VF220130	VF220130
37	Double lip seal	2	VF400320	VF400320
38	Spacer ring	2	VB514991	VB514991
39	Tapered roller bearing	2	VF310130	VF310130

Item	Description	Qty	RETARDER	
			AC61-25	AC61-35 AC61-60
40	Set of bearing adjusting shims	1	VB201930	VB201930
41	Spacer ring	1	VB201930	VB201930
45	Dust	2	VB514990	VB514990
50	Clockwise rotor	1	VB515041	VB501830
51	Anti-clockwise rotor	1	VB515042	VB501840
54	Coupling flange securing screw to rotor	8	VF100820	VF100800
54	Coupling flange securing screw to rotor <b>only for indexes 134 and 136</b>	8	VF108330	VF108330
55	Spring washer for flange securing screw	8	VF200820	VF200820
55	Spring washer for flange securing screw <b>only for index 134</b>	8	VF200810	VF200810
56	Coupling flange	2	see pages 13 to 18	see pages 13 to 18
	Grease (see page 25)	1	VJ200340	VJ200340

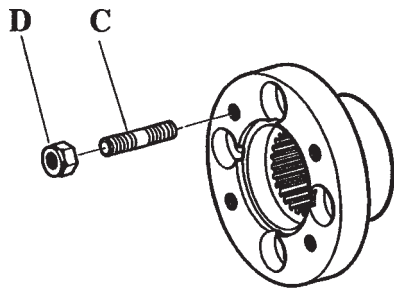
# Retarder shaft assembly



Item	Description	Qty	RETARDER	
			AC72-00	AC82-70 AC83-00 AC83-31
31	Shaft assembly, including :	1	VB107306	VB107307
31a	<i>shaft with countersunk holes</i>	1	supplied under the assembly part number	supplied under the assembly part number
31b	<i>tab washer</i>	2	VB515119	VB515119
31c	<i>shaft end screw</i>	4	VF100500	VF100500
31d	<i>plate</i>	2	VB515159	VB515159
32	Set of air-gap adjusting shims	1	VB100170	VB100170
35	Snap ring for bore	2	VF220130	VF220170
37	Lip seal (IE VITON type)	2	VF400320	VF400340
38	Spacer ring	2	VB515265	VB501390
39	Tapered roller bearing	2	VF310170	VF310160

Item	Description	Qty	RETARDER	
			AC72-00	AC82-70 AC83-00 AC83-31
40 41	Set of bearing adjusting shims Spacer ring	1	VB201940	VB201950
45	Dust	2	VB515264	VD503754
50	Clockwise rotor	1	VB501870	VB514838
51	Anti-clockwise rotor	1	VB501880	VB514839
54	Coupling flange securing screw to rotor	8	VF101100	VF101100
54	Coupling flange securing screw to rotor <b>only for indexes 136 and 137</b>	4 4	VF108260 VF108320	VF108260 VF108320
55	Spring washer for flange securing screw	8	VF200830	VF200830
56	Coupling flange	2	see pages 13 to 18	see pages 13 to 18
	Grease (see page 25)	1	VJ200340	VJ200340

# SAE coupling flanges with metric fasteners



INDEXES { 103  
104  
105

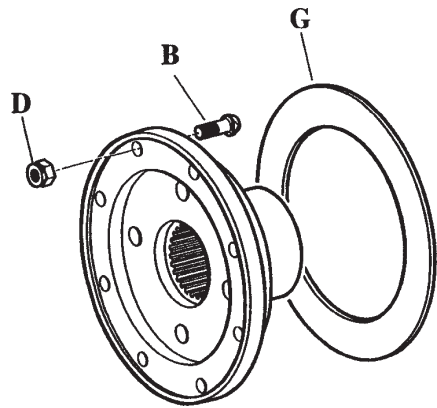
Figure I

INDEX	RETARDER	Fig.				
			Fasteners* assembly	Screw (item B)	Stud (item C)	Nut (item D)
103	AC50-55	I	VB107085		VF131150 Qty: 4	VF120140 Qty: 4
104	AC50-55	I	VB107086		VF131300 Qty: 4	VF120160 Qty: 4
	AC50-65 AC50-80 AC51-00	I	VB100940		VF131300 Qty: 4	VF120160 Qty: 4
	AC50-65 AC51-00	I	VB100950		VF131420 Qty: 4	VF120170 Qty: 4
105	AC61-35 AC61-60	I	VB100980		VF131420 Qty: 4	VF120170 Qty: 4

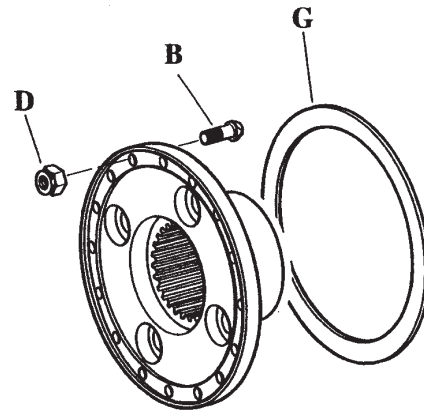
\* including the items C and D.

CAUTION : After degreasing the parts, the studs must be fitted to the coupling flange with LOCTITE 270.

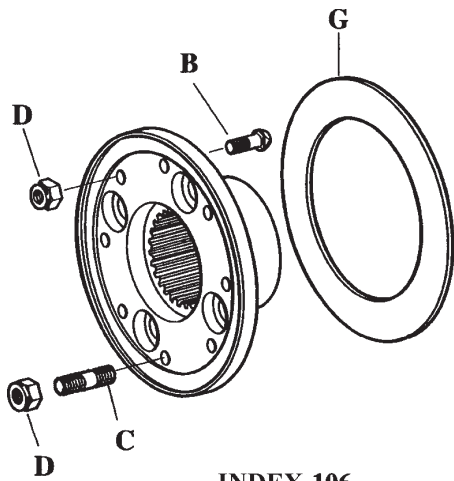
# SAE coupling flanges with metric fasteners



INDEX 106  
Figure II



INDEXES {  
107  
108  
110  
145  
Figure III



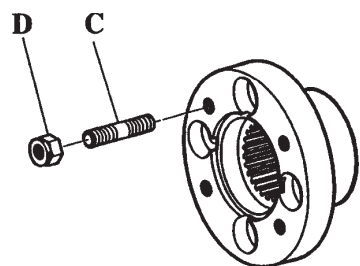
INDEX 106  
Figure IV

Index	RETARDER	Fig.					to be ordered separately
			Fasteners* assembly	Screw (item B)	Stud (item C)	Nut (item D)	Retaining plate (item G)
106	AC50-65 AC50-80 AC51-00	II	VB102920	VF119210 Qty: 8		VF120140 Qty: 8	VB515031 Qty: 1
	AC61-25	IV	VB107199	VF119230 Qty: 8		VF120140 Qty: 8	VB515030 Qty: 1
	AC61-35 AC61-60	IV	VB107190	VF119230 Qty: 8		VF120140 Qty: 8	VB515031 Qty: 1
	AC72-00 AC82-70	IV	VB107173		VF131100 Qty: 8	VF120140 Qty: 8	
107	AC61-60	III	VB107191	VF119230 Qty: 8		VF120140 Qty: 8	VB515031 Qty: 8
	AC72-00	III	VB107174	VF119230 Qty: 8		VF120140 Qty: 8	VB502830 Qty: 1
108	AC61-25	III	VB107201	VF119120 Qty: 12		VF120150 Qty: 12	VB515030 Qty: 1
	AC61-35 AC61-60	III	VB107192	VF119120 Qty: 12		VF120150 Qty: 12	VB515031 Qty: 1
	AC72-00 AC82-70 AC83-00 AC83-31	III	VB107176	VF119120 Qty: 12		VF120150 Qty: 12	VB502830 Qty: 1
	AC72-00 AC82-70 AC83-00 AC83-31	III	VB107176	VF119120 Qty: 12		VF120150 Qty: 12	VB502830 Qty: 1
145	AC61-35 AC61-60	III	VB107193	VF119230 Qty: 12		VF120140 Qty: 12	VB515031 Qty: 1
	AC72-00 AC82-70 AC83-00	III	VB107175	VF119230 Qty: 12		VF120140 Qty: 12	VB502830 Qty: 1

\* including the items B, C and D.

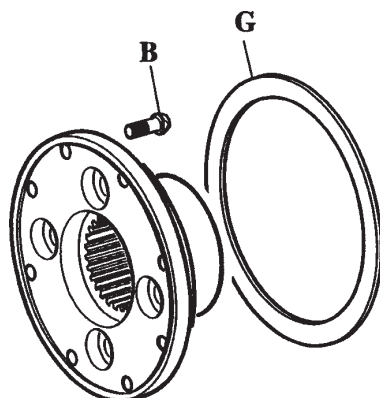
CAUTION : After degreasing the parts, the studs must be fitted to the coupling flange with LOCTITE 270.

# SAE coupling flanges with anglo american fasteners

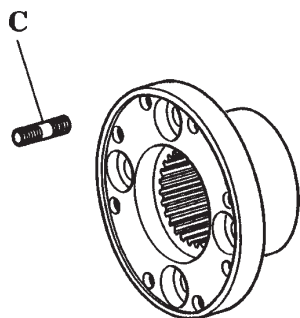


INDEXES { 154  
155

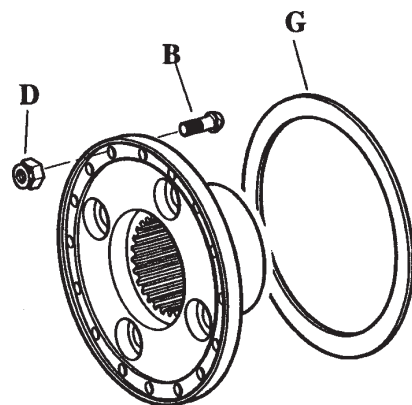
Figure V



INDEX 158  
Figure VI



INDEX 158  
Figure VII



INDEXES { 152  
157  
Figure VIII

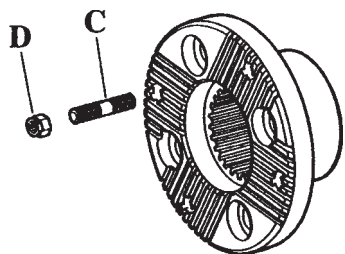
Index	RETARDER	Fig.					to be ordered separately
			Fasteners* assembly	Screw (item B)	Stud (item C)	Nut (repère D)	Retaining plate (item G)
152	AC61-25	VIII	VB107400	VF119270 Qty: 8			VB515030 Qty: 1
	AC61-35 AC61-60	VIII	VB107194	VF119270 Qty: 8			VB515031 Qty: 1
	AC72-00	VIII	VB107180	VF119270 Qty: 8			VB502830 Qty: 1
154	AC50-55	V	VB107215		VF130120 Qty: 4	VF120370 Qty: 4	
	AC50-65 AC50-80 AC51-00	V	VB107211		VF130120 Qty: 4	VF120370 Qty: 4	
	AC50-65 AC50-80 AC51-00	V	VB107212		VF130130 Qty: 4	VF120340 Qty: 4	
155	AC61-25	V	VB107203		VF130130 Qty: 4	VF120340 Qty: 4	
	AC61-35 AC61-60	V	VB107267		VF130130 Qty: 4	VF120340 Qty: 4	
157	AC61-60	VIII	VB107398	VF104180 Qty: 12		VF120370 Qty: 12	VB515031 Qty: 1
	AC72-00 AC82-70 AC83-00 AC83-31	VIII	VB107182	VF104180 Qty: 12		VF120370 Qty: 12	VB502830 Qty: 1
	AC50-80 AC51-00	VI	VB107213	VF119260 Qty: 8			
	AC61-25	VI	VB107207	VF119270 Qty: 8			VB515030 Qty: 1
158	AC61-35 AC61-60	VI	VB107195	VF119270 Qty: 8			VB515031 Qty: 1
	AC72-00	VII	VB107179		VF130110 Qty: 8		

\* including the items B, C and D.

CAUTION : After degreasing the parts, the studs must be fitted to the coupling flange with LOCTITE 270.

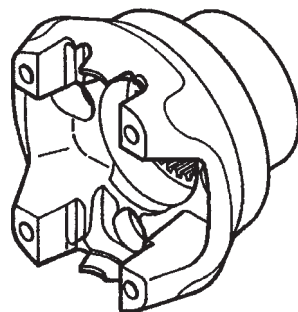


## 70° cross-serrated coupling flanges and SCANIA yokes



INDEXES { 128  
129  
138

Figure IX



INDEXES { 136  
137

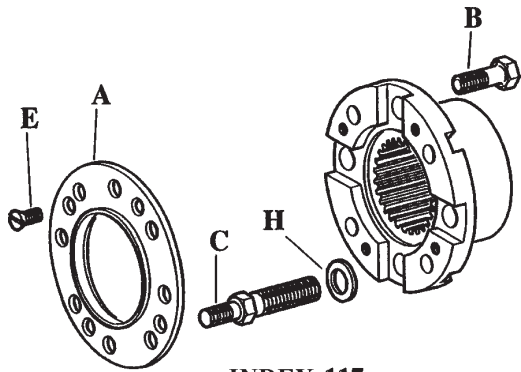
Figure X

INDEX	RETARDER	Fig.				
			Fastener* assembly	Screw (item B)	Stud (item C)	Nut (item D)
128	AC50-65 AC50-80 AC51-00	IX	VB106994		VF131110 Qty: 4	VF120140 Qty: 4
	AC61-25	IX	VB107505		VF131110 Qty: 4	VF120140 Qty: 4
	AC61-35 AC61-60	IX	VB107206		VF131110 Qty: 4	VF120140 Qty: 4
129	AC50-80 AC51-00	IX	VB106995		VF131360 Qty: 4	VF120160 Qty: 4
	AC61-25	IX	VB107319		VF131360 Qty: 4	VF120380 Qty: 4
	AC61-35 AC61-60	IX	VB107196		VF131360 Qty: 4	VF120380 Qty: 4
	AC72-00 AC82-70 AC83-00	IX	VB107183		VF131360 Qty: 4	VF120380 Qty: 4
136	AC61-60	X	VB107630			
	AC72-00 AC82-70 AC83-00	X	VB107001			
137	AC72-00 AC82-70 AC83-00	X	VB107002			
138	AC61-25	IX	VB107616		VF131500 Qty: 4	VF120390 Qty: 4
	AC61-35 AC61-60	IX	VB107452		VF131500 Qty: 4	VF120390 Qty: 4
	AC72-00 AC82-70 AC83-00 AC83-31	IX	VB107185		VF131500 Qty: 4	VF120390 Qty: 4

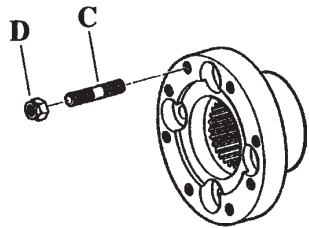
\* including the items C and D.

CAUTION : After degreasing the parts, the studs must be fitted to the coupling flange with LOCTITE 270.

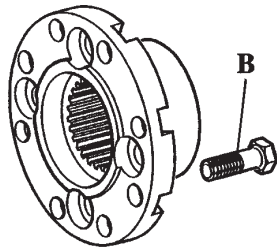
# DIN flat coupling flanges



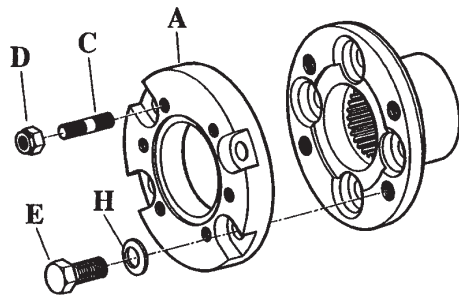
INDEX 117  
Figure XI



INDEXES { 117  
124  
Figure XIII



INDEXES { 117  
120  
Figure XII



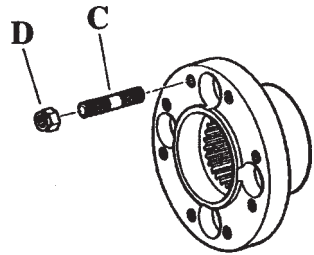
INDEX 123  
Figure XIV

INDEX	RETARDER	Fig.							
			Fasteners* assembly	Adaptor (item A)	Screw (item B)	Stud (item C)	Nut (item D)	Screw (item E)	Washer (item H)
117	AC50-80 AC51-00	XIII	VB105120			VF131260 Qty: 8	VF120160 Qty: 8		
	AC61-25 AC61-60	XII	VB107209		VF100510 Qty: 8				
	AC61-35 AC61-60	XII	VB101100		VF100510 Qty: 8				
	AC72-00 AC82-70	XI	VB100840	VB502910 Qty: 1	VF100510 Qty: 4	VF130520 Qty: 4		VF109300 Qty: 4	VF200830 Qty: 4
120	AC61-60	XII	VB101120		VF100820 Qty: 8				
	AC72-00	XII	VB107178		VF101430 Qty: 8				
123	AC50-55	XIV	VB107139	VB503890 Qty: 1		VF131150 Qty: 6	VF120140 Qty: 6	VF100850 Qty: 4	VF200810 Qty: 4
	AC50-65 AC50-80 AC51-00	XIV	VB102930	VB503890 Qty: 1		VF131150 Qty: 6	VF120140 Qty: 6	VF100850 Qty: 4	VF200810 Qty: 4
	AC50-55	XIII	VB107089			VF131180 Qty: 8	VF120140 Qty: 8		
124	AC50-65 AC50-80 AC51-00	XIII	VB100960			VF131180 Qty: 8	VF120140 Qty: 8		
	AC61-25	XIII	VB107734			VF131180 Qty: 8	VF120140 Qty: 8		
	AC61-35	XIII	VB107326			VF131180 Qty: 8	VF120140 Qty: 8		

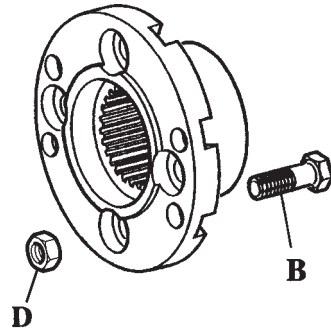
\* including the items A, B, C, D, E and H.

CAUTION : After degreasing the parts, the studs must be fitted to the coupling flange with LOCTITE 270.

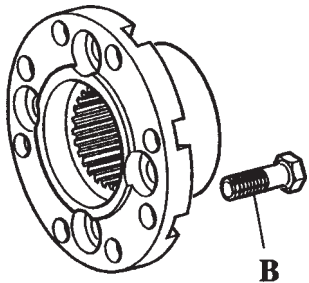
# DIN flat coupling flanges



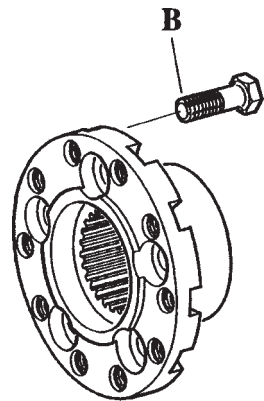
**INDEX 134**  
**Figure XV**



**INDEX 135**  
**Figure XVI**



**INDEXES { 139  
141**  
**Figure XVII**



**INDEX 140**  
**Figure XVIII**

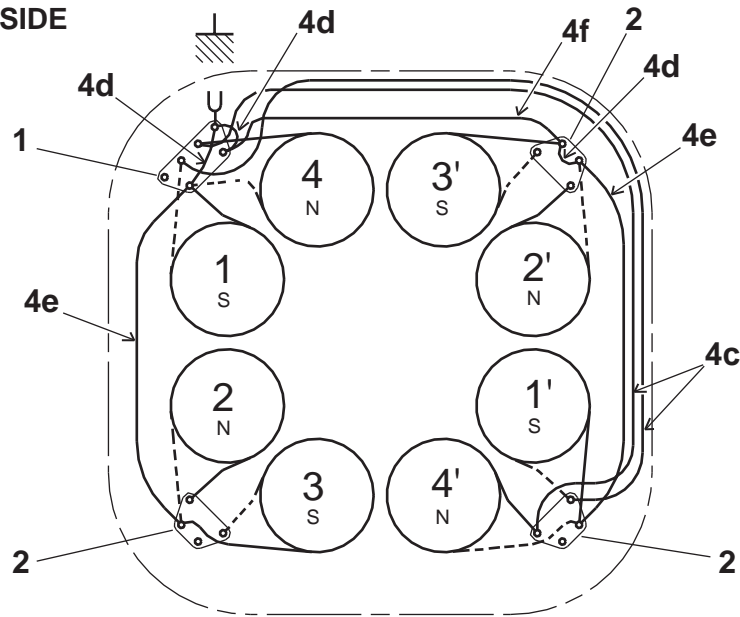
INDEX	RETARDER	Fig.				
			Fasteners* assembly	Screw (item B)	Stud (item C)	Nut (item D)
134	AC50-55	XV	VB107090		VF131180 Qty: 8	VF120140 Qty: 8
	AC50-65 AC50-80 AC51-00	XV	VB100970		VF131180 Qty: 8	VF120140 Qty: 8
	AC61-35 AC61-60	XV	VB103230		VF131160 Qty: 8	VF120130 Qty: 8
135	AC61-25	XVI	VB107735	VF101120 Qty: 4		VF120180 Qty: 4
139	AC72-00 AC82-70 AC83-00	XVII	VB107186	VF101120 Qty: 8		
140	AC72-00 AC82-70 AC83-00	XVIII	VB100900	VF101230 Qty: 10		
141	AC61-60	XVII	VB101130	VF101120 Qty: 8		
	AC72-00 AC82-70	XVII	VB100890	VF101120 Qty: 8		

\* including the items B, C and D.

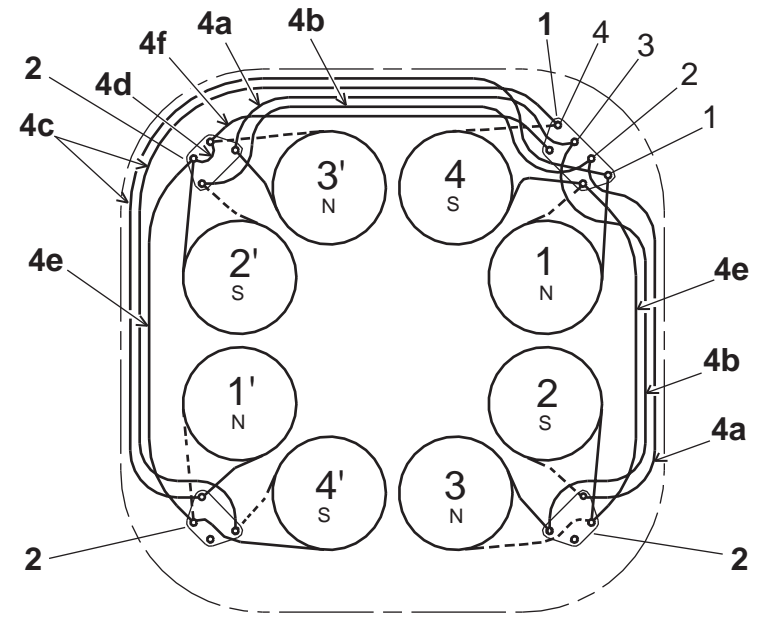
CAUTION : After degreasing the parts, the studs must be fitted to the coupling flange with LOCTITE 270.

# 12 V wiring diagram – Insulated earth return

FRONT SIDE



REAR SIDE

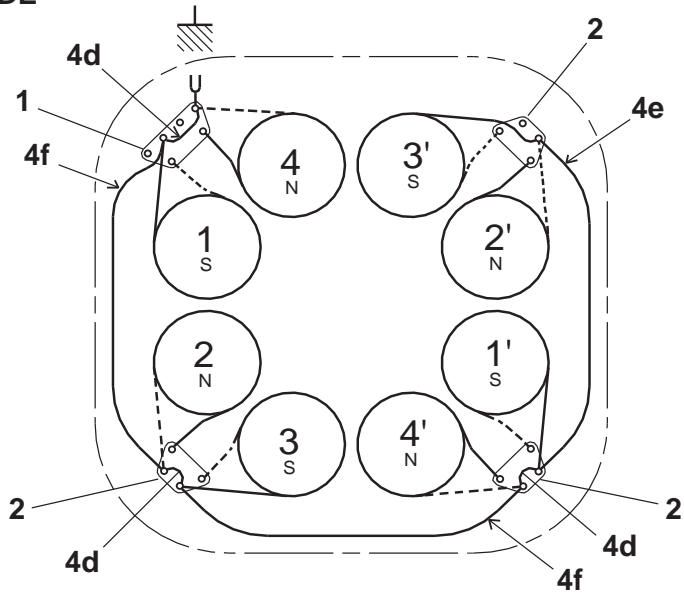


— red sleeve  
 - - - blue sleeve

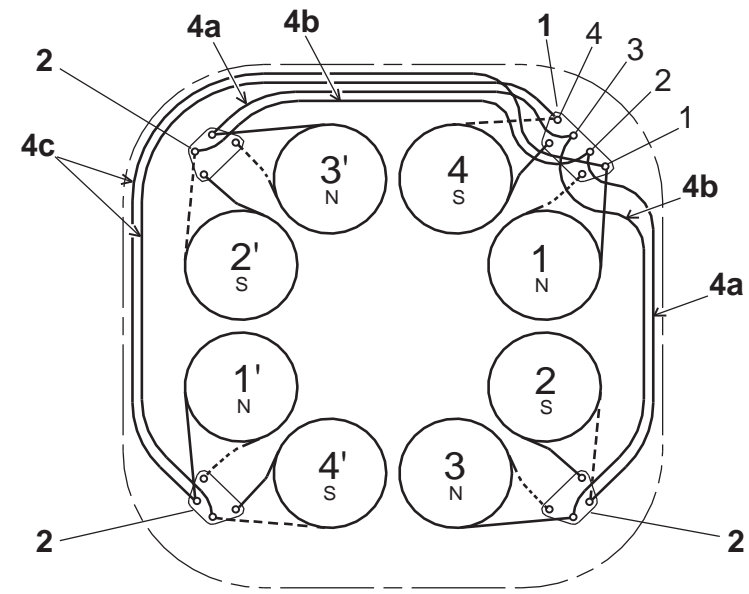
Item	Qty	Description	RETARDER			
			AC50-65 AC50-80 AC51-00	AC61-25 AC61-35 AC61-60	AC72-00	AC82-70 AC83-00
1	1	Connecting block assembly with fasteners and insulated earth terminal (see details on page 24)	VD408573	VD408573	VD408573	VD408573
2	3	Junction block assembly with fasteners (see details on page 23)	VD407390	VD407390	VD407390	VD407390
4	1	12 V and 24 V internal wiring set, including :	VD408575	VD408576	VD408577	VD408578
	12V					
4a	2	connecting wire (short)				
4b	2	connecting wire (medium)				
4c	4	connecting wire (long)				
4d	4	earth shunt				
4e	4	earth wire				
4f	2	double earth wire				

# 24 V wiring diagram – Insulated earth return

**FRONT SIDE**



**REAR SIDE**

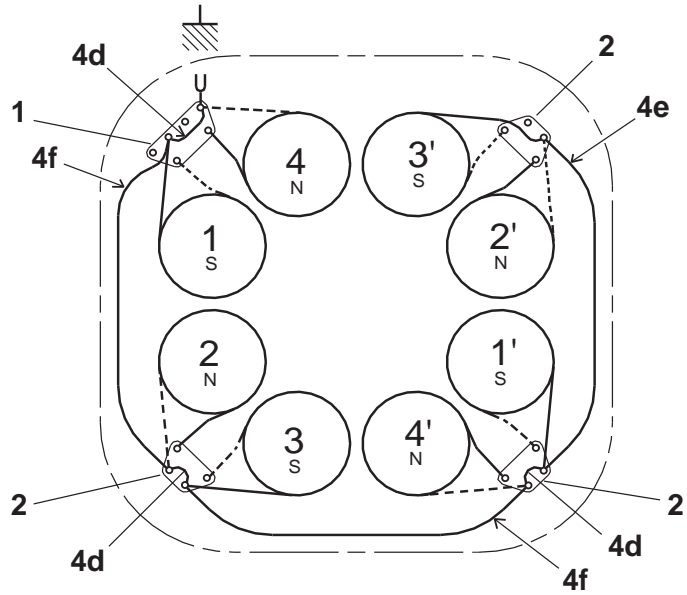


— red sleeve  
 - - - blue sleeve

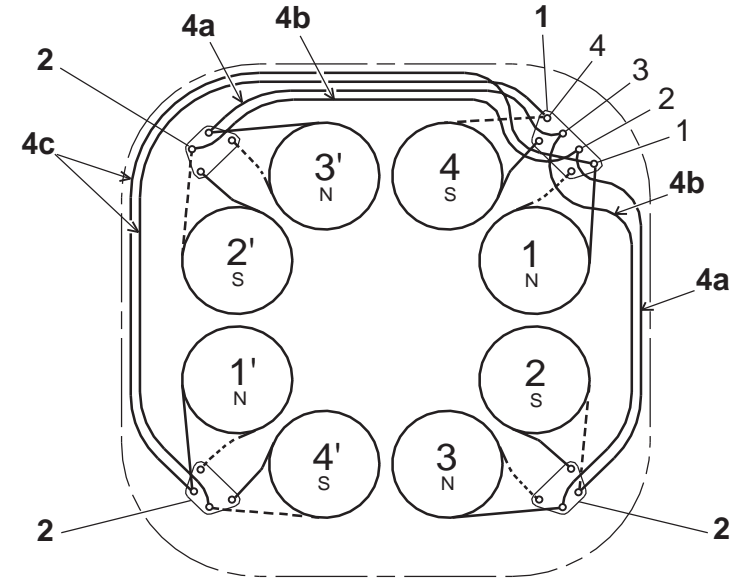
Item	Qty	Description	RETARDER			
			AC50-65 AC50-80 AC51-00	AC61-25 AC61-35 AC61-60	AC72-00	AC82-70 AC83-00 AC83-31
1	1	Connecting block assembly with fasteners and insulated earth terminals(see details on page 24)	VD408573	VD408573	VD408573	VD408573
2	3	Junction block assembly with fasteners (see details on page 23)	VD407390	VD407390	VD407390	VD407390
4	1	12 V and 24 V internal wiring set, including:	VD408575	VD408576	VD408577	VD408578
	24V					
4a	2	connecting wire (short)				
4b	2	connecting wire (medium)				
4c	2	connecting wire (long)				
4d	3	earth shunt				
4e	1	earth wire				
4f	2	double earth wire				

# 12 V wiring diagram – Insulated earth return

FRONT SIDE



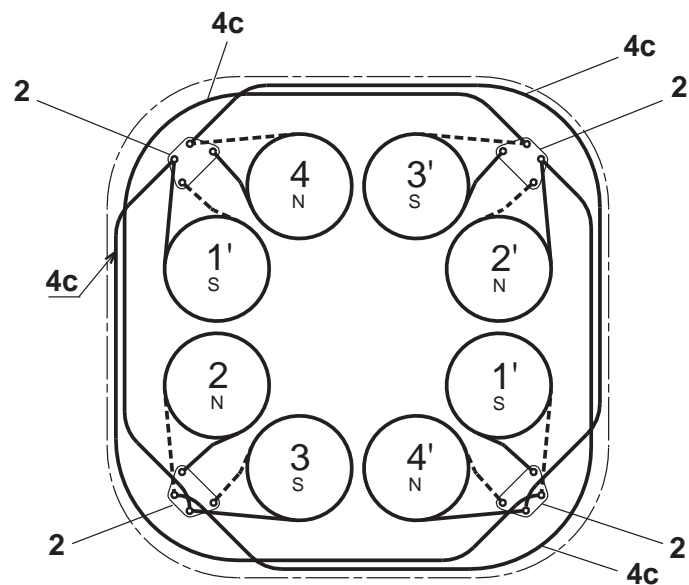
REAR SIDE



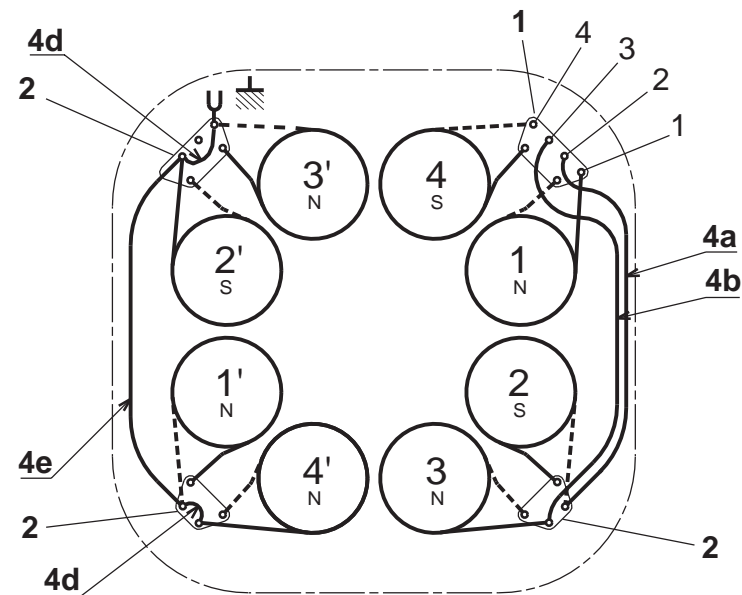
Item	Qty	Description	RETARDER	
			AC50-55	
1	1	Connecting block assembly with fasteners and insulated earth terminal (see details on page 24)	VD408573	
2	3	Junction block assembly with fasteners (see details page 23)	VD407390	
4	1	12 V and 24 V internal wiring set, including:	VD408575	
	12V			
4a	2	connecting wire (short)		
4b	2	connecting wire (medium)		
4c	2	connecting wire (long)		
4d	3	earth shunt		
4e	1	earth wire		
4f	2	double earth wire		

## 24 V wiring diagram – Insulated earth return

FRONT SIDE



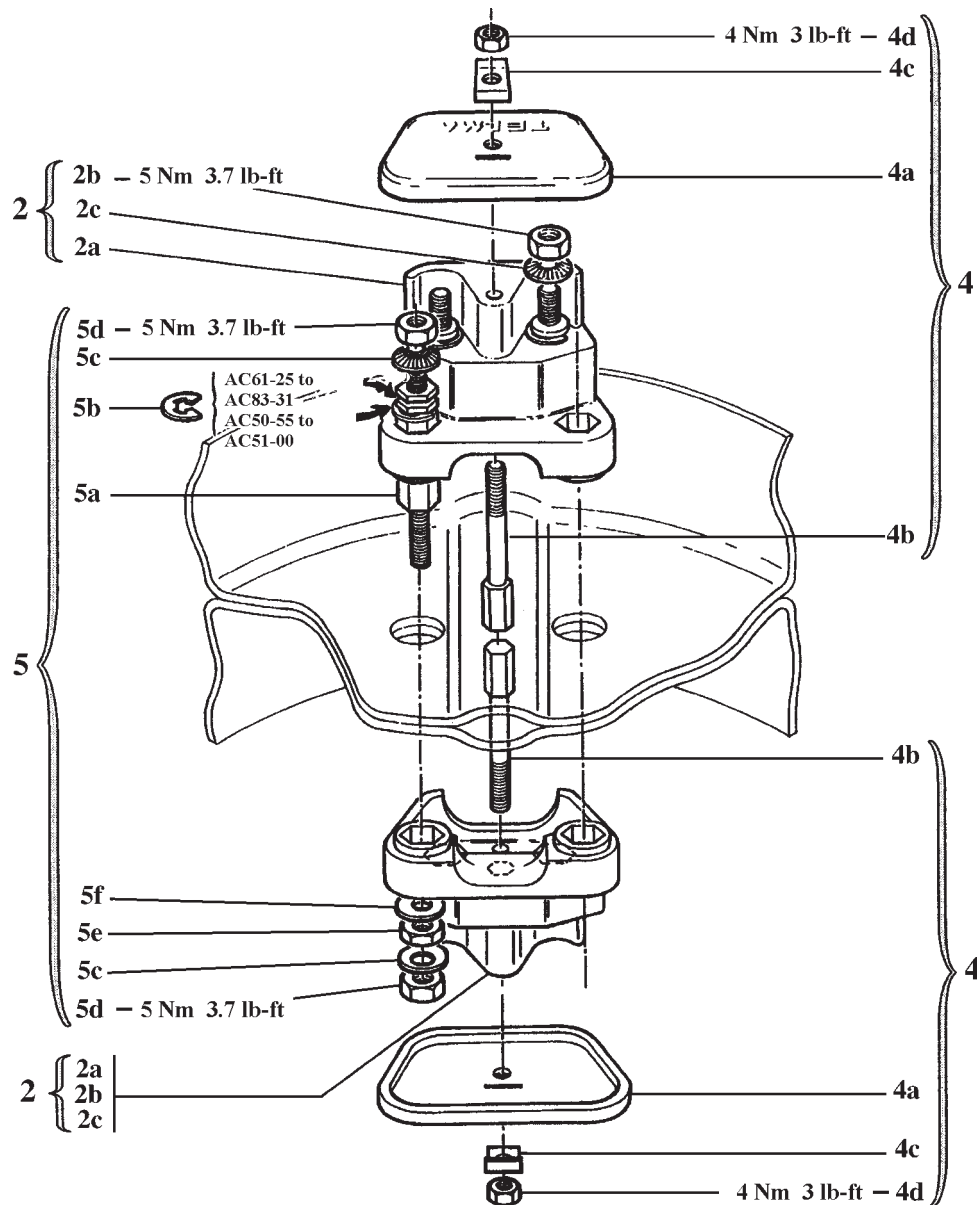
REAR SIDE



— red sleeve  
 - - - blue sleeve

Item	Qty	Description	RETARDER	
				AC50-55
1	1	Connecting block assembly with fasteners and insulated earth terminals (see details on page 24)		VD408573
2	3	Junction block assembly with fasteners (see details page 23)		VD407390
4	1	12 V and 24 V internal wiring set, including:		VD408575
	24V			
4a	1	connecting wire (short)		
4b	1	connecting wire (medium)		
4c	4	connecting wire (long)		
4d	2	earth shunt		
4e	1	earth wire		
4f	/	double earth wire		

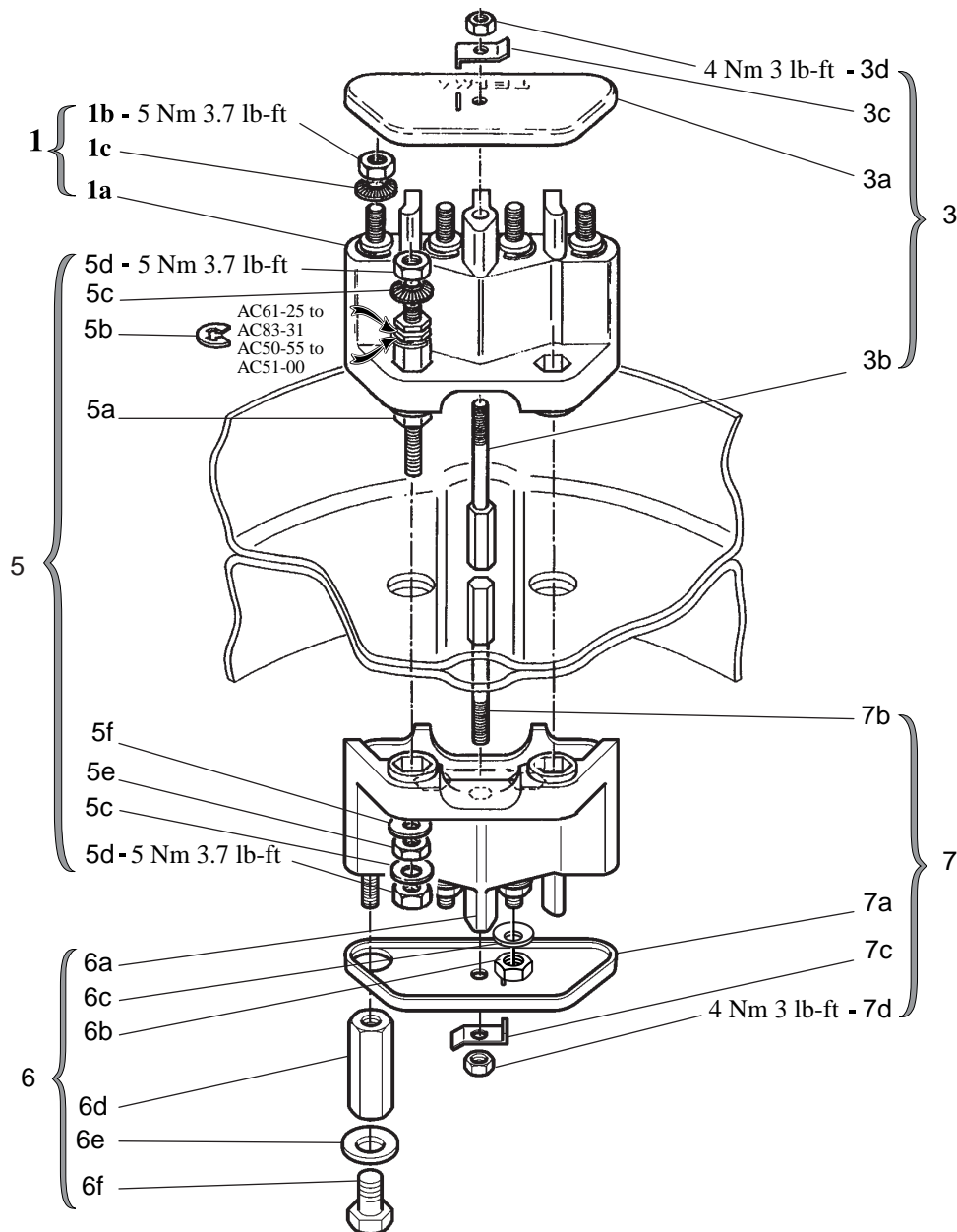
# Junction block assembly – VD 407 390



Item	Description	Qty	Reference
	<b>Junction block assembly</b>		<b>VD 407 390</b>
	<i>including:</i>		
<b>2</b>	<b>Small junction block assembly (2 insulated terminals)</b>	<b>2</b>	
	<i>including:</i>		
2a	1 small junction block (2 insulated terminals)		
2b	2 M6 nuts		
2c	2 contact washers Ø 6		
<b>4</b>	<b>Small cover assembly with fasteners</b>	<b>2</b>	<b>VD 407 230</b>
	<i>including:</i>		
4a	1 small cover		
4b	1 lid securing screw		
4c	1 locking plate		
4d	1 M5 nut		
<b>5</b>	<b>Set of feed through terminals with fasteners</b>	<b>1</b>	
	<i>including:</i>		
5a	2 feed through terminals		
5b	2 snap-rings		
5c	4 contact washers Ø 6		
5d	4 M6 nuts		
5e	2 M6 nuts		
5f	2 MN 6 washers		



# Connecting block and insulated earth terminal – VD 408 573



Item	Description	Qty	Reference
<b>1</b>	<b>Connecting block and insulated earth terminal, including:</b>		<b>VD 408 573</b>
<b>1</b>	<b>Large connecting block assembly (4 insulated terminals) including:</b>	<b>1</b>	
1a	1 large connecting block (4 insulated terminals)		
1b	4 M6 x 1.00 nuts		
1c	4 contact washers Ø 6		
<b>3</b>	<b>Large cover assembly with fasteners, including:</b>	<b>1</b>	<b>VD 407 220</b>
3a	1 large cover		
3b	1 lid securing screw		
3c	1 locking plate		
3d	1 M5 nut		
<b>5</b>	<b>Set of double terminals with fasteners, including:</b>	<b>1</b>	
5a	2 feed through terminals		
5b	2 snap-rings		
5c	4 contact washers Ø 6		
5d	4 M6 nuts		
5e	2 M6 nuts		
5f	2 MN 6 washers		
<b>6</b>	<b>Large connecting block assembly with earth terminals, including:</b>	<b>1</b>	
6a	1 large connecting block (4 insulated terminals)		
6b	2 M6 x 1.00 nuts		
6c	2 contact washers Ø 6		
6d	1 hexagonal earth muff		
6e	1 contact washer Ø 8		
6f	1 M 8 x 1.25 screw		
<b>7</b>	<b>Large cover assembly with, including:</b>	<b>1</b>	<b>VD 408 579</b>
7a	1 large cover		
7b	1 lid securing screw		
7c	1 locking plate		
7d	1 M5 nut		

## Greasing

Using a manual grease gun, fill the retarder hub with «SUPERTELMACO 3» grease until it starts to appear at the air escape pipe aperture.

### IMPORTANT :

In order to guarantee proper operation of the retarder and maintain warranty conditions, it is necessary that only «SUPERTELMACO 3» grease or another TELMA approved grease is used exclusively.

#### RECOMMENDED GREASING INTERVAL

Greasing must be carried out every 60 000 km (40 000 miles), ensuring there is no mixing with other kinds of greases.

#### MISCIBILITY

Any mixing of this high performance grease with other kinds of grease is **not accepted**.

#### PACKAGING

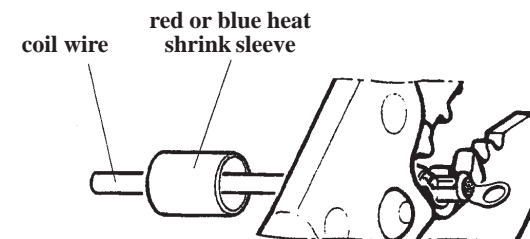
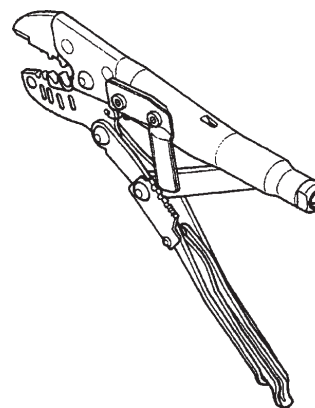
«SUPERTELMACO 3» grease is available in the following packs:

PACKAGING	TELMA n°
417 g – cartridge L = 240 mm – Ø 52 mm	VJ 200 340
25 kg – barrel	VJ 200 130

## Crimping tool

In certain cases, it is necessary to replace coil eyelet terminals.

Only genuine TELMA parts (see below repair kit VD 407 872) and a suitable crimping tool, RKG n° 69003 or TELMA n° JZ 800 380, should be used.

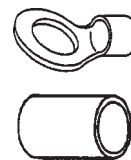


Crimp the «COPALUM» eyelet terminal using the last notch of the crimping tool.

**IMPORTANT :** Do not remove the insulation varnish of the wire before crimping.

## Wiring repair kit

The kit VD 407 872 includes:



Description	Qty
eyelet terminal .....	16
red heat shrink sleeve .....	8
blue heat shrink sleeve .....	8

## Protection of terminals against corrosion

To protect the connecting and junction terminals, use **Body-Coating – n° VH 520 100** (1 liter – can).



# Telma

28, rue Paul Painlevé – Z.A. du Vert Galant  
F-95310 SAINT OUEN L'AUMONE – FRANCE  
B.P. 692 F-95004 CERGY Cedex – FRANCE  
Tel. (+33) (0) 1 34 48 54 00 – Fax : (+33) (0) 1 30 37 63 69

TELMA S.A. au capital de 163 603 000 F  
Siège Social : 28, rue Paul Painlevé – F95310 Saint Ouen l'Aumône  
410 163 125 – R.C.S. Pontoise

*This technical data is supplied for your guidance in the use of the product and may be modified at any moment without prior notice.*

*Any reproduction, duplication or translation of this publication, also in the form of an abstract, is subject to the previous written permission of TELMA, Cergy.*

*Printed in France*