

OPERATION MANUAL

INTERNAL PIPE COATER IPC-900 (PART NO. 0281-001)

1. INTRODUCTION

IPC Pipe Coater is designed to coat the inside of pipe or tubing. The machine having a rotating head powered by an air motor, throws paint by centrifugal force at an even paint film thickness in the pipe. The IPC Pipe Coater is manually pulled through the pipe at a pre-determined speed based on paint film thickness and type of coating.

Generally, any type of coating may be used in this tool that can be airless sprayed. To obtain the best possible production, one man should operate the Paint Spray Gun while another man pulls the tool through the pipe or tubing.

1.1 NOTE:

BE SURE TO CHECK WITH THE COATING MANUFACTURER OR SUPPLIER ON THE SIZE SPRAY TIP TO BE USED FOR APPLYING THE TYPE OF COATING SPECIFIED.

SPRAY TIP SIZES USED ON IPC PIPE COATER ARE NORMALLY LARGER THAN TIP SIZES USED FOR HAND SPRAYING APPLICATIONS.

IMPROPER SPRAY TIP MAY AFFECT SPEED AND PAINT THICKNESS. THE IPC-900 PIPE COATER IS SUPPLIED WITH TN-SSTC-6 (1.1mm) SPRAYTIP AS STANDARD.

ANY NORMAL AIRLESS PAINT SPRAY PUMP MAY BE USED WITH THE IPC PIPE COATER. HOWEVER, THE MINIMUM PRESSURE RATIO SHOULD BE 30:1. FOR BEST RESULTS, USE AN AIRLESS PUMP WITH A RATIO OF 45:1 AND A CAPACITY OF 2.5 U.S. GALLONS PER MINUTE. SPRAY TIP IS LOCATED IN PAINT FEED TUBE ASSEMBLY ON THE IPC PIPE COATER. (POS.25)

1.2 Air requirement for Pipe Coater is (200 liter/min at 7 bar) Speed/Rpm: 22,000

IPC-900 Pipe Coater has spraying head with diameter of 69mm and is designed for coating inner diameters from 12" to 35" (300mm-900mm)

1.3 SAFETY WARNINGS

IMPORTANT WARNING

**HIGH PRESSURE DEVICE CAN CAUSE SERIOUS INJURY.
SAFETY PRECAUTIONS SHOULD BE TAKEN WHILE SERVICING OR
OPERATING HIGH PRESSURE EQUIPMENT.**

- A. Before operating any part of the IPC Pipe Coater system, be sure to check all fittings and connectors for tightness. Immediately replace any damaged or worn parts.
- B. Use only high-pressure hose and fittings designed for use with this equipment. Do not substitute any parts as it will void warranty and may be unfit for this application.
- C. Never exceed specified airless pump or compressed air pressures.
- D. Keep hands clear of centering legs to prevent injury.
- E. Before making any adjustments, repairs, etc., shut-off airless pump and air compressor. Release fluid pressure from all lines.
- F. If disassembled from system, **never point paint spray gun at any person**. The high velocity paint is dangerous.
- G. Always engage spray gun safety lever when gun is not in use.
- H. Refer to Airless Pump Instruction Sheet for additional safety precautions.
- I. Always maintain a distance of 10 feet from rotating head while paint is following.

2. INSTALATION

- 2.1 Connect high pressure paint hose to spray gun connector and to Pipe Coater paint hose fitting. Check that correct spray tip is in place and the in-line strainer is clean and in good condition. Tighten all high-pressure paint hose fittings with a wrench.
- 2.2 Attach Air Supply Hose to Pipe Coater air inlet. Hose is purchased separately in lengths to suit specific applications. Various lengths may be connected together to obtain desired overall length. Airless spray pump performance and paint hose distance capability must be considered with regard to pressure drop in paint hose.
- 2.3 Regulation of air pressure and air flow is not included in the IPC-900 Pipe Coater package and must be arranged separately by customer.
- 2.4 Connect high pressure paint hose from airless pump spray gun. Follow airless pump manufactures instructions on setting up spray pump. Check all connections for tightness.

IMPORTANT WARNING

**TURN ON AIR COMPRESSOR AND CHECK PRESSURE.
DO NOT EXCEED 100 PSI (7 BAR)**

- 2.5 Connect high pressure hose from the spray gun to Pipe Coater unit.
- 2.6 Unit is now ready for test and operation. Desired quality and thickness of coating must be achieved by trial & error method. Vary with air supply (head rotating speed), retraction speed, and paint outlet pressure or flow control tip to achieve desired quality. Operation is explained in next chapter.

3. OPERATION

Before starting actual painting, it is advisable to operate the IPC Pipe Coater without paint in order to become familiar with the handling of the unit.

IMPORTANT WARNING

**IT IS VERY IMPORTANT THAT THE PAINT TUBE (pos. 11-21) ARE CLEAN
BEFORE USE.
THE FLUID MUST BE ABLE TO FLOW FREELY THROUGH THE PAINT HOSE
(pos. 11-21).**

- 3.1 Turn on the air supply to check the spin of the rotating head and turn off again.
- 3.2 Set the Carriage to the correct diameter size. It may be necessary to choose the diameter a bit smaller than the actual pipe diameter to be able to smoothly retract when approaching bends or protrusions in pipe.
- 3.3 At this point, airless spray pump should be checked for tight fittings and proper pressure settings.
- 3.4 Before inserting IPC Pipe Coater into pipe, position rotating head inside a container and squeeze spray gun trigger. When satisfied with the flow, pipe spraying may begin.
- 3.5 Check pipe interior to ensure that it is clean and ready for coating.
- 3.6 Insert IPC Pipe Coater into pipe and check proper positioning of legs when using IPC-900 model. Push IPC Pipe Coater through pipe until rotating head is flush with the pipe edge on the opposite end. Always pull IPC Pipe Coater through pipe. Avoid pushing tool back as carriage wheels will damage wet coating. Re-check carriage to be sure carriage can be pulled at a smooth and steady rate.

- 3.7 Turn on air supply to spin rotating head. Squeeze spray gun trigger to begin paint flow. Release trigger immediately if carriage movement is interrupted. It is critical that the operator pulling the Pipe Coater hose move the tool through pipe at even rate to avoid excessive paint thickness.

Speed of tool movement varies with pipe diameters. Small pipes can be painted faster than larger pipes. If two or more coats are desired, allow each coat to dry sufficiently prior to applying the next coat. Refer to paint manufacturer's instructions for accurate drying time.

- 3.8 At the exit end of pipe, furnish a shield to capture overspray as tool leaves the pipe. Use extreme care when removing Pipe Coater from end of pipe. Be sure no one is within 10 feet of rotating head except the operator. Release spray gun trigger and shut-off air supply to rotating head when tool is removed from pipe.
- 3.9 Turn off air compressor and relieve all fluid pressure from the system including airless spray pump.

4. MAINTENANCE

- 4.1 When painting is finished, promptly clean the IPC Pipe Coater carefully. Do not allow paint to dry in any of the internal IPC Pipe Coater or spray gun parts. Place rotating head in a container and run solution through paint hose. Also turn on air supply for rotating head to allow solvent to flush out spray gun, paint hose, spray tip and rotating head. When clear solvent is evident on the rotating head, tool has been cleaned sufficiently. Use only cleaning solvents that are recommended by paint manufacturer.

IMPORTANT WARNING

**NEVER SUBMERGE PIPECOATER TOOLS IN ANY TYPE OF SOLVENT.
DAMAGE WILL OCCUR TO GASKET AND SEALS.**

- 4.2 Remove strainer housing, disassemble and clean strainer with solvent. Never allow paint dry anywhere in the system.
- 4.3 Remove rotating head and clean internal cavity of disc with solvent. Any build up of paint will have an adverse effect on uniform paint flow.
- 4.4 Lubrication of the IPC Pipe Coater is important. Daily, supply 5 to 10 drops of lightweight oil through the air inlet on the IPC Pipe Coater. If air compressor is fitted with an oil mist lubricator, be sure the oil cup is full of lightweight oil (SAE10, Mobile Spindle Oil no1, Shell Spindle Oil 60 or equivalent).
- 4.5 Follow manufactures instructions on cleaning airless spray pump.

5 TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
Rotating head does not spin when air is applied.		<p>Check air supply is connected to IPC Pipe Coater.</p> <p>Check that location of paint tube or other obstacles are not preventing head rotation.</p> <p>Check air supply pressure (600 liter/min at 7 bar).</p>
Rotating head does not spin by hand.	Air motor seized due to lack of lubrication.	Disassemble IPC Pipe Coater tool and replace or service air motor.
Rotating head spins too slowly.		<p>Check air supply capacity (600 liter/min at 7 bar).</p> <p>Check air supply hose for damage. Replace if necessary.</p>
No paint flow from rotating head.		<p>Check rotating head, spray tip orifice, strainer, high pressure paint hose and spray gun for blockages. Also if paint has been allowed to dry on interior parts, disassembly / cleaning / replacement and re-assembly may be necessary.</p> <p>Check if airless spray pump is operating correctly. Follow separate manufacturers instructions.</p>
Insufficient paint flow from rotating head.		<p>Pressure ratio / Volume output of airless pump too low. Adjust pressure input to spray pump and use correctly sized airless spray pump.</p> <p>Spray tip may be sized too small for type of coating used.</p>
Insufficient paint deposit on pipe internal.	Speed of pull of Pipe Coater through pipe too fast.	Try slower pull rate.
Too much paint deposit on pipe internal, resulting in paint running to bottom of pipe internal.	Speed of pull through pipe too slow.	<p>Try faster pull rate.</p> <p>Spray tip size too large for type of coating used.</p> <p>Spray tip worn, disassemble and replace.</p> <p>Too high pressure setting on airless pump. Reduce air input pressure to pump to reduce paint output pressure.</p>
Air leakage on air control hose couplings.		Replace O-ring seals on air control hose.

PART LIST MANUAL

INTERNAL PIPE COATER IPC-900 (PART NO. 0281-001)

FINE SPRAY NOZZLES

PERFORMANCE DATA

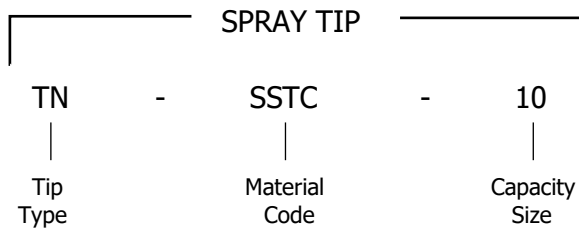
TN-SSTC

Nozzle Inlet Conn. NPT or BSPT (in.)	Capacity Size	Orifice Dia. Nom. (mm)	Capacity* (liters per minute)					Approx. ** Spray Pattern Diameter (at 30 cm distance) (mm)
			30 bar	50 bar	70 bar	100 bar	140 bar	
1/4	.60	.41	.12	.16	.19	.23	.27	7.6
	.80	.34	.17	.21	.25	.30	.36	7.6
	.90	.41	.19	.24	.29	.34	.40	7.6
	1	.51	.21	.27	.32	.38	.45	8.9
	1.5	.51	.31	.40	.48	.57	.67	8.9
	1.8	.68	.37	.48	.57	.68	.81	11.4
	2	.71	.42	.54	.64	.76	.90	11.4
	3	.71	.62	.81	.95	1.1	1.3	15.2
	4	1.1	.83	1.1	1.3	1.5	1.8	20.3
	6	1.1	1.2	1.6	1.9	2.3	2.7	25.4
	8	1.5	1.7	2.1	2.5	3.0	3.6	30.5
	9	1.5	1.9	2.4	2.9	3.4	4.0	35.6
	10	1.6	2.1	2.7	3.2	3.8	4.5	40.6
	12	1.9	2.5	3.2	3.8	4.6	5.4	45.7
	14	1.9	2.9	3.8	4.4	5.3	6.3	35.6
	15	2.1	3.1	4.0	4.8	5.7	6.7	40.6
	16	2.2	3.3	4.3	5.1	6.1	7.2	45.7
	18	1.9	3.7	4.8	5.7	6.8	8.1	40.6
	20	2.1	4.2	5.4	6.4	7.6	9.0	45.7
	22	1.9	4.6	5.9	7.0	8.4	9.9	30.5
	24	2.1	5.0	6.4	7.6	9.1	10.8	33
	26	2.2	5.4	7.9	8.3	9.9	11.7	35.6

* Tabulated capacities are based on water.

** Spray pattern diameter is based on liquid with viscosity of 20 seconds #4 Zahn Cup spraying at 1600 psi (110 bar).
Coverage will vary with viscosities and pressures.

ORDERING INFO

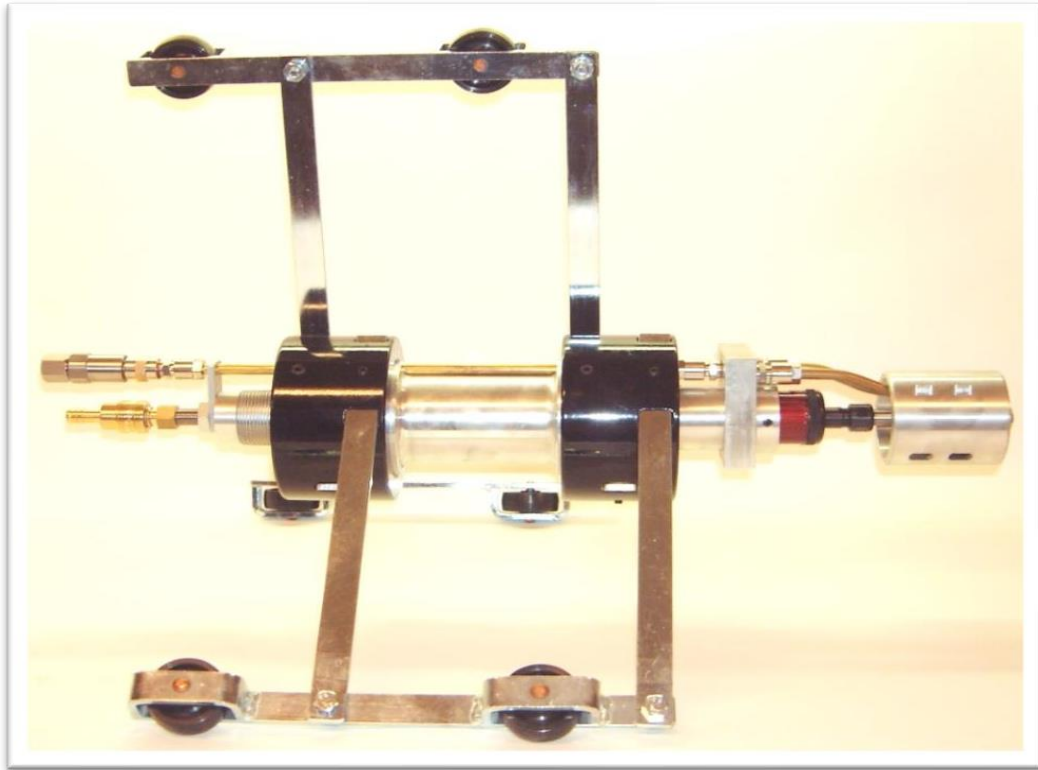


Most common Tip Size including article number are:

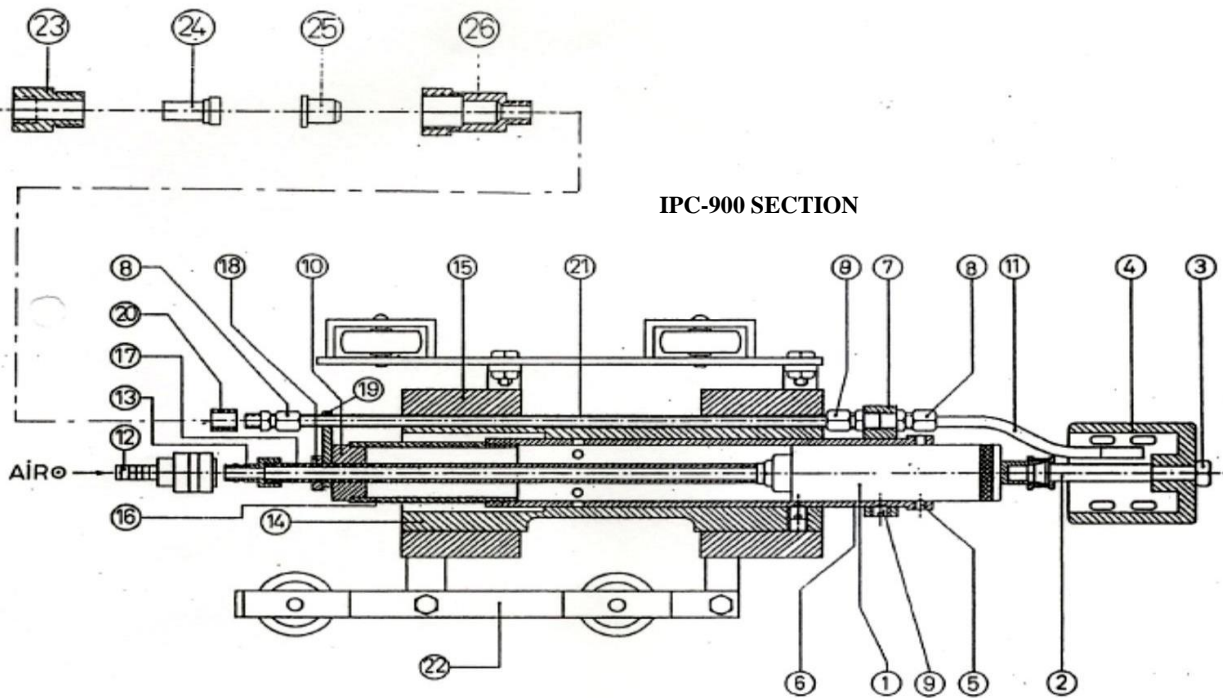
Article number	Tip Type	Material Code	Capacity Size	Orifice dia. nom. (mm)
0253-099	TN	- SSTC	- .90	(0.41 mm)
0253-100	TN	- SSTC	- 1.5	(0.51 mm)
0253-102	TN	- SSTC	- 2	(0.71 mm)
0253-106	TN	- SSTC	- 6	(1.10 mm)
0253-108	TN	- SSTC	- 8	(1.50 mm)
0253-110	TN	- SSTC	- 10	(1.60 mm)
0253-112	TN	- SSTC	- 12	(1.90 mm)
0253-114	TN	- SSTC	- 14	(1.90 mm)
0253-115	TN	- SSTC	- 15	(2.10 mm)
0253-116	TN	- SSTC	- 16	(2.20 mm)
0253-118	TN	- SSTC	- 18	(1.90 mm)
0253-126	TN	- SSTC	- 26	(2.20 mm)

For spray pattern, refer to table under the Performance data.

Internal Pipe Coater IPC-900 (PN 0281-001)



Tip Holder special



Internal Pipe Coater IPC-900 (PN 0281-001)
Part List: 12" – 35" ID (Ø 300mm - Ø 900mm)

Item	Description	Article No.
1	Air Motor	0283-001
2	Axle	0283-002
3	Nut (M10)	0283-003
4	Rotating Head (Ø69mm)	0283-004
5	Bolt (M6 x 8)	0283-005
6	Aluminium Housing	0283-006
7	Inlet Housing	0283-007
8	Coupling (1/4" x 8mm)	0283-008
9	Bolt (M10 x 10)	0283-009
10	Rear End Plate 38mm	0283-010
11	Paint Tube	0283-011
12	Quick Coupling	0283-012
13	Nipple	0283-013
14	Bushing	0283-014
15	Centering Collar	0283-015
16	Protection Sleeve	0283-016
17	Tube St. Steel (1/4" x 300mm)	0283-017
18	Nut (1/4")	0283-018
19	Aluminium tube holder	0283-019
20	Nut (1/4")	0283-020
21	Paint Tube Brass (330mm)	0283-021
22	Arms with Wheels	0283-022
23	Filter Holder	0283-023
24	Tip Filter (100 mesh)	0283-024
25	TN-SSTC-6 Tip (1.1mm)	0253-106
26	Tip Holder	0283-026