

SYNCHRO

A VICEROY 12 SPEED CENTRE LATHE

STAR FEATURES

- * Synchro Speed Change
- * 12 Speed Geared Headstock
- * Totally Enclosed Headstock



DENFORD

MACHINE TOOLS

SYNCHRO 12 SPEED CENTRE LATHE

HEADSTOCK

The Headstock is totally enclosed, sump lubricated and provides speeds from 70-1600 r.p.m. with backgear to provide maximum torque, in the low speed range. The spindle accepts 27 mm or 1.1/16" and is mounted on TIMKEN pre-loaded tapered roller bearings with a No. 4 M.T. and D1/3 Camlock.

SYNCHRO SPEED CHANGE

Gives fingertip control to the operator. Speed changes can be achieved without a pause whilst the machine is running, effortlessly and with precise control.

APRON

The apron is double wall design with feedshaft worm and gears oil bath lubricated. Quick and convenient selection dials/levers are provided for the leadscrew and feedshaft which are interlocked to prevent dual engagement.

TAILSTOCK

Tailstock incorporates auto ejection with a No.3 M.T. and graduated barrel. Set over screws are provided for alignment and taper turning. Positional clamping is cam operated by a quick action lever.

SADDLE AND SLIDES

The saddle top and Cross slides are all equipped with adjustable jibs. 'T' slots are incorporated in the saddle wings to fit accessories and the compound slide can be removed to fit the Boring Table. Adjustable Collar fitted to feedshaft for pre-setting automatic longitudinal feed trip.

GEARBOX

The pre-selector Gearbox provides a full range of threads or feeds without changing end gears. Feeds are selected by a Dial and Lever Combination which incorporates a safety interlock to prevent dual engagement.

BED AND BASE

High quality cast iron designed with wide ports for rapid swarf clearance. Double 'V' ways ensure accurate alignment for the carriage and tailstock. The bed is bolted to a heavy gauge Steel Cabinet (extra) providing a rigid structure and incorporating the coolant tray and tank.

ELECTRICAL CONTROLS

Incorporates NV/OL Release Contactor and overload, coupled to end Drive Micro Switch. Mushroom Stop Button. Forward and Reverse Switch Controls.

END DRIVE

'A' and 'B' (High/Low) Gearbox position is easily reached along with Gearbox Driving Gear which includes a SAFETY Shear Key. END DRIVE GUARD Micro switch.

STANDARD EQUIPMENT

Two-way all-position tool post; back splash guard and tool tray; tinted chuck guard; No. 4 M.T. Spindle taper centre; No. 3 M.T. tailstock taper centre; driving plate with adaptor; hexagon wrenches; keys and grease gun; instruction and service manual.

STANDARD ELECTRICS

1200KW 1 1/2 H.P. 380/440/3/50 or 60 Hz motor; no volt overload release starter; forward and reversing switch.

TECHNICAL SPECIFICATION — 280 SYNCHRO

CAPACITIES	Metric	Imperial
Swing Over Bed	280 mm.	11"
Swing Over Saddle Wings	240 mm.	9 1/2"
Swing Over Cross Slide	170 mm.	6 3/4"
Spindle Bar Capacity	26 mm.	1 1/2"
Distance Between Centres	600 mm.	24"
	or 1000 mm.	36"
Base Height to Centre Line	1140 mm.	45"
HEADSTOCK		
Spindle Nose	D1/3 Camlock	
Spindle Bore	27 mm.	1 1/2"
Spindle Nose Internal Taper	4 M.T.	
Spindle Bearings	Timken Taper Roller	
Spindle Speeds	70-1600 r.p.m.	
Low Range	70-260 r.p.m.	
High Range	400-1600 r.p.m.	
THREADS AND FEEDS		
Number of Threads and Feeds	72	48
Number of I.S.O Threads	25 (0.2 to 7.0)	224 t.p.i. to 4 t.p.i.
Longitudinal Feed Range	.03 to 2.14 mm.	.0014" to .0769"
Cross Feed Range	.012 to .84 mm.	.0005" to .030"
Leadscrew	3 mm.	8 t.p.i.
CARRIAGE		
Movement along Bed	530 or 935 mm.	20" or 36"
Cross Slide Movement	130 mm.	5 1/4"
Top Slide Movement	105 mm.	4 1/8"
Swivel Slide Graduated		
Left and Right	0.90°	
Top Slide to Spindle C/L	27 mm.	1 1/2"
BED		
Length	915 mm.	36"
Width	150 mm.	6"
Ground Ways	2 Vees—2 Flats	
TAILSTOCK		
Barrel Taper	3 M.T.	
Barrel Movement	70 mm.	2 3/4"
Barrel Graduation	1.0 mm.	1/16"
MOTOR		
1,500 r.p.m. at 50 Hz.	1200KW	1 1/2 H.P.
1,800 r.p.m. at 60 Hz.		
MACHINE		
Length	1400 mm.	55"
Height	1470 mm.	58"
Width	710 mm.	28"
Weight	330kg	720lbs.

DENFORD MACHINE TOOLS LIMITED

REPLACEMENT PARTS LIST

'VICEROY' 280S (SYNCHRO)
LATHE

HEADSTOCK

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF</u>
BVS.100/101	HEADSTOCK	1
102	MAIN SPINDLE	1
103	HEADSTOCK LAYSHAFT	1
104	BACKGEAR PINION	1
105	GEAR ON LAYSHAFT	1
106	PLUG	1
107	FIXED SPINDLE PINION	1
108	GEAR ON SPINDLE	1
109	LOOSE SPINDLE PINION	1
110	BEARING CAP	1
111	SPACER	1
112A	SHIFTER	1
113	SHIFTER GEAR	1
114A	SHIFTER SHAFT	1
116	RACK	1
117A	SHIFTER GEAR SHAFT	1
118	BUSH FOR SHIFTER SHAFT	1
119	SPACER	1
MVS.100/119	CAMLOCK KEY	1
120	CAM	3
122	DETENT PLUNGER	3
124 A	BEARING CAP	1
148	CHUCK GUARD	1
128	SPINDLE SPACER	1
130A	REAR CAP	1
149	CHUCK GUARD WINDOW	1
150	CHUCK GUARD ROD	1
151	REAR BEARING CAP	1
152	FRONT BEARING SPACER	1
MVS.105/144A	SPINDLE EXTENSION	1
ML. 100/112	GEAR SHIFTER DOG BUSH	1
SP 169	TOMMY BAR	1
SP 181	SOFT CENTRE (NO. 4MT)	1
CH 235	HEADSTOCK LEVER PLATE	1
CH 251 B	SPEED INDICATOR PLATE	1
CH 252	TOP FACIA	1
CH 254		
SL.100/102	HEADSTOCK COVER	1
SL.100/121	MOTOR DRIVE GUARD	1
122	END DRIVE GUARD	1
123 A	ELECTRIC CONTROL BOX	1
124	MICRO SWITCH CAM	1
125	END GUARD GRUMET	1
BVS.160/76	SPINDLE LOCKNUT	1
SL.100/127	CONNECTION BOX	1
SL.100/128	PANEL PLATE	1

REPLACEMENT PARTS LIST280S (SYNCHRO) LATHEHEADSTOCKBOUGHT OUT PARTS

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
ROLLER BEARING	TIMKEN	CONE: 18790	2
ROLLER BEARING	TIMKEN	CUP: 18720	2
BALL BEARING	FAG	L.J. 1.3/8" 2RS	1
BALL BEARING	FAG	6204-2RS	3
OILITE BUSH	MANGANESE BRONZE	FGH.2 x 1"	2
OILITE BUSH	MANGANESE BRONZE	FGM.24 x 35	2
CIRCLIP	ANDERTON	1300/3"	1
CIRCLIP	ANDERTON	1400/20	1
TIMING BELT	WM. KENYON	187 L 100	1
TIMING PULLEY	WM. KENYON	20 L 100 F	1
TIMING PULLEY	WM. KENYON	36 L 100	1
PROXIMITY SWITCH	HIRD BROWN	Bi 2-13 YO	1
LEVER	ELESA	LBR 45/110/A12	1
OIL FILLER PLUG	ELESA	T.C.O. 1/4" BSP	1
NYLON GLAND		A2 251	1
GREASE NIPPLE	LUMATIC	HP2/45	1
RUBBER MAT	J DOLMAN	FLUTED - 3/16" THICK	12" x 10"
STEEL BALL		3/16" DIA	1
COMPRESSION SPRING	DON SPRINGS	3/16" D.3/8" FL.20 SWG 9 C.P.I.	1
SQUARE DRIVE KEY		5/16" SQ. x 1.1/2"	1
SQUARE DRIVE KEY		1/4" SQ. x 5/8"	1
SQUARE DRIVE KEY		1/4" SQ. x 1"	1
SQUARE DRIVE KEY		6 MM x 1.1/2"	1
SQUARE DRIVE KEY		3/16" SQ. x 2.1/2"	1
GROOVE PIN		3/16" DIA x 7/8"	6
GROOVE PIN		3 MM x 45	1
SEL-LOC PIN		3/16" DIA x 1"3"	1
SEL-LOC PIN		1/8" DIA x 1"	2

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REPLACEMENT PARTS LIST280S(SYNCHRO) LATHEDRIVE CONTROL

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF</u>
SL.100/103	CONTROL HOUSING	1
104	PRESSURE ARM	1
105 A	PRESSURE ARM BRACKET	1
106	PRESSURE ARM FORK	1
107	PUSH ROD	1
108	CROSS BAR	1
109	ADJUSTING NUT	2
110	FORK	1
111	PIVOT PIN	1
112	CONTROL SHAFT	1
113	CONTROL LEVER BODY	1
114	CONTROL LEVER	1
115	LEVER ROD	1
116	CONTROL LEVER CAP	1
117	CONTROL LEVER PIN	1
118	MOTOR BACKPLATE	1
119	LOCATING PIN	1
120	ADJUSTING COLLAR	1
126	PULLEY RETAINING PLATE	2
SP. 117	HANDLE	1
CH. 250	TOP INNER PLATE	1
BVS.103/119	ELECTRICAL GUARD	1
SL. 100/124	GUARD MICRO SWITCH CAM	1

CABINET

✓ BVS.100/201S MOD.I.	CABINET (STD. 'SYNCHRO')	1
✓ 202S	DOORS (STD.)	1
✓ 204	SUMP COVER	1
✓ 205	DRAIN PLUG	1
✓ 206	RETURN PLUG	1
207	DOOR HINGE	4
208A	COOLANT PUMP COVER PLATE	1
209S	SPLASH GUARD (STD.)	1
203	DRAWS	3
212	FOOT KNOCK OFF RATE	1
SP. 106	HINGE BUSH	4
CH. 234C	NAMEPLATE VICEROY 'SYNCHRO'	1
CH. 249	STARTER BOX PANEL 'VICEROY'	1
CH. 311A	BRAKE RESET PLATE	1

COOLANT SYSTEM

ML.100/208A	COOLANT PIPE	1
219A	CABINET DRAIN FILTER	1
BVS.100/226	COOLANT PIPE BRACKET	1
SP. 164	TAILPIECE ADAPTOR	2
SP. 180	STUD	1
SP. 189	1/2" HOSE ADAPTOR	1
EM. 100/28	1/2" B.S.P. TAILPIECE ADAPTOR	2

CABINET CONT.

SK.794/1	BOTTOM BRACKET	2
SK.794/2	TOP BRACKET	2
SK.794/3	ROD	2

REPLACEMENT PARTS LIST280S(SYNCHRO) LATHEBOUGHT OUT ITEMSCABINET

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
NYLON GLAND	EGATUBE	A2 251	4
HANDLES	HEMO	102 5"	1
PLASTIC RIVETS (BLACK)	HARMSWORTH & TOWNLEY	201.080551.00	10
PLASTIC RIVETS	-DO- -DO-	239.ED 868	12
RUBBER MAT	J DOLMAN	FLUTED 3/16" THICK	5" x 12"
CABLE CLIPS		C.T.I.	2
SET SCREW		M6 - 16	2
CSK. SKT HD SCREW		MS - 6	4
STD. HEX NUT		M6	2
STD. HEX NUT		4 BA	2
STD. WASHER		M6	2
RD. HD. SCREW		4BA-1/2"	2
LATCH HANDLE	SOUTHCO	62-10-201-10	2
STARTER BOX	ELECTRONOMICS	3668-8 3PH	1
FOOT KNOCK OFF SWITCH	BBC	120115001	1
-DO-	BBC	13004300103	1
FOOT KNOCK OFF BRAKE	G.S.M.	ROTA STOP.Z239	1

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REPLACEMENT PARTS LISTBOUGHT OUT ITEMS280S(SYNCHRO) LATHESPINDLE DRIVE CONTROL

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
DRIVE MOTOR	ASEA	Mt 80 B 19x65_4	1
DRIVE PULLEY	BROWN PESTELL	TYPE R.100, 19mm bore	1 SET
DRIVEN PULLEY }			
DRIVE BELT	GOODYEAR	V3 22X8X/26/700IL	1
SK.HD.CAP SCREW		M8 - 45	4
-DO-		M8 - 35	2
-DO-		M8 - 25	3
HEX. SET SCREW		M8 - 15	4
-DO-		M6 - 45	2
GRUB SCREW		M6 - 6 KND CUP	1
-DO-		2BA - 5/16 KND CUP	1
HEX NUT		M6 - STD.	2
HEX NUT		M8 NYLOCK	1
C/SUNK SKT. SCREW		2BA - 3/8	2
WASHER		M8	4
TENSION PIN		3/16 DIA - 2	1
COMPRESSION SPRING		3/16 OD $\frac{1}{2}$ FL.7.5 CPI 17 SWG	1

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(Centre distance = 238)

REPLACEMENT PARTS LISTBOUGHT OUT ITEMS280S (SYNCHRO) LATHECOOLANT SYSTEM

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
COOLANT PUMP	M G ELECTRICS	AQ3/2/Q/SS 3-phase	1
COOLANT TAP	DRANWALL	25/4440/00	1
FEMALE ELBOW	ENOTS	34-0328-17	2
JUBILEE CLIP		22-30mm	2
CLEAR TUBE	GRIFLEX	$\frac{3}{4}$ " BORE x 20"	1
CLEAR TUBE	GRIFLEX	$\frac{1}{2}$ " BORE x 4"	1
CLEAR BRAIDED	GRIFLEX	$\frac{1}{4}$ " BORE x 23	1
DRAIN PLUG	ADAMS	NP.50.G	1
SKT. HEAD CAP SCREW		M5-16	2
SKT. HEAD CAP SCREW		M6-12	2
SKT. HEAD BUTTON		M6-12	3

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REPLACEMENT PARTS LISTBED ASSEMBLY

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF</u>
BVS. 110/403A	FEEDSHAFT	1
ML. 100/402	BED	1
403A	RACK (STANDARD)	1
404	BED TENON	2
405	HEADSTOCK STRIP	1
406	BED END STOP	1
407	BED SPACER	4
ML. 110/405	LEADSCREW COLLAR	1
409	COLLAR	1
MVS. 110/ 401	LEADSCREW & FEEDSHAFT BRACKET	1
404E	LEADSCREW (IMPERIAL)	1
BVS. 160/83	STUD	4
CH. 101	LUBRICATION CHART	1

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REPLACEMENT PARTS LIST280S(SYNCHRO) LATHESADDLE ARRANGEMENT

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF</u>
BVS.100/501	CROSS SLIDE LEADSCREW	1
502	SADDLE LEADSCREW BUSH	1
503 B	INCH/ DIAL	2
505	INCH/METRIC DIAL COLLAR	2
506	TOP SLIDE LEADSCREW	1
507	TOP SLIDE LEADSCREW BUSH	1
MVS.100/506	CROSS SLIDE	1
507	SWIVEL SLIDE	1
508	TOP SLIDE	1
513	REAR GIB STRIP	1
BVS.115/975A	SADDLE CLAMP SCREW	1
CROSS SLIDE GRADUATION RING	CROSS SLIDE GRADUATION RING	1
ML.100/ 504	SADDLE	1
506	LOCKING PAD	1
507	SWIVEL SLIDE LOCKING PIN	3
508A	TOP SLIDE GIB STRIP	1
508B	CROSS SLIDE GIB STRIP	1
511B	TOP SLIDE FEEDNUT	1
512D	CROSS SLIDE FEEDNUT	1
515	NEARING COLLAR	2
521	CROSS SLIDE SPIGOT INSERT	1
523	SLUG (CROSS SLIDE NUT)	1
523A	SLUG (TOP SLIDE NUT)	1
SP 135	TAILSTOCK CLAMP PAD	1
CH 245	METRIC & IMPERIAL DIAL DIVISION CHART	2
CH 332	CROSS SLIDE GRADUATION RING	1

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REPLACEMENT PARTS LISTBOUGHT OUT ITEMS280S (SYNCHRO) LATHEBED ASSEMBLY

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
THRUST BEARING	TORRINGTON	NTA - 815	2
THRUST PLATE	TORRINGTON	TRA - 815	4
SPRING LID OILER	ADAMS	C 1787	1
OILER	ADAMS	B 04	1
FEMALE ELBOW		1/8" BSP	1
NIPPLE		1/8" BSØ	1
SPAT WASHER	DOWTY	5/16"	4
BRASS RIVETS	G K N	'U' x 3/16"	4
GROOVE PIN		3/16" DIA x 1	2
GROOVE PIN		1/8" DIA x 3/8"	1
SQUARE DRIVE KEY		3/16" x 3/4"	1
SEL LOC PIN		1/8" DIA x 7/8"	1
SKT. HD CAP. SCREW		M8 - 35	1
SKT. HD CAP SCREW		M6 - 20	2
SKT. HD CAP SCREW		2BA - 1/2"	5
GRUB SCREW		M6-6	1
NYLOC NUT		M8	4
STD. WASHER		M8	4

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REPLACEMENT PARTS LISTBOUGHT OUT ITEMS280S(SYNCHRO) LATHESADDLE ARRANGEMENT

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
CROSS SLIDE HANDWHEEL	ELESA	MD.90 FP	1
TOP SLIDE HANDWHEEL	ELESA	MD.63 FP	1
THRUST BEARING	TORRINGTON	NTA 613	3
THRUST PLATE	TORRINGTON	TRA-613	6
GROOVE PIN		3/16" DIA - 1.1/2"	1
GROOVE PIN		3MM-30	2
GROOVE PIN		1/8" DIA-3/4"	2
OILER	LUMATIC	BO.4	3
PLASTIC RIVETS (BLACK)	HARMSWORTH & TOWNLEY	201-080551-00	8
SEL LOC PIN		1/8" DIA x 5/8"	2
SKT. CAP HD. SCREW		5/16" BSW - 1.1/4"	
SKT. CAP HD. SCREW		5/16" BSW - 1"	3
GRUB SCREW		M10 - 10	3
GRUB SCREW		2BA - 7/8"	6
GRUB SCREW		MB - 8	2
GRUB SCREW		1/4" BSW - 1/4"	1
GRUB SCREW		M4 - 4	1
SCREWED ROD		3/8" BSW - 2"	1
STD. HEX NUT		3/8" BSW	1
STD. HEX NUT		2 BA	6
NYLOC NUT		3/8" BSW	1
STD. WASHER		3/8"	2
STD. WASHER		5/16"	2
SPRING WASHER		5/16"	1
CURVED WASHER	RELIANCE GEAR	SU.10	2

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REPLACEMENT PARTS LIST280S(SYNCHRO) LATHETAILSTOCK

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF.</u>
MVS.100/701	TAILSTOCK BODY	1
702	TAILSTOCK SHOE	1
703	END CAP	1
705E	BARREL (IMPERIAL)	1
707	NUT	1
710A/B	BARREL CLAMPS	1 SET
711	EJECTOR PIN	
712	CLAMP HANDLE STOP	1
BVS.100/706	TAILSTOCK SCREW	1
SP 135	CLAMP PAD	1
SP 147A	CLAMP ECCENTRIC	1
SP 148	CLAMP PIN	1
SP 171A	LOCKING STUD	1
SP 172	TEE KEY	1

P.C.S. APRON

ML.110/301C	APRON BODY	1
302	APRON DRIVING GEAR	1
303	APRON PINION	1
304	CROSS SLIDE DRIVING GEAR	1
305	CROSS SLIDE GEAR PLNION	1
306	CROSS SLIDE GEAR SHAFT	1
308	WORM	1
309	WORM GEAR	1
310	CHIMNEY GEAR	1
311	WORM GEAR SHAFT	1
312	WORM DRIVING GEAR	1
313	FEEDSHAFT GEAR	1
315	WORK SHAFT	1
318	WORM CARRIER LIFTER	1
319	APRON DRIVING GEAR SHAFT	1
320	CHANGE GEAR	1
321	WORM CARRIER	1
325	LOCKING PIN	1
ML.100/117	RETAINING PLATE	1
ML.105/301	HALF NUTS (IMPERIAL)	1 SET
302A	HALF NUTS STUDS	2
306	SCREWCUTTING LEVER CATH	2
MVS.110/345	APRON SHIFTER	1
346	SELECTOR KNOB	1
349	SELECTOR SHAFTER	1
355	APRON COVER PLATE	1
356	SELECTOR SHAFT BUSH	1
BVS.110/307	HANDWHEEL PINION	1
326	SCREWCUTTING LEVER BOSS	1
348	FEED BOSS	1
CH 218A	APRON PLATE	1
CH 223D	DIRECTION .CHANGE INSERT	1
CH 243	FEED DIRECTION PLATE	1

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REPLACEMENT PARTS LISTBOUGHT OUT ITEMS280S(SYNCHRO) LATHETAILSTOCK

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
HANDWHEEL	ELESA	VDO-125FP-1	1
LEVER ARM	ELESA	BL 366.10x155	1
CONTROL LEVER	ELESA	LBR.37/85/A10	1
OILER	LUMATIC	BO4	2
GROOVE PIN		3MM x 45	1
GROOVE PIN		1/8" x 1.1/2"	1
GRUB SCREW (PLAIN CUP PT)		M8 - 45	2
GRUB SCREW (DOG PT)		M6 x 6	1
GRUB SCREW (KNL CUP)		M6 x 6	1
GRUB SCREW (KNL CUP)		M5 x 6	3
NYLOCK NUT		M10	1
STD. WASHER		M10	1
SKT. HD. CAP. SCREW		M6 - 20	4

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REPLACEMENT PARTS LISTBOUGHT OUT ITEMS280S (SYNCHRO) LATHEP.C.S. APRON

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
HANDWHEEL	ELESA	VDO 125 FP-1	1
CONTROL LEVER	ELESA	LBR.37/85 A10	2
OIL WINDOW	ADAMS	DW 4072	1
OIL FILLER & WASHER	ADAMS	NP.506	1 EACH
CIRCLIP	ANDERTON	1400/5/8	1
CIRCLIP	ANDERTON	1500/396E	1
OILERS	LUMATIC	BO4	3
PLASTIC RIVETS (NATURAL)	HARMSWORTH & TOWNLEY	201.ED306.00	6
GROOVE PIN		1/8 x 1.1/2"	2
GROOVE PIN		1/8" x 1"	2
GROOVE PIN		3 x 45	1
SEL LOC PIN		1/8" x 1.1/2"	2
STEEL BALL		9/64 DIA.	1
COMPRESSION SPRING	(3/16"D. 20 SWG 3/16	F.L. 10 CPI)	2
COMPRESSION SPRING	(1/8" D. 22 SWG.1/4	F.L. 10 CPI)	1
SQUARE DRIVE KEY		3/16" x 1.3/8"	1
SQUARE DRIVE KEY		1/8" x 1.3/8"	1
C/SK. SKT.HD.SCREWS		1/4" B.S.W. x 1/2	1
C/SK. SKT. HD. SCREWS		2 BA x 1/4"	5
SLOTTED C/SK. SCREW		2 BA x 1/4"	1
GRUB SCREW (CONE PT)		1/4" B.S.W. x 5/16"	1
GRUB SCREW (CONE PT)		2 BA x 3/16"	4
GRUB SCREW (KNL CUP)		1/4" B.S.W. x 3/8"	4
GRUB SCREW (KNL CUP)		5/16" B.S.W. x 1/4"	2
GRUB SCREW (DOG PT)		5/16" B.S.W. x 3/8"	2
GRUB SCREW (DOG PT)		1/4" B.S.W. x 1/4"	1
GRUB SCREW (DOG PT)		2 BA x 1/4"	1
STD. WASHER		5/16"	2

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REPLACEMENT PARTS LIST280S(SYNCHRO) LATHEREVERSING BRACKET

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF</u>
MVS.105/101	REVERSING BRACKET	1
107	32T REVERSING GEAR	2
108	42T STUD GEAR	1
109	IDLER STUD	2
BVS.115/993	LOCATING PIN PLUNGER	1
ML. 105/104	REVERSING BRACKET STOP	1
ML. 115/948	24T STUD GEAR	1
949	INTERMEDIATE STUD	1
950	STUD GEAR SPACER	1
<u>END DRIVE</u>		
BVS.115/903	QUADRANT	1
970	END DRIVE GUARD	1
971	MOTOR COVER GUARD	1
972	GUARD SUPPORT BLOCK	2
973	GUARD RETAINING BLOCK	1
974	GUARD CATCH	1
975	5/16 B.S.W. COLLAR SCREW	1
ML. 115/908A	64T QUAD GEAR	1
909A	66T QUAD GEAR	1
943A	64T & 22T QUAD GEAR SHAFT	1
944A	22T QUAD GEAR	1
945A	24T QUAD GEAR	1
946A	66T & 24T QUAD GEAR SHAFT	1
995	QUAD RETAINING SPRINGS	2
996A	SHEAR BUSH	1
997	66T GEAR (WITH BOSS)	1
998	66T GEAR	1
999	RETAINING PLATE	1
1004	SHEAR KEY	1
ML. 100/117	RETAINING PLATE	2
CH. 107	QUAD. SLIDING GEAR CHART	1
CH. 236	SPINDLE CAPACITY CHART	1
CH. 242	END DRIVE GUARD	1

/CONTINUED -

REPLACEMENT PARTS LISTBOUGHT OUT ITEMS280S (SYNCHRO) LATHEREVERSING BRACKET

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
BALL BEARING	FAG	6200 2RS	2
'O' RING	G. ANGUS	R2112	1
PLASTIC KNOB	ELESA	VTR 40B.MB	1
COMPRESSION SPRING	DON SPRINGS	F5352 A	1
OILER	LUMATIC	BO 4	1
SQUARE DRIVE KEY		1/8" x 1.3/8"	1
SKT. HD. CAP SCREW		2BA x 5/8"	1
STD. HEX NUT		7/16" B.S.W.	1
HEX. LOCK NUT		5/16" B.S.W.	2
STD. WASHER		7/16"	1
TOOTHED LOCKWASHER		5/16"	2
CIRCLIP	ANDERTON	1300/30M	2

/CONTINUED -

REPLACEMENT PARTS LISTBOUGHT OUT ITEMS280S(SYNCHRO) LATHEEND DRIVE

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO. OFF</u>
TEE HANDLE	LOWE & FLETCHER	1 - 27772	1
MICRO SWITCH	BURGESS	KB5EQR	1
BUTT HINGE		2.1/2" x 1.5/8"	2
OILITE BUSH	MANGANESE BRONZE	CT.174 x 3/4"	4
STEEL BALL		3/16" DIA	1
HEX SET SCREW		3/8" BSW.x1.1/2"	1
CSK. SKT. HD. SCREW		M6 - 10	1
CSK. SKT. HD. SCREW		M5 - 15	2
RD. HD. M/C SCREW		M5 - 10	8
RD. HD. M/C SCREW		2BA - 1/4"	2
SKT. HD. CAP SCREW		2BA - 1/2"	4
SKT. HD. CAP SCREW		M5 - 10	2
GRUB SCREW		2BA x 4	5
STD. WASHER		3/8"	1
STD. WASHER		2BA	2
STD. HEX NUT		M5	6

/CONTINUED -

REPLACEMENT PARTS LIST280S(SYNCHRO) LATHEGEAR BOX (IMPERIAL)

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF</u>
ML.115/901	GEAR BOX BODY	1
902D	GEAR BOX COVER PLATE	1
904B	GEAR CHANGE HANDLE	1
906	TUMBLER CARRIER BODY	1
910A	TUMBLER CARRIER END (PLAIN)	1
910B	TUMBLER CARRIER END (GEARED)	1
911	TUMBLER GEAR	1
919	SLIDING GEAR SHAFT	1
923	SLIDING DOG SHAFT	1
924A	DRIVING GEAR & DOG INSERT	1
926	SLIDING SHAFT DRIVEN GEAR	1
927	SHAFT DRIVING GEAR & COLLAR	1
929	SLIDING DOG & GEAR	1
930	FIXED DOG & GEAR	1
931	GEAR TRAIN SHAFT	1
932	GEAR TRAIN - 32T GEAR	1
933	GEAR TRAIN - 28T GEAR	1
934	GEAR TRAIN - 26T GEAR	1
935	GEAR TRAIN - 24T GEAR	1
936	GEAR TRAIN - 23T GEAR	1
937	GEAR TRAIN - 22T GEAR	1
938	GEAR TRAIN - 20T GEAR	1
939	GEAR TRAIN - 18T GEAR	1
940	GEAR TRAIN - 16T GEAR	1
941	GEAR TRAIN SPACING COLLAR	2
942	GEAR TRAIN LOCKING NUT	1
947	QUADRANT LEAF SPRING	1
953	RACK MOVING GEAR	1
956	RACK SHAFT	1
957	TUMBLER TRIP LEVER	1
958	RACK	1
959	TUMBLER SHAFT	1
984	FOOL PROOF PIN STOP - HOUSING	1
985	FOOL PROOF PIN STOP	1
987	FOOL PROOF PIN	1
989	FOOL PROOF SPRING	1
990	TUMBLER DRIVING SHAFT BUSH	1
991A	GEAR TRAIN SHAFT BUSH	1
991B	GEAR TRAIN SHAFT BUSH	1

/CONTINUED -

REPLACEMENT PARTS LIST280S (SYNCHRO) LATHEGEAR BOX (IMPERIAL) C/TD.

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF</u>
ML. 115/992A	SLIDING DOG SHAFT BUSH	1
992B	SLIDING DOG SHAFT BUSH	1
994	CARRIER MOVING GEAR	1
1000	GEAR BOX SPINDLE BUSH	1
1001	SPACER SPINDLE BUSH	1
1005	COLLAR	1
1006	SLIDING GEAR SHAFT COLLAR	1
1007	SLIDING GEAR SHAFT COLLAR	1
 ML. 100/117	 RETAINING PLATE	 2
 BVS. 115/913	 DOG GEAR TRIP LEVER	 1
915	DOG GEAR CHANGE LEVER SHAFT	2
916	DOG GEAR CHANGE LEVER BUSH	2
952	SELECTOR DIAL SHAFT	1
982	SLIDING GEAR TRIP LEVER	1
993	GEAR CHANGE LEVER	1
 MVS. 115/905	 QUADRANT BRACKET	 1
912A	TUMBLER GEAR DRIVING SHAFT	1
 ML. 110/101	 SLIDING GEAR	 1
ML. 110/103	LEADSCREW GEAR	1
107	KICKER PIN	2
407	FEEDSHAFT DOG GEAR	1
408	DRIVEN DOG GEAR	1
 CH. 106	 CHANGE LEVER CHART	 1
217	GEARBOX NAMEPLATE	1

/CONTINUED -

REPLACEMENT PARTS LISTBOUGHT OUT ITEMS280S (SYNCHRO) LATHEIMPERIAL GEARBOX

<u>DESCRIPTION</u>	<u>MANUFACTURER</u>	<u>REF. NO.</u>	<u>NO.OFF.</u>
CONTROL LEVER	ELESA	LBR.37.85-A10-IN	2
INDICATOR	ELESA	VC.192.50.A8	1
KNOB	ELESA	VTR.40B.MB	1
THRUST BEARING	TORRINGTON	NTA - 815	1
THRUST PLATE	TORRINGTON	TRA-815	2
WINDOW UNIT	TECALEMIT	1C - 4610	1
OILITE BUSH	MANGANESE BRONZE	CT29-.75"	1
CIRCLIP	ANDERTON	700/75	1
CIRCLIP	ANDERTON	1400/3/4	1
CIRCLIP	SALTERFIX	5144 - 56	1
COMPRESSION SPRING	DON SPRINGS	F5352 A	1
COMPRESSION SPRING	DON SPRINGS	1/2 I/D-1"PL 14 SWG 6 CPI	1
TAPER PIN		3/16" x 1"	2
TAPER PIN		3/16" x 1.3/8"	1
SEL LOC PIN		1/8" x 1.1/2"	2
SEL LOC PIN		1/8" x 7/8"	1
SQUARE DRIVE KEY		3/16" x 3.5/8"	1
SQUARE DRIVE KEY		3/16" x 3.1/2"	1
SQUARE DRIVE KEY		3/16" x 3.1/2"	1
SQUARE DRIVE KEY		3/16" x 2.3/8"	1
SQUARE DRIVE KEY		3/16" x 1.3/4"	1
SQUARE DRIVE KEY		3/16" x 3/8"	1
SQUARE DRIVE KEY		1/8" x 3/4"	1
SQUARE DRIVE KEY		1/8" x 3/8"	1
SQUARE DRIVE KEY		1/8" x 1/4"	2
STD. HEX NUT		5/16" B.S.W.	1
STD. HEX NUT		2 B.A.	1
'O' RING		2075	1
'O' RING		2050	1
STEEL BALL		5/32" DIA	1

/CONTINUED -

REPLACEMENT PARTS LIST280S (SYNCHRO) LATHETOOLPOSTS

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF</u>
BVS. 100/801	SINGLE WAY TOOLPOST	1
ML. 100/801B	TWO WAY TOOLPOST	1
ML. 119/1B	FOUR WAY TOOLPOST	1
ML. 100/802	TOOLPOST TENON	1
100/803A	TOOLPOST STUD	1
805	TOOLPOST HANDLE CAP	1
SP 142	HANDLE	1

AMERICAN TYPE TOOLPOST

BVS. 113/1	TOOLPOST COLLAR	1
113/4	TOOLPOST BODY	1
ML. 113/2	TOOLPOST BOAT	1
3	TOOLPOST BASE	1

FIXED STEADY

ML. 101/1	FIXED STEADY - TOP	1
2A	FIXED STEADY - BOTTOM	1
3	STEADY ROD	3
4	SWING BOLT	1
6	HINGE PIN	1
7	HINGE PIN	1
8	CLAMP SHOE	1
10	SCREW BUSH	3
11	BUSH	3

TRAVELLING STEADY

ML. 102/1A	TRAVELLING STEADY BODY	1
2	TENON	1
ML. 101/3	STEADY ROD	2
10	SCREW BUSH	2
11	BUSH	2
ML. 100/220	COOLANT BLOCK CLAMP	1

BUS.114 A

REPLACEMENT PARTS LIST280S (SYNCHRO) LATHEMETRIC TRANSPOSING SET UP

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. OFF.</u>
BVS.114/1A	IMPERIAL TO METRIC QUAD	1
2	48T GEAR	1
3	48T GEAR SPACING BUSH	1
4	SPACER	1
5A	LOCATING PIN PLUNGER	1
ML. 114/3	INTERMEDIATE STUD	2
4A	64T SCREW GEAR	1
6	64T STUD GEAR	1
7	66T STUD GEAR	1
ML. 105/113	SPACING BUSH	1
117	WASHER	1
119	16T CHANGE WHEEL	1
121	24T CHANGE WHEEL	1
127	48T CHANGE WHEEL	1
130	56T CHANGE WHEEL	1
131	60T CHANGE WHEEL	1
138	26T CHANGE WHEEL	1
147	127T /120T CHANGE WHEEL	1
CH. 238	METRIC TRANSPOSING GEAR CHART	1

IV/JR/27184



MOD WIRING DIAGRAMS:-

A3-500004

A3-500005

A3-500006

A3-500007

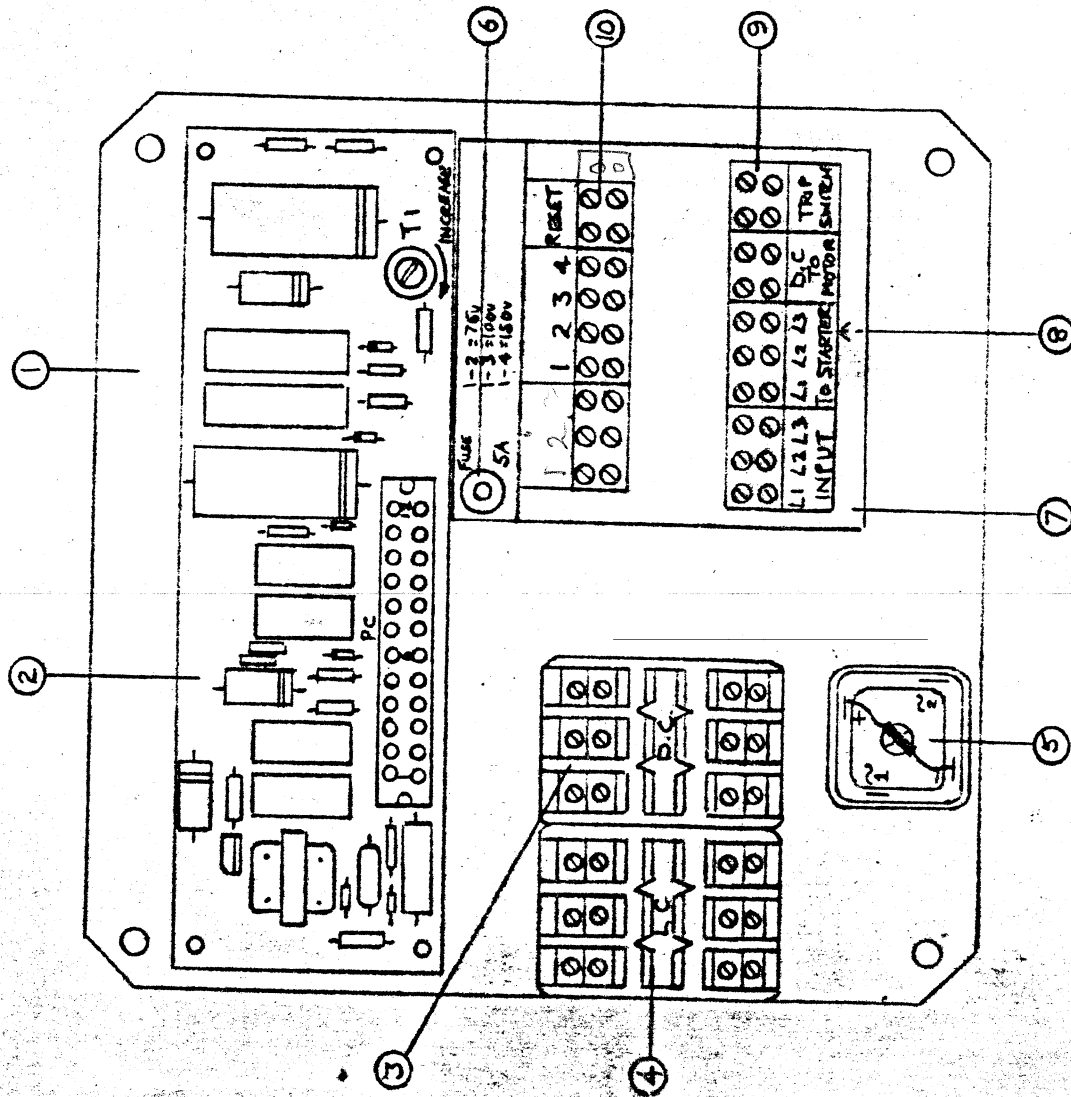
A3-500011

BRAKING UNIT (2239)

Dwg N° 51798.

CONTACTOR - Item N° 4

B10038IN £11.40 + VAT



415V. 24/12

ITEM Nº	DESCRIPTION	G. S. M. PART Nº	Nº OFF	REMARKS
1	E4 CHASSIS PLATE		1	SEE DRG S1758
2	BRAKING CARD WITH D.C. PROVING	PC0469	1	SEE DRG M1051
3	BENEDIKT & JAGER K12 CONTACTOR A 110V		1	K12 A215021
4	BENEDIKT & JAGER K12 CONTACTOR A 110V		1	
5	BRIDGE RECTIFIER	SBR2	1	FITTED WITH GH98 340V 1-2mA VDR
6	CONTROL FUSE HOLDER	PD3	1	FITTED WITH 5A 20MM FUSE
7	T.B. & FUSE MOUNTING BOARD			SEE DRG S1797
8	MAIN TRANSFORMER	TM178	1	
9	10 WAY MK3 TERM. BLOCK	TS115	1	
10	9 WAY MK3 TERM. BLOCK	TS235	1	

REVISIONS

TITLE

GENERAL ARRANGEMENT OF Z239
ROTOR STOP BRAKING UNIT WITH D.C. PROVING

JOB

CODE

DRN. A C H

CKD.

DATE 7.11.83

GSM ELECTRICAL CONTROLS LTD.

VICTORIA WORKS,
QUEENS MILL ROAD,
HUDDERSFIELD,
W. YORKS. HD1 3PJ
PHONE 0484 351012



DRG. No.

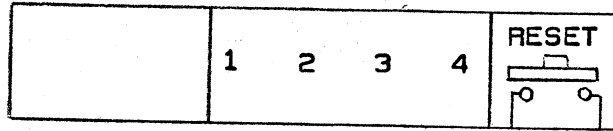
S1798

Transformer Tappings

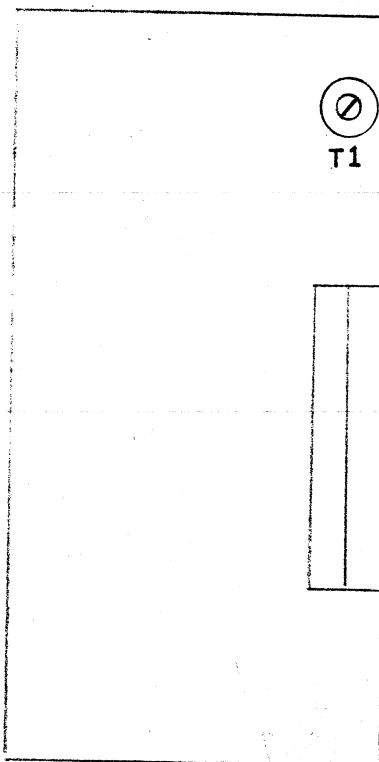
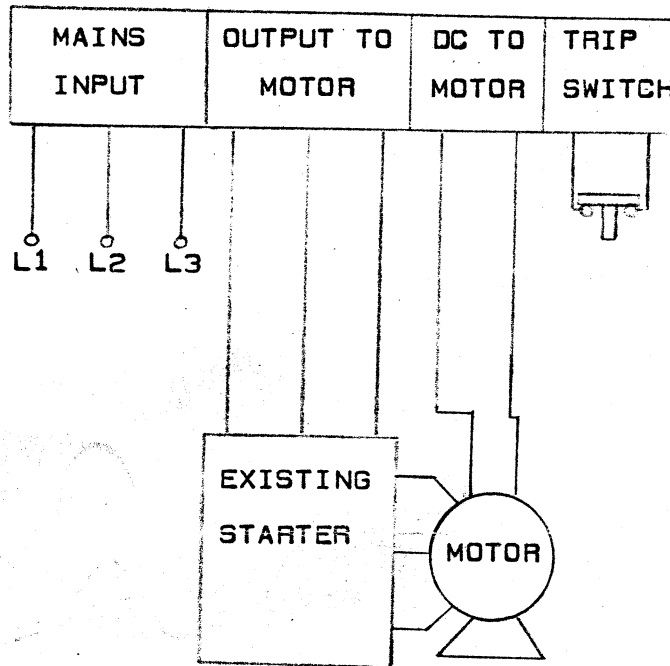
1 - 2 = 75v

1 - 3 = 100v

1 - 4 = 150v



D.C. BRAKING
ADJUSTMENT.



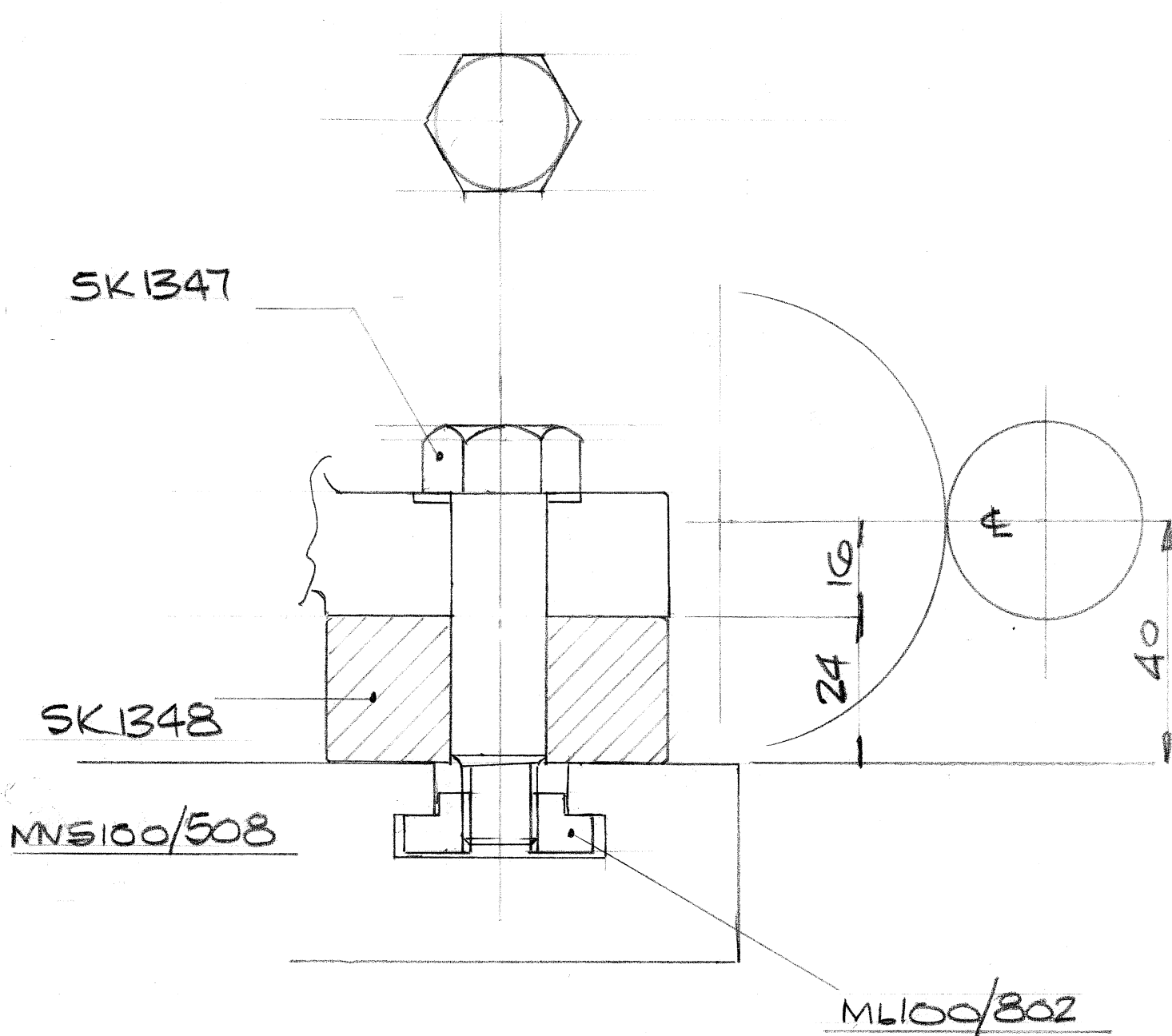
INCREASE

D.C. INJECTION BRAKING UNIT - TYPE DR/P

Setting up procedure

Wire up the unit as shown on the attached sheet of diagrams. Wiring the interlock connections in series with the existing starter coil.

- 1) Set D.C. Braking adjustment volts to minimum i.e. between 1 and 2.
- 2) Turn timer T1 on the P.C.B. to maximum i.e. fully clockwise.
- 3) Try the machine for braking.
- 4) Set D.C. Braking adjustment such that the D.C. current is approximately 2 to 2½ times motor full load current.
- 5) When required braking is achieved adjust timer T1 so that the D.C. Contactor 'drops out' just after the motor comes to rest.



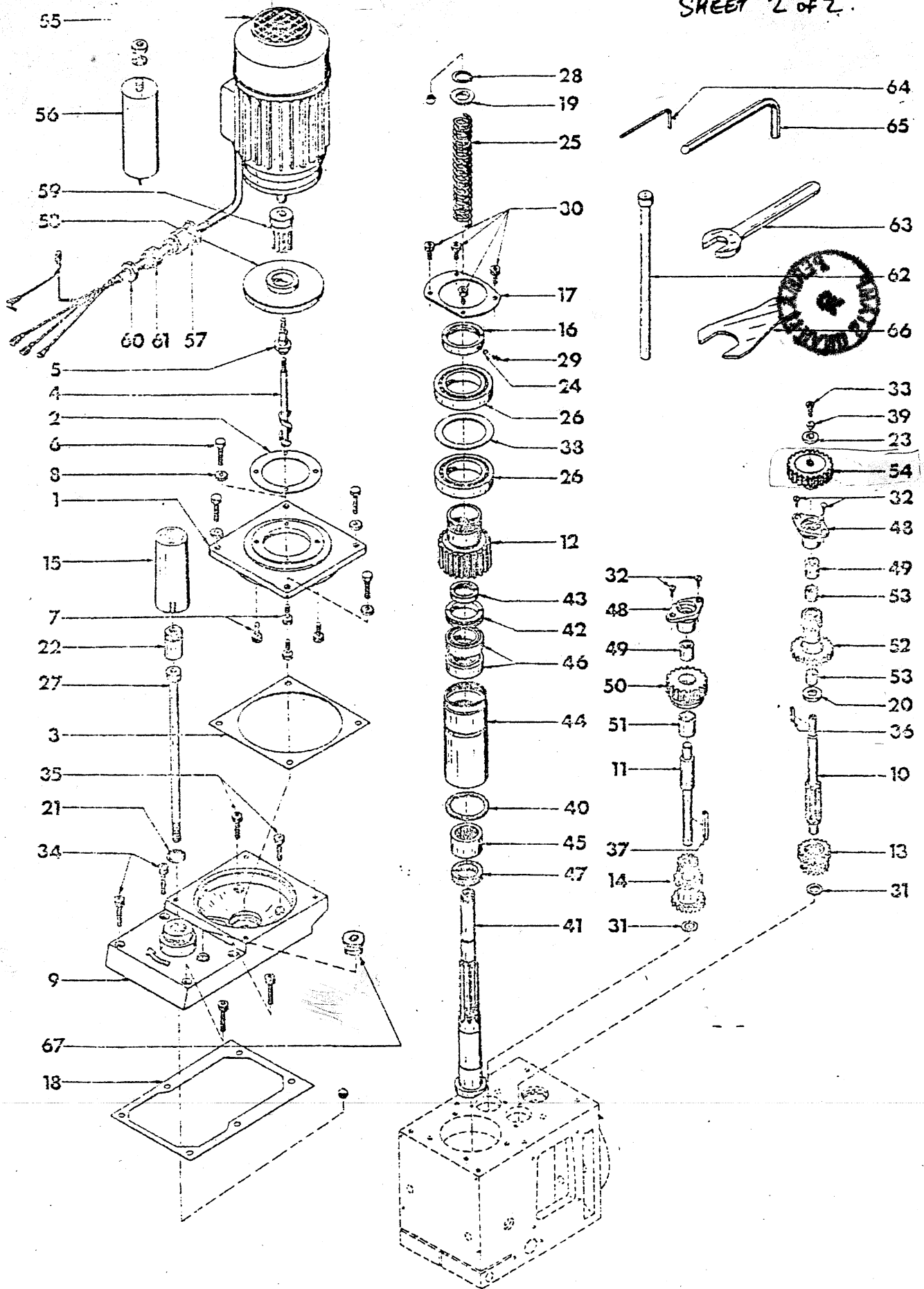
280 SYNCHRO LATHE

TOOLPOST GRINDER (M.O.D. ORDER)

REF:- DUPLEX D26 B

415V 3PH 50HZ

20.4.95



REPLACEMENT PARTS LIST

- 1 - / 9

VICEROY 280 'Synchro' LATHE

<u>Part No.</u>	<u>Description</u>	<u>No Off</u>
<u>Headstock</u>		
BVS100/101	Headstock	1
" /102	Main Spindle	1
" /103	Headstock Layshaft	1
" /104	Backgear pinion	1
" /105	Gear on layshaft	1
" /106	Plug	1
" /107	Fixed spindle pinion	1
" /108	Gear on spindle	1
" /109	Loose spindle pinion	1
" /110	Bearing cap	1
" /111	Spacer	1
" /112A	Shifter	1
" /113	Shifter gear	1
" /114A	Shifter shaft	1
" /116	Rack	1
" /117A	Shifter gear shaft	1
" /118	Bush for shifter shaft	1
" /119	Spacer	1
MVS100/119	Camlock key	1
" /120	Cam	3
" /122	Detent plunger	3
" /124	Bearing cap	1
" /127	Locknut	2
" /128	Spindle spacer	1
" /130A	Rear cap	1
" /149	Chuck guard window	1
" /150	Chuck guard rod	1
" /151	Rear bearing cap	1
" /152	Front bearing spacer	1
MVS105/144	42T Spindle gear	1
ML 100/112	Gear shifter dog bush	1
SP 169	Tommy bar	1
SP 181	Soft centre (No.4MT)	1
CH 235	Headstock lever plate	1
CH 251A	Speed indicator plate	1
CH 252	Top facia	1
SL100/102	Headstock cover	1
SL100/121	Motor drive guard	1
" /122	End drive guard	1
" /123	Electric control box	1

CH. 254. HEADSTOCK NAME PLATE 1

REPLACEMENT PARTS LIST - 280 'Synchro' LATHE

2/9

<u>Part No.</u>	<u>Description</u>	<u>No.Off</u>
<u>DRIVE CONTROL</u>		
SL 100/103	Control housing	1
" /104	Pressure arm	1
" /105	Pressure arm bracket	1
" /106	Pressure arm fork	1
" /107	Push rod	1
" /108	Cross bar	1
" /109	Adjusting nut	2
" /110	Fork	1
" /111	Pivot Pin	1
" /112	Control shaft	1
" /113	Control lever body	1
" /114	Control lever	1
" /115	Lever rod	1
" /116	Control lever cap	1
" /117	Control lever pin	1
" /118	Motor backplate	1
" /119	Locating pin	1
" /120	Adjusting collar	1
SP 117	Handle	1
CH 250	Top inner plate	1
BVS103/119	Electrical guard	1
SL 100/124	Guard micro-switch cam	1
<u>CABINET</u>		
BVS100/201S	Cabinet (Std 'Synchro')	1
" /201L	Cabinet (Long 'Synchro')	1
" /202S	Doors (Std.)	2
" /202L	Doors (Long)	1 Set
" /204	Sump cover	1
" /205	Drain plug	1
" /206	Return plug	1
" /207	Door Hinge	4
" /208A	Coolant pump cover plate	1
" /209S	Splash guard (Std.)	1
" /209L	Splash guard (Long)	1
" /211	Door catch (Long cabinet)	1
SP 106	Hinge bush	4
CH 234C	Nameplate Viceroy 'Synchro'	1
CH 234D	Nameplate Enterprise 'Synchro'	1
CH 249	Starter box panel 'Viceroy'	1
CH 249A	Starter box panel 'Enterprise'	1
<u>COOLANT SYSTEM</u>		
ML 100/208A	Coolant pipe	1
ML 100/219A	Cabinet drain filter	1
BVS100/226	Coolant pipe bracket	1
SP 164	Tailpiece adaptor	2
SP 180	Stud	1
SP 189	1/2" HOSE ADAPTOR	1
EM.100/28	1/2 B.S.P. TAILPIECE ADAPTOR	2

REPLACEMENT PARTS LIST - 280 'Synchro' LATHE

-3- / 9

<u>Part No.</u>	<u>Description</u>	<u>No. Off</u>
<u>BED ASSEMBLY</u>		
BVS/403A	Feedshaft	1
ML 100/402	Bed	1
" 403A	Rack (Standard)	1
" 404	Bed tenon	2
" 405	Headstock strip	1
" 406	Bed end stop	1
" 407	Bed spacer	4
ML 110/405	Leadscrew collar	1
" 409	Collar	1
MVS110/401	Leadscrew & feedshaft bracket	1
" 404M	Leadscrew (Metric)	1
" 404E	Leadscrew (Imperial)	1
SP 180	Stud	4
CH 101	Lubrication chart	1
<u>SADDLE ARRANGEMENT</u>		
BVS100/501	Cross slide leadscrew	1
" /502	Saddle leadscrew bush	1
" 503	Inch/Metric dial	2
" 504	Inch/Metric dial indicator	2
" 505	Inch/Metric dial collar	2
" 506	Top slide leadscrew	1
" 5 07	Top slide leadscrew bush	1
MVS100/506	Cross slide	1
" 507	Swivel slide	1
" 508	Top slide	1
" 513	Rear gib strip	1
BVS115/975A	Saddle clamp screw	1
ML 100/501B	Cross slide graduation ring	1
" 504	Saddle	1
" 506	Locking pad	1
" 507	Swivel slide locking pin	3
" 508A	Top slide gib strip	1
" 508B	Cross slide gib strip	1
" 511B	Top slide feednut	1
" 512D	Cross slide feednut	1
" 515	Bearing collar	2
" 521	Cross slide spigot insert	1
" 523	Slug (cross slide nut)	1
" 523A	Slug (top slide nut)	1
SP 135	Tailstock clamp pad	1
CH 245	Metric & Imperial dial division chart	2

REPLACEMENT PARTS LIST - 280 'Synchro' LATHE

-4- | 9

<u>Part No.</u>	<u>Description</u>	<u>No.Off</u>
<u>TAILSTOCK</u>		
MVS100/701	Tailstock Body	1
" 702	Tailstock shoe	1
" 703	End cap	1
" 705E	Barrel (Imperial)	1
" 705M	Barrel (Metric)	1
" 707	Nut	1
" 710A/B	Barrel clamps	1 set
" 711	Ejector pin	1
" 712	Clamp handle stop	1
BVS100/706	Tailstock screw	1
SP 135	Clamp pad	1
SP 147A	Clamp eccentric	1
SP 148A	Clamp pin	1
SP 171A	Locking stud	1
SP 172	Tee key	1
<u>P.C.S. APRON</u>		
ML 110/301C	Apron body	1
" 302	Apron driving gear	1
" 303	Apron pinion	1
" 304	Cross slide driving gear	1
" 305	Cross slide gear pinion	1
" 306	Cross slide gear shaft	1
" 308	Worm	1
" 309	Worm gear	1
" 310	Chimney gear	1
" 311	Worm gear shaft	1
" 312	Worm driving gear	1
" 313	Feedshaft gear	1
" 315	Worm shaft	1
" 318	Worm carrier lifter	1
" 319	Apron driving gear shaft	1
" 320	Change gear	1
" 321	Worm carrier	1
" 325	Locking pin	1
ML 100/117	Retaining plate	1
ML 105/301	Half nuts (Imperial)	1 set
" 301A	Half nuts (Metric)	1 set
" 302A	Half nuts studs	2
" 306	Screwcutting lever catch	2
MVS110/345	Apron shifter	1
" 346	Selector knob	1
" 349	Selector shafter	1
" 355	Apron cover plate	1
" 356	Selector shaft bush	1
BVS110/307	Handwheel pinion	1
" 326	Screwcutting lever boss	1
" 348	Feed boss	1
CH 218A	Apron plate	1
CH 223D	Direction change insert	1
CH 243	Feed direction plate	1

REPLACEMENT PARTS LIST - 280 'Synchro' LATHE

-5-19

<u>Part No.</u>	<u>Description</u>	<u>No. Off</u>
<u>REVERSING BRACKET</u>		
MVS105/101	Reversing bracket	1
" 107	32T reversing gear	2
" 108	42T stud gear	1
" 109	Idler stud	2
BVS115/993	Locating pin plunger	1
ML 105/104	Reversing bracket stop	1
ML 115/948T	24T stud gear	1
" 949	Intermediate stud	1
" 950	Stud gear spacer	1
<u>END DRIVE</u>		
BVS115/903	Quadrant	1
" 970	End drive guard	1
" 971	Motor cover guard	1
" 972	Guard support block	2
" 973	Guard retaining block	1
" 974	Guard catch	1
" 975	5/16 B.S.W. collar screw	1
ML 115/908A	64T Quad gear	1
" 909A	66T Quad gear	1
" 943A	64T & 22T quad gear shaft	1
" 944A	22T quad gear	1
" 945A	24T quad gear	1
" 946A	66T & 24T quad gear shaft	1
" 995	Quad retaining springs	2
" 996A	Shear bush	1
" 997	66T gear (with boss)	1
" 998	66T gear	1
" 999	Retaining plate	1
" 1004	Shear key	1
ML 100/117	Retaining plate	2
CH 107	Quad, sliding gear chart	1
CH 236	Spindle capacity chart	1
CH 242	End drive guard	1
MVS115/971	End guard handle	1

<u>Part No.</u>	<u>Description</u>	<u>No. Off</u>
<u>GEAR BOX - Metric</u>		
ML115 /901	Gear box body	1
" 902C	Gear box cover plate	1
" 904B	Gear change handle	1
" 906	Tumbler carrier body	1
" 910A	Tumbler carrier end (Plain)	1
" 910B	Tumbler carrier end (geared)	1
" 911	Tumbler gear	1
" 919	Sliding gear shaft	1
" 923	Sliding dog shaft	1
" 924A	Driving gear & dog insert	1
" 926	Sliding shaft driven gear	1
" 927A	Shaft driving gear & collar	1
" 929	Sliding dog & gear	1
" 930	Fixed dog & gear	1
" 931	Gear train shaft	1
" 932	Gear train - 32T gear	1
" 933	Gear train - 28T gear	1
" 935	Gear train - 24T gear	1
" 938	Gear train - 20T gear	1
" 940	Gear train - 16T gear	1
" 941	Gear train spacing collar	1
" 941B	Gear train spacing collar	1
" 941D	Gear train spacing collar	1
" 942	Gear train locking nut	1
" 947	Quadrant leaf spring	1
" 953	Rack moving gear	1
" 956	Rack shaft	1
" 957	Tumbler trip lever	1
" 958	Rack	1
" 959	Tumbler shaft	1
" 983	Gear train - 25T gear	1
" 984	Foolproof pin stop - housing	1
" 985	Foolproof pin stop	1
" 987	Foolproof pin	1
" 989	Foolproof spring	1
" 990	Tumbler driving shaft bush	1
" 991A	Gear train shaft bush	1
" 991B	Gear train shaft bush	1
" 992A	Sliding dog shaft bush	1
" 992B	Sliding dog shaft bush	1
" 994	Carrier moving gear	1
" 996A	Shear bush	1
" 1000	Gear box spindle bush	1
" 1001	Spindle spacer bush	1
" 1005	Collar	1
" 1006	Sliding gear shaft collar	1
" 1007	Sliding gear shaft collar	1
ML110/ 101	Sliding gear	1
" 103	Leadscrew gear	1
" 107	Kicker pin	2
" 403A	Feedshaft	1
" 407	Feedshaft dog drive	1
" 408	Driven dog gear	1
MVS115/ 905	Quadrant bracket	1
" 912A	Tumbler gear driving shaft	1

REPLACEMENT PARTS LIST - 280 'Synchro' LATHE

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<u>Part No.</u>	<u>Description</u>	<u>No.Off</u>
<u>GEAR BOX - Metric continued</u>		
BVS115/913	Dog gear trip lever	1
" 915	Dog gear change lever shaft	2
" 916	Dog gear change lever bush	2
" 952	Selector dial shaft	1
" 982	Sliding gear trip lever	1
" 993	Gear change lever	1
CH 152	Change lever chart	1
CH 209	Gear box nameplate	1
ML 100/117	Retaining plate	1

GEAR BOX - Imperial

This is the same as the metric gear box but omitting the following parts:-

ML 115/941B&D	Gear train spacing collar	1
ML 115/983	Gear train - 25T gear	1
ML 115/996A	Shear bush	1
ML 110/403A	Feedshaft	1
CH 152	Change lever chart	1
CH 209	Gear box nameplate	1

and ADDING these parts:-

ML 115/902D	Gearbox cover plate	1
" 934	Gear train - 26T gear	1
" 936	Gear train - 23T gear	1
" 937	Gear train - 22T gear	1
" 939	Gear train - 18T gear	1
CH 106	Change lever chart	1

REPLACEMENT PARTS LIST - 280 'Synchro' LATHE

- 8 - 9

<u>Part No.</u>	<u>Description</u>	<u>No.Off</u>
<u>TOOLPOSTS</u>		
BVS100/801	Single way toolpost	1
ML 100/801B	Two way toolpost	1
ML 119/1B	Four way toolpost	1
ML 100/802	Toolpost tenon	1
ML 100/803A	Toolpost stud	1
ML 100/805	Toolpost handle cap	1
SP 142	Handle	1
<u>AMERICAN TYPE TOOLPOST</u>		
BVS113/1	Toolpost collar	1
BVS113/4	Toolpost body	1
ML 113/2	Toolpost boat	1
ML 113/3	Toolpost base	1
<u>FIXED STEADY</u>		
ML 101/1	Fixed steady - top	1
" 2A	Fixed steady - bottom	1
" 3	Steady rod	3
" 4	Swing bolt	1
" 6	Hinge pin	1
" 7	Hinge pin	1
" 8	Clamp shoe	1
" 10	Screw bush	3
" 11	Bush	3
<u>TRAVELLING STEADY</u>		
ML 102/1A	Travelling steady body	1
" 2	Tenon	1
ML 101/3	Steady rod	2
" 10	Screw bush	2
" 11	Bush	2
ML 100/220	Coolant block clamp	1

<u>Part No.</u>	<u>Description</u>	<u>No. Off</u>
<u>METRIC TRANSPOSING SET UP</u>		
BVS114/1A	Imperial to Metric quad	1
" 2	48T gear	1
" 3	48T gear spacing bush	1
" 4	Spacer	1
" 5A	Locating pin plunger	1
ML 114/3	Intermediate stud	2
" 4A	64T Screw gear	1
" 6	64T Stud gear	1
" 7	66T Stud gear	1
ML 105/113	Spacing bush	1
" 117	Washer	1
" 119	16T Change wheel	1
" 121	24T Change wheel	1
" 127	48T Change wheel	1
" 130	56T Change wheel	1
" 131	60T Change wheel	1
" 138	26T Change wheel	1
" 147	127T / 120T Change wheel	1
CH 238	Metric transposing gear chart	1

REPLACEMENT PARTS LIST 280 VS & 280 SYNCHRO LATHE.

IMPERIAL TRANSPOSING SET UP.

<u>Part. No.</u>	<u>Description.</u>	<u>No. Off.</u>
BVS 114/1B	Metric To Imperial Quadrant	1
BVS 114/2	48T Gear	1
BVS 114/3	48T Gear Spacing Bush	1
BVS 114/4	Spacer	1
BVS 114/5A	Locating Pin Plunger	1
ML 114/3	Intermediate Stud	2
ML 114/9	127T/135T Change Wheel	1
ML 114/10	48T Gear	1
ML 114/13	49T Gear	1
ML 105/113	Spacing Bush	1
ML 105/127	48T Change Wheel	1
ML 105/128	52T Change Wheel	1
ML 105/129	54T Change Wheel	1
CH 271	Metric To Eng. Conversion Chart	1

REPLACEMENT PARTS LIST

SYNCHRO
~~EASTERN~~ CNC LATHE

BOUGHT OUT ITEMSSPINDLE DRIVE CONTROL

DESCRIPTION	MANUFACTURER	REF. NO.	NO.
DRIVE MOTOR	CROMPTON PARKINSON	VMX58. 4B.126	1
DRIVE PULLEY	SIMPLATROLL	11.213.13.920	1
DRIVEN PULLEY	SIMPLATROLL	11.213.13.910	1
DRIVE BELT	SIMPLATROLL	057040-0.22/750.9223	1
SK.HD.CAP SCREW		M8 - 45	4
-do-		M8 - 35	2
-do-		M8 - 25	3
HEX. SET SCREW		M8 - 15	4
-do-		M6 - 45	2
GRUB SCREW		M6 - 6 KND CUP	1
-do-		2BA - 5/16 KND CUP	1
HEX NUT		M6 -STD	2
HEX NUT		M8 NYLOCK	1
C/SUNK SKT SCREW		2 BA - 3/8	2
WASHER		M8	4
TENSION PIN		3/16 DIA - 2	1
COMPRESSION SPRING		3/16 OD. $\frac{1}{2}$ FL.7.5 CPI 17 SWG	1

DENFORD MACHINE TOOLS LIMITEDSYNCHRO LATHE - PARTS LIST
COOLANT SYSTEM - BOUGHT OUT ITEMS.

DESCRIPTION	MANUFACTURER	REF. NO.	NO.
COOLANT PUMP	M.G. ELECTRICS	AQ3/2/Q/SS 3-phase	1
COOLANT TAP	DRANWALL	25/4440/00	1
FEMALE ELBOW	ENOTS	34-0328-17	2
STD. NIPPLE		1/2" D.S.P.	2
JUBILEE CLIP		22-30 mm	2
CLEAR TUBE	GRIFLEX	3/4" BORE x 20"	1
CLEAR TUBE	GRIFLEX	1/2" BORE x 4"	1
CLEAR BRAIDED	GRIFLEX	1/4" BORE x 23"	1
DRAIN PLUG	ADAMS	NP.50.G.	1
SKT.HEAD CAP SCREW		M5-16	2
-do-		M6-12	2
SKT.HEAD BUTTON		M6-12	3

8th March 1982