

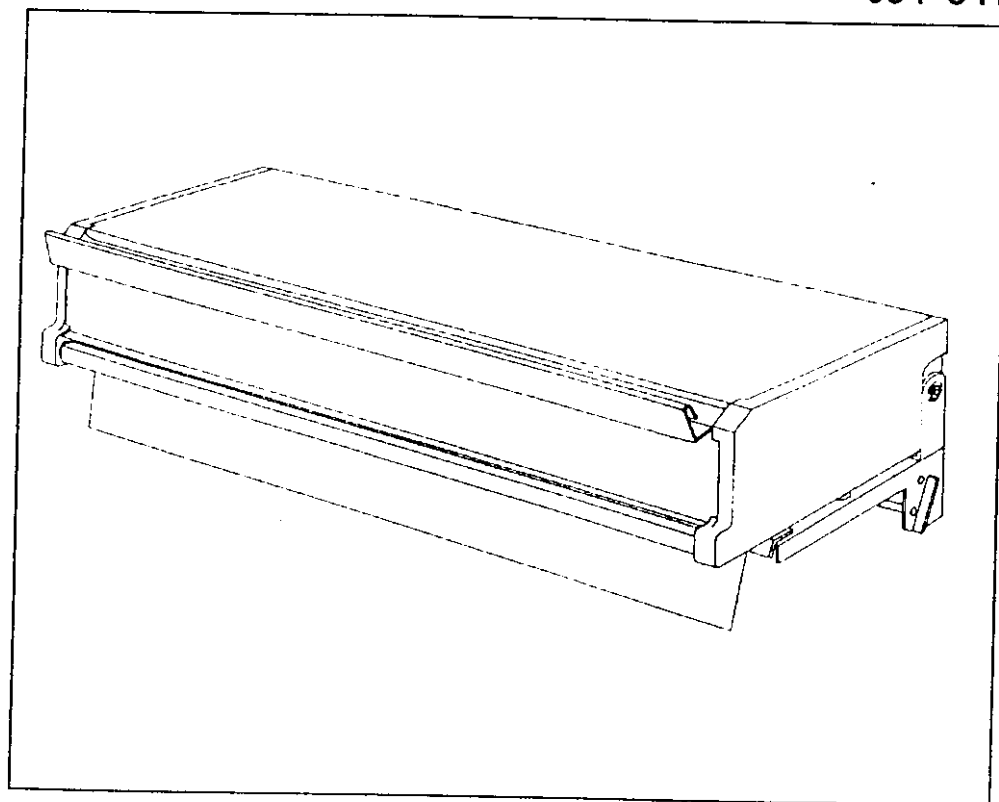
MANNESMANN
Tally

T2045

T2060

Maintenance Manual

Matrix Printer
Cutting Device
054 341



Installation / Introduction

This Maintenance Manual describes how to repair and to order spare parts. This manual only deals with the changes or additions to the standard Maintenance Manual 379 279.

These are:

- Specification
- Mechanical Parts and Spares
- Electronic Schematics
- Electronic Parts

For proper use and installing of the automatic Cutting Device consider also the Operator's Manual "Cut Device Id.: 059901".

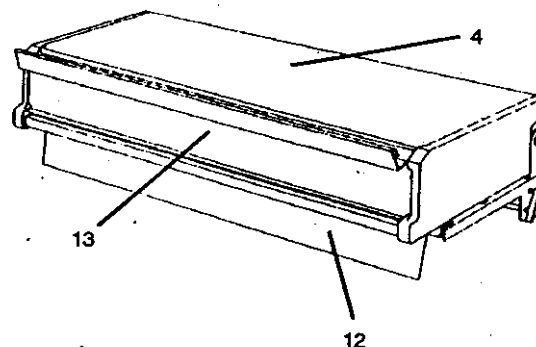
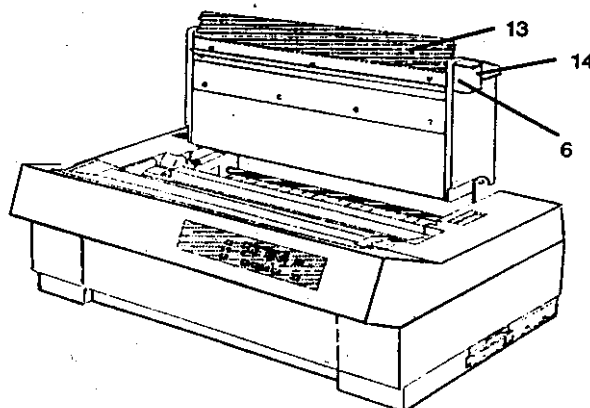
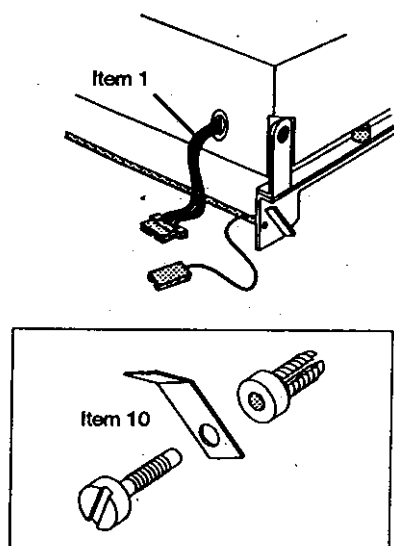
Safety Notes:

- If you have any short pieces of paper remaining in the device, turn off the printer first.
- Do not stick an unsuitable materials or tools - such as screw drivers etc. - into the device openings as this may damage the mechanical system.
- Replace the protective cap for the drive wheel when the cutter is no longer needed (in use) to prevent long hair, chains etc. from being pulled into the printer.

Specification MT360-CUT

Cut width	400mm	Paper weight	multi-part form 2. tractor
Cut height	min. form length 2.5 inches (=6,35cm)		1.sheet 60g/m ² - 90g/m ²
Cut duration	350ms		1.copy 45g/m ² - 56g/m ²
Cutting accuracy	1 to 2 sheet-sets +/-1mm >= sheet-sets +/-2mm depending on the stiffness of the cross perforation	Copies	2.copy 45g/m ² - 56g/m ²
Service life	>250000 cuts	1.push tractor	1+5
Weight	approx. 4 kp	2.push tractor	1+2
Paper type	fanfold paper		depending on paper quality
Paper weight	single form 60g/m ² - 120g/m ² multi-part form 1.tractor: original 45g/m ² - 120g/m ² 1.sheet 45g/m ² - 65g/m ² copies 45g/m ² - 56g/m ² last 45g/m ² - 65g/m ² Total: <280g/m ²	Stacker	1 sheet-sets > 150 sheets 80g/m ² 6 sheet-sets > 50 sets multi-part depends on crimping (punch printing on edge of sheet) and perforation / paper weight
			Paper stacking, above all of multi-part sets, depends on the quality of the crimping

Item	Name	Part No	Class	Qty.
1	Connection Cable	395 076	A	1
2	Controller PCB	395 077	A	1
3	Motor complete incl. gear	395 078	B	1
4	Housing (upper part)	395 079	B	1
5	Drive Belt	395 080	B	2
6	Toothed Wheel complete with flat spring and axle	395 081	A	1
7	Friction Shaft without item 8	395 082	B	1
8	Paper Transport Roller	052 110	A	7
9	Switch	395 083	C	1
10	Frame Ground Connector Assy*	047 428	B	1
11	Paper Stacker (-Support)	053 493	B	2
12	Foil	395 166	A	1
13	Lip Holder metal	395 568	B	1
14	Housing Toothed Wheel	395 597	B	1



Maintenance and Adjustments

No preventive maintenance has to be performed.
No adjustments need to be done.

*Contains:
Wedge insert M4x9.5
Flat Plug 6,3
Screw M4x10

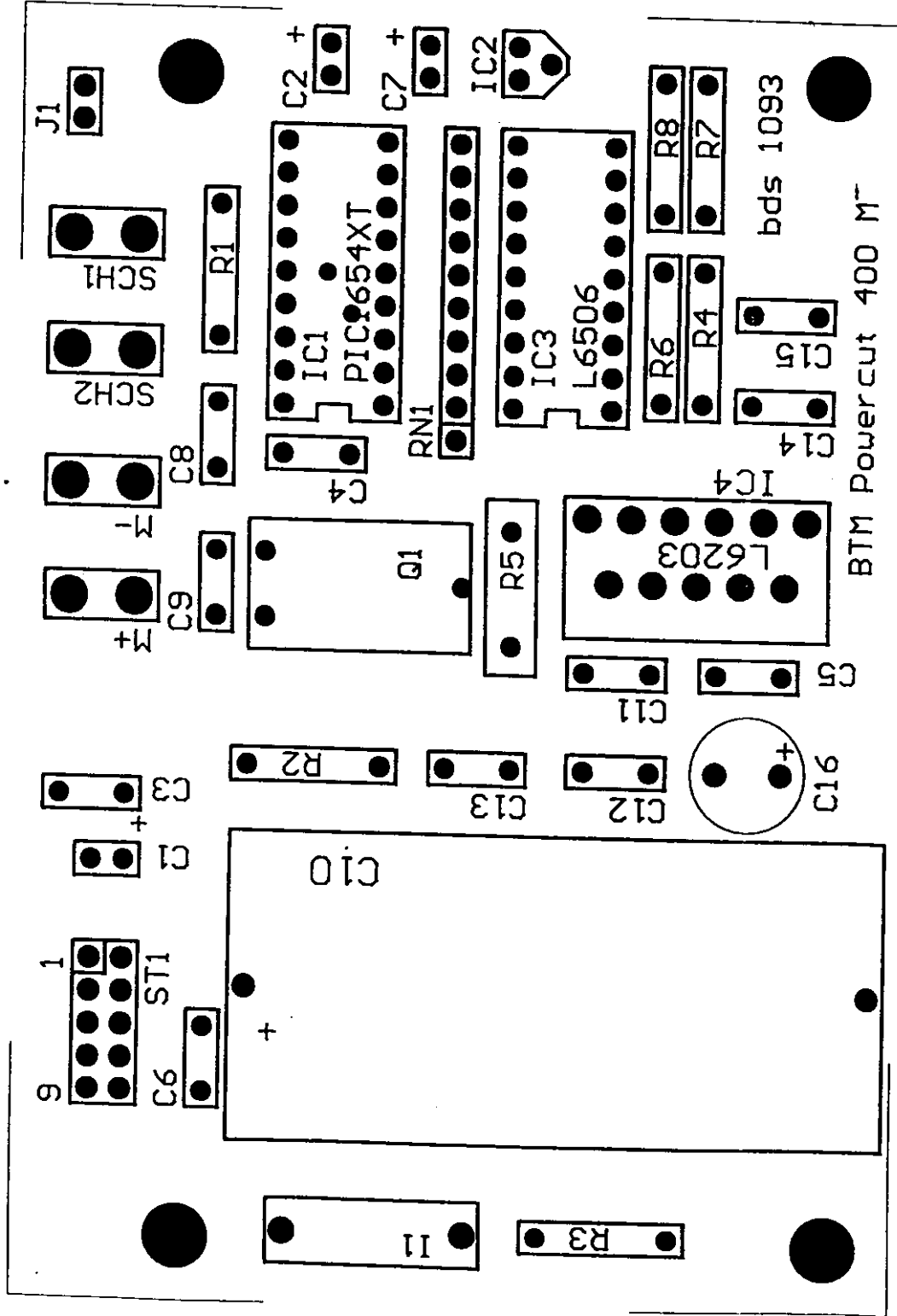
Spare Parts and Schematics



100 x 68 mm

BTM Powercut 400 MT

bds 1093



Part	Value	Package	Other
C1	1 μ F	R 2,5mm, Tantal, 16 V	
C2	10uF	axial, 63V	
C4	100nF	R 5,0mm, Ceramic, 100 V	
C5	100nF	axial, 63V	
C6	100nF	axial, 63V	
C7	10uF	R 2,5mm, Tantal, 16 V	
C8	22pF	R 5,0mm, Ceramic, 100 V	
C9	22pF	axial, 63V	
C10	1000uF	R 5,0mm, Ceramic, 100 V	
C11	47nF	axial, 63V	
C12	47nF	axial, 63V	
C13	10nF	axial, 63V	
C14	10nF	axial, 63V	
C15	2,2nF	axial, 63V	
C16	10uF	R 5,0mm, 63V	
C17	470pF	R 5,0mm, Ceramic, 100 V	
C18	470pF	axial, 63V	
C19	10 μ F	R 2,5mm, Tantal, 16 V	
IC1	PIC1654XT	DIL 18	on socket
IC2	MC34064	TO 92	
IC3	L 6506	DIL 18	on socket
IC4	L 6203		
J1	Jumper		
M+	FLACHST	Connector, 4,8 mm	
M-	FLACHST	axial, 63V	
Q1	3 MHz Quartz	RW 43	lying
R1	100	Metalfilm, 0,25 Watt	
R2	4,7	axial, 63V	
R4	22k	axial, 63V	
R5	0.22	Raster 8,9mm, 2 Watt	
R6	10k	Metalfilm, 0,25 Watt	
R7	10k	axial, 63V	
R8	1k6	axial, 63V	
R9	220	axial, 63V	
R10	220	axial, 63V	
R11	680	axial, 63V	
R12	220	axial, 63V	
R13	22K	axial, 63V	
RN1	10k	Array, Raster 2,5, gem. Anschl. „G“ one sided	
SCH1	FLACHST	Connector, 6,3 mm	
SCH2	FLACHST	axial, 63V	
ST1	CON05X2	Connector, 10 pol.	
U1	317T	LM 317 T, TO 220	

Motoren mit Schneckenradgetriebe

DC motors with worm gear

Moto-réducteurs à vis sans fin

Baureihe/Series/Série

0223 (SWMP)

Technische Beschreibung

Das Motorgehäuse und das rückseitige Lagerschild bestehen aus sendzimirverzinktem Stahlblech, die Schalenmagnete aus Sintermetall und das Getriebegehäuse aus Zinkdruckguß. Die Ankerwelle (mit aufgewalzter oder gefräster Schnecke) ist motorseitig in einem Sintermetall-Gleitlager, getriebeseitig im Boden des Getriebegehäuses entweder in einem Kugellager oder ebenfalls in einem Sintermetall-Gleitlager gelagert. Das Axialspiel kann mit einer Justierschraube eingestellt werden. Aus Kunststoff oder Hartgewebe ist das Schneckenrad gefertigt, das in einem Sintermetall-Gleitlager montiert ist.

Das mit Fett gefüllte Getriebegehäuse wird mit einem Stahlblechdeckel über eine Dichtung verschlossen.

Der elektrische Anschluß erfolgt über Litzen oder Flachstecker.

Verwendung: Allgemeiner Maschinenbau, Automaten, Landwirtschaftstechnik, Büromaschinen, Laborgeräte, Medizinische Geräte, Verkehrs- und Kommunikationstechnik, Foto/Optik.

Schutzart: IP 20

Gewicht: ca. 0,71 kg.

Technical Description

The motor casing and the rear motor bearing plate consist of Sendzimir-galvanized sheet steel, the shell magnets are made of sintered metal material and the gearbox is a zinc die-casting. The armature shaft (with rolled-on or cut worm) has a sintered metal bush bearing on the motor side, and the gear side bearing, mounted in the bottom of the gearbox, is either a ball bearing or also a sintered metal bush bearing.

The end play of the armature is set by means of an adjusting screw. The worm wheel is made of plastic or resinbonded fabric and the shaft runs in a sintered metal bush bearing.

The grease-filled gearbox is sealed by means of a sheet steel cover and gasket.

Electrical connection is carried out by means of leads or spade terminals.

Use: General machine construction, automatic machines, agricultural technology, business machines, laboratory appliances, medical appliances, traffic and communications technology, photographic/optical equipment.

Protection: IP 20

Weight: approx. 0.71 kg.

used in

T2155-70 Cutter

Description technique

Le carter cylindrique du moteur et le disque de support de palier arrière sont en tôle d'acier galvanisée par procédé Sendzimir, les aimants en forme de coquille sont réalisés en Baryum-ferrite et le carter du réducteur est réalisé en zamak.

L'arbre de l'induit, dont l'extrémité comporte une vis sans fin, repose côté face arrière du moteur sur un palier lisse en métal fritté et côté réducteur sur un roulement à billes ou également sur un palier lisse. Le jeu axial de arbre induit est réglé par l'intermédiaire d'une vis d'ajustage.

La roue de vis sans fin est réalisée en matière plastique ou en fibre de résine et l'arbre de sortie repose sur des palier lisses en métal fritté. Le carter du réducteur est rempli de graisse et est fermé par un couvercle en tôle dont l'étanchéité est assurée par un joint.

Le branchement électrique est effectué à partir de fils multibrins ou de fiches plates.

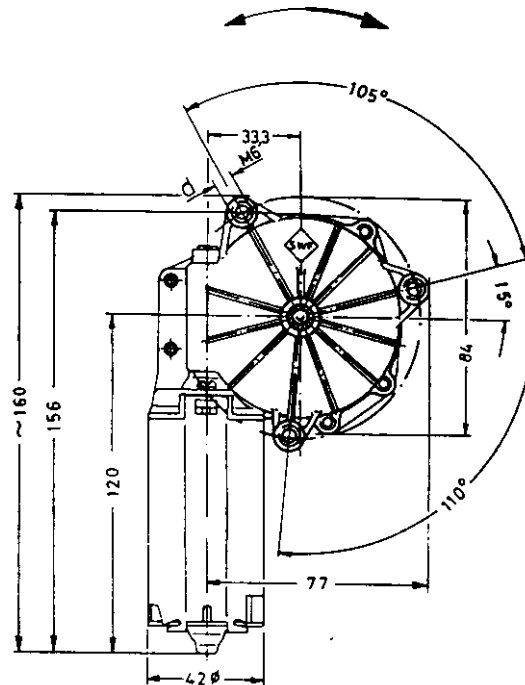
Applications: Constructions générales de machines, automates, machines agricoles, machines de bureau, appareils de laboratoire, appareils médicaux, techniques de communication et de transports, photographie et optique.

Degré de protection: IP 20

Poids: env. 0,71 kg.

Moto-réducteurs à vis sans fin

0223 (SWMP)



Motoren mit Schneckenradgetriebe

DC motors with worm gear

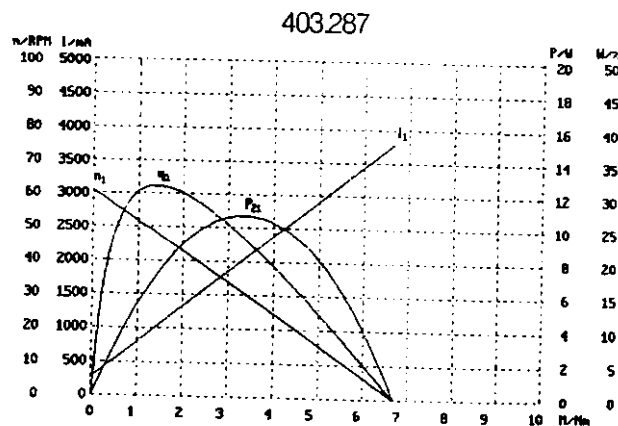
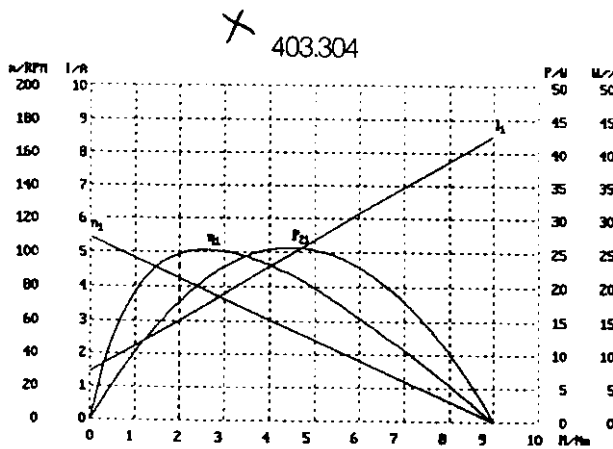
Moto-réducteurs à vis sans fin

Baureihe/Series/Série

0223 (SWMP)

Typ Type Type	Zeichnung / Drawing / Design		Nennspannung Rated voltage Tension nominale		Leerlaufdrehzahl No-load speed Régime au ralenti		Nennmoment Nominal torque at output shaft Couple nominal sur l'arbre entrainem.		Anzugsmoment an der Abtriebswelle Starting torque at driven shaft Couple de traction sur l'arbre		Getriebeübersetzung Gear ratio Démultiplication		Selbsthemmung, bis .. Nm Self-locking, up to .. Nm Autoblocage jusqu'à .. Nm		Hochlaufzeit Acceleration time Temps de montée		Bremszeit, ohne/mil Kurzschlußbremse Deceleration time, without/mil short circuit brake Temps de freinage sans/avec frein à court circuit		Anschlußwiderstand, 2/4 Lamellen Connection resistance, 2/4 lamellations Impédance de branchement 2/4 lamelles		Anschlußinduktivität, 2/4 Lamellen Connection inductance, 2/4 lamellations Inductivité de branchement 2/4 lamelles		Läuferträgheitsmoment Rotor inertia moment Couple inertiel du collecteur		Zahnradwerkstoff Gear material Matériau des pignons		Zusätzliche Abgriffsmöglichkeit Additional drive possibilities Accroissements supplémentaires possibles		Welle Shaft Arbre		Schaltbild Wiring diagram Schéma électrique		Anschlußart Connections Connexions		Bemerkungen Remarks Remarques																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
			U_N [V]	n_0 [min ⁻¹]	M_N [Nm]	M_A [Nm]	i		t [ms]	t_{Brem} [ms]	R [mΩ]	L [mH]	J_r [kgm ²] x 10 ⁻⁶																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

Motorkennlinien für Ausführung ... / Motor curves for type ... / Caractéristiques moteur pour la version ...



Moto-réducteurs à vis sans fin

0223 (SWMP)

(virol jedoch
bearbeitet)

Application for FCC Part 15, Subpart B, Class B Certification

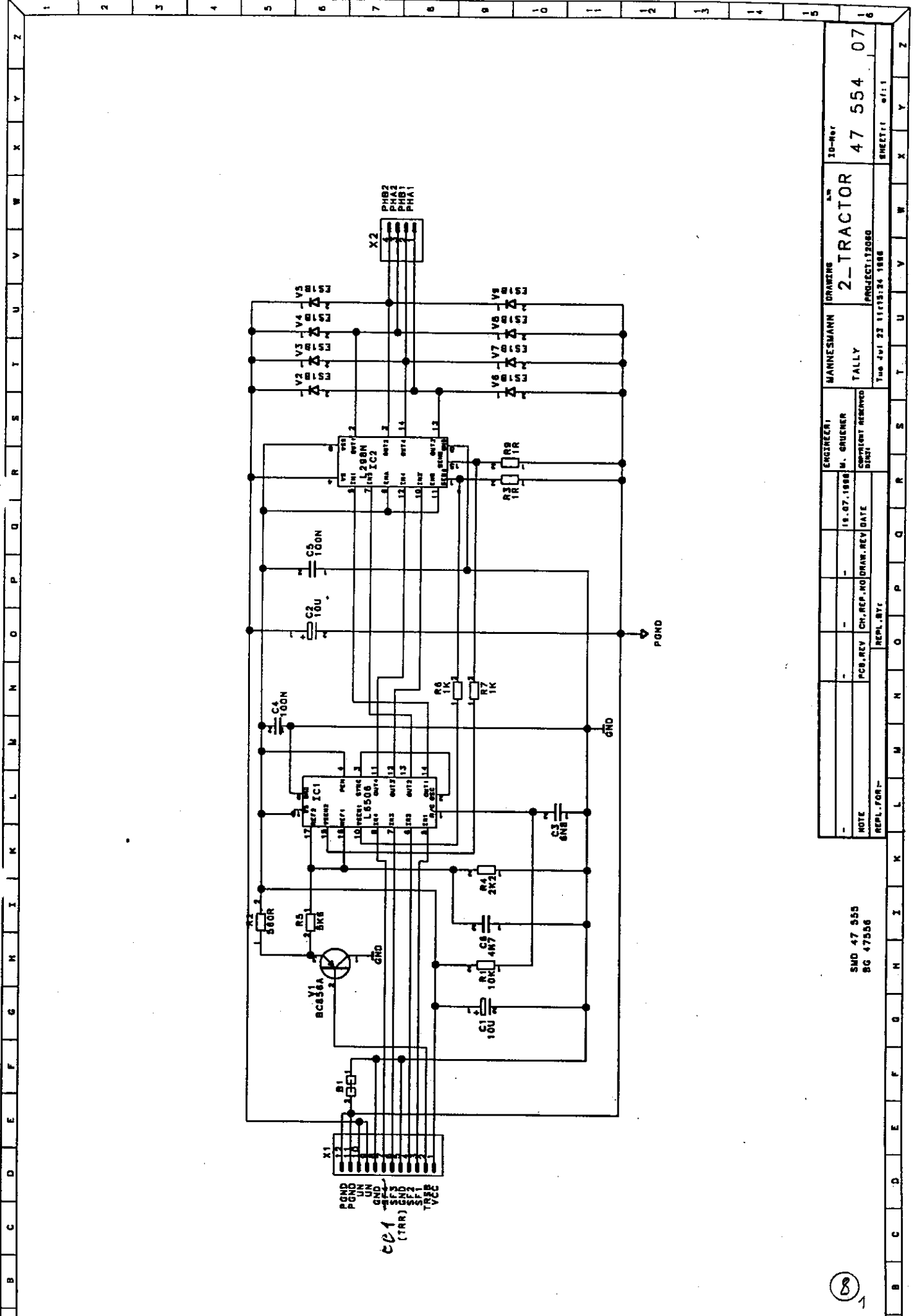
Matrix Printer Model T2155 and T2170

Documentation of optional Assemblies

Scope:

Sheet:

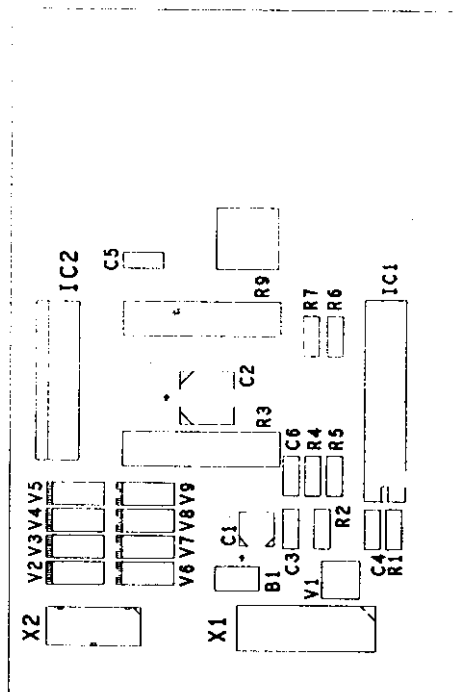
	Overview Drawing of optional Assemblies (numbered 1 to 8)	1
1.	Color and Sheet Feeder Motor Driver (OPTION 1) Circuit Diagram, Layout, Placement Sketch and Parts List	1-3
2.	Interface parallel / serial CENTRONICS / RS232 (INTERFACE 2) Circuit Diagram, Placement Sketch, Drawing, Parts List	1-5
3.	Interface RS422 (INTERFACE 3) Circuit Diagram, Jumpers Table, Placement Sketch Drawing, Layout and Parts List	1-6
4.	Interface SS97 (Siemens) (INTERFACE 4) Circuit Diagram, Placement Sketch Drawing and Parts List	1-4
5.	Interface CURRENT LOOP (20mA) (INTERFACE 5) Circuit Diagram, Placement Sketch Drawing and Parts List	1-6
6.	Interface Ethernet ENI3 (INTERFACE 6) Circuit Diagram, Placement Sketch Drawing and Parts List	1-3
7.	Paper Cutting Device (OPTION 7) Circuit Diagram, Motor Data Sheets, Placement Sketch and Parts List	1-10
8.	2 nd Tractor Motor Driver (OPTION 8) Circuit Diagram, Layout, Placement Sketch and Parts List	1-3



DRAWING		ENGINEER		DATE		PROJECT		SHEET		NO.	
2-TRACTOR		M. GRUCHER		18.07.1988		PROJECT 12000		47		554	
TALLY		COMPILED		DATE		REV		NO		07	
Tue Jul 23 11:13:24 1988		REPL. FOR		PCB REV		CH. REV		NO		07	

SMD 47 555
 BG 47556
 8
 1

?	?		?	?		31.07.1996	
Note	AG.Rev	PCB.Rev	Ch.Rep.No	Draw.Rev	Date		
Layer: SILKSCREEN TOP				OUTLINE			
				MANNESMANN			
				TALLY			
				ID-No 47 554			



DESIGN : 2_tractor, T2060
 BAUGRUPPE : 47 556
 SMD-BAUGR. : 47 555
 LEITERPLATTE: 47 554

DATUM : 23.07.1996

(Mechanische Bauteile und Bauteile ohne elektrische Funktion sind separat aufgefuehrt)

POS	ID-NR	BAUTEIL	TYP	ANZ	STATUS	BEZEICHNUNG
708547	2_5ULTREX4	SEX=MALE DIRECT=S COL=BLACK		1 ?		X2
708553	R	R=1K ID=62050 P=0.25W TOL=J	SMD	2 ?		R6 R7
708554	R	R=2K2 ID=62050 P=0.25W TOL=J	SMD	1 ?		R4
708660	C	C=100n ID=62132 U=63V TOL=M	SMD	2 ?		C4 C5
708663	C	C=4n7 ID=62132 U=63V TOL=K	SMD	1 ?		C6
708675	L6506	PAC=DIP		1 ?		IC1
709117	L293N	PAC=HWATT15		1 ?		IC2
709124	R	R=1R ID=112-0 P=1.0W TOL=J		2 ?		R3 R9
709633	R	R=10K ID=62050 P=0.25W TOL=J	SMD	1 ?		R1
709683	ELKO	C=10u ID=62110 U=50V TOL=M	SMD	1 ?		C2
709818	ELKO	C=10u ID=62110 U=16V TOL=M	SMD	1 ?		C1
709851	R	R=5K ID=62050 P=0.25W TOL=J	SMD	1 ?		R5
709874	MICROMATCH12	SEX=FEMALE DIRECT=S COL=RED		1 ?		X1
709988	DIODE	TYP=ES1B	SMD	8 ?		V2 V3 V4 V5 V6 V7 V8 V9
710097	C	C=6n8 ID=62132 U=63V TOL=M	SMD	1 ?		C3
710562	R	R=560R ID=62050 P=0.25W TOL=J	SMD	1 ?		R2
710960	PNP	TYP=BC856A	SMD	1 ?		V1
BR_CLOS	BRIDGE	TYP=CLOSED		1 ?		B1

* = nicht bestueckt

Tally Computerdrucker GmbH
D-89275 Elchingen
Germany
FCC ID: EUIT2155-70

March 30, 1999
W. Boehm, Dept. TQV

Application for FCC Part 15, Subpart B, Class B Certification

Matrix Printer Model T2155 and T2170

Photographs of Printer and Interiors

No.	Description
1.	Overall Front View, Sheet Feeder installed, Front Flap open.
2.	Overall Back View, Cutting Device installed (Placement of FCC ID marked).
3.	Electronic Slide including Power Supply and Controller Board.
4.	Cutting Device, Top Front View
5.	Cutting Device without Enclosure, CUT-Logic with Motor