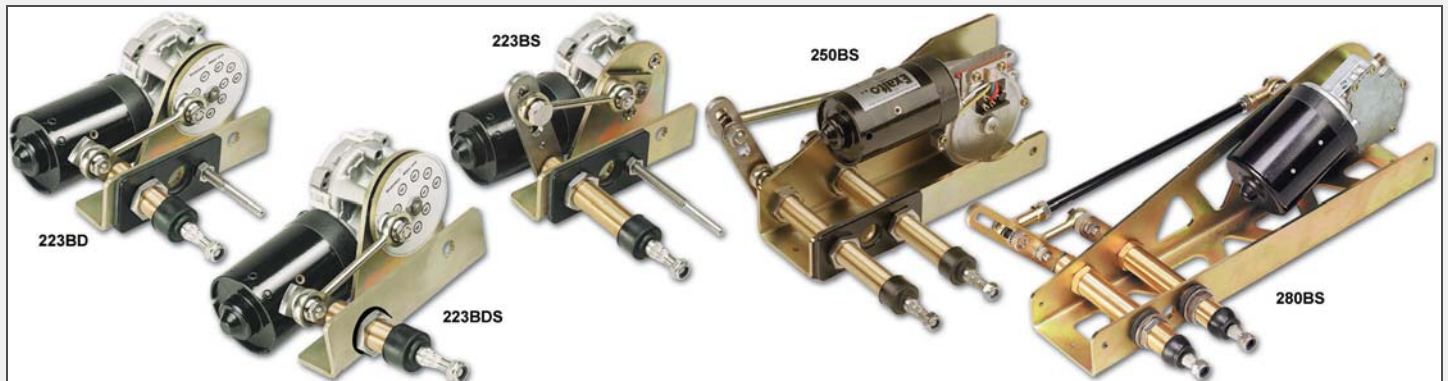


Exalto H.D. wiper motors

Unlike many other wipers, Exalto H.D. wipers are specially designed for marine use. That is why Exalto wipers are the best wipers available on the market today. Exalto offers a wide range of motors, arms, blades, switches and complete electronic controls to ensure that the complete wiper system meets your specifications. Pantograph arms and wiping arcs are adjustable to give customised coverage.

All wipers have two speeds, are self-parking and in combination with one of the smart wiper controls an adjustable intermittent wipe and a wipe / wash feature are offered as a standard. All Exalto wipers have stainless steel shafts, bolts and nuts. The drive shafts run in self-lubricating bronze bearings to ensure many hours of trouble-free performance.



Technical specs	223BD (12 / 24V)	223BDS (12 / 24V)	223BS (12V)	223BS (24V)	250BS (12V)	250BS (24V)	280BS (24V)
Torque	23 Nm	23 Nm	23 Nm	23 Nm	50 Nm	50 Nm	80 Nm
Power consumption	36W	36W	36W	36W	30W	30W	95W
Insulated earth return	Optional	Optional	Optional	Optional	Yes	Yes	Optional
Negative earth	Yes	Yes	Yes	Yes			Yes
Bulkhead mounting	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Max. arm length	750 mm	750 mm	750 mm	750 mm	1000 mm	1000 mm	1500 mm
Max. blade length	800 mm	800 mm	800 mm	800 mm	1200 mm	1200 mm	1200 mm
Two speeds	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Self-parking	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wiping arc 40°-90°	5° increments	5° increments	Stepless	Stepless	Stepless	Stepless	Stepless
Drive shaft sleeve	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	27 mm
Idler spindle / sleeve	8 mm	8 mm	8 mm	8 mm	20 mm	20 mm	27 mm
Centre distance	50 mm	50 mm	50 mm	50 mm	60 mm	60 mm	60 mm
Driven shaft(s)	Single	Single	Single	Single	Dual	Dual	Dual
Compatible pantograph arms	PU type	-	PU type	PU type	P10 type	P10 type	P12 type

List of catalogue numbers	223BD (12V) Cat. no.	223BD (24V) Cat. no.	223BDS (12V) Cat. no.	223BDS (24V) Cat. no.	223BS (12V) Cat. no.	223BS (24V) Cat. no.	250BS (12V) Cat. no.	250BS (24V) Cat. no.	280BS (24V) Cat. no.
20 mm bulkhead thickness	2165.30	2166.30	2165.30s	2166.30s	2167.30	2168.30			
25 mm bulkhead thickness									2178.30
35 mm bulkhead thickness	2165.32	2166.32	2165.32s	2166.32s	2167.32	2168.32	2175.30	2176.30	
55 mm bulkhead thickness	2165.35	2166.35	2165.35s	2166.35s	2167.35	2168.35			
65 mm bulkhead thickness							2175.35	2176.35	
75 mm bulkhead thickness	2165.40	2166.40	2165.40s	2166.40s	2167.40	2168.40			
Non-standard bulkhead thickness	2109.01	2109.01	2109.01	2109.01	2181.04	2181.04	2181.03	2181.03	2181.02

For dimensions of these strong H.D. wiper motors, please refer to further in this section.



Technical specs	235KG (12V)	235KG (24V)	232BD (12V)	232BD (24V)	233BD (12V)	233BD (24V)
Torque	23 Nm	23 Nm	32 Nm	32 Nm	23 Nm	23 Nm
Power consumption	36W	36W	40W	40W	36W	36W
Insulated earth return	Optional	Yes	Yes	Yes	Yes	Yes
Bulkhead mounting			Yes	Yes	Yes	Yes
Glass mounting	Yes	Yes				
Max. arm length	450 mm	450 mm	750 mm	750 mm	750 mm	750 mm
Max. blade length	500 mm	500 mm	800 mm	800 mm	800 mm	800 mm
Two speeds	Yes	Yes	Yes	Yes	Yes	Yes
Self-parking	Yes	Yes	Yes	Yes	Yes	Yes
Wiping arc 40°-90°	5° increments	5° increments	5° increments	5° increments	5° increments	5° increments
Drive shaft sleeve	11 mm	11 mm	20 mm	20 mm	20 mm	20 mm
Idler spindle / sleeve	8 mm	8 mm	8 mm	8 mm	8 mm	8 mm
Centre distance	50 mm	50 mm	50 mm	50 mm	50 mm	50 mm
Driven shaft(s)	Single	Single	Single	Single	Single	Single
Compatible pantograph arms	PU type	PU type	PU type	PU type	PU type	PU type

List of catalogue numbers	235KG (12V) Cat. no.	235KG (24V) Cat. no.	232BD (12V) Cat. no.	232BD (24V) Cat. no.	233BD (12V) Cat. no.	233BD (24V) Cat. no.
17 mm bulkhead thickness	2123	2124				
20 mm bulkhead thickness			2157.30	2158.30	2151.30	2152.30
35 mm bulkhead thickness			2157.32	2158.32	2151.32	2152.32
55 mm bulkhead thickness			2157.35	2158.35	2151.35	2152.35
75 mm bulkhead thickness			2157.40	2158.40	2151.40	2152.40
100 mm bulkhead thickness			2157.45	2158.45	2151.45	2152.45
125 mm bulkhead thickness			2157.50	2158.50	2151.50	2152.50
Non-standard bulkhead thickness			2109.01	2109.01	2109.01	2109.01
Cover for unit	2198.25	2198.25	2198.50	2198.50	2198.50	2198.50

For the dimensions of these strong H.D. wiper motors, please refer to the next pages.



Exalto Wiper covers

For wiper motor 223BD / 223BDS

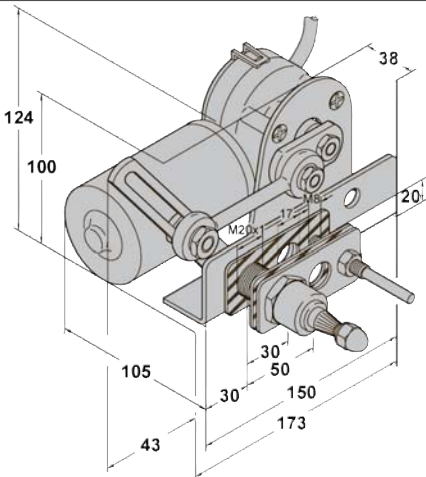
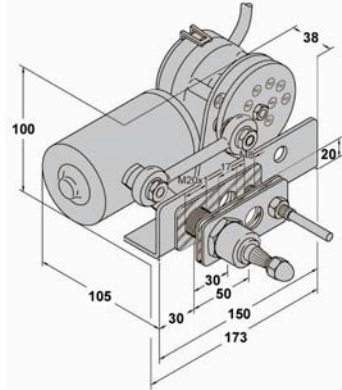
These tastefully designed wiper covers can be used to protect the wiper motor. Another advantage is that all moving parts will be out of reach, which makes the motor safe for everyone around. Of course the covers can also be applied just for the looks!

The covers come complete with click-in hand rivets and gaskets.

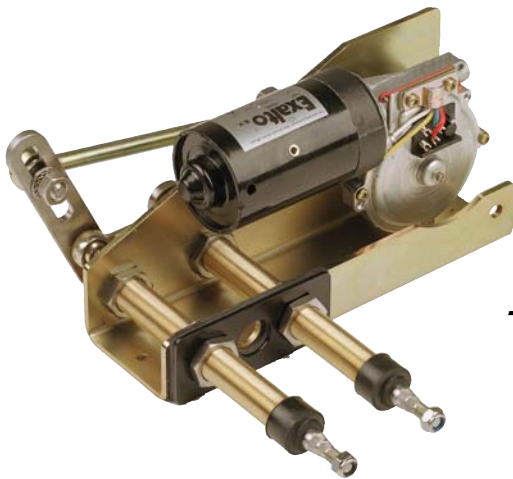
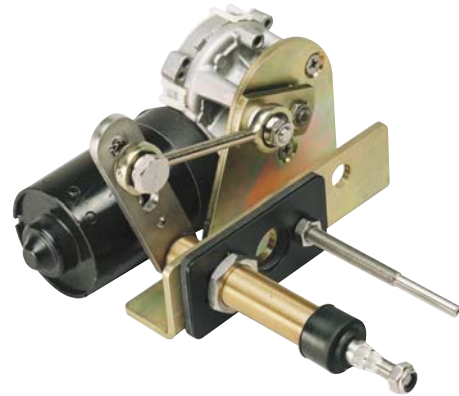
Pos.	For motor	Colour	Cat. no.
1	223BD	white	2101
2	223BD	black	2115



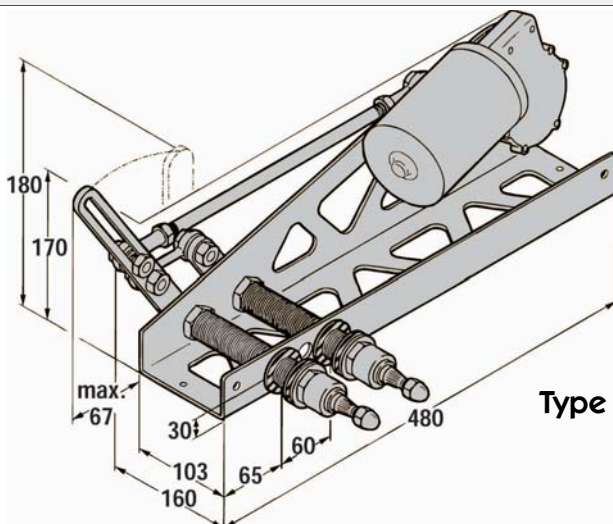
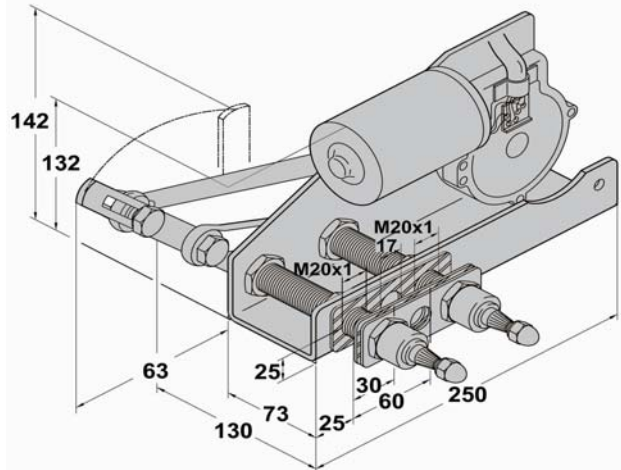
**Types
223BD
&
223BDS**



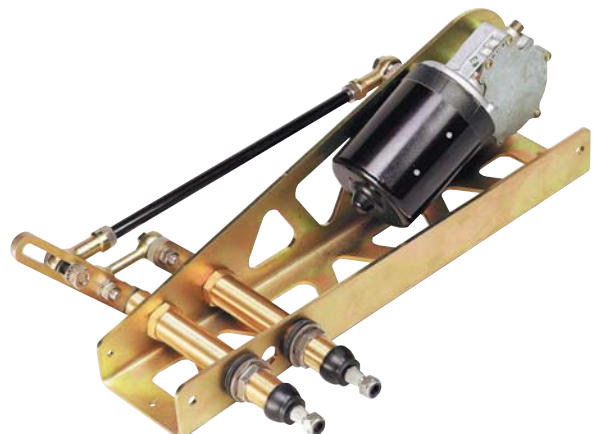
Type 223BS

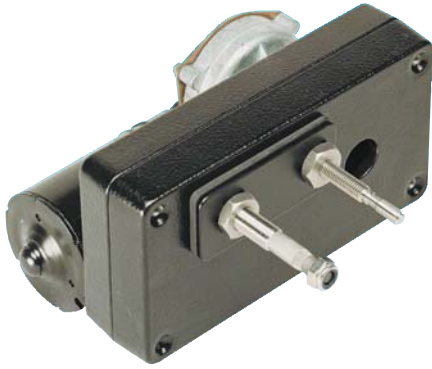


Type 250BS

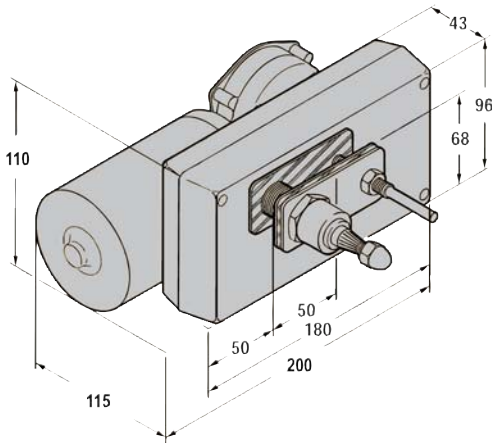
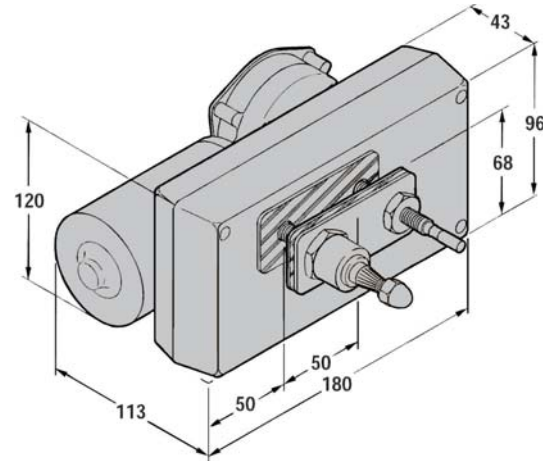


Type 280BS





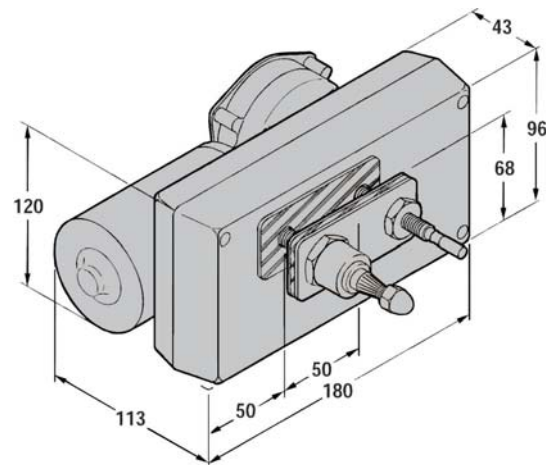
Type 235KG



Type 232BD



Type 233BD



For other specifications of all H.D. wiper motors, please refer to the previous pages.

Exalto Linkage wiper system

Type KW

The Exalto KW wiper system is custom-made, so in almost every situation the perfect solution can be offered. With one wiper a maximum of four arms can be driven. Main advantage of this wiper system is that the arms are easily adjustable in length. The arms have a swivelling blade clip, so in self-parking position the blade is parallel to the edge of the glass. The type E wiper arms are specially designed for the Exalto KW wiper system. We advise you to use the Exalto H.D. blades.

Features Exalto KW:

- Easy to mount
- Noiseless
- Two speeds
- Stainless steel shafts, bolts and nuts
- Maximum wiping arc 100°
- Insulated earth return
- Self-parking
- Available for bulkhead thicknesses 20, 35, 55, 75, 100 and 125 mm
- Self-lubricating bronze bearings
- Three types



Type	Bulkhead thickness (mm)	Torque (Nm)	Power consumption (W)	Max. arm length model E (mm)	Max. blade length (mm)	Volt	Cat. no.	Volt	Cat. no.
KW2	20	23	36	600	700	12	2123.02012	24	
KW2	35	23	36	600	700	12	2123.03512	24	
KW2	55	23	36	600	700	12	2123.05512	24	
KW2	75	23	36	600	700	12	2123.07512	24	
KW2	100	23	36	600	700	12	2123.10012	24	
KW2	125	23	36	600	700	12	2123.12512	24	
KW3	20	50	30	750	750	12	2150.02012	24	
KW3	35	50	30	750	750	12	2150.03512	24	
KW3	55	50	30	750	750	12	2150.05512	24	
KW3	75	50	30	750	750	12	2150.07512	24	
KW3	100	50	30	750	750	12	2150.10012	24	
KW3	125	50	30	750	750	12	2150.12512	24	
KW4	20	80	96	750	750			24	
KW4	35	80	96	750	750			24	
KW4	55	80	96	750	750			24	
KW4	75	80	96	750	750			24	
KW4	100	80	96	750	750			24	
KW4	125	80	96	750	750			24	2180.12524



Wiper arms

Type E, for linkage wipers

The E-arms are manufactured of stainless steel 316. To prevent reflection, a black coating is applied. The blades have a swivelling blade clip.

Adjustable length (mm)	Cat. no.
350 - 450	2103
500 - 600	2106
650 - 750	2109



Exalto Pantograph arms

The Exalto PU wiper arms have been the quality norm for marine wiper systems for years now. As wiper specialist, Exalto is improving her products continuously. Therefore all PU arms can be placed in fixed position away from the windshield now (see detail in photograph). In this way it is easier to mount the arms, to replace blades and to clean your window. Besides that, the spring pressure of the PU arms on the windshield can be easily and steplessly adjusted from now on.

All Exalto arms are manufactured of stainless steel 316 and have bronze heads. On standard arms, a black coating is applied on all metal parts to prevent reflection. However, for special applications, the arms are also available with a polished finish. The position of the blade in relation to the window configuration can be adjusted by the swivelling blade clip. The PU arms suit wipers type 235KG, 235KK-HD, 223BD, 223BDS and 223BS. The P10 arms suit wiper type 250BS and the P12 arm suits wiper type 280BS. All Exalto wiper arms are adjustable in length, except for type P12. However, the P12 arms can be supplied in any required length. Please note that P12 arms have a longer delivery time.

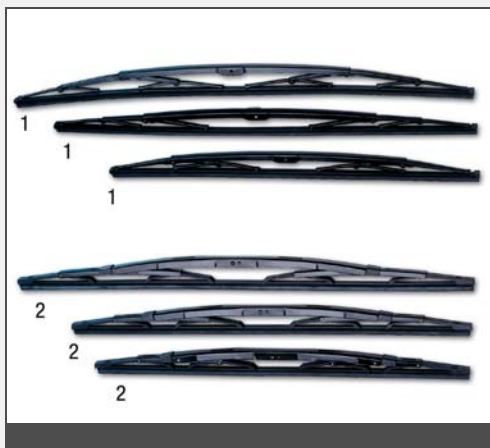
Length	PU type (pos. 1)			P10 type (pos. 3)		P12 type (pos. 4)
	270-450 mm	500-600 mm	650-750 mm	750-1000 mm	750-1000 mm	Max. 1500 mm
No. of springs	One	One	One	Two	Two	Two
Suit blade sizes	300-800 mm	300-800 mm	300-800 mm	300-800 mm	900-1200 mm	900-1200 mm
Centre distance	50 mm	50 mm	50 mm	60 mm	60 mm	60 mm
Cat. no. black coated arm with adjustable spring pressure	2133	2136	2139			
Cat. no. black coated arm with fixed springs				2142.s	2142.b	
Cat. no. black coated arm with two adjustable springs (pos. 5)	2133.01	2136.01	2139.01	2142.sas	2142.bas	2144.b
Cat. no. tubing retainer strip (pos. 2)	2133.03	2136.03	2139.03			

Wiper blades

Exalto Wiper blades

For Exalto H.D. wipers

All Exalto wiper blades are manufactured of stainless steel 316. To prevent reflection, a black coating is applied on all metal parts. The Heavy Duty blades have a lower profile than the standard blades and a reduced lift. This makes them perfect for applications where a little more pressure is required. The Heavy Duty blades are also more screen-friendly due to the use of plastic lower bridges. In case of damaged rubber, these plastic bridges will not damage the screen.



Type	Length (mm)	Cat. no.	Type	Length (mm)	Cat. no.
Standard	250	2170	H.D.	610	216120
Standard	300	2171	H.D.	650	216121
Standard	350	2172	H.D.	700	216122
Standard	400	2173	H.D.	750	216123
Standard	450	2174	H.D.	800	216124
Standard	500	2175	H.D.	850	216125
Standard	550	2176	H.D.	900	216126
Standard	600	2177	H.D.	950	216127
Standard	650	2178	H.D.	1000	216128
Standard	700	2179	H.D.	1200	216130
Standard	750	2195			
Standard	800	2196			

Washing accessories for wipers

We advise fitting washing jets to the arms to enable proper window cleaning. This water can be supplied from either a reservoir with built-in pump, a separate pump or the fresh water pressure system on board, using a solenoid valve. When using one of the Exalto switches, the wipe / wash feature can be controlled by the switch.

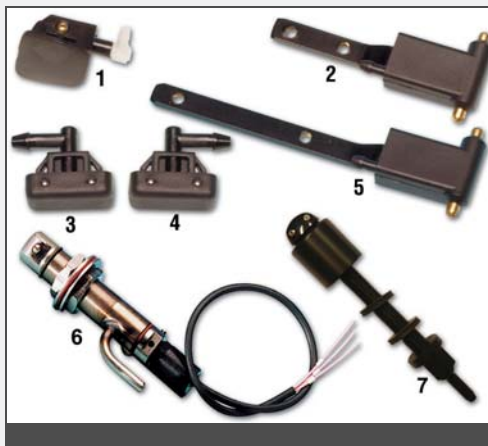


Reservoirs and solenoid valves for Exalto wipers

Pos.	Description	Volt	Cat. no.
1	Reservoir 8 l. with pump	12	2193
1	Reservoir 8 l. with pump	24	2194
1	Reservoir 20 l. with 3 pumps	24	2192
2	Solenoid valve 1/8"	12	2137
2	Solenoid valve 1/8"	24	2138
3	Solenoid valve 1/4"	12	2142
3	Solenoid valve 1/4"	24	2143

Washing jets for Exalto wiper arms

Washing jets can be fitted on the Exalto wiper arms or in the bulkhead. Washing jets allow quick and easy cleaning of the windows.



Pos.	For arm	Cat. no.
1	PU (2 nozzles)	2184
2	PU (6 nozzles)	2110
3	P10 en P12 (4 nozzles) left	2185
4	P10 en P12 (4 nozzles) right	2185L
5	P10 en P12 (6 nozzles)	2111
6	Heated 24V DC, 25W	2148
6	Heated 230V AC, 25W	2149
7	Washing jet bulkhead mount	2151

Fittings for Exalto H.D. wipers

For non-pressurized systems



Pos.	Description	Dimensions	Cat. no.
1	Bent bulkhead connector	4 x 6 mm	2153
2	End coupling female	1/4" B.S.P. x 6 mm	2120
3	T-coupling	6 x 6 x 6 mm	2156
4	Straight bulkhead connector	6 x 6 mm	2150
5	Straight coupling	1/8" B.S.P. x 6 mm	2116
6	Straight coupling	1/4" B.S.P. x 6 mm	2117
7	Plastisized nylon tubing per m (black)	4 x 6 mm	2157
7	Flexible rubber tubing per m (black)	4 x 6 mm	2154
-	Non-return valve for rubber tubing		2121



Fittings for Exalto H.D. wipers

Fittings for pressurized systems

Pos.	Description	Dimensions	Cat. no.
1	Elbow	6 x 6 mm	2129
2	Straight bulkhead connector	6 mm	2130
3	T-coupling	6 x 6 x 6 mm	2166
4	Swivelling elbow	6 x 6 mm	2131
5	Straight coupling	1/8" B.S.P. x 6 mm	2118
6	Straight coupling	1/4" B.S.P. x 6 mm	2119
7	Unplastised nylon tubing per m (blue)	4 x 6 mm	2167
8	Plastic bulkhead fitting	75 mm	2180
8	Stainless steel bulkhead fitting	125 mm	2181

L.D. wipers

L.D. wiper motors

Types 009, 0095 and 008

A range of L.D. wiper motors, designed for non-commercial use. Type 009 and 0095 wipers have two speeds, are self-parking and are standard supplied for the use of pendulum arms. With the use of a special bracket, pantograph arms can also be fitted. These wiper motors are available in two shaft lengths. Wiper motor type 008 has one speed only and is not self-parking. This model is supplied complete with 350 mm pendulum arm and blade.



Pos.	Type	Volt	25 mm shaft Cat. no.	50 mm shaft Cat. no.
1	009	12	211001	211002
1	009	24	211011	211012
2	0095	12	211021	211022
2	0095	24	211031	211032
3	008	12	211051	-

Exalto Wiper arms and blades

for L.D. wipers

Both L.D. pendulum and pantograph arms are made of stainless steel with a brushed finish and are adjustable in length. The pendulum arms have a maximum length of 650 mm and the pantograph arms maximum 550 mm. On these arms and blades a black coating is applied as a standard. Arms however can also be supplied with a polished finish. Both arms can take standard as well as heavy duty Exalto wiper blades.

For wipers type 009 and 0095, stronger arms are available, completely manufactured from stainless steel 316 and also adjustable in length. L.D. blades are available in three fixed lengths.



Pos.	Description	Length (mm)	Cat. no.
1	Bracket with idler shaft		212220
2	Pendulum arm	270 - 365	212027
3	Panthograph arm	310 - 390	212014
3	Panthograph arm	360 - 450	212016
4	Wiper blade	280	212211
4	Wiper blade	355	212214
4	Wiper blade	406	212216
5	Pendulum arm black	650	2107
6	Panthograph arm black	550	2108
-	Mounting kit		2112

Control switches and panels

In order to comply with the wiring diagrams as shown in the instruction manuals supplied with each wiper, we advise the use of the following switches or controls.



Exalto Electronic wiper control

For maximum 4 L.D. wipers

Dual voltage electronic wiper control for up to four L.D. wipers. Wipers can be switched in two groups: group I and group II. These groups can be controlled individually but also together. The wiper control with flush mount panel of 90 x 90 mm offers one continuous speed, self-parking, three step intermittent wipe and a wipe / wash feature. In the intermittent modes, all wipers run synchronised.

Installation sizes (hole-in-plate) : Diam. x d = 75 x 50 mm

Description	Volt	Cat. no.
Electronic wiper control for max. 4 L.D. wipers	12 / 24	210604



Electronic wiper switches

Pos 1 and 2: These switches offer two speeds and self-parking controls with separate connections for pumps or solenoids.

Position 3: This switch incorporates an adjustable intermittent wipe, two speeds and self-parking control, and has a separate connection for a pump or solenoid.

Pos.	Description	Volt	Cat. no.
1	Two speed switch for one H.D. wiper	12 / 24	2134
2	Two speed switch for two H.D. wipers	12 / 24	2135
3	Combination switch for one H.D. wiper	12	2158
3	Combination switch for one H.D. wiper	24	2159
4	Panel for combination switch		2159.01

Exalto Electronic wiper switch

For maximum 1 or 2 Exalto H.D. wipers

These new switches are micro-controller based "intelligent" switches for operating one or two Exalto H.D. wiper motors. They provide all functions for a proper window cleaning. The switches consist of a touch pad with a 45 cm connection cable. The switches offer two continuous speeds, three step intermittent, perfect self-parking due to dynamic break and a wipe / wash program. LEDs on the switch indicate the selected mode, speed and intermittent setting. The wiper switches operate with a power supply of 10 - 30V.

The wiper switch for two Exalto H.D. motors offers a very exclusive extra feature: the connected wipers will run synchronised in **each** speed setting.

Dimensions panels : H x w = 50 x 25 mm
Installation sizes : H x w x d = 36.5 x 21 x 90 mm
Length connection cable : 450 mm

Description	Volt	Cat. no.
Electronic wiper switch for 1 wiper	12 / 24	210341
Electronic wiper switch for 2 wipers	12 / 24	210342





Exalto Electronic wiper control CT3EX

For maximum 3 Exalto H.D. wipers

Electronic wiper control for up to three Exalto H.D. wipers. Wipers can be switched individually or in any combination. LED's indicate each setting. The complete wiper control consists of one flush mount panel of 72 x 72 mm and one junction box. The wiper control offers two continuous speeds, a three-step intermittent wipe and a wipe / wash feature. All wipers are self-parking. The wipers run synchronised in all settings. To ease the mounting of the panel, we offer two different bulkhead mounts: a low and a high version. These mounts should be ordered separately.

Pos.	Description	Volt	L x w x h (mm)	Cat. no.
1	Wiper panel	12 / 24	72 x 72 x 72	216324
2	Bulkhead mount high	-	88 x 88 x 6	216886
3	Bulkhead mount low	-	88 x 88 x 3	216883
-	Dual station wiper panel	12 / 24	72 x 72 x 72	216324.DCP

Exalto Electronic wiper control

For maximum 2, 3, 4 or 5 Exalto H.D. wipers

Electronic control available for 2, 3, 4 or 5 Exalto wipers. Wipers can be switched individually or in any combination. The complete wiper controls consist of one flush mount panel of 100 x 100 mm, one junction box of 154 x 200 mm and a 4 m connection cable to connect the panel to the junction box. Extension cables of 3 m and 6 m are available. The wiper control offers two continuous speeds, three step intermittent wipe and a wipe / wash feature. In the low continuous mode and in the intermittent mode, all wipers run synchronised and are self-parking. LED indicators on the panel show the selected speed setting.

Dimensions panel : 100 x 100 mm
 Installation sizes : H x w x d = 79 x 78 x 75 mm
 Dimensions relais box : 200 x 154 x 80 mm
 Length standard supplied cable between panel and relais box : 4 m
 Also available : extension cables of 3 m en 6 m in length.

Description	Volt	Cat. no.
Electronic wiper control for max. 2 H.D. wipers	12	2102012
Electronic wiper control for max. 2 H.D. wipers	24	2102024
Electronic wiper control for max. 3 H.D. wipers	12	210312
Electronic wiper control for max. 3 H.D. wipers	24	210324
Electronic wiper control for max. 4 H.D. wipers	12	210412
Electronic wiper control for max. 4 H.D. wipers	24	210424
Electronic wiper control for max. 5 H.D. wipers	12	210512
Electronic wiper control for max. 5 H.D. wipers	24	210524



Exalto Electronic wiper control

Dual station control for maximum 3 Exalto H.D. wipers

This wiper control offers two stations from which you can operate the wipers. The set consists of one relay box, with two panels connected to it. The dual station wiper control can operate up to three Exalto wipers. Wipers can be switched individually or in any combination. The complete wiper control consists of two flush mount panels of 100 x 100 mm, one junction box of 154 x 200 mm and a 4 m connection cable to connect the panels to the junction box. Extension cables of 3 m and 6 m are available. The wiper controls offer two continuous speeds, three step intermittent wipe and a wipe / wash feature. In the low continuous mode and in the intermittent mode, all wipers run synchronised and are self-parking. LED indicators on the panels indicate the selected speed setting. The Dual station unit is pre-wired, so you should not have any trouble installing it.

Dimensions panels : 100 x 100 mm each
 Installation sizes : H x w x d = 79 x 78 x 75 mm each
 Dimensions relay box : 200 x 154 x 80 mm
 Length standard supplied cable between panels and relay box : 4 m
 Also available : extension cables of 3 m en 6 m in length.

Description	Volt	Cat. no.
Dual control panel for up to 3 Exalto H.D. wipers	12	210312.DCP
Dual control panel for up to 3 Exalto H.D. wipers	24	210324.DCP

