

## Model PTC - P For Chiller



Tool and Foot Switch Storage Box

Folding Carrying Handle



Water Inlet-Standard Garden Hose Connection

Quick Disconnect for Easy Change of Shaft

Cleaning Tool Easily Changed

- Compact and durable for use in multiple locations.
- Interchange different flexible shafts and cleaning tools.
- Simultaneous flushing of water to remove deposits-save time.
- Quick disconnect of flexible shafts-no tools required.
- Foot switch operation to operate shaft rotation and water flow convenience, reduced water consumption and clean working area.

The **PTC-P** is built for technicians on the move. Used clean 1/4" -1" I.D. tubes in chillers, evaporators, heat exchangers. The flexible shaft rotates at 1740 rpm as water feeds 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 flow only when the machine is running.

Tube I.D. inch.	Tube I.D. mm	Tube Cleaner Model No.	Motor Power HP	Motor Power kW	Motor Speed RPM	Weight lbs.	Weight Kg.	High	Dimension Wide	Deep
1/4-1	6.4-25.4	PTC-P	1/2	0.40	1440	32	14	9 1/2"(241mm)	10 3/8"(264mm)	18"(457mm)

All units available in your choice of:  
 115v 60Hz, 115v 50Hz - 9 Amps. 220v 50Hz - 4.5 Amps.  
 Please Specify when ordering.

## PORTABLE ELECTRIC TUBE CLEANING SYSTEM

### Chiller Tube Cleaning System

Chiller Tube Cleaning System represents the most commonly used system for cleaning chillers by technicians on the move.

- CONTENTS**
- \* PTC - P Tube Cleaner - 1
  - \* PFS - 703 - 25 Flexible Shafts - 1
  - \* N Nylon Brush ( specify size ) - 12
  - \* Two Direction Foot Switch - 1
  - \* Repair Kit for Flexible Shaft PFS-703 Consisting of 4 Drive End Couplings, 4 Tool End Couplings, 1 Crimping Tool with Punch, 1 Flexible Shaft Lubricator and 2 Bottles of Lubricant.







**Stainless Steel Inner Cores**

Shaft Model	Aluminium CAP. Color core
701	Gold
702	Black
703	Red
704	Blue

## FLEXIBLE SHAFTS WITH STAINLESS STEEL INNER CORE

When ordering Flexible Shafts and Accessories, each item should be ordered for specific tube/pipe size or size range. Shafts Have color coded durable aluminium caps for easy identification. Stainless Steel inner Cores ensure our shafts have longest life, flexibility and resistance to corrosion.

To order Flexible Shaft(s), determine tube I.D.(s) and length of the longest tube(s). Order Flexible Shafts(s) to correspond with tube I.D.(s) and lengths. Please ask us for special or longer lengths.

Tube I.D. Range inch	mm	Flexible Shaft Model NO.	Flexible Shaft Length		Shaft Core O.D.		Shaft Casing O.D.		Tool End Thread
			feet	mtrs	inch	mm	inch	mm	
1/4-3/8	6.4-9.5	PFS-701-25	25	7.6	1/8	3.2	1/4	6.4	8-32 F
		PFS-702-25	25	7.6					
7/16-1/2	11.1-12.7	PFS-702-35	35	10.7	1/4	6.4	3/8	9.5	1/4-28 F
		PFS-702-45	45	13.7					
9/16-1	14.3-25.4	PFS-703-25	25	7.6	5/16	7.9	1/2	12.7	1/4-28 F
		PFS-703-35	35	10.7					
		PFS-703-45	45	13.7					
		PFS-703-60	60	18.3					

## FLEXIBLE SHAFTS FOR INTERNALLY SPIRALED TUBES

Tube I.D. Range inch	mm	Flexible Shaft Model NO.	Flexible Shaft Length		Shaft Core O.D.		Shaft Casing O.D.		Tool End Thread
			feet	mtrs	inch	mm	inch	mm	
1 1/16-1	17.5-25.4	PFS-704-25	25	7.6	3/8	9.5	9/16	14.3	1/4-28
		PFS-704-35	35	10.7					
		PFS-704-45	45	13.7					
		PFS-704-60	60	18.3					

## FLEXIBLE SHAFTS (Wet Application-Nylon Casing) for tubes 1" (25.4mm.) I.D. and UP

Tube I.D. Range inch	mm	Flexible Shaft Model NO.	Flexible Shaft Length		Shaft Core O.D.		Shaft Casing O.D.		Tool End Thread
			feet	mtrs	inch	mm	inch	mm	
1	25.4	PFS-720-25	25	7.6	1/2	12.7	3/4	19.1	1/2-12 F
		PFS-720-35	35	10.7					
		PFS-720-50	50	15.2					



**CONE CUTTER ASSEMBLIES** Cone Cutter Assemblies are used for removing scale from curved and straight. Assemblies are slightly smaller than tube I.D. Scale is cut starting at the smaller tapered end and finished at the larger end. The rotation of the tool ensures a thorough cleaning. In water tube boilers, cone cutters are the most effective cleaning for all conditions. To order refer to the tables below.

**SINGLE AND DOUBLE CONE ASSEMBLIES** Assemblies consisting of one or two cone elements are used for cleaning straight tubes 1.1/8" - 2.5/16" (28.6-58.7mm) I.D. and curved tubes 1.1/4" - 2.3/8" (31.7-60.3mm) I.D.



Replacement Cone

Straight Tube I.D.		Curved Tube I.D.		Complete Single Cone Assembly	Complete Double Cone Assembly	Cone Max		Replacement Cone Only	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	PSCA-100	PDCA-100	1	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	PSCA-112	PDCA-112	1.1/8	28.6	RCO-112	CUJ-002	SCB-002	DCB-002
1.7/16-1.1/2	36.5-38.1	1.3/4-1.7/8	44.5-47.6	PSCA-125	PDCA-125	1.1/4	31.7	RCO-125	CUJ-002	SCB-002	DDB-002
1.9/16-1.3/4	39.7-44.5	2-2.1/8	51.0-54.0	PSCA-150	PDCA-150	1.1/2	38.1	RCO-150	CUJ-002	SCB-002	DCB-002
1.13/16-2	46.0-51.0	2.1/4-2.3/8	57.0-60.3	PSCA-175	PDCA-175	1.3/4	44.5	RCO-175	CUJ-002	SCB-002	DCB-002
2.1/16-2.5/16	52.4-58.7			PSCA-200	PDCA-200	2	51.0	RCO-200	CUJ-002	SCB-002	DCB-002



Single Cone Assembly



Double Cone Assembly



Disc Cone Assembly

## DISC CONE ASSEMBLIES

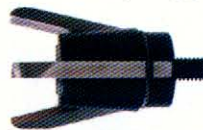
Assemblies consisting of three cones are used for cleaning straight tubes 2.3/8"-3.3/4" (60.3-95.2mm) I.D. and curved tubes 2.1/2"-4" (63.5-101.6mm) I.D.

Straight Tube I.D.		Curved Tube I.D.		Complete Disc Cone Assembly	Replacement Cone Only (three req.)	Disc Only (less cones)	Universal Joint	Cone Retainer Bolt (three 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	PDC-101	RCO-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	PDC-102	RCO-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	PDC-103	RCO-112	PCD-102	CUJ-002	CRB-002

## Flex Hub Tools

Flex Hub Tools use centrifugal force activated blades for removing hard and heavy deposits in straight or curved tubes. A drill can be attached to the front of the PTC-227 or PTC-231 Flex Hub to clean severely clogged tubes.

Straight Tube I.D.		Curved Tube I.D.		Flex Hub Assembly
inch	mm	inch	mm	
7/8-1.1/2	22.2-38.1	1-1.3/4	25.4-44.5	PTC-226
1.1/2-2	38.1-51.0	1.3/4-2.1/2	44.5-63.5	PTC-231
1.3/4-3	44.5-76.2	2.1/2-3	63.5-76.2	PTC-227



Flex Hub Assembly



Replacement Blades



Carbide Drill



Universal Joint

**PTC-226A** Replacement Blades for PTC-226 (set of three)

**PTC-231A** Replacement Blades for PTC-231 (set of three)

**PTC-227A** Replacement Blades for PTC-227 (set of three)

**CB-088** Drill to be attached to PTC-227 Flex Hub Assembly for use when tubes are severely clogged

**CB-075** Drill to be attached to PTC-231 Flex Hub Assembly for use when tubes are severely clogged

**CUJ-002** Universal Joint for use with above Flex Hub Assemblies when minimum tube bend radius is less than 5x tube I.D. (consult factory)

**DRILL CONE ASSEMBLIES** for Plugged Tubes/Pies 1"-1.7/8" (25.4-47.6mm) I.D.

Drill/Cone Assemblies are recommended for cleaning straight tubes plugged solidly with deposits. Order assembly to correspond to tube I.D. All drills run 10% oversize.

Tube I.D.		Drill Cone Assembly
inch	mm	
1	25.4	DC-100
1.1/8	28.6	DC-112
1.1/4-1.3/8	31.7-35.0	DC-125
1.1/2-1.5/8	38.1-41.3	DC-150
1.3/4-1.7/8	44.5-47.6	DC-175



Drill/Cone Assembly



## BUFFING TOOLS

for Tubes/Pipes 1"-3" (25.4-76.2mm) I.D.

Stainless Steel Wire Buffing Tools are used for light to medium scale deposits or for finishing tubes previously "roughed out" with other cleaning tools. They can be used in both ferrous and non-ferrous tubes. Buffing tools are normally used in straight tubes but will go through very large radius bends.

**PTC-223** Adjustable Buffing Tools for tubes 1"-3" (25.4-76.2mm) I.D.

**PTC-223DT** Adjustable Buffing Tools for tubes 1"-3" (25.4-76.2mm) with drill tip

**PTC-224** Replacement Blades for PTC-223



Buffing Tool



Buffing Tool with Drill Tip



Replacement Blades

## CARBIDE DRILLS

for Plugged Tubes/Pipes

Carbide Drills are used for cleaning straight tubes plugged solidly with scale or deposit.

Tube I.D.		Carbide Drill
Inch	mm	
3/4	19.1	CB-075
7/8	22.2	CB-088
1	25.4	CB-100



Carbide Drill

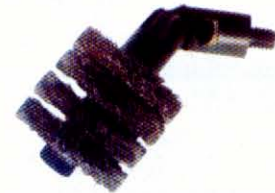
**Note:** All drills run 10% oversize [ e.g. CB-075 Drills is 0.825" (21.0mm) O.D. ]

## WHEEL BRUSH ASSEMBLIES

To order Wheel Brush Assemblies refer to the table below listing the types of be cleaned straight or curved.

### STRAIGHT TUBE WHEEL BRUSH ASSEMBLIES

Recommended for removing soft and light scale deposits (rust, soot, algae, etc.) in straight tubes. Each assembly consists of four stainless steel wire wheel brushes attached to a universal joint. Brushes should be 1/8" - 1/4" (3.2-6.4mm) smaller than tube I.D. Replacement brush elements are available as shown in the table below.



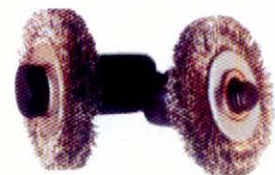
Straight Tube Wheel Brush Assembly

Straight Tube I.D. inch	mm	Wheel Brush Assembly	Actual Brush O.D.		Replacement Brushes	Replacement Universal Joint	Replacement Retainer Bolt
			inch	mm			
1.1/8-1.1/4	28.6-31.7	WBS-100	1	25.4	WBR-100	CUJ-001	SWB-001
1.3/8-1.1/2	35.0-38.1	WBS-125	1 1/4	31.7	WBR-125	CUJ-001	SWB-001
1.5/8-1.3/4	41.3-44.5	WBS-150	1 1/2	38.1	WBR-150	CUJ-001	SWB-001
1.7/8-2	47.6-51.0	WBS-175	1 3/4	44.5	WBR-175	CUJ-002	SWB-002
2.1/8-2.1/4	54.0-57.1	WBS-200	2	51.0	WBR-200	CUJ-002	SWB-002
2.3/8-2.1/2	60.3-63.5	WBS-225	2 1/4	57.1	WBR-225	CUJ-002	SWB-002
2.5/8-2.3/4	66.7-70.0	WBS-250	2 1/2	63.5	WBR-250	CUJ-002	SWB-002
2.7/8-3	73.0-76.2	WBS-275	2 3/4	70.0	WBR-275	CUJ-002	SWB-002
3.1/8-3.1/4	79.4-82.6	WBS-300	3	76.2	WBR-300	CUJ-002	SWB-002

**Note:** For larger sizes consult factory.

### CURVED TUBE WHEEL BRUSH ASSEMBLIES

Recommended for removing soft and light scale deposits in curved tubes. Each assembly consists of a single stainless steel wire wheel brush attached to each end of a universal joint. Brushes should be 1/4"-3/8" (6.4-9.5mm) smaller than tube I.D. Replacement element are available as shown in the table below.



Curved Tube Wheel Brush Assembly

Curved Tube I.D. inch	mm	Wheel Brush Assembly	Actual Brush O.D.		Replacement Brushes	Replacement Universal Joint	Replacement Retainer Bolt
			inch	mm			
1.1/4-1.3/8	31.7-35.0	WBC-100*	1	25.4	WBR-100	CUJ-003	CWB-001
1.1/2-1.5/8	38.1-41.3	WBC-125*	1.1/4	31.7	WBR-125	CUJ-003	CWB-001
1.3/4-1.7/8	44.5-47.6	WBC-150*	1.1/2	38.1	WBR-150	CUJ-003	CWB-001
2-2.1/8	51.0-54.0	WBC-175	1.3/4	44.5	WBR-175	CUJ-002	CWB-002
2.1/4-2.3/8	57.1-60.3	WBC-200	2	51.0	WBR-200	CUJ-002	CWB-002
2.1/2-2.5/8	63.5-66.7	WBC-225	2.1/4	57.1	WBR-225	CUJ-002	CWB-002
2.3/4-2.7/8	70.0-73.0	WBC-250	2.1/2	63.5	WBR-250	CUJ-002	CWB-002
3-3.1/8	76.2-79.4	WBC-275	2.3/4	70.0	WBR-275	CUJ-002	CWB-002
3.1/4-3.1/2	82.6-89.0	WBC-300	3	76.2	WBR-300	CUJ-002	CWB-002

**Note:** For larger sizes consult factory.

\*PTC-706 Coupling required to connect to PFS-720 and PFS-721 and PFS-821 flexible Shafts.





**Buffing Tool**



**Buffing tool with Drill Tip**



**Replacement Blades**

## BUFFING TOOLS

are used for final polishing or removal of light scale deposits from ferrous and Non-ferrous tubes that have been previously cleaned with other tools. Used in straight or very large radius tubes in a clockwise direction only. They cannot be used in internally enhanced tubes.

Tube I.D.		Buffing Tool	With Drill Tip	Replacement Blades	Adjusting Jig
inch	mm				
5/16-3/8	7.9-9.5	PTC-203	PTC-203DT	PTC-207	PTC-209
3/8-1/2	9.5-12.7	PTC-204	PTC-204DT	PTC-207	PTC-209
1/2-9/16	12.7-14.3	PTC-205	PTC-205DT	PTC-208A	-
5/8-1	15.9-25.4	PTC-206	PTC-206DT	PTC-208B	-

## CARBIDE DRILLS

for Plugged Tubes/Pipes

Tube I.D.		Carbide Drill
Inch	mm	
1/4	6.4	CB-025
3/8	9.5	CB-037
7/16	11.1	CB-043
1/2	12.7	CB-050
9/16	14.3	CB-056
5/8	15.9	CB-062
11/16	17.5	CB-068



**Carbide Drill**

**CARBIDE DRILLS** are used for cleaning straight tubes plugged solidly with deposits.

**Note:** All drills run 10% oversize [ e.g. CB-062 drill is 0.6875" (17.5mm) O.D.]

## NYLON BRUSHES

Used for removing soft deposits in straight non-ferrous tubes (copper, brass, plastic, etc).



**Nylon Brush**

## STAINLESS STEEL BRUSHES

Used for removing soft and light scale deposits in straight 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.



**Brass Brush**

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

\* Brush should be equal to or 1/16" (1.6mm) smaller than tube I.D.

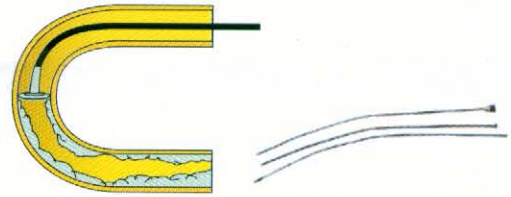
\* 9/16"-1" (14.3-25.4 mm) brushes can be for both clockwise and counterclockwise rotation.



These tools have either a cup brush, wheel brush or grinding tip attached to a 20"(508.0mm) piece of flexible shaft. They are designed to negotiate the bends of a U-tube from each side to clean the U-portion from both sides.

## CUP BRUSH TOOLS - Brass or Stainless Steel

Tube I.D.		Cup Brush Tools
Inch	mm	
1/2-3/4	12.7-19.1	CBT-075B
1/2-3/4	12.7-19.1	CBT-075S



## WHEEL BRUSH TOOLS - Brass or Stainless

Tube I.D.		Wheel Brush Tools
Inch	mm	
1/2-3/4	12.7-19.1	WBT-075B
13/16-1	20.6-25.4	WBT-100B
1/2-3/4	12.7-19.1	WBT-075S
13/16-1	20.6-25.4	WBT-100S



## GRINDING TIP TOOLS

Tube I.D.		Grinding Tip Tools
Inch	mm	
1/2	12.7	GTT-050
5/8	15.9	GTT-625

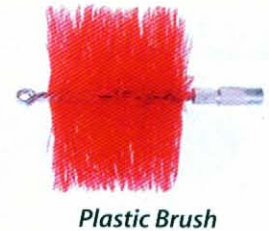
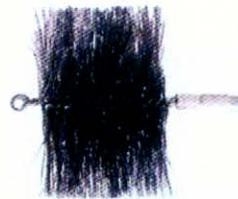


For sizes not listed above please contact us.

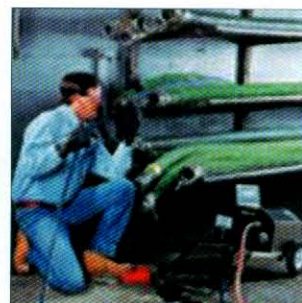
**CARBON STEEL BRUSHES** Recommended for removing soft and light scale deposits in straight, ferrous tubes. Order brush to correspond to tube I.D.

**PLASTIC BRUSHES** Recommended for removing soft deposits in straight, ferrous and non-ferrous and tubes. Order brush to correspond to tube I.D.

Brush O.D.		Carbon Steel	Plastic Brush
Inch	mm		
5	127.0	CS-050	P-050
6	152.4	CS-060	P-060
7	178.0	CS-070	P-070
8	203.2	CS-080	P-080
9	228.6	CS-090	P-090
10	254.0	CS-100	P-100
11	279.4	CS-110	P-110
12	305.0	CS-120	P-120
13	330.2	CS-130	P-130
14	355.6	CS-140	P-140



Ideal for Difficult Tube/Hose Cleaning Applications.

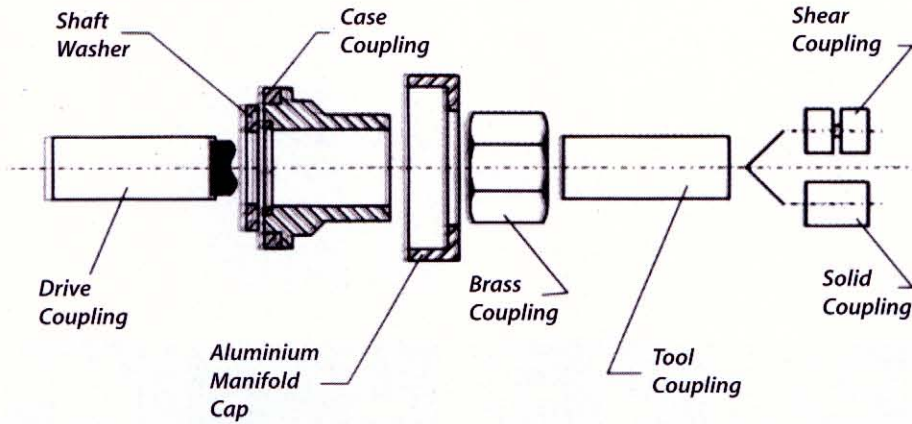




## FLEXIBLE SHAFTS REPAIR / MAINTENANCE

### REPAIR COUPLINGS

Flexible Shafts are precision made and capable of taking considerable stress. However, like all precision made products, Flexible Shafts require care in use and maintenance. If a Flexible Shaft breaks through normal wear, it will usually break at drive end. If a break should occur close to either end, the shaft may be repaired by cutting back the casing, grinding off any frayed portion of the Flexible Shaft, and crimping on a new coupling. A crimping tool (see below) is available.

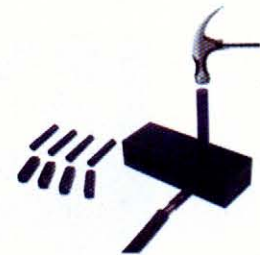


## CRIMPING TOOL FOR FLEXIBLE SHAFT REPAIR

The Crimping Tool provides the user with a quick, convenient method for performing repairs of flexible shafts in the field, it will permanently attach repair couplings, extending the usable life of The flexible shaft while reducing down - time when a repair is needed.

**PTC-CT5** Crimping Tool with punch

**PTC-CTP** Replacement Punch



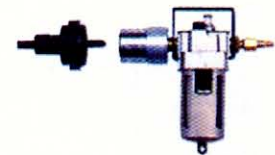
**Crimping Tool with Punch**

## SHAFT LUBRICATOR

Lubricates the flexible shafting to protect the shafting's steel Core. Easy to operate Fill the lubricator with water soluble lubricant. Simply connect a lubricated air line to the lubricators 1/4" NPT port, connect the shaft to the adapter, and turn on lubricated air supply. Flushes residue water and lubricates at the same time, extending your flexible shaft time.

**PSL-705** Flexible Shaft Lubricator with quick disconnect

**PSL-LU1** Lubricant for flexible shaft lubricator, 16 ounces (0.5 litres)



**Flexible Shaft Lubricator**

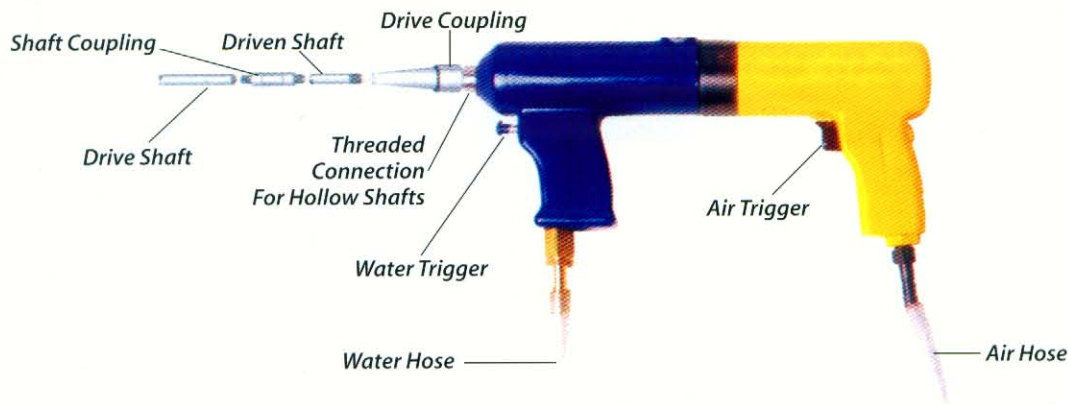
## FLEXIBLE SHAFT REPAIR KITS

Flexible shaft repair kits include 4 drive end repair couplings, 4 tool end repair couplings, 1 crimping tool with punch, 1 flexible shaft lubricator with quick disconnect, 2 bottles [16 ounce (0.5 liter) each] of lubricant for flexible shaft lubricator.



**Repair Kit**





**Operation :** The portable pneumatic tube cleaners use hollow shafting of different diameters as per tube I.D. to be cleaned which can be coupled together to from lengths as per the length of the tube to be cleaned.

Water flows through the hollow tube and flushes out deposits that are loosened out by the cleaning tools attached to the hollow shafts. The rotation of the air motor and the water flow are controlled independently for a cleaner working area. Typical cleaning tools used are carbide drills for severely clogged tubes, brushes for light deposits and buffing tools for final polishing of tubes.

Model **C-10** is typically used on oil coolers, small heat exchangers and condensers.

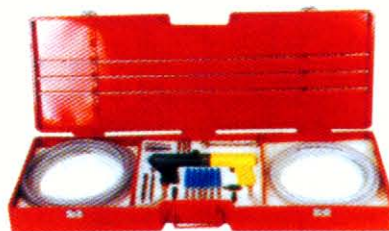
Model **CP-315** is Typically Used on larger diameter tubes of process equipment, heat exchangers and condensers.

Tube I.D. s suited for Inch	mm	Model No.	Max Motor Power		Free Speed RPM	Air Supply		Water Supply		Weight	
			HP	kW		Min	Max	Min	Max	lbs.	Kg.
3/16-1	4.8-25.4	C-10	0.6	0.45	700	60psi@16cfm	90psi@16cfm	30psi	100psi	5.72	2.6
7/8-2	22.2-51.0	CP-315	1	0.76	1000	90psi@20cfm	90psi@40cfm	30psi	100psi	6.60	3.0

**Note :** the tube cleaner above are supplied with a heavy duty metal carrying case with provision to house upto 8, (1.2m) long hollow shaft, 15 (4.6m) air hose, 15 (4.6m) water hose.



*Ideal for cleaning Small  
Diameter heat Exchangers*



*Hollow Drive Shaft*

## CLEANING TOOLS FOR USE WITH PORTABLE PNEUMATIC TUBE CLEANERS

- **Starter Drill** - To make pilot holes in deposits of completely clogged tubes.
- **Nylon Brushes** - ..... Refer to pages 13
- **Brass Brushes** - ..... Refer to pages 13
- **Stainless Brushes** - ..... Refer to pages 13
- **Buffing Tools** - ..... Refer to pages 13
- **Carbide Drill** - ..... Refer to pages 13



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