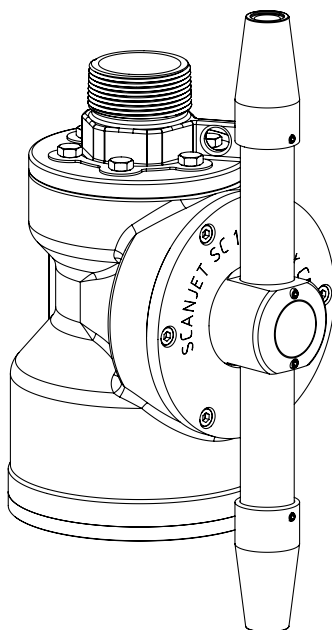




Instruction Manual

SC 15TW

Stainless Steel



#SC 15TW-SS 13

Scanjet Tank Cleaning Equipment

Tank Cleaning Technologies, Inc.

15200 Middlebrook Drive; Suite E

Houston, Texas 77058

United States of America

Telephone +1 281.480.4041

Telefax +1 713.513.5883

E-mail eng@tankcleantech.com

Web www.tankcleantech.com



This Manual Applies for the Following Products:

<u>Type</u>	<u>Date</u>
SC 15TW - Stainless Steel	2010-12-06
SC 15TW - Rubber Bumper	2010-12-06

Spare Parts Department

Contact Information

Read "9. How to Order Spare Parts"

Scanjet Tank Cleaning Equipment

15200 Middlebrook Drive; Suite E

Houston, Texas 77058

United States of America

Telephone +1 281.480.4041

Telefax +1 713.513.5883

E-mail eng@tankcleantech.com / eng@scanjetinc.com

This manual is intended to assist in the handling and operation of the Scanjet SC 15TW Tank Cleaning System. Continuous product improvement is the policy of Scanjet and we reserve the right to alter the specifications at any time without prior notice.



Contents

1. Introduction.....	4
2. Safety Instructions.....	5
3. General Description.....	6
4. Technical Data.....	7
4.1. Specifications.....	7
4.2. Dimensions.....	8
5. Performance Data.....	9
6. Installation Instructions.....	12
6.1. Connecting to supply line and starting up.....	13
6.2. Calculation of Cleaning Time.....	14
6.3. Speed Adjustment.....	16
7. Maintenance.....	17
7.1. Preventive Maintenance.....	17
7.2. Service Kits.....	18
7.3. Service intervals.....	19
7.4. Disassembly.....	20
7.5. Reassembly.....	24
8. Trouble Shooting Guide.....	26
9. How to Order Spare Parts.....	27
10. Exploded Drawing View - SC 15TW.....	28
11. Spare Part List - SC 15TW.....	29
12. Spare Parts - Old versions.....	31
13. Optional Accessories.....	32
14. Basic Settings.....	34
14.1. SC 15TW - 2 nozzles.....	34
14.2. SC 15TW - 4 nozzles.....	37
15. Service Kit Contents.....	38
16. Spare Part Kit.....	39
17. Tool Kit.....	40
18. Service Card.....	41



1. Introduction

SCANJET SC 15TW is a tank cleaning machine specially developed for cleaning of cargo and slop-tanks on board chemical carriers/product carriers and other applicable tanks. The size, construction and cleaning requirements of these tanks are design criteria, which have been evaluated prior to installation. The SC 15TW could be used as fixed installed machine as well as for portable use.

The cleaning procedure will start by open the valve for cleaning media. The water flow will pass over a turbine inside the machine and the nozzles will rotate creating a crisscross cleaning pattern inside the tank. When the cleaning procedure is finalized the valves are to be closed.

SC 15TW is as standard delivered with two or four nozzles, and nozzle sizes between Ø6 mm and Ø10 mm.

This manual has been prepared as a guide to facilitate for persons who will be operating and maintaining the tank cleaning machine. The key for long tank cleaning machine life will always be carefully planned maintenance, the tank cleaning machine is actually doing a rough and dirty job for you. With proper maintenance the Scanjet SC 15TW will keep servicing you for many years.

2. Safety Instructions

- If the machine is used in potentially explosive atmospheres then tapes or joint sealing compounds, which are electrical insulators, must not be used on threads or joints, unless an electrical connection is otherwise established to ensure an effective grounding. In addition, connection pipe work must be electrically conductive and grounded to the tank structure. The resistance between the nozzle and the tank structure should not exceed 20 000 Ohm. This is important in order to avoid any build up of static electricity in the machine. For further information see CENELEC R044-001 Safety of Machinery, guidance and recommendations for the avoidance of hazards due to static electricity.
- When the equipment is operating in potentially explosive atmospheres, measures have to be taken to verify that the tank is inert at all times during cleaning operation. This is to avoid sparks and possible explosions since fluids moving at high velocities through air causes electrostatic build up in the media. As an extra precaution the cleaning media could be made conductive.
- The machine should be installed in accordance with national regulations for safety and other relevant regulations and standards.
- Precautions should be made to prevent starting of the tank cleaning operation, while personnel are inside the tank or otherwise can be hit by jets from the nozzle.
- In EU-countries the complete system have to comply with EU-machine directive and should be CE-marked. In North America consult Underwriters Laboratory for any specific regulatory needs relative to the entire CIP (Clean In Place) System.
- Earmuffs should always be used when operating machine.
- Be careful not to drop tank cleaning machine/equipment when lifting and carrying. Dropping the machine could cause serious injuries. Never stand under the machine during mounting.
- The equipment may only be used for tank cleaning operations as described in this manual.
- The equipment has not been assessed as a safety related device as referred to in directive 94/9EC Annex II, clause 1.5

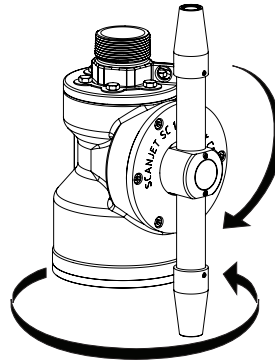
Always follow these instructions before taking the SC 15TW into service!

3. General Description

The Scanjet SC 15TW is media driven and lubricated tank cleaning machine. No lubrication substances as oil grease etc. are used.

Functional Principle

When cleaning media enters the machine it passes through a turbine and a worm gearbox. Then the media enters a nozzle housing leading it out through the nozzles. The turbine's rotation drives the worm gearbox making the machine rotate around its own body on the same time as the nozzle housing is forced to rotate.



A combined motion of the machine body and the nozzle housing creates a criss-cross cleaning pattern inside the tank. After $11 \frac{3}{4}$ rotation of the machine, a first course pattern has been created inside the tank as shown on fig 1. This process is repeated 4 times, each time indexed from each other until a full cleaning pattern will be created inside on the tank walls as per fig 2. When this is finalized, after 47 rotations of the machine or 49 rotations of the nozzle housing, the first cycle will be repeated.

Cleaning of tanks is a process depending on a number of factors such as soilage of the tank, distance between nozzles and tank walls, cleaning procedure, cleaning agent, temperature and more. All of these factors need to be considered before a proper cleaning is accomplished.

The rotation speed of the machine is depending on flow rate through the machine. Higher flow rate makes the turbine spin faster and because of this the machine is equipped with different turbines according to nozzle size and intended operating parameters.

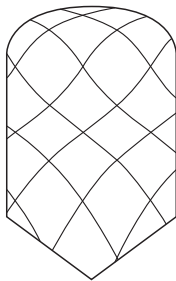


Fig 1. After one cycle

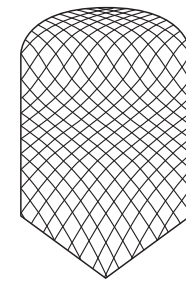
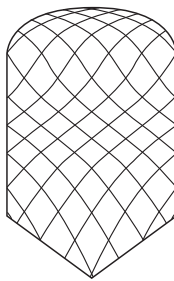
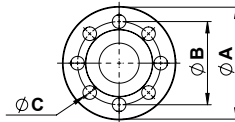


Fig 2. Full pattern

4. Technical Data

4.1. Specifications

Weight	: 9,2 kg (20,2 lb)
Operating pressure range	: 4-12 bar (60-180 psi)
Nominal pressure range	: 6-10 bar (85-145 psi)
Max pressure	: 14 bar (200 psi)
Max working temperature	: 95°C (200°F)
Max ambient temperature	: 140°C (284°F)
Rotation speed	: 2-4 rpm (see page 16)
Materials	: AISI316L, PEEK, PTFE, Ceramic
Adapter types	
Portable Installation	: 1½" BSPP ¹ , 1½" NPT ²
Fixed Installation	: 1½" BSPP ¹ , 1½" NPT ² , Flange adapter according to specification below



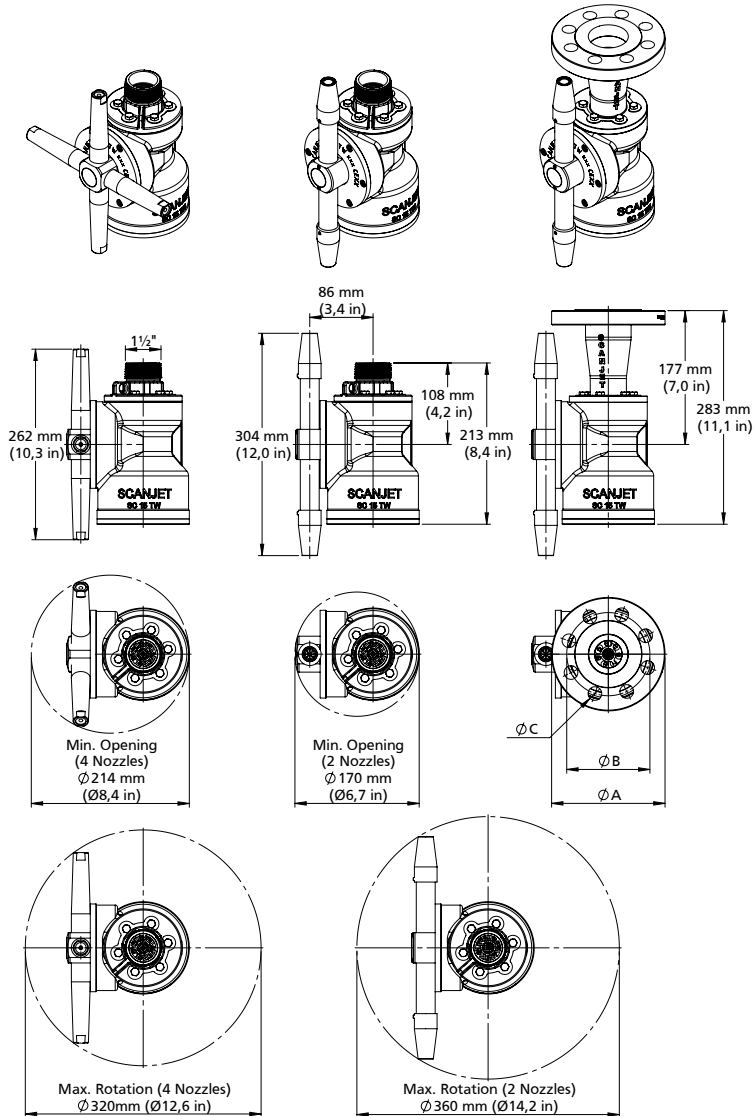
Adapter

Flange type	Adapter Part No.	ØA	ØB	ØC
PN16 DN40	41085-01	Ø150	Ø110	Ø18x4
JIS 10/16K 40	41085-05	Ø140	Ø105	Ø19x4
JIS 10K 50	41085-06	Ø155	Ø120	Ø19x4
JIS 16K 50	41085-07	Ø155	Ø120	Ø19x8
ANSI 2" 150lb	41085-21	Ø152.4	Ø120.6	Ø19x4

¹ British Standard Pipe Thread Parallel

² National Pipe Thread Tapered

4.2. Dimensions

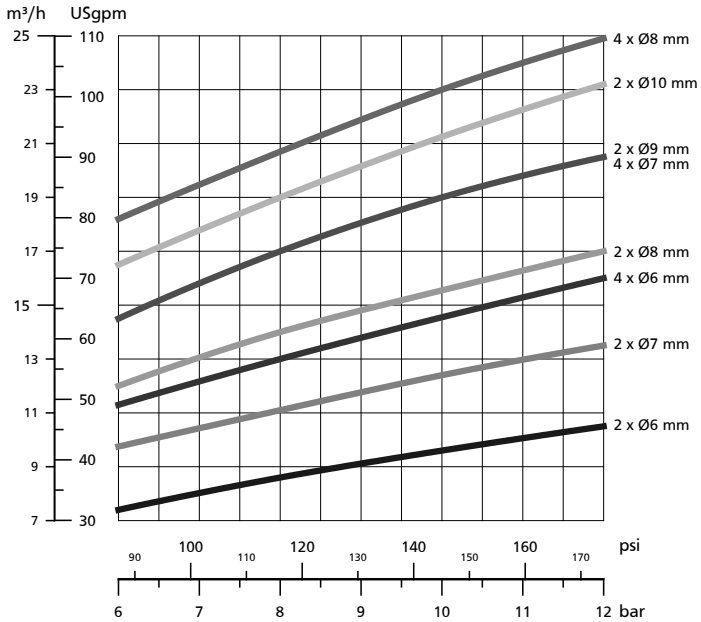


5. Performance Data

Performance data: The table below shows the flow and effective jet length (radius) for each combination of inlet pressure and nozzle diameter. Other nozzles and maximum jet length available upon request.

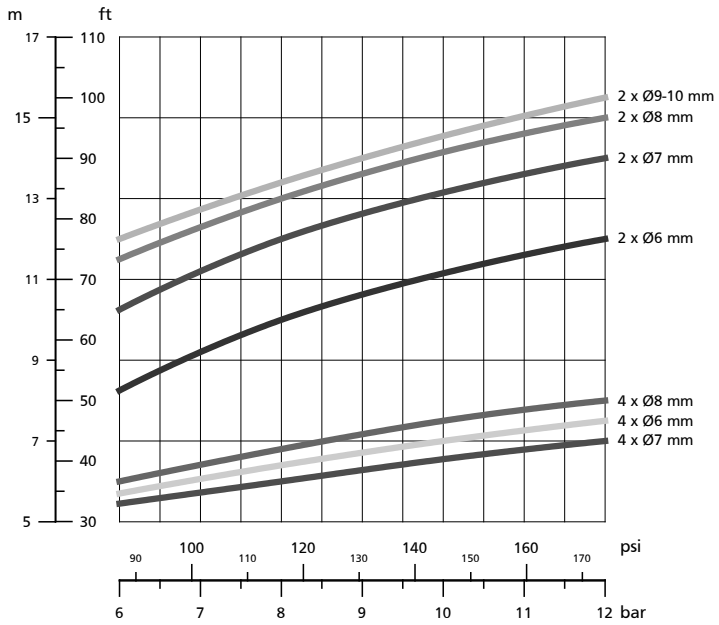
SC 15TW								
Supply pressure MPa (Bar)								
Nozzle size	0,6 (6)		0,8 (8)		1,0 (10)		1,2 (12)	
	Flow [m ³ /h]	Jet length [m]	Flow [m ³ /h]	Jet length [m]	Flow [m ³ /h]	Jet length [m]	Flow [m ³ /h]	Jet length [m]
2 x Ø6mm	7,5	8	8,5	10	9,5	11	10,5	12
2 x Ø7mm	10	10	11	12	12,5	13	13,5	14
2 x Ø8mm	12	12	14	13	15,5	14	17	15
2 x Ø9mm	14,5	12	17	13	19	14	20,5	16
2 x Ø10mm	16,5	12	19	13	21	14	23,5	16
4 x Ø6mm	11,3	5,5	13	6	14,6	7	16	7,5
4 x Ø7mm	14,5	5,5	17	6	19	6,5	20,5	7
4 x Ø8mm	18,2	6	20,7	6,5	23	7,5	24,9	8

Flow versus pressure



Inlet pressure has been measured at machine inlet. In order to achieve the performance indicated in the curves the pressure drop in supply lines must be taken into consideration.

Jet Length





6. Installation Instructions

General Installation Instructions: The Scanjet SC 15TW cleaning machine should be installed in vertical position (upright or inverted).

Filtration: It is recommended to install a filter in the supply line in order to avoid large particles lodging inside the machine. The portable SC 15TW is fitted with strainers at the inlet. Before connecting the machine into the system, all supply lines and valves should be flushed to remove foreign matter.

Cleaning Media: Only media compatible with the materials listed on the reference list of parts for your model should be used, see "4. Technical Data" on page 7.

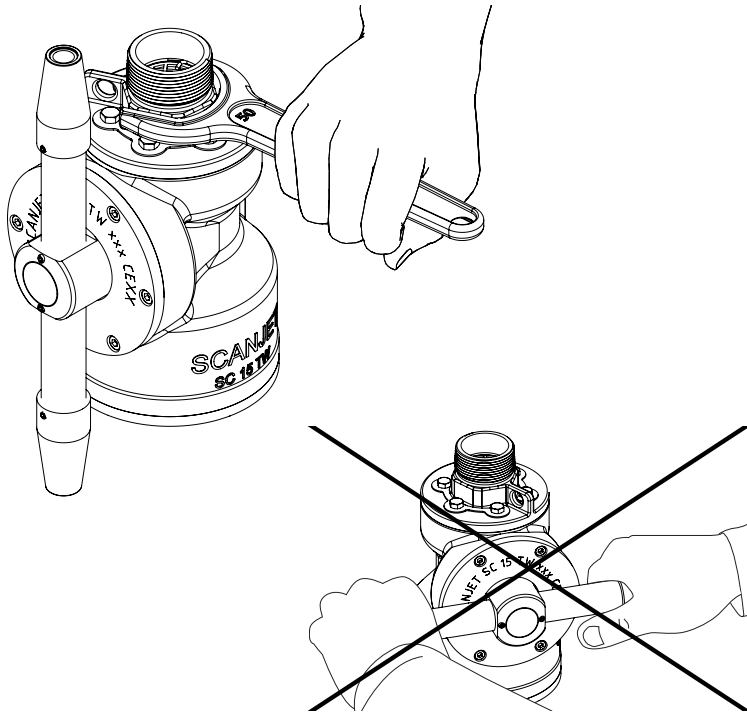
After Use Cleaning: Depending on the type of cleaning that is being performed and the type of cleaning solution used, a procedure for after use flushing of the cleaning system should be developed for your application. In general, a fresh water flush is recommended after each cleaning.

Pressure: Hydraulic shocks may damage the system. In order to avoid shocks increase pressure gradually from 0 to maximum operating pressure over 5-7 seconds. Do not exceed 14 Bar (200 PSI) inlet pressure. Higher pressure in combination with higher flow rates will increase consumption of wear parts.

WARNING! *If the machine is used in potentially explosive atmospheres then tapes or joint sealing compounds, which are electrical insulators, must not be used on threads or joints, unless an electrical connection is otherwise established to ensure an effective grounding. In addition, connection pipe work must be electrically conductive and grounded to the tank structure. This is important in order to avoid any build up of static electricity in the machine.*

6.1. Connecting to supply line and starting up

Never attach the Scanjet SC 15TW by grabbing the nozzles. Always use proper tools and turn on the threaded connection as shown in the picture below.



When threading the inlet connection of tank cleaning machine to the cleaning media connection, we recommend that Teflon tape or another appropriate anti-seizing compound is used to avoid metal galling. Galling means that threads clamp together and cannot easily be loosened.

Starting up

The machine will start automatically when there is a supply of cleaning media to the machine. The machine is self-lubricated by means of the cleaning media and self-draining through a hole in the bottom plate.



6.2. Calculation of Cleaning Time

Calculation of cleaning time for a full cycle

The cleaning time depends of the following:

Rotation speed of the main housing

A (rev./min.)

Number of rotations for full pattern

47 (turns)

Cleaning time

D (minutes)

Cleaning time **$D = \frac{47}{A}$ (min)**

Example 1: The main body rotates with 2,5 turns per minute (checked with a wristwatch when looking at the machine). How long time does it take to create a first cleaning pattern in the tank?

A = 2,5 rev/min

A first pattern is created **after 1 cycle!**

Cleaning time **$D = \frac{47}{2.5} = 4.7$ minutes**

Note that after an additional $4 \times 4.7 = 18.8$ minutes a full cleaning pattern will be created.

Example 2: Calculation of cleaning time for getting out a certain amount of cleaning media (prewash).

- The total flow **Q** (m³/h) through the nozzles at the specific pressure used is taken from the table in "5. Performance Data" on page 9. The total flow in the tank is then calculated by adding the flow from all machines used at the same time in the tank.

- Needed amount of washing media **R** (m³) calculated as per Prewash Regulations or other.

- The time **T** the machine must be in operation is then calculated as:

$$T = \frac{R \times 60}{Q} \text{ (min)}$$

Example 3:

- Prewash rules gives that 6 m³ of cleaning media should be used.

- We have a tank with two (2) machines, each with 2 x Ø10 mm nozzles, and will operate the tank cleaning machine at 12 bar pressure.

- How long time should we operate the machine?

Solution

Machine data at page 9 shows that at 12 bar and 10 mm nozzles will give a flow of 23,5 m³/h per machine. Total flow will then be calculated adding both machines giving a total flow in the tank of 47 m³/h.

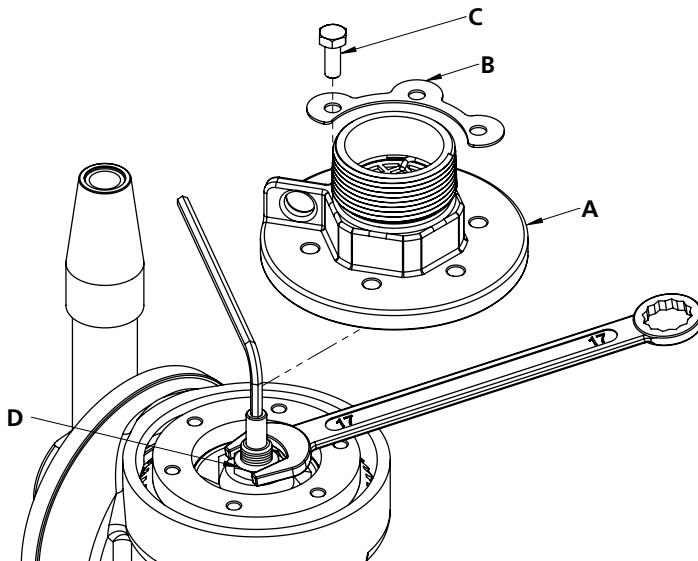
$$\text{Needed time } T = \frac{6 \times 60}{47} \sim 7.6 \text{ min}$$

6.3. Speed Adjustment

The rotating speed for the machine could be adjusted by changing the position of the conical turbine on its shaft. The speed will increase when lowering the turbine and vice versa.

To change the speed, please proceed as follows:

1. Remove the inlet flange (A) by unlocking the locking plate (B) and undoing the bolts (C)
2. Loosen the contra nut (D) with key No 17 and Allen key No 4.
3. Turn the turbine to desired position and lock the contra nut.
4. The correct speed should be between 2-4 rpm ideal is 2,5-3 rpm be careful not to screw the turbine too far down in the cone. This may cause the machine to stop because the turbine is touching the cone.



Basic settings for turbine

Set the upper edge of the turbine in level with the upper edge of the turbine cone. Then hold the turbine shaft fixed, as shown above, while **turning the turbine 2 revolutions up** and locking the contra nut.



7. Maintenance

7.1. Preventive Maintenance

In order to keep your Scanjet tank cleaning machine servicing you as an efficient tool in your tank cleaning operations, it is essential to care for maintenance. Following a simple maintenance program will keep your tank cleaning machine in good condition and the machine will maintain its high performance.

Good maintenance is careful and regular attention!

The following recommended preventive maintenance program is based on tank cleaning machines working in average conditions. However, a cleaning machine, which has a rough and dirty job to do, will need more frequent attention than one working in ideal conditions. It is recommended that the maintenance program is adjusted to suit such a situation.

Only use proper tools when servicing the machine; see chapter "17. Tool Kit" for Scanjet standard tool kit. Never use excessive force or hammer components together or apart. Always follow all assembly/disassembly steps in the order described in this manual. Never assemble components without previous cleaning; this is especially important at all mating surfaces. Work only in a clear well lighted working area.

Change of bearings is recommended every 250 working hours.

Change of gears is recommended every 500 working hours.

When re-tightening the screws/bolts use Loctite 243. For use of (any other) Loctite, read "7.5. Reassembly" on page 24.



7.2. Service Kits

Tank cleaning machines are installed and operated in extremely harsh conditions. In order to ensure continued safe operation of the Scanjet tank cleaning machines it is advised to follow given service instructions.

Scanjet has identified components which should be checked at regular intervals and replaced if necessary, because of wear or damage. This is important in order to avoid unplanned stops or breakdowns and to assure safe, smooth and trouble free operation of the tank cleaning machines. The components that may be subject to wear and need replacement have been included in service kits, naturally optimized for each specific model and type of Scanjet tank cleaning machine.

Service intervals are described on the following page.

Service kits are rapidly available and easy to order, as well as being more economical compared to ordering of parts individually.

The service kits are specified at page 38 and forward.

Scanjet part no.	Description
KIT 15TW-S-250-2	Wear kit for 250 hours service
KIT 15TW-S-500-2	Wear kit for 500 hours service
T 15	Scanjet basic tool kit including all necessary tools to service the machine



7.3. Service intervals

Every 250 working hours

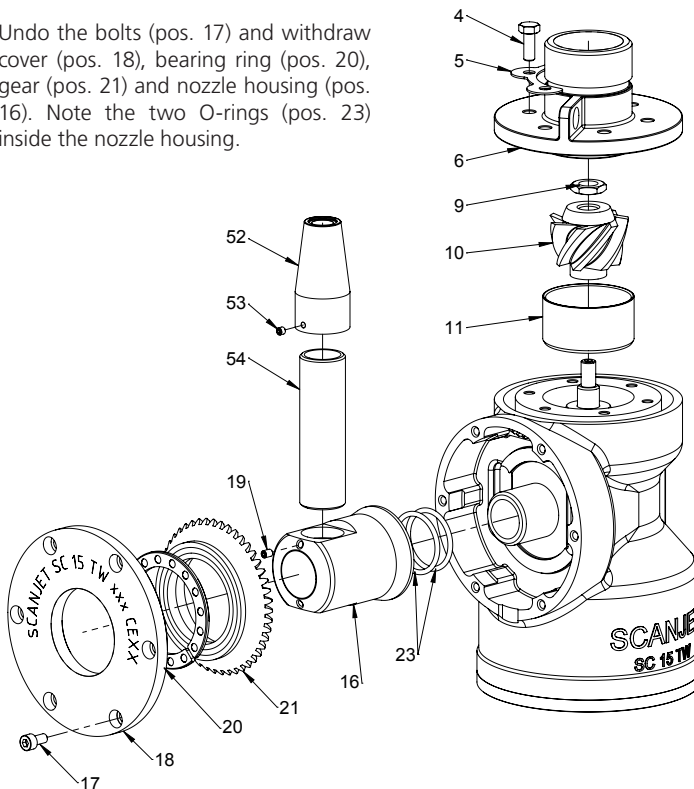
1. Order the service kit for 250-hours service "KIT 15TW-S-250-2".
2. Thoroughly flush the machine prior to disassembly and ensure that no particles remain in the machine.
3. Disassemble the machine as described on the following pages. For 250-hours service it is not required to disassembly the gear box if not needed.
4. Upon complete disassembly of the machine, all parts should be thoroughly washed and/or degreased in the appropriate manner, then inspected accordingly.
5. Inspect seals, bushings and gears for wear; locate position numbers from "10. Exploded Drawing View - SC 15TW" on page 28 and part number from "11. Spare Part List - SC 15TW" on page 29. Replace if unduly worn.
6. Reassemble the machine. A service card is included with this manual; see page 41. This should be completed each time service is performed on the tank cleaning machine so that a proper maintenance record/history is kept.

Every 500 working hours

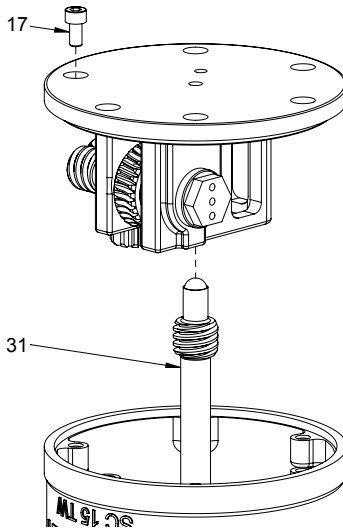
7. Order the service kit for 500-hours service "KIT 15TW-S-500-2".
8. Do the same inspection as for 250-hours but with a complete disassembly of the machine, including the gear box.
9. Replace the parts in the service kit. Check all parts for wear, replace if necessary.

7.4. Disassembly

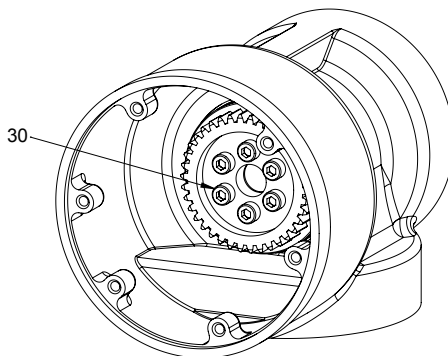
1. Use a sharp tool, e.g. a flat screwdriver, to unlock the locking plates (pos. 5) on the connection (pos. 6). Undo the bolts (pos. 4) and remove the connection.
2. Loosen the contra nut (pos. 9) with help of box wrench no. 17 and Allen key no. 4. Remove the turbine (pos. 10) and turbine cone (pos. 11).
3. Remove the nozzle tubes (pos. 54) by unlocking the stopscrews (pos. 19). If needed, withdraw the nozzles (pos. 52).
4. Undo the bolts (pos. 17) and withdraw nozzle cover (pos. 18), bearing ring (pos. 20), gear (pos. 21) and nozzle housing (pos. 16). Note the two O-rings (pos. 23) inside the nozzle housing.



5. Turn the machine upside down. Undo the bolts (pos. 17) in the bottom plate to remove the gearbox and the turbine shaft (pos. 31).



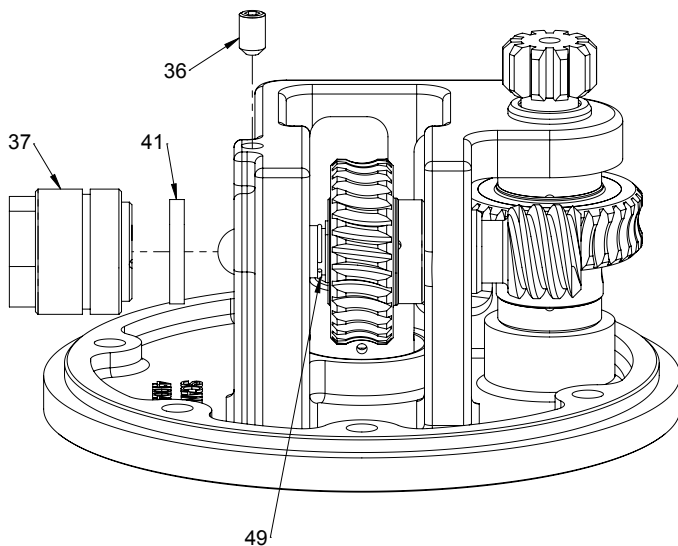
6. Undo the bolts (pos. 30) in the gear, which is also fixed in the stator, and then remove the gear, bearings and the stator.



7. Check all O-rings bearings and ball bearings for wear and change if needed.

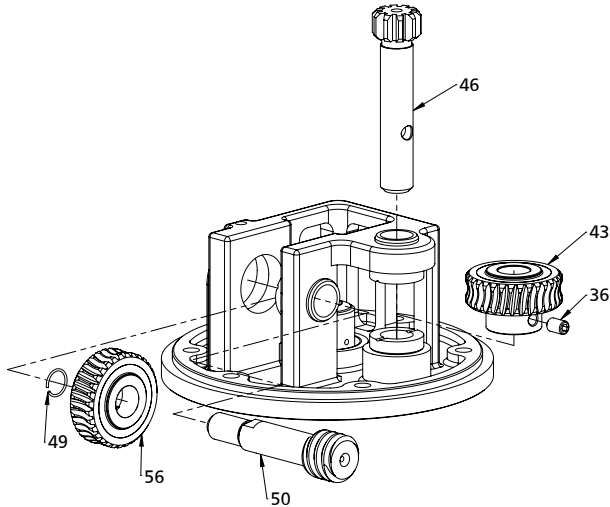
Gearbox

8. Undo the stopscrew (pos. 36), sleeve assembly (pos. 37) and remove washer (pos. 41).

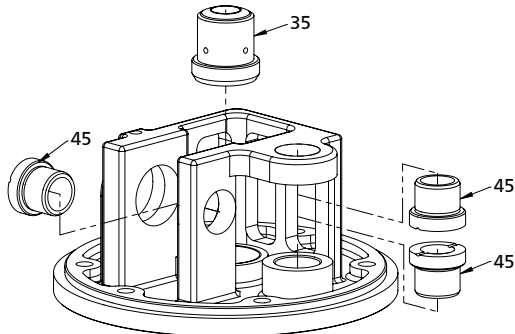


9. Remove the retaining ring (pos. 49) that is placed on the horizontal gear shaft next to the gear. This could be a bit difficult; a suggestion is to use two narrow screwdrivers.

10. Pull out the horizontal gear shaft (pos. 50) and gear (pos. 56), be careful not to damage the gear teeth.



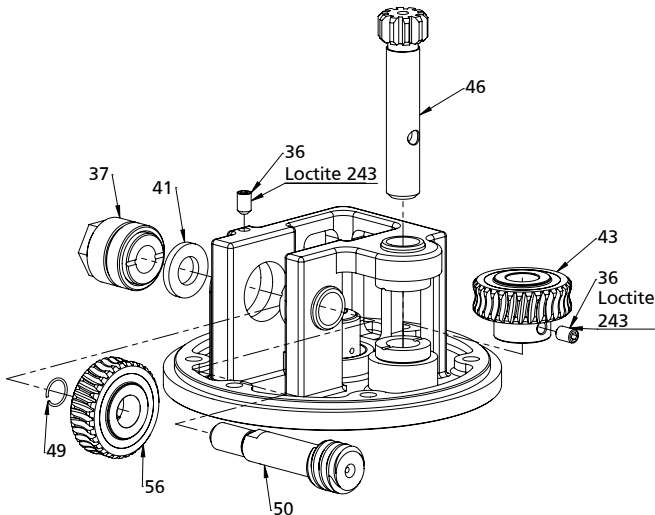
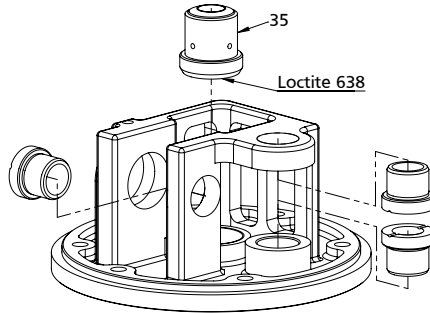
11. Undo the stop screw (pos. 36) to pull up the vertical gear shaft (pos. 46) and remove the gear (pos. 43).
12. If needed, change the bearings (pos. 35, 45) by carefully pressing out the bearings. Use a screwdriver (or similar) to carefully remove the sleeve in the middle (pos. 35) if needed



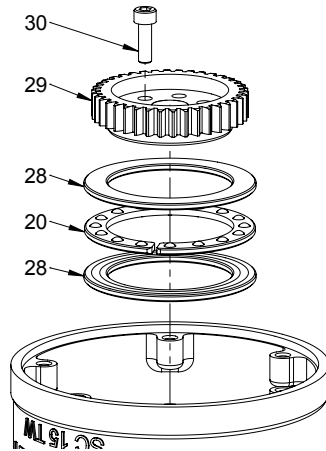
7.5. Reassembly

Gearbox

1. Start by putting together the gearbox, if the bearings have been changed carefully press them into places. Use Loctite 638 on bearing (pos. 35).
2. Be careful not to damage the gear teeth while mounting the gear and gear shafts. First assemble the vertical gear and gear shaft. Turn the gear and gear shaft to make the holes concentric. This enable the stopscrew to lock it properly. Use Loctite 243.
3. Assemble the horizontal gear shaft, place the gear upon it and lock with the retaining ring (pos. 49).
4. Mount the sleeve assembly by tightening it and then release $\frac{1}{2}$ turn. Use Loctite 243 on the stopscrew and lock it. Make sure the gearbox rotates freely.



5. Insert the stator, turn the machine upside down and place the bearings, gear and bolts, as shown on the picture, into the main housing. Tighten the bolts diagonally, use Loctite 243.
6. Assemble the turbine shaft, gearbox and bolts. Tighten the bolts (pos.17) diagonally, use Loctite 243.
7. Mount the nozzle housing, the gear, bearing and cover on the main housing. Tighten the bolts (pos. 17) diagonally, use Loctite 243.



8. Mount the nozzles and lock them with the stop screws. Use the Loctite 577 on all the threads on the nozzles and nozzle tubes, and Loctite 243 on the stop screws.
9. Insert the turbine cone and turbine. It is important to get the right speed on the turbine, check "6.3. Speed Adjustment" on page 16. Lock the turbine position with the contra nut.
10. Place the connection upon the housing and fasten the locking plates and bolts. Use Loctite 243. Bend up the corners of the locking plate to lock the bolts.
11. Testrun the machine to check that everything is working as it should.



8. Trouble Shooting Guide

Symptom: Tank cleaning machine will not clean

1. No or insufficient liquid flow.
 - a. Check fluid supply to ensure that pressure and flow as per the operating curves are being observed. For this to be properly accomplished, you should install a pressure gauge as close to the machine inlet as possible, not further from the tank cleaning machine than 4,5 m or 15 feet.
2. Tank cleaning machine inlet is blocked.
 - a. Check inlet of machine; position 6; and ensure that no debris or particles is present. Remember that it was advised earlier in this manual (page 12) to employ a filter in the supply line.
3. Tank cleaning nozzles are blocked.
 - a. Remove and dismantle the nozzles, position 52 and 54, and check for any foreign matter. If present, remove and then reassemble nozzles.

Symptom: Tank cleaning machine will not rotate

4. Bevel gears are blocked.
 - a. If foreign matter has entered the machine and passed through the body, it may have lodged itself in the bevel gears; position 13 and 21. To check these areas refer to "7.4. Disassembly" on page 20. Take care to review the gearing and ensure that there is no damage that could prevent operation.
5. Gearbox rotation is restricted.
 - a. If foreign matter has entered through the stator, position 8, it may have lodged itself in the gearbox; to perform an inspection see disassembly instructions.
6. Worn parts; replacements required.
 - a. After items 1-5 above have been checked; it may be necessary to replace parts due to normal wear associated with your type of operation (or possible damage). One of the best ways to determine the need to replace parts is a visual inspection of the primary wear parts as indicated on the list at "15. Service Kit Contents" on page 38.

Symptom: Tank cleaning machine runs with wrong speed

7. Check that the pressure and flow is correct.
8. Try changing the rotation speed by adjusting turbine as described on page 16.

9. How to Order Spare Parts

To order spare parts please contact our “Spare Parts Department” at eng@tankcleantech.com see contact information on page 2.

Scanjet has prepared Service kit due to regular maintenance, see “15. Service Kit Contents” on page 38 for further information.

Please note that each machine is marked at the housing as showed on fig below. When ordering spare parts the following data must be referred to for securing a correct and rapid delivery.

Company name: *Name*

Invoice address: *Customer name and address*

Contact person: *Customer responsible person*

Your order no:

Contact person: *Customer contact person*

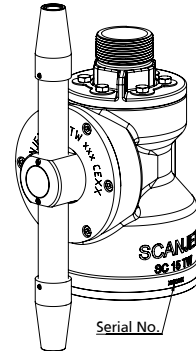
Mode of delivery: *By mail, courier etc.*

Shipping address:

Shipping mark: *Marking of delivery*

Serial no: *Serial numbers of machines*

Equipment model: *SC 15TW-SS, number of nozzles and nozzle size*

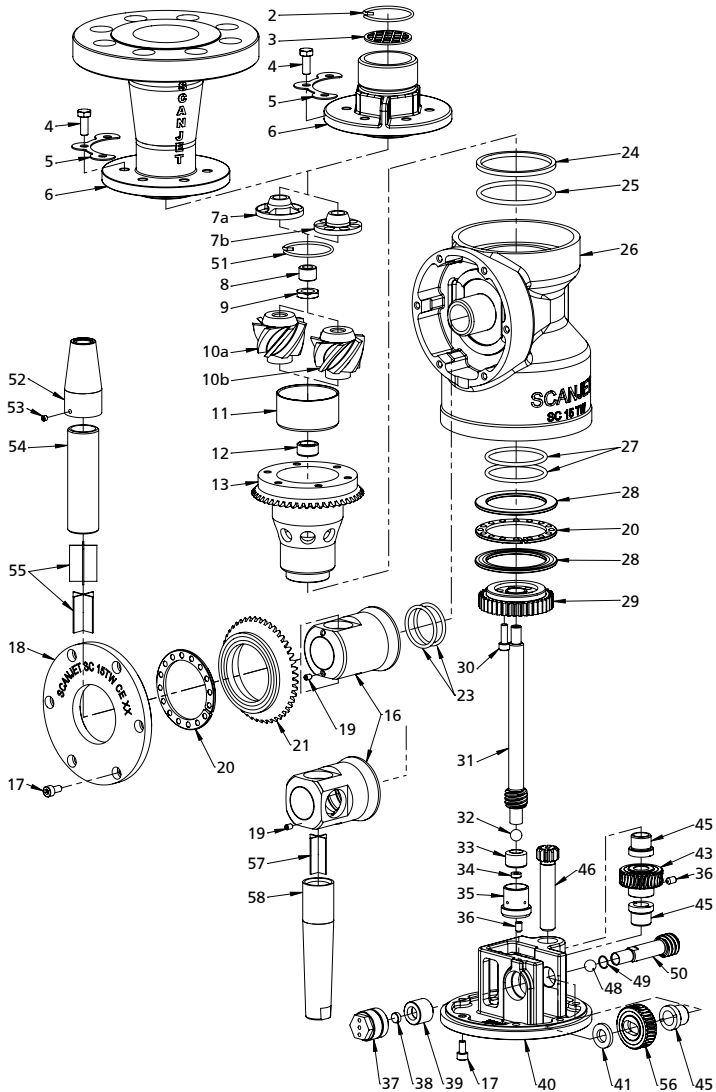


Spare Part List:

Pos.	Part No.	Qty.	Description
.....
.....
.....
.....
.....
.....
.....
.....

10. Exploded Drawing View - SC 15TW

List dated 2010-12-06





11. Spare Part List - SC 15TW

List dated 2010-12-06

NOTE! Spare parts number may be changed without prior notice. Final spare parts numbers will be issued for "ship set manual".

Depending on nozzle size there is some parts that differ. See chapter "14. Basic Settings" on page 34 for information about your specific settings.

Spare Part List - SC 15TW

Pos.	Part No.	Qty.	Description
2	41038	1	Retaining Ring
3	70068	1	Strainer
4	104443	6	Bolt
5	41043	2	Locking Plate
6	41007	1	Adapter
	41085-xx	1	Connection Adapter Optional See page 7
7a	41040	1	High Flow Stator (see basic settings)
7b	41027		Low Flow Stator (see basic settings)
8	41029	1	Bearing
9	41023	1	Nut
10a	41032-xx	1	Turbine T1 (see basic settings)
10b	41042-xx		Turbine T2 (see basic settings)
11	41018-xx	1	Turbine Cone (see basic settings)
12	41028	1	Bearing
13	41047	1	Stator
16a	41309-2S	1	Nozzle Housing 2 nozzles (see basic settings)
16b	41309-4S		Nozzle Housing 4 nozzles (see basic settings)
17	104725	12	Bolt
18	41056	1	Cover
19	105089	2	Bolt (see basic settings)
20	41030-x	2	Ball Bearing (-2 for chemical tankers)
21	41048	1	Gear
23	110415	2	O-ring (see basic settings)
24	110471	1	O-ring
25	110440	1	O-ring
26	41055	1	Housing SC15TW

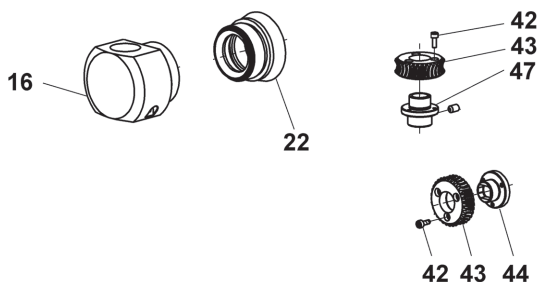


Spare Part List - SC 15TW

Pos.	Part No.	Qty.	Description
27	110425	2	O-ring
28	41025	2	Bearing Ring
29	41017	1	Gear
30	104728	6	Bolt
31	41045	1	Turbine Shaft (Including pos. 32)
32		1	Precision ball (Order pos. 31)
33		1	Bearing (Order pos. 35)
34		1	Bearing (Order pos. 35)
35	40062	1	Sleeve (Including pos 33, 34)
36	105096	2	Bolt
37	40099	1	Sleeve (Including pos 38, 39)
38		1	Bearing (Order pos. 37)
39		1	Bearing (Order pos. 37)
40	41004	1	Bottom Plate
41	41034	1	Washer
43	25312-1	1	Gear
45	41026	3	Bearing
46	41016	1	Gear shaft
48		1	Precision Ball (Order pos. 50)
49	120319	1	Ring
50	41046	1	Gear (Including pos. 48)
51	41038	1	Retaining Ring
52	50155-xx	2	Nozzle – xx is nozzle diameter (see basic settings)
53	105087	2	Bolt (see basic settings)
54	50156-085-S	2	Nozzle tube (see basic settings)
55	50158	4	Flow Guide
56	25312-2	1	Gear
57	70071	4	Flow Guide (see basic settings)
58	41037-xx	4	Nozzle – xx is nozzle diameter(see basic settings)

12. Spare Parts - Old versions

List dated 2010-12-06



Spare Part List SC15TW - Old versions

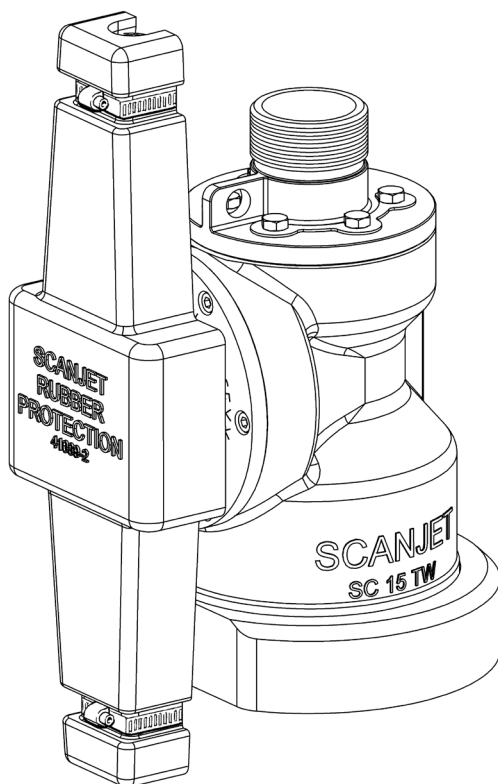
Pos.	Part No.	Qty.	Description	Replaced by:
16	41009-x	1	Nozzle Housing	41309-xx (Pos. 16x)
22	41051	1	Sleeve	
42	104704	6	Screw	
43	41012	2	Gear	(Pos. 43 or 56)
44	41031	1	Sleeve	25312-2 (Pos. 56)
47	41015	1	Sleeve	25312-1 (Pos. 43)

13. Optional Accessories

Scanjet is able to supply some optional accessories for the machine with 2 nozzles that might be included in your delivery; these can also be ordered afterwards.

Rubber Bumper

This is a system to protect the tank wall and deck coating from damage if the machine is hanging from a rubber hose in rough sea. It also protects against sparks when handling and operating the machine. It consists of two rubber protections that cover the nozzle and the bottom of the machine.

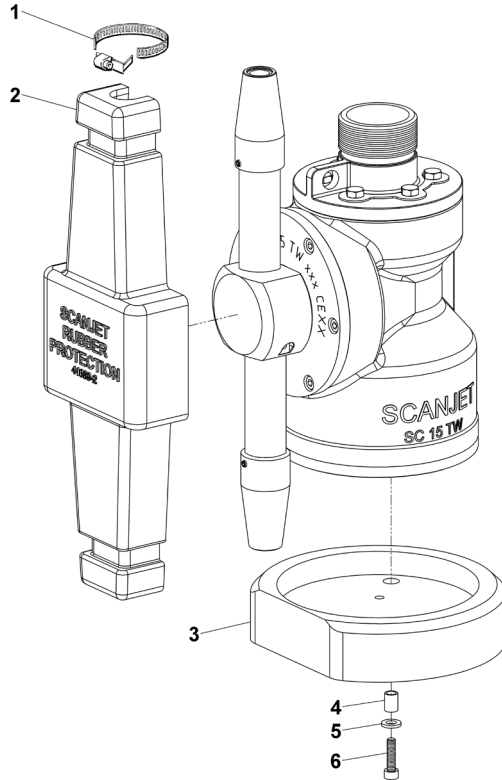


SC15TW

Rubber Protection

Exploded drawing view for optional Rubber bumper

This kit can be ordered as part no. "RB 15"



Spare Part List - Rubber Bumper

Pos.	Part No.	Qty.	Description
1	40071	2	Hose clamp
2	41089-2	1	Rubber protection
3	41084	1	Rubber bumper bottom
4	41082	3	Pipe
5	106105	3	Washer
6	120426	3	Bolt

14. Basic Settings

This lists serves as guidance for ordering spare parts depending on the number and size of the nozzles on the machine. This list may be changed without prior notice.

14.1. SC 15TW - 2 nozzles

Nozzle size Ø6 mm

Pos.	Part No.	Qty.	Description
7a	41040	1	High Flow Stator
10b	41042-35	1	Turbine T2 Ø35
11	41018-35	1	Turbine Cone Ø35
16	41309-2S	1	Nozzle Housing
19	105089	2	Bolt
23	110415	2	O-ring
52	50155-06	2	Nozzle Ø6
53	105087	2	Bolt
54	50156-085-S	2	Nozzle Tube
55	50158	4	Flow Guide

Nozzle size Ø7 mm

Pos.	Part No.	Qty.	Description
7a	41040	1	High Flow Stator
10b	41042-35	1	Turbine T2 Ø35
11	41018-38	1	Turbine Cone Ø38
16	41309-2S	1	Nozzle Housing
19	105089	2	Bolt
23	110415	2	O-ring
52	50155-07	2	Nozzle Ø7
53	105087	2	Bolt
54	50156-085-S	2	Nozzle Tube
55	50158	4	Flow Guide

14.1. SC 15TW - 2 nozzles

Nozzle size Ø8 mm

Pos.	Part No.	Qty.	Description
7a	41040	1	High Flow Stator
10b	41042-35	1	Turbine T2 Ø35
11	41018-38	1	Turbine Cone Ø38
16	41309-2S	1	Nozzle Housing
19	105089	2	Bolt
23	110415	2	O-ring
52	50155-08	2	Nozzle Ø8
53	105087	2	Bolt
54	50156-085-S	2	Nozzle Tube
55	50158	4	Flow Guide

Nozzle size Ø9 mm

Pos.	Part No.	Qty.	Description
7a	41040	1	High Flow Stator
10b	41032-35	1	Turbine T1 Ø35
11	41018-35	1	Turbine Cone Ø35
16	41309-2S	1	Nozzle Housing
19	105089	2	Bolt
23	110415	2	O-ring
52	50155-09	2	Nozzle Ø9
53	105087	2	Bolt
54	50156-085-S	2	Nozzle Tube
55	50158	4	Flow Guide

14.1. SC 15TW - 2 nozzles

Nozzle size Ø10 mm

Pos.	Part No.	Qty.	Description
7a	41040	1	High Flow Stator
10b	41032-35	1	Turbine T1 Ø35
11	41018-35	1	Turbine Cone Ø35
16	41309-2S	1	Nozzle Housing
19	105089	2	Bolt
23	110415	2	O-ring
52	50155-10	2	Nozzle Ø10
53	105087	2	Bolt
54	50156-085-S	2	Nozzle Tube
55	50158	4	Flow Guide

14.2. SC 15TW - 4 nozzles

Nozzle size Ø6 mm

Pos.	Part No.	Qty.	Description
7a	41040	1	High Flow Stator
10b	41042-35	1	Turbine T2 Ø35
11	41018-38	1	Turbine Cone Ø38
16	41309-4S	1	Nozzle Housing
19	105089	4	Bolt
23	110415	2	O-ring
57	70071	4	Flow Guide
58	41037-06	4	Nozzle Ø6

Nozzle size Ø7 mm

Pos.	Part No.	Qty.	Description
7a	41040	1	High Flow Stator
10b	41042-35	1	Turbine T2 Ø35
11	41018-38	1	Turbine Cone Ø38
16	41309-4S	1	Nozzle Housing
19	105089	4	Bolt
23	110415	2	O-ring
57	70071	4	Flow Guide
58	41037-07	4	Nozzle Ø7

Nozzle size Ø8 mm

Pos.	Part No.	Qty.	Description
7a	41040	1	High Flow Stator
10b	41042-35	1	Turbine T2 Ø35
11	41018-38	1	Turbine Cone Ø38
16	41309-4S	1	Nozzle Housing
19	105089	4	Bolt
23	110415	2	O-ring
57	70071	4	Flow Guide
58	41037-08	4	Nozzle Ø8



15. Service Kit Contents

Service kits are rapidly available and easy to order, as well as being more economical compared to ordering of parts individually. This list is a guide when ordering service kits, containing the spare parts included in each kit. This list may be changed without prior notice.

KIT 15TW-S-250-2

Service Kit 250-hours

Pos.	Part No.	Qty.	Description
4	104443	3	Bolt
5	41043	2	Locking Plate
17	104725	5	Bolt
23	110415	1	O-Ring
24	110471	1	O-Ring
25	110440	1	O-Ring
27	110425	2	O-Ring

KIT 15TW-S-500-2

Service Kit 500-hours

Pos.	Part No.	Qty.	Description
4	104443	6	Bolt
5	41043	2	Locking Plate
12	41028	1	Bearing
17	104725	12	Bolt
20	41030-2	2	Ball Bearing
23	110415	2	O-Ring
24	110471	1	O-Ring
25	110440	1	O-Ring
27	110425	2	O-Ring
28	41025	2	Bearing Ring
30	104728	6	Bolt
35	40062	1	Sleeve Assembly (Including pos. 33, 34)
45	41026	3	Bearing
49	120319	1	Ring
50	41046	1	Gear Assembly (Incl. pos. 48)
56	25312-2	1	Gear



16. Spare Part Kit

Spare part kit SC 15TW

This spare part kit can also be ordered as Scanjet part no. S 15-S

Pos.	Part No.	Qty.	Description	Material
4	104443	3	Bolt	SS
8	41029	1	Bearing	Peek
12	41028	1	Bearing	Peek
17	104725	3	Bolt	SS
20	41030-2	2	Ball bearing	PTFE / SS
23	110415	1	O-Ring	PTFE
25	110440	1	O-Ring	PTFE
27	110425	1	O-Ring	PTFE
45	41026	1	Bearing	Peek

17. Tool Kit

For normal maintenance and operation the following tools are included in Scanjet tool kit:

This tool kit can also be ordered as Scanjet part no. T 15

Pos.	Part no.	Qty.	Description
------	----------	------	-------------

1	12030	1	Box wrench 10 mm
---	-------	---	------------------

2	12044	1	Box wrench 17 mm
---	-------	---	------------------



3	12046	1	Box wrench 19 mm
---	-------	---	------------------

4	12060	1	Set of Allen Keys
---	-------	---	-------------------



A machine ordered for portable installation is always equipped with a spanner for mounting the machine on the supply line when delivered, see "6.1. Connecting to supply line and starting up" on page 13. The spanner can be ordered as Scanjet part no. 95145-50





Date	No. of working hours	Maintenance Actions/Exchanged Parts	Sign



- World's Leading Producer of Tank Cleaning Equipment

Scanjet designs and produces portable and stationary tank cleaning equipment to match any marine, offshore or industrial demand for an efficient and environmentally friendly installation.

Using the most modern and efficient tank cleaning technology ensures that our clients will receive a Scanjet tank cleaning machine with maximum performance and quality to last for many years.

Our business mission is to continuously co-operate directly with our clients offering economical solutions and high quality range of products to assist our clients.

Contact details for all countries are continuously updated on our website. Please visit www.scanjet.se for more information or www.tankcleantech.com in North America.
