



WHEELHOUSE INDUSTRIES LLC

TOOLS FOR EVERY TUBE CLEANING NEED





Features :

- Water flushes through the shaft and helps remove deposits from tube.
- Forward direction foot switch enables operator to concentrate on cleaning operation without worrying about cleaner.
- Flexible shaft can be easily disconnected.
- Stainless steel body for use in the harshest environments.
- Easy interchangeability of various shafts and accessories for maximum versatility.
- Large wheels for easy transportation.
- Water consumption can be regulated as needed.

Electric Tube Cleaners are environment friendly, compact and easily maneuverable units used to clean straight and curved tubes in heat exchangers, condensers, boilers and other tubular apparatus. They work by attaching a cleaning tool (to be determined on type of deposit to be cleaned) to a flexible shaft. The Electric Tube Cleaner provides rotary motion to the flexible shaft which rotates the cleaning tool inside the tube. If needed water passes through the flexible shaft to aid in flushing out of the deposits. All Electric Tube Cleaners are supplied with forward direction foot switch. Dual direction foot switches are available on request.

Tube I.D. mm	Tube I.D. inch	Tube Cleaner Model No.	Motor Power		Motor Speed RPM	Weight		Dimension		
			HP	kW		lbs.	Kg.	Wide	Deep	
6.4-25.4	1/4-1	TP-40	1/2	0.40	890	62	28	38"(975mm)	21"(535mm)	18"(457mm)
6.4-25.4	1/4-1	TP-60	3/4	0.60	890	66	30	38"(975mm)	21"(535mm)	18"(457mm)
25.4 & UP	1 & UP	TP-75	1	0.75	1780	70	32	38"(975mm)	21"(535mm)	18"(457mm)
25.4 & UP	1 & UP	TP-150	2	1.50	1780	84	38	40"(1015mm)	22"(560mm)	19"(482mm)

All units available in your choice of :

110v 60Hz, 110v 50Hz - 9 Amps.

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

Please Specify when ordering.



Features :

- Compact and portable for use in multiple locations.
- Easy connect and disconnect of various shafts and cleaning tools.
- Foot Switch enables operator to concentrate on cleaning operation.
- Water moving through shaft flushes out deposits already dislodged by cleaning tools.

The Turbo Pro 20 is built for users to whom a small size and easy transportation means they can clean more tubes faster. Used to clean 1/4" - 1" I.D. tubes in chillers, condensers, evaporators and heat exchangers. The flexible shaft rotates at 1760 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 flows only when the machine is running. Water consumption can be regulated as needed.

Tube I.D. mm	Tube I.D. inch	Tube Cleaner Model No.	Motor Power HP	Motor Power KW	Motor Speed RPM	Weight lbs.	Weight Kg.	Dimension High	Dimension Wide	Dimension Deep
6.4-25.4	1/4-1	TP-20	1/2	0.40	1760	36	16	10"(254mm)	11"(279mm)	18"(457mm)

All units available in your choice of :

110v 60Hz, 110v 50Hz - 9 Amps. 220v 60Hz, 220v 50Hz - 4.5 Amps.

Please Specify when ordering.

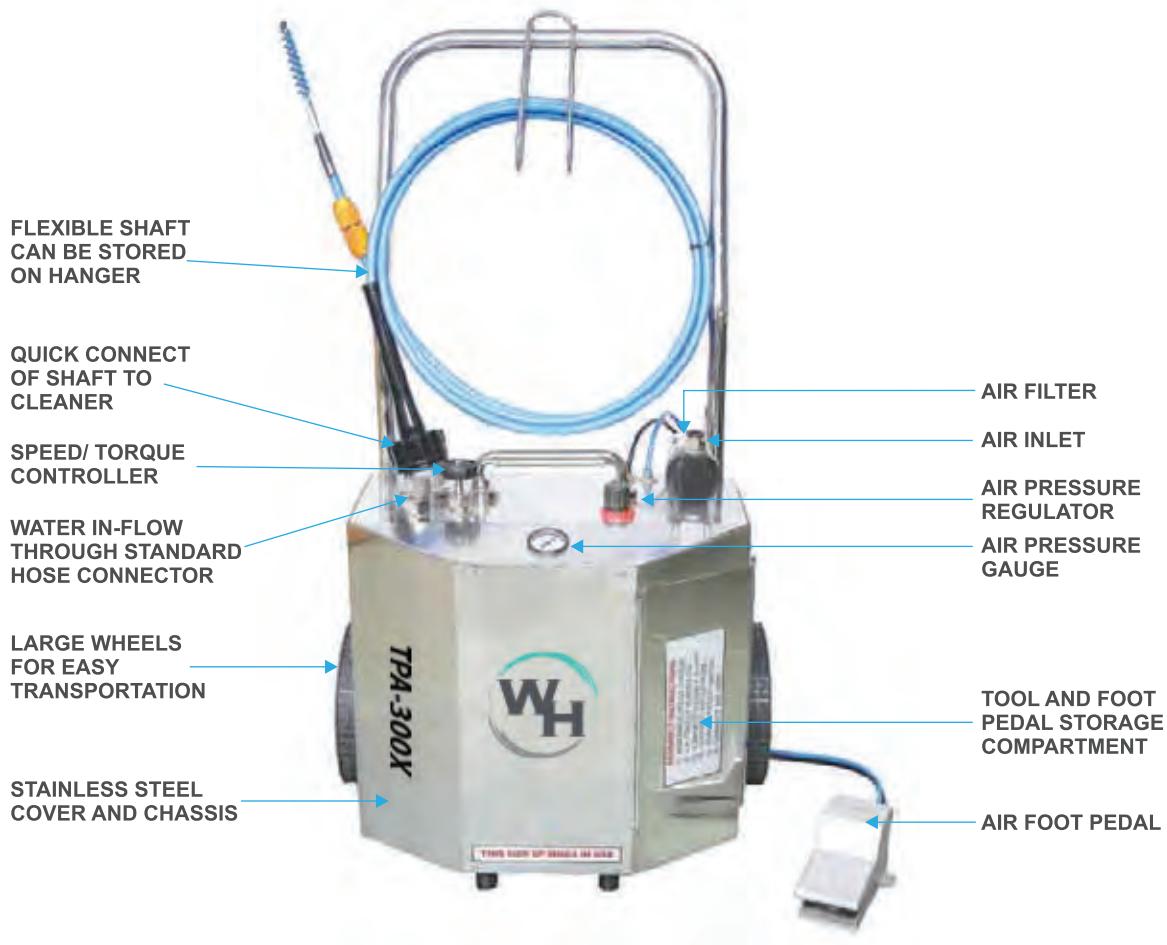
TURBO PRO 20 PORTABLE ELECTRIC TUBE CLEANING SYSTEM

Turbo Pro 20 Chiller tube cleaning system is the most common system for cleaning chillers by users to whom size and portability is paramount.

CONTENTS

- TURBO PRO 20 Portable Tube Cleaner
- WHI - 500 - 140 Flexible Shafts - 2 pcs.
- Nylon Brush (specify size) - 25 pcs.
- Repair kit for flexible shaft WHI-500 consisting of 4 drive end couplings, 4 tool end couplings, 1 shaft repair tool with hammer, 1 flexible shaft lubricator and 2 bottles of lubricant.





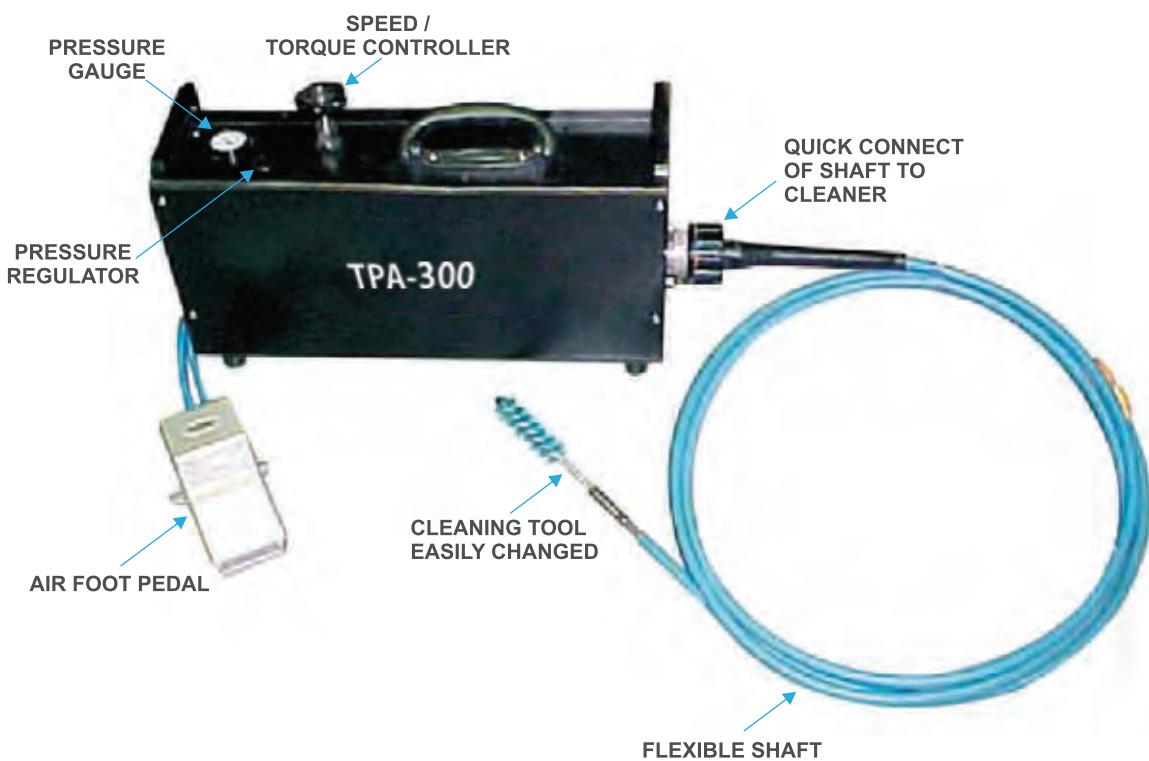
Features :

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

Wheelhouse Industries Model TPA-300X Extra Heavy Duty Pneumatic Tube Cleaning Machine includes air filter, regulator, lubricator, adjustable speed/torque control, mobile dolly, tool storage box and air foot pedal.

The TPA-300X 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 its watertight nylon casing, the unit feeds water through the casing to the cleaning tool. A foot pedal controls shaft rotation and water flow. While the operator feeds the rotating shaft assembly through the tube, the water flushes out deposits as they are loosened.

Tube I.D.		Tube Cleaner Model No.	Motor Power		Motor Speed RPM	Weight		Dimension		
mm	inch		HP	KW		lbs.	Kg.	High	Wide	Deep
6.4 & UP	1/4 & UP	TPA-300X	4	3.00	300-3000	64	29	38"(975mm)	22"(560mm)	16"(406mm)



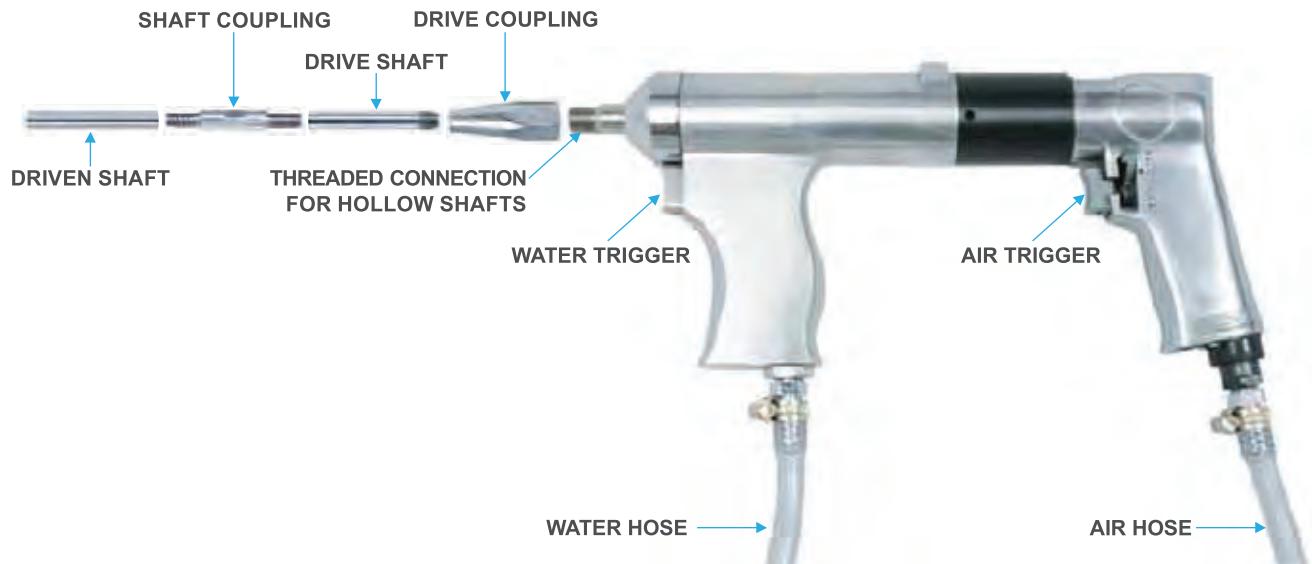
Features :

- Shock Resistant - Excellent for applications where use of electric equipment is hazardous.
- Versatile - Interchangeability 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-TPA-300 Portable Pneumatic Tube Cleaning Machine includes FRL unit, adjustable speed/torque control, and air foot pedal. The TPA-300 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 waterflow softens the deposits before cleaning and flushes them out during cleaning.

Tube I.D. mm	Tube I.D. inch	Tube Cleaner Model No.	Motor Power		Motor Speed RPM	Air Supply		Weight		Dimension		
			HP	KW		Min	Max	lbs.	Kg.	High	Wide	Deep
6.4 & UP	1/4 & UP	TPA-300	1.7	1.1	300-3000	60psi @ 15cfm	100psi @ 70cfm	26	12	10.3/8"(655mm)	6"(152mm)	19"(483mm)



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 form lengths as per the length of the tube to be cleaned.

Water flows through the hollow tube and washes out deposits that are dislodged by the cleaning tools attached to the driven shafts. Typical cleaning tools used are carbide drills for severely clogged tubes, brushes for light deposits and buffering tools for final polishing of tubes. The water flow is independently controlled allowing the user to determine how much water is needed in the application.

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

Model **TPG-10X** is typically used on larger diameter tubes of process vessels, heat exchangers and condensers.

Tube I.D.'s suited for mm inch	Model No.	Max Motor Power HP kW	Free Speed RPM	Air Supply		Water Supply		Weight			
				Min	Max	Min	Max	Ibs.	kg.		
4.8-25.4	3/16-1	TPG-10	0.6	0.45	700	60psi@16cfm	90psi@16cfm	30psi	100psi	5.72	2.6
22.2-51.0	7/8-2	TPG-10X	1	0.746	1000	90psi@20cfm	90psi@40cfm	30psi	100psi	6.60	3.0

Note : The tube cleaners above are supplied with a heavy duty plastic carrying case with separate provision to house upto 8, 4ft. (1.2m) long hollow shafts, 15ft. (4.6m) air hose, 15ft. (4.6m) water hose.



- **Hollow Drive Shaft** - 4ft. (1.2m) long aircraft quality steel shafts to connect to drive.
Model **WDS-300** to **WDS-500**
Model **WDS-562** to **WDS-750**



- **Hollow Driven Shaft** - 4ft. (1.2m) long aircraft quality steel shafts to connect to driven shafts. Order quantities based on length of tube to be cleaned.
Model **WDN-300** to **WDN-500**
Model **WDN-562** to **WDN-750**



- **Drive Coupling** - To Couple hollow drive shaft to drive. Model **WDC-300** to **WDC-500**
Model **WDC-562** to **WDC-750**



- **Shaft Coupling** - To Couple 2 hollow shafts together.
Model **WSC-300** to **WSC-500**
Model **SWC-562** to **WSC-750**



- **Starter Drill** - To make pilot holes in deposits of completely clogged tubes.
Model **WSD-312** to **WSD-500**
Model **WSD-562** to **WSD-750**



Tube I.D.'s suited for mm	Tube I.D.'s suited for inch	Drive Model No.	Hollow Drive Shaft Model No.	Hollow Driven Shaft Model No.	Drive Coupling Model No.	Shaft Coupling Model No.	Starter Drill Model No.
4.8-6.4	3/16-1/4	TBG-10	WDS-300	WDN-300	WDC-300	WSC-300	-
9.5	3/8		WDS-312	WDN-312	WDC-312	WSC-312	WSD-312
11.1	7/16		WDS-375	WDN-375	WDC-375	WSC-375	WSD-375
12.7-14.3	1/2-9/16		WDS-437	WDN-437	WDC-437	WSC-437	WSD-437
15.9-17.5	5/8-11/16		WDS-500	WDN-500	WDC-500	WSC-500	WSD-500
19.1-20.6	3/4-13/16		WDS-562	WDN-562	WDC-562	WSC-562	WSD-562
22.2-25.4	7/8-1	TBG-10X	WDS-625	WDN-625	WDC-625	WSC-625	WSD-625
27.0-51.0	1.1/16-2		WDS-750	WDN-750	WDC-750	WSC-750	WSD-750

CLEANING TOOLS

For use with portable pneumatic tube cleaners

- Nylon Brushes -
- Brass Brushes -
- Stainless Brushes -
- Buffing Tools -
- Carbide Drills -

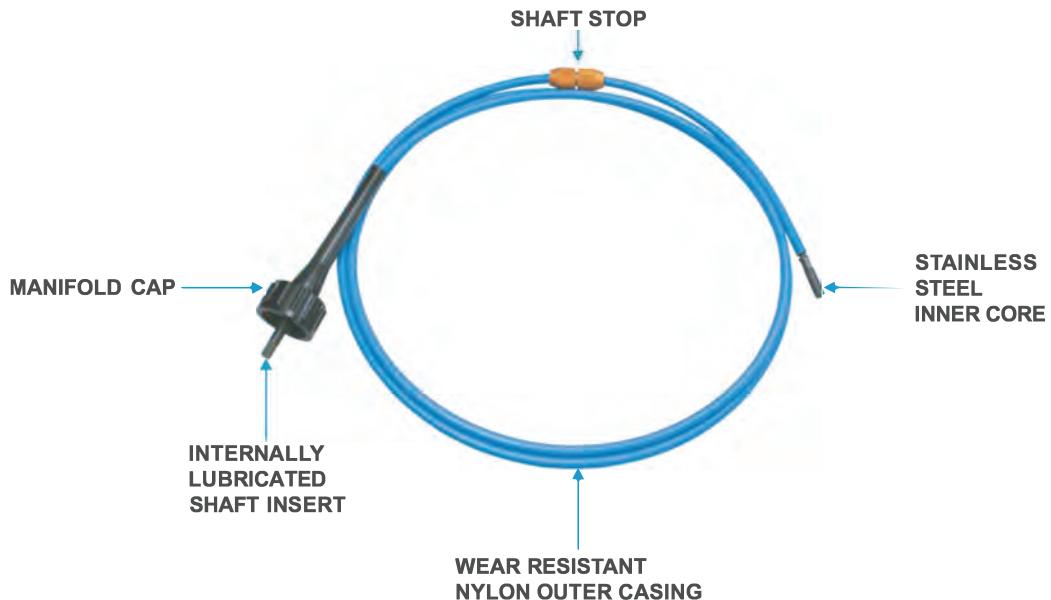


PORTABLE PNEUMATIC TUBE CLEANING KITS



Build your own kit by adding price of Drive (TPG-10 or TPG-10X), Hollow Drive Shafts, Hollow Driven Shafts, Shaft Couplings, Drive Coupling based on length of tube to be cleaned and cleaning tools (Brushes, Carbide Drills, Buffing Tools).

We will supply all the above in a handy box at no extra charge ! The box will accomodate a maximum of 1 Drive + 4 Hollow Shafts + 5 Couplings + 18 Cleaning Tools (Brushes, Carbide Drills, Buffing Tools).



For TP-40, TP-60

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 shaft stops for easy identification. Stainless Steel inner cores ensure our shafts have longest life, flexibility and resistance to corrosion. Since the inner core of the shafts are the heart of the system and take most of the strain, stainless steel inner cores cause our shafts to last longer than the competition.

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

Tube I.D. Range mm inch	Flexible Shaft Model No.	Flexible Shaft Length feet mtrs	Shaft Core O.D. mm inch	Shaft Casing O.D. mm inch	Tool End Thread	
6.4-9.5 1/4-3/8	WHI-250-40 WHI-250-79	13 26	4.0 7.9	3.2 1/8	6.4 1/4	8 - 32 F
11.1-12.7 7/16-1/2	WHI-375-40 WHI-375-55 WHI-375-79 WHI-375-110 WHI-375-140	13 18 26 36 46	4.0 5.5 7.9 11.0 14.0	6.4 1/4	9.5 3/8	1/4 - 28 F
14.3-25.4 9/16-1	WHI-500-40 WHI-500-55 WHI-500-79 WHI-500-110 WHI-500-140 WHI-500-184 WHI-500-232	13 18 26 36 46 61 76	4.0 5.5 7.9 11.0 14.0 18.4 23.2	7.9 5/16	12.7 1/2	1/4 - 28 F

FLEXIBLE SHAFTS FOR INTERNALLY GROOVED TUBES

Tube I.D. Range mm inch	Flexible Shaft Model No.	Flexible Shaft Length feet mtrs	Shaft Core O.D. mm inch	Shaft Casing O.D. mm inch	Tool End Thread	
17.5-25.4 11/16-1	WHI-560-40 WHI-560-55 WHI-560-79 WHI-560-110 WHI-560-140 WHI-560-186 WHI-560-232	13 18 26 36 46 61 75	4.0 5.5 7.9 11.0 14.0 18.6 23.2	9.5 3/8	14.3 9/16	1/4 - 28

Note : WHI-560 shafts can be supplied with Teflon[®] casing for when using dry. To order add suffix "T" to shaft number.

Teflon is a trademark of Du Pont Company.

Note: See page 102 for shaft repair equipment.

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

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

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

DRILL TIP DOUBLE DIAMETER BRUSHES



DRILL TIP DOUBLE DIAMETER NYLON BRUSH



DRILL TIP DOUBLE DIAMETER BRASS BRUSH

Tube I.D. mm	Tube I.D. inch	Drill Tip Nylon Brush	Drill Tip Brass Brush
15.9	5/8	WHNT-625	WHBT-625

DRILL TIP DOUBLE DIAMETER BRUSHES

These brushes are used to clean internally grooved tubes. The drill tip of brushes cleans through hard scale before the brush cleaning action takes over. The large diameter of this brush cleans into the grooves of the tubes and the small diameter into the lands of the tube's rifling.

COLOR CODED SCRUBBERS

mm	Tube I.D. inch	Scrubber O.D. (inch)	Model	Color	Type
12.57-13.74	0.495-0.541	0.560	WTS-560-S	Gold	Soft
13.39-14.10	0.527-0.555	0.560	WTS-560	Gold	Hard
14.50-15.75	0.570-0.620	0.630	WTS-630-S	Brown	Soft
15.00-16.00	0.590-0.630	0.630	WTS-630	Brown	Hard
15.75-17.15	0.620-0.675	0.695	WTS-695-S	Orange	Soft
16.56-17.63	0.652-0.694	0.695	WTS-695	Orange	Hard
16.76-18.54	0.660-0.730	0.750	WTS-750-S	Violet	Soft
18.03-19.05	0.710-0.750	0.750	WTS-750	Violet	Hard
18.54-20.32	0.730-0.800	0.825	WTS-825-S	White	Soft
19.74-20.80	0.777-0.819	0.825	WTS-825	White	Hard
19.81-21.60	0.780-0.850	0.870	WTS-870-S	Lime	Soft
20.96-22.10	0.825-0.870	0.870	WTS-870	Lime	Hard
22.10-24.00	0.870-0.944	0.960	WTS-960-S	Blue	Soft
22.50-24.13	0.886-0.950	0.960	WTS-960-M	Blue	Medium
22.91-24.28	0.902-0.956	0.960	WTS-960	Blue	Hard
25.40-27.56	1.000-1.085	1.100	WTS-1100-S	Black	Soft
26.09-28.09	1.027-1.106	1.100	WTS-1100	Black	Hard

In most cases hard tube scrubbers are recommended for removing light to medium deposits in condensers. They work by being 'Shot Thru' the tubes with a high pressure air gun. Order tube scrubbers by model and color.

Features :

- Scrubbers are shot thru tubes with a gun using compressed air and water.
- The scraping disks will not damage inside of tubes.
- Scrubbers float for easy retrieval.
- Reuseable.



1/4" - 1"
I.D.

CLEANING ACCESSORIES



BUFFING TOOL



REPLACEMENT BLADES



BUFFING TOOL WITH DRILL TIP

BUFFING TOOLS are used for final polishing or removal of light and soft deposits from ferrous and non-ferrous tubes that have been previously cleaned. Used in straight or very large radius tubes in a clockwise direction only.

Tube I.D. mm	Tube I.D. inch	Buffing Tool	With Drill Tip	Replacement Blades	Adjusting Tool
7.9-9.5	5/16-3/8	WBT-1	WBT-1-T	WBB-1	WBT-AT
9.5-12.7	3/8-1/2	WBT-2	WBT-2-T	WBB-1	WBT-AT
12.7-14.3	1/2-9/16	WBT-3	WBT-3-T	WBB-2	-
15.9-25.4	5/8-1	WBT-4	WBT-4-T	WBB-3	-

CARBIDE DRILLS for heavily choked tubes

Tube I.D. mm	Tube I.D. inch	Carbide Drill
6.4	1/4	WCB-250
9.5	3/8	WCB-375
11.1	7/16	WCB-430
12.7	1/2	WCB-500
14.3	9/16	WCB-560
15.9	5/8	WCB-625
17.5	11/16	WCB-680



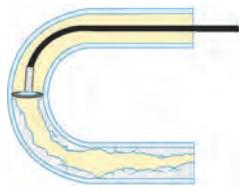
CARBIDE DRILL

CARBIDE DRILLS are used for cleaning tubes choked solidly with hard deposits.

U-TUBE TOOLS These tools are used to clean tubes that have sharp bends in them. They consist of a brush or cobalt tip mounted on a piece of flexible shaft so the tool can negotiate the bend.

CUP BRUSH TOOLS - Brass or Stainless Steel

Tube I.D. mm	Tube I.D. inch	Cup Brush Tools
12.7-19.1	1/2-3/4	WCBT-500B
12.7-19.1	1/2-3/4	WCBT-500SS



CUP BRUSH TOOL

WHEEL BRUSH TOOLS - Brass or Stainless Steel

Tube I.D. mm	Tube I.D. inch	Wheel Brush Tools
20.6-25.4	13/16-1	WBBT-813B
20.6-25.4	13/16-1	WSBT-813SS



WHEEL BRUSH TOOL

COBALT TIP TOOLS

Tube I.D. mm	Tube I.D. inch	Cobalt Tip Tools
12.7	1/2	WCTT-500
15.9	5/8	WCTT-625



COBALT TIP TOOL

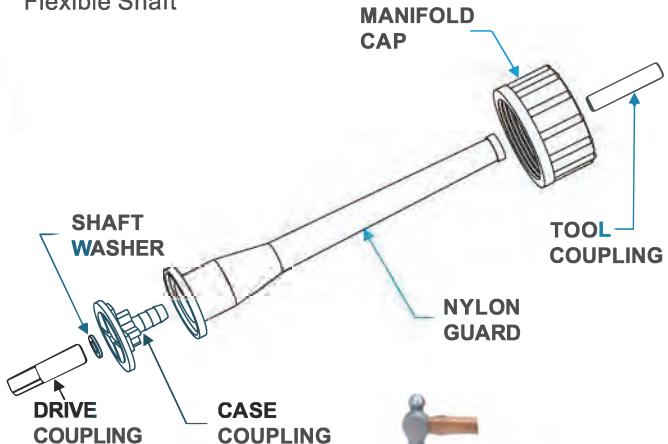
For sizes not listed above please contact us.

SHAFT REPLACEMENT COUPLINGS

Flexible Shaft Model	WHI-250	WHI-375	WHI-500	WHI-560	WHI-750
Tool Coupling	WC-250	WC-375	WC-500	WC-560	WC-750
Case Coupling	CC-250	CC-375	CC-500	CC-560	CC-750
Manifold Cap	WMC-1	WMC-1	WMC-1	WMC-1	WMC-1
Shaft Washer	3/16x3/4	5/16x3/4	7/16x3/4	9/16x7/8	11/16x1
Drive Coupling	DC-250	DC-375	DC-500	DC-560	DC-750
Nylon Guard	NG-250	NG-250	NG-500	NG-500	NG-750

FLEXIBLE SHAFT REPAIR AND MAINTENANCE

For PFS-250, PFS-375, PFS-500, PFS-560 and PFS-750
Flexible Shaft



SHAFT REPAIR TOOL allows users to quickly and safely attach couplings onto the shaft ensuring maximum useful life for the shaft.

SHT-1 Shaft Repair Tool with Hammer.
SHP-1 Replacement Hammer.

FLEXIBLE SHAFT LUBRICATOR is used to lubricate flexible shafts for maximum useful life. They are also used to lubricate shafts prior to storage. The lubricator is filled with a water soluble lubricant that enters and lubricates the shaft when air supply is provided to the lubricator. The residue lubricant washes out with water when the shaft is used again.

PFSL-1 Flexible Shaft Lubricator.

PLUBE Lubricant for flexible shaft lubricator, 8 ounces (0.25 litres).



LUBRICANT



FLEXIBLE SHAFT LUBRICATOR



FLEXIBLE SHAFT

For TP-75, TP-150

To order flexible shaft(s), determine tube I.D.(s) and length of longest tubes. Order flexible shaft(s) to correspond with tube I.D.(s) and lengths. (Consult factory for longer shafts if required.)

FLEXIBLE SHAFTS (Wet application - Nylon casing) for tubes 1" (25.4mm) I.D. and UP

Tube I.D. Range mm	Flexible Shaft Model No.	Flexible Shaft Length feet	Flexible Shaft Length mtrs	Shaft Core O.D. mm	Shaft Casing O.D. mm	Tool End Thread
25.4	WH-750-49	16	4.9	12.7	19.1	1/2 - 12F
	WH-750-79	26	7.9			
	WH-750-110	36	11.0			
	WH-750-155	51	15.5			



FLEXIBLE SHAFT

FLEXIBLE SHAFTS (Dry application - Steel casing) for tubes 1" (25.4mm) I.D. and UP

Tube I.D. Range mm	Flexible Shaft Model No.	Flexible Shaft Length feet	Flexible Shaft Length mtrs	Shaft Core O.D. mm	Shaft Casing O.D. mm	Tool End Thread
25.4	WH-875-49	16	4.9	12.7	22.2	1/2 - 12F
	WH-875-79	26	7.9			
	WH-875-110	36	11.0			
	WH-875-155	51	15.5			

FLEXIBLE SHAFTS (Dry application - Stainless steel casing) for tubes 1" (25.4mm) I.D. and UP

Tube I.D. Range mm	Flexible Shaft Model No.	Flexible Shaft Length feet	Flexible Shaft Length mtrs	Shaft Core O.D. mm	Shaft Casing O.D. mm	Tool End Thread
25.4	WH-875-49-SS	16	4.9	12.7	22.2	1/2 - 12F
	WH-875-79-SS	26	7.9			
	WH-875-110-SS	36	11.0			
	WH-875-155-SS	51	15.5			

BRUSHES

NYLON BRUSHES Recommended for removing soft scales in straight, non-ferrous tubes. (copper, brass, plastic, etc.) and ferrous (stainless steel, carbon steel) and for final 'finishing' of tubes. Order brush so that brush O.D. is marginally smaller than tube I.D.

BRASS BRUSHES Recommended for removing soft and light scale deposits in straight, non-ferrous tubes. Order brush so that brush O.D. is marginally smaller than tube I.D.

STAINLESS STEEL BRUSHES Recommended for removing soft and light scale deposits in straight, ferrous tubes. (carbon steel, stainless steel, etc.). Order brush so that brush O.D. is marginally smaller than tube I.D.

Brush O.D. mm	Brush O.D. inch	Nylon Brush	Brass Brush	Stainless Steel
31.7	1. 1/4	WHN - 1250	WHB - 1250	WHSS - 1250
38.1	1. 1/2	WHN - 1250	WHB - 1500	WHSS - 1500
44.5	1.3/4	WHN - 1250	WHB - 1750	WHSS - 1750
51.0	2	WHN - 2000	WHB - 2000	WHSS - 2000
57.1	2. 1/4	WHN - 2250	WHB - 2250	WHSS - 2250
63.5	2. 1/2	WHN - 2500	WHB - 2500	WHSS - 2500
70.0	2.3/4	WHN - 2750	WHB - 2750	WHSS - 2750
76.2	3	WHN - 3000	WHB - 3000	WHSS - 3000
82.6	3. 1/4	WHN - 3250	WHB - 3250	WHSS - 3250
89.0	3. 1/2	WHN - 3500	WHB - 3500	WHSS - 3500
95.2	3.3/4	WHN - 3750	WHB - 3750	WHSS - 3750
101.6	4	WHN - 4000	WHB - 4000	WHSS - 4000



NYLON BRUSH



BRASS BRUSH



STAINLESS STEEL BRUSH

CARBON STEEL BRUSHES Recommended for removing soft and light scale deposits in straight, ferrous tubes. Order brush so that brush O.D. is marginally smaller than tube I.D.

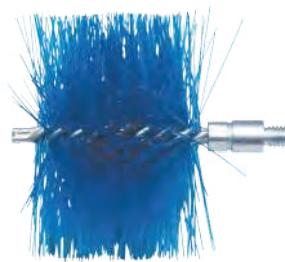
PLASTIC BRUSHES Recommended for removing soft deposits in straight, ferrous and non-ferrous tubes and for final 'finishing' up of cleaning in hoses, tubes and pipes. Order brush so that brush O.D. is marginally smaller than tube I.D.

Brush O.D. mm	Brush O.D. inch	Carbon Steel	Plastic Brush
127.0	5	CS - 5000	P - 5000
152.4	6	CS - 6000	P - 6000
178.0	7	CS - 7000	P - 7000
203.2	8	CS - 8000	P - 8000
228.6	9	CS - 9000	P - 9000
254.0	10	CS - 10000	P - 10000
279.4	11	CS - 11000	P - 11000
305.0	12	CS - 12000	P - 12000
330.2	13	CS - 13000	P - 13000
355.6	14	CS - 14000	P - 14000

Note : Brushes over 1" O.D. require # TCB-C coupling to connect to WH-750, WH-875 and WH-875-SS



CARBON STEEL BRUSH



PLASTIC BRUSH



DRILL TIP NYLON BRUSH



DRILL TIP BRASS BRUSH



CIRCULAR BRUSH
(FOR STRAIGHT TUBES)

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

Note : For larger sizes, please enquire.

CIRCULAR BRUSH TOOLS FOR CURVED TUBES

TUBES 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.



CIRCULAR BRUSH (FOR CURVED TUBES)

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

Note : For larger sizes, please enquire.



BUFFING TOOL



BUFFING TOOL WITH DRILL TIP



REPLACEMENT BLADES

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

Buffing tool are used for final polishing or removal of light and soft deposits from ferrous and non-ferrous tubes that have been previously cleaned.

Used in straight or very large radius tubes in a clockwise direction only.

WBT-7 Buffing Tools for tubes 1"-3" (25.4-76.2mm) I.D.

WBT-7-T Buffing Tools for tubes 1"-3" (25.4-76.2mm) with drill tip.

WBB-5 Replacement Blades for WBT-7.

CARBIDE DRILLS for Heavily choked tubes.

Carbide Drills are used for cleaning tubes choked solidly with hard deposits.

Tube I.D. mm	Tube I.D. inch	Carbide Drill
19.1	3/4	WHCB-750
22.2	7/8	WHCB-875
25.4	1	WHCB-1000



CARBIDE DRILL

CONE CUTTER TOOLS These tools use patented ergocentric cutters to clean hard scale from typically larger tubes that are found in boilers. The ergocentric cutters ensure that the same tooth does not touch the same spot when cleaning and prevents grooves being formed in the tube scale. All cone cutter tools are fitted with universal joints to negotiate bends in curved tubes.

ONE CONE TOOL These consist of 1 Cone fitted onto a Universal Joint and are used when scale build up is not severe.

TWO CONE TOOL These consist of 2 Cones fitted onto a Universal Joint and are used when scale build up is severe.



SPARE CONE

Straight Tube I.D.		Curved Tube I.D.		One Cone Tool Model	Two Cone Tool Model	Cone Diameter		Spare Cone Model	Spare Universal Joint Model
mm	inch	mm	inch			mm	inch		
27.0-33.3	1.1/16-1.5/16	30.2-36.5	1.3/16-1.7/16	WHOC-1063	WHTC-1063	23.8	15/16	WSCT-937	WUCT-1063
31.7-36.5	1.1/4-1.7/16	36.5-42.9	1.7/16-1.11/16	WHOC-1250	WHTC-1250	27.0	1.1/16	WSCT-1062	WUCT-1250
35.0-39.7	1.3/8-1.9/16	42.9-49.2	1.11/16-1.15/16	WHOC-1375	WHTC-1375	30.2	1.3/16	WSCT-1187	WUCT-1250
38.1-46.0	1.1/2-1.13/16	49.2-55.5	1.15/16-2.3/16	WHOC-1500	WHTC-1500	36.5	1.7/16	WSCT-1437	WUCT-1250
44.5-58.7	1.3/4-2.1/16	55.5-61.9	2.3/16-2.7/16	WHOC-1750	WHTC-1750	42.9	1.11/16	WSCT-1687	WUCT-1250
50.8-60.3	2-2.3/8			WHOC-2000	WHTC-2000	49.2	1.15/16	WSCT-1937	WUCT-1250



ONE CONE TOOL



TWO CONE TOOL



THREE CONE TOOL

THREE CONE TOOL

These consist of 3 Cones fitted onto a base which is fitted with a Universal Joint and are used for cleaning larger (2.5/16" I.D. and up) tubes where scale build up is severe.

Straight Tube I.D.		Curved Tube I.D.		Three Cone Tool Model	Spare Cone Model	Spare Base Model	Spare Universal Joint Model
mm	inch	mm	inch				
58.7-73.0	2.5/16-2.7/8	61.9-79.4	2.7/16-3.1/8	WHT-2313	WHSC-937	WHSB-2313	WHUN-1250
71.4-85.7	2.13/16-3.3/8	77.8-93.7	3.1/16-3.11/16	WHT-2813	WHSC-937	WHSB-2813	WHUN-1250
84.1-96.8	3.5/16-3.13/16	92.1-103.2	3.5/8-4.1/16	WHT-3313	WHSC-1062	WHSB-2813	WHUN-1250

SCRAPER TOOLS

Scraper Tools use scrapper blades that 'fly out' when the tool is rotated, coming into contact with scale and scraping it out. These tools can be coupled with brushes for simultaneous 'finishing' of the cleaning operation as with carbide drills to initially drill through tubes that have very hard deposits.

Straight Tube I.D.		Curved Tube I.D.		Scraper Tool Model
mm	inch	mm	inch	
20.6-39.7	13/16-1.9/16	23.8-46.0	15/16-1.13/16	WCR-813
36.5-58.7	1.7/16-2.1/16	42.9-65.1	1.11/16-2.9/16	WCR-1438
42.9-77.8	1.11/16-3.1/16	61.9-77.8	2.7/16-3.1/16	WCR-1687



FLEX HUB ASSEMBLY



REPLACEMENT BLADES



CARBIDE DRILL



UNIVERSAL JOINT

SPARES FOR SCRAPER TOOLS

Model WCR-813-SB Spare Set of 3 Scraping Blades for WCR-813.

Model WCR-1438-SB Spare Set of 3 Scraping Blades for WCR-1438.

Model WCR-1687-SB Spare Set of 3 Scraping Blades for WCR-1687.

Model WB-750 Carbide Drill for use with WCR-1438 Scraper tool to drill through tubes with very hard deposits.

Model WB-875 Carbide Drill for use with WCR-1687 Scraper tool to drill through tubes with very hard deposits.

Model UCT-1250 Universal Joint for use with scraper tool for use with curved tubes.

COMBINATION CONE-CARBIDE DRILL TOOL

These combination tools use the extreme hardness of a carbide drill coupled with the ergocentric cleaning properties of cone cleaning cutters to drill through and simultaneously clean tubes that are choked with very hard deposits.

Tube I.D. mm	Tube I.D. inch	Combination Cone-Carbide Drill Tool Model
23.8-27.0	15/16-1.1/16	WHCD-938
27.0-30.2	1.1/16-1.3/16	WHCD-1063
30.2-36.5	1.3/16-1.7/16	WHCD-1188
36.5-42.9	1.7/16-1.11/16	WHCD-1438
42.9-49.2	1.11/16-1.15/16	WHCD-1687

**COMBINATION CONE-CARBIDE DRILL TOOL****CYLINDER CUTTER TOOL**

These tools are used typically in boilers and other larger tubes that have a light to medium deposit. These tools use patented ergonomic cutting wheels that ensure the same tooth of the cutter wheel does not touch the same spot when cleaning. This prevents grooves being formed in the tube scale. The cutters 'fly out' when the tool is rotated and perform cleaning action.

Tube I.D. mm	Tube I.D. inch	Cylinder Cutter Tool Model	Spare Cylinder Cutter Model
36.5-47.6	1.7/16-1.7/8	WHCC-1438	WHCY-1438
46.0-73.0	1.13/16-2.7/8	WHCC-1813	WHCY-1438
55.5-81.0	2.3/16-3.3/16	WHCC-2188	WHCY-2188
79.4-98.4	3.1/8-3.7/8	WHCC-3125	WHCY-2188

**CYLINDER CUTTER TOOL****WING TOOLS-STIFF ARM CUTTER**

These tools use long stiff arms with patented cone cutters on their ends, that spread out when rotated. These tools are used to clean light to medium deposits in large diameter tubes and pipes.

Tube I.D. mm	Tube I.D. inch	Wing Tool-Stiff Arm Cutter Model	Spare Cone Cutter Model
42.9-101.6	1.11/16-4	WHST-1688	WHSC-937
100.0-165.1	3.15/16-6.1/2	WHST-3938	WHSC-937

**WING TOOLS-STIFF
ARM CUTTER****WING TOOLS-FLEXIBLE ARM CUTTER****WING TOOLS-FLEXIBLE ARM-CARBIDE BALL TIP**

These tools are similar in operation to the Stiff Arm Winged Tools, but patented Cone Cutters are attached onto flexible arms. These tools are used in typically very large vertical pipes and are used in cleaning pipes from top to bottom.

Tube I.D. mm	Tube I.D. inch	Wing Tool - Flexible Arm Cutter Model	Spare Cone Cutter Model
100.0-309.0	3.15/16-12	WHTF-3938	WHSC-937

WING TOOLS-FLEXIBLE ARM-CARBIDE BALL TIP

These tools are similar in operation to the Flexible Arm Cutter Wing Tools except these use carbide balls for removing light scale in large diameter tubes and pipes.

Tube I.D. mm	Tube I.D. inch	Wing Tool - Flexible Arm Carbide Ball Tip Model	Number of Balls Used
23.8-52.4	15/16-2.1/16	WFA-938	4
49.2-103.2	1.15/16-4.1/16	WFA-1938	6
100.0-204.8	3.15/16-8.1/16	WFA-3938	6

**WING TOOLS-FLEXIBLE ARM-CARBIDE BALL TIP****WING TOOLS-FLEXIBLE NYLON ROD**

These tools are fitted with abrasive nylon rods that spread out when rotated. These tools are used to clean light deposits in thin tubes and pipes of exotic materials where damage to tubes is to be avoided.

Tube I.D. mm	Tube I.D. inch	Wing Tool - Flexible Nylon Rod Model
49.2-431.8	1.15/16-17	WFN-1938

**WING TOOLS-FLEXIBLE NYLON ROD**

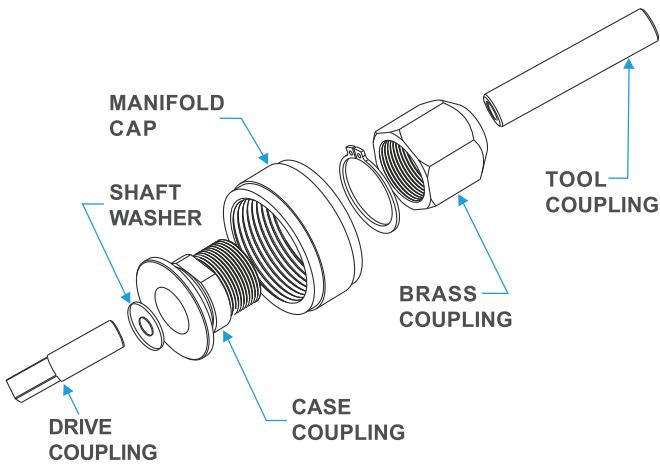
FLEXIBLE SHAFTS REPAIR / MAINTENANCE

For PFS-750, PFS-875 and PFS-875-SS Flexible Shafts

SHAFT REPAIR COUPLINGS

The life of flexible shafts can be extended by proper use and maintenance. If a flexible shaft should break at either end it can be easily repaired by cutting off the end portion and using a shaft repair tool to attach a coupling onto the cut shaft.

Flexible Shaft Model	PFS-875/ PFS-875-SS
Tool Coupling	TC-750
Case Coupling	CC-875
Manifold Cap	MC-2
Shaft Washer	9/16x7/8
Drive Coupling	DC-750
Brass Coupling	BC-875



SHAFT REPAIR TOOL FOR FLEXIBLE SHAFT REPAIR

Allows users to quickly and safely attach couplings onto the shaft ensuring maximum useful life for the shaft.

SHT-1 Shaft Repair Tool with Hammer.

SHP-1 Replacement Hammer.



FLEXIBLE SHAFT LUBRICATOR

Is used to lubricate flexible shafts for maximum useful life. They are also used to lubricate shafts prior to storage. The lubricator is filled with a water soluble lubricant that enters and lubricates the shaft when air supply is provided to the lubricator. The residue lubricant washes out with water when the shaft is used again.

PFSL-1 Flexible Shaft Lubricator.

PLUBE Lubricant for flexible shaft lubricator, 8 ounces (0.25 litres).



FLEXIBLE SHAFT LUBRICATOR

FLEXIBLE SHAFT REPAIR KITS

Flexible shaft repair kits include 4 drive end repair couplings, 4 tool end repair couplings, 1 shaft repair tool with punch, 1 flexible shaft lubricator, 2 bottles [8 ounce (0.25 liter) each] of lubricant for flexible shaft lubricator.

REP-750-KIT Repair kit for PFS-750, PFS-875 and PFS-875-SS Flexible shafts.



REPAIR KIT



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