

W I P E R S Y S T E M S


C O R P O R A T I O N



www.imtra.com

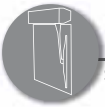


The Trusted Source for Quality Systems

With high quality products, unsurpassed service, and over sixty years of experience, Imtra is the known reliable supplier to a wide range of commercial and recreational markets. We provide unique application solutions for boat owners, commercial marine customers, military and transportation departments, as well as oil and gas industries. To learn more about our full range of products, visit www.imtra.com.



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MARKETS WE SERVE

High performance wiper systems for a wide range of applications

Imtra is the source for quality wiper systems that can stand up to the harshest conditions – on land or sea. We have chosen the best equipment manufacturers such as Roca, Exalto and Decca to make up a comprehensive selection of pendulum, pantograph and straight line wiper systems. Our products include high performance motors, innovative arms, durable blades, washing systems and switchgear. These are systems you can count on to provide many years of reliable service.

With our industry expertise and extensive product knowledge, Imtra has built a solid reputation as an industry leader, providing customized solutions across a range of industries. Here are some of the markets we serve:



Recreational Marine

In the yachting and leisure boating market, we offer wipers for windows of all sizes. Our systems feature intuitive control options and can be used on traditional or more contemporary yachts. Imtra's expertise includes new production and retrofit installations, where we can supply simple or comprehensive solutions. Imtra wiper systems are popular choices for large and small vessels, including:

- Sport cruisers
- Downeasters
- Mega yachts
- Trawlers
- Runabouts
- Center consoles

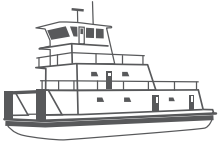


Government, Municipal & Patrol Boats

Imtra has extensive experience in small craft wiper systems for use in commercial and government markets, where heavy duty equipment is required for small window applications. We have provided cost effective solutions to some of the largest Coast Guard response boat contracts, including RB-S and RB-M boats. Other types of vessels include:

- Fireboats
- Pilot boats
- Patrol boats
- Small Tugboats

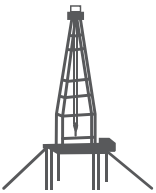




Large Commercial Craft

Imtra has wiper systems to meet the demands of larger vessels in a range of commercial applications. We have systems suitable for wide or tall windows, and where multiple window systems are required (such as offshore supply vessels). On push boats, where large single wipers are often used, we offer pantograph and straight-line external mounted solutions that provide reliable and continuous duty. Commercial vessels include:

- Large Navy vessels
- Offshore supply and anchor handling
- Crew boats
- Tugs and push boats
- Wind farm support vessels



Land and Offshore Industrial

For industrial and land-based customers, Imtra provides durable wiper systems suitable for large windows exposed to harsh environments in a wide range of climates. Our reliable and continuous duty equipment is easy to maintain and service. Imtra's experience includes the following applications:

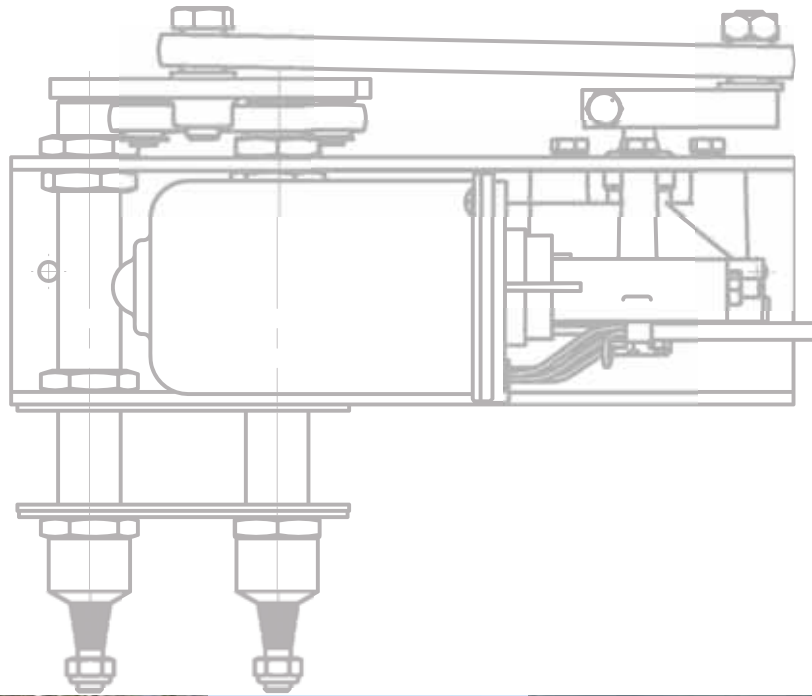
- Land-based oil rigs
- Offshore oil platforms
- Cranes
- Mining equipment / draglines
- Fracking equipment



Transportation & Military

For many small scope production vehicles, a custom wiper solution is the best option. Imtra provides compact custom wiper systems to a range of industrial and military vehicles. With our deep knowledge, quick delivery and extensive warranties, Imtra is the ideal choice for transportation and government markets, including:

- Land-based RVs
- Humvees and military vehicles
- Buses
- Trains



WIPER SYSTEM OVERVIEW

What you need to know before installing a wiper system

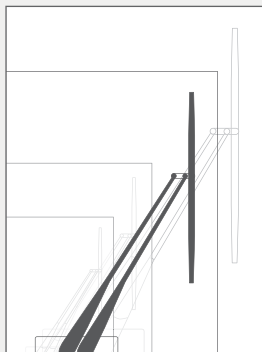
The importance of a quality wiper system is often overlooked – until you need it most. When visibility is poor and conditions are rough, a durable, fully-functional wiper system can make all the difference. Imtra can help you select the right equipment to satisfy all of your requirements. When evaluating a new wiper system, there are a number of factors to consider:

Window Size

While application is taken into account, the determining factor in choosing a wiper system is the size and shape of the glass to be cleaned. The larger the windshield, the longer the wiper arms and blades need to be. Since longer arms and blades create more friction, you will also need a stronger motor. The best solution for taller and broader windshields would be a larger wiper system capable of driving those longer arms and blades.

SIZING KEY

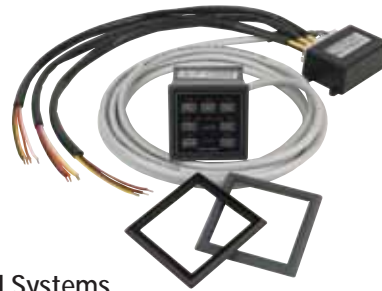
Each wiper system is sized based on the maximum arm and blade length. From these values we can determine the maximum reach and can generalize a size of the window. Use the icons featured on the coming pages to direct you to the right wiper system choice.



Motor Mounting Location

With each system, we strive to maximize the area of the windshield that will be cleared. However the most important area to clean is where the operator is most likely to be looking through; often this dictates the mounting location of the motor. Installation ease and service accessibility should be taken into consideration when choosing the location, and in some cases exterior styling can be an additional factor.

Wiper motors are usually fitted either directly below or above the window and equipment is available to mount the motor on the interior or the exterior depending on the application.

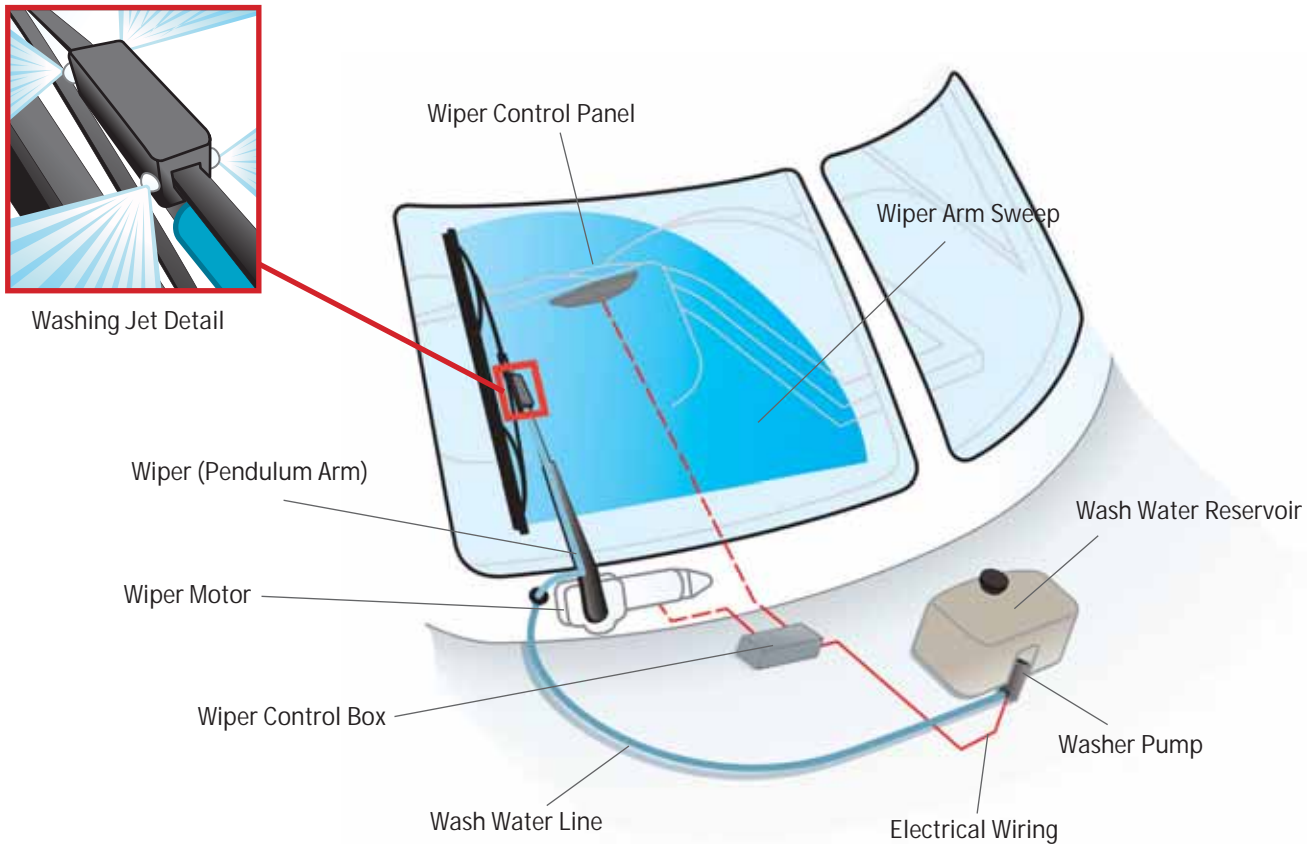


Control Systems

Operating your wiper system no longer means either “ON” or “OFF”. Like today’s automobile wiper systems, wiper control systems now offer a long list of features to make your experience more enjoyable and trouble-free.

Most of our wiper systems feature two-speed motors (low/high). Our controls take advantage of these two continuous speeds, as well as intermittent wiper operation. Most also allow for easy push-button control of a wiper washing system if one is installed. We offer individual switches or full-feature control panels with detailed LED displays to identify which motors are running and at what speeds. Many of our panels and switches will synchronize the wiping action of multiple wipers—even if they were turned on separately!

SYSTEM OVERVIEW



Washing Systems

More and more wiper installations are being fitted with washing systems to help clear the glass from salt spray, pollen and obstructions. Systems can be adapted to run off a pressurized water system or be plumbed to a **stand-alone reservoir** with a simple DC pump. We have all the bits and pieces needed to plumb the system including solenoids, manifolds, washing jets and more.



Washing jets can be mounted to the bulkhead or directly to the end of the arm. Arm-mounted jets are popular as they direct the washing fluid right where it's needed with less wind interference.

Making it Easy

We want to help you select the wiper system that's best for your application. To streamline this process, we have a simple, one-page questionnaire that lets you provide us with the information we need to understand your specific requirements. From this information, we can recommend a wiper system just for you.

You can find this questionnaire on page 39 of this catalog or at www.imtra.com in the wipers section. Or, you can request one by emailing us at wipers@imtra.com. Email the completed form to us and we will respond with a detailed specification including recommended motor selection, arm and blade length, as well as details for a control and/or washing system.



With over 30 years of experience, Roca is one of the world's leading suppliers of wiper systems. Roca's mission is to design, develop and manufacture quality marine systems worldwide. Roca's wiper systems feature a maximum reach from 21" to 70.5" (533 to 1790mm).

ROCA WIPER SYSTEMS

- Designed in Sweden
- Expansive range suitable for all applications
- Innovative and stylish design
- Built with 304 stainless steel





W5 SERIES

A compact pendulum solution for windows with a maximum reach of 21" (533mm).

W5 Series Motors

- Bulkhead thickness: 1" (25mm)
- Self-parking (right or left)
- Single speed motor
- Arm/blade combination up to 14" (355mm)

MOTOR SPECIFICATIONS

Sweep angle range	90° or 110°
Voltages	12V and 24V
Amp draw	1.4A (12V); 8A (24V)
Fuse size	3A
Torque	5Nm
Max arm / blade	14" (355mm)

W5 Series Arms & Blades

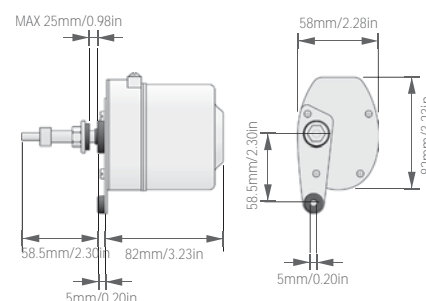
- Wiper arm constructed of 304 stainless steel
- Easy snap-in blade connection
- Adjustable length wiper arms
- Powder-coated steel with durable rubber insert

ARM & BLADE SPECIFICATIONS

	Pendulum
Arm length range	11-14" (280-355mm)
Finish	Black
Fixed or adjustable tip	Fixed
Arm length type	Adjustable
Accepted blade length	11-14" (280-355mm)
Springs	Fixed
Blade attachment method	Hook-type



W5 Series Motor



W5 Series Arm

W5 Series Blade

W10/W12 SERIES

A compact system for windows with a maximum reach of 35" (889mm).

W10 Series Motors

- Three bulkhead thicknesses: 0.63" (16mm), 1.65" (42mm) or 2.68" (68mm) (1.5", 2.5", or 3.5" shaft length)
- Self-parking (right or left)
- Stainless steel drive shaft, mounting bracket and fasteners
- Solid brass, nickel-plated, knurled drive nut and bearing
- Proprietary motor magnets for quieter operation
- Optional motor cover (see inset)

W12 Series Motors

- Three bulkhead thicknesses: 0.63" (16mm), 1.65" (42mm) or 2.68" (68mm) (1.5", 2.5", or 3.5" shaft length)
- Self-parking (right or left)
- Stainless steel wiper shaft
- Integrated heat sink fins for effective heat dissipation
- IP65 rated
- Insulated ground for metal, fiberglass and wooden boats

MOTOR SPECIFICATIONS

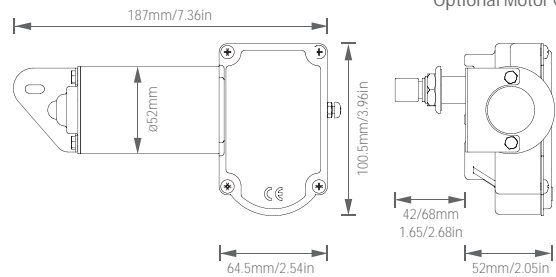
	W10	W12
Sweep angle adjustment	10° increments	Stepless
Sweep angle range	40° – 110°	45° – 110°
Voltages	12V and 24V	
Amp draw	4A (12V); 2A (24V)	
Fuse size	5A (12V); 3A (24V)	
Torque	10Nm	12Nm
Sweeps per minute	35 (low); 55 (high)	
Max arm	24" (610mm)	
Max blade	22" (560mm)	



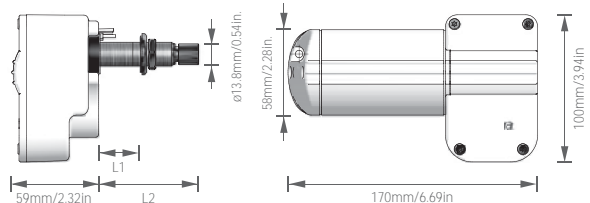
W10 Series Motor



RC528614
Optional Motor Cover



W12 Series Motor



L1 = Bulkhead Thickness
L2 = Overall Shaft Length



W10 / W12 Series Arms

- Fits most motors with 0.54" (13.75mm) shaft diameter
- Accepts standard wiper blades only
- Constructed of 304 stainless steel and UV-stable synthetics
- Easy snap-in blade connection
- Adjustable length wiper arms
- Optional washing jet snaps onto pendulum or pantograph arm



EX21000.326
Optional Washing Jet
for W10/W12 Series
Wiper Arms



W10/W12 Series Wiper Arms

W Series Blades

- Fits W Series and many other wiper arms
- Powder-coated steel with durable rubber insert
- Offered in lengths from 11 – 22"
- Easy to mount
- Includes mounting clips suitable for other attachment methods

W10 / W12 Series Heavy Duty Arms

- Fits most motors with 0.54" (13.75mm) shaft diameter
- Accepts heavy duty blades
- 316 stainless steel gallery, arms, springs and head
- Includes mounting plate with idler shaft (see inset)

W Series Heavy Duty Blades

- Fits only heavy duty arms
- All bridges constructed of 316 stainless steel
- 10", 12", 14", 16", 18", 20", 22" available
- Replacement rubber inserts available

ARM & BLADE SPECIFICATIONS

	Pantograph	Pendulum
Arm length range	12.8-23.3"(324-591mm)	12.8-23.3"(324-591mm)
Finish	Black or Electro-Polished	
Fixed or adjustable tip	Fixed	Both
Arm length type	Adjustable	
Accepted blade length	11-22" (280-560mm)	
Springs*	Fixed	
Blade attachment method	Hook-type	
Washing jet	Optional	

*Dual spring option available



Mounting Plate



EX2184
Optional Washing Jet
for W10/W12 Heavy Duty
Wiper Arm



W10 / W12 Heavy Duty Wiper Arm & Blade



W25 SERIES

A robust system for windows with a maximum reach of 45" (1140mm).

W25 Series Motors

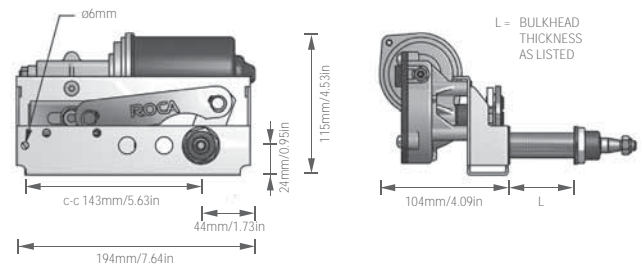
- Three bulkhead thicknesses: 1.1" (28mm), 2.1" (53mm) or 3.1" (78mm)
- Dynamically parks (right or left)
- Stainless steel 0.75" (20mm) drive shaft. Exterior idler shaft part of mounting plate (standard with pantograph arm)

MOTOR SPECIFICATIONS

Sweep angle adjustment	Stepless
Sweep angle range	45° – 110°
Voltages	12V and 24V
Amp draw	7A (12V); 4A (24V)
Fuse size	25A (12V); 15A (24V)
Torque	25Nm
Sweeps per minute	35 (low); 55 (high)
Max arm / blade	30" (762mm)



W25 Series Motor



W25 Series Arms & Blades

- 304 stainless steel arm construction
- Adjustable length wiper arms
- Arms fold back in a locked position for easy cleaning
- Pantograph arms supplied with polished stainless steel mounting plate
- Stainless steel wiper blades with anti-glare black coating

ARM & BLADE SPECIFICATIONS

	Pantograph	Pendulum
Arm length range	18.5-29.5" (470-750mm)	
Finish	Black or Electro-Polished	
Fixed or adjustable tip	Fixed	Adjustable
Arm length type	Adjustable	
Accepted blade length	22-30" (560-1000mm)	
Springs*	Fixed	
Blade attachment method	6mm Bolt	
Blade clip width	.63" (16mm)	
Washing jet	Standard	

* Pantograph arms feature dual springs

W25 Series Wiper Blade



Washing Jet

W25 Wiper Arms



W38 SERIES



Heavy duty motors, arms and blades with a maximum reach of 52.5" (1330mm).

W38 Series Motors

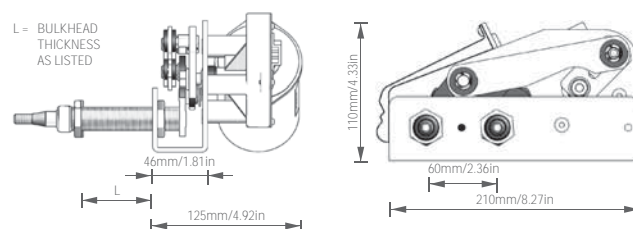
- Three bulkhead thicknesses: 1.1" (28mm), 2.1" (53mm) or 3.1" (78mm)
- Dynamically parks (right or left)
- Stainless steel 0.75" (20mm) drive shaft

MOTOR SPECIFICATIONS

Sweep angle adjustment	Stepless
Sweep angle range	45° – 110°
Voltages	12V and 24V
Amp draw	7A (12V); 4A (24V)
Fuse size	35A (12V); 20A (24V)
Torque	38Nm
Sweeps per minute	40 (low); 60 (high)
Max arm / blade	35" (890mm)



W38 Series Motor



W38 Series Arms & Blades

- 304 stainless steel arm construction
- Adjustable length wiper arms
- Arms fold back in a locked position for easy cleaning
- Pantograph arms supplied with polished stainless steel mounting plate (see inset)
- Stainless steel wiper blades with anti-glare black coating
- Includes wiper blade attachment saddle to 0.63" (16mm)

ARM & BLADE SPECIFICATIONS

	Pantograph
Arm length range	18.5-35.4" (470-900mm)
Finish	Black or Electro-Polished
Fixed or adjustable tip	Fixed
Arm length type	Adjustable
Accepted blade length	28-35" (710-890mm)
Dual Spring	Fixed
Blade attachment method	6mm Bolt
Blade clip width	.63" (16mm)
Washing jet	Standard



W38 Series Blade

W38 Series Arms



Washing Jet



Mounting Plate



W50 SERIES



A modern designed wiper system for windows with a maximum reach of 70.5" (1790mm).

W50 Series Motors

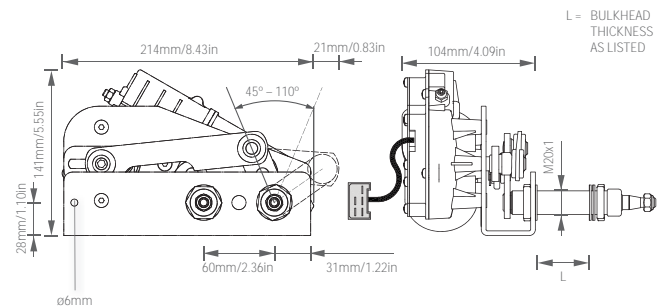
- Three bulkhead thicknesses: 1.1" (28mm), 2.1" (53mm) or 3.1" (78mm)
- Dynamically parks (right or left)
- Internal thermal switch for added safety

MOTOR SPECIFICATIONS

Sweep angle adjustment	Stepless
Sweep angle range	45° – 110°
Voltages	12V and 24V
Amp draw	10A (12V); 5A (24V)
Fuse size	40A (12V); 20A (24V)
Torque	50Nm
Sweeps per minute	30 (low); 47 (high)
Max arm / blade	47.25" (1200mm)



W50 Series Motor



W50 Series Arms & Blades

- 304 stainless steel arm construction
- Adjustable length wiper arms
- Arms fold back in a locked position for easy cleaning
- Pantograph arms supplied with polished stainless steel mounting plate (see inset)
- Stainless steel wiper blades with anti-glare black coating
- Includes wiper blade attachment saddle to 0.63" (16mm)

ARM & BLADE SPECIFICATIONS

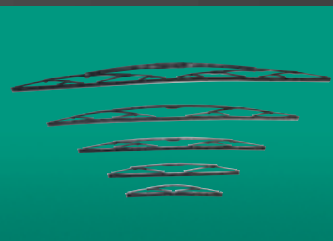
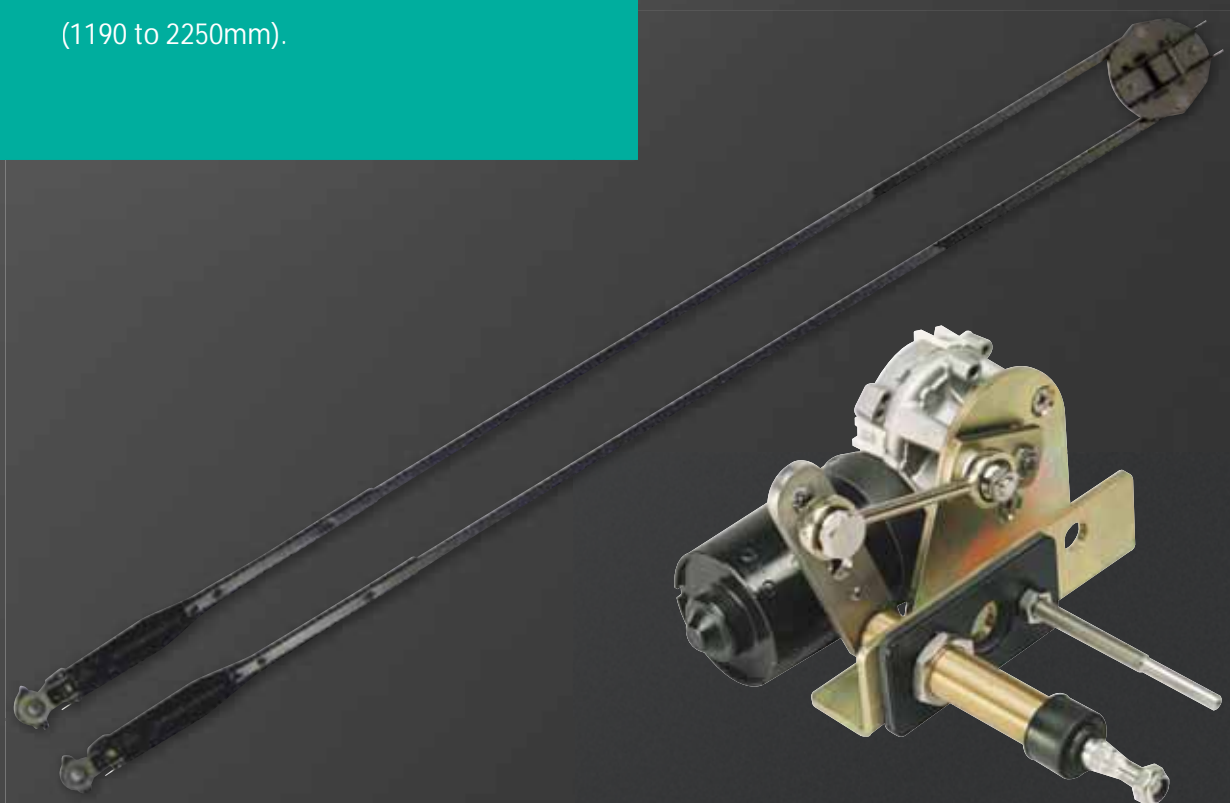
Pantograph arm length range	40-47" (1020-1200mm)
Finish	Black or Electro-Polished
Fixed or Adjustable Tip	Fixed
Arm length type	Adjustable
Accepted blade length	Up to 47.25" (1200mm)
Dual Spring	Fixed
Blade attachment method	6mm Bolt
Blade clip width	.63" (16mm)
Washing jet	Standard



Exalto offers a premium all-weather wiper system. Built for the harshest environments and made of high quality materials, Exalto wiper systems feature 316 stainless steel components to provide many years of reliable service. Choose from a range of systems with a maximum reach from 46.9" to 88.5" (1190 to 2250mm).

EXALTO WIPER SYSTEMS

- Assembled in Holland
- Highest quality components used with the harshest conditions in mind
- Designed for continuous duty and serviceability
- Built with 316 stainless steel components
- Easily adjusted to create the ideal cleared area



TYPE 1 SERIES

A premier continuous duty wiper system for windows under 46.9" (1190mm) in height.

Type 1 Series Motors

- Three bulkhead thicknesses: 0.75" (20mm), 1.375" (35mm) or 2.125" (55mm)
- Dynamically parks (right or left)
- 316 stainless steel drive (20mm) and idler (8mm) shafts
- Custom bulkhead thickness available

223BS Wiper Motor

- Stepless adjustable sweep angle from 40° – 90°
- Allows tuning of wiping angle to maximize cleared area

223BD Wiper Motor

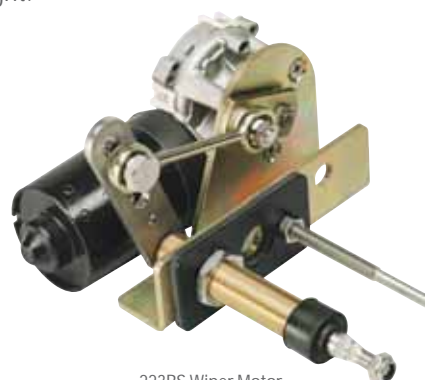
- Disk wiping angle adjustment in 5° increments from 40° – 90°
- Easily preset for production applications
- Optional wiper motor cover in UV-resistant white or black



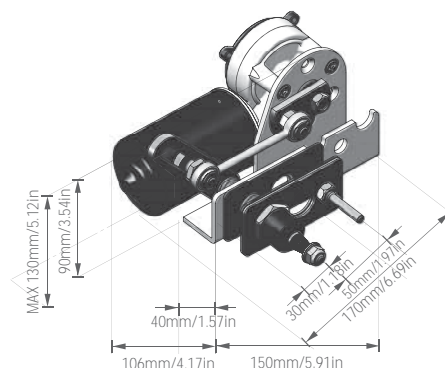
EX2115 EX2101
223BD Wiper Covers

MOTOR SPECIFICATIONS

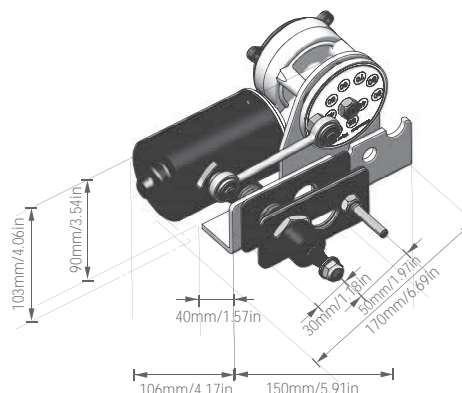
	223BS	223BD
Sweep angle adjustment	Stepless	5° increments
Sweep angle range	40°- 90°	
Voltages	12V and 24V	
Amp draw	3A (12V); 1.5A (24V)	
Fuse size – slow-blow	6A (12V); 4A (24V)	
Torque	23Nm	
Sweeps per minute	38 (low); 59 (high)	
Max arm length	31.1" (790mm)	
Max blade length	31.5" (800mm)	



223BS Wiper Motor



223BD Wiper Motor



Type 1 Series Arms & Blades

- Fits 223BS & 223BD motors
- 316 stainless steel components with brass attachment heads
- Adjustable length wiper arms
- Adjustable spring mechanism in drive gallery
- Arms can be folded back for cleaning
- Styled gallery covers for clean appearance
- Low-glare black polyester epoxy coating over sandblasted stainless steel surface for durable finish
- Two different optional washing jets available (see insets)
- Optional tubing retainer strip holds tubing to the arm (see inset)

Imtra offers **Standard Blades** and **Heavy Duty Blades** for use with Type 1 Series. Unlike most marine wiper manufacturers, Exalto blades feature replaceable rubber inserts, saving time and money.



Standard Blades

- 10" to 31.5" in approximately 2" increments
- All stainless steel bridges



Heavy Duty Blades

- 24", 25.5", 27.5", 29.5" and 31.5" lengths
- Durable stainless steel upper bridges with high-impact polymer lower bridges for optimal blade/glass contact

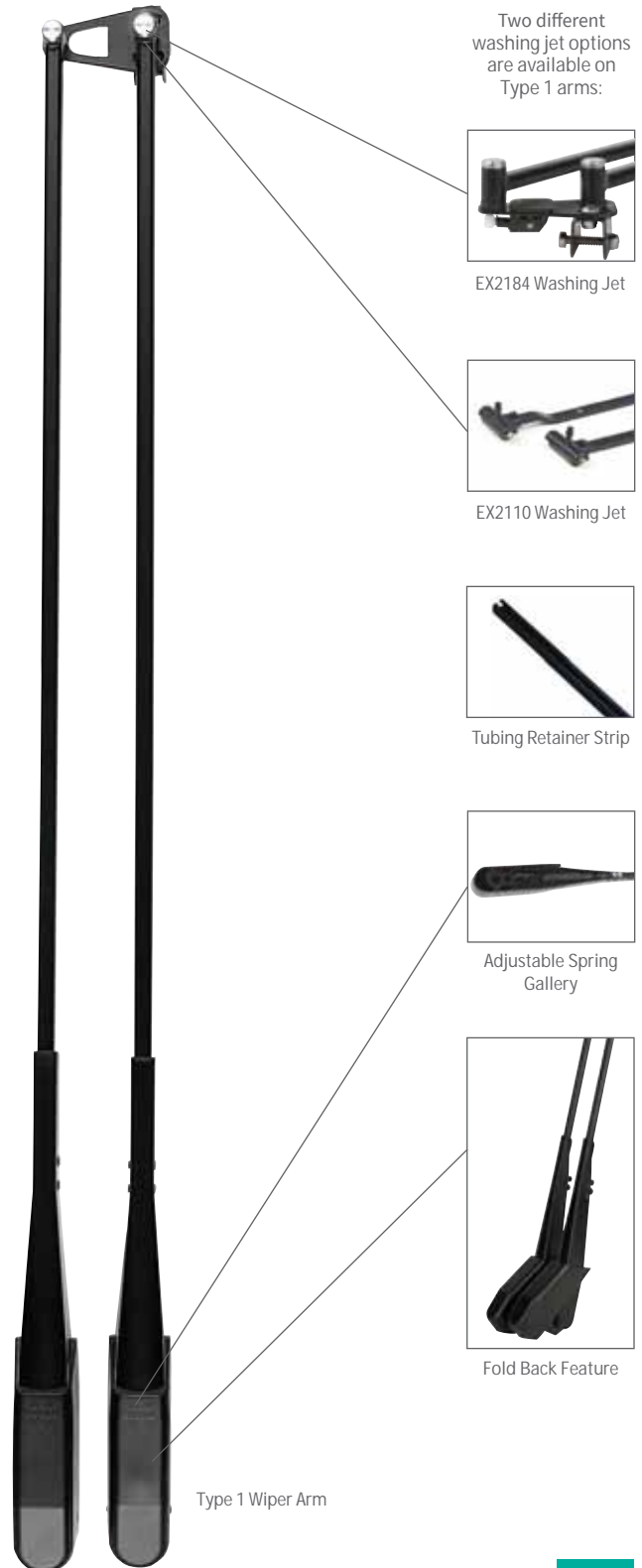
Replacement Blade Inserts

- Available in 39" and 47" lengths (can be cut to fit shorter blades)
- With extra clips, one longer insert can be cut to replace two shorter blades

ARM & BLADE SPECIFICATIONS

Pantograph arm length	14.8-20.7" (375-525mm) 20.7-25.6" (525-650mm) 26.6-31.1" (675-790mm)
Pendulum arm length	26.6-29.5" (650-750mm)
Finish	Black
Arm length type	Adjustable
Accepted blade length	Up to 31.5" (800mm)
Springs*	Adjustable
Blade attachment method	5mm Bolt
Blade clip width	.5" (12mm)
Washing jet	Optional

*Dual spring option available



TYPE 1.5 SERIES

A powerful, compact system for windows up to 52.5" (1330mm) in height.

Type 1.5 Series Motors

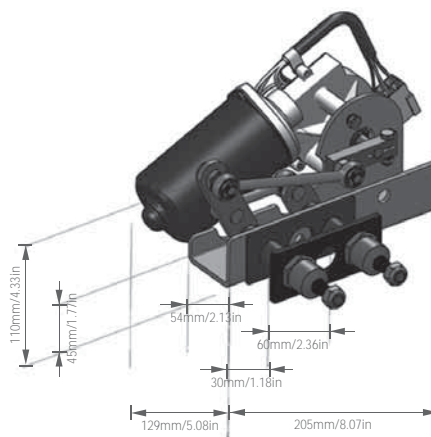
- One bulkhead thickness: 1.1" (28mm)
- Dynamically parks (right or left)
- 316 stainless steel 0.75" (20mm) drive shaft
- Custom bulkhead thickness available

MOTOR SPECIFICATIONS

Sweep angle adjustment	Stepless
Sweep angle range	40°- 90°
Voltages	12V and 24V
Amp draw	7A (12V); 4A (24V)
Fuse size – slow-blow	8A (12V); 6A (24V)
Torque	40Nm
Sweeps per minute	38 (low); 56 (high)
Max arm/blade length	35.4" (900mm)



240BS Wiper Motor



DYNAMIC PARK

Motors that feature **Dynamic Park** finish their sweep and return to a "parked" position when the switch is turned off. The parking feature is specific to the motor, but also requires a switch that maintains a flow of power to the wiper motor when the switch is in the OFF position. All wiper motors and switches that Imtra offers have dynamic parking ability.

Intermittent operation is when a wiper sweeps at preset time intervals with a gap in between. Common in most automobiles, it is now available for marine wipers. Intermittent operation is a function of the switch and will work with any motor that has Dynamic Park. For details, see our many switching options on page 31.

Type 1.5 Series Arms & Blades

- Fits 240BS motor
- 316 stainless steel components with brass attachment heads
- Offered in two versions ("S" and "B") to fit blades of different lengths and widths
- Arms can be folded back for cleaning
- Fixed length wiper arms
- Styled gallery covers for clean appearance
- Two different optional washing jets available (see insets)

Imtra offers **Standard Blades** and **Heavy Duty Blades** for use with Type 1.5 Series. Unlike most marine wiper manufacturers, Exalto blades feature replaceable rubber inserts, saving time and money.



Standard Blades

- 10" to 31.5" in approximately 2" increments
- All stainless steel bridges



Heavy Duty Blades

- 24", 25.5", 27.5", 29.5" and 31.5" lengths
- Durable stainless steel upper bridges with high-impact polymer lower bridges for optimal blade/glass contact

Replacement Blade Inserts

- Available in 39" and 47.25" lengths (can be cut to fit shorter blades)
- With extra clips, one longer insert can be cut to replace two shorter blades

ARM & BLADE SPECIFICATIONS

	"S" Type Arms	"B" Type Arms
Pantograph arm length range	31.5", 33.5", 35.5" (800, 850, 900mm)	
Finish	Black or Polished	
Arm length type	Fixed	
Accepted blade length	19.7-31.5" (500-800mm)	33.5, 35.5" (850, 900mm)
Dual Spring	Fixed	
Blade attachment method	5mm Bolt	8mm Bolt
Blade clip width	.5" (12mm)	.75" (20mm)
Washing jet	Optional	



Type 1.5 Wiper Arm



TYPE 2 SERIES

The ultimate system for windows up to 65" (1650mm) in height.

Type 2 Series Motors

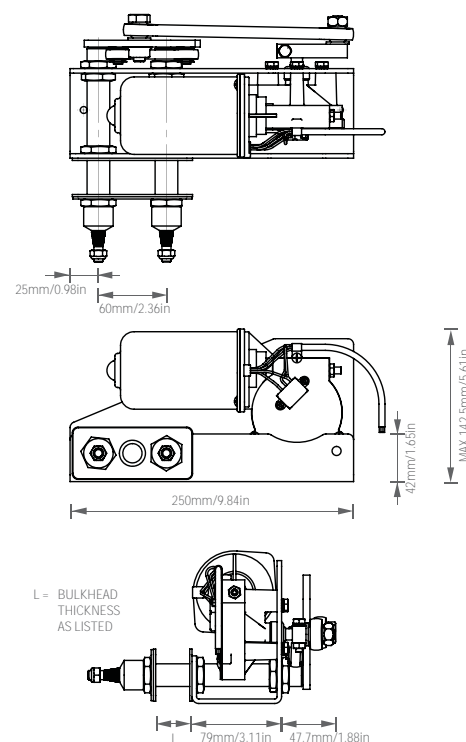
- Two bulkhead thicknesses: 1.375" (35mm), 2.5" (65mm)
- Dynamically parks (right or left)
- 316 stainless steel 0.75" (20mm) drive and support shaft
- Tapered drive shaft for secure arm/motor connection
- Dual drive shafts
- Custom bulkhead thickness available

MOTOR SPECIFICATIONS

Sweep angle adjustment	Stepless
Sweep angle range	40°- 90°
Voltages	12V and 24V
Amp draw	2.5A (12V); 1.3A (24V)
Fuse size – slow-blow	8A (12V); 6A (24V)
Torque	55Nm
Sweeps per minute	38 (low); 60 (high)
Max arm length	37.75" (1000mm)
Max blade length	47.25" (1200mm)



255BS Wiper Motor



CUSTOM APPLICATIONS

In addition to the standard motors featured in this catalog, many of our motors can be special-ordered with custom bulkhead thicknesses to fit unusual mounting arrangements. We also offer a solution for explosion proof applications. Contact Imtra if you have a unique application, and we will work with you to develop a wiper solution to meet your requirements.

- Fits 255BS motor
- 316 stainless steel components with brass attachment heads
- Adjustable length wiper arms
- Offered in two versions ("S" and "B") to fit blades of different lengths and widths
- Arms can be folded back for cleaning
- 10mm box section extension arms with channel for washing system tubing
- Optional arm-mounted washing jets (see insets)



- Standard and heavy duty blades available
- 24", 25.5", 27.5", 29.5", 31.5", 33.5", 35.5", 37.5", 39.5" and 47.25" lengths for Type 2 applications
- Durable stainless steel upper bridges with high-impact polymer lower bridges for optimal blade/glass contact

- Available in 39" and 47.25" lengths (can be cut to fit shorter blades)
- With extra clips, one longer insert can be cut to replace two shorter blades

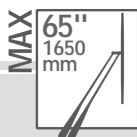
ARM & BLADE SPECIFICATIONS

	"S" Type Arms	"B" Type Arms
Pantograph arm length range	29.5-39.4" (750-1000mm)	
Finish	Black	
Arm length type	Adjustable	
Accepted blade length	19.7-31.5" (500-800mm)	33.5-47.25" (850-1200mm)
Dual Spring	Fixed or Adjustable	
Blade attachment method	5mm Bolt	8mm Bolt
Blade clip width	.5" (12mm)	.75" (20mm)
Washing jet	Optional	



Type 2 Wiper Arm

Galleries feature 316 stainless steel construction, brass heads and protective head covers.



TYPE 3 SERIES

The largest pantograph system for window up to 88.5" (2250mm) in height.

Type 3 Series Motor

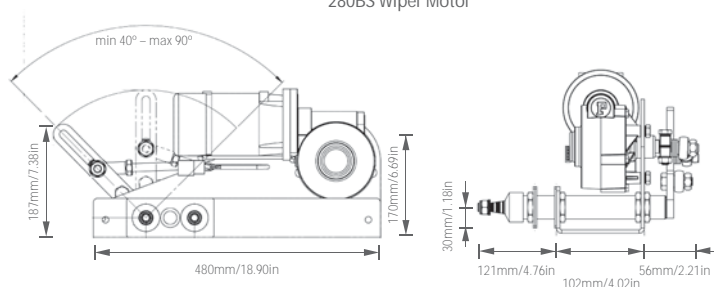
- One bulkhead thickness: 1" (25mm)
- Self-parking (right or left)
- Stainless steel shafts and fasteners with double brass bearings
- Dual drive shafts
- Custom bulkhead thicknesses are available

MOTOR SPECIFICATIONS

Sweep angle adjustment	Stepless
Sweep angle range	40°- 90°
Voltages	24V
Amp draw	3.2A
Fuse size – slow-blow	10A
Torque	80Nm
Sweeps per minute	30 (low); 45 (high)
Max arm/blade length	59" (1500mm)



280BS Wiper Motor



Type 3 Series Arms & Blades

- Fits 280BS wiper motor
- Stainless steel galleries and springs
- Fixed length wiper arms
- Brass gallery heads
- Stainless steel extension arms, end bracket, blade holder and fasteners
- 12mm box section extension arms with channel for washing system tubing

ARM & BLADE SPECIFICATIONS

Pantograph arm length range	up to 59" (1500mm)
Finish	Black
Arm length type	Fixed
Accepted blade length	up to 59" (1500mm)
Dual Spring	Fixed or Adjustable
Blade attachment method	8mm Bolt
Blade clip width	.75" (20mm)
Washing jet	Optional (see page 19)



Type 3 Series Blade

Type 3 Series Arm



EXTERNAL SERIES

A durable, waterproof external motor with a maximum reach of 46.9" (1190mm).

External Series Motor

- Adjustable mounting brackets for varying mounting surface angles
- Self-parking (right or left)
- Stainless steel shafts and fasteners with double brass bearings
- Durable 316 stainless steel motor housing
- Long life in wet, corrosive environment – waterproof to IPx6
- Waterproof cable connection to motor housing

MOTOR SPECIFICATIONS

Sweep angle adjustment	5° increments
Sweep angle range	40°- 90°
Voltages	12V and 24V
Amp draw	3A (12V), 1.5A (24V)
Fuse size – slow-blow	6A (12V), 4A (24V)
Torque	23Nm
Sweeps per minute	38 (low); 59 (high)
Max arm length	31.1" (790mm)
Max blade length	31.5" (800mm)

External Series Arms & Blades

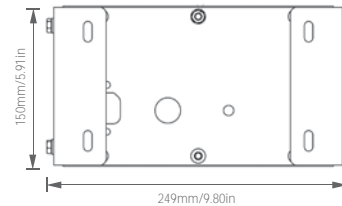
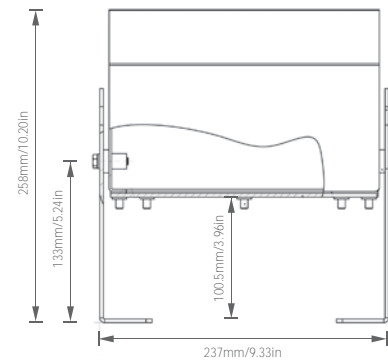
- Fits 223XBD wiper motor
- Stainless steel construction with brass heads
- Adjustable length wiper arms
- Arms fold back for easy windshield cleaning
- Coated with durable low-glare polyester epoxy

ARM & BLADE SPECIFICATIONS

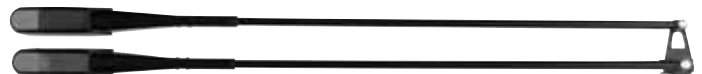
Pantograph arm length	14.8-20.7" (375-525mm) 20.7-25.6" (525-650mm) 26.6-31.1" (675-790mm)
Finish	Black
Arm length type	Adjustable
Accepted blade length	Up to 31.5" (800mm)
Springs	Adjustable
Blade attachment method	5mm Bolt
Blade clip width	.5" (12mm)
Washing jet	Optional (see page 17)



223XBD Wiper Motor



External Series Blade



External Series Arm



Built in Norway to survive the rigors of the North Sea, Decca Straight Line wiper systems have been installed in some of the harshest environments and the most demanding applications, including:

- US Navy vessels
- Energy and mining equipment
- Tugs and towboats
- Patrol and fireboats
- Bulk carriers
- North Sea offshore supply and handling vessels

DECCA WIPER SYSTEMS

- Externally mounted wiper system
- High quality materials and technical features provide unbeatable construction advantages
- Easy to install and operate



DECCA STRAIGHT LINE SERIES

A heavy duty, externally mounted system specifically for commercial applications.

Decca Straight Line Motors

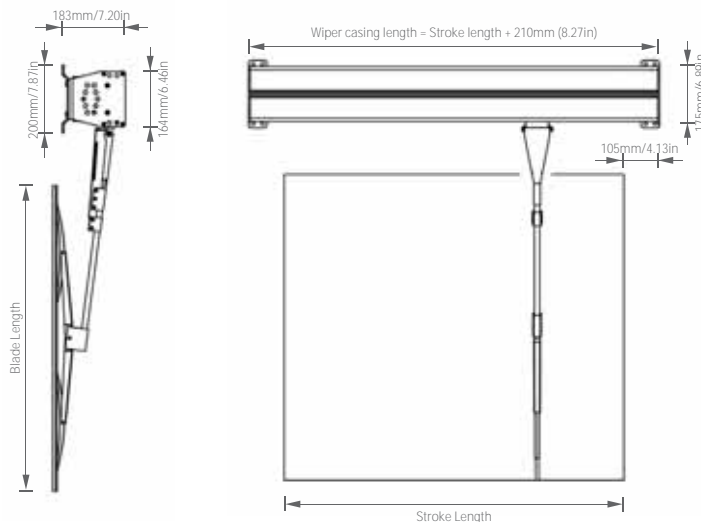
- Voltage: AC (110/220V) or DC (24V)
- Self-parking (right and left)
- Stroke length from 19.6" (500mm) to 98.4" (2500mm)
- Variable speed / variable interval control
- Optional water spray with air purge
- Single or double arm wipers available
- Up to 90% of the window can be wiped
- Heater option available on 110/220 VAC units
- Mirror image units available

Decca Features & Benefits

- Self-adjusting polyamide track rollers
- Sealed stainless steel bearings
- Roller tracks in stainless steel
- Housing in seawater resistant aluminum with powder coated surface for maximum weather resistance
- Unique carriage assembly does not weaken the drive belt
- Interlocking high performance PowerTwist Plus® belt for quick replacement



Decca Straight Line Wiper



DECCA WIPER CONTROLS

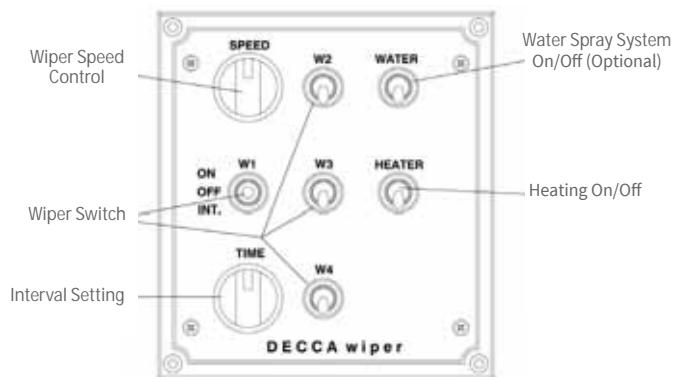
Wiper controls to meet the requirements for Decca Straight Line wiper systems.

Thor Controller Series

- Supports up to 40 wipers
- Supports 1 to 4 separate wiper groups
- Toggle wash function
- Optional air purge function
- Heater function with LED indicator
- Stepless motor speed control
- Stepless intermittent timer
- Heavy duty toggle switches
- Dimensions (HxW): 4.78" (121.5mm) x 4.4" (111.75mm)



Thor Controller Series Panel



Odin Controller Series

- Supports up to 100 wipers
- Supports 5 separate wiper groups
- Supports up to 5 water spray zones
- Built-in air purge function
- Heater function with LED indicator
- Adjustable speed and intermittent
- Soft-touch keypad
- LED indicated speed setting for each group
- Dimmer (night mode) function
- Auto-resume function in standby mode



Odin Controller Series Panel

Rotary Switches

- Simple switching solution for 24V motors
- Variable intermittent time delay
- Continuous low and high speed
- Push button wash function



Rotary Switch

TYPICAL INSTALLATIONS

Single Wiper Installation Layouts

A standard wiper installation features a single arm wiper unit that is mounted above the window frame (Figure 1) or below the frame (Figure 2).

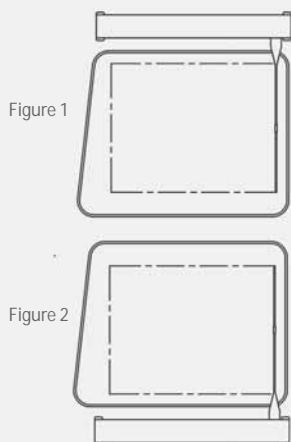


Figure 1

Figure 2

Dual Wiper Installation Layouts

Taller windows require two wipers to ensure maximum visibility, where one wiper unit covers the upper part and the other covers the lower part of the window (Figure 3). The wiper unit can also be supplied with two wiper arms, configured to cover one large window (Figure 4) or two smaller adjacent windows (Figure 5).

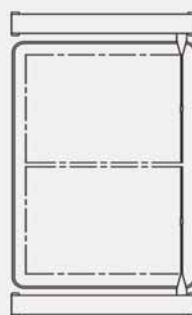


Figure 3

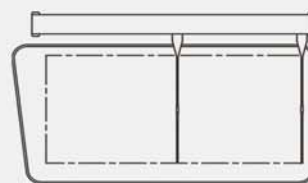


Figure 4

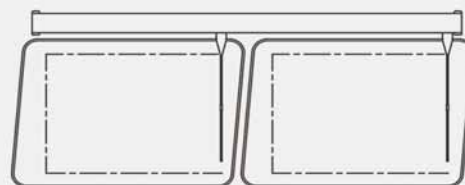


Figure 5

WIPER CONTROLS

Imtra offers a range of innovative switches and controls that let you customize your wiper system.

Use the chart below to determine the best controls for the type of wipers you have.

IMTRA WIPER CONTROLS

- Simple and intuitive switching options
- Multiple wiper synchronization
- Control includes wash functionality



WIPER CONTROLS	W10/12	W25	W38	W50	Type 1 223BD/BS	Type 1.5 240BS	Type 2&3 255BS/280BS	External 223XBD
210 Series Control Panel								
CT3EX Wiper Control								
Quad Control Panel								
CT41/42*								
RC532 Series for W10 / W12								
RC532 Series W25 / W38								
RC532 Series for W50								
Simple Rotary Switch								
Simple Rocker Switch								
Combination Rotary Switch								

* High amp version is needed for Type 1.5, Type 2 & 3 Systems

Contact Imtra for W5 switch option.

CONTROLS

Electronic wiper control panels for 12V and 24V wiper motors.

210 Series Control Panel

- Electronic wiper control for two, three, four and five 12V or 24V wiper motors
- Consists of dashboard panel, separate relay box and plug-and-play connecting cable
- Five operating speeds: low, high, 3 intermittent levels (with 2.5-second, 5-second, 10-second delay)
- Synchronized wiping at each operating speed
- Smart wipe-wash program
- ON/OFF switch
- Individual switches for each wiper
- Indicator lights for active wipers, speed/intermittent settings and wipe-wash
- Low-fluid warning LED for washing system (requires tank sensor)
- Option to network multiple wipers within individual zones
- Option for dimming available

Dimensions

- Panel: 4" H x 3.875" W x 3" D (100 x 98 x 75mm)
- Relay box: 7.52" L x 4.29" W x 1.57" H (191 x 109 x 40mm)
- Connecting cable: 5 meter connecting cable between panel and control

CT3EX Wiper Control

- Electronic wiper control for a maximum of three 12V or 24V wiper motors
- Consists of dashboard panel, separate relay box and plug-and-play connecting cable
- Five operating speeds: low, high, 3 intermittent levels (with 2-second, 4-second, 8-second delay)
- Synchronized wiping at each operating speed
- Smart wipe-wash program
- ON/OFF switch
- Individual switches for each wiper
- Indicator lights for active wipers, speed/intermittent settings and wipe-wash
- Warning system indicates a failing wiper or incorrect wiring
- Optional dual-station version available

Dimensions

- Panel: 2.875" H x 2.875" W x 2.56" D (72 x 72 x 65mm)
- Relay box: 3.125" L x 2.187" W x 1.375" H (80 x 55 x 35mm)
- Connecting cable: 8'2" with plug



210 Series Control

SMART WIPE - WASH

Controls that feature a **Smart Wipe-Wash Program** are able to clear your windshield with a single touch of a button. The smart function starts the spray of washing fluid (or water from ship's supply), adjusts the operating speed of the motors to continuous low speed, continues wiping for a few seconds after the spray stops, and then returns to the speed that was in effect before the washing cycle was initiated. Some of our controls allow the smart function to be customized by the operator.



CT3EX Wiper Control

CONTROLS

Electric wiper controls and panels for 12V and 24V wiper motors.

Quad Control Panel

- Control panel for up to four 12V or 24V wiper motors
- Four operating speeds: low, high, 2 intermittent levels (with 5-second and 10-second delay)
- Synchronized wiping at each operating speed
- Smart wipe-wash program
- UV-safe ABS plastic
- Turn wiper groups on/off independently or together
- Self-parks all wipers
- Includes integral 15A fuse (no inline fuses required)

Dimensions

- 3.5" H x 3.5" W x 2.375" D (90 x 90 x 61mm)



Quad Control Panel

CT41/42 Electronic Wiper Switches

- Electronic switches for standard dashboard systems (such as Carlingswitch®)
- Available in one wiper model (CT41) and two wiper model (CT42)
- Five operating speeds: low, high, 3 intermittent levels (with 2-second, 4-second and 8-second delay)
- Multi-function switch for one or two wipers (10-30VDC)
- Smart wipe-wash program
- CT42 operates both wipers synchronized or independently
- Max amp draw per wiper is 4 amps
- Contact Imtra for high amp options



CT41/42 Electronic Wiper Switch

SOLAR BLINDS FROM SOLA-CURE

Sola-Cure is a premier supplier of anti-glare, UV protection shades and blinds. With **over 99% UV protection**, Sola-Cure blinds create a safer, cooler environment for the crew. Imtra offers a range of Sola-Cure products, with a choice of operating and locking mechanisms and shades in gold, silver, bronze and grey.

Features & Benefits:

- Excellent solar energy rejection
- Protection from harmful UV rays
- Suitable for inclined windows and restricted spaces
- Made to measure
- Improves instrumentation visibility
- Protects fabrics and furnishings from fading
- 5-year warranty on all products



Contact Imtra at 508.995.7000 for more information.



RC532 Series Electronic Wiper Switches

- Electronic switches that combine a remote-mounted electronic box and a single, momentary Carlingswitch to control all functions for three wiper motors
- Compatible with 12V or 24V motors
- Separate models for W10/W12, W25/W38, and W50 series
- Three operating speeds: low, high, intermittent
- Allow operation of a single primary wiper or synchronized operation of up to three wipers
- Compatible with 12V or 24V motors
- Operates wash solenoid or pump
- Illuminated Carlingswitch rocker switch and 3' (1m) connecting harness included



RC532 Series Electronic Wiper Switch

Simple Rotary Switch

- Simple 2-speed rotary switch
- Compatible with 12V or 24V motors
- Dynamic park or coast to park
- Includes option for wash functionality



Simple Rotary Switch

Simple Rocker Switch

- Simple 2-speed rotary switch
- Compatible with 12V or 24V motors
- Dynamic park or coast to park



Simple Rocker Switch

Combination Rotary Switch

- 12V or 24V available
- Variable intermittent time delay
- Continuous low and high speed
- Push button wash function
- Dynamic park or coast to park



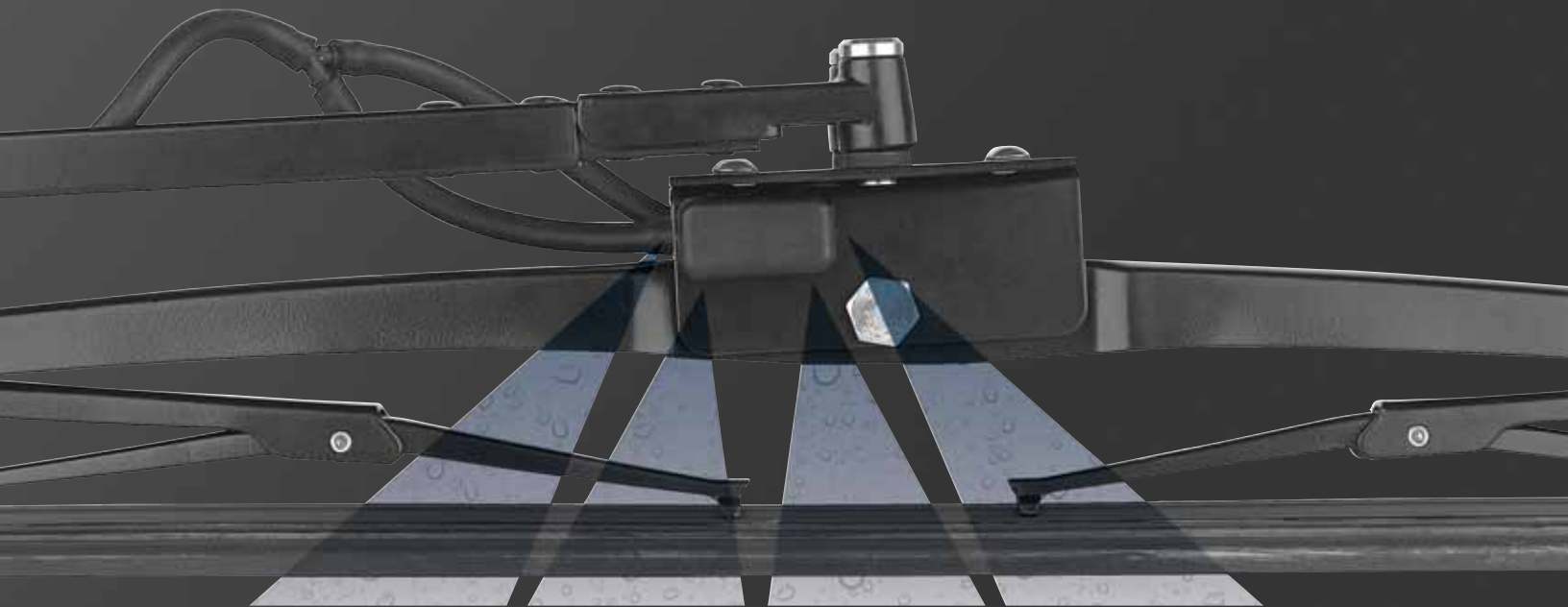
Combination Rotary Switch

WASHING SYSTEMS

A washing system is an important add-on which improves visibility and function of wiper blades, while also extending the life of wiper components. Our selection of washing jets, fittings, bulkhead connectors and tubing provide options for plumbing the entire washing system. Whether you use a pressurized water supply or a separate remote reservoir, Imtra has the components you need.

WASHING SYSTEMS

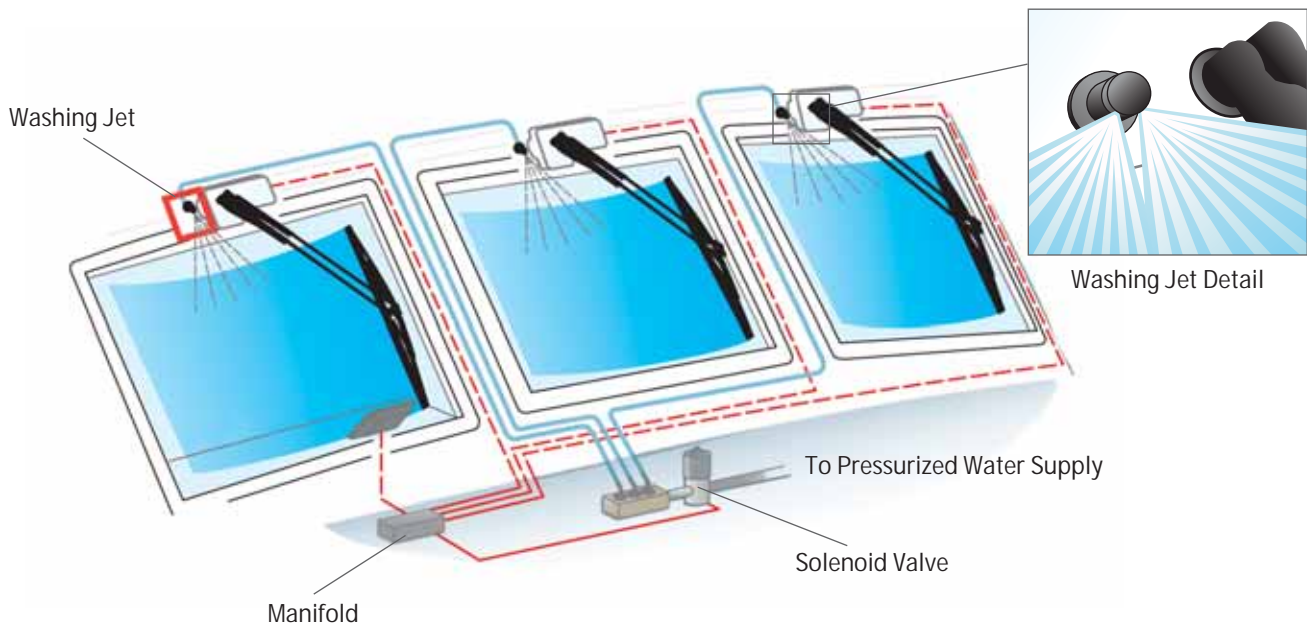
- Complete plumbing solutions from water source to washing jet
- Extensive offering for customized solutions
- Simple and reliable plumbing assemblies



WASHING SYSTEMS

Parts for a complete washing system, including solenoids, manifolds, tubing and bulkhead connectors.

PRESSURIZED WASHING SYSTEM



Washing Jets

Washing jets mount either on the wiper arm or directly to the mounting surface. Water is supplied to the jet and sprays out onto the glass through the jet. Most jets can have their spray angle adjusted with a pin if needed.

Bulkhead Fittings

Bulkhead fittings allow water to be passed through the mounting surface. They usually mount near the shafts of the wiper and include a nipple on the outside and an adjustable threaded pipe on the inside.

Plumbing Fittings

Available in elbows, tees, straight connectors and stem fittings, these push-fit fittings allow you to cater your plumbing system to your requirements.

Tubing

We offer hard and soft tubing for our washing systems. Hard tubing is used inside and works best with push-fit plumbing fittings. Soft tubing is used for the run from the bulkhead fitting to the washing jet along the wiper arm, or on barbed fittings.

Solenoid Valves

A solenoid is used on washing systems that run off pressurized water systems. The solenoid will open the water flow when it gets a signal to do so from a wiper control.

Reservoirs

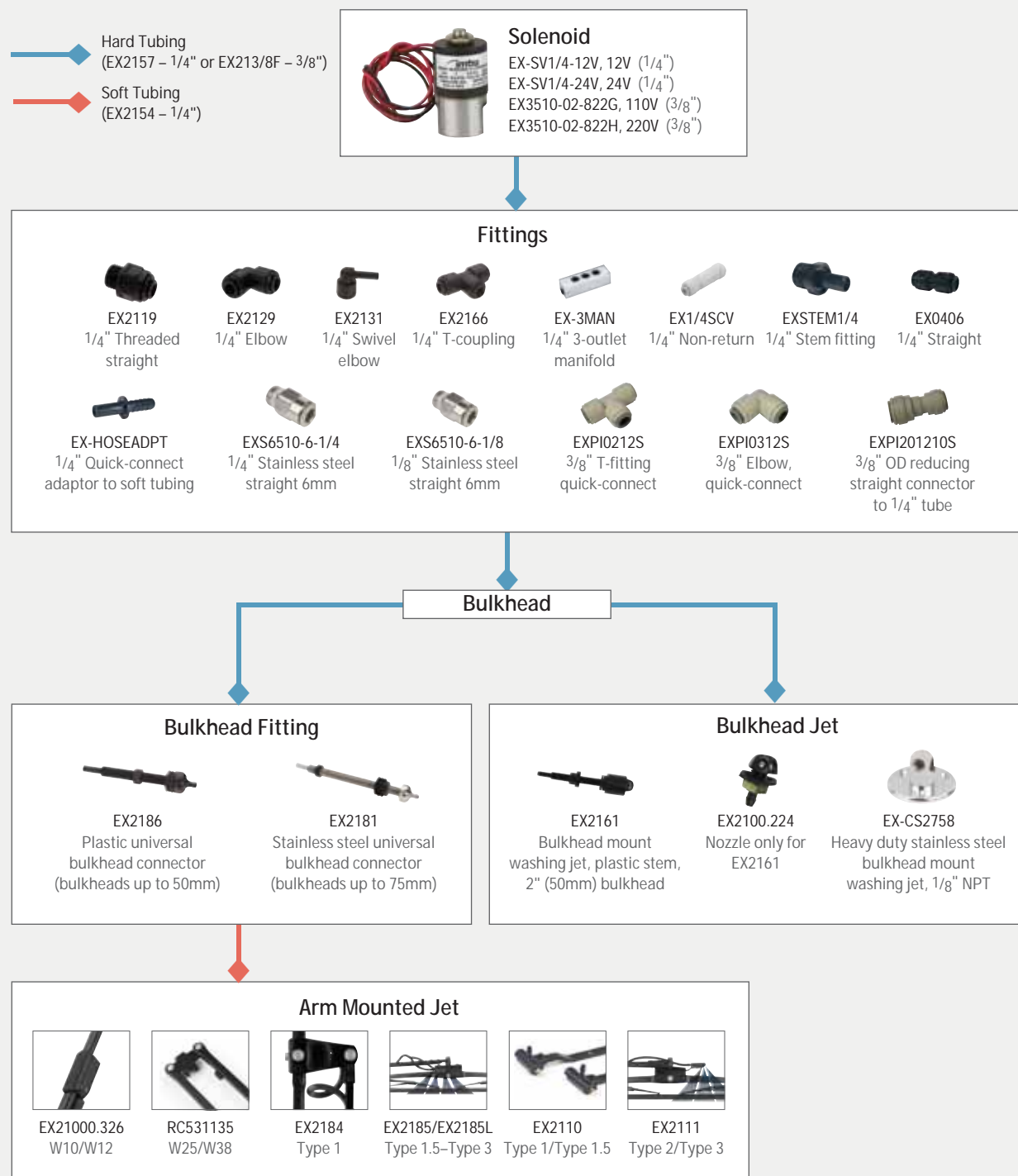
For systems in freezing conditions or without a pressurized water supply, a reservoir-based washing system is the best choice. Reservoirs include one to three pumps to supply fluid from the tank to the windows. Anti-freeze can be added to the washing solution for use in sub-zero conditions.

Manifolds

A manifold allows a single water supply to be branched off to three outgoing lines with even water pressure. You can gang manifolds together if needed.

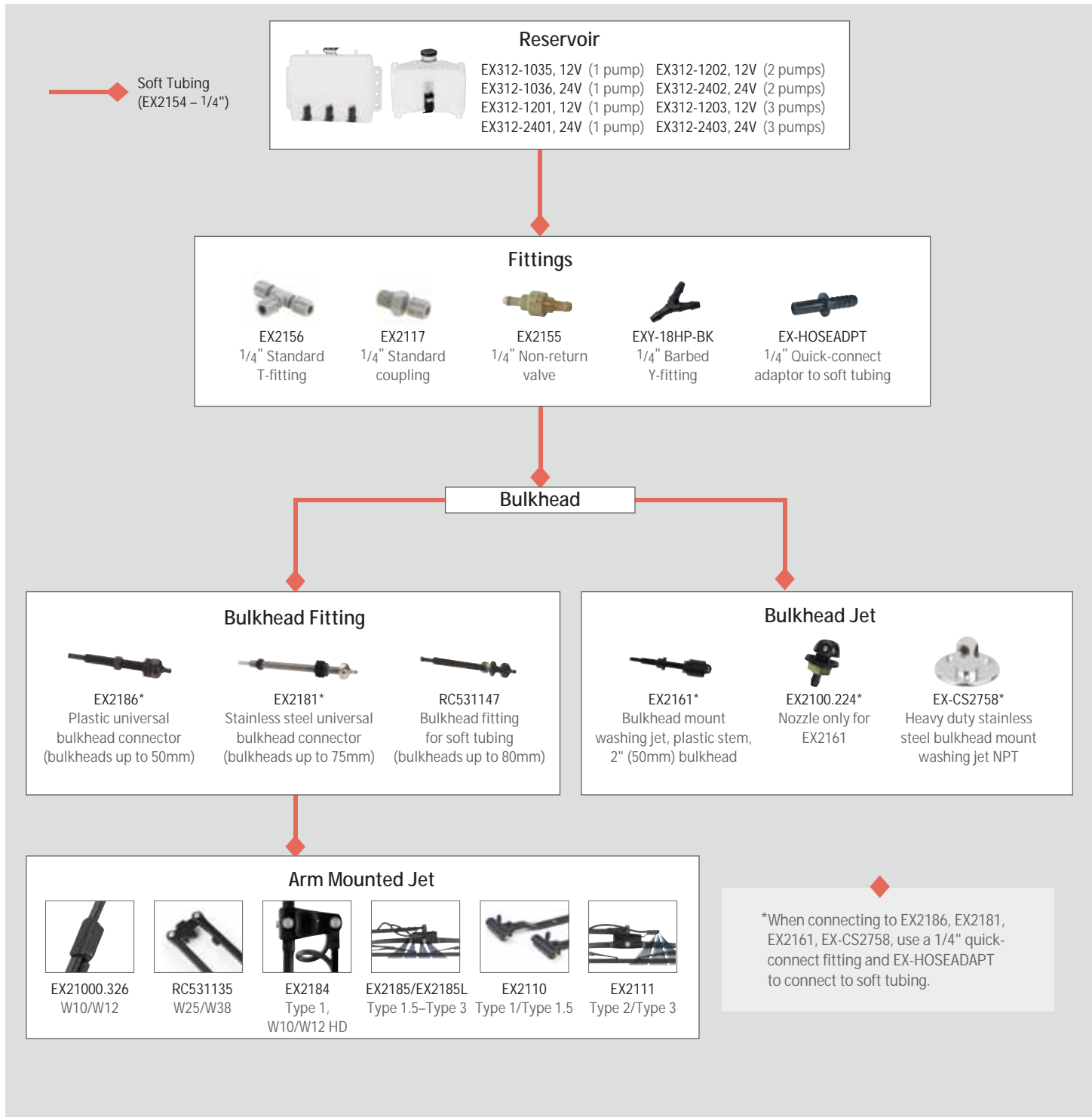
PRESSURIZED SYSTEM

Parts for a complete washing system from a pressurized water supply.







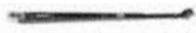



NON-PRESSURIZED SYSTEM







Parts for a complete washing system from a separate, remote reservoir.

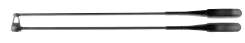
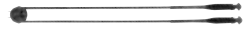

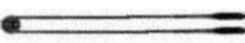











WIPER MOTORS		Voltage	Bulkhead Thickness		Item #
W5 Series		12V	1.0"	(25mm)	RC521001
		24V	1.0"	(25mm)	RC521002
W10 Series		12V	0.625"	(16mm)	RC525991
			1.625"	(41mm)	RC524991
			2.625"	(66mm)	RC525891
		24V	0.625"	(16mm)	RC525992
			1.625"	(41mm)	RC524992
			2.625"	(66mm)	RC525892
W12 Series		12V	0.625"	(16mm)	RC533011
			1.625"	(41mm)	RC533021
			2.625"	(66mm)	RC533031
		24V	0.625"	(16mm)	RC533012
			1.625"	(41mm)	RC533022
			2.625"	(66mm)	RC533032
W25 Series		12V	1.1"	(28mm)	RC531015
			2.1"	(53mm)	RC531025
			3.1"	(78mm)	RC531035
		24V	1.1"	(28mm)	RC531016
			2.1"	(53mm)	RC531026
			3.1"	(78mm)	RC531036
W38 Series		12V	1.1"	(28mm)	RC531011
			2.1"	(53mm)	RC531021
			3.1"	(78mm)	RC531031
		24V	1.1"	(28mm)	RC531012
			2.1"	(53mm)	RC531022
			3.1"	(78mm)	RC531032
W50 Series		12V	1.1"	(28mm)	RC531013
			2.1"	(53mm)	RC531023
			3.1"	(78mm)	RC531033
		24V	1.1"	(28mm)	RC531014
			2.1"	(53mm)	RC531024
			3.1"	(78mm)	RC531034

WIPER ARMS	Length		Description	Item #	Washing Jet
W5 Series (Pendulum) 	11"-14"	(280-355mm)	Fixed Spring, Black, Fixed Tip	RC520100	
W10/W12 Series (Pendulum) 	12.8"-18"	(324-460mm)	Fixed Spring, Electro-Polished, Adj. Tip	RC536218	EX21000.326
	18"-23.3"	(545-591mm)	Fixed Spring, Electro-Polished, Adj. Tip	RC536224	
	12.8"-18"	(324-460mm)	Fixed Spring, Black, Adj. Tip	RC538218	
	18"-23.3"	(454-591mm)	Fixed Spring, Black, Adj. Tip	RC538224	
W10/W12 Series (Pantograph) 	12.8"-18"	(324-460mm)	Dual Springs, Electro-Polished, Fixed Tip	RC536318	EX21000.326
	18"-23.3"	(454-591mm)	Dual Springs, Electro-Polished, Fixed Tip	RC536324	
	12.8"-18"	(324-460mm)	Dual Springs, Black, Fixed Tip	RC538318	
	18"-23.3"	(454-591mm)	Dual Springs, Black, Fixed Tip	RC538324	
W10/W12 Series Heavy Duty (Pantograph) 	12"-23.6"	(305-600mm)	Fixed Spring, Black, Fixed Tip	EX2108K	EX2184
W25 Series (Pendulum) 	18.5"-29.5"	(470-750mm)	Fixed Spring, Black, Adj. Tip, w/Wash Jet	RC538230	RC531135
	18.5"-29.5"	(470-750mm)	Fixed Spring, SS, Adj. Tip, w/Wash Jet	RC536230	
W25 Series (Pantograph) 	18.5"-29.5"	(470-750mm)	Fixed Spring, Black, Fixed Tip, w/Wash Jet	RC538330	
	18.5"-29.5"	(470-750mm)	Fixed Spring, SS, Fixed Tip, w/Wash Jet	RC536330	
W38 Series (Pantograph) 	24.4"-35.4"	(620-900mm)	Fixed Spring, Black, Fixed Tip, w/Wash Jet	RC536335	
	24.4"-35.4"	(620-900mm)	Fixed Spring, SS, Fixed Tip, w/Wash Jet	RC538335	
	18.5"-29.5"	(470-750mm)		RC536430	
	18.5"-29.5"	(470-750mm)		RC538430	
W50 Series (Pantograph) 	40"-47"	(1020-1200mm)	Fixed Spring, Black, Fixed Tip, w/Wash Jet	RC536347	RC531135
	40"-47"	(1020-1200mm)	Fixed Spring, SS, Fixed Tip, w/Wash Jet	RC538347	

WIPER MOTORS		Voltage	Bulkhead Thickness		Item #
Type 1 Series  223BS  223BD		12V	0.75"	(20mm)	EX2167.30
		12V	1.375"	(35mm)	EX2167.32
		12V	2.125"	(55mm)	EX2167.35
		24V	0.75"	(20mm)	EX2168.30
		24V	1.375"	(35mm)	EX2168.32
		24V	2.125"	(55mm)	EX2168.35
		12V	0.75"	(20mm)	EX2165.30
		12V	1.375"	(35mm)	EX2165.32
		12V	2.125"	(55mm)	EX2165.35
		24V	0.75"	(20mm)	EX2166.30
		24V	1.375"	(35mm)	EX2166.32
		24V	2.125"	(55mm)	EX2166.35
Type 1.5 Series 		12V	1.1"	(28mm)	EX211240.30
		24V	1.1"	(28mm)	EX212440.30
Type 2 Series 		12V	1.375"	(35mm)	EX211255.35
		12V	2.5"	(65mm)	EX211255.65
		24V	1.375"	(35mm)	EX212455.35
		24V	2.5"	(65mm)	EX212455.65
Type 3 Series 		24V	1.0"	(25mm)	EX2178.080
		24V	Custom		EX2178.080SP
External Series 		12V	Surface-Mount		EX2165XBD
		24V			EX2166XBD

WIPER ARMS	Length		Description	Item #	Washing Jet
Type 1 Series (Pantograph) 	14.8"-20.7"	(375-525mm)	Adj. Spring, Black, Adj. Tip	EX2133AS	EX2184 or EX2110
	14.8"-20.7"	(375-525mm)	Adj. Dual Springs, Black, Adj. Tip	EX2133AS2	
	20.7"-25.6"	(525-650mm)	Adj. Spring, Black, Adj. Tip	EX2136AS	
	20.7"-25.6"	(525-650mm)	Adj. Dual Springs, Black, Adj. Tip	EX2136AS2	
	26.6"-31.1"	(675-790mm)	Adj. Spring, Black, Adj. Tip	EX2139AS	
	26.6"-31.1"	(675-790mm)	Adj. Dual Springs, Black, Adj. Tip	EX2139AS2	
Type 1.5 Series (Pantograph) 	31.5"	(800mm)	Narrow Blade,* Adj. Dual Springs, Black, Adj. Tip	EX2140.800.S	EX2185, EX2185L or EX2111
	33.5"	(850mm)	Narrow Blade,* Adj. Dual Springs, Black, Adj. Tip	EX2140.850.S	
	35.5"	(900mm)	Narrow Blade,* Adj. Dual Springs, Black, Adj. Tip	EX2140.900.S	
	31.5"	(800mm)	Wide Blade,* Adj. Dual Springs, Black, Adj. Tip	EX2140.800.B	
	33.5"	(850mm)	Wide Blade,* Adj. Dual Springs, Black, Adj. Tip	EX2140.850.B	
	35.5"	(900mm)	Wide Blade,* Adj. Dual Springs, Black, Adj. Tip	EX2140.900.B	
Type 2 Series (Pantograph) 	29.5"-39.4"	(750-1000mm)	Narrow Blade,* Fixed Spring, Black, Adj. Tip	EX2142.S	EX2185 or EX2111
	29.5"-39.4"	(750-1000mm)	Narrow Blade,* Adj. Spring, Black, Adj. Tip	EX2142.SAS	
	29.5"-39.4"	(750-1000mm)	Wide Blade,* Fixed Spring, Black, Adj. Tip	EX2142.B	
	29.5"-39.4"	(750-1000mm)	Wide Blade,* Adj. Spring, Black, Adj. Tip	EX2142.BAS	
Type 3 Series (Pantograph) 	Up to 59"	(Up to 1500mm)	Fixed Spring, Black, Adj. Tip	EX2144.SP	EX2185 or EX2111
External Series (Pantograph) 	14.8"-20.7"	(375-525mm)	Adj. Spring, Black, Adj. Tip, Reverse Head	EX2133.R	EX2184
	20.7"-25.6"	(525-650mm)	Adj. Spring, Black, Adj. Tip, Reverse Head	EX2136.R	
	26.6"-31.1"	(675-790mm)	Adj. Spring, Black, Adj. Tip, Reverse Head	EX2139.R	

*Narrow blade: 0.5" (12mm) up to 800mm. Wide blade: 0.75" (20mm) from 850-1500mm

WIPER BLADES	Length	Item #	Width at Connection	Fastener Diameter
W5 Series 	11" (280mm) 12" (305mm) 13" (330mm) 14" (355mm)	RC520911 RC520912 RC520913 RC520914	0.59" (15mm)	6mm J-Hook Connection
W Series (Standard) 	11" (280mm) 12" (305mm) 13" (330mm) 14" (355mm) 15" (380mm) 16" (405mm) 17" (430mm) 18" (455mm) 19" (480mm) 20" (508mm) 21" (533mm) 22" (560mm)	RC520911 RC520912 RC520913 RC520914 RC520915 RC520916 RC520917 RC520918 RC520919 RC520920 RC520921 RC520922		
W Series (Heavy Duty) 	10.6" (250mm) 11.8" (300mm) 13.8" (350mm) 15.8" (400mm) 17.7" (450mm) 19.7" (500mm) 21.7" (550mm)	EX2170CN EX2171 EX2172 EX2173 EX2174 EX2175 EX2176		
W25/W38/W50 Series 	22" (559mm) 24" (610mm) 28" (710mm) 30" (760mm) 32" (810mm) 33" (838mm) 34" (863mm) 35" (890mm) 38" (965mm) 40" (1016mm)	RC520822 RC520824 RC520828 RC520830 RC520832 RC520833 RC520834 RC520835 RC520838 RC520840		
Type 1, Type 1.5, Type 2 and External Series (Standard) 	10.6" (250mm) 11.8" (300mm) 13.8" (350mm) 15.8" (400mm) 17.7" (450mm) 19.7" (500mm) 21.7" (550mm) 23.6" (600mm) 25.6" (650mm) 27.5" (700mm) 29.5" (750mm) 31.5" (800mm)	EX2170CN EX2171 EX2172 EX2173 EX2174 EX2175 EX2176 EX2177 EX2178 EX2179 EX2195 EX2196		
Type 1, Type 1.5, Type 2, Type 3 and External Series (Heavy Duty) 	24" (610mm) 25.6" (650mm) 27.5" (700mm) 29.5" (750mm) 31.5" (800mm) 33.5" (850mm) 35.5" (900mm) 37.5" (950mm) 39.5" (1000mm) 43.3" (1100mm) 47.5" (1200mm) 51.2" (1300mm) 59" (1500mm)	EX216120 EX216121 EX216122 EX216123 EX216124 EX216125 EX216126 EX216127 EX216128 EX216129 EX216130 EXT130S04/P01 EXT150S04/P01	0.75" (20mm)	8mm Bolt Connection

Imtra's Limited Warranty

Imtra Corporation warrants the wiper products we offer to be free from defects in materials and workmanship for 3 years or 1 year (see products) from date of purchase. This warranty does not cover damages due to improper installation or use, damage attributable to unauthorized service or damage directly identified as the result of a power surge. Any product returned to Imtra during the warranty period that is deemed defective by Imtra will be repaired or replaced, at the option of Imtra, free of charge. The rubber portion of wiper blades wear under typical use and is therefore not covered under warranty. The foregoing is in lieu of all other express warranties.

Procedure

Products must be returned with an RA#, postage paid, to Imtra and should be accompanied by a return address, a brief statement of the malfunction, and a copy of the proof of purchase for either the product or the boat they were supplied on as new equipment.

Photo Credits

Imtra would like to thank the following companies for allowing us to use their images in this catalog:
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 E-mail: info@imtra.com





CONTACT INFORMATION

Name _____

Company _____

Address _____

City _____ State _____ ZIP _____

Tel _____ Fax _____

Email _____

Owner's Name _____

Project Name _____

Type of Application _____

Window Type



NOTE: Straight Line Wiper Systems are available. Please note window height and width in the comment field below for recommendations.

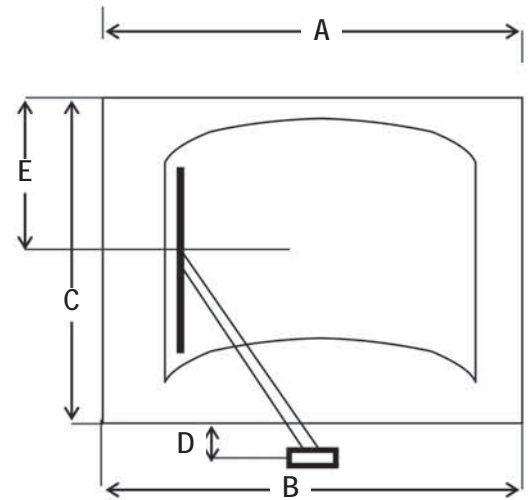
WINDOW DIMENSIONS

	Port	Port/ Center	Center	Starboard/ Center	Starboard
Window Type (see above)					
Window Height (C)					
Width of Glass/Top (A)					
Width of Glass/Bottom (B)					
Motor Setback* from Window (D)					
Eye Level (E)					
Bulkhead Thickness					

*The distance between the inside edge of the windshield frame and the center of the motor shaft. Please take into account the radius of any corner when measuring window dimensions.

☐ Please check if wiper motor mounting position is not parallel with windshield. If known, what is the angle between them? _____

Comments:



Motor Voltage & Location

- ☐ 12VDC
- ☐ 24VDC
- ☐ Below Window
- ☐ Above Window
- ☐ External

Switchgear Selection

- ☐ Electronic Control Panel (Synchronized)
- ☐ Electronic Wiper Switch (Synchronized)
- ☐ Individual Switch with Intermittent
- ☐ Individual Switch without Intermittent
- ☐ No Switchgear Needed

Washing System Details

- ☐ Complete System from Ship's Supply
- ☐ Complete System from Reservoir
- ☐ Bulkhead Mounted Jet
- ☐ Arm Mounted Jet
- ☐ No System Required





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