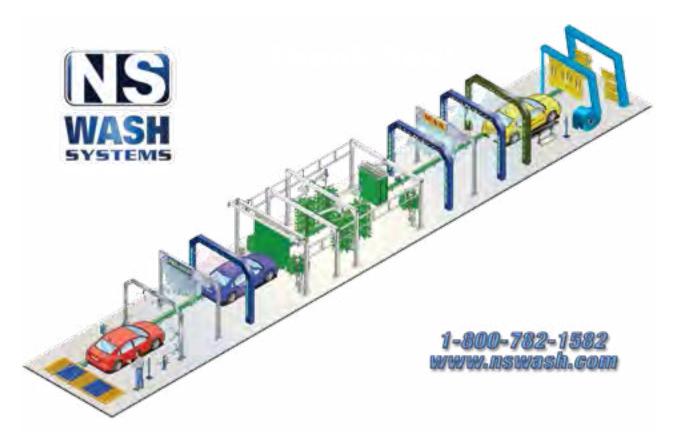


Maintenance & Parts Manual

AUTOHANDWASH





Thanks for your confidence in the NS Corporation and our vehicle washing products. If this is your first time as an NS equipment purchaser we welcome you to our family of customers dating back to 1961.

Thank you again if this purchase of equipment is the most recent in your loyal history as an NS customer. We truly appreciate your continued confidence in our company and it's products. Your trust in us is the heart of our on-going success.

In today's market every company, no matter the industry, must be Quality conscious. Our view of Quality goes beyond the delivery of equipment fabricated and assembled with exceptional care. In fact, the entire NS staff is dedicated to provide Quality products and Quality Customer Service. Every member of the NS team, including our worldwide Distributor organization, is committed to this sense of pride and professionalism in our efforts to assist you in achieving success in your vehicle washing business.

We want to hear your comments concerning your entire experience with NS during this most recent purchase. Please contact either one of us, or our Customer Service Director, with your report card on our performance.

Thanks again for purchasing your equipment from NS. We appreciate your business.

Thomas Ennis Sr.
Chief Executive Officer



Table of Contents

Thank You!—————2
Table of Contents ————————3
System Specifications ————4
Schematics — 5
Plumbing and Electrical
Operating Description ————6
Precautions
Bubblizer [™] ———7
Figure A
Bubblizer [™] ———8
Figure B
Bubblizer [™] Tank ———9
Isometric Views
Wax Applicator —————————10
Orthographic Views
Installation————11
Sequence
Air Blower Assembly————12
Steps 1-3
Air Blower Assembly————13
Steps 4-5
Plumbing Manifolds ————————————————————————————————————
Orthographic Views
Electrical Schematics ————————————————————————————————————
Sheet 1
Electrical Schematics ————————————————————————————————————
Sheet 2
Ton Hatch Postraint 17

Pictures
Optional LED Kit ———————————————————————————————————
Connections
Chemical Metering Board ———— 19
Pictures
DEMA MixRite————20
14CW Series Click Chart
DEMA MixRite————21
Proportional Injector
DEMA MixRite—————22
Specifications
DEMA MixRite————23
Technical Data
DEMA MixRite————24
Installation
DEMA MixRite————26
Adjustments
DEMA MixRite————27
Air Release Valve
DEMA MixRite————28
On/Off System
DEMA MixRite————29
Troubleshooting
Manufacturers Limited Warranty 30
Warranty Procedures ——————31



Due to Continuous research NS Corporation reserves the right to upgrade or change at any time, specifications, or designs without notice and without incurring any obligations. Copyright © 2012 NS Corporation.

System Specifications







Specifications

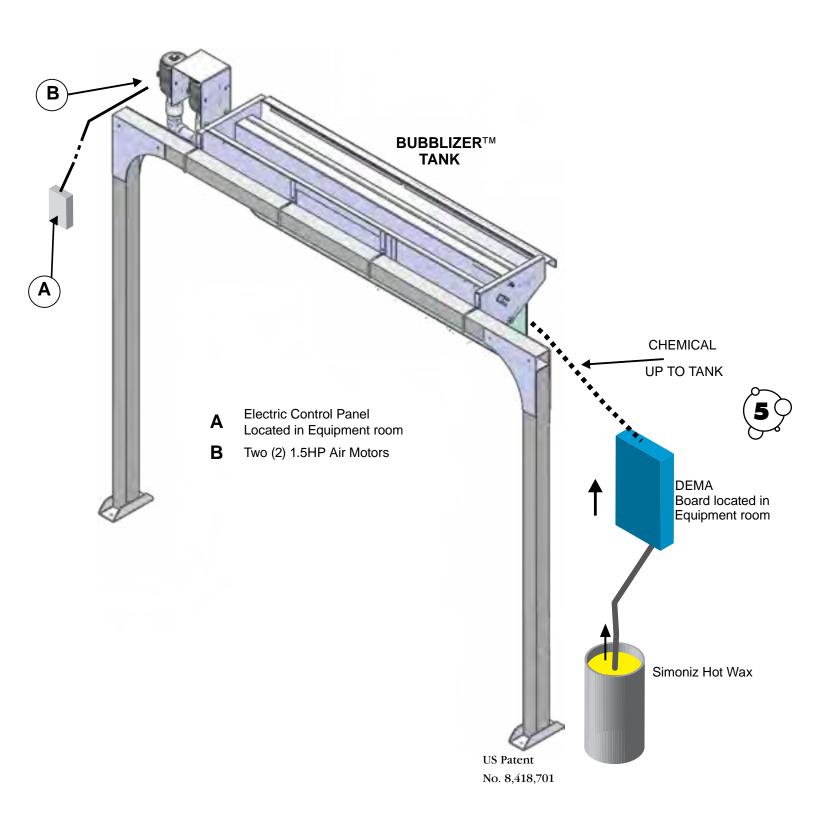
- Two I.5 HP/ I20VAC/ I phase/
 7.4 amps per unit. I4.8 amps for both.
- All PVC internal Bubblizer[™] plumbing manifold
- Tank built with hinged top hatch for easy access
- Mounts to 4"x4" square anchor, 6"x
 6" square NS bulkhead or to 4"Ø
 round arch
- Powder-coated aluminum tank
- Silver Powder-coated aluminum tank
- Vehicle Height Clearance 96"

Equipment Options

 Can be mounted to free-standing arches or equipment No. 8,418,701



SchematicsPlumbing and Electrical



Operating Description



Precautions

1 Bubblizer[™] control panel receives its 120VAC 1PH power from service source. (See sheet 1 of 2 of panel schematic)

Activation of BubblizerTM is the result of carwash controller sending 120 vac signal to BubblizerTM control panel.

Water to BubblizerTM to be from fresh water source. (Reclaim water will damage internal components of DEMA pump piston and result in break- down of dedicated components inside pump.)



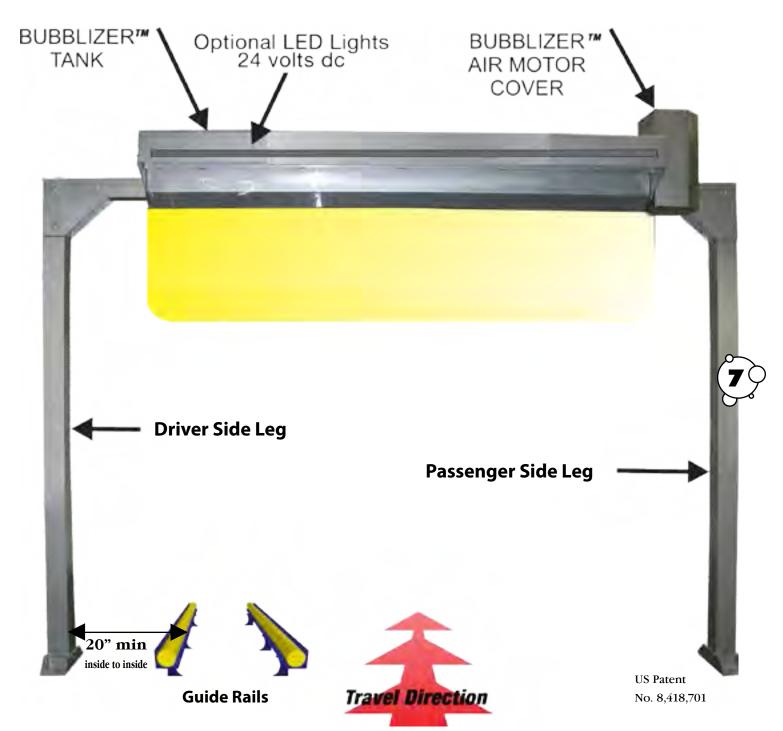
H-O-A switch on BubblizerTM control panel should be on OFF when machine is not in service. Turn knob to A prior to car wash start up (Automatic.)

5 Fluid inside BubblizerTM tank is composed of fresh water mixed with Simoniz Hot Wax. Source of mixture is from the DEMA manifold. Fresh water flowing to and thru DEMA pump inlet causes pump to draw chemical from chemical container and pump mixture downstream to BubblizerTM tank. A solenoid valve will open to allow fresh water through the DEMA pump to maintain proper solution level in BubblizerTM tank.

6 Air motors blow air through a perforated tube located inside the BubblizerTM tank. Fluid inside BubblizerTM tank will be bubblized and overflow through the discharge opening of BubblizerTM tank and onto the vehicles below. When air pump stops pumping air into BubblizerTM tank, no bubbles are made and discharged onto vehicles.



Bubblizer™ Figure A

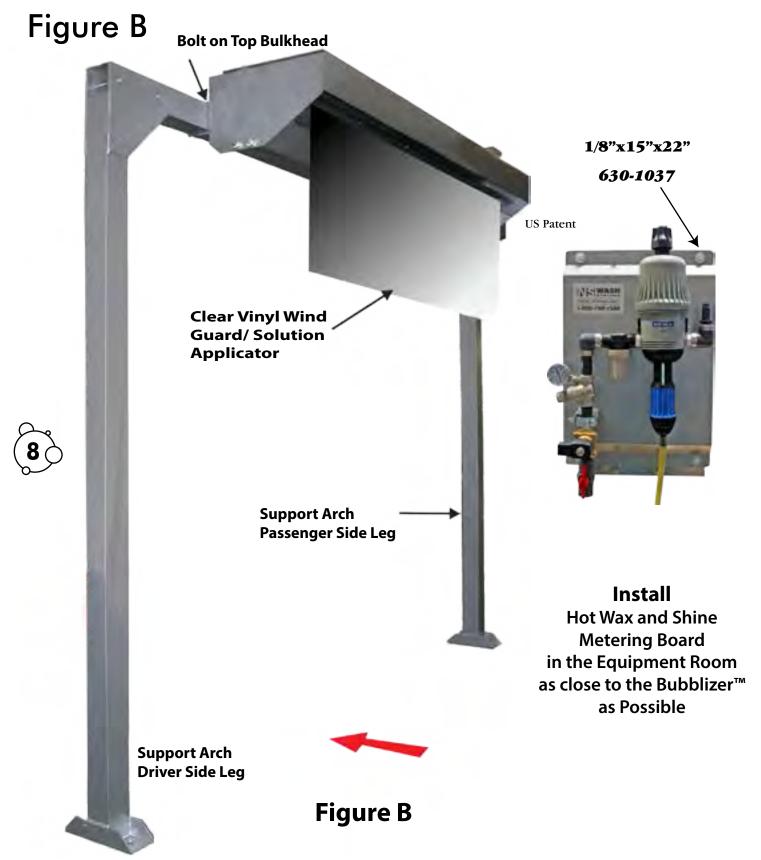


Bubblizer™ with Light Bars Figure A

1-800-245-0350 FOR PARTS & SERVICE

Bubblizer™



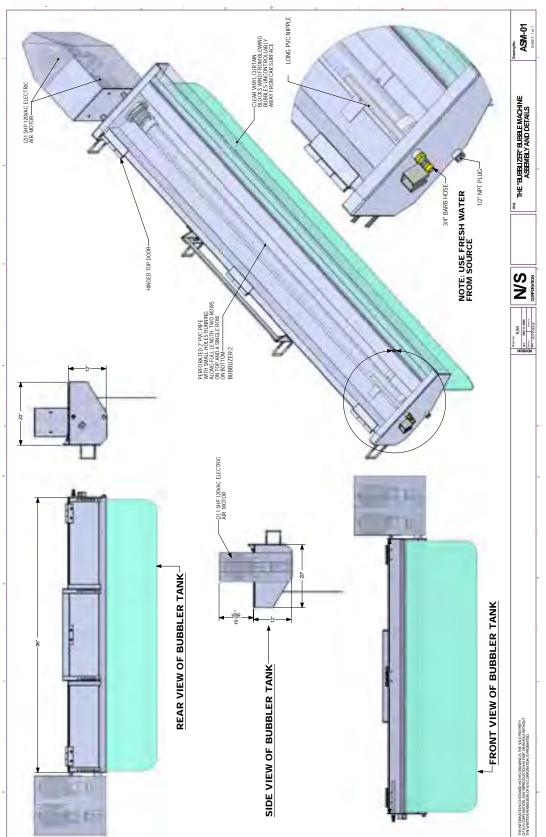


1-800-245-0350
FOR PARTS & SERVICE



Bubblizer™ Tank

Isometric Views





US Patent

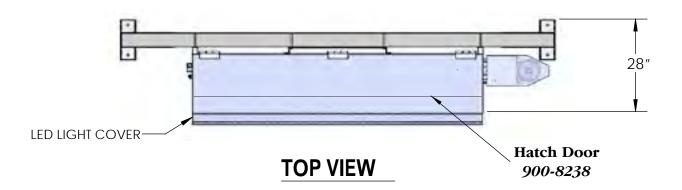
No. 8,418,701

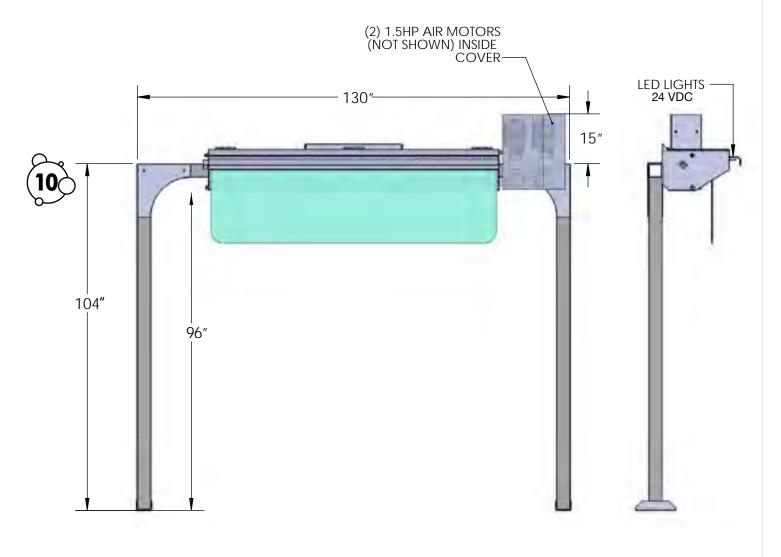
1-800-245-0350 FOR PARTS & SERVICE

Wax Applicator

WASH SYSTEMS

Orthographic Views





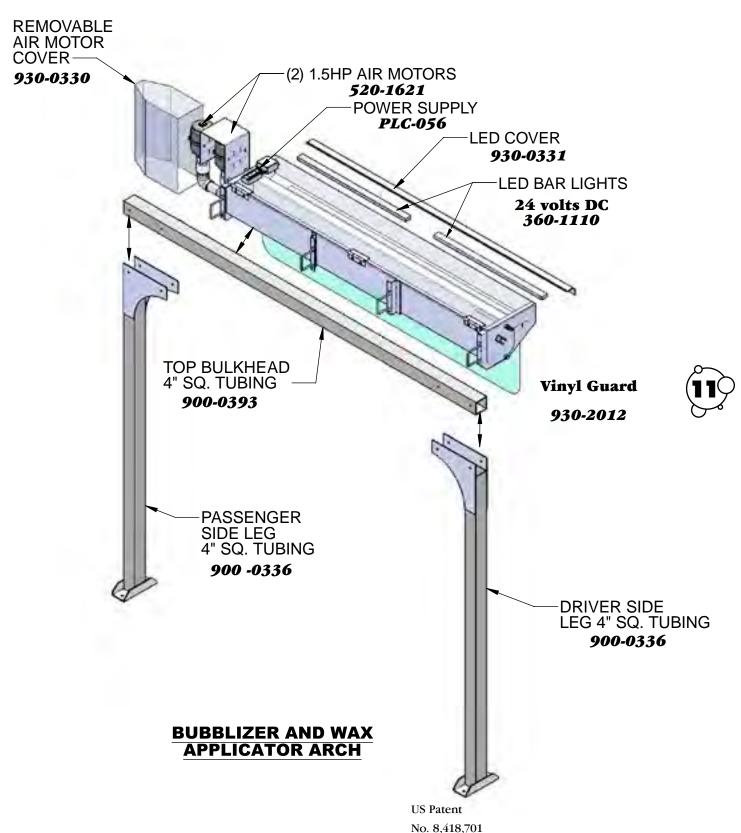
FRONT VIEW

US Patent No. 8,418,701 **END VIEW**

1-800-245-0350



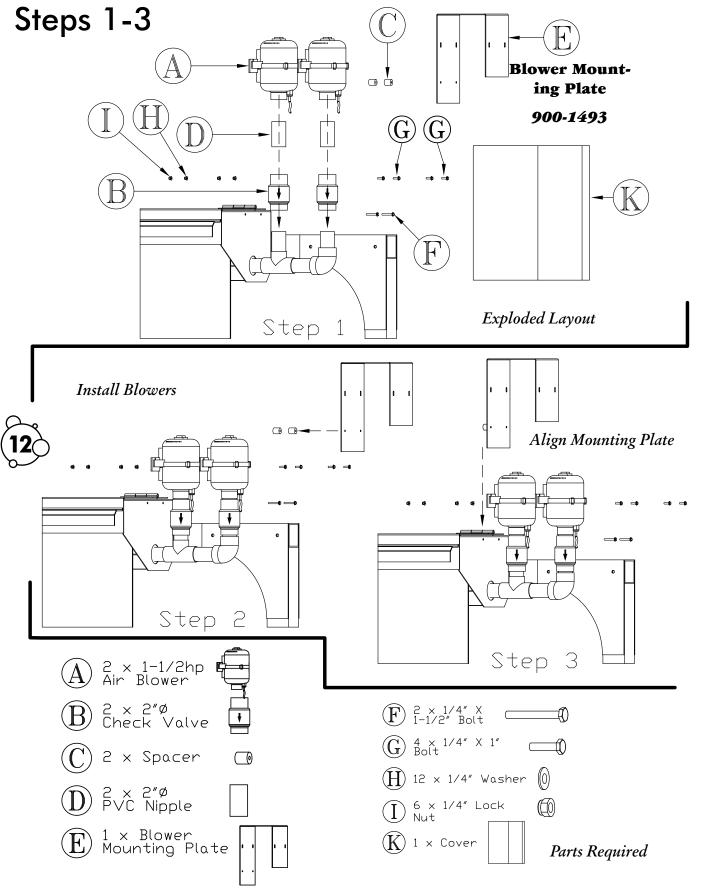
Installation Sequence



1-800-245-0350 FOR PARTS & SERVICE

Air Blower Assembly



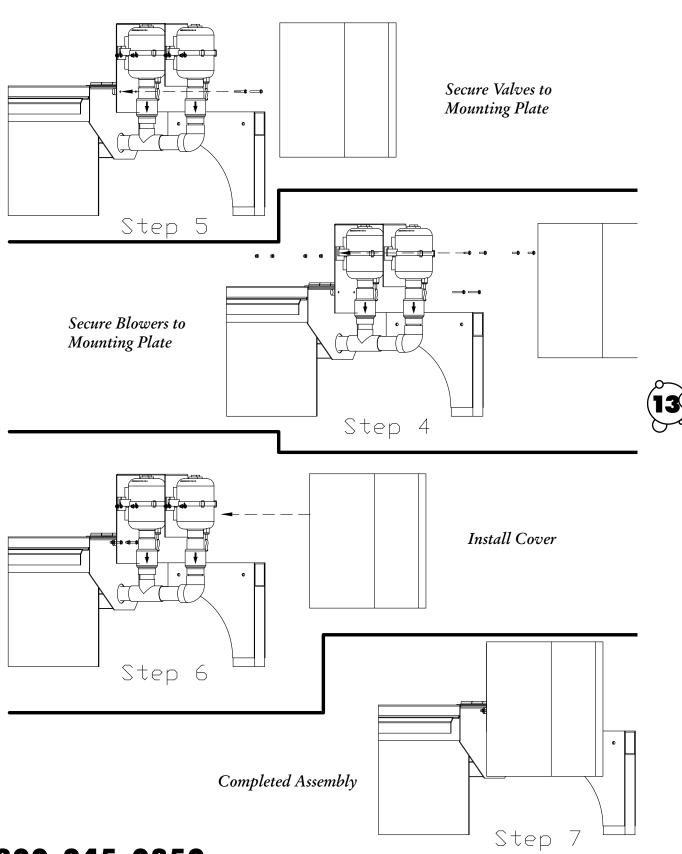


1-800-245-0350



Air Blower Assembly

Steps 4-5

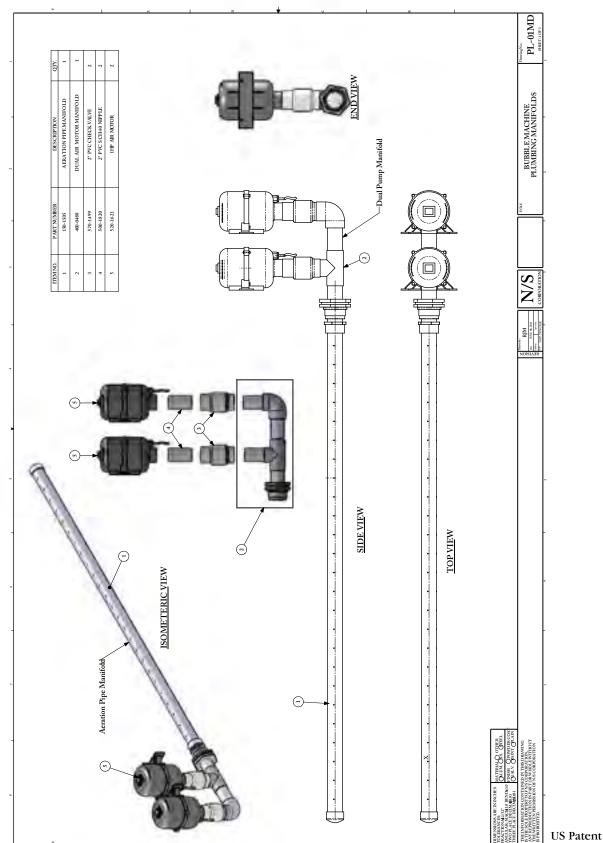


1-800-245-0350
FOR PARTS & SERVICE

Plumbing Manifolds



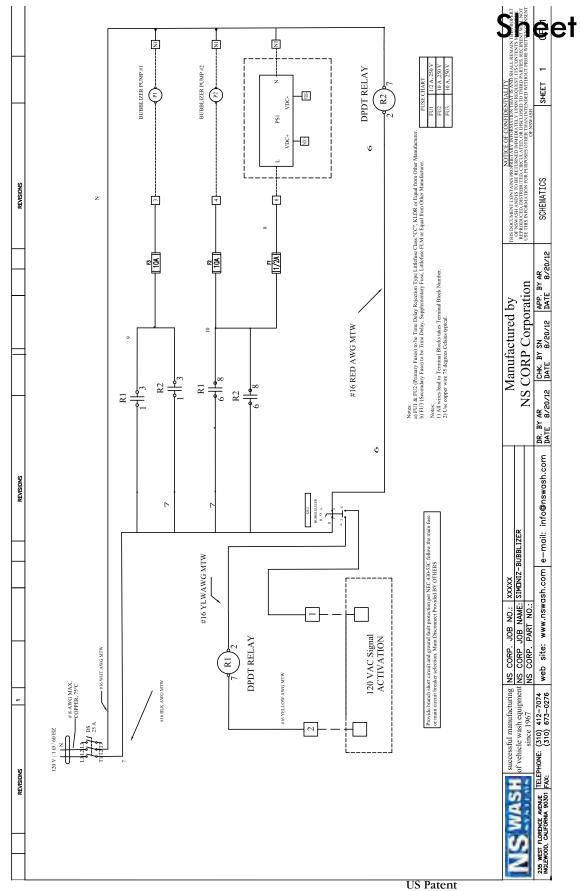
Orthographic Views



1-800-245-0350 FOR PARTS & SERVICE No. 8,418,701



Electrical Schematics



1-800-245-0350

No. 8,418,701 www.nswash.com

Electrical Schematics

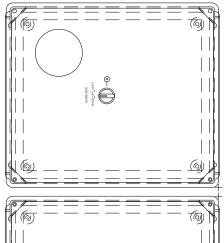
NS WASH

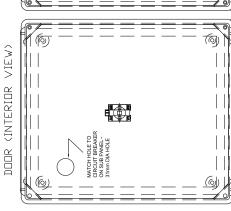
Sheet 2

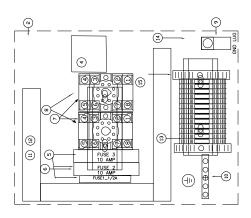
HOFFMAN ENCLOSURES INC. RHJ1412HWLG

(EXTERIOR VIEW)

DOOR







ITEM	TAGS	ΔI	CATALOG	NS PART #	MFG	PRODUCT DESCRIPTION
-	ENC	-	HJ1008HWLG	320-1069	HOFFMAN	Enclosure, Fiberglass 10x8x6 type 4x
2	ENC	-	A10P8	320-1070	HOFFMAN	Enclosure, Back Panel 14x12
3	MS	-	HW1F-3F20QG24 V	240-4148	IDEC	Switch, 3 way type 4x with LED light
4	DS		SIELBR3025/LBR H4/LBRS120	260-1199	SIEMENS	Disconnect, Switch with handle and shaft 25amp type 4x
5	FUSE	23	USCC1	360-0004	FERRAZ SHAWMUT	Fuse, Time delay Reject type 10amp
9	FUSE HOLDER	М	KCCFPX2R	360-1119	FERRAZ SHAWMUT	FUSE HOLDER (CCHCC1D) MODULAR GLOBAL BUSSMAN
7	RELAY BASE	-	3TX7144-4E2		SIEMENS	Base, Relay 8 pin
∞	RELAY	-	3TX7112-11f13		SIEMENS	Relay, 5 pin 120vac DPDT
6	OND LUG	-	T2	840-3022	QSD	Ground Single, Lug
10	GND BAR	-	PK7GTA	840-3026	SQD	Ground Bar, 7 terminal
11	WIREWAY	-	F1X2LG6	240-0011	PANDUIT	Wireway, Light Gray 1x2
12	WIREWAY	-	C1LG6	240-0011C	PANDUIT	Wireway, Light Gray 1x2 cover
13	TMR BLK	9	8WA1011-10F11	240-0029	SIEMENS	Block,Terminal
14	DIN RAIL	2	199DR1	810-1567	AB	Rail, Din 35 mm
15	END BLK	∞	1492-EAJ35	810-1566	AB	Block, Teminal End

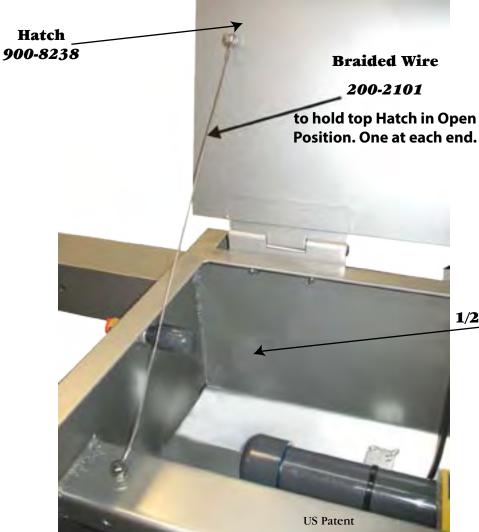
US Patent No. 8,418,701





Top Hatch-Restraint

Pictures



1/2"x10" PVC Nipple 500-1407



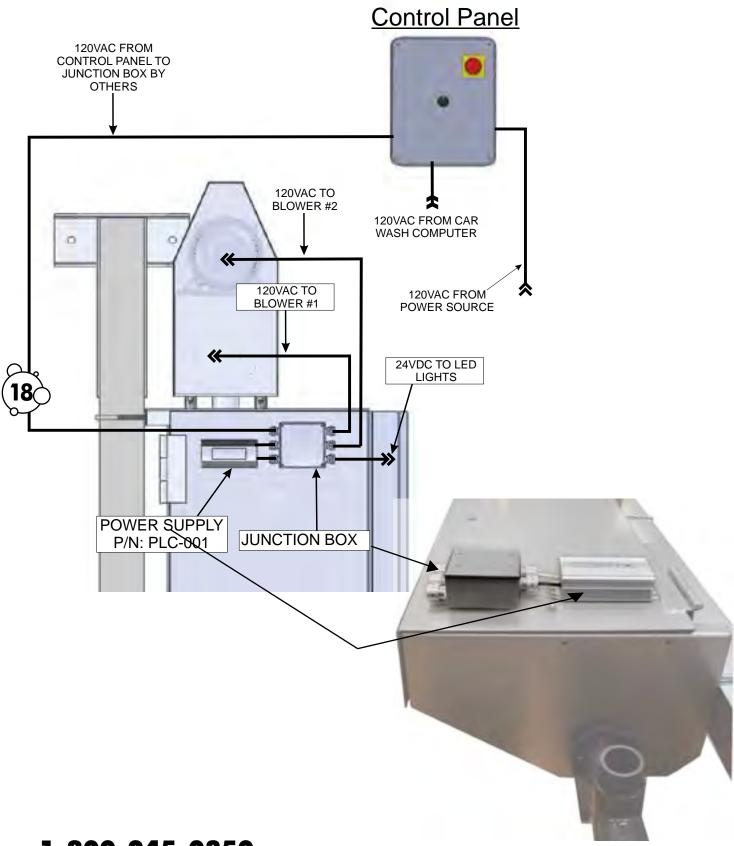


Simoniz Hot Wax from Bubblizer™

Optional LED Kit

WASH SYSTEMS

Connections

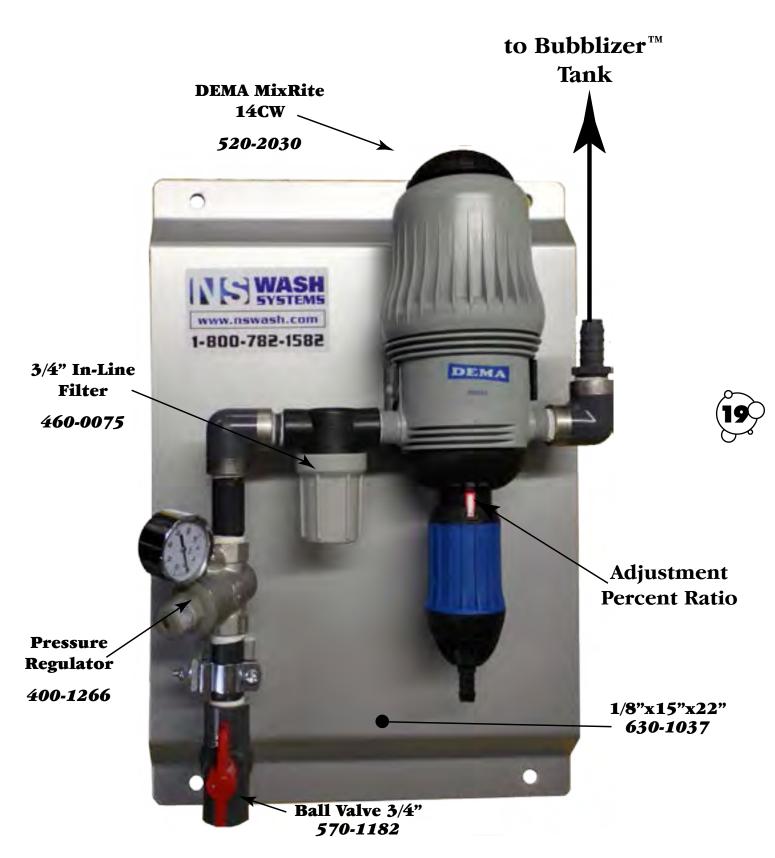


1-800-245-0350



Chemical Metering Board

Pictures



1-800-245-0350 FOR PARTS & SERVICE

NS WASH

14CW Series Click Chart

	Click
1 Click is	.06 Gallons
Clicks	Gallons
1	0.06
2	0.12
5	0.31
10	0.61
15	0.92
16	0.98
20	1.23
24	1.47
30	1.84
35	2.15
40	2.45
45	2.76
50	3.07
60	3.68
75	4.60
90	5.52
105	6.44
120	7.36
135	8.28
150	9.20
160	9.81
4	

175

10.73

hart	
1 Gallon is	s 16 Clicks
Gallons	Clicks
0.25	4
0.5	8
1	16
1.25	20
1.5	24
1.75	29
2	33
2.5	41
3	49
3.5	57
4	65
4.5	73
5	82
5.5	90
6	98
6.5	106
7	114
7.5	122
8	130
9	147
10	163
11	179

Comm	on Injection Chart		
Percentage	Ratio	Oz/Gallon	
0.10%	1000:1	0.13	
0.25%	400:1	0.32	
0.33%	303:1	0.42	
0.50%	200:1	0.64	
0.66%	152:1	0.84	
0.75%	133:1	0.96	
0.80%	125:1	1.02	
0.90%	111:1	1.15	
1.00%	100:1	1.28	
1.20%	83:1	1.54	
1.30%	77:1	1.66	
1.40%	71:1	1.79	
1.50%	67:1	1.92	
1.60%	63:1	2.05	
1.70%	59:1	2.18	
1.80%	56:1	2.30	
1.90%	53:1	2.43	
2.00%	50:1	2.56	
2.25%	44:1	2.88	
2.50%	40:1	3.20	
2.75%	36:1	3.52	
3.00%	33:1	3.84	
3.50%	29:1	4.48	
4.00%	25:1	5.12	
4.50%	22:1	5.76	
5.00%	20:1	6.40	
6.00%	17:1	7.68	
7.00%	14:1	8.96	
8.00%	13:1	10.24	
9.00%	11:1	11.52	
10.00%	10:1	12.80	





Proportional Injector

MixRite

The MixRite is powered by water flow, with minimal loss of pressure. The water engine powers the proportioning unit. No external power is required.

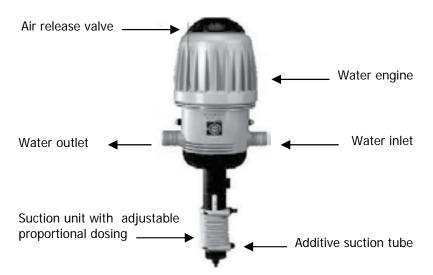
The proportioning unit injects liquid additives in direct relation to the amount of water that passes through the motor and injects the additives into the water system.

The water engine action:

The suction and proportioning unit is built from a piston connected to the water engine, from which it derives its movement. The piston moves within a cylinder with a non-return valve. The movement of the piston within the cylinder causes the water to be injected with the required liquid additive to be drawn through a hose inserted into a container. It is possible to regulate the supply ratio between the additive and the water passing through the injector in models: 570(CW/CL/PVDF),572(CW/CL/PVDF),574CL,571(CW/CL/PVDF),573(CW/CL/PVDF),575CL.

In model 571 Green the dosing is predetermined and can not be changed.

In models 576IN, 578IN, 577IN, 579IN the drawn additive is transferred through a inlet bypass directly into the main water line, without contact with the water engine.





Specifications

- Accurate dispensing
- Uses only 10% (mid range) and 20% (maximum) of pressure to drive the pump
- No electricity required
- Low maintenance and easy to adjust

Specifications:

- Chemically Resistant Nylon Fiberglass body
- All seals specifically designed to withstand harsh chemical additives.
 - Easily replaceable wear parts.
 - Extra Lip Seal Piston Kit included with each unit
 - Higher operating range from 2.9 PSI to 120 PSI
 - Optional Tip Kit, p/n 57-11.1 for dilutions from 750:1 to 2000.1. No special model needed
 - Hose barbs with swivel for easy installation
- Injection from 300:1 to 1:10 (.3% to 10%)
- Flow rate from .09 to 11 gallons per minute
- Includes 7 ft. 3/8" inlet tubing with foot valve strainer
- Check Valve with Hastelloy spring
- 19 1/2" high, 7" wide





AS Hastelloy Springs As FVDF components

35-1 to 10 1 (0% to 10%)

Part#	PSI	Ratio	Percent	Oz/Gal	Features	Applications
570CW	2.9 - 120	500:1 to 50:1	.3% - 2%	.38 to 2.5	Tip Kit Option	Carwash Cleaning Agents & Detergents
571CW	2.9 - 120	300:1 to 50:1	3% - 2%	38 to 2.5	Chemical On/Off. Tip Kill Option	Carwash Cleaning Agents & Delergents
572CW	2.9 - 120	250:1 to 25:1	4% - 4%	.51 to 5.1		Carwash Cleaning Agents & Detergents
573CW	2.9 - 120	250:1 to 25:1	.4% - 4%	.51 to 5.1	Chemical On/Off	Carwash Cleaning Agents & Detergents
574CL	2.9 - 120	33:1 to 10:1	3% - 10%	3.8 to 12.8		Hydrofluoric acids, Tire Cleaners, Chlorine, and other harsh chemicals
575CL	2.9 - 120	33:1 to 10:1	3% - 10%	3.8 to 12.8	Chemical On/Off	Hydrofluoric acids. Tire Cleaners, Chlorine, and other harsh chemicals
570CL	2.9 - 120	300:1 to 50:1	3% - 2%	.38 to 2.5	Tip Kit Option	Hydrofluonic acids, Tire Cleaners, Chlorine, and other harsh chemicals
571CL	2.9 - 120	300/1 (6 50:1	3% - 2%	38 to 2.5	Chemical On/Off, Tip Kit Option	Hydrofluoric acids. Tire Cleaners, Chlorine, and other harsh chemicals
572CL	To a To a second	250:1 to 25:1	4% - 4%	.51 to 5.1		Hydrofluoric acids, Tire Cleaners, Chlorine, and other harsh chemicals
573CL	2.9 - 120	250:1 to 25:1	.4% - 4%	.51 to 5.1	Chemical On/Off	Hydrofluoric acids, Tire Cleaners, Chlorine, and other harsh chemicals



DEMA MixRiteTechnical Data

Technical Data

MixRite operates in the following conditions:

- From a minimum flow rate of 20 L/H (5.3 Gal/H) and up to 2,500 L/H (660 Gal/H)
- Temperature not lower than 4°C (39°F) and not higher than 40°C (104°F)
- Water pressure between 0.2 Bar to 8 Bar (2.9 to 120 PSI)

The additive may be added to the water flow according to the required dosing percentage:

0.3% to 2% in models: 570(CW/CL/PVDF), 571(CW/CL/PVDF), 576IN, 577IN.

0.4% to 4% in models: 572(CW/CL/PVDF), 573(CW/CL/PVDF), 578IN, 579IN.

3 % to 10% in models: 574CL,575CL Fixed dosage 0.8 % in models: 571 Green

Water pressure loss:

Pressure loss in the lower flow rates 0.1 Bar and in the higher flow rates up to 1 Bar.

Models with 0.3%-2%: from 0.1 Bar up to 1 Bar in proportion to the water flow

Models with 0.4%-4%: from 0.2 Bar up to 1.2 Bar in proportion to the water flow

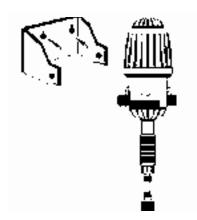
Models with 3%-10%: from 0.5 Bar up to 1.8 Bar in proportion to the water flow

The MixRite inlet and outlet are 3/4" BSPT male thread.

The additive tank should be placed beneath the MixRite.

Mounting the MixRite

- 1. Prepare the MixRite site.
 - The MixRite intake and outlet must reach the intake and outlet pipes.
 - The MixRite must be positioned above the liquid additives container.
- 2. Screw the MixRite bracket onto a wall or any stable vertical base.
- 3. Press the MixRite onto the bracket.
 The nipples on the MixRite must click into the holes in the side of bracket.





Installation

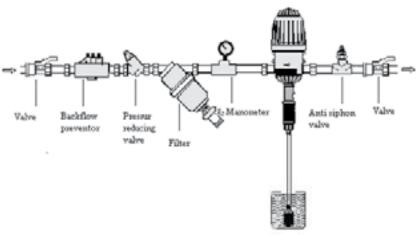


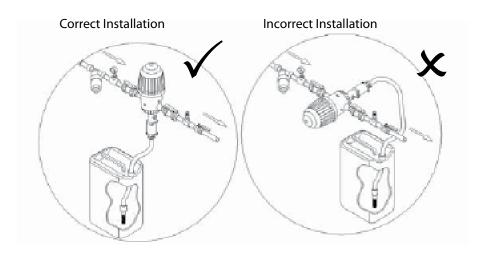
Installation of the MixRite

Installing the MixRite on a Direct Line (in line)

- 1. Install onto the water line using swivel connectors and ensure that the water flows into the MixRite in the direction indicated by the arrows printed on the MixRite.
- 2. Install a 50-75 mesh (250-300 micron) filter between the valve and the injector intake.
- 3. Valves have to be installed at the water line entry and exit; in order to stop the pump's action you should close the Valve at the entry point.
- 4. Position the drawing pipe into the additive container. Ensure that the suction pipe filter is set several millimeters above the container's bottom. Check to ensure that the suction pipe is not bent or folded.

Install the MixRite on a Direct Line (In Line)









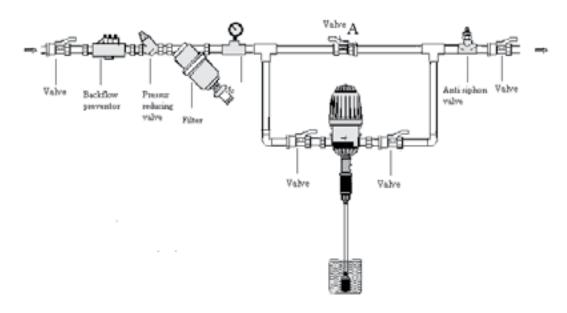


Installing the MixRite on a Bypass line (off line)

Where water is supplied at a higher flow rate, than the working flow rate of the injector or where the injector isn't needed for continuous operation, the MixRite must be installed on a bypass line. The bypass provides the possibility to close the operation of the injector while water continues to flow through the line.

- 1. Install onto the water line using swivel connectors and ensure that the water flows into the MixRite in the direction indicated by the arrows printed on the MixRite.
- 2. Install a 50-75 mesh (250-300 micron) filter between the valve and the injector intake.
- 3. Valves have to be installed at the bypass entry and exit and on the main water line.
- 4. Position the liquid additive container beneath the injector. Check to ensure that the suction pipe is not bent or folded. Position the drawing pipe into the additive container. Ensure that the suction pipe filter is set several millimeters above the container's bottom.

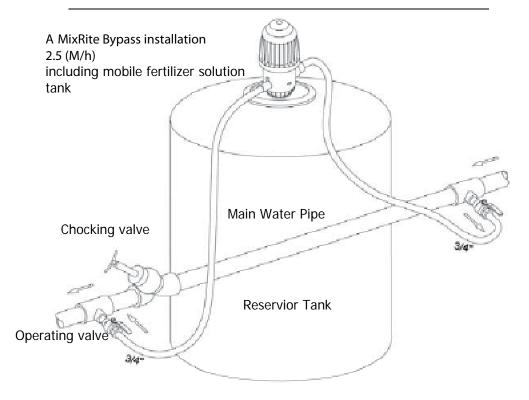
Install the MixRite on Bypass Line (Off Line)





NE WASH

Adjustments





Adjusting the MixRite

Every stroke of the MixRite moves a predetermined volume of water with a predetermined volume of liquid additive.

To adjust the volume of the liquid additive in models 570(CW/CL/PVDF), 572(CW/CL/PVDF), 571(CW/CL/PVDF), 573(CW/CL/PVDF), 576IN, 577IN, 579IN:

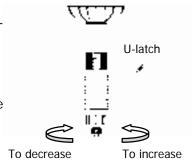
- 1. Remove the upper U-latch from the Proportioning Lock Nut.
- 2. Preset the amount of additives according to the Percentage to Water Scale that is found on the proportioner.
- Turn the proportioning Adjuster counter clock-wise to increase the amount of additives.
- Turn the Proportioning Adjuster clock-wise to decrease the amount of additives.
 - The marking on the scale indicates the % of additive out of the total water flowing through the injector.
- 3. Turn the proportioning Adjuster slightly, until the U-latch holes of the Proportioning Lock Nut align with the notches in the proportioner.
- 4. Push the U-latch into the U-latch holes of Proportioning Lock Nut until it is firmly in place.



DEMA MixRiteAir Release Valve

In models 574CL, 575CL there is no U-latch and the adjustment is done by turning the adjustment sleeve to the desired %.

In models 571 Green there is no possibility to adjust the dosing percentage it is predeterment by the injector model (see page 3)



DO NOT REMOVE THE LOWER U-LATCH !!! (For maintenance purpose only)

Rinsing and Cleaning the unit

After pumping

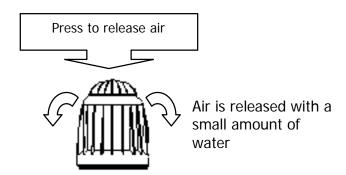
- Rinse the unit by pumping clean water from the additives container.
- Wash the external surface of the unit with clean water.

Warning: During pumping, ensure that the additive container is not completely empty.

Air-release Valve

In models: 571 Green, 570(CW/CL/PVDF), 572(CW/CL/PVDF), 574CL, 576IN, 578IN.

After initial operation of the MixRite, apply pressure to the cap (the air release valve) for several seconds to open valve that allows trapped air to escape. This air release is accompanied by a slight loss of water. Release the pressure on the cap to close the valve.









On/Off System

In Models: 571(CW/CL/PVDF), 573(CW/CL/PVDF), 575CL, 577IN, 579IN

ON position – the Knob should be in its high position, the injector is working & pumping.

OFF position – The knob is turned and pushed down to the cap, the water flow the injector continuous without the pumping action.

To Turn the dosage unit off and allow the free flow of water through the MixRite:

A: The handle must be turned and pushed in so that it is in the close state. (see 1).

To Turn the dosage unit on and allow the pumping action MixRite: B: The handle must be turned and pulled out so that it is in the opened state. (see 2).





In injectors with On/Off knob there is no air-release valve.

It is highly recommended to use the On/Off knob when the additive container is empty or there is no need at all in the additive but the water flow should continue.



DEMA MixRiteTroubleshooting

Troubleshooting

Problem	Check	Solution
	Check that the intake and outlet valves are open	Open the valve
	Check that the water filter isn't clogged	Clean the filter
MixRite does not	Check that water is flowing in the line	Open main and outlet valve
operate	Check that springs are not broken Open pump lid & remove piston	Change the broken spring
	Check that cylinder is not scratched	Change cylinder
	Check that piston seals are not damaged	Change the seals
MixRite does not draw	Dismantle the suction pump and check the suction seal for damage	Change the suction seal
The MixRite	Check if there is liquid in the additive container	Add liquid to the container
makes scratching noises	Check if suction pipe is immersed and not folded	Straighten or change the pipe
	Check suction filter to see if it is blocked and if it is immersed in the additive tank	Clean and rinse suction filter, Fill liquid into tank to cover filter



Correct installation will prevent damages and malfunctions of the MixRite

It is strongly recommended to install a back flow preventor before the injector on the main water line.

A vacuum release unit should be installed at the outlet of the MixRite in order to prevent undesired suction of additive when the water line is draining.

A master valve must be installed before the injector, to be opened only for the operation of the injector to prevent water hammer damage to the injector.





Standard Manufacturer's Limited Warranty

EXPRESSED WARRANTY: N/S Corporation's manufactured vehicle wash equipment is guaranteed for one (1) year commencing the first day following installation, or thirty (30) days from the original invoice date, which ever occurs first. Equipment not manufactured by N/S Corporation and electrical parts are guaranteed for ninety (90) days. The equipment is guaranteed against manufacturing defects on material and workmanship, which develop in the service for which it was designed, provided that the equipment is installed and used in accordance with all applicable instructions and limitations as issued by N/S Corporation.

Pursuant to the above expressed warranty, N/S Corporation at its sole discretion, will repair goods or replace defective materials, free of charge excluding labor, provided that such goods or materials are returned as specified by N/S Corporation and found to be defective based upon N/S Corporation's inspection process. This limited warranty is non-cumulative.

N/S Corporation does not warrant: (1) labor; (2) transportation, charges, which shall be submitted to the carrier of damaged product; (3) installation, adjustment, or other expenses which may arise in connection with such equipment or parts; (4) site related/ operation based problems; (5) damage due to accident; (6) damage due to misuse, negligence, or overloading; (7) lack of proper maintenance; (8) maintenance items, including but not limited to lubricating grease/oils, filters, cloth, materials, bearings, rollers, etc; (9) nor any items therein which show signs of neglect. Repairs and service provided by unauthorized N/S personnel voids warranty.

LIMITED LIABILITY: N/S Corporation shall not be liable (1) for any incidental, special, consequential, or exemplary damages; (2) for commercial loss; (3) for inconvenience; or (4) for any service not expressly provided for herein related to or arising from the vehicle wash equipment. N/S Corporation makes no further warranties and no implied warranties of merchantability or fitness for a specific purpose.

All terms and conditions apply unless otherwise specified in the contract. This warranty given in lieu of all other expressed warranties on the part of the Manufacturer, Distributors, or Dealers. No Dealer or Distributor (nor any agent, representative or employee thereof) is authorized to extend or enlarge this warranty.

If there are any questions regarding these procedures or you need additional assistance, please contact our *Director of Customer Service at (310) 330-1250*.

Copyright 2013 NS Corporation. All rights reserved. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage of retrieval system, except as may be expressly permitted by the 1976 Copyright Act. NS has the right to change or modify this limited warranty without notice.

F: CS-013 Revision Date: 9/26/13





Warranty Procedures

1 Before commencing any warranty work, the N/S Customer Service Department must be contacted and advised that a problem was encountered, which location, and an estimate must be given for any labor cost. The Customer Service Department will then advise the customer as to what action is to be taken.

2 If replacement parts are required, the Customer Service Department will advise the customer where the needed parts can be obtained.

All of parts supplied under warranty will be shipped via UPS ground by N/S Corporation. If a more expeditious means are requested, the customers will incur the extra charges.

A Returned Good Authorization (RGA) will be issued by the N/S Customer Service Department at the time that credit for the replacement parts is requested. All parts returned under an RGA number must be returned within 20 days, freight prepaid and the RGA number must be plainly visible on the outside of the packaging.

No Credit will be issued for motors or reducers that do not have the original name plates affixed.

6 If there are any questions regarding the clarification of these procedures, this may be directed to the N/S Director of Customer Service at (800) 782-1582





Manufacturers of Vehicle Cleaning Equipment Since 1961



235 West Florence Avenue Inglewood, California 90301

1-800-782-1582

Parts or Service 800-245-0350 310-330-1233 310-330-1275 310-412-2367 fax