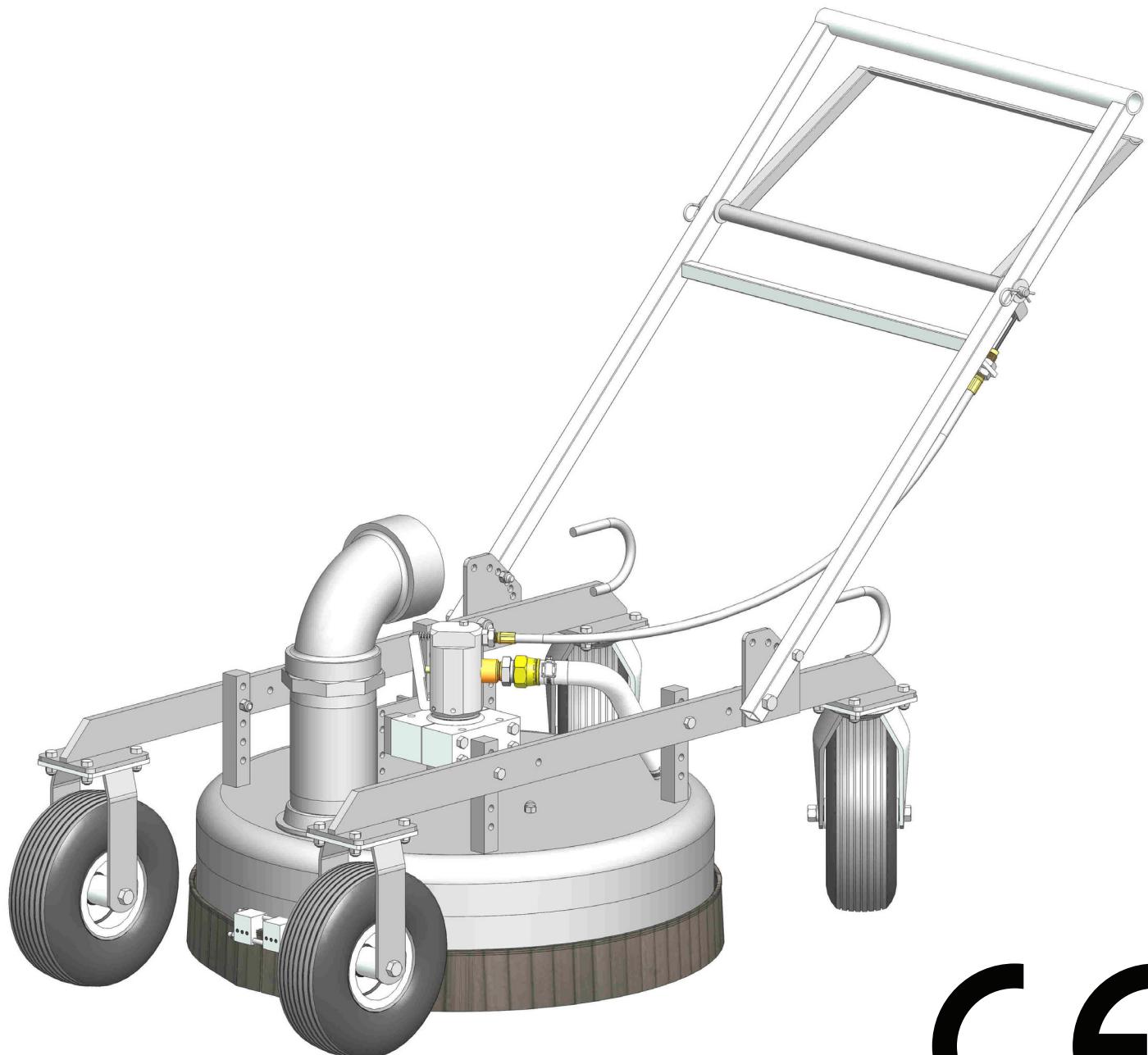




# FC-SG / FC-SV 15 & 22 KPSI FLOOR CLEANER USER MANUAL



PL 540 REV A  
(3/2016)

## TABLE OF CONTENTS

<b>MANUFACTURER'S INFORMATION .....</b>	<b>3</b>
SPECIFICATIONS .....	3
DESCRIPTION OF EQUIPMENT AND INTENDED USE .....	3
CE DECLARATION OF CONFORMITY.....	4
<b>WARNING AND SAFETY INSTRUCTIONS .....</b>	<b>5</b>
OPERATOR TRAINING.....	5
PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS.....	5
PRE-RUN SAFETY CHECK .....	6
<b>OVERVIEW - FCSG AND FCSV FLOOR CLEANERS.....</b>	<b>7</b>
<b>ASSEMBLY, INSTALLATION, AND CONNECTION.....</b>	<b>8</b>
NOZZLE ARM ASSEMBLY.....	8
WHEEL MOUNT ASSEMBLIES.....	9
HEAD ASSEMBLIES .....	10
<b>OPERATION.....</b>	<b>11</b>
<b>MAINTENANCE.....</b>	<b>11</b>
<b>PARTS DIAGRAM .....</b>	<b>12</b>
<b>TERMS AND CONDITIONS .....</b>	<b>15</b>

StoneAge Inc.  
466 S. Skylane Drive  
Durango, CO 81303, USA  
Phone: 970-259-2869  
Toll Free: 866-795-1586  
[www.stoneagetools.com](http://www.stoneagetools.com)

This manual must be used in accordance with all applicable national laws. The manual shall be regarded as a part of the machine and shall be kept for reference until the final dismantling of the machine, as defined by applicable national law(s).

**SPECIFICATIONS****FCSG-15K, 22K AND FCSV-15K, 22K**

Total Assembly Weight:	255 lbs (116 kg)
Height from Floor to Handle:	41 in. (1052 mm)
Height To Top of Wheel Mount:	14 in. (363 mm)
Length Front Wheel to End of Handle:	62 in. (1575 mm)
Jet Path:	24 in. (610 mm)
Jet Height Range:	1-5 in (20-120 mm)
Pressure Dump:	Yes
Vacuum Connection:	4 in. Camlock
Nozzles:	AP4
Maximum Pressure 15 kpsi Head- 1/2 (13 mm) in arms	15,000 psi (103 MPa)
Maximum Pressure 22 kpsi Head- 3/4 (19 mm) in arms	22,000 psi (152 MPa)
Maximum Flow Rating <sup>1</sup>	50 GPM (189 LPM)

<sup>1</sup> The maximum flow rating is 50 gpm (189 LPM), but flow rates higher than 30 gpm (114 LPM) will require adding additional weight added to the machine to hold it down against the reaction thrust of the waterjets.

**DESCRIPTION OF EQUIPMENT AND INTENDED USE**

The FC FLOOR CLEANER is a heavy duty flat surface cleaner with four rotating arms. It is designed to apply rotating waterjets over a 24 inch wide path for cleaning, coating removal or light scarification. Rotation of the arms is typically powered by jet reaction force but an air or hydraulic powered rotation drive (SG-40, SG-50) will mount to the unit as well. Components are also available for vacuuming water and debris from under the dome; these include an inner dome, an elbow for attachment to the vacuum hose and a brush type skirt instead of the rubber skirt. The machine includes a dump valve cartridge built directly into the swivel and actuated by an operator controlled dump handle; the dumped water exits underneath the dome.

StoneAge builds all Floor Cleaners to the 22,000 PSI specification. The 22,000 PSI model can be reduced to 15,000 PSI with a simple part change on the Head Assembly, shown on Page 9.



**CE DECLARATION OF INCORPORATION  
OF PARTLY COMPLETED MACHINERY**

We: StoneAge, Inc. 466 South Skylan Drive Durango, CO 81303, USA

Declare that this "partly completed machinery" supplied with this declaration:

Equipment: FLOOR CLEANER 15K AND 22K ASSEMBLIES

Model name: FCSG-15K, FCSG-22K, FCSV-15K, AND FCSV-22K are in accordance with the following Directives: and

- are designed and manufactured solely as a non-functional components to be incorporated into a machine requiring completion;
- must not be put into service within the European Community ("EC") until the final machinery into which it is to be incorporated has been declared in conformity with the Machinery Directive and all other applicable EC Directives; and
- are designed and manufactured to comply with the 2006/42/EC Essential Health and Safety Requirements of the Machinery Directives and the relevant parts of the following specifications:

EN ISO 12100:2010 Safety of machinery - General principles for design - Risk assessment and risk reduction

I hereby declare that the equipment named above has been tested and found to comply with the relevant sections of the above referenced specifications and directives.

Signed \_\_\_\_\_ Date 04/11/2016

Andrew Birt

Independent Dealer Manager

StoneAge, Inc., Worcester, UK

The technical files for the Floor Cleaner Assemblies (FCSG-15K, FCSG-22K AND FCSV-15K, FCSV-22K) User Manuals are maintained at: StoneAge, Inc. 466 South Skylan Drive, Durango, CO 81303, USA



## WARNING AND SAFETY INSTRUCTIONS

### OPERATOR TRAINING

Managers, Supervisors, and Operators MUST be trained in Health and Safety Awareness of High-pressure Water Jetting and hold a copy the Water Jetting Association (WJA) Code of Practice, or equivalent (see [www.waterjetting.org.uk](http://www.waterjetting.org.uk)).

Operators MUST be trained to identify and understand all applicable standards for the equipment supplied. Operators should be trained in manual handling techniques to prevent bodily injury.

Operators MUST read, understand, and follow the Operational and Training Requirements (Section 7.0) of WJTA-IMCA's Recommended Practices For The Use Of High-pressure Waterjetting Equipment, or equivalent.

Operators MUST read, understand, and follow the Operational and Training Requirements of WJTA-IMCA's Recommended Practices For The Use Of Industrial Vacuum Equipment, or equivalent.

Operators MUST read, understand and follow the Warnings, Safety Information, Assembly, Installation, Connection, Operation, Transport, Handling, Storage, and Maintenance Instructions detailed in this manual.

StoneAge has designed and manufactured this equipment considering all hazards associated with its operation. StoneAge assessed these risks and incorporated safety features in the design. StoneAge **WILL NOT** accept responsibility for the results of misuse.

**IT IS THE RESPONSIBILITY OF THE INSTALLER/OPERATOR** to conduct a job specific risk assessment prior to use. Job specific risk assessment MUST be repeated for each different set up, material, and location.

The risk assessment MUST conform to the Health and Safety at Work Act 1974 and other relevant Health and Safety legislation.

The risk assessment MUST consider potential material or substance hazards including:

- Aerosols
- Biological and microbiological (viral or bacterial) agents
- Combustible materials
- Dusts
- Explosion
- Fibers
- Flammable substances
- Fluids
- Fumes
- Gases
- Mists
- Oxidizing Agents

### PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Use of Personal Protective Equipment (PPE) is dependent on the working pressure of water and the cleaning application. Managers, Supervisors, and Operators MUST carry out a job specific risk assessment to define the exact requirements for PPE. See Protective Equipment for Personnel (Section 6) of WJTA-IMCA's Recommended Practices For The Use Of High-pressure Waterjetting Equipment for additional information.

Hygiene - Operators are advised to wash thoroughly after all waterjetting operations to remove any waterblast residue which may contain traces of harmful substances.

First aid provision - users MUST be provided with suitable first aid facilities at the operation site.

#### PPE may include:

- **Eye protection:** Full face visor
- **Foot protection:** Kevlar® brand or steel toe capped, waterproof, non-slip safety boots
- **Hand protection:** Waterproof gloves
- **Ear protection:** Ear protection for a minimum of 85 dBA
- **Head protection:** Hard hat that accepts a full face visor and ear protection
- **Body protection:** Multi-layer waterproof clothing approved for waterjetting
- **Hose protection:** Hose shroud
- **Respiratory protection:** May be required; refer to job specific risk assessment

## WARNING AND SAFETY INSTRUCTIONS

### ⚠️ WARNING

Operations with this equipment can be potentially hazardous. Caution MUST be exercised prior to and during machine and water jet tool use. Please read and follow all of these instructions, in addition to the guidelines in the WJTA Recommended Practices handbook, available online at [www.wjta.org](http://www.wjta.org). Deviating from safety instructions and recommended practices can lead to severe injury and/or death.

- Do not exceed the maximum operating pressure specified for any component in a system. The immediate work area MUST be marked off to keep out untrained persons.
- Inspect the equipment for visible signs of deterioration, damage, and improper assembly. Do not operate until repaired. Make sure all threaded connections are tight and free of leaks.
- Users of the Floor Cleaner System MUST be trained and/or experienced in the use and application of high-pressure technology and cleaning, as well as all associated safety measures, according to the WJTA Recommended Practices for the use of High-pressure Water jetting Equipment.
- Always de-energize the system before opening the door to service or replace any parts. Failure to do so can result in severe injury and/or death.

### PRE-RUN SAFETY CHECK

Refer to WJTA-IMCA's, Recommended Practices For The Use Of High-pressure Water jetting Equipment and/or The Water Jetting Association's, WJA Code of Practice for additional safety information.

- Complete a job specific risk assessment and act on the resulting actions.
- Ensure the waterblasting zone is properly barricaded and that warning signs are posted.
- Adhere to all site safety procedures.
- Ensure no personnel are in the hydroblasting zone.
- Ensure the work place is free of unnecessary objects (e.g. loose parts, hoses, tools).
- Ensure all operators are using the correct Personal Protective Equipment (PPE).
- Check that the air hoses are properly connected and tight.
- Check all hoses and accessories for damage prior to use. Do not use damaged items. Only high quality hoses intended for waterblast applications should be used as high-pressure hoses.
- Ensure that operators never connect, disconnect, or tighten hoses, adapters, or accessories with the high-pressure water pump unit running.
- Check all high-pressure threaded connections for tightness.

StoneAge has designed and manufactured this equipment considering all hazards associated with its operation. StoneAge assessed these risks and incorporated safety features in the design. StoneAge **WILL NOT** accept responsibility for the results of misuse.

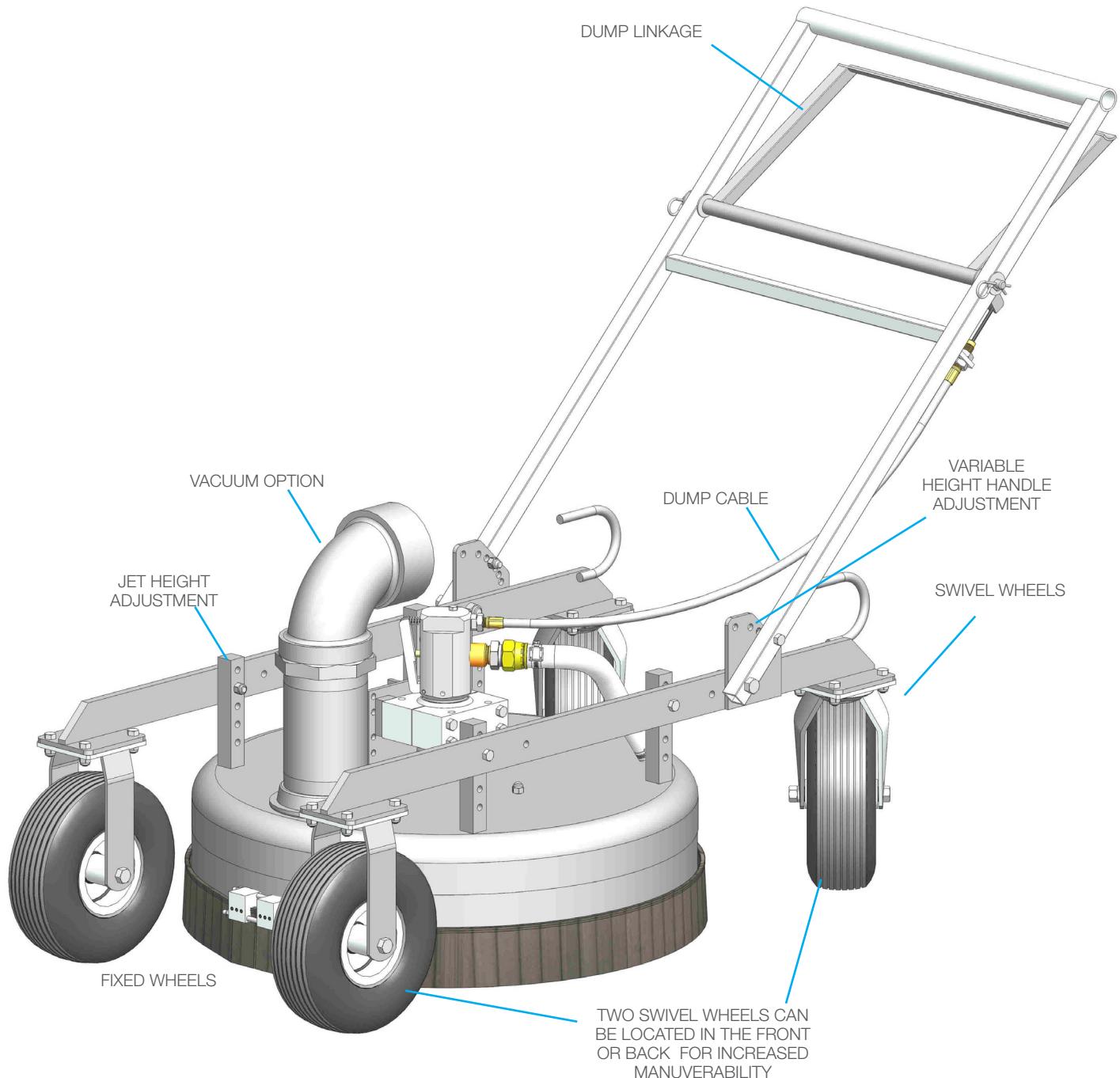
**IT IS THE RESPONSIBILITY OF THE INSTALLER/OPERATOR** to conduct a job specific risk assessment prior to use. Job specific risk assessment MUST be repeated for each different set up, material, and location.

The risk assessment MUST conform to the Health and Safety at Work Act 1974 and other relevant Health and Safety legislation.

The risk assessment MUST consider potential material or substance hazards including:

- Aerosols
- Biological and microbiological (viral or bacterial) agents
- Combustible materials
- Dusts
- Explosion
- Fibers
- Flammable substances
- Fluids
- Fumes
- Gases
- Mists
- Oxidizing Agents

**15KPSI & 22KPSI (FCSG & FCSV)  
FLOOR CLEANERS  
VACUUM OPTIONAL**



## ASSEMBLY, INSTALLATION, AND CONNECTION

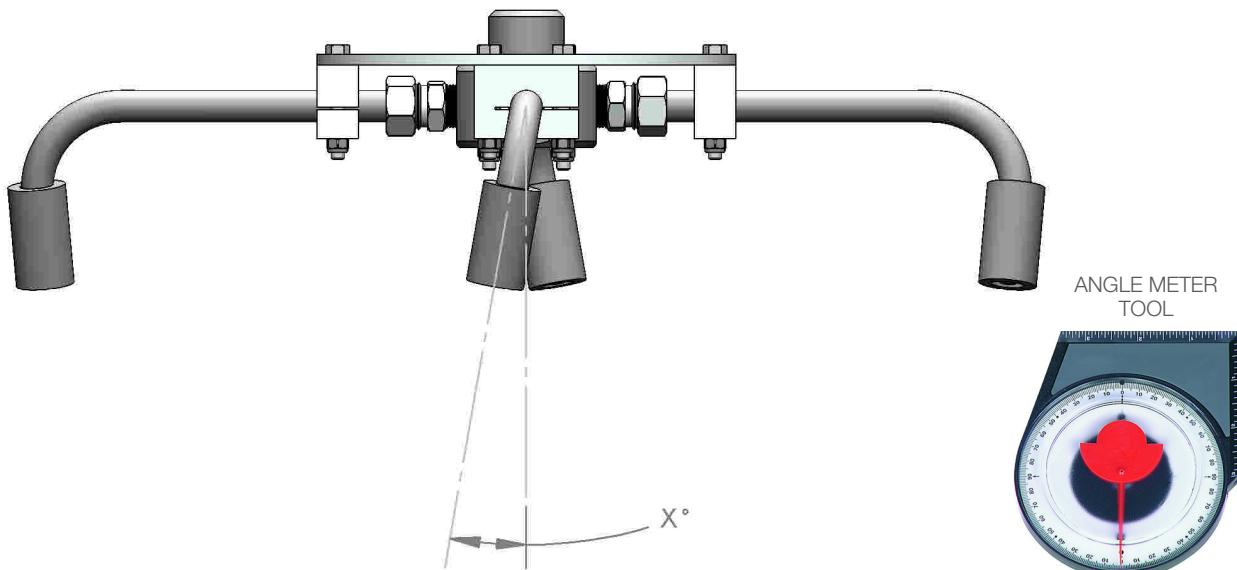
### NOZZLE ARM ASSEMBLY

The angle of the nozzle arms should be adjusted to give speed adjustment. Refer to the chart which shows the angle that two arms should be set at to give a rotation speed of approximately 1000 rpm for the operating flow and pressure. If 4 of the arms are being angled, each arm should be angled 1/2 of the chart value. Increasing or decreasing the angle will give faster or slower rotation rates. Make sure that the head will rotate clockwise when viewed from the bottom, so as to tighten the head onto the shaft of the swivel. Tighten the arm clamp after adjusting the angle. The maximum safe rotation speed for the assembly is 1500 rpm.

		Flow Rate, GPM					
		10	15	20	25	30	35
Pressure, PSI	22000	.024Ø	.032Ø	.035Ø	.038Ø	.042Ø	.047Ø
	16°	10°	8°	7°	5°	4°	
	15000	.029Ø	.035Ø	.038Ø	.042Ø	.047Ø	.052Ø
	12°	8°	7°	5°	4°	4°	
	10000	.032Ø	.038Ø	.042Ø	.047Ø	.052Ø	.057Ø
	11°	8°	6°	5°	4°	3°	
	5000	.038Ø	.042Ø	.052Ø	.057Ø	.063Ø	.069Ø
	10°	8°	6°	5°	4°	3°	
	X°	Angle of 2 arms for approximately 1000 RPM					

#### ⚠ WARNING

- The angle of the arms controls the rotation speed and direction. Increasing the angle will increase the rotation speed.
- Always angle the arms so that the jet torque tightens the manifold onto the swivel shaft. (Clockwise when viewed from the bottom.)

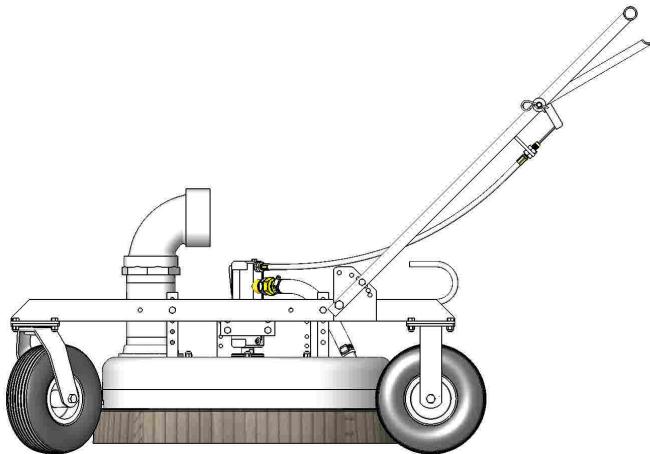


**NOTE:** If all 4 arms are being angled, each arm should be angled 1/2 of the chart value.

Use an angle meter tool, like the one shown to verify the angle of each arm.

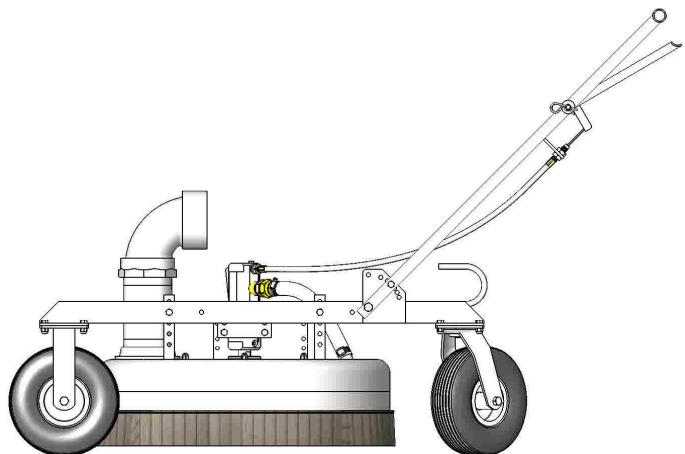
## WHEEL MOUNT ASSEMBLY

**MOUNT TYPE 'A'**- FIXED WHEELS IN REAR  
FOR MANEUVERABLE TRAVEL

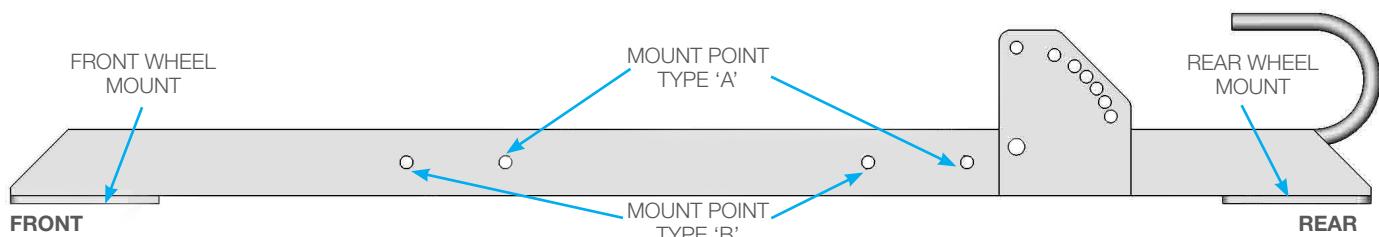


**MOUNT TYPE 'A'**: THIS CONFIGURATION ALLOWS FOR MANEUVERABILITY AND EASE OF TURNING. THE REAR MOUNT POINTS ON THE "CHASSIS FRAME ASSEMBLY" ARE ATTACHED TO THE "DOME UPRIGHT MOUNTS". SEE ABOVE PICTURES. THE STATIONARY (NON-CASTER) WHEEL IS MOUNTED TO THE REAR OF THE "CHASSIS FRAME ASSEMBLY"

**MOUNT TYPE 'B'**- FIXED WHEELS IN FRONT  
FOR STRAIGHT LINE TRAVEL



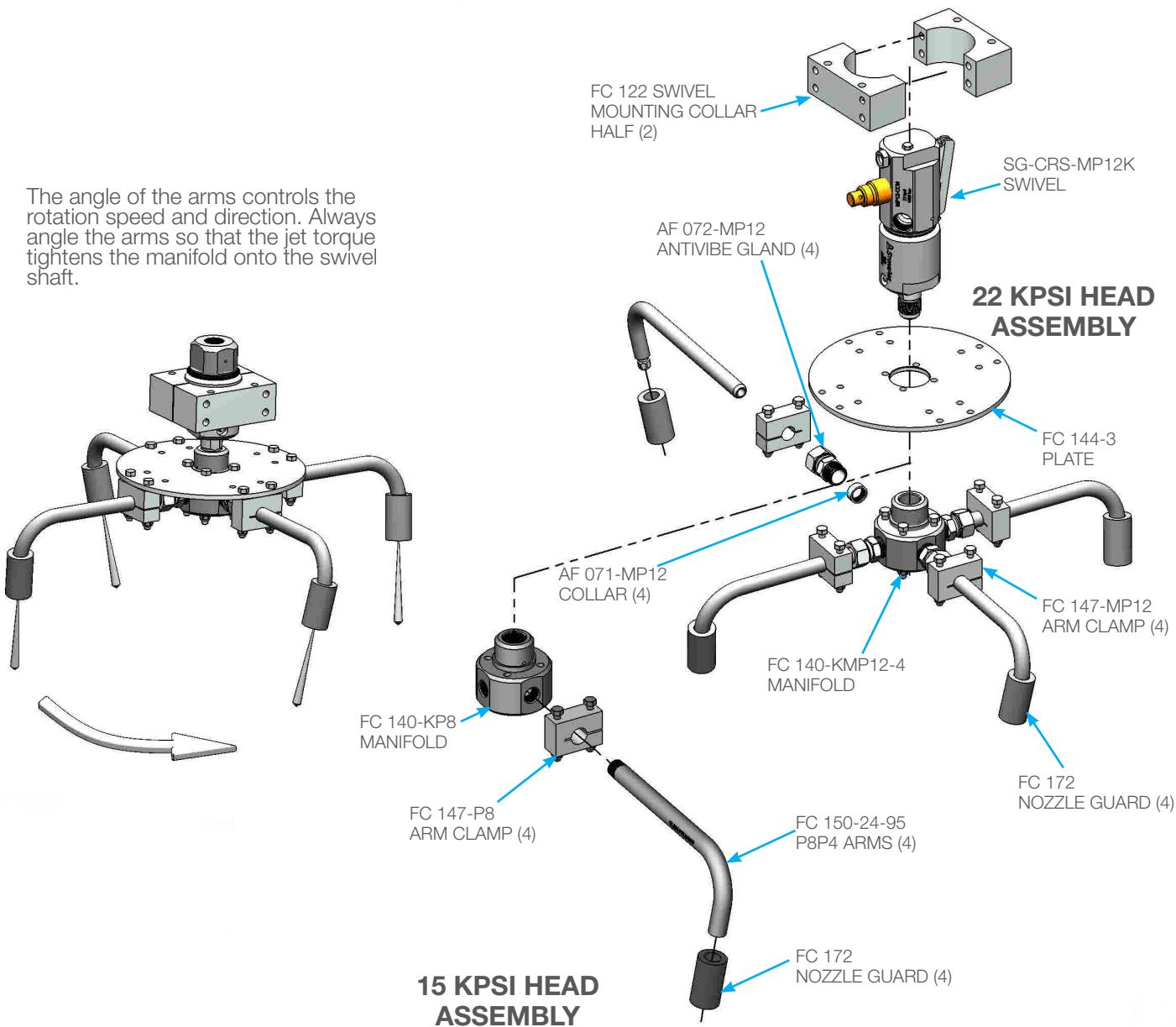
**MOUNT TYPE 'B'**: THIS CONFIGURATION ALLOWS FOR STRAIGHT LINE MOTION/TRACKING. THE FRONT MOUNT POINTS ON THE "CHASSIS FRAME ASSEMBLY" ARE ATTACHED TO THE "DOME UPRIGHT MOUNTS". SEE ABOVE PICTURES. THE STATIONARY (NON-CASTER) WHEEL IS MOUNTED TO THE FRONT OF THE "CHASSIS FRAME ASSEMBLY"



## ASSEMBLY, INSTALLATION, AND CONNECTION

### HEAD ASSEMBLIES

The angle of the arms controls the rotation speed and direction. Always angle the arms so that the jet torque tightens the manifold onto the swivel shaft.



There are two different head units that can be placed on the non-vacuum (FCSG) Floor Cleaner for 15 kpsi or 22 kpsi. The 15 kpsi version uses 1/2 npt ports in the manifold and 1/2 pipe for the arms. The 22 kpsi model uses 3/4 medium pressure (autoclave) ports in the manifold and 3/4 medium pressure tubing for the arms. Both use 1/4 npt nozzles in the ends of the arms.

**⚠ WARNING**

Always de-energize the system before adjusting, servicing, or replacing any parts. Failure to do so can result in severe injury and/or death.

Attach the short hose section to the swivel inlet; Flush the high pressure hose from the pump before connecting to the short hose.

To set the operating pressure, the operator needs to close the dump valve by holding the dump handle bar up against the push handle bar. Check for dump valve leakage by looking through the clear hose leading to the dome; if water is flowing while the handle is closed, tighten the cable tension using the adjustment nuts on the cable ends.

If rotation speed needs to be adjusted, shut down pump in case the dump handle gets accidentally closed, then change the angle on two or four of the arms to increase or decrease the rotation speed. Custom arms can be made if different angles or slightly differing jet paths are desired to distribute the jet power. In cases of very easily removed materials, fan jets can also be used to allow faster cleaning rates. (See Page 7)

When trying to remove thick deposits of material or trying to remove material at large standoff distances it is better to use slower rotation speeds. If removing thinner coatings or milling or scarifying, use faster rotation speeds. Faster rotation speeds are also effective when trying to remove a coating or deposit without damaging the underlying substrate. Standard arm lengths provide a 24 inch jet path, with a 95° bend so the jets are angled slightly inward to reduce the water escaping under the skirt.

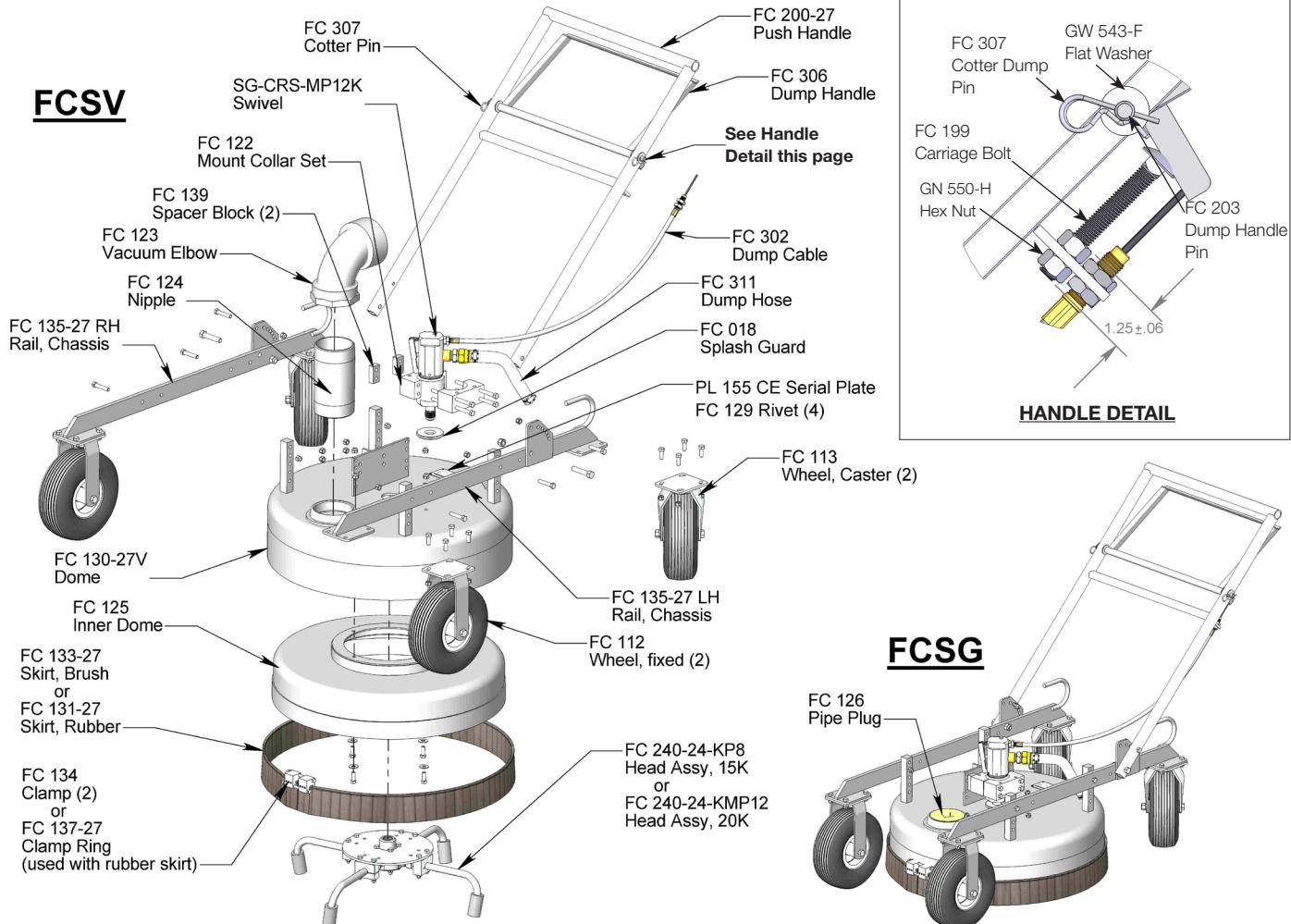
If excessive vibration occurs during operation under pressure, check that arms are not bent and are angled the same for driving torque. Check that nozzle orifices are the same size and are not worn.

**MAINTENANCE**

Maintenance Item	Maintenance Required
Swivel	Grease the swivel after every 100 hours of use
High Pressure Seals	When the amount of leak from the swivel seal does not allow maintaining operating pressure, replace the high pressure seals.
Nozzles	If the unit vibrates or shakes badly, check nozzles for plugging or wear, which creates unbalanced jet thrust and vibration
Dump Cartridge	The dump cartridge should be replaced when it leaks enough that operating pressure cannot be maintained. Refer to the SG-CRS swivel insert for instruction.

## PARTS DIAGRAM

**FCSX™**  
FLOOR CLEANER SV OR SG SWIVEL



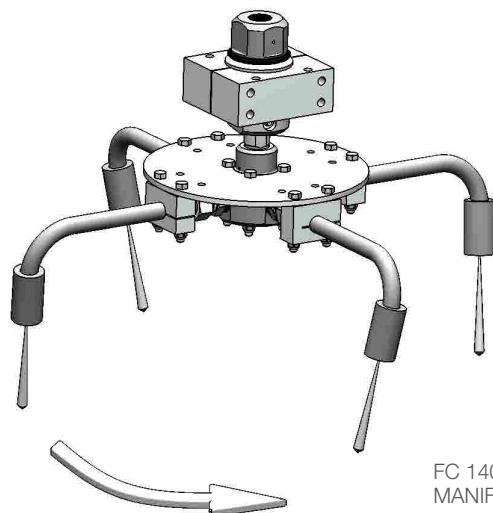
PART NUMBER	STANDARD ASSEMBLY QTY.	VACUUM ASSEMBLY QTY.
AF 063-063 1" NIPPLE TYPE M	1	1
AF 063-MP12 ADAPTER	1	1
AF 063-P8 1" ADAPTER TYPE MPX8	1	1
FC 018 SPLASH GUARD	1	1
FC 112 WHEEL, FIXED	2	2
FC 113 WHEEL, CASTER	2	2
FC 122 SWIVEL MOUNT COLLAR	1	1
FC 123 VACUUM ELBOW	-	1
FC 124 NIPPLE, 4" PIPE	-	1
FC 125 INNER DOME	-	1
FC 126 4 INCH PIPE PLUG	1	1
FC 130-27V DOME ASSEMBLY	1	1
FC 131-27 SKIRT, RUBBER	1	1

FC 133-27 SKIRT, BRUSH	-	1	FC 312 FITTING, 1 JIC, 3/4 NPT	1	1
FC 134 CLAMP, BRUSH SKIRT	-	2	FC 313 DUMP HOSE FITTING	1	1
FC 135-27 RAIL, CHASSIS (PAIR)	1	1	GB 537-03 BOLT 3/8-16 X 3/4 ZINC	4	4
FC 137-27 CLAMP, RUBBER SKIRT	1	1	GB 537-04 BOLT 3/8-16 X 1 ZINC	16	16
FC 139 SPACER BLOCK	2	2	GB 537-08 BOLT 3/8-16 X 2 ZINC	6	6
FC 190 INLET HOSE	1	1	GB 550-10 BOLT 1/2-13 X 2-1/2 ZINC	2	2
FC 192-M COUPLER, TYPE M	1	1	GB 550-16 BOLT 1/2-13 X 4 ZINC	1	1
FC 192-P8 COUPLER, P8	1	1	GN 537-L NUT 3/8 LOCK ZINC	30	30
FC 200-27 PUSH HANDLE	1	1	GN 550-H NUT 1/2 HEX ZINC	1	1
FC 203 DUMP HANDLE PIN	1	1	GN 550-L NUT 1/2-13 LOCK ZINC	2	2
FC 240-24-X HEAD ASSEMBLY	1	1	GW 543-F WASHER, 7/16 FLAT ZINC	4	4
FC 302 DUMP CABLE	1	1	PL 155 CE SERIAL PLATE	1	1
FC 306 DUMP HANDLE	1	1	SG CRS-MP12K SWIVEL	1	1
FC 307 COTTER PIN	2	2			
FC 311 DUMP HOSE	1	1			

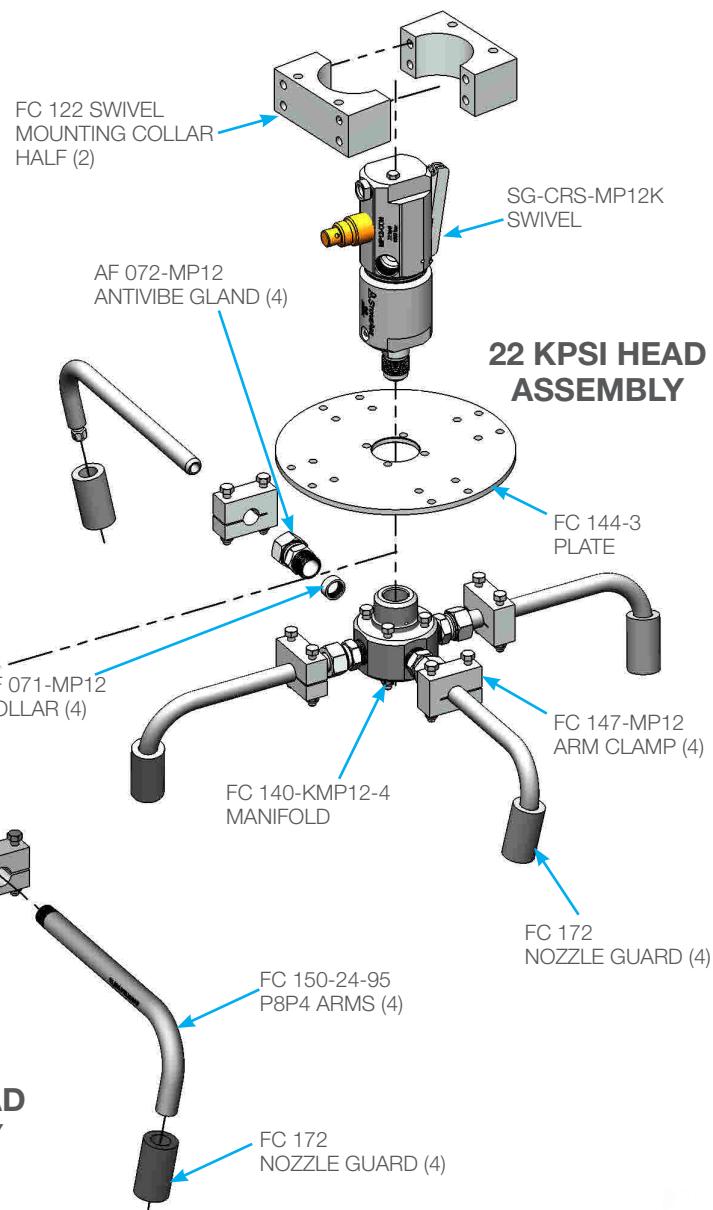
**FC 240-18-X AND FC 240-24-X**

15,000 AND 22,000 PSI MANIFOLD ARMS ASSEMBLY

THE ANGLE OF THE ARMS CONTROLS THE ROTATION SPEED AND DIRECTION. ALWAYS ANGLE THE ARMS SO THAT THE JET TORQUE TIGHTENS THE MANIFOLD ONTO THE SWIVEL SHAFT.

**15 KPSI HEAD ASSEMBLY****15,000 PSI MANIFOLD ARMS ASSEMBLY**

PART NUMBER	QTY.
FC 140-KP8 MANIFOLD	1
FC 144-3 PLATE, SUPPORT	1
FC 147-P8 ARM CLAMP	4
FC 150-24-95 P8 ARM	4
FC 172 NOZZLE GUARD	4
GB 531-10 BOLT 5/16-18 X 2-1/2 ZINC	8
GB 531-11 BOLT 5/16-18 X 2-3/4 ZINC	4
GN 531-L NUT 5/16 LOCK ZINC	12

**22,000 PSI MANIFOLD ARMS ASSEMBLY**

PART NUMBER	QTY.
AF 071-M12 COLLAR	4
AF 072-M12 GLAND, ANTI-VIBE	4
FC 140-XX12 MANIFOLD	1
FC 144-3 PLATE, SUPPORT	1
FC 147-XX12 ARM CLAMP	4
FC 160-24-95 XX12 ARM	4
FC 172 NOZZLE GUARD	4

## TERMS AND CONDITIONS

1. Acceptance of Terms and Conditions. These Terms and Conditions shall operate as Seller's acceptance of Buyer's purchase order, and such acceptance is made expressly conditional on assent by Buyer to the Terms and Conditions. Such assent shall be deemed to have been given unless written notice of objection to any of such Terms and Conditions (including inconsistencies between Buyer's purchase order and this acceptance) is given by Buyer to Seller promptly on receipt hereof.

Seller desires to provide its Buyer with prompt and efficient service. However, to negotiate individually the terms of each sales contract would substantially impair Seller's ability to provide such service. Accordingly, products furnished and services rendered by Seller are sold only on the Terms and Conditions stated herein. Notwithstanding any Terms or Conditions on Buyer's order, Seller's performance of any contract is expressly made conditional on Buyer's agreement to Seller's Terms and Conditions of sale unless otherwise specifically agreed to in writing by Seller. In the absence of such agreement, commencement of performance, shipment and/or delivery shall be for Buyer's convenience only and shall not be deemed or construed to be an acceptance of Buyer's Terms and Conditions. **PRODUCTS SOLD BY SELLER ARE DESIGNED AND INTENDED TO BE USED AT HIGH PRESSURES AND SPEEDS, AND MAY BE DANGEROUS IF OPERATED IMPROPERLY OR WITHOUT THE USE OF APPROPRIATE SAFETY DEVICES AND GUARDS. BUYER IS CAUTIONED TO CAREFULLY READ AND UNDERSTAND THESE TERMS AND CONDITIONS, AS THEY HAVE IMPORTANT LEGAL CONSEQUENCES.**

2. Payment/Prices. Unless other arrangements have been made in writing between Seller and Buyer, payment for product delivered shall be made upon receipt of invoice. The prices shown on the face hereof are those currently in effect. Prices invoiced shall be per price list in effect at the time of shipment. Prices are subject to increase for inclusion of any and all taxes which are applicable and which arise from the sale, delivery or use of Seller's products or services and for the collection of which Seller is or may be responsible to any governmental authority unless acceptable exemption certificates are provided by Buyer in accordance with law. Buyer shall pay all charges for transportation and delivery and all excise, order, occupation, use or similar taxes, duties, levies, charges or surcharges applicable to the equipment or services being purchased, whether now in effect or hereafter imposed by any governmental authority, foreign or domestic.

3. Warranty. Subject to the limitations and conditions hereinafter set forth, Seller warrants to the original Buyer that its products are free from defects in workmanship and material for a period of one (1) year months from shipment. Seller's obligation under this warranty shall be limited to repairing, replacing or issuing a credit for, at Seller's option, any products or services it finds to be defective in material or workmanship. In no event shall Seller be liable for any incidental, consequential or indirect damages of any kind. **THIS WARRANTY SHALL BE IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY FOR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.** No statement or recommendation made by Seller or its representative to Buyer or User shall constitute a warranty by Seller or a waiver or modification to any of the provisions hereof or create any liability for Seller. All warranty claims are subject to the exclusions and limitations set forth below:

a. The warranty shall not apply if the product or service (1) has been subject to misuse, negligence or accident; (2) has not been installed or

operated in accordance with Seller's recommendations; (3) has been operated under more severe conditions than those specified for the particular product or service; (4) has been operated beyond the rated capacity of the product; or (5) has been repaired or altered outside Seller's facilities or in any way so as, in Seller's judgment, to affect its stability or reliability.

b. Products that Seller furnishes, but does not manufacture, carry only the warranty of the manufacturer of such products. Where other manufacturers' or suppliers' products used in Seller's products or services prove defective, Seller's liability shall exist only to the extent that Seller is able to recover from such manufacturers or suppliers for such defects.

c. Any warranty granted by Seller to the Buyer shall be deemed void if any goods covered by such warranty are used for any purpose not recommended or permitted. In addition, the Buyer shall indemnify Seller and hold Seller harmless from and against any and all claims, damages, losses, costs, expenses and other liability of whatever nature that Seller suffers or incurs by reason of any such unintended use.

d. Notice of defective product or service must be given in writing to Seller by Buyer or User within fifteen (15) business days following receipt of goods. Buyer or User shall keep such products or services in an unaltered condition for examination by Seller's representative. No goods may be returned for credit or adjustment without prior written permission from Seller.

4. Product Liability. Buyer specifically acknowledges that the products being purchased may be operated at high speeds and/or pressures, and that as such they may be inherently dangerous if not used correctly. Buyer shall be solely responsible for the safe operation of the products at all times and for determining the safety devices and guards that may be required for the safe operation of the products. Buyer shall undertake to specify and order all safety devices and guards necessary for the safe operation of the equipment covered. All safety devices and guards offered in Seller's quotations are recommended for purchase. Seller may provide necessary safety devices and guards not offered in this quotation at an extra price in accordance with the specifications of Buyer. Buyer shall at all times use and require its employees to use all necessary and appropriate safety devices, guards and proper safe operating procedures. Buyer shall not remove or modify any such devices, guards or warning signs and shall insist on safe operating practices on the part of its personnel. In no event shall Seller be responsible for any injuries to persons or property caused by defects in any equipment, including by way of illustration and not limitation, any pumps, compressors, fittings, connections, components, piping or hoses up to the point that same are connected to the product. Buyer agrees to indemnify and to save Seller harmless from any and all liability or obligation incurred by or against Seller, including costs and attorneys' fees, to or by any persons injured directly or indirectly in the operation of the equipment furnished under the following conditions:

- a. if Buyer fails to purchase and use necessary and appropriate safety devices and guards as determined and/or recommended by Seller;
- b. if Buyer fails to maintain in good working order such safety devices and guards as are purchased from Seller;
- c. if Buyer adds, omits, repairs, modifies, replaces or substitutes any components on the equipment without permission from Seller;

d. if Buyer exceeds at any time the maximum safe loads, pressures or speeds recommended by Seller for the equipment furnished hereunder without the specific written consent of Seller; or

e. if Buyer otherwise fails to operate the product or equipment in accordance with Seller's printed instructions or otherwise negligently operates the equipment.

5. Delivery. Seller is not obligated to make delivery by a specified date, but will always use its best efforts to make delivery within the time requested. All deliveries are based on F.O.B. Seller's factory, unless specifically agreed otherwise, and Buyer shall pay all shipping costs and insurance from that point. Seller, in its sole discretion, will determine and arrange the means and manner of transportation of the products. Responsibility of Seller shall cease and Buyer assumes all risk of loss or damages upon Seller's delivery to and receipt by a common carrier. Carriers shall be responsible for goods lost or damaged in transit and Buyer shall immediately notify the carrier in writing of such loss or damage. At Buyer's request Seller will offer its assistance. **THE PROPOSED SHIPMENT DATE IS AN ESTIMATE. UNDER NO CIRCUMSTANCES SHALL SELLER HAVE ANY LIABILITY WHATSOEVER FOR LOSS OF USE OR FOR ANY DIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM DELAY REGARDLESS OF THE REASON(S).** Shortages or errors must be reported within fifteen (15) business days from receipt of shipment to secure adjustment. No merchandise may be returned without securing written approval from Seller. Seller will notify Buyer promptly of any material delay and will specify the revised delivery date as soon as practicable. Seller shall not be liable for any delay in delivery or performance, or for any failure to manufacture, deliver or perform due to (a) any cause beyond its reasonable control; (b) any act of God, act of Buyer, act of civil or military authority, governmental priority, strike or other labor disturbance, flood, epidemic, war, riot, delay in transportation or car shortage; or (c) inability on account of any cause beyond the reasonable control of Seller to obtain necessary materials, components, services or facilities. In the event of any such delay, the date of delivery or of performance shall be extended for a period equal to the time lost by reason of the delay.

6. Technical Advice. All technical advice, recommendations and services of Seller are intended for use by persons having adequate skill, at their own risk, and Seller assumes no responsibility, and Buyer hereby waives all claims against Seller, for results obtained or damages incurred from the use of Seller's advice, recommendations and services.

7. Modification. These Terms and Conditions are intended by Seller and Buyer to constitute a final, complete and exclusive expression of agreement and cannot be supplemented or amended without Seller's prior written approval. Seller's waiver of any breach, or failure to enforce any of the Terms and Conditions at any time, shall not in any way affect, limit or waive Seller's right thereafter to enforce and compel strict compliance with every Term and Condition thereof. If any provisions of these Terms and Conditions are held to be invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the other portions hereof.

8. Disputes. Buyer and Seller shall attempt in good faith promptly to resolve any dispute arising under these Terms and Conditions by negotiations between representatives who have authority to settle the controversy. If unsuccessful, Buyer and Seller shall further attempt in good faith to settle the dispute by nonbinding third-party mediation, with

fees and expenses of such mediation apportioned equally to each side. Any dispute not so resolved by negotiation or mediation may then be submitted to a court of competent jurisdiction in accordance with the terms hereof. These procedures are the exclusive procedures for the resolution of all such disputes between the parties. All sales, agreements for sale, offers to sell, proposals, acknowledgments and contracts of sale, including, but not limited to, purchase orders accepted by Seller, shall be considered a contract under the laws of the State of Colorado and the rights and duties of all persons, and the construction and effect of all provisions hereof shall be governed by and construed according to the laws of such state. A state or federal court located within the State of Colorado shall have sole and exclusive jurisdiction over any litigation concerning any such matters as well as any alleged defects of any products or equipment covered thereby or damages sustained as a result of such alleged defects. If any litigation is commenced between Seller and Buyer, or their personal representatives, concerning any provision hereof, the party prevailing in the litigation shall be entitled, in addition to such other relief that is granted, to a reasonable sum as and for their attorneys' fees and costs in such litigation or arbitration.

### STONEAGE TRADEMARK LIST

View the list of StoneAge's trademarks and service marks and learn how the trademarks should be used. Use of StoneAge trademarks may be prohibited, unless expressly authorized.

<http://www.StoneAgetools.com/trademark-list/>

### STONEAGE PATENT DATA

View the list of StoneAge's current U.S. patent numbers and descriptions.

<http://www.sapatents.com>



1-866-795-1586 • [www.STONEAGETOOLS.com](http://www.STONEAGETOOLS.com)

© 2015 StoneAge, Inc. All Rights Reserved