

Tube Cleaner Machine & Tools





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• Economy Type Tube Cleaner~ TCM-V1(Dry Type) Functions & Features

This Second generation of tube cleaner
Is also an electrical driven tube cleaning machine
And is specially designed for cleaning a boiler
Straight tube, chillers, condensers, evaporators,
Absorption machines and heat exchanger, this
Electrical driven cleaning machine is suitable
For tubes size is between 1.1/4" ~ 4" internal diameter.



Description

The Model TCM-V1 is a machines that removal of scale from evaporator tubes can be an irksome and very tiring task ,as well as being costly ,but is one which is essential for the efficient running and operation of every palm oil mill and general industrial .the job needs to be done quickly and effectively ,at the lowest possible cost while at the same time damage to the tube walls must be avoided. Tube cleaning equipment is in operation in most sugar producing countries of the world and is a popular acquisition .it is backed by more than 60 years of field experience .

Tools and Type

The latest, very comprehensive range of tools and equipment is range tools and equipment is available for all tube bore diameters from 1/2 inch (12mm) to 4 inch (102mm) all suit all manner of scale conditions. Both electric and air drive are available ,for use when cleaning evaporator ,juice heater and vacuum pan tubes ,while water driver are also available ; these have been found to extremely useful in many varied mill conditions.

Recommendation

Conditions inevitably vary from mill to mill, and client are encouraged to acquaint the manufacturers with any problems they may have be made for the best selection of tools or brushes for expeditious and effective cleaning .

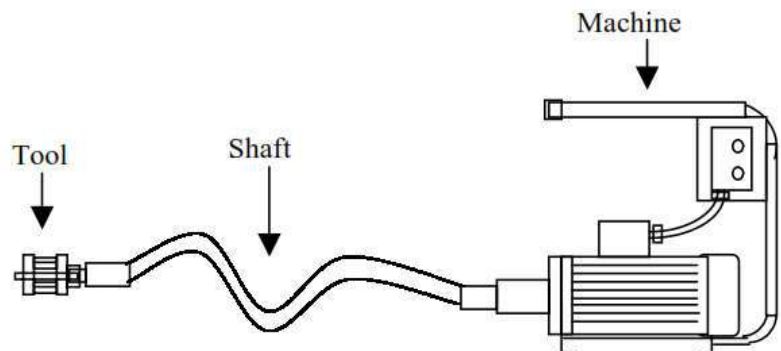
Line Voltage

240VAC /50 Hz

415 VAC / 50Hz

Approximate weight

2 Hp Machine	46KG
3 Hp Machine	46KG
Flexible Drive (26' x 1/2")	16KG
Tools (PH 2.1/2")	0.4KG





• Economy Type Tube Cleaner~ TCM-V2(Wet Type)

Functions & Features

This electrical driven tube cleaning machine is especially design for cleaning tube, juice heater and vacuum pan tubes. This TCM model is also a economy tube cleaning machine which is an electrical type and is suitable for all type of boiler provided the tube size is between 1/2" to 4" internal diameter . The smallest bending radius is 250mm at 180° C.



Description

The Model TCM is a machines that removal of scale from evaporator tubes can be an irksome and very tiring task ,as well as being costly ,but is one which is essential for the efficient running and operation of every palm oil mill and general industrial .the job needs to be done quickly and effectively ,at the lowest possible cost while at the same time damage to the tube walls must be avoided. BONT tube cleaning equipment is in operation in most sugar producing countries of the world and is a popular acquisition .it is backed by more than 60 years of field experience .

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The latest, very comprehensive range of tools and equipment is range tools and equipment is available for all tube bore diameters from 1/2 inch (12mm) to 4 inch (102mm) all suit all manner of scale conditions. Both electric and air drive are available ,for use when cleaning evaporator ,juice heater and vacuum pan tubes ,while water driver are also available ; these have been found to extremely useful in many varied mill conditions.

Recommendation

Conditions inevitably vary from mill to mill, and client are encouraged to acquaint the manufacturers with any problems they may have be made for the best selection of tools or brushes for expeditious and effective cleaning .

Line Voltage

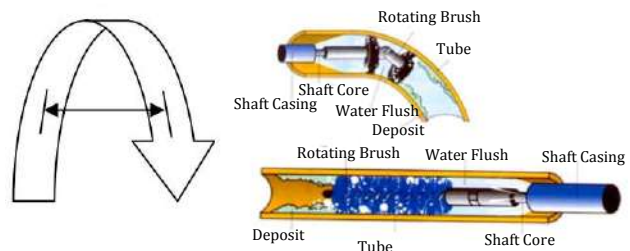
240VAC /50 Hz

415 VAC / 50Hz

Approximate weight

2 Hp Machine	46KG
3 Hp Machine	46KG
Flexible Drive (26' x 1/2")	16KG
Tools (PH 2.1/2")	0.4KG

Minimum Bending Radius





• Electric Tube Cleaners :(BT-L) Series)

In Electric Tube Cleaner, the brushes or other cleaning tools are rotated through a tube at tip of flexible shaft. Simultaneously water gets injected, hence loosen deposits leaving tubes cleaned.

Flexible shafts ensure use in bent tubes.

All models consist of tool storage box, single direction foot switch, mobile dolly.

2 direction foot switches is optional.

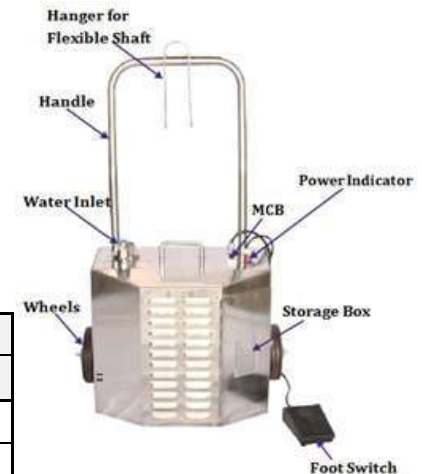
-All units are available with following specifications:

115 v 60 Hz, 115 v 50 Hz - 9 Amps

220 v 60 Hz, 220 v 50 Hz - 4.5 Amps

While ordering, please mention electric specifications.

Model	Motor		Tube ID		Speed
	HP	kW	inch	mm	RPM
BT-3L	0.75	0.56	1/4~1	6.4~25.40	910
BT-4L	1.00	0.75	1/4~1.1/4	6.4~31.75	910
BT-4SL	1.00	0.75	1/4~1	6.4~25.40	1440
BT-6L	2.00	1.50	1/4~1.1/2	6.4~38.10	910
BT-6SL	2.00	1.50	1/4~1.1/4	6.4~31.75	1440



BT-L-6L Machine

• Portable Tube Cleaner: (BT-PTC)

BT-PTC is a portable machine which can be carried by technician on the move. Flexible shaft rotates at speed of 1740 rpm and water gets injected simultaneously through the nylon casing to the cleaning tool. As the tool removes the deposits, the water flow flushes them out. A solenoid valve ensures that water flows only when machine is running.

Fall units are available with following specifications:

115 v 60 Hz, 115 v 50 Hz - 9 Amps

220 v 60 Hz, 220 v 50 Hz - 4.5 Amps

While ordering, please mention electric specifications

Model	Motor		Tube ID		Speed
	HP	kW	inch	mm	RPM
BT-PTC	0.50	0.40	1/4~1	6.4~25.4	1440



BT-PTC Machine

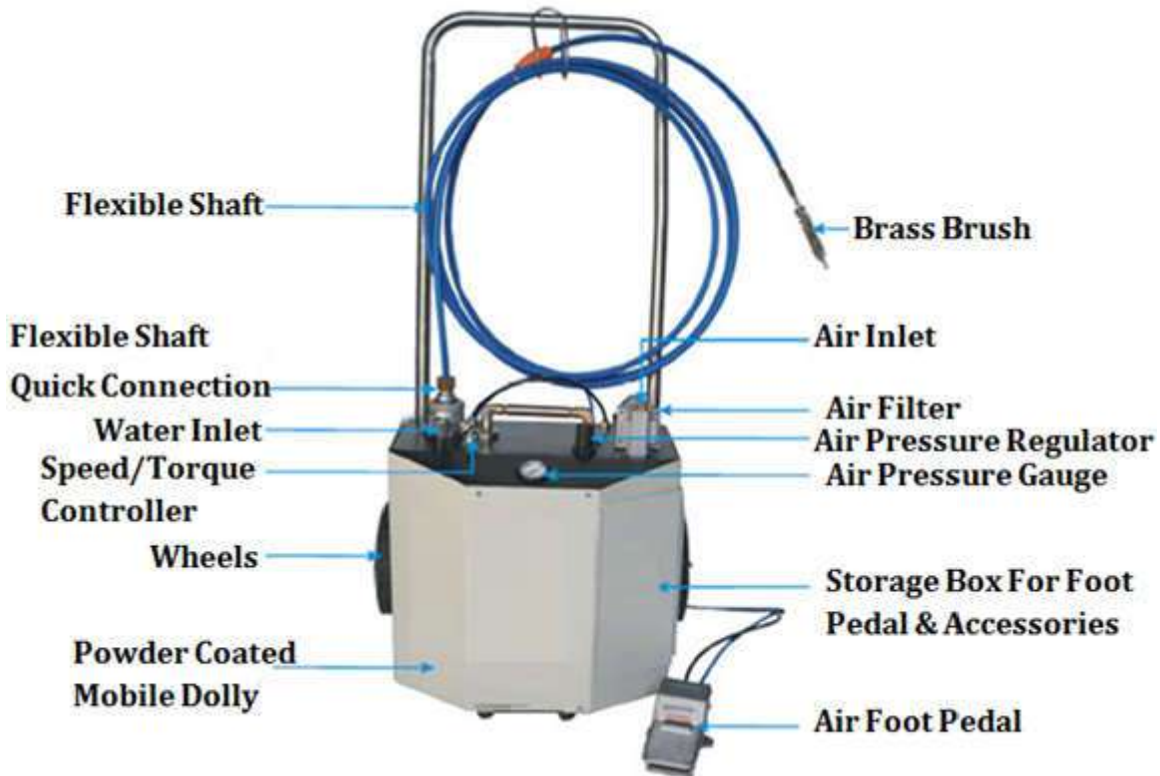
All units available with various electrical specifications:

115v 60 Hz, 115v 50Hz - 9 Amps. 220 v 60 Hz, 220v 50Hz -4.5 Amps.

Please specify while ordering.



• Pneumatic Tube Cleaner :(BT-PTC-400)



Features :

- Shock Resistant - Excellent for applications where using electric equipment is hazardous
- Speed/Torque control - Shaft rotation can be set at optimum speed for each application.
- Versatile - Interchange ability of different size flexible shafts and cleaning tools
- No Tooling - Quick disconnect for flexible shaft.
- Easy manoeuvrability - Large Wheels.
- Cleanliness - Foot pedal for operator convenience to activate shaft rotation and water flow to reduced water consumption and cleaner working area.
- Time Saving - Simultaneous water flush to remove deposits from tubes

NOTE: As per the customer requirement ,we can provide the machine with Stainless Steel Cover & Chasis

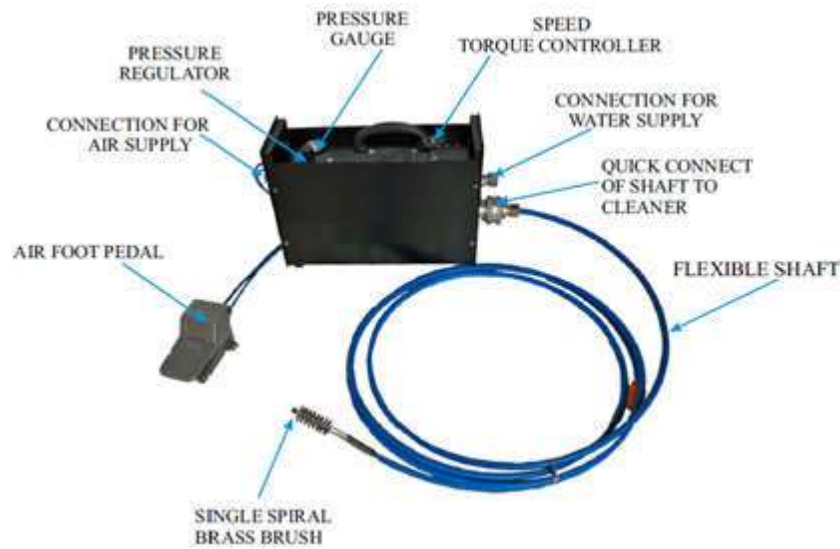
Model BT-PTC- 400 Extra Heavy Duty Pneumatic Tube Cleaners Machine includes lubricator, regulator, air filter, adjustable speed/torque control, mobile dolly, air foot pedal and tool storage box.

The BT-PTC- 400 uses a cleaning tool mounted to the tip of a flexible shaft, which is available in different lengths and diameters to fit the size of the tube to be cleaned. For wet applications as the shaft rotates inside a watertight nylon casing, the unit feeds water through the casing to the cleaning tool. A foot pedal controls shaft rotation and flow. While the operator feeds the rotating shaft assembly through the tube, the water flushes out deposits as they are loosened.

Model	Motor		Tube ID		Speed	Weight		Dimension		
	HP	kW	inch	mm	RPM	Lbs.	Kg.	High	Wide	Deep
BT-PTC	4	3	1/4 & 1.1/2	6.4 & 38.1	0-3000	66	30	38" (975mm)	22" (560mm)	16" (406mm)



• Portable Pneumatic Tube Cleaner :(BT-PPTC)



Features:

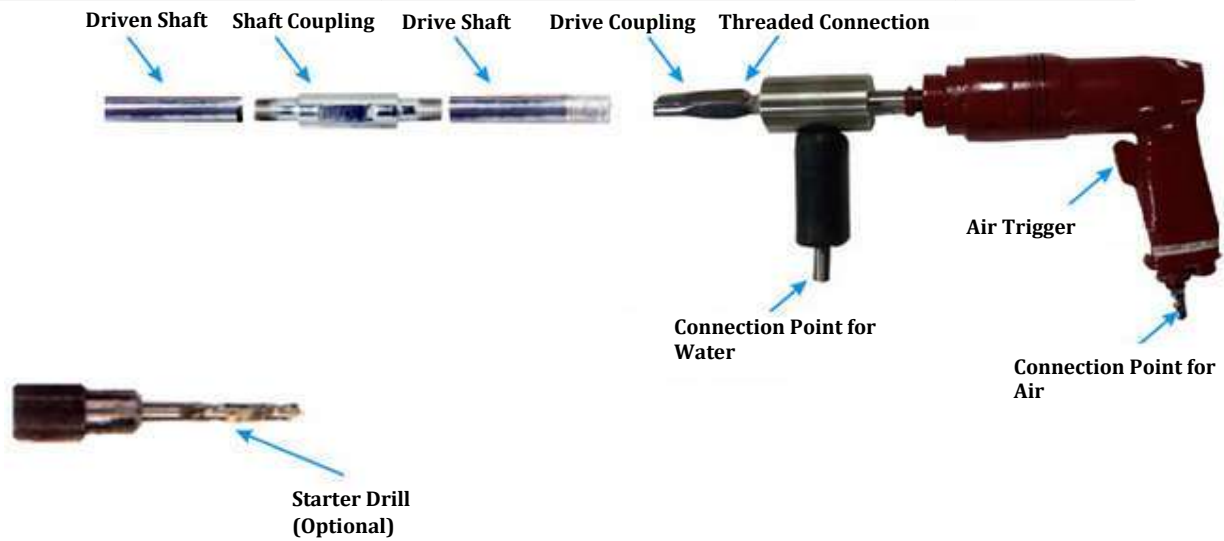
- Shock Resistant - Excellent for applications where use of electric equipment is hazardous.
- Versatile - Interchange ability of different size flexible shafts and cleaning tools.
- Speed/Torque control - Shaft rotation speed can be set at optimum for each application.
- No Tooling - Quick disconnection of flexible shaft.
- Time Saving - Simultaneous water flush to remove deposits from tubes.
- Cleanliness - Foot switch for operator's convenience to activate both shaft rotation and water flow to reduce water consumption and making working area clean.
- Compact - Light weight easy to operate inside drum.

Model-BT-PPTC-150 Portable Pneumatic Tube Cleaning Machine includes FRL unit, adjustable speed/torque control, and air foot pedal. The BT-PPTC-150 uses a cleaning tool mounted on the tip of a flexible shaft, which is available in different lengths and diameters to fit the size of the tube to be cleaned. For wet applications, as the shaft rotates inside its watertight nylon casing, the unit feeds water through the casing to the cleaning tool.

A foot switch controls shaft rotation and water flow. While the operator feeds the rotating shaft assembly through the tube, the water flow softens the deposits before cleaning and flushes them out during cleaning.

TUBE I.D		Tube Cleaner Model No.	Motor Power		Motor Speed RPM	Air Supply		Weight		Dimension		
mm	inch		HP	KW		Min	Max	Lbs.	Kg.	High	Wide	Deep
6.4 & UP	1/4 & UP	BT-PPTC-150	1.5	1	0-3000	60psi @ 15cfm	100psi @ 70cfm	33	15	10.3/8" (264mm)	6" (150mm)	19" (483mm)

• Portable Pneumatic Tube Cleaner :(BT-HPTC)



- Portable Pneumatic tube cleaners used hollow air craft quality shaft of different diameters per tube I.D. to be cleaned which can be coupled together to from length of the tube to be cleaned.
- Water flows through the hollow tube & flushes out deposits that are loosened by the cleaning tools attached to hollow shaft .Tools used for cleaning are carbide drills, for severely clogged tubes, brushed for light deposits & buffing tools for final polishing .The rotation of air motor & the water flow are controlled independently.

Tube Cleaner Model No.	Motor Power		Tube I.D.		Motor Speed RPM	Air Supply		Water Supply		Weight	
	HP	KW	Inch	mm		Min	Max	Min	Max	Lbs.	Kg.
BT-HPTC-20	0.6	0.45	3/16 ~ 1	4.8~25.4	700	60psi @ 16cfm	90psi @ 16cfm	30psi	100psi	5.72	2.6
BT-HPTC-30	1	0.746	7/8 ~ 2	22.2~51.0	1000	90psi @ 20cfm	90psi @ 40cfm	30psi	100psi	6.60	3.0

- Model BT-HPTC-20 is generally used for oil coolers, small hear exchanger and condensers.
- Model BT-HPTC -30 is generally used for large diameter tubes of process equipment condensers and heat exchangers.

• Chiller Tube Cleaning System: BT-CTCS

Model No. BT-CTCS chillers tube cleaning system uses a 3/4 HP motor for tougher deposits. A single direction foot switch is provided for cleaning internally enhanced tubes.

CONTENTS:

- * BT-CTCS Tube cleaners-1
- * NFSC-703-45 Flexible Shafts-2
- * Nylon Brush (Specify Size)- 25
- * Single Direction Air Foot Switch-1
- * Repairing kit for flexible shaft NFSC-703 consisting of 4 drive couplings, 4 tool end couplings, 1 crimping tool with punch, 1 flexible shafts Lubricator , & 2 bottles of lubricant Tubes.



BT-CTCS Tube Cleaner



Flexible Shaft

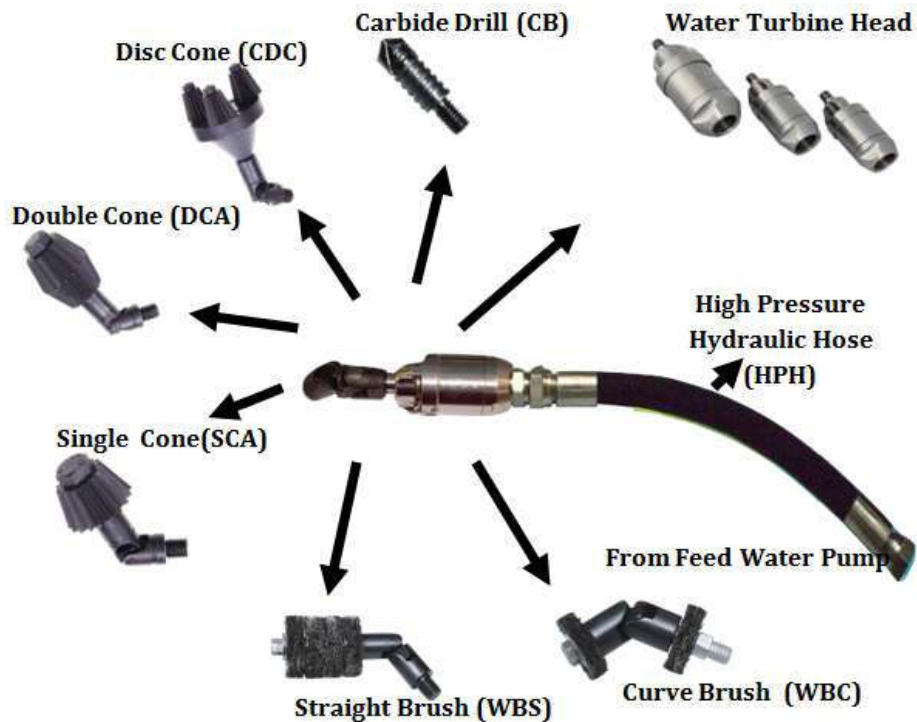


Crimping Tool

Repair Kit



• Water Driven System : TCM-V3



Size		Model	Connection	End Thread
mm	Inch			
32-45	1.1/2"	V3250	1/2" Or 3/8" Male BSW	1/2"BSP
48-54	2"	V3400		
70-83	3"	V3650		
89-102	4"	V3800		

High Pressure Hydraulic Hose

- HPH-1/2"-20M
- HPH-1/2"-30M
- HPH-1/2"-50M
- HPH-1/2"-80M
- HPH-1/2"-100M

*Min Water Pressure : 25Bar



Steel Shaft

It is used for cleaning of tube by transmitting power in terms of rotation from the motor unit to tools head cutter or brush within tube.

Inner Core

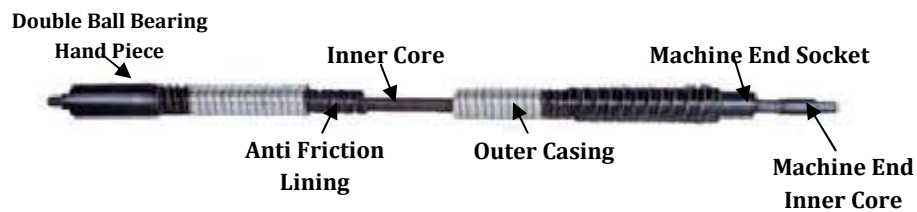
It is flexible wire with multiple wound opposite layer. It is made of high tensile spring steel or stainless steel (as per requirement) and passed through heat treatment process to make it absolutely vibration free.

Outer Casing

It is flexible ,double interlock ,circular rounded, made of galvanized steel strip , special spring steel lining is provided within outer casing to avoid any friction between inner core & outer casing .

Connection

One end of shaft with machine end socket is attached to suitable motor and other end is attached to tool end.



Inner Core Dia mm (Inch)			12-13mm (1/2")	15-16 mm (5/8")	19.0 mm (3/4")	20.0 mm
Outer Casing mm (Inch)			24.0 mm (15/16")	29.0 mm (1.1/4")	33.0 mm (1.3")	34.0 mm
Length						
Mtrs.	Feets	Sr.No.	Model No.	Model No.	Model No.	Model No.
6.0	20.0	1	BTS-105-20	BTS -106-20	BTS -107-20	BTS -108-20
7.5	25.0	2	BTS-105-25	BTS 106-25	BTS -107-25	BTS -108-25
8.0	27.0	3	BTS-105-27	BTS -106-27	BTS -107-27	BTS -108-27
9.0	30.0	4	BTS-105-30	BTS-106-30	BTS -107-30	BTS -108-30
10.0	33.0	5	BTS-105-33	BTS -106-33	BTS -107-33	BTS -108-33
12.0	40.0	6	BTS-105-40	BTS -106-40	BTS -107-40	BTS -108-40
15.0	50.0	7	BTS-105-50	BTS -106-50	BTS -107-50	BTS -108-50
18.0	60.0	8	BTS-105-60	BTS -106-60	BTS -107-60	BTS -108-60
20.0	65.0	9	BTS-105-65	BTS -106-65	BTS -107-65	BTS -108-65
25.0	82.5	10	BTS-105-82	BTS -106-82	BTS -107-82	BTS -108-82
30.0	100.0	11	BTS-105-100	BTS -106-100	BTS-107-100	BTS -108-100
Spare Inner Core Per Meter			BTIC-105	BTIC-106	BTIC-107	BTIC-108
Spare Outer Casing Per Meter			LBOC-105	LBOC-106	LBOC-107	LBOC-108
Spare Hand Piece			LBHP-105	LBHP-106	LBHP-107	LBHP-108



Flexible Shaft

1/4" & up
Tube
I.D.

Nylon Shaft

While ordering flexible shaft & accessories, each item should be ordered for specific tube / pipes size or size range .

Stainless steel inner core ensures our shaft have longest life, resistance to corrosion.

To order flexible shaft(s) determine tube I.D. & length of longest tube (s). Order flexible shaft (s) to correspond with tube I.D. (s) ,& length . Please ask for special or longer length.



Tube ID Range		Flexible Shaft	Flexible Shaft Length		Nylon Casing O.D		Inner Core O.D		Tool End Thread
mm	Inch	Model	Feet	Mtrs	Inch	mm	Inch	mm	
6.4~9.5	1/4 ~ 3/8	LNFS-701-12	12	3.7	1/4	6.4	1/8	3.2	8-32F
		LNFS-701-25	25	7.6					
11.1~12.7	7/16 ~ 1/2	LNFS-702-12	12	3.7	3/8	9.5	1/4	6.4	1/4-28F
		LNFS-702-17	17	5.2					
		LNFS-702-25	25	7.6					
		LNFS-702-35	35	10.7					
		LNFS-702-45	45	13.7					
14.3~25.4	9/16 ~ 1	LNFS-703-12	12	3.7	1/2	12.7	5/16	7.9	1/4-28F
		LNFS-703-17	17	5.2					
		LNFS-703-25	25	7.6					
		LNFS-703-35	35	10.7					
		LNFS-703-45	45	13.7					
		LNFS-703-60	60	18.3					
16~22	5/8 ~ 7/8	LNFS-704-13	13	4.0	9/16	14.3	3/8	9.5	1/4-28F
		LNFS-704-18	18	5.5					
		LNFS-704-26	26	7.9					
		LNFS-704-36	36	11.0					
		LNFS-704-46	46	14.0					
		LNFS-704-61	61	18.4					
23~35	7/8 ~ 1.3/8	LNFS-705-16	16	4.9	3/4	19.1	1/2	12.7	1/2-12F
		LNFS-705-26	26	7.9					
		LNFS-705-36	36	11.0					
		LNFS-705-51	51	15.5					



• Tube Cleaning Tools

Size		TH' Turk Head Brush Model No.	DS' Double Spiral Brush Model No.	WBA' Brush Model No.	EXP' Expandin g Brush Model No.	MB' Multi Purpose Brush Model No.	CB' Circular Wheel Brush Model No.	RS' Cup Shape Brush Model No.	EXS' Expanding Scrapers Model No.
mm	inch (")								
31.7	1.1/4	TH-10	DS-10	WBA-10	EXP-10	MB-10	CB-10	-	EXS-10
35.0	1.3/8	TH-11	DS-11	WBA-11	EXP-11	MB-11	CB-11	-	EXS-11
38.1	1.1/2	TH-12	DS-12	WBA-12	EXP-12	MB-12	CB-12	-	EXS-12
41.3	1.5/8	TH-13	DS-13	WBA-13	EXP-13	MB-13	CB-13	-	EXS-13
44.5	1.3/4	TH-14	DS-14	WBA-14	EXP-14	MB-14	CB-14	-	EXS-14
47.6	1.7/8	TH-15	DS-15	WBA-15	EXP-15	MB-15	CB-15	-	EXS-15
50.8	2	TH-16	DS-16	WBA-16	EXP-16	MB-16	CB-16	RS-16	EXS-16
54.0	2.1/8	TH-17	DS-17	WBA-17	EXP-17	MB-17	CB-17	RS-17	EXS-17
57.1	2.1/4	TH-18	DS-18	WBA-18	EXP-18	MB-18	CB-18	RS-18	EXS-18
60.3	2.3/8	TH-19	DS-19	WBA-19	EXP-19	MB-19	CB-19	RS-19	EXS-19
63.5	2.1/2	TH-20	DS-20	WBA-20	EXP-20	MB-20	CB-20	RS-20	EXS-20
66.7	2.5/8	TH-21	DS-21	WBA-21	EXP-21	MB-21	CB-21	RS-21	EXS-21
70.0	2.3/4	TH-22	DS-22	WBA-22	EXP-22	MB-22	CB-22	RS-22	EXS-22
73.0	2.7/8	TH-23	DS-23	WBA-23	EXP-23	MB-23	CB-23	RS-23	EXS-23
76.2	3	TH-24	DS-24	WBA-24	EXP-24	MB-24	CB-24	RS-24	EXS-24
79.4	3.1/8	TH-25	DS-25	WBA-25	EXP-25	MB-25	CB-25	RS-25	EXS-25
82.5	3.1/4	TH-26	DS-26	WBA-26	EXP-26	MB-26	CB-26	RS-26	EXS-26
85.7	3.3/8	TH-27	DS-27	WBA-27	EXP-27	MB-27	CB-27	RS-27	EXS-27
88.9	3.1/2	TH-28	DS-28	WBA-28	EXP-28	MB-28	CB-28	RS-28	EXS-28
92.1	3.5/8	TH-29	DS-29	WBA-29	EXP-29	MB-29	CB-29	RS-29	EXS-29
95.2	3.3/4	TH-30	DS-30	WBA-30	EXP-30	MB-30	CB-30	RS-30	EXS-30
98.4	3.7/8	TH-31	DS-31	WBA-31	EXP-31	MB-31	CB-31	RS-31	EXS-31
101.6	4	TH-32	DS-32	WBA-32	EXP-32	MB-32	CB-32	RS-32	EXS-32



"DS" Double Spiral Brush
-For Removing Light Scale & Burnishing All Types of Tubes



"CB" Circular Wheel Brush
-For Polishing Deburring & Cleaning of Tube



"EXS" Expanding Scrapers
-For Thin Scale, Soot or Soft Deposits.



"EXP" Expanding Brush
-For Thin Scale, Soot or Soft Deposits.



"RS" Cup Shape Brush
-Heavy Duty Brushes For Heavy Scale Removal



"WBA"
-Heavy Duty Brush



"TH" Turk Head Brush
-For Soot Remover From Smoke Tubes, General Cleaning



"MB" Type Brush
-For General Purpose Polishing & Deburring

• Tube Cleaning Tools

"H" Type Cutter Heads

For Tubes/Pipes 1.1/4"~4" (31.7mm~101.6mm)I.D.

These Cutter Heads are designed for cleaning straight and curved tubes as found in boilers,Air Heaters ,Economizers ,etc .Cutter Heads are provided with 3 cutter wheels,one each of straight teeth , teeth cut right hand ,teeth cut left hand, for quicker cleaning and prevention of scale grooving .

Size		Single Layer 'H' Type Cutter	Two Layer 'H' Type Cutter	Three Layer 'H' Type Cutter	Cutter Wheel Set (3) ('H' TypeCutter)	Spare Spindle ('H' TypeCutter)
mm	inch (")					
31.7	1.1/4	H-10	H2-10	H3-10	HSRL-1	HA-1
35.0	1.3/8	H-11	H2-11	H3-11	HSRL-1	HA-1
38.1	1.1/2	H-12	H2-12	H3-12	HSRL-1	HA-1
41.3	1.5/8	H-13	H2-13	H3-13	HSRL-2	HA-2
44.5	1.3/4	H-14	H2-14	H3-14	HSRL-2	HA-2
47.6	1.7/8	H-15	H2-15	H3-15	HSRL-2	HA-2
50.8	2	H-16	H2-16	H3-16	HSRL-2	HA-2
54.0	2.1/8	H-17	H2-17	H3-17	HSRL-2	HA-2
57.1	2.1/4	H-18	H2-18	H3-18	HSRL-3	HA-3
63.5	2.1/2	H-20	H2-20	H3-20	HSRL-3	HA-3
70.0	2.3/4	H-22	H2-22	H3-22	HSRL-4	HA-3
76.2	3	H-24	H2-24	H3-24	HSRL-4	HA-3
82.5	3.1/4	H-26	H2-26	H3-26	HSRL-5	HA-3
88.9	3.1/2	H-28	H2-28	H3-28	HSRL-5	HA-3
95.2	3.3/4	H-30	H2-30	H3-30	HSRL-6	HA-4
101.6	4	H-32	H2-32	H3-32	HSRL-6	HA-4



Single Layer
'H' Tools



Single Layer
'H2' Tools



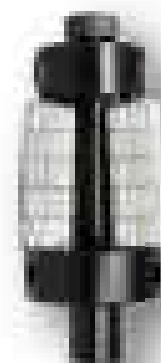
Single Layer
'H3' Tools

"HZ" Type Cutter Heads

For Tube Pipes 1.1/4"~2" (31.7mm~51.0mm)I.D.

These spring loaded, self expanding Cutter Heads are design for rapid removal of hard and obstinate scale formation in straight tubes as found in Evaporates, Juice Heaters, etc. It consists of 3 bevel ,4 straight cutter wheels ,4 left cutter wheels and 4 right cutter wheels, fitted on 3 bridge type arms.

Size		"HZ"Type Cutter Heads	Cutter Wheels Set(15)	Spare Arms
mm	inch (")			
31.7	1.1/4	HZ-10	HZSR-1	HZA-1
33.3	1.5/16	HZ-10A	HZSR-1	HZA-1
35.0	1.3/8	HZ-11	HZSR-1	HZA-1
36.5	1.7/16	HZ-11A	HZSR-1	HZA-2
38.1	1.1/2	HZ-12	HZSR-1	HZA-2
39.7	1.9/16	HZ-12A	HZSR-1	HZA-2
41.3	1.5/8	HZ-13	HZSR-1	HZA-2
42.9	1.11/16	HZ-13A	HZSR-1	HZA-2
44.5	1.3/4	HZ-14	HZSR-2	HZA-3
46.0	1.13/16	HZ-14A	HZSR-2	HZA-3
47.6	1.7/8	HZ-15	HZSR-2	HZA-3
49.2	1.15/16	HZ-15A	HZSR-2	HZA-3
51.0	2	HZ-16	HZSR-2	HZA-3



Open "HZ" Tool
(HZ-11A to HZ-16)



Close "HZ" Tool
(HZ-10 to HZ-16)

• Tube Cleaning Tools

"WA" Type Cutter Heads

For Tubes/Pipes 1.1/2"~4" (38.1mm~101.6mm)I.D.

These Cutter Heads produce excellent results in curved or straight tubes. Pivoted arms of Cutter Heads swing out by centrifugal force so that the cutters contact every part of the tube wall.

Size		WA' Type Cutter	Cone Cutter Set (3)	Spare Arms	Universal Joint
mm	inch (")				
38.1	1.1/2	WA-12	WAL-1	WAA-1	WAUJ-1
44.5	1.3/4	WA-14	WAL-1	WAA-1	WAUJ-1
51.0	2	WA-16	WAL-1	WAA-1	WAUJ-1
57.1	2.1/4	WA-18	WAL-2	WAA-1	WAUJ-2
63.5	2.1/2	WA-20	WAL-2	WAA-1	WAUJ-2
70.0	2.3/4	WA-22	WAL-2	WAA-1	WAUJ-2
76.2	3	WA-24	WAL-3	WAA-2	WAUJ-2
88.9	3.1/2	WA-28	WAL-3	WAA-2	WAUJ-2
101.6	4	WA-32	WAL-4	WAA-2	WAUJ-2



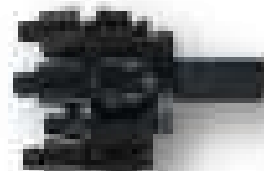
"WA" Type Cutter Heads

"SA" Type Cutter Heads

For Tubes/Pipes 2"~4" (51.0mm~101.6mm)I.D.

These Cutter Heads have 3 to 5 freely pivoted arms, activated centrifugally, which swing out to give access to any part of tube wall .

Size		SA' Type Cutter	Cone & Flat Cutter Set(9)	Arms	Universal Joint
mm	inch (")				
51.0	2	SA-16	SAFC-1	SAA-1	SAUJ-1
57.1	2.1/4	SA-18	SAFC-2	SAA-2	SAUJ-2
63.5	2.1/2	SA-20	SAFC-2	SAA-2	SAUJ-2
70.0	2.3/4	SA-22	SAFC-3	SAA-2	SAUJ-2
76.2	3	SA-24	SAFC-3	SAA-2	SAUJ-2
88.9	3.1/2	SA-28	SAFC-4	SAA-2	SAUJ-2
101.6	4	SA-32	SAFC-5	SAA-3	SAUJ-2



"SA" Type Cutter Heads

Carbide Drills & Drill Cone Assemble

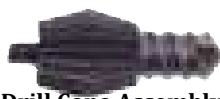
For Heavy Choked Tubes

- used for cleaning tubes choked solidly with hard deposits.

Size		Carbide Drill
mm	inch (")	
6.4	1/4	CB-025
9.5	3/8	CB-037
11.1	7/16	CB-043
12.7	1/2	CB-050
14.3	9/16	CB-056
15.9	5/8	CB-062
17.5	11/16	CB-068
19.1	3/4	CB-075
22.2	7/8	CB-088
25.4	1	CB-100



← Carbide Drill



Drill Cone Assembly →

Size		Drill Cone Assembly
mm	inch (")	
25.4	1	DDC-100
28.6	1.1/8	DDC-112
31.7-35.0	1.1/4-1.3/8	DDC-125
38.1-41.3	1.1/2-1.5/8	DDC-150
44.5-47.6	1.3/4-1.7/8	DDC-175



• Tube Cleaning Tools

Nylon Brushes

Used for removing soft scales in ferrous (Carbon Steel, Stainless Steel) and non-ferrous tubes (Copper, Brass, Plastic, Etc.) and for final 'Finishing' of tubes.



Nylon Brush

Stainless Steel Brushes

Used for removing soft and light scale deposits in ferrous tubes (Carbon Steel, Stainless Steel, Etc.).



Stainless Steel Brush

Brass Brushes

Used for removing soft and light scale deposits in straight, Non-ferrous tubes. (Copper, Brass, Nickel and Their Alloyed Tubes.)



Brass Brush

Brushes for Heat Exchangers and Condensers

Size		Nylon Brush	Stainless Steel	Brass Brush	Threading	Coupling
mm	inch (")					
6.4	1/4	TN-250	SS-250	B-250	8-32F	P-1 (8-32Mx8-32M)
7.9	5/16	TN-312	SS-312	B-312	8-32F	P-1 (8-32Mx8-32M)
9.5	3/8	TN-375	SS-375	B-375	12-24F	P-2 (8-32Mx12-24M)
11.1	7/16	TN-437	SS-437	B-437	1/4-28M	-
12.7	1/2	TN-500	SS-500	B-500	1/4-28M	-
14.3	9/16	TN-562	SS-562	B-562	1/4-28M	-
15.9	5/8	TN-625	SS-625	B-625	1/4-28M	-
17.5	11/16	TN-687	SS-687	B-687	1/4-28M	-
19.1	3/4	TN-750	SS-750	B-750	1/4-28M	-
20.6	13/16	TN-812	SS-812	B-812	1/4-28M	-
22.2	7/8	TN-875	SS-875	B-875	1/4-28M	-
23.8	15/16	TN-937	SS-937	B-937	1/4-28M	-
25.4	1	TN-1000	SS-1000	B-1000	1/4-28M	-

Brushes for Boiler and Sugar Mills

Size		Nylon Brush	Stainless Steel	Brass Brush
mm	inch (")			
31.7	1.1/4	TN-1250	SS-1250	B-1250
38.1	1.1/2	TN-1500	SS-1500	B-1500
44.5	1.3/4	TN-1750	SS-1750	B-1750
51.0	2	TN-2000	SS-2000	B-2000
57.1	2.1/4	TN-2250	SS-2250	B-2250
63.5	2.1/2	TN-2500	SS-2500	B-2500
70.0	2.3/4	TN-2750	SS-2750	B-2750
76.2	3	TN-3000	SS-3000	B-3000
82.6	3.1/4	TN-3250	SS-3250	B-3250
89.0	3.1/2	TN-3500	SS-3500	B-3500
95.2	3.3/4	TN-3750	SS-3750	B-3750
101.6	4	TN-4000	SS-4000	B-4000

- Brushes should be ordered so that brush O.D. is marginally less than tube I.D., for it to easily enter tube with deposit.

• Tube Cleaning Tools

Curved Tube Wheel Brush

These tools consist of 2 stainless steel circular brushes that are mounted onto a double Universal Joint for maximum flexibility. These tools are used to clean soft to medium scales. Replacement circular brushes can be ordered when wear starts.

Curved Tube I.D.		Circular Brush Tool	Brush O.D.		Spare Brush (2 needed)	Spare Universal Joint
mm	inch (")		mm	inch (")		
31.7~35.6	1.1/4 ~ 1.7/16	WBC-1125	25.4	1	WBR-1125	UCT-1500
38.1~42.9	1.1/2~1.11/16	WBC-1500	31.7	1.1/4	WBR-1375	UCT-1500
44.5~49.2	1.3/4~1.15/16	WBC-1750	38.1	1.1/2	WBR-1625	UCT-1500
51.0~55.6	2~2.3/16	WBC-2000	44.5	1.3/4	WBR-1875	UCT-1250
57.1~61.9	2.1/4~2.7/16	WBC-2250	51.0	2	WBR-2125	UCT-1250
63.5~68.3	2.1/2~2.11/16	WBC-2500	57.1	2.1/4	WBR-2375	UCT-1250
70.0~74.6	2.3/4~2.15/16	WBC-2750	63.5	2.1/2	WBR-2625	UCT-1250
76.2~81.0	3~3.3/16	WBC-3000	70.0	2.3/4	WBR-2875	UCT-1250
82.6~90.6	3.1/4~3.9/16	WBC-3250	76.2	3	WBR-3125	UCT-1250



Curve Tube Wheel Brush

Straight Tube Wheel Brush

These tools consist of 4 stainless steel circular brushes that are mounted on a shaft and connected to a Universal Joint. These tools are used to clean soft to medium scales. Replacement circular brushes can be ordered when wear starts.

Straight Tube I.D.		Circular Brush Tool	Brush O.D.		Spare Brush (2 needed)	Spare Universal Joint
mm	inch (")		mm	inch (")		
28.6~33.3	1.1/8~1.5/16	WBS-1125	25.4	1	WBR-1125	UCT-1063
35.0~39.7	1.3/8~1.9/16	WBS-1375	31.7	1.1/4	WBR-1375	UCT-1063
41.3~47.1	1.5/8~1.13/16	WBS-1625	38.1	1.1/2	WBR-1625	UCT-1063
47.6~52.6	1.7/8~2.1/16	WBS-1875	44.5	1.3/4	WBR-1875	UCT-1250
54.0~58.7	2.1/8~2.5/16	WBS-2125	51.0	2	WBR-2125	UCT-1250
60.3~65.1	2.3/8~2.9/16	WBS-2375	57.1	2.1/4	WBR-2375	UCT-1250
66.7~71.6	2.5/8~2.13/16	WBS-2625	63.5	2.1/2	WBR-2625	UCT-1250
73.0~77.8	2.7/8~3.1/16	WBS-2875	70.0	2.3/4	WBR-2875	UCT-1250
79.4~84.2	3.1/8~3.5/16	WBS-3125	76.2	3	WBR-3125	UCT-1250



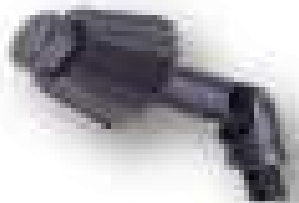
Straight Tube Wheel Brush

- **Note:** For larger sizes, please enquire.

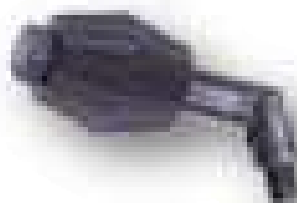
• Tube Cleaning Tools

Single & Double Cone Assemblies

Assemblies consisting of one or two cone elements are used for cleaning straight tubes 1 1/4" ~ 2 3/8" (31.7 ~ 60.3mm) I.D. and curved tubes 1 1/4" ~ 2 3/8" (31.7 ~ 60.3mm) I.D.



Single Cone Assemble



Double Cone Assemble



Replacement Cone

Straight Tube I.D.		Curved Tube I.D.		Single Cone	Double Cone	Cone Max		Replacement Cone	Universal Joint	Single Cone Bolt	Double Cone Bolt
inch (")	mm	inch (")	mm			inch (")	mm				
1.1/8~1.1/4	28.6~31.7	1.1/4~1.3/8	31.7~35.0	SCA-100	DCA-100	1.0	25.4	RCO-100	CUJ-001	CRB-001	DCB-001
1.5/16~1.3/8	33.3~35.0	1.1/2~1.5/8	38.1~41.3	SCA-112	DCA-112	1.1/8	28.6	RCO-112	CUJ-002	CRB-002	DCB-002
1.7/16~1.1/2	36.5~38.1	1.3/4~1.7/8	44.5~47.6	SCA-125	DCA-125	1.1/4	31.7	RCO-125	CUJ-002	CRB-002	DCB-002
1.9/16~1.3/4	39.7~44.5	2~2.1/8	51.0~54.0	SCA-150	DCA-150	1.1/2	38.1	RCO-150	CUJ-002	CRB-002	DCB-002
1.13/16~2	46.0~51.0	2.1/4~2.3/8	57.1~60.3	SCA-175	DCA-175	1.3/4	44.5	RCO-175	CUJ-002	CRB-002	DCB-002
2.1/16~2.5/16	52.4~58.7			SCA-200	DCA-200	2.0	51.0	RCO-200	CUJ-002	CRB-002	DCB-002

Disc Cone Assemblies

Assemblies consisting of three cones are used for cleaning straight tubes 2 3/8"~3 3/4" (60.3~95.2mm) I.D. and curved tubes 2 1/2" ~ 4" (63.5~101.6mm) I.D.



Disc Cone Assemble

Straight Tube I.D.		Curved Tube I.D.		Complete Disc Cone Assembly	Replacement Cone (3 Req.)	Disc Only (Less Cones)	Universal Joint	Cone Retainer Bolt (3 req.)
inch (")	mm	inch (")	mm					
2.3/8~2.13/16	60.3~71.4	2.1/2~3.1/16	63.5~77.8	CDC-101	PCO-100	PCD-101	CUJ-002	CRB-001
2.7/8~3.5/16	73.0~84.1	3.1/8~3.5/8	79.4~92.1	CDC-102	PCO-100	PCD-102	CUJ-002	CRB-001
3.3/8~3.3/4	85.7~95.2	3.11/16~4	93.7~101.6	CDC-103	PCO-112	PCD-102	CUJ-002	CRB-002



Distributor:

LKS Flowsys Sdn Bhd (1110212-U)

No.50-2,Jalan Sungai Rasau D32/D ,Berjaya Park ,
Seksyen 32 ,Shah Alam .Selangor ,40460 .Malaysia
Tel:+603-5525 5038 Fax:+603-5124 0222
Email: info.flowsys@lkssb.com.my
Webpage : www.lkssb.com.my

Bont Technologies GmbH

Salzstr .1 21335 Lüneburg

www.bont-tech.com Email : info@bont-tech.com

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An light technologies measurement for Water Analyzer principle also been produce for measuring the water quality for River, Industrial Effluent, Water Treatment plant for the parameter like COD, BOD, TSS, pH, Cr, As, AOX, Ammonical Nitrogen,Flouride, Phenol, Cyanide, Flow for open channel and close channel and temperature.

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