



Electrical parts

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Switches

Starter switches



Starter switches

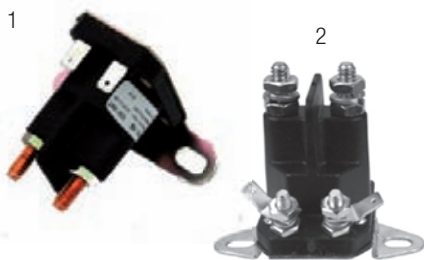
#	Fits for manufacturer	Replaces original manufacturer number	Fits models / info	Connections	Number of positions	Order No.	Code number
1	Bobcat, Briggs & Stratton, MTD, Simplicity	672318, 493625, 692318, 725-1396, 725-1396A, 925-1396, 925-1396A, 1679006, 1686734	235432, 235437, 245432, 245437, 28N707, 28N777, 28Q777, 350442, tractors with Briggs & Stratton, OHV, Vanguard engines	6	3	5011-M6-0001	C0695
2	AYP, Bunton, Cub Cadet, Dixon, Economy, Gilson, Hako, Honda, Husqvarna, John Deere, Lawn-Boy, MTD, Noma, Partner, Roper, Scag, Simplicity, Stiga, Toro	125104X, 3621R, 365402, 4406R, PAL0903, 725-0267, 725-3026, 4197, 43160, 36457, 69-367, 70-116, 35100-772-003, 506 55 87-01, 506 91 71-01, AM102551, 741308, 135798, 725-0267A, 725-0267B, 925-0267A, ICH-132295-C1, WD-900-2003, WD-C37516, 300295, 44745, 532 12 51-04, 532 36 54-02, 48017, 178280, 1134-1814-01, 23-0660	SC Edition, 503, DX 70, Polo 70, MF 28-15 HO, Sprinto	5	3	5011-M6-0002	G0480
3	MTD	725-04227B	models with mow in reverse option (OCR), fits for Arnold 5011-M6-0006	8	4	5011-M6-0003	K2842



Starter switches

#	Fits for manufacturer	Replaces original manufacturer number	Fits models / info	Connections	Number of positions	Order No.	Code number
4	AYP, MTD, John Deere, Murray	163968, 175442, 175566, 532 16 39-68, 532 17 54-52, 532 17 55-66, 725-1741, 925-1741, GY20074, 94762	YTH und LTH Modelle, JN 200 AT, RH 150/92 B, AE 5150 K, HE 5150, HN 5200, Mastercut 105 H, RMH 514-105 A, Silvertrac 15/92 H, Silvertrac 18/92 H, Silvertrac 22/105 H, Polo 108/17 H, TF 7135, 102, 105, 115, 125, 135, 145, 155 C, 190 C, L 100, L 108, L 110, L 118, L 120, L 130, LA 100, LA 105, LA 110, LA 115, LA 120, LA 125, LA 130, LA 135, LA 140, LA 145, LA 150, LA 155, LA 165, LA 175, X 110, X 120, X 140, G 110, 14.542 GS, 1642 HS, 1742 HS, 17.542 HS, L 1742, L 17.542, L 2048, L 2548, D 100, D 110, D 120, D 130, D 140, D 150, D 160, D 170, X 125, X 145, X 165	7	4	5011-M6-0004	Z0767
5	Westwood, WOLF-Garten	2703, 6150051	T-models, SV 3, SV 3 M, SV 4, SV 4 M, OHV 2, OHV 3, OHV 3 M	5	3	5011-M6-0005	D0695
6	MTD	725-1744A	fits for Arnold 5011-M6-0003	–	–	5011-M6-0006	H0195
7	MTD, Tecumseh	725-1660, 35062	Ariens and MTD snow throwers with Tecumseh engine	–	–	5011-M6-0007	K0162
8	MTD, Murray	725-1717, 925-1717, 92556	461004X92A models and Cub Cadet 3000 series, HH 8200, Z 48, Z 54, G 185, G 200, GT 180, TH 8200, HDS 3185	7	4	5011-M6-0008	I0895

Starter solenoids



Starter solenoids

#	Connections	Thread ["]	Order No.	Code number
1	3-pin	1/4	5012-M6-0001	W0765
2	4-pin	1/4	5012-M6-0002	U0903

Switches for magnetic clutches



Switches for magnetic clutches

#	Fits for manufacturer	Replaces original manufacturer number	Connections	Order No.	Code number
1	Ariens, Bobcat, John Deere, Kubota, MTD, Scag, Snapper, Toro	00522100, 1545600, 05221000, 52210000, 2188153, AM118802, AM119139, K1211-6223-0, 725-1716, 481635, 2425974, 93-9998, 93-9999, 95-4108, 95-7489, 94-2697	7	5013-A4-0001	F1195
2	AYP, Bad Boy, Bobcat, Bunton, Bush Hog, Cub Cadet, Dixon, Encore, Ferris, Great Dane, Howard, Husqvarna, Hustler, Murray, Scag, Simplicity, Snapper, Wright, Yazoo	140404, 146283, 154959, 169416, 169417, 174651, 174653, 056-8058-00, 1985032, PL7994, 50018299, 725-3022, 539117238, 539129512, 5961, 523030, 22180, 5022182, D38005, 02-422, 5321694-17, 5321746-51, 5391017-68, 77146, 776476, 6201316, 94927, 481687, 483162, 483957, 1675800, 171348, 1714772, 1716332, 35658, 7035658, 52420003, 101768, 539101768	8	5013-A7-0001	N1756
3	Bobcat, Gravely, John Deere, Power King, Snapper, Toro, Walker	128009, 45848, AM-39489, 1972736, 2792281, 7019545, 37-2610, 92-6328, 6950	5	5013-B6-0001	H0793
4	Ariens, Bobcat, Everride, Exmark, Grasshopper, John Deere, Kubota, MTD, Scag, Snapper, Toro, Woods, Yazoo	1545600, 5221, 2188153, 136574, 1-633673, 633673, 183925, AM-118802, AM-119139, AM131966, K1211-62231, 725-1716, 1748723, 725-1752, 725-3233, 481635, 28542, 7028542, 93-9998, 93-9999, 95-4108, 95-7489, 1035221, 1633673, 3657100, 1923-025	7	5013-T3-0001	H1514

Safety switches



Safety switches

#	Fits for manufacturer	Replaces original manufacturer number	Connections	Order No.	Code number
1	Ariens, AYP, Black Rock, Bobcat, Bunton, Commercial Turf Prod, Exmark, Ferris, Great Dane, Howard, John Deere, Kubota, Murray, Simplicity, Snapper	30957, 104445X, 109869X, 119-3501, 38383, PL4518, 18324, 513152, 21769, D38085, 09-058, AM-108483, K2561-6225-1, 24273, 1708207, 1708207SM, 27225, 7027225, 923408	2	5014-A4-0001	H0566
2	Castelgarden	119410613/0	2	5014-C2-0001	R0273
3	Castelgarden	19410603/1	3	5014-C2-0003	F1435
4	Castelgarden	19410609/0	3	5014-C2-0004	O0957
5	Castelgarden	25425000/1	3	5014-C2-0005	R1698
6	Castelgarden	18450067/0	2	5014-C2-0006	D0957
7	Gravely, Scag, Simplicity, Toro	36450000, 48021, 1654634, 28-4250	2	5014-G7-0001	S1030
8	MTD	725-1657A	4	5014-M6-0001	E0390
9	Ariens, AYP, Bobcat, Dixon, John Deere, MTD, Snapper, Toro	8828100, 109553X, 108208, 4242, AM128925, 725-3169A, 925-3169A, 1-7590, 2-3355, 7023355, 112-045	4	5014-M6-0003	E0283
10	AYP, Etesia, John Deere, MTD, Murray, Scag	121305X, 28106, ET28106, AM104403, 725-3166, 925-3166, 94159, 48717	2	5014-M6-0004	P0368
11	MTD	725-0268	2	2011-M6-0018	L0345

Magnetic clutches



Magnetic clutches

#	Fits for manufacturer	Replaces original manufacturer number	Order No.	Code number
1	Castelgarden	118399062/0	5021-C2-0001	L17177
2	WOLF-Garten	1096051	5021-M6-0001	Q10047
3	MTD	717-1459	5021-M6-0002	W9250
4	Axxom, Cub Cadet, MTD, Warner	892595, 717-3389, 917-3389, 5215-68	5021-M6-0003	E13980
5	Herkules, MTD	947 000 532 010, 717-04000	5021-M6-0005	D16796
6	Husqvarna, MTD, Warner	532 16 08-89, 717-1708, 5215-129	5021-M6-0006	S15000
7	MTD, Snapper, Warner	717-1709, 672169, 53740, 5215-130	5021-M6-0007	K15375
8	Cub Cadet	WI-17570	5021-W4-0001	P12160
9	WOLF-Garten	1096060	2016-M6-0006	Q10047

Batteries & Accessories

Accu packs



WOLF-Garten accu packs

#	Replaces original manufacturer number	Fits models / info	Order No.	Code number
1	4911075	AW 120 A	5031-M6-0001	F6795
2	4939091	Hybrid Power 37 & 40	5031-M6-0002	H10500
3	4919096	Power 34	5031-M6-0003	E11965
4	7420096	Power HSA, GT 815	5031-M6-0004	N3620
5	4911055	OHV 3, SV4 M, 6.42 ACN	5031-M6-0005	T4300
6	6150075	SV4 M, OHV 2, Concept 43 BA, Premio 46	5031-M6-0006	J1795
7	4948066	Premio 40 ACA	5031-M6-0007	O4300
8	7086916	Accu BS 80 & BS 100	5031-M6-0008	P1849
9	7085916	Accu 80	5031-M6-0009	C1384
10	7134060	GT 815 AC	5031-M6-0010	N3038
11	7086918	Accu BS 80, Power BS 80 Plus, P 530	5031-M6-0011	R2130
12	7085918	Power 80 Plus	5031-M6-0016	Y2111
13	7095095	Accu 60, SP 75, Accu BS 60, Accu 80 Li-Ion	5031-M6-0017	N2119

Batteries

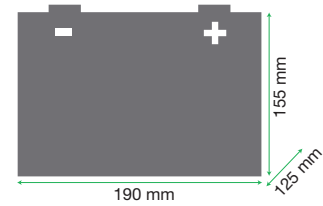
Battery Set 12V - 16 Ah, 230 CCA

Order no. 5032-U1-0001

Dry charged battery with 2 acid bottles (each 1,05 liter)



**Long life!
High starting power!**













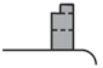







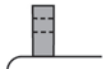








- Battery acid 1,28
- UN: 2796 | EINECS: 231-639-5
- DIN: 43530 | 1,285 g H₂SO₄/cm³



Battery set, 12 V

Information	Order No.	Code number
equivalent MTD battery 725-1751 and MTD battery acid 725-2064A	5032-U1-0001	J2898

Pole types of batteries

Type	Front	Side	Top	Battery type Fiamm
M02				FB9L-A2 FB16AL-A2
M04				FTX4L-BS FTX5L-BS FTX7L-BS FTX7A-BS FBTX20L-BS FB4L-B FB16B-A FTX12-BS FTX14-BS FB7L-B2 FTX16-BS FTX20CH-BS
M05				FTX9-BS FB16CL-B FTZ7S-BS
M06				12N5-3B FB7-A 12N9-3B 12N10-3A FB12A-A FB12AL-A FB12A-B FB16-B B38-6A 6N6-3B B39-6 B49-6 6N11A-1B FB9-B FB10L-B
M07				F50-N18L-A
M08				FB14L-A2 FB14-A2 FB14L-B2
M11				FT19-12B 51814 53030 F60-N24AL-B
M12				FT7-BS FT9-BS FT12A-BS FT12B-BS FTZ10S-BS FTZ12S-BS FTZ14S-BS
14				FTR4A-BS

Cold cranking amperes CCA

The cold cranking amperes is the amount of current a battery can provide at 0 °F (−18 °C).

The rating is defined as the current a lead-acid battery at that temperature can deliver for 30 seconds and maintain at least 1.2 volts per cell (7.2 volts for a 12-volt battery).

It is a more demanding test than those at higher temperatures.



Batteries 12 V

Capacity [Ah]	+ Terminal	Length [mm]	Width [mm]	Height [mm]	Information	Order No.	Code number
-	right, round terminal	210	170	210	equivalent MTD 725-04514, 540 CCA	5032-M6-0006	Y10712
2,3	right, flat terminal	180	35	70	equivalent MTD 725-04323	5032-M6-0005	Y2401
2,5	right, flat terminal	-	-	-	equivalent MTD 725-1276	5032-M6-0004	Y4204
14	right, type M08	145	90	170	equivalent MTD 725-1633	5032-M6-0003	Y1795
4	right, type M04	120	70	92	FB4L-B DIN 50411, CCA 40	5032-U1-0007	W0865
4	right, type M04	120	70	92	FB4L-B DIN 50411 (ACID), CCA 40	5032-U1-0008	L1042
5	right, type M06	120	60	130	12N5A-3B DIN 50512, CCA 45	5032-U1-0009	D0898
8	right, type M06	135	75	133	FB7-A DIN 50813, CCA 80	5032-U1-0010	Y1587
8	right, type M04	135	73	133	FB7L-B2 DIN 50712, CCA 80	5032-U1-0011	Y1598
9	left, type M06	135	75	139	12N9-4B-1 DIN 50914, CCA 90	5032-U1-0012	Y1596
9	right, type M06	135	75	139	12N9-3B DIN 50915, CCA 90	5032-U1-0013	Y1598
9	right, type M02	135	75	139	FB9L-A2 DIN 50916, CCA 90	5032-U1-0014	E1788
10	right, type M06	135	90	145	12N10-3A DIN 51112, CCA 100	5032-U1-0015	T1965
10	right, type M06	135	90	145	12N10-3B DIN51113, CCA 100	5032-U1-0016	O1965
12	type M06	134	80	160	FB12A-A DIN 51211, CCA 130	5032-U1-0017	D2294
12	right, type M06	134	80	160	FB12AL-A DIN 51213, CCA 130	5032-U1-0018	Y2294
14	left, type M08	134	89	166	FB14-A2 DIN 51412, CCA 150	5032-U1-0020	J2414
12	left, type M06	134	80	160	FB12-B DIN 51215, CCA 130	5032-U1-0019	L2692
14	right, type M08	134	89	166	FB14L-B2 DIN 51411, CCA 150	5032-U1-0021	M2414
14	right, type M08	136	91	168	FB14L-B2 DIN 51413, CCA 150	5032-U1-0022	L2855
16	right, type M02	205	70	162	FB16AL-A2 DIN 51616, CCA 180	5032-U1-0023	U3217
19	left, type M06	175	100	155	FB16-B DIN 51912, CCA 200	5032-U1-0024	D3515
19	right, type M11	186	82	173	51814 DIN, CCA 160	5032-U1-0026	L2970
16	type M04	160	90	161	FB16B-A DIN 51615, CCA 200	5032-U1-0025	Y3080
20	right, type M07	205	90	162	equivalent 725-1635, AF50-N18L-A DIN 52012, CCA 200	5032-U1-0027	J3535
30	type M11	186	130	171	53030 DIN, CCA 300	5032-U1-0028	M4836
32	right	233	131	167	53211 DIN, CCA 240	5032-U1-0029	L5965
19	right, type M05	175	100	175	FB16CL-B DIN 51914, CCA 200	5032-U1-0030	Y3515
24	right, type M11	186	126	170	F60-N24AL-B DIN 52515, CCA 220	5032-U1-0031	Y4390
3,6	type 14	113	70	85	FBTX4L-BS DIN 50314, CCA 40	5032-U1-0032	Y1177
5	left, type M04	113	70	105	FTX5L-BS DIN 50412, CCA 50	5032-U1-0033	Y1527
6	right, type M05	113	70	105	FTZ7S-BS, CCA 70	5032-U1-0034	D2690
6,5	right, type M04	113	70	130	FBTX7L-BS DIN 50614, CCA 75	5032-U1-0035	Y1937
6,5	right, type M0	150	87	93	FTX7A-BS DIN 50615, CCA 75	5032-U1-0036	L1952
9	type M05	150	87	105	FTX9-BS DIN 50812/50913, CCA 120	5032-U1-0037	J2117
8	left, type M12	150	70	105	FT9-BS, CCA 110	5032-U1-0038	M2855
8,6	left, type M12	150	87	93	FBTX10L-BS DIN 51015, CCA 120	5032-U1-0039	L3277
11	left, type M12	150	70	130	FT12B-BS, CCA 150	5032-U1-0041	F3535
9,5	left, type M12	150	87	105	FT12A-BS, CCA 175	5032-U1-0040	H3565
11	left, type M12	150	87	110	FTZ12S-BS, CCA 150	5032-U1-0042	D3565
12	left, type M04	150	87	130	FTX12-BS DIN 51012, CCA 150	5032-U1-0043	Y2614
12	left, type M04	150	87	145	FTX14-BS DIN 51214, CCA 170	5032-U1-0044	Y3080
18	left, type M04	175	87	155	FBTX20L-BS DIN 51801, CCA 200	5032-U1-0045	Y4827
2,3	left	113	48	85	FTR4A-12B, CCA 30	5032-U1-0046	Y1567



Batteries 12 V

Capacity [Ah]	+ Terminal	Length [mm]	Width [mm]	Height [mm]	Information	Order No.	Code number
6,5	left	150	65	93	FT7-12B, CCA 75	5032-U1-0047	L2586
19	right	181	76	167	FT19-12B, CCA 200	5032-U1-0048	E3615

Attention! Prices subject to change due to fluctuating lead prices !



Batteries 6 V

Capacity [Ah]	+ Terminal	Length [mm]	Width [mm]	Height [mm]	Information	Order No.	Code number
4	right, rear	70	70	95	6N4-2A-4 DIN 00414, CCA 15	5032-U1-0049	L0535
6	right, type M06	98	56	110	6N6-3B DIN 00612, CCA 25	5032-U1-0002	S0747
7	right, front	127	50	123	B39-6A DIN 00714, CCA 30	5032-U1-0003	I1096
8	right, front	90	82	160	B49-6 DIN 00811, CCA 40	5032-U1-0004	E1183
11	right, type M06	120	60	130	6N11A-1B DIN 01214, CCA 50	5032-U1-0005	W1198
13	right	118	82	160	B38-6A DIN 01612, CCA 13	5032-U1-0006	F1567

Attention! Prices subject to change due to fluctuating lead prices !

Battery accessories

Restorative treatment for batteries

Order no. 5033-U1-0021

Megapulse 12 V- the battery pulser!

Restorative treatment for batteries:

Defective batteries often have to be replaced despite only having had a short useful life. Lead-acid forms lead sulfate during every discharge cycle. If the battery is not recharged immediately, the amorphous lead sulfate turns into crystals. These are inactive, are no longer able to store a charge (i.e. turn into spongy porous active material) and have a high electrical resistance to storing a charge, but also to discharging the rest of the material that remains active. The battery becomes weaker and is easily pronounced „dead“.

Megapulse® with the right primary and peak frequency work against this happening, and can even reverse the process. They turn the lead sulfate back into amorphous active material and thereby lengthen the life of a battery considerably.

The Megapulse® 12 V generates a voltage of approximately 12,9 V. During the 12,9 V de-energising process, the Megapulse® usage is below the battery's self-discharge rate (less than 0,5 mA).

While the battery is being charged, Megapulse attacks the lead-sulfate crystals.

Applying an equalising charge with the resonance frequency of the lead-sulfate breaks down the crystals. If you install Megapulse® in time, the formation of crystals can even be prevented from the start on! The results are absolutely staggering.

Many „scrap batteries“ wake up to a new life after a pulse charge.



new battery

6 month, without pulsing

2 years, unpulsed

2 years, pulsed since deseace

11 month, permanent pulsed

Additional technical data:

for: Lead-acid, Gel- und AGM-batteries

Dimension (length x width x height): 10 cm x 9,5 cm x 3 cm

Weight: 190 g

Use for



Measurable by every battery technician

- The charging voltage increases!
- The final acid density of the charge increases!
- The CCA increases!
- The capacity increases!

5033-U1-0021 - Megapulse 12 V

Type	Order No.	Code number
Megapulse 12 V	5033-U1-0021	T4295



Battery charger, 12 V, 1000 mA

Information	Order No.	Code number
12 V operation, including 3 connection wires: lighter socket, ring eye leads and crocodile clips	5033-U1-0018	C2625



Battery charger, OptiMate 3 Plus

Information	Order No.	Code number
<p>the OptiMate 3 plus battery charger is the consequent follow-on development from the OptiMate III SP.</p> <ul style="list-style-type: none"> • compatible with all 12 V batteries • charging current - 0,6 A • desulphating of badly discharged batteries • watertight casing with built-on wall housing • low current drain, high efficiency • clear and informative digital display • deliverables: eye lead and crocodile clip set, • device proof against short circuits and reverse polarity connection • spark suppression, overheating protection 	5033-U1-0023	Y4098



Battery charger, OptiMate 4 Dual

Information	Order No.	Code number
<p>OptiMate 4 battery charger, the ultimate, universal tool for 12 V battery maintenance - now with automatic double program for diagnosis, recovery, charging, testing and maintenance. Charge the battery directly or choose the program via the 12 V connection of your CAN bus fitted motorbike. With automatic keyless activation.</p> <ul style="list-style-type: none"> • OptiMate 4 DUAL PROGRAM will charge and maintain your battery automatically. OptiMate 4 DUAL PROGRAM covers low voltage, neglected, sulphated batteries and includes a user-friendly battery test on connection. • It also has a smooth, weatherproof housing with integrated fixing loops and improved energy efficiency. • Extends battery life by up to 400 %. OptiMate 4 DUAL PROGRAM will maintain your battery safely and for months until it is needed for use. • OptiMate 4 DUAL PROGRAM. Guaranteed battery performance! 	5033-U1-0022	P4583



Battery charger, AccuMate Pro 12 V 4 amp.

Information	Order No.	Code number
<ul style="list-style-type: none"> • versatile, automatic 3-stage, compact charger for starting and deep charging cycles on lead/acid batteries with a capacity of at least 17 Ah (12 V) • 3-stage charging algorithm with basic charging at constant current until the voltage has risen to 14,4 V (at 20 °C) • voltage in the absorption phase is held at 14,4 V until the charging current drawn by the battery reverts to 1/6 of full load current • voltage in float mode is limited to 13,7 V. 12 V / 4 A charging output 	5033-U1-0024	R8268

WOLF-Garten battery charger, Ni-Cd

Information	Order No.	Code number
for Accu 60, Accu 75, Accu BS 60, Accu 45, SB 60	5033-U1-0013	T0926



WOLF-Garten battery charger, Li-Ion

Information	Order No.	Code number
for Accu 60 Li-Ion, Accu BS 80 Li-Ion, Accu 100 Li-Ion	5033-U1-0014	D1253



WOLF-Garten battery charger, Li-Ion

Information	Order No.	Code number
for Li-Ion Power 34, Hybrid Power 37, Hybrid Power 40, Compact Power 37 H	5033-U1-0015	S4219



WOLF-Garten battery fast charger 24 V

Information	Order No.	Code number
for Premio 40 ACA, Concept 43 ACA, Esprit 40 AC	5033-U1-0016	03683





WOLF-Garten battery charger with reverse battery protection, Ansmann

Information	Order No.	Code number
for Li-Ion Power GT 815, Li-Ion Power HSA 45 V	5033-U1-0017	02374



Battery charger, 12 V Euro plug

Information	Order No.	Code number
12 V, 500 mA	5033-U1-0019	N2611



WOLF-Garten charger, 12 V

Information	Order No.	Code number
WOLF original charger for Picco 32 AC, P 32 A2, Picco 32 Accu, TC 32 Mac	5033-U1-0020	E2355



Battery tester, TestMate II Sport

Information	Order No.	Code number
for batteries from 2 - 35 Ah, user-friendly, results in seconds on a clear display with language selection	5033-U1-0025	G19477

Digital battery tester

Information	Order No.	Code number
<ul style="list-style-type: none"> • large 3-digit LED digital display • quick indicator (3 LED lights) for battery power status • chromium plated compact steel housing • heavy-duty, powerful safety clips • fixed current load: 100 A - max. battery capacity: 200 Ah / 1000 CCA - battery voltage: 12 V 	5033-U1-0500	R3167



Battery / charging system tester with printer

Information	Order No.	Code number
<ul style="list-style-type: none"> • LCD shows the voltage and the battery status, as well as the available battery capacity • for 6 V & 12 V batteries and 12 V & 24 V charging systems • for testing VRLA, GEL, AGM and SLI batteries • test based on SAE, DIN, EN, IEC & JIS/AH standards • quick testing: 2 seconds for one test • battery testing while installed possible • starter motor and charging system test • application areas 40-200 A SAE, 40-2100 A EN2, 50-2500 A EN 1, 25-1300 A DIN, 30-1500 A IEC • with integrated thermal printer 25 x 37 mm - software in German, English, Spanish, French, Italian, Portuguese, Japanese • incl. detailed instructions 	5033-U1-0501	P36700



Digital multimeter

Information	Order No.	Code number
shock resistant - with stand - modern design - measurement ranges: - DC 200 mV, 2 V, 20 V, 200 V, 600 V - AC 200 V, 600 V - DC 200 A, 2 mA, 20 mA, 200 mA, 10 A - diode test - memory key	6011-X1-0071	00945



LCD digital multimeter in pocket format

Information	Order No.	Code number
handy pocket-size digital multimeter <ul style="list-style-type: none"> • with LCD display • for diagnosis in the automotive, motorbike sector and home use • has important measurement ranges such as: • alternating current (AC V) up to 750 V Ranges 200 V and 750 V • direct current (DC V) up to 1000 V • ranges 200 mV, 2000 mV, 20 V, 200 V, 1000 V • direct current (DC A) 200 µA, 2000 µA, 20 mA, 200 mA, 10 A • resistance 200 Ω, 2 kΩ, 20 kΩ, 200 kΩ, 2 MΩ • with acoustic signal 	6011-X1-0193	M0512





Clamp multimeter

Information	Order No.	Code number
<ul style="list-style-type: none"> • for general usage • alternating current: 2 A, 20 A, 600 A • AC voltage: 200 V, 600 V • DC voltage: 200 V, 600 V • resistance: 200 Ohm, 200 kOhm • acoustic circuit indicator • testing leads and battery included 	6011-X1-0073	C1212



Universal line and accessories assortment, 15 pieces

Information	Order No.	Code number
for multimeters, test lamps, etc. <ul style="list-style-type: none"> • 2 each, 100 + 50 cm leads, red/black • 2 two-colour LEDs test lead for polarity indication • 1 injection test prod • 4 needle test leads, red/black • 2 test prods, red/black • 2 crocodile clips, red/black • suitable for up to 24 V, 10 A 	6011-X1-0069	D5167



Ratchet crimping tool, 0,5-6 mm²

Information	Order No.	Code number
<ul style="list-style-type: none"> • forged • insulated handles • 0,5 - 1 - 1,5 - 2,5 - 4 - 6 mm² • length 215 mm 	6011-X1-0035	A1056



Terminal set, 60 insulated terminals

Information	Order No.	Code number
0,75 mm ² - 6,0 mm ²	6011-X1-0036	P0418

Crimping tool with 5 pairs of jaws

Information	Order No.	Code number
crimping pliers set with ratcheting function and adjustable jaws. Includes 5 exchangeable crimping jaws for: <ul style="list-style-type: none"> closed non-insulated terminal ends: AWG 20-18 / 16-14 / 12-10 / 8 / DIN 1,5 / 2,5 / 6 / 10 mm² / JIS 1,25 / 2 / 5,5 / 8 mm² insulated terminal ends: AWG 22-18 / 16-14 / 12-10 / DIN 0,5-1,0 / 1,5-2,5 / 4-6 mm² open, non-insulated terminal end: AWG 22-18 / 16-14 / 12-10 / DIN 0,5-1,0 / 1,5-2,5 / 4-6 mm² small, insulated terminal end: AWG 22-18 / 16-14 / 12-10 / DIN 0,5-1,0 / 1,5-2,5 / 4-6 mm² big, insulated terminal end: AWG 22 / 20 / 18 / 16 / 14 / 12 / DIN 0,5 / 0,75 / 1,0 / 1,5 / 2,5 / 4,0 mm² supplied in an acid-proof blow mould case 	6011-X1-0034	H5545



Cable tie assortment, 100-200 mm, 75 pieces

Information	Order No.	Code number
in various length (100 - 120 - 200 mm), 25 pieces each	6012-X1-0001	V0073



Cable tie assortment, 50 pieces

Information	Order No.	Code number
white, 4,8 x 250 mm	6012-X1-0026	J0121



Battery booster cables, TÜV/GS, 200 amp. (16mm²), length 3 m

Information	Order No.	Code number
TÜV / GS approved - insulated clips	6011-X1-0133	A1551



1-6



Battery cables, with corrosion protection

#	Type	Order No.	Code number
1	20 cm red	5033-U1-0001	Z0218
2	20 cm black	5033-U1-0002	G0218
3	30 cm red	5033-U1-0003	I0248
4	30 cm black	5033-U1-0004	T0248
5	40 cm red	5033-U1-0005	H0296
6	40 cm black	5033-U1-0006	A0296

Battery acid, 1,05 l bottle



Information	Order No.	Code number
acid density 1:28	5033-U1-0030	T0236

1 & 2



3



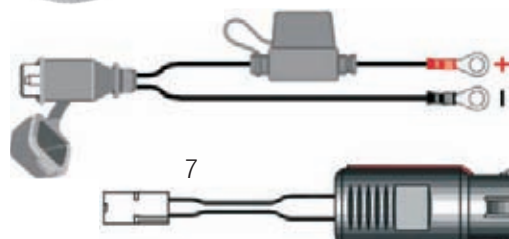
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8



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Battery accessories

#	Type	Information	Order No.	Code number
1	ring cable terminal 3/8 "	with corrosion protection	5033-U1-0007	P0065
2	ring cable terminal 1/4 "	with corrosion protection	5033-U1-0008	E0060
3	ring cable terminal 3/8 "	-	5033-U1-0009	N0075
4	ring cable terminal 1/4 "	-	5033-U1-0010	J0070
5	battery thread bolts	20 cm length	5033-U1-0011	H0348
6	ring terminal cable with plug, cap and fuse holder	-	5033-U1-0026	C0425
7	plug for power socket or lighter socket	-	5033-U1-0027	S0933
8	10 mm power socket with waterproof cover	-	5033-U1-0028	T1067
9	battery connector cable / crocodile clips	-	5033-U1-0029	K0488

Battery Maintenance

Initial steps

Warning: Electrolyte is diluted sulfuric acid. Use extreme care to avoid spilling. When handling with acid wear protective goggles and gloves. It can destroy clothing and burn your skin. By acid contact with skin flush with water. When contacting eyes flush with water for 15 minutes and get prompt medical attention.

Remove battery caps firmly.

Check cables, clamps and battery case for obvious reasons of leakage as this could cause damage to painted surfaces, the battery compartments and to the pulleys and transmission.

Fill each cell to the top of the plates with room temperature electrolyte. Electrolyte is diluted sulfuric acid with a density of 1,28 in lead-acid batteries.

Attention: Do not spill acid!

Allow the battery to sit 30 minutes. This allows the chemical action to take place. Check the level of electrolyte in all cells and add if necessary, to bring the level up to the indicated point.

Charge battery with 1/10 of its capacity for 3-5 hours. Do not add acid. Add only distilled water. Only charger can charge battery fully.

Clean cable connectors with wire brush or sand paper to remove oxidation. Connect cables to the proper terminals. Positive cable to positive terminal (+) and negative cable to negative terminal (-). Connect negative cable last.

Charge battery

Charge battery with common 12 V charger. Charging rate should be not more than 10 % of battery capacity. Use 5 % charging rate of battery capacity for approx. 36 hours for deep-discharged batteries.

- Overcharge
- Low acid level
- Voltage drop by deep discharge
- Corroded terminals
- Transfer resistance
- Wrong liquid inside
- Fast charging
- Freezed electrolyte
- Rectifier defect

Battery Maintenance

Check frequently battery conditions to avoid any accident.

Check the liquid level. Electrolyte must be between the indicated points. If necessary, fill up with distilled water.

Clean the battery terminals and use terminal grease.

If voltage drops below 12 V or acid density is below 1,265 charge battery.

Recharge battery monthly, if not used.

Dry charged battery for push mowers

- Keep battery in cool, dry place with the humidity as low as possible.
- The temperature should be uniform and not subject to frequent changes.
- Remove battery cable when storing battery during winter

The higher the temperature, the higher the self-discharge!!

Examples:

Deep discharge: 40 °C after 400 days

Deep discharge: 50 °C after 200 days