



20-2299-1

SD-90MAC

Diesel Engine



GL011602

REV.021302



SD-90MAC Diesel Engine

Shell Parts

NameandNumber	Part #	\$Price PerUnit	NameandNumber	Part #	\$Price PerUnit
1.) Lens(clear)(windshield)(2parts)	FA-2100019	1.00	29.) Gasket(black)	IB-0000015	1.00
2.) Lens(clear)	FA-2100020	1.00	(foam)(14.5x26.5mm)(forsmokeunit)		
3.) Lens(clear)	FA-2100021	1.00	30.) Screw	IA-0000072	0.15
(bothsidesofcab)(front)(9.0x17.0x0.3mm)			(M3x8.0mm)(roundhead)(self-drillingthreads)		
4.) Lens(clear)	FA-2100023	1.00	31.) Airhorns(black)(3chime)	FC-2100253	5.00
(bothsidesofcab)(middle)(4.4x17.0x0.3mm)			(CP)(#91111)(#9126)(#9159)		
5.) Lens(clear)	FA-2100024	1.00	32.) Liftring(red)	FC-2100949	0.50
(leftdooroncab)(rear)(9.2x15.6x0.3mm)			(CP)(#91111)(#9126)(#9159)(sidesofshell)		
6.) Lens(clear)	FA-2100022	1.00	33.) Liftring(black)	FC-2100189	0.50
(bothsidesofcab)(rear)(12.5x17.0x0.3mm)			(CP)(#91111)(#9126)(#9159)(topofshell)		
7.) Fan shroud&grill(silver)	FC-2100951	4.00	34.) Steps (red,black)	FC-2100970	5.00
(CP)(#91111)(#9126)(#9159)(rear)			(plastic)(right)(2steps)		
8.) Fan shroud&grill(silver)	FC-2100950	4.00	(CP)(#91111)(#9126)(#9159)		
(CP)(#91111)(#9126)(#9159)(frontthree)			35.) Steps (red,black)	FC-2100971	10.00
9.) Fan(lightgray)	FC-2100231	2.00	(plastic)(left)(3stepsw/walkway)		
(large)(10blades)(20.2mmdiameter)			(CP)(#91111)(#9126)(#9159)		
10.) Pin(black)(forfan)	FC-2100691	1.00	36.) Vent frame (red)	FC-2100967	4.00
(2.0x4.3mm)(1.4x1.2mmshank)(0.8x3.4mmflathead)			(plastic)(16.0x45.0mm)		
11.) Handrail(black)	FC-2100898	1.00	(CP)(#91111)(#9126)(#9159)		
(5.6mm long)(CP)(#91111)(#9126)(#9159)			37.) Screen(red)	FC-2100968	4.00
12.) Handrail(black)	FC-2101073	2.00	(metal)(12.8x41.8mm)(forventframe)		
(7.0mm long)(mountsontoprearofshell)			(CP)(#91111)(#9126)(#9159)		
(CP)(#91111)(#9126)(#9159)			38.) Vent frame (red)	FC-2100967	4.00
13.) Handrail(red)(7.0mm long)	FC-2101074	2.00	(plastic)(16.0x45.0mm)		
(mountsonrearofshell)(CP)(#91111)(#9126)(#9159)			(CP)(#91111)(#9126)(#9159)		
14.) Handrail(red,white)	FC-2100964	8.00	39.) Screen(red)	FC-2100968	4.00
(front&rear)(CP)(#91111)(#9126)(#9159)			(metal)(12.8x41.8mm)(forventframe)		
15.) Lens(clear)(3.0x1.7mm)	FA-2100018	1.00	(CP)(#91111)(#9126)(#9159)		
(ribbedforpressfit)(forheadlight/reverselight)			40.) Vent frame (red)	FC-2100967	4.00
16.) Sand fill cap(red)(rear)	FC-2101075	1.00	(plastic)(16.0x45.0mm)		
(CP)(#91111)(#9126)(#9159)			(CP)(#91111)(#9126)(#9159)		
17.) Sand fill cap(black)(toprear)	FC-2100900	1.00	41.) Screen(red)	FC-2100968	4.00
(CP)(#91111)(#9126)(#9159)			(metal)(12.8x41.8mm)(forventframe)		
18.) Handrail(red)	FC-2101076	2.00	(CP)(#91111)(#9126)(#9159)		
(rearsides)(CP)(#91111)(#9126)(#9159)			42.) Antenna(black)	FC-2100912	2.00
19.) Vent housing (red)	FC-2101077	3.00	(mountsontop,center&frontofcab)		
(plastic)(9.0x34.0mm)(sameonbothsides)(rear)			(CP)(#91111)(#9126)(#9159)		
(CP)(#91111)(#9126)(#9159)			43.) Numberboard(CP)(#91111)	FG-2100278	2.00
20.) Vent(red)(rear)(bottom)	FC-2100955	2.00	(blackw/clearnumbers)(rightfront)(3.9x9.6mm)		
(metal)(6.8x32.0mm)(sameonbothsides)			Numberboard(CP)(#9126)	FG-2100279	2.00
(CP)(#91111)(#9126)(#9159)			(blackw/clearnumbers)(rightfront)(3.9x9.6mm)		
21.) Vent(red)	FC-2100954	3.00	Numberboard(CP)(#9159)	FG-2100280	2.00
(rear)(metal)(18.0x31.0mm)(sameonbothsides)			(blackw/clearnumbers)(rightfront)(3.9x9.6mm)		
(CP)(#91111)(#9126)(#9159)			44.) Numberboard(CP)(#91111)	FG-2100281	2.00
22.) Intakeventhousing(red)	FC-2100952	8.00	(blackw/clearnumbers)(leftfront)(3.9x9.6mm)		
(plastic)(22.3x108.2mm)(sameonbothsides)			Numberboard(CP)(#9126)	FG-2100282	2.00
(CP)(#91111)(#9126)(#9159)			(blackw/clearnumbers)(leftfront)(3.9x9.6mm)		
23.) Screen(red)	FC-2100953	3.00	Numberboard(CP)(#9159)	FG-2100283	2.00
(metal)(sameonbothsides)(forintakeventhousing)			(blackw/clearnumbers)(leftfront)(3.9x9.6mm)		
(13.7x105.0mm)(CP)(#91111)(#9126)(#9159)			45.) Windshieldwipers(black)	FC-2100458	1.00
24.) Handrail(black,white)	FC-2100965	12.00	46.) Handrail(white)	FC-2100958	2.00
(long)(right)(CP)(#91111)(#9126)(#9159)			(8.2mm long)(topnoseofcab)		
25.) Handrail(black,white)	FC-2100966	12.00	(CP)(#91111)(#9126)(#9159)		
(long)(left)(CP)(#91111)(#9126)(#9159)			47.) Sidemirror(silver)	FC-2100914	2.00
26.) Exhaustmanifold(black)	FC-2100972	10.00	(7.1mm long)(mountsonbothsidesofcab)		
(die-cast)(13.0x34.5mm)(mountingtabson1side)			48.) Handrail(white)	FC-2100962	2.00
(forsmokeunit)(CP)(#91111)(#9126)(#9159)			(25.0mm long)(rightsideofnoseofcab)		
27.) O ring(black)	IB-0000014	2.00	(CP)(#91111)(#9126)(#9159)		
(rubber)(forexhaustmanifold)			49.) Handrail(white)	FC-2100961	2.00
28.) Bracket(black)	IH-0000323	3.00	(25.0mm long)(leftsideofnoseofcab)		
(plastic)(13.0x36.0mm)(mountsoneachend)			(CP)(#91111)(#9126)(#9159)		
(formountingexhaustmanifoldtotopofshell)					

*Requires Exchange
Allpartsarerepriced as each



SD-90MAC Diesel Engine

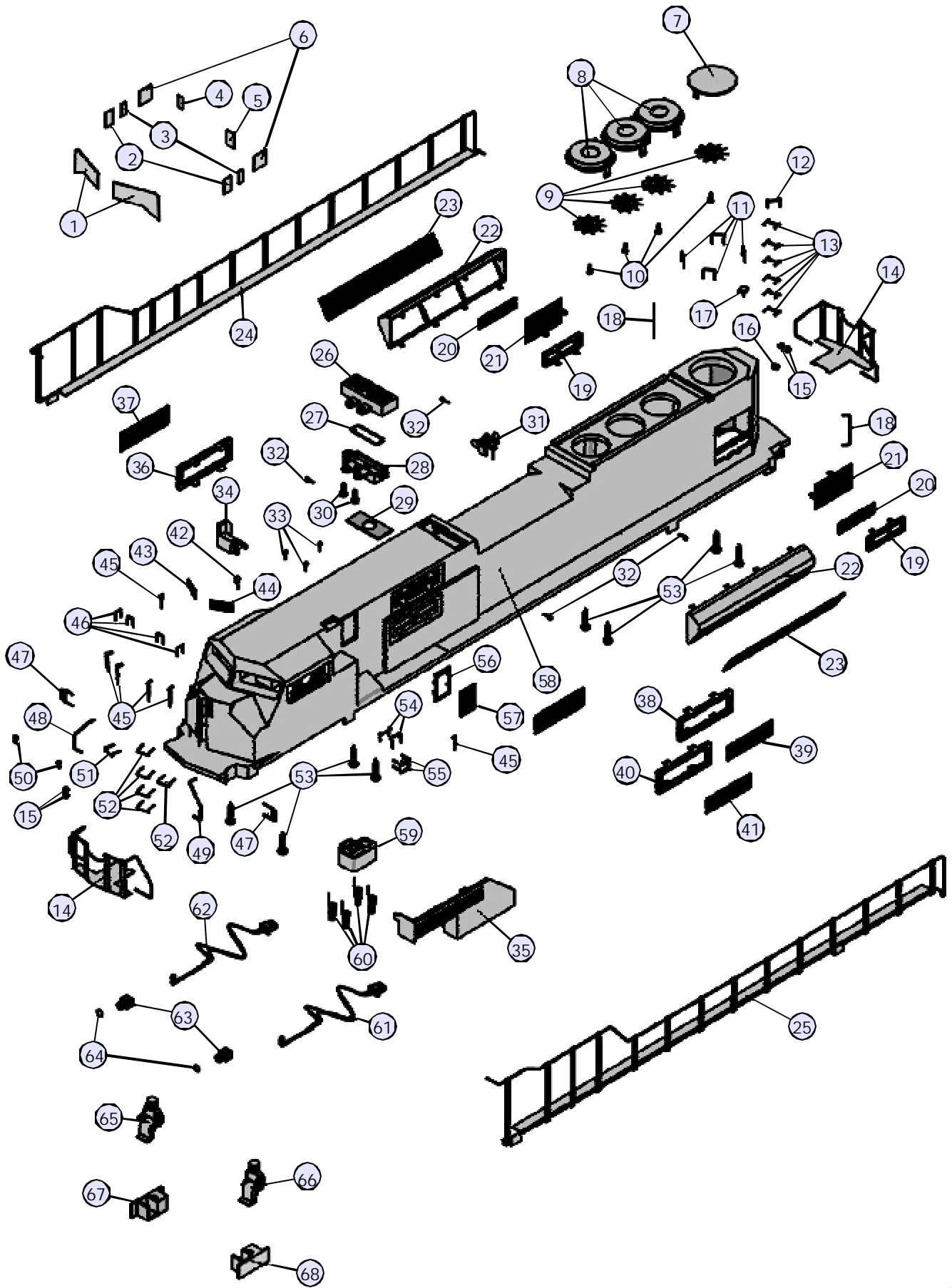
Shell Parts

NameandNumber	Part #	\$Price PerUnit
50.) Sand fill cap(black)(front) (CP)(#91111)(#9126)(#9159)	FC-2100957	1.00
51.) Handrail(red) (8.0mmlong)(frontrightsideofnoseofcab) (CP)(#91111)(#9126)(#9159)	FC-2100959	2.00
52.) Handrail(red) (8.0mmlong)(frontleftsideofnoseofcab) (CP)(#91111)(#9126)(#9159)	FC-2100959	2.00
53.) Screw (M3x16.0mm)(washerhead)(self-drilling)	IA-0000025	0.15
54.) Handrail(black) (8.7mmlong)(mountsbehindleftsideofcab) (CP)(#91111)(#9126)(#9159)	FC-2100910	2.00
55.) Handrail(red) (8.7mmlong)(mountsbehindleftsideofcab) (CP)(#91111)(#9126)(#9159)	FC-2100956	2.00
56.) Vent housing (red) (plastic)(12.8x21.8mm)(behindleftsideofcab) (CP)(#91111)(#9126)(#9159)	FC-2101078	3.00
57.) Vent screen (red) (metal)(11.5x20.2mm)(behindleftsideofcab) (CP)(#91111)(#9126)(#9159)	FC-2100969	3.00
58.) Shell(red,black,white) (CP)(#91111)	FC-2100946	*120.00
Shell(red,black,white) (CP)(#9126)	FC-2100947	*120.00
Shell(red,black,white) (CP)(#9159)	FC-2100948	*120.00
59.) Contactspringbase(black) (plastic)(for2male2pinplugs)	BH-0000056	3.00
60.) Contactspring(copper)	IE-0000015	0.50
61.) Bulb(clear)(6v)(1) (220.0mmlongwiresw/yellowmale2pinplug) (grainofwheat)(ditchlight)	CD-0000010	3.00
62.) Bulb(clear)(6v)(1) (220.0mmlongwiresw/bluemale2pinplug) (grainofwheat)(ditchlight)	CD-0000009	3.00
63.) Ditchlighthousing(red) (plastic)(CP)(#91111)(#9126)(#9159)	FC-2100963	3.00
64.) Lens(clear)(ditchlightlens) (1.5x2.7x3.7mm)(0.8x3.3mmlenshead)	FA-2100017	1.00
65.) Engineer(blackman)	FI-0000030	5.00
Engineer(whiteman)	FI-0000001	5.00
66.) Fireman/Brakeman/Conductor (whiteman)	FI-0000009	5.00
Fireman/Brakeman/Conductor (blackman)	FI-0000033	5.00
67.) Engineerbase(gray)(rightside)	FI-0000025	1.00
68.) Brakemanbase(gray)(leftside)	FI-0000024	1.00
69.) Handrail(red) (9.4mmlong)(frontmiddleofnoseofcab) (CP)(#91111)(#9126)(#9159)	FC-2100960	2.00
NS.) Wireclip(white) (plastic)(4.0x9.0x3.5mm)	IH-0000313	1.00
NS.) Wireclip(white) (plastic)(4.0x4.6x4.0mm)	IH-0000314	1.00

*Requires Exchange
Allpartsarepricedaseach



SD-90MAC Diesel Engine Shell Parts



SD-90MAC Diesel Engine

Chassis Parts

Name and Number	Part #	\$Price Per Unit	Name and Number	Part #	\$Price Per Unit
1.) Grommet(black)(rubber) (holds 2 bulbs)(for headlight & reverse light bulbs)	IH-0000319	0.50	27.) Screw (4/40x6.0mm)(roundhead)	IA-0000003	0.15
2.) Screw (M3x3.0mm)(roundhead)	IA-0000296	0.15	28.) Smoke unit (Proto-Sound® 2.0)(9.0x12.0x3.2x8.0mm brass cup) (26.0mm long mounting posts)	AA-0000049	50.00
3.) Bracket(black) (metal)(8.3x55.5mm)(for reverse lights) (bulbs mount horizontally)	IH-0000324	5.00	29.) Insulator(black)(rubber) (22.0x30.0x17.0mm)(1.5mm thick)(for smoke unit)	IB-0000016	2.00
4.) Bracket(black) (metal)(8.0x7.7x41.0mm)(for headlight) (bulbs mount vertically)	IH-0000325	5.00	30.) Switch(large)(2 position)	BB-0000006	5.00
5.) Bulbs(clear)(6v)(2) (140.0mm long wires w/green male 2 pin plug) (grain of wheat)(reverse light bulbs)	CA-0000060	4.00	31.) Screw (M2x4.0mm)(roundhead)(mount switch to chassis)	IA-0000058	0.15
6.) Bulbs(clear)(6v)(2) (140.0mm long wires w/blue male 2 pin plug) (grain of wheat)(headlight bulbs)	CA-0000032	4.00	32.) Battery charger jack(complete)	BG-0000001	3.00
7.) Rubberband	BI-4500004	0.50	33.) Bracket(black) (metal)(7.0x20.0x11.5mm)(3 mounting holes) (forming patchboard)	IH-0000315	3.00
8.) Tachboard(green)(standard) (no spacer between board and optical sensor)	AG-0000033	6.00	34.) Patchboard(green) (front)(20.3x27.3mm) (blue, black, red, yellow female 2 pin plugs)	AG-0000065	8.00
9.) Motor(RS-385PH) (7.8x24.0mm worm gear)(15.0mm long threads) (9.0x30.0mm white flywheel w/black stripes) (w/black plastic tachboard bracket)	BE-0000113	25.00	35.) Screw (M2.4x3.0mm)(roundhead)(plastic cutting threads)	IA-0000350	0.15
10.) Motor(RS-385PH) (7.8x24.0mm worm gear)(15.0mm long threads) (9.0x30.0mm black flywheel)	BE-0000114	25.00	36.) Bracket(gray) (metal)(34.0x42.0mm)(0.5mm thick) (holds # boards lights)(mounts on top of motor cover)	IH-0000318	4.00
11.) Motor mount(black) (for 3 axle diesel truck block)	BI-0000027	15.00	37.) Bulbs(clear)(6v)(2) (140.0mm long wires w/red male 2 pin plug) (grain of wheat)(number board lights)	CC-0000049	4.00
12.) Screw(yellow Zink) (M2.5x6.0mm)(roundhead)(w/lock washer)	IA-0000001	0.15	38.) Grommet(black) (cupped)(rubber)	IH-0000144	0.50
13.) Screw (M3x14.0mm)(roundhead)(w/lock washer)	IA-0000012	0.15	39.) Motor cover(gray) (has holes near bottom to mount interior lights brackets)	BI-0000064	7.00
14.) Battery leads (200.0mm long wires w/small black 2 pin male plug) (270.0mm long wires w/battery charger jack)	BC-0000134	6.00	40.) Bracket(black) (metal)(6.5x10.0mm)(7.5mm step) (forming cab interior bulb to motor cover)	IH-0000309	2.00
15.) Battery(white) (8.4 volts)(re-chargeable)(nickel-cadium)	BG-4000001	10.00	41.) Grommet(black) (4.5x5.0mm)(rubber)	IH-0000010	0.50
16.) Screw (M3x4.0mm)(roundhead)	IA-0000010	0.15	42.) Bulbs(clear)(6v)(2) (150.0mm long wires w/yellow male 2 pin plug) (grain of wheat)(cab interior lights)	CG-0000036	4.00
17.) Bracket(black) (battery)(flat mounted)(plastic)	IH-0000074	3.00	43.) Chassis(black) (57.0x480.0mm)(has holes for battery charger jack)	DH-2100034	*20.00
18.) Boards(Proto-Sound® 2.0) (w/Rom memory)(5v board)	AE-0000001	*200.00	44.) Bell(black) (tapped for M2.5mm screw) (CP)(#91111)(#9126)(#9159)	FC-2100945	3.00
19.) Bracket(Aluminum) (for Proto-Sound 2.0® boards)(tapped for 6/32 screw) (15.0x43.5mm)(10.5mm step-up)	IH-0000198	4.00	45.) Screw (M2.5x4.0mm)(roundhead)	IA-0000005	0.15
20.) Screw (6/32x12.0mm)(roundhead) (forming PS2 board to Aluminum bracket)	IA-0000103	0.15	46.) Wire nut(yellow)	BI-4500003	0.25
21.) Bracket(Aluminum) (10.0x23.5x27.0mm)(11.0mm & 16.5mm steps) (support the front of PS2 boards)	IH-0000317	4.00	47.) Volume pot (small volume pot)(blue w/green board)	BI-0000040	5.00
22.) Screw (M3x6.0mm)(roundhead)	IA-0000016	0.15	48.) Bracket(brass) (speaker)(12.0x9.7mm)(5.0mm step) (rounded end by mounting hole)	IH-0000322	1.00
23.) Insulator(white) (washer)(3.0x6.0x3.0mm)(plastic)	ID-0000025	0.15	49.) Speaker(STAR) (FR-050-A1421)(16ohms)(5W)(50.0mm speaker)	BF-0000022	10.00
24.) Insulator(clear) (13.0x19.0x0.1mm)(single hole)	ID-0000024	0.15	50.) Gasket(black)(speaker)(foam) (46.0x51.0mm)(4.5mm thick)(for 50.0mm speakers)	IB-0000011	1.00
25.) Voltage regulator (LM2937ET)	AG-0000032	3.00	51.) Gasket(black) (foam)(mount on SD-80 & 90MAC fuel tanks)	IB-2200001	3.00
26.) Contact spring board(green) (front)(16.5x27.0mm)(3 silver pads)	BH-0000062	3.00	52.) Fuel tank (black w/red markings & danger sign) (has holes for mounting small volume pot) (CP)(#91111)(#9126)(#9159)	FC-2100944	*20.00

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SD-90MAC Diesel Engine

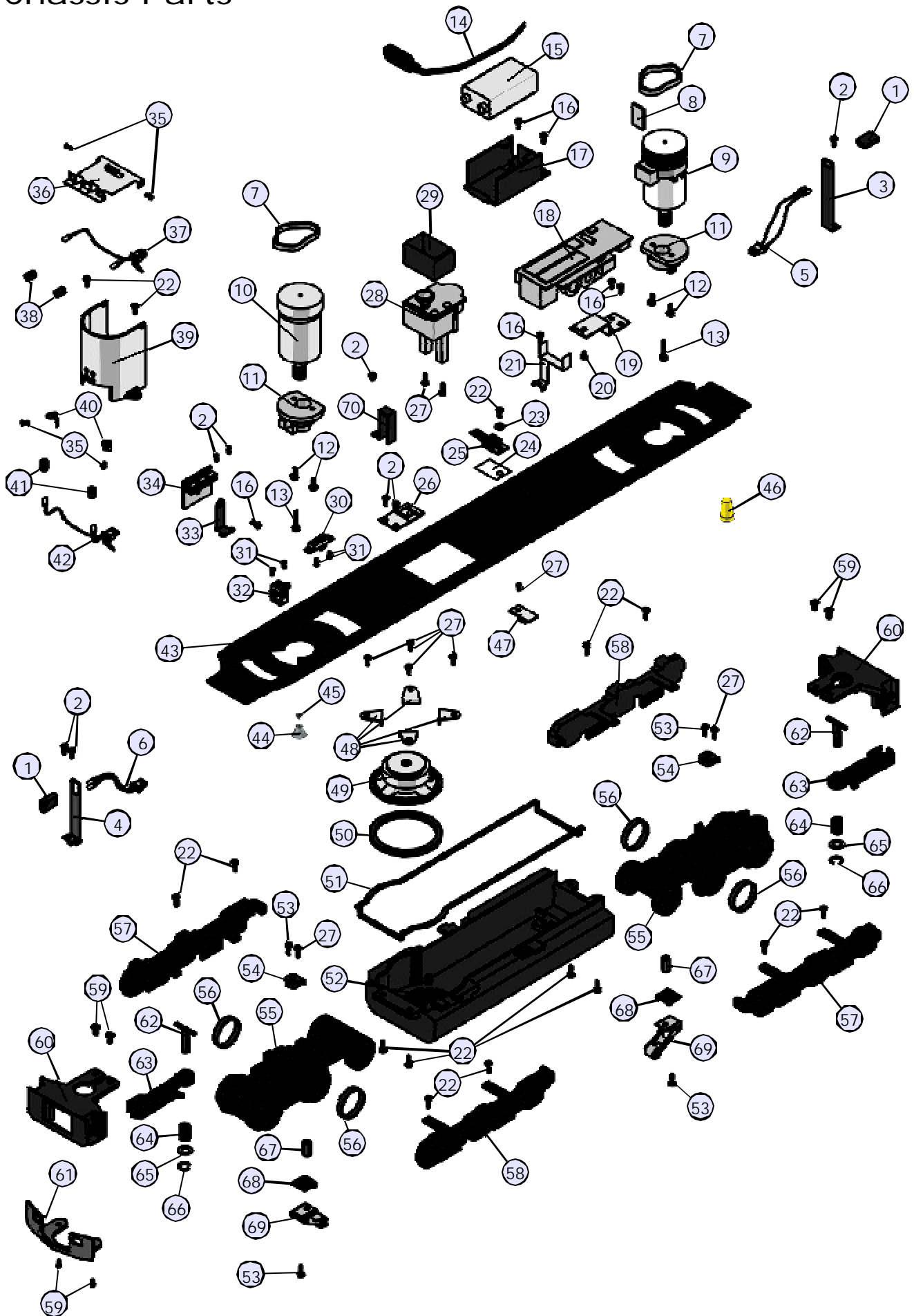
Chassis Parts

Name and Number	Part #	\$Price Per Unit
53.) Screw(nickel) (M3x6.0mm)(roundhead)	IA-0000015	0.15
54.) Insulator(black) (top)(square)(pick-up)	BD-0000015	2.00
55.) Truck(black) (powered)(3axle)(2screwholesformountingpilot)	DA-2050016	*35.00
56.) Tractiontire(black) (rubber)(4.0x17.0mm)	DE-0000018	0.75
57.) Truckside(black) (rightfront/leftrear) (CP)(#91111)(#9126)(#9159)	DB-2100044	9.00
58.) Truckside(black) (leftfront/rightrear) (CP)(#91111)(#9126)(#9159)	DB-2100045	9.00
59.) Screw (4/40x6.0mm)(flathead)	IA-0000038	0.15
60.) Pilot(black,w/whitesteps) (pilothas2screwholesformountingpilot) (CP)(#91111)(#9126)(#9159)	DG-2150042	15.00
61.) Snowplow(black) (CP)(#91111)(#9126)(#9159)	FH-2130001	4.00
62.) T-bar (black) (4.0x20.0mm)(plastic)(mountscouplertotruck)	IG-0000001	0.50
63.) Proto-Coupler®(black) (Proto-Coupler®2.0)(51.0mmlong)	DD-0000032	10.00
64.) Spring(nickel) (6.5x11.0mm)(w/0.4mmthickwire) (formountingcoupler)	IE-0000007	0.50
65.) Washer(black) (5.0x10.0x1.0mm)(formountingcoupler)	ID-0000026	0.15
66.) E-clip(black) (3.0x8.0x0.5mm)(formountingcoupler)	IF-0000002	0.15
67.) Nut(nickel) (2.5x5.0x10.0mm)(formountingpick-up)	IC-0000005	0.50
68.) Insulator(black) (pick-up)(bottom)(flat)(square)	BD-0000024	2.00
69.) Pick-up (8.0x11.0mmlong)(28.0mmlong)	BD-0000025	5.00
70.) Wirestrap(black) (metal)(7.0x15.5mm)(15.0mmstep) (holds wires behindfrontmotor)	IH-0000316	2.00
NS.) Wireharness (blackmale12pinplug)	BC-2100028	18.00
NS.) Wireharness (blackmale7pinplug)	BC-2100024	10.00
NS.) Wireharness (blackmale5pinplug)(formotors)	BC-2100025	4.00
NS.) Wireharness (blackmale4pinplug)(smokeunit)	BC-2100026	4.00
NS.) Wireharness(forspeaker) (70.0mmlongwiresw/whitemale2pinplug)	BC-2100027	3.00
NS.) Wireharness (170.0mmlongwiresw/blackmale2pinplug) (blackwireshieldonwires)(forProto-Coupler®)	BC-0000135	3.00
NS.) Wireharness (220.0mmlongred&blackwiresw/eyelets) (blackwireshieldonwires)(forpick-up)	BC-0000136	4.00

*Requires Exchange
All parts are priced as each



SD-90MAC Diesel Engine Chassis Parts



Smoke Unit Proto-Sound® 2.0

Smoke Unit Parts

Name and Number	Part #	\$Price Per Unit
1.) Screw (4/40x6.0mm)(roundhead)	IA-0000003	0.15
2.) Gasket(burntorange) (forstandardsmokeunit)(25.0x37.0mm)(0.5mmthick)	IB-0000006	2.00
3.) Screw (M1.4x3.0mm)(roundhead)	IA-0000120	0.15
4.) Fan impeller(black) (plastic)(forsmokeunit)	AI-0000019	2.00
5.) Heating elements (forsmokeunit)	AI-0000018	2.00
6.) Wick (white) (forsmokeunit)(4"long)(soldasapair) (requires2wickspersmokeunit)	AA-0000001	1.00
7.) Motor (forsmokeunit)(wireharnessnotincluded)	BE-0000041	5.00

All parts are priced as each

