

Metor 28 / MHHS 5171
MAINTENANCE MANUAL
9100 555-4VE ED. 1.20

Rapiscan[®]
s y s t e m s

An OSI Systems Company

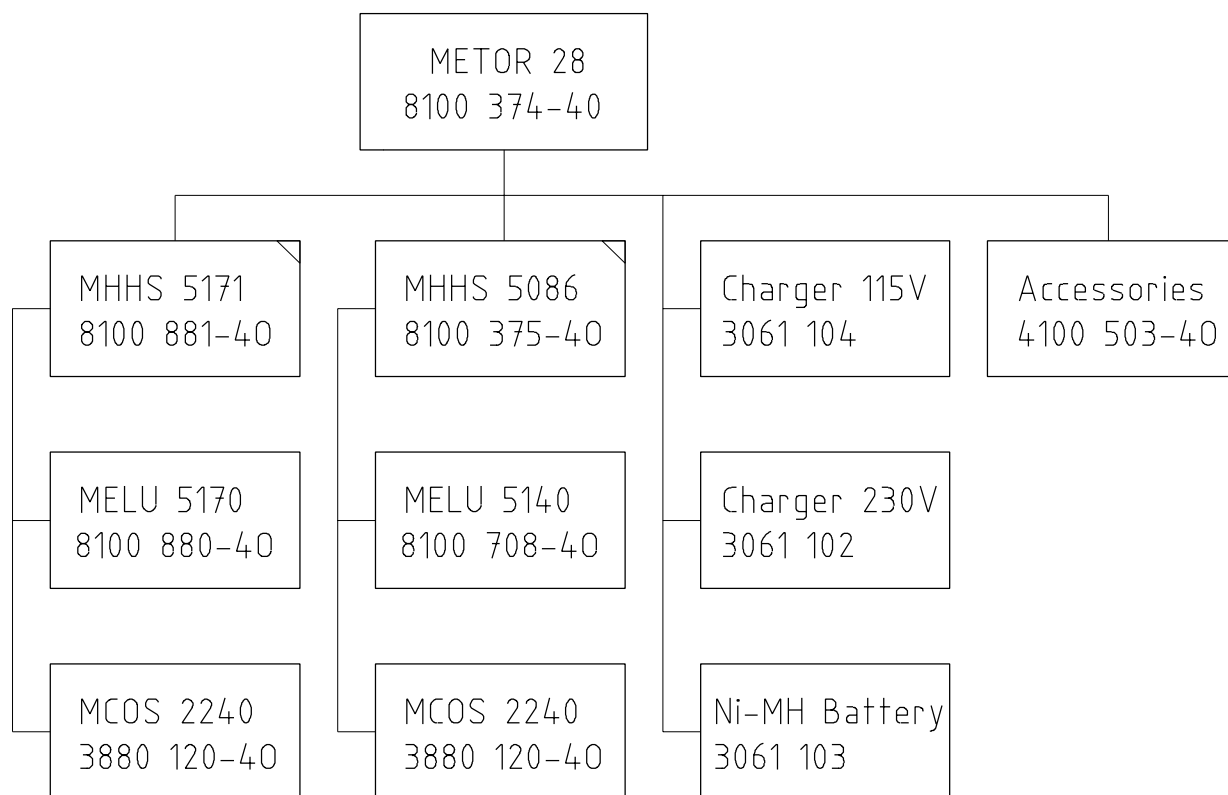
Author O.Rantala/ij	Rev. 1.20	Code 9100 555-4VE
Approved ORA	Date 13.12.2005	Document
Product Metor 28		Archives M28
Title MAINTENANCE MANUAL / MHHS 5171		

TABLE OF CONTENTS

DOCUMENT CODE REV:

1	METOR 28 / MHHS 5171		
	- Product structure	9100 257-4QE	B
	- Part list	8100 374-4OE	E
2	MHHS 5171 HANDHELD METAL DETECTOR SET		
	- Part list	8100 881-4OE	A *
	- Assembly drawing	9100 599-2KE	A *
3	MELU 5170 ELECTRONICS UNIT		
	- Part list	8100 880-4OE	A *
	- Assembly drawing	9100 492-4KE	A *
	- Block diagram	9100 275-4LE	01
	- Technical description	9100 273-4VE	1.00
4	ACCESSORIES		
	- Part list	4100 503-4OE	B
	- Spare part kit	8100 540-4OE	01

4		3		2		1	
REV.	MUUTOKSET REVISIONS			PVM DATE	PIIRT. DRAWN	HYV. APPR.	
a	MELU 5087 -> 5140			2004 11	IJ	ORA	
b	Lisätty / Added MHHS 5171, MELU 5170			2005 09	IJ	ORA	



Asiakaskohtainen
Depends on customer

OSA ITEM	OSAN NIMI, MITAT, MITTASTD., AINE, AINESTD. DESCRIPTION	PIIR.N:O TAKO CODE	KPL QTY
YLEISTOLERANSSI TOLERANCES		SUUNN. DESIGNED 2001 03 ORA	PIIRT. DRAWN 2001 03 IJ
	SUHDE SCALE	TARK. CHECKED 2002 01 JLA	HYV. APPROVED 2002 01 ORA
	LIITTYY NEXT ASSY Metor 28	TUOTE PRODUCT Metor 28	
		OSAL.N:O PART LIST 8100 374-40	REV. B
		PIIR.N:O CODE 9100 257-4QE	
Product structure Tuoterakenne			

SINGLE LEVEL

Last.revision: E
Revision updated: 24.9.2005
Version: PLANNING
Accept:

L. Line	Item	Dty	Description	Qty	U/M	Feat.	Rev
	8100374	40	METOR 28 HAND-HELD METAL DETECTOR	1,000	KPL		E
1	10	8100375	40 MHHS 5086 M28 HANDHELD METAL DETECTOR SET	1,000	KPL	F2	B
1	11	8100881	40 MHHS 5171 M28 HANDHELD METAL DETECTOR SET	1,000	KPL	F2	01
1	30	3061104	AC/DC PLUG-IN ADAPTOR 115VAC/14-24VDC IDLE 12V NOM. 2.5W 3.5 or 120VAC/12VDC 0.3A EI-35 A20930 ONTO or 120VAC/12VDC 0.3A PD9300PL01 SCEPTR	1,000	KPL	01	
1	40	3061102	AC/DC PLUG-IN ADAPTOR 230VAC/14-24VDC IDLE 12V NOM. 2.5W 3.5 or 12V 0.3A 2.7VA A20930G NORDIC POWER or 12V 0.28A 2.5W 8311 MASCOT	1,000	KPL	01	
1	50	3061103	NI-MH BATTERY 9V 150MAH IEC 6F22 PP3 VARTA V718H or ANSMAN 5030081, GP BATTERIES 15F8H or VANSON N1509V, TECXUS 9V NiMH	1,000	KPL	01	
1	60	3061369	BATTERY ALKALINE 9V IEC 6LR61 8022 VARTA	1,000	KPL	01	
1	90	9100268	4VE OPERATING INSTRUCTIONS METOR 28	1,000	KPL	F1	1.10
1	91	9100268	4VR OPERATING INSTRUCTIONS METOR 28	1,000	KPL	F1	1.10
1	92	9100268	4VD OPERATING INSTRUCTIONS METOR 28	0,000	KPL	F1	1.10
1	100	4100503	40 ACCESSORIES M22, 28	1,000	KPL		B
Related Installation components							
8001	8100445	40	M28 SINGLE UNIT PACKING 450x150x60MM	1,000	KPL		02
8002	3057955		CARTON 16XMETOR20 INSIDE MEASUREM 600X400X450 S 1/28 KPL	0,030	KPL		
8003	3061466		SCREW DRIVER 0.5x3 L=100	1,000	KPL		
Related Drawings							
9001	9100257	4QE	PRODUCT STRUCTURE M28	0,000	KPL		A
9002	9100269	4XE	METOR 28 TESTING PLAN	0,000	KPL		1.00
9004	9100326	4QE	WARRANTY METOR HAND-HELD METAL DETECTORS	0,000	KPL		1.00
9005	9100343	4HE	METOR 28 HAND HELD METAL DETECTOR	0,000	KPL		
9006	9100364	4VE	MAINTENANCE MANUAL M28/MHHS 5086	0,000	KPL		1.10
9007	9100555	4VE	MAINTENANCE MANUAL M28/MHHS 5171	0,000	KPL		1.00

MHHS 5171 HANDHELD METAL DETECTOR SET

SINGLE LEVEL

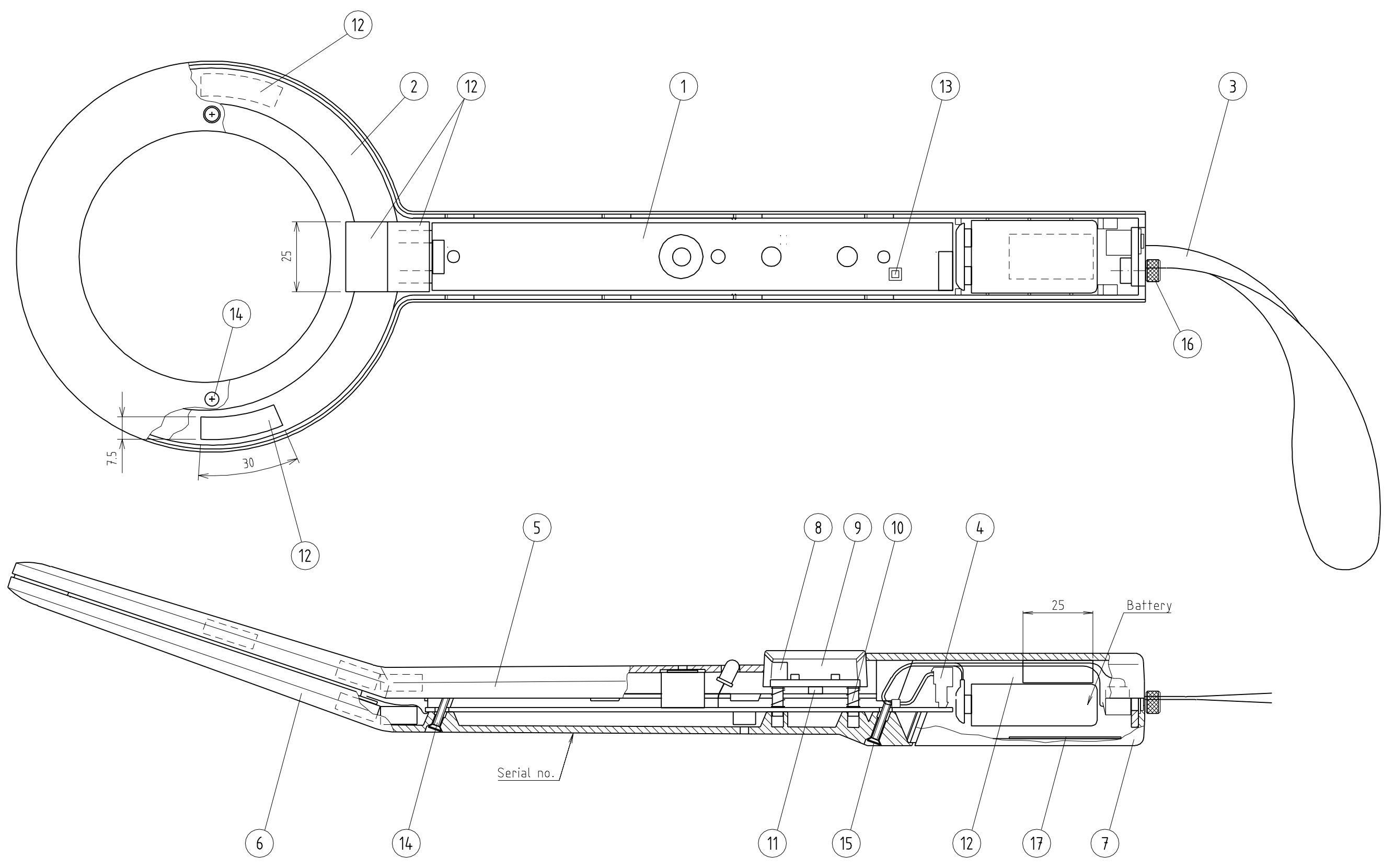
Last.revision: B
Revision updated: 9.12.2005
Version: PLANNING
Accept:

L. Line	Item	Dty	Description	Qty	U/M	Feat.	Rev
	8100881	40E	MHHS 5171 M28 HANDHELD METAL DETECTOR SET	1,000	KPL		B
1	10	8100880	40 MELU 5170 M28 ELECTRONICS UNIT *1	1,000	KPL		01
1	20	3880120	40 MCOS 2240 M20, 22 METOR COIL SET *2	1,000	KPL		01
1	30	8100436	40 CARRING STRAP M28 *3	1,000	KPL		01
1	40	8100426	40 BATTERY/CHARGER CABLE M28 *4	1,000	KPL		A
1	50	8100431	2ME FRAME M28 ABS/CYCOLAC GPM 5500 COLOR 304005 RAL7021 *5	1,000	KPL		A
1	60	8100432	2M COVER M28 ABS/CYCOLAC GPM 5500 COLOR 304005 RAL7021 *6	1,000	KPL		01
1	70	8100433	3M BATTERY COVER M28 ABS/CYCOLAC GPM 5500 COLOR 304005 RAL7021 *7	1,000	KPL		01
1	80	8100434	4M BUTTON M28 ABS/CYCOLAC GPM 5500 COLOR 304005 RAL7021 *8	1,000	KPL		01
1	90	8100435	4M BUTTON SLIDE M28 ABS/CYCOLAC GPM 5500 COLOR 304005 RAL7021 *9	1,000	KPL		01
1	100	3057853	CLAMPING SPRING 84-0,4x5x10,9MM TYPE A2 DIN 2095 *10	2,000	KPL		
1	110	8100478	4M BUTTON EXTENDER HOSE L=11.7 M28 *11	1,000	KPL		01
1	115	8100950	4PE MHHS 5171 STICKER 20x40 METOR 28 *17	1,000	KPL		A
1	120	3025939	SEALING TAPE FLEXOPAD W 8X15 *12	0,155	M		
1	130	2130110	CABLE TIE SST1,5M 2,4X140MM *13	1,000	KPL		
1	250	3059785	SCREW 3x12 CROSS RECESS COUNTER SUNK HEAD PZ1 BK WN1413 PZ *14	3,000	KPL		
1	260	3059786	SCREW 3x16 CROSS RECESS COUNTER SUNK HEAD PZ1 BK WN1413 PZ *15	1,000	KPL		

SINGLE LEVEL

L. Line	Item	Dty	Description	Qty	U/M	Feat.	Rev

	8100881	4OE	MHHS 5171 M28 HANDHELD METAL DETECTOR SET	1,000	KPL		B
1	270	3061632	PAIN THUMB SCREW M3x8 RAF M3465-SS-0 *16	1,000	KPL		
Related Drawings							
9001	9100599	2KE	HAND HELD METAL DETECTOR MHHS 5171 M28	0,000	KPL		A
9002	9100271	4XE	METOR 28 TESTING AND INSTRUCTION	0,000	KPL		1.20
9003	9100272	4X	METOR 28 ASSEMBLY INSTRUCTION	0,000	KPL		1.00
9004	9100273	4VE	METOR 28 TECHNICAL DESCRIPTION	0,000	KPL		1.00



REV.	MUUTOKSET	REVISIONS	PVM	DATE	PIIRT.	DRAWN	HYV.	APPR.

OSA / ITEM DESCRIPTION		PIIR.N:O TAKO / CODE	KPL / QTY
OSAN NIMI, MITAT, MITTASTD., AINE, AINESTD.		SUUNN. DESIGNED	PIIRT. DRAWN
YLEISTOLERANSSI TOLERANCES		2005 12 JLA	2005 12 IJ
SUHDE SCALE		TARK. CHECKED	HYV. APPROVED
1:1		2005 12 JLA	2005 12 ORA
LIIITYY NEXT ASSY		TUOTE PRODUCT	
Metor 28		Metor 28	
Rapiscan® systems		OSAL.N:O PART LIST	REV.
MHHS 5171		8100 881-40	A
Hand held metal detector set		PIIR.N:O CODE	
		9100 599-2KE	

MELU 5170 ELECTRONICS UNIT

SINGLE LEVEL

Last.revision: A
Revision updated: 13.12.2005
Version: PLANNING
Accept:

L. Line	Item	Dty	Description	Qty	U/M	Feat.	Rev
	8100880	40	MELU 5170 M28 ELECTRONICS UNIT	1,000	KPL		A
1	10	8100377 9F	PCB PANEL 5 PCS MELU 5087 VER. H *1	1,000	KPL		H
1	15	8100630 4PE	S/N LABEL BASE 10x51 *2	1,000	KPL		A
1	20	3052164	TERMINAL STRIP 1x36-PIN STRAIGHT 5.72/3.05/0.64SQR or 77311-118-36 Berg Electronics X1,X3	5,000	KPL		
1	30	3061274	BUZZER 12V 2048Hz 98DB QMB-12SL STA or QMB-12SL FARNELL 927-340 or HGP-12 STAR MICRONICS *H1	1,000	KPL		
1	40	3057903	PUSH BUTTON SWITCH 50MA 24VDC JB-15FBP2 NIKKAI *S1	1,000	KPL		
1	50	3061276	ROTARY SWITCH 429-051 30111 0010 DDM or RS 665-089 or RTE03 ITT CANNON, RS 665-089 *S2	1,000	KPL		
1	90	3061594	IC LMC6044IM 4xOP.AMP SO14 NATIONAL *IC1	1,000	KPL		
1	100	3059993	IC LM324M 4xOP.AMP SO14 NATIONAL *IC2	1,000	KPL		
1	110	3061264	IC LP2951 ACMX REGULATOR 3.3V SO8 NATIONAL or EBV ELEKTRONIK *IC3	1,000	KPL		
1	120	3061271	IC HEF4093BT 4x2NAND SCHMITTRIG SO-14 PHILIPS, TEXAS or MC4093 MOTOROLA or CD4093 NATIONAL, FAIRCHILD *IC4	1,000	KPL		
1	130	3061268	EMI-FILT 470pF 50VDC NFM21CC471R1H SMD 0805 MURATA *ZF1-6	6,000	KPL		
1	140	3061269	TR BCW32 NPN SOT23 32V/250mW/100mA PHILIPS *Q1-9	9,000	KPL		

SINGLE LEVEL

8100880 40 MELU 5170 M28 ELECTRONICS UNIT			1,000 KPL	A			
L. Line	Item	Dty	Description	Qty	U/M	Feat.	Rev
1	150	3061270	LED EL339-1EVGW 5mm EVERLINGHT or EL339-1SRVGN EVERLIGHT or 521-9450 DIALIGHT *D1	1,000	KPL		
1	160	3059945	DIODE LL4148 MINIMELF *D2-8,10-14-17	15,000	KPL		
1	170	3061273	REF-DIODE LM385-1.2 1.235V SOT23 NATIONAL *D9	1,000	KPL		
1	200	3061252	R METFILM 15R .25W 1% SMD1206 ROHM MCR18EZHF15 *R45	1,000	KPL		
1	210	3061234	R METFILM 20R .1W 1% SMD0805 ROHM MCR10EZHF20 *R39	1,000	KPL		
1	220	3061083	R METFILM 150R .1W 1% SMD0805 ROHM MCRS10EZHF151 or ROHM MCRS10EZHF151 *R2,25,31,53	4,000	KPL		
1	230	3061235	R METFILM 300R .1W 1% SMD0805 ROHM MCR10EZHF301 *R37,52	2,000	KPL		
1	240	3061254	R METFILM 300R .25W 1% SMD1206 ROHM MCR18EZHF301 *R20,56	2,000	KPL		
1	250	3060007	R METFILM 1K50 .25W 1% SMD1206 *R16	1,000	KPL		
1	260	3061244	R METFILM 2K .1W 1% SMD0805 ROHM MCR10EZHF2001 *R15,28,32,50	4,000	KPL		
1	270	3061247	R METFILM 5K6 .1W 1% SMD0805 ROHM MCR10EZHF5601 *R27	1,000	KPL		
1	280	3061089	R METFILM 10K .1W 1% SMD0805 ROHM MCR10EZHF1002 *R3,22,24,33,34,36,40,58	8,000	KPL		
1	290	3061237	R METFILM 13K7 .1W 1% SMD0805 ROHM MCR10EZHF1372 *R17	1,000	KPL		
1	295	3061287	R METFILM 16K .1W 1% SMD0805 ROHM MCR10EZHF1602 *R49 (IC4=FAIRCHILD, NATIONAL)	1,000	KPL	F1	
1	300	3061367	R METFILM 19K1 .1W 1% SMD0805 ROHM MCR10EZHF1902 *R49 (IC4=TEXAS, PHILIPS, MOTOROLA)	1,000	KPL	F1	
1	305	3061239	R METFILM 20K .1W 1% SMD0805 ROHM MCR10EZHF2002 *R11	1,000	KPL		
1	310	3061240	R METFILM 24K .1W 1% SMD0805 ROHM MCR10EZHF2402 *R38,47	2,000	KPL		

SINGLE LEVEL

8100880 40 MELU 5170 M28 ELECTRONICS UNIT				1,000 KPL	A
L. Line	Item	Dty	Description	Qty	U/M Feat. Rev
1	320	3061241	R METFILM 24K9 .1W 1% SMD0805 ROHM MCR10EZHF2492 *R1	1,000	KPL
1	330	3061242	R METFILM 26K7 .1W 1% SMD0805 ROHM MCR10EZHF2672 *R23	1,000	KPL
1	340	3061243	R METFILM 27K .1W 1% SMD0805 ROHM MCR10EZHF2702 *R10,43,44	3,000	KPL
1	350	3061245	R METFILM 30K .1W 1% SMD0805 ROHM MCR10EZHF3002 *R30	1,000	KPL
1	360	3061246	R METFILM 39K .1W 1% SMD0805 ROHM MCR10EZHF3902 *R9,41	2,000	KPL
1	370	3061248	R METFILM 51K .1W 1% SMD0805 ROHM MCR10EZHF5102 *R13,18,46	3,000	KPL
1	380	3061236	R METFILM 100K .1W 1% SMD0805 ROHM MCR10EZHF1003 *R4,8,19,29,35	5,000	KPL
1	390	3061238	R METFILM 200K .1W 1% SMD0805 ROHM MCR10EZHF2003 *R7,12,14,21,48	5,000	KPL
1	400	3061249	R METFILM 300K .1W 1% SMD0805 ROHM MCR10EZHF3003 *R54	1,000	KPL
1	410	3061250	R METFILM 2M2 .1W 1% SMD0805 ROHM MCR10EZHF2204 *R5,26	2,000	KPL
1	420	3061251	R METFILM 4M7 .1W 1% SMD0805 ROHM MCR10EZHF4704 *R61	1,000	KPL
1	430	3061581	R TRIMM 5K/12 TURNS 3266W-1-502 BOURNS or VISHAY 5K/13 T63YB-5K or COPAL ELECTRONICS 5K/11 RJ-5W5K502 *P1	1,000	KPL
1	440	3061440	C CERAM 22PF 25V 10% SMD0603 22PF/25V/10%/NPO/0603 MURATA *C24,28-30	4,000	KPL
1	450	3061260	C CERAM 1,5NF 50V 10% SMD1206 C1206C152J5GAC-7 KEMET or SIEMENS B37871-K5152-J60 *C10	1,000	KPL
1	460	3061256	C PPS FILM 10NF 50V 5% SMD1206 ECHU1H103GB5 PANASONIC or FARNELL 550-474 or ECHU1H103JX5 PANASONIC *C25	1,000	KPL
1	490	3061262	C CERAM 22NF 50V 10% X7R SMD1206 C1206C223K5RAC KEMET *C11,19	2,000	KPL

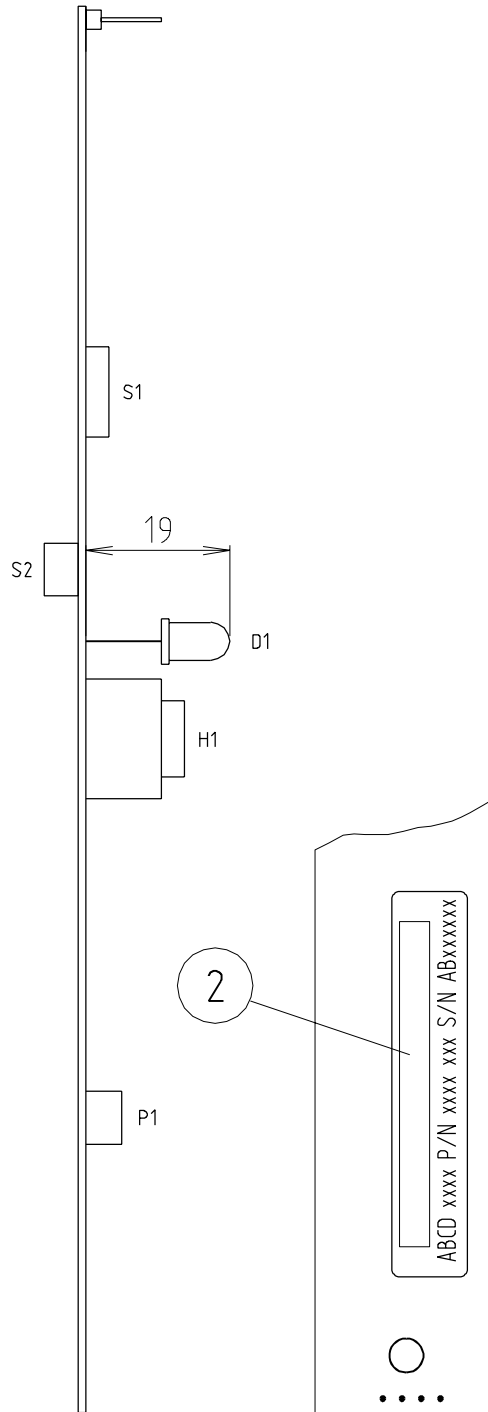
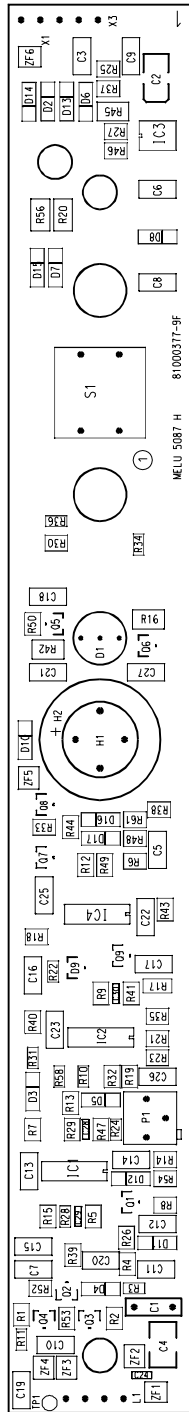
SINGLE LEVEL

L. Line	Item	Dty	Description	Qty	U/M	Feat.	Rev
	8100880	40	MELU 5170 M28 ELECTRONICS UNIT	1,000	KPL		A
1	500	3061258	C CERAM 100NF 50V 10% X7R SMD1206 C1206C104K5RAC KEMET *C3,9,12,14-18,21,26,27	11,000	KPL		
1	510	3061259	C CERAM 1UF 16V 10% X7R SMD1206 GRM42-6X7R105K16 MURATA or AVNET NORTEC OY *C5-8,13,20,22,23,	8,000	KPL		
1	520	3061257	C PPS FILM 15NF 50V 5% SMD1210 ECHU1H153JB5 PANASONIC or FARNELL 320-1326 or ECHU1H153JX5 PANASONIC *C4	1,000	KPL		
1	530	3061255	C PPROP 15NF 68V 5% RAD 5MM FKP2/15NF/5MM WIMA *C1	0,000	KPL		
1	540	3061263	C TANT 1UF 20% 35V SMD-B T491 KEMET or ELFA 67-738-24 *C2	1,000	KPL		
1	550	NA	NOT ASSEMBLED COMPONENTS *R42	0,000	KPL		

Related Drawings

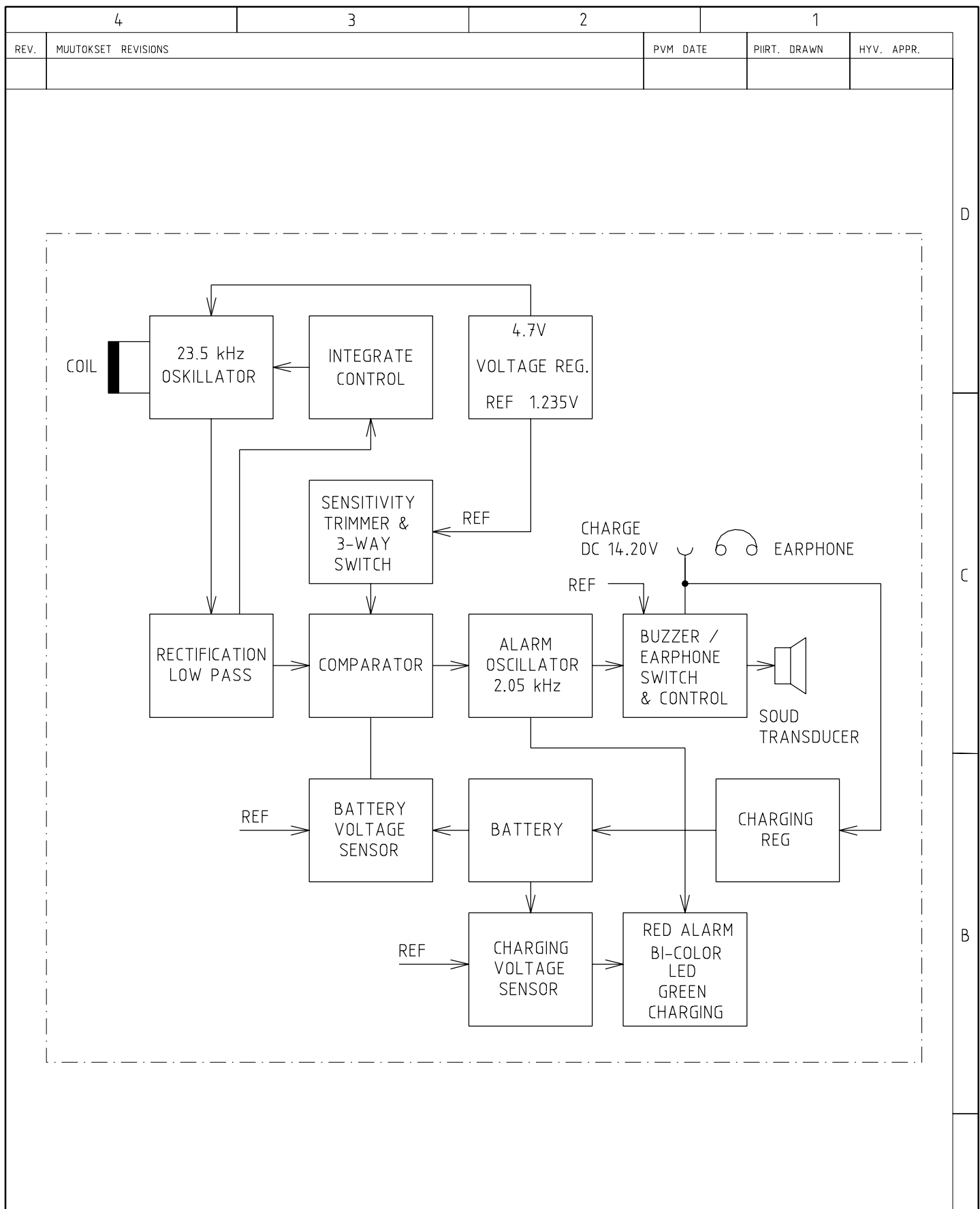
9001	9100492	4KE	MELU 5140, 5170 M28 ELECTRONICS UNIT	0,000	KPL		A
9002	9100493	2SE	CIRCUIT DIAGRAM MELU 5140, 5170 M28	0,000	KPL		04
9003	9100275	4LE	BLOCK DIAGRAM M28	0,000	KPL		01
9004	9100270	4XE	MELU 5087, 5140 AND 5170 TESTING AND CALIBRATION INSTRUCTION	0,000	KPL		1.50
9005	9100274	4V	MELU 5087, 5140 AND 5170 TECHNICAL DESCRIPTION	0,000	KPL		1.30

4		3		2		1	
REV.	MUUTOKSET REVISIONS			PVM DATE	PIIRT. DRAWN	HYV. APPR.	
02	PCB ver. G -> H			2008 09	IJ	ORA	
A	Lisätty osa 2/ Added part 2			2005 12	IJ	ORA	



IC4 = Texas, Philips or Motorola -> R49 = 19.1k
 IC4 = Fairchild or National -> R49 = 16k

OSA ITEM		OSAN NIMI, MITAT, MITTASTD., AINE, AINESTD. DESCRIPTION		PIIR.N:O TAKO CODE		KPL QTY	
YLEISTOLERANSSI TOLERANCES				SUUNN. DESIGNED 2004 09 JNI		PIIRT. DRAWN 2004 10 IJ	
SUHDE SCALE 1:1		LIITTY NEXT ASSY MHHS 5086, 5171		TARK. CHECKED 2004 10 JNI		HYV. APPROVED 2004 10 ORA	
		MELU 5140, 5170 Electronics unit		TUOTE PRODUCT Metor 28			
				OSAL.N:O PART LIST		REV. A	
				PIIR.N:O CODE 9100 492-4KE			



OSA ITEM	OSAN NIMI, MITAT, MITTASTD., AINE, AINESTD. DESCRIPTION	PIIR.N:O TAKO CODE	KPL QTY
YLEISTOLERANSSI TOLERANCES		SUUNN. DESIGNED 2001 04 HT	PIIRT. DRAWN 2001 04 IJ
	SUHDE SCALE	LIITYY NEXT ASSY Metor 28	TARK. CHECKED 2002 01 JNI
			HUV. APPROVED 2002 01 ORA
		TUOTE PRODUCT Metor 28	
		OSAL.N:O PART LIST 8100 374-40	REV. 01
		PIIR.N:O CODE 9100 275-4LE	
Block diagram			

Author H.Tervola/ORa	Rev. 1.00	Code 9100 273-4VE
Approved ORA	Date 1.10.2002	Document
Product Metor 28		Archives M28
Title TECHNICAL DESCRIPTION		

1 OPERATION

The coil is part of the oscillating circuit which operation frequency is 23.5 kHz. When a metal object is inside the sensing area of the coil, it will effect to amplitude of the oscillating signal. After a while the integrating control will set the amplitude a constant value.

Output of oscillator is rectified and it is connected through the filter section to comparator. When the signal is lower than the adjusted reference level (sensitivity seting) comparator generates alarm signal. It activates the alarm oscillator and the audible alarm / the red alarm light.

Battery voltage is controlled with a low voltage circuit and constant alarm is activated when the battery voltage is under 7V.

The connector in the rear of the unit operates as headphone and charger connections. The charger idle voltage is between 14 and 24 VDC. During charging operation the green light is plinking and with full battery it lights constantly. If headphone is connected, audible alarm is not operational.

2 ABSOLUTE MAXIMUM RATINGS

- Operating voltage: 18 VDC
- Operating temperature: 0°C ... +70 °C
- Storing temperature: -40 °C ... +85 °C

3 OPERATING RATINGS

- Nominal current consumption (Vcc = 9 VDC): 2.4 mA idle, 34 mA alarm
- Minimum operating voltage: 7.0 ± 0.5 VDC
- Operating frequency of the oscillator: 23.5 ± 4 kHz
- Volume of audible alarm (distance = 30 cm and Vcc = 12 V): 98 dB
- Operating frequency of audible alarm: 2.03 ± 0.03 kHz
- Hearphone specifications,
 - connector: Ø3.5 mm jack male mono
 - impedance: 8 ... 32 ohms
- Charger specifications,
 - connector: Ø3.5 mm jack male mono
 - output voltage: 14 .. 24 VDC idle, min.12 VDC nominal
 - output current: min. 0.2 A

ACCESSORIES

SINGLE LEVEL

Last.revision: B

Revision updated: 18.9.2002

Version:

Accept:

L. Line	Item	Dty	Description	Qty	U/M	Feat.	Rev
	4100503	40	ACCESSORIES M22, 28	1,000	KPL		B
1	20	4100407	40 METOR 22/28 BELT CLIP SET	1,000	KPL		A
1	30	4101352	40 METOR 22/28 CARRYING BAG	1,000	KPL		
1	40	8100539	40 SPARE PART KIT M22	1,000	KPL		01
1	50	8100540	40 SPARE PART KIT M28	1,000	KPL		01
1	60	3061351	40 EARPHONE MONAURAL 3.5 JACK 3M/10FT or RADIO SHACK 33-179	1,000	KPL		

Related Drawings

9001	5100819	4VE	OPERATING INSTRUCTION MANUAL M22	1,000	KPL		1.00
------	---------	-----	----------------------------------	-------	-----	--	------

SINGLE LEVEL

Last.revision: 01

Revision updated: 12.4.2002

Version: PLANNING

Accept:

L. Line	Item	Dty	Description	Qty	U/M	Feat.	Rev
	8100540	40	SPARE PART KIT M28	1,000	KPL		01
1	10	8100436	40 CARRING STRAP M28	1,000	KPL		01
1	20	8100426	40 BATTERY/CHARGER CABLE M28	1,000	KPL		A
1	30	8100431	2ME FRAME M28 ABS/CYCOLAC GPM 5500 COLOR 304005 RAL7021	1,000	KPL		A
1	40	8100432	2M COVER M28 ABS/CYCOLAC GPM 5500 COLOR 304005 RAL7021	1,000	KPL		01
1	50	8100433	3M BATTERY COVER M28 ABS/CYCOLAC GPM 5500 COLOR 304005 RAL7021	1,000	KPL		01
1	60	8100434	4M BUTTON M28 ABS/CYCOLAC GPM 5500 COLOR 304005 RAL7021	1,000	KPL		01
1	65	8100478	4M BUTTON EXTENDER HOSE L=11.7 M28	1,000	KPL		01
1	70	3061311	COUNTERSUNK FLAT HEAD SCREW M3x8-A2-Z-AISI 304	1,000	KPL		
1	80	3059785	SCREW 3x12 CROSS RECESS COUNTER SUNK HEAD PZ1 BK WN1413 PZ	2,000	KPL		
1	90	3059786	SCREW 3x16 CROSS RECESS COUNTER SUNK HEAD PZ1 BK WN1413 PZ	2,000	KPL		
1	100	3057853	CLAMPING SPRING 84-0,4x5x10,9MM TYPE A2 DIN 2095	2,000	KPL		
1	110	3061274	BUZZER 12V 2048Hz 98DB QMB-12SL STA or QMB-12SL FARNELL 927-340 or HGP-12 STAR MICRONICS	1,000	KPL		
1	120	3061270	LED EL339-1EVGW 5mm EVERLINGHT or EL339-1SRVGN EVERLIGHT or 521-9450 DIALIGHT	1,000	KPL		
1	130	3057903	PUSH BUTTON SWITCH 50MA 24VDC JB-15FBP2 NIKKAI	1,000	KPL		