

AERO-MOTIVE COMPANY

A Woodhead Industries, Inc. Subsidiary



IMPORTANT SAFETY INSTRUCTIONS

Please read this manual carefully and follow its instructions. Improper use or failure to follow these instructions could result in serious injury, death or property damage. Operators should be instructed in the safe and proper use and maintenance of this product. Keep this manual for future reference.

The following safety precautions call attention to potentially dangerous conditions.



DANGER: Immediate hazards which **WILL** result in severe personal injury or death.



WARNING: Hazards or unsafe practices which **COULD** result in severe personal injury or death.



CAUTION: Hazards or unsafe practices which **MAY** result in *minor* personal injury or product or property damage.

INSTALLATION



WARNING: Failure to read, understand, and follow these instructions creates hazards that **COULD** result in personal injury or death.



CAUTION: Instruct operators in the safe, proper use, and maintenance of the reel. Keep this manual for future reference. Hazards or unsafe practices **MAY** result in *minor* personal injury or product or property damage.

MOUNTING

The fixed base of the reel allows mounting in several different positions including base up, base down, or wall mounted. Here are general mounting requirements:

- Main-shaft must be horizontal.
- Centerline of the spool assembly must be on line with the cable run.
- When mounted overhead in base up position, add a secondary chain, bracket or other safety device to prevent reel from falling in case the mounting bolts are removed or become loosened from vibration.

SECONDARY SUPPORT CHAIN



DANGER: A secondary safety cable or chain is to be attached to all reels mounted overhead to prevent reel from falling. Immediate hazards **WILL** result in severe personal injury or death.

All reels mounted over head should have a secondary support chain to protect personnel in case of structure or mounting component failure. Attach one end of secondary support chain or cable to secondary support point on reel. Attach other end of secondary support chain or cable to a support component other than that which supports the reel. The chain or cable should be as short as possible allowing reel to drop no more than 6 to 12 inches if the primary connection is released. A secondary support is offered as an accessory item.

PIVOT BASE

If optional pivot base is used, reel will be self-aligning to direction of cable run. The four roller cable guide must be used with pivot or swivel mounts.

WIRING

NOTE: On model 228BH and CSA listed reels--in Canada--, the green wire has been grounded to the frame of the reel and cannot be used as a power conductor.

A convenient one inch pipe thread opening has been provided at the bottom of the enclosure in base for connecting standard water tight cable connectors or conduit fitting--fittings not supplied. Individual power connections are made to the collector ring bus wires inside the junction box enclosure in base using commercially available twist on wire connectors or compression splices.

35 amp			220 v		
1 Phase			3 Phase		
Wire	Color	Number	Wire	Color	Number
L1	black	1	L1	black	1
N	white	2	L2	white	2
L3	red	3	L3	red	3
G	green	4	G	green	4

SAFETY INTERNAL GROUNDING

Standard reels are not grounded internally with the exception of reels built to CSA standards and the model 228BH. Internal grounding must be accomplished by running a jumper wire from the brush assembly to the grounding screw provided, and attaching the collector ring ground bus to the bolt (3) provided in the junction box enclosure on back of base (5). See main illustration and diagram.

OPERATION

RATCHET LOCK


All models are supplied with a ratchet lock that works in any position. If ratchet lock is not required--constant tension--, move spring clip and spring to adjacent cable guide screw.

CABLE GUIDE

The cable guide position is set by rotating the spring pocket assembly. Loosen the three clamps holding the spring pocket assembly in place by unscrewing the three hex head bolts. Unless required, do not completely remove bolts or clamps. Reposition guide as required, making sure clamps straddle ribs on outside diameter of spring pocket assembly and retighten hex head bolts.

SPRING TENSION

	CAUTION: Do not connect working end of cable until the reel is properly pretensioned. Hazards or unsafe practices MAY result in <i>minor</i> personal injury or product or property damage.
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	CAUTION: Failure to test for adequate spring revolutions can cause spring damage. Hazards or unsafe practices MAY result in <i>minor</i> personal injury or product or property damage.
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NOTE: A minimum 2 pre-tension turns is required. Additional turns can added as long as one unused spring turn remains when cable is completely extended. If entire cable cannot be pulled out, decrease spring tension until full one turn remains.

Reels shipped with cable end attachments (handlamps, plugs, etc.) are pre-tensioned at factory. All other reels require pretensioning turns to spool assembly before connecting free end of working cable. Set spring tension by turning fully wrapped reel through a specific number of revolutions or turns. Number of pretension turns depends on application and desired tension. **A minimum of 2 set up turns is needed for most applications.** Additional tension may be added by repeating above process. After tension is set, connect cable free end. Failure to pretension reel may result in insufficient tension to retract and may shorten spring life.


SERVICE


BULB REPLACEMENT--model 228BH


 **CAUTION:** Always check for shorts and continuity before turning on electrical power. Hazards or unsafe practices **MAY** result in *minor* personal injury or product or property damage.

Remove guard on hand lamp by removing screws on base of guard. NOTE: Use a 75-watt or smaller bulb. A rough service bulb is recommended.

MAINSRING

 **WARNING:** Always disconnect electrical power before dismantling any part of the reel. Fuse size must not be greater than maximum amperage capacity of cable. Remove all spring tension before attempting any service. Hazards or unsafe practices **COULD** result in **severe** personal injury or death.


 **WARNING:** To prevent personal injury, death or property damage, handle all springs with care. Use suitable protective gloves for spring handling. Hazards or unsafe practices **COULD** result in **severe** personal injury or death.

 **WARNING:** To prevent personal injury, death or property damage, hold center of spring down as the hub is pulled out. If the center is allowed to rise up, the spring may escape from its container. Hazards or unsafe practices **COULD** result in **severe** personal injury or death.


NOTE: It is recommended to replace all springs since unbroken springs of same age will likely need replacement very soon as well. Failure to do this will result in much more frequent maintenance.

If reel will not develop tension or retract cable, spring pocket assembly may need to be replaced. Remove junction box cover. Disconnect line-input wires from collector ring bus wires. Remove screw, shaft retainer, drum and main shaft from base. Remove cable guide, spring clip, ratchet spring, shoulder bolt and ratchet pawl from spring pocket assembly. Remove spring pocket assembly from base and replace with new part. To reassemble, reverse the above procedure making sure the dimple in the shaft retainer is toward the main shaft.

COLLECTOR RING REPLACEMENT

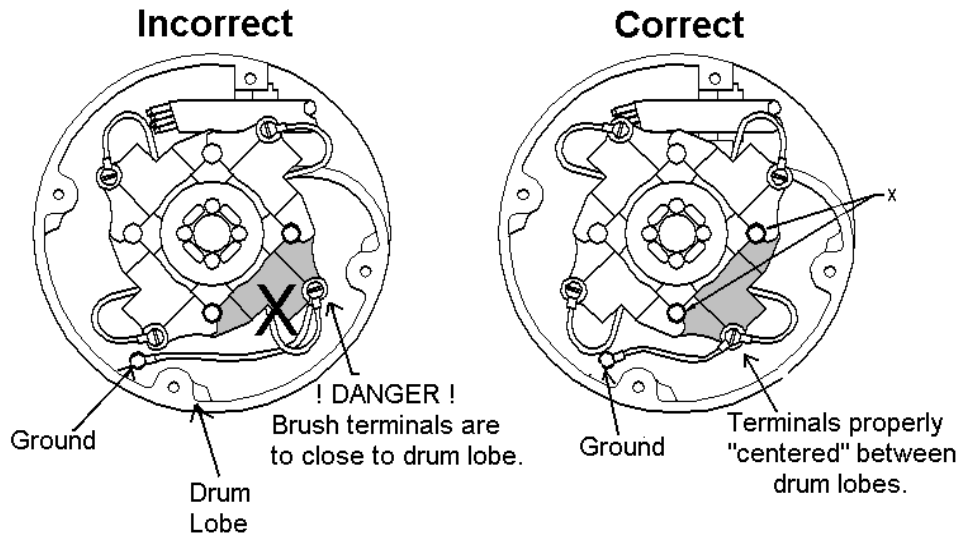
 **WARNING:** Disconnect and lock out all power to reel before servicing collector ring assembly. Hazards or unsafe practices **COULD** result in **severe** personal injury or death.

 **CAUTION:** Check continuity and replace all covers before turning on electrical power. Hazards or unsafe practices **MAY** result in *minor* personal injury or product or property damage.

 **WARNING:** Check placement of brush holder assemblies to make sure terminal locations are centered between the protruding lobes on the inner and outer drums. Hazards or unsafe practices **COULD** result in **severe** personal injury or death.

NOTE: Check position of cable entry in relationship to studs marked by "X" in figure. Replace subsequent brush assemblies in clockwise rotation

To service the collector ring assembly, remove junction box cover and disconnect bus wires in junction box. Remove cover, if required, and outer drum-half. Unclip brush assembly from brush studs and remove. Notice position of brush assembly. Remove all brush assemblies from collector ring. Loosen collector ring set screw & slide collector ring off main shaft. To reassemble, reverse above procedure. The last brush assembly--one closest to steel hub on collector ring--must be assembled on brush studs indicated by the "X" in the figure BELOW.



WORKING CABLE REPLACEMENT/INSTALLATION

WARNING: Disconnect and lock out all power to reel before servicing. Hazards or unsafe practices **COULD** result in severe personal injury or death.

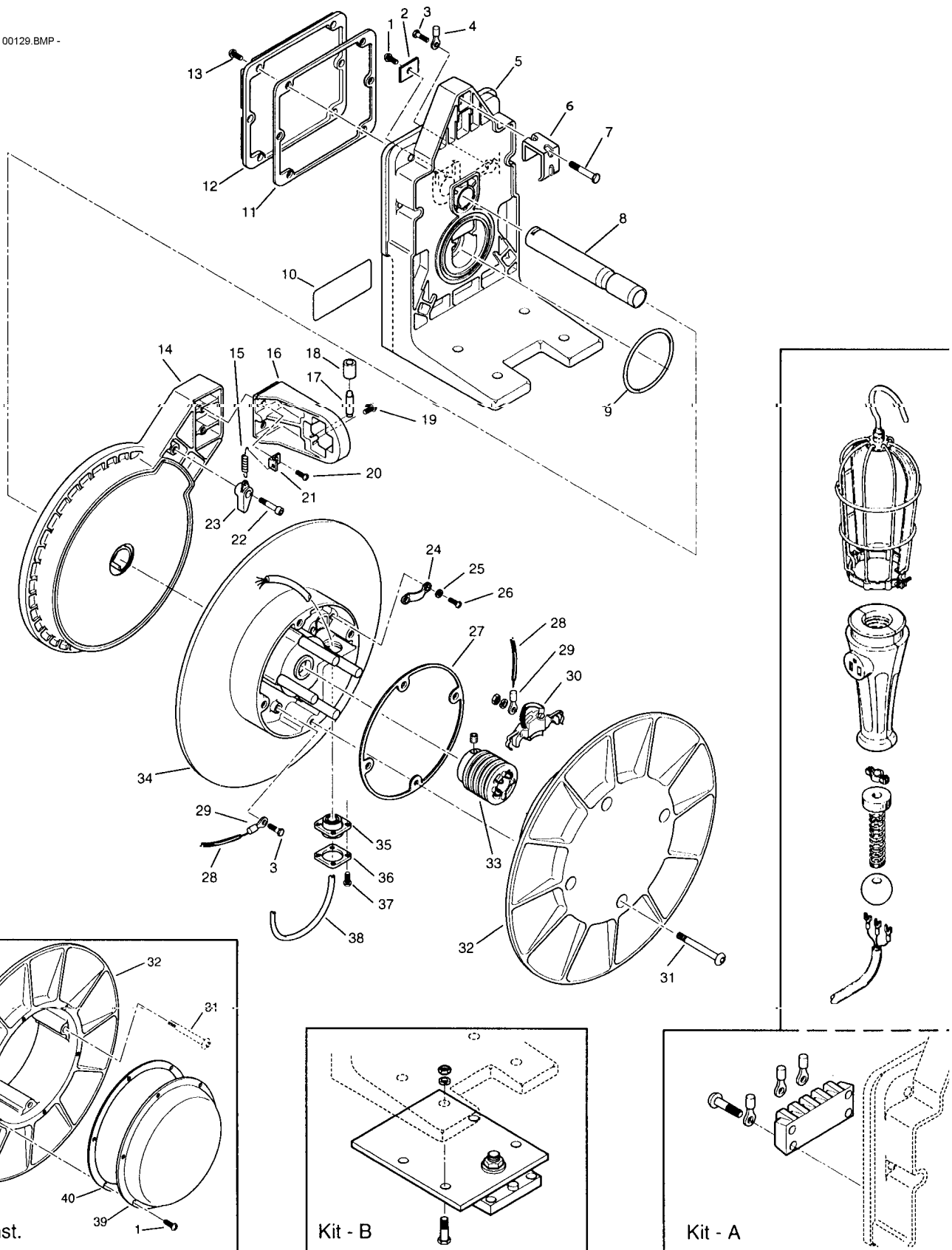
CAUTION: Check continuity and replace all covers before turning on electrical power. Hazards or unsafe practices **MAY** result in *minor* personal injury or product or property damage.

NOTE: Cable seal is a bellows type seal designed to fit different size cables. Pull out the bellows in one direction and cut the seal so that the through opening is at least 1/8" diameter smaller than the working cable. Always cut the seal smaller than required. More of the seal may be cut off if necessary.

The procedure below applies to both new installations and for replacement of working cable. To install/replace cable loosen seal cover and cable seal. Remove cover, if required, and outer drum half. Loosen or remove cable clamp & individual conductors of working cable from brush assemblies. Pull working cable through opening of inner drum & remove seal cover, & cable seal from old working cable. Place seal cover and cable seal over replacement cable. To reassemble, reverse the above procedure. Be sure to connect working cable conductors to the proper brush assembly.

REPLACEMENT PARTS

- 00129.BMP -



POW-R-MITE REEL REFERENCE CHART FOR REELS WITH CABLE INCLUDED.

Pow-R-Mite Model	Pow-R-Matic Model No.	Pow-R-Mite includes cable:				Cable No.	Ft	Size	O.D.	306B	0420600C4	R62120179	36	14-6	.740
		Cable No.	Ft	Size	O.D.										
224B	0520300C1	R62110114	31	16-3	.430	308C	0420800C4	R62120181	21	14-8	.795				
228B	0520300C1	R62110114	51	16-3	.430	345C	0420400C4	R62110118	51	14-4	.605				
234B	0520400C1	R62110115	31	16-4	.485	228BH	052030GC1	R62110114	51	16-3	.430				
238B	0520400C1	R62110115	51	16-4	.485	485B	0620800C3	R62120148	51	16-8	.645				
253C	0520300C2	R62110117	26	14-3	.560	403B	0621000C4	R62120150	31	16-10	.720				
358C	0420300C2	R62110117	51	14-3	.560	413B	0621200C4	R62120151	31	16-12	.740				
363C	0420400C2	R62110118	26	14-4	.605	483C	0620800C5	R62120181	31	14-8	.845				
367C	0420400C2	R62110118	46	14-4	.605	402C	0621000C5	R62120183	21	14-10	.905				
383D	0420300C3	R62110120	26	12-3	.640	435D	0620300C3	R62110120	51	12-3	.640				
385D	0420300C3	R62110120	36	12-3	.640	444D	0620400C3	R62110121	41	12-4	.670				
394D	0420400C3	R62110121	31	12-4	.670	445D	0620400C3	R62110121	51	12-4	.670				
242E	0520300C3	R62110123	21	10-3	.695	463D	0620600C4	R62120212	31	12-6	.800				
206B	0520600C2	R62120146	46	16-6	.565	482D	0620800C5	R62120214	21	12-8	.915				
208B	0520800C3	R62120148	39	16-8	.645	434E	0620300C3	R62110123	41	10-3	.695				
						443E	0620400C4	R62110124	31	10-4	.750				
						462E	0620600C5	R62120237	21	10-6	.880				

Reference Number	Part Number	Qty.	Description
1	C03500231	1	Screw pan head M5x12mm
	C03500231	7	Screw pan head m5x12mm #0951-xx-2060, -2080, -2100, -2120, -206S, -208S
2	M41100003	1	Shaft retainer
3	C03510130	2	Bolt hex head M5x10mm
4	00041P0127	1	Terminal - 0951-xxxx-3, 4, 6, 8 -- ground
	00041P0126	1	Terminal - 0951-xxxx-10, 12 -- ground
5	M04160004	1	Base
6		3	Clamp-Included in Clamp Kit "D" below.
7		3	Bolt hex head M6-Included in Clamp Kit "D" below.
8	M34370002	1	Main shaft - 0951-xx-2030, 2040, 203S, 204S
	M34370003	1	Main shaft - 0951-xx-2060, 2080, 206S, 208S
	M34370004	1	Main shaft - 0951-xx-2100, 2120
9	C47040141	1	O-ring
10	M13020029	1	Name plate
11	M14240007	1	Junction box gasket
12	M04540004	1	Junction box cover
13	C03500253	6	Screw pan head M6x16mm
14	H41220074	1	Spring pocket assembly -- 0951-04
	H41220075	1	Spring pocket assembly -- 0951-05
	H41220076	1	Spring pocket assembly -- 0951-06
	H41220078	1	Spring pocket assembly -- 0951-08
	H41220079	1	Spring pocket assembly -- 0951-09
15	C60610121	1	Extension spring
16	M04730007	1	Cable guide
17	M24060125	4	Roller shaft
18	M86700006	4	Roller
19	C03500253	4	Screw pan head M6x16mm
20	C03500255	2	Screw pan head M6x20mm
21	M53350002	1	Spring clip
22	C15070225	1	Screw shoulder M8x10x16
23	M86750002	1	Ratchet pawl
24	M70780007	1	Cable clamp
25	C01070517	2	Flat washer M5
26	C03500233	2	Screw pan head M5x16 -- 0951xxxxxxx1 -- .380-539
	C03500235	2	Screw pan head M5x20 -- 0951xxxxxxx2 -- .540-699

	C03500237	2	Screw pan head M5x25 -- 0951xxxxxxx3 -- .700-.925
	H35460014	1	Screw pan head M5 -- 0951xxxxxxx4 -- no cable
27		1	Drum gasket -- Included in Drum Kits below
28	R61210586	6 inch	Wire - green #10 -- ground only
29	00041P0126	2	Terminal - ground only -- AWG #16 and #14
	00041P0127	2	Terminal - ground only -- AWG #10 and #12
30	6050500000	AR	Brush assembly - quantity one per 9th digit
	6155000000	AR	Brush assembly - silver - quantity one per 9th digit
31		4	Screw -- Included in Drum Kits below
32		1	Outer drum half -- Included in Drum Kits below
33	5856700021	1	Collector ring subassembly -- 0951-xx-2030
	5856700022	1	Collector ring subassembly -- 0951-xx-2040
	5856700023	1	Collector ring subassembly -- 0951-xx-2060
	5856700024	1	Collector ring subassembly -- 0951-xx-2080
	5856700009	1	Collector ring subassembly -- 0951-xx-2100
	5856700011	1	Collector ring subassembly -- 0951-xx-2120
	H96420102	1	Collector ring subassembly -- 0951-xx-203S
	H96420103	1	Collector ring subassembly -- 0951-xx-204S
	H96420105	1	Collector ring subassembly -- 0951-xx-206S
	H96420107	1	Collector ring subassembly -- 0951-xx-208S
34		1	Inner drum half -- Included in Drum Kits below
35	M86550002	1	Cable seal
36	M37810027	1	Seal cover
37	C03500201	4	Screw, cheese head M4x12mm
38	see chart	AR	Cable
39	5876200000	1	Cover -- 0951-xx-2060, -2080, -206S, -208S
	5876100000	1	Cover -- 0951-xx-2100, -2120
40	4350600000	1	Gasket -- 0951-xx-2060, -2080, -2100, -2120, -206S, -208S
Kit A	H05010001	AR	Hand lamp kit 228H and terminal
Kit B	PB2A	AR	Pivot base -- optional
Kit C	H05040001	AR	Drum Kit - 3, 4 & 5 Cond. -- Includes Reference Numbers 27, 31, 32 & 34
	H05040002	AR	Drum Kit - 6 & 8 Cond. -- Includes Reference Numbers 27, 31, 32 & 34
	H05040003	AR	Drum Kit - 10 & 12 Cond. -- Includes Reference Numbers 27, 31, 32 & 34
KIT D	H05040013	AR	Clamp Kit; Stainless Steel-Includes Reference Numbers 6 & 7.
KIT E	H26340009	1	Roller Guide Kit Reference Numbers 16,17,18, 19 & 20.

Above parts are all painted Yellow

Aero-Motive Company

W A Woodhead Industries Inc. Subsidiary
 PO Box 2678
 Kalamazoo, MI 49003-2678
 (616) 337 7700
 (800) 999 8559
 FAX: (800) 333 6119
 www.aeromotive.com

AKAPP Electro Industrie

W A Woodhead Industries Inc. Subsidiary
 Nijverheidsweg 14 Box 54
 NL-3771 ME Barneveld
 NL-3771 AB Barneveld
 Holland
 (31) 34 241 4022
 FAX: (31) 34 249 2384
 www.akapp.com

Woodhead Connectivity LTD.

W A Woodhead Industries Inc. Subsidiary
 Factory No. 9
 Rassau Industrial Estate
 Ebbw Vale Gwent NP3 5SD
 United Kingdom
 (0495) 35 0436
 FAX: (0495) 35 0877
 sales@wdhd.co.uk

Woodhead Asia PTE LTD.

W A Woodhead Industries Inc. Subsidiary
 401 Commonwealth Drive #04-04
 Haw Par Technocentre
 Singapore 0314
 (65) 261 6533
 FAX: (65) 479 3588
 sales@wasia.com.sg

Woodhead Canada LTD.

W A Woodhead Industries Inc. Subsidiary
 1090 Brevik Place
 Mississauga Ontario
 L4W 3Y5 Canada
 (905) 624-6518
 FAX: (905) 624-9151
 www.woodhead.ca