

# **Bridgeport Variable Speed (2J Head) Rebuild Instructions**

**H&W Machine Repair  
And Rebuilding, Inc.**

**2119 Meyer Road**

**Fort Wayne, IN 46803**

**(800)285-5271**

**[www.machinerypartsdepot.com](http://www.machinerypartsdepot.com)**

# Bridgeport 2J Upper Half Head Rebuild

1. Parts are listed as (Page/Item/Part).
2. Run the head to its slowest speed.
3. Lock out the power.
4. Remove the 3 **Socket Head Cap Screws** (1/43/1524) from the **Bottom Pulley Cover** (1/51/1525) and remove cover.
5. Insert 2 of the **Socket Head Cap Screws** (1/43/1524) into the bottom of the **Motor Vari-Disc Assembly** (1/42/1036 or 1037) and tighten to draw the spring down.
6. Crank the **Speed Change Hand Wheel** (2/15/1476) to the highest speed (with power off).
7. Disconnect and remove the electrical wires from the power source at the **Drum Switch** (2/81/1466) (mark order they are wired into the switch before removal).
8. Remove the **Drum Switch** (2/81/1466) from the side of the **Belt Housing** (1/10/1575).
9. Remove the 2 **Hex Head Bolts** (1/9/1548) holding the motor in place.
10. Remove the motor by lifting and tipping slightly in order to slide the **Drive Belt** (1/27/1105) off the pulley.
11. Remove the **Snap Ring** (1/44/1599) from the bottom of the motor shaft and remove the **Motor Vari-Disc Assembly** (1/42/1036 or 1037).
12. Remove the 3 **Socket Head Cap Screws** (1/1/1195) from the **Top Bearing Cap** (1/2/1468). Scribe a small line in the cap and housing so that the cap is in the same position when reassembled.
13. Reinstall the **Socket Head Cap Screws** (1/1/1195) into the provided pilot holes in order to remove the **Top Bearing Cap** (1/2/1468). (keep the wavy washer with the bearing cap)
14. Remove the **Upper Bearing** (1/4/1542) if it does not come out with the bearing cap.
15. Remove the **Snap Ring** (1/5/1543) after the bearing has been removed.
16. Remove the 2 **Pivot Sleeves** (1/19/1556) from the **Speed Change Plate** (1/13/1551) by removing the 2 **SHCS** (1/17/1554). (they are located under the bearing and snap ring you just removed).
17. Remove the 4 **SHCS** (2/20/1480) holding the **Speed Changer Housing** (2/5/1458) in place.
18. Remove the 5 **SHCS** (1/6/1544, 2/14/1469 & 2/65/1523) holding the **Belt Housing** (1/10/1467) in place.
19. Remove the **Belt Housing** (1/10/1467). There may be 2 pins holding the Belt Housing in place so the housing may not come off easily.
20. Remove the **Front Adjustable Driven Vari-Disc** (1/25/1559) from the **Spindle Pulley Hub** (1/33/1537).
21. Follow the instructions provided with the **Bushing Repair Kit** (1036-20 or 1037-15) to install the new bushings into the front and motor vari-disc assemblies.
22. Remove the **Hex Jamb Nut** (2/77/1258) by holding the brake tight and loosening the nut with a 15/16" wrench.
23. Remove the 4 **Socket Head Cap Screws** (2/65/1523) from the **Belt Housing Base** (1/50/1575).
24. Remove the **Belt Housing Base** (1/50/1575) by lifting and sliding the **Timing Belt** (2/30/1536 or 1115) off the **Timing Belt Pulley** (2/76/1146 or 1539).
25. Remove the **Timing Belt Pulley** (2/76/1146 or 1539) by using two pry bars or screwdrivers under the pulley and prying it up off the shaft.
26. Remove the 3 **Round Head Machine Screws** (1/55/1584) holding the **Gear Housing Plate** (1/56/1585) and remove the plate (keep note of which side of the plate is up).
27. Remove the 2 **Socket Head Cap Screws** (2/60/1502) holding the **Hi-Low Detent Plate** (2/54/1510) in place and remove the detent plate & shaft.
28. Remove the 2 **Socket Head Cap Screws** (2/75/1534) holding the **Bull Gear Pinion Bearing Cap** (2/74/1533) in place.

29. Remove the bearing cap by reinserting the 2 **Socket Head Cap Screws** (2/75/1534) into the provided pilot holes (there is a wavy washer on top of the bearing).
30. Remove the **Large Spindle Bull Gear** (2/34/1490) assembly by carefully lifting with 2 pry bars or screwdrivers.
31. Remove the **Bull Gear Pinion Counter Shaft** (2/71/1529) assembly (shaft, gear and bearing).
32. Remove the 4 **Socket Head Cap Screws** (2/65/1523) from the bottom of the **Gear Housing** (2/38/1494) and remove the gear housing.
33. Clean all grease from the gear housing and clean all disassembled parts.
34. Reassemble the head in the reverse order after completing the repairs listed below. (Don't forget to install the new belts and keys).

#### **Large Bull Gear (1490) Assembly:**

1. Remove the **Bearing Locknut** (2/50/1506) from the bottom of the **Splined Gear Hub** (2/33/1161).
2. Remove the **Bearing Sleeve Assembly** (2/51/1507) from the **Splined Gear Hub** (2/33/1161).
3. Tap the upper and lower bearings from the **Bearing Sleeve Assembly** (2/51/1507). They must be removed from each end because they are setting on snap rings.
4. Clean all components and reassemble with new bearings (make sure you reinstall the wavy washer in the correct position).

#### **Bull Gear Pinion Counter Shaft (1529) Assembly.**

1. Loosen the **Socket Set Screw** (2/34/1307) from the **Small Spindle Bull Gear** (2/34/1490). Scribe or mark where the gear is setting on the shaft.
2. Using an arbor press, remove the shaft from the assembly.
3. Clean all components and reassemble using new bearings (make sure to reinstall the Small Spindle Bull Gear where it was before disassembly).

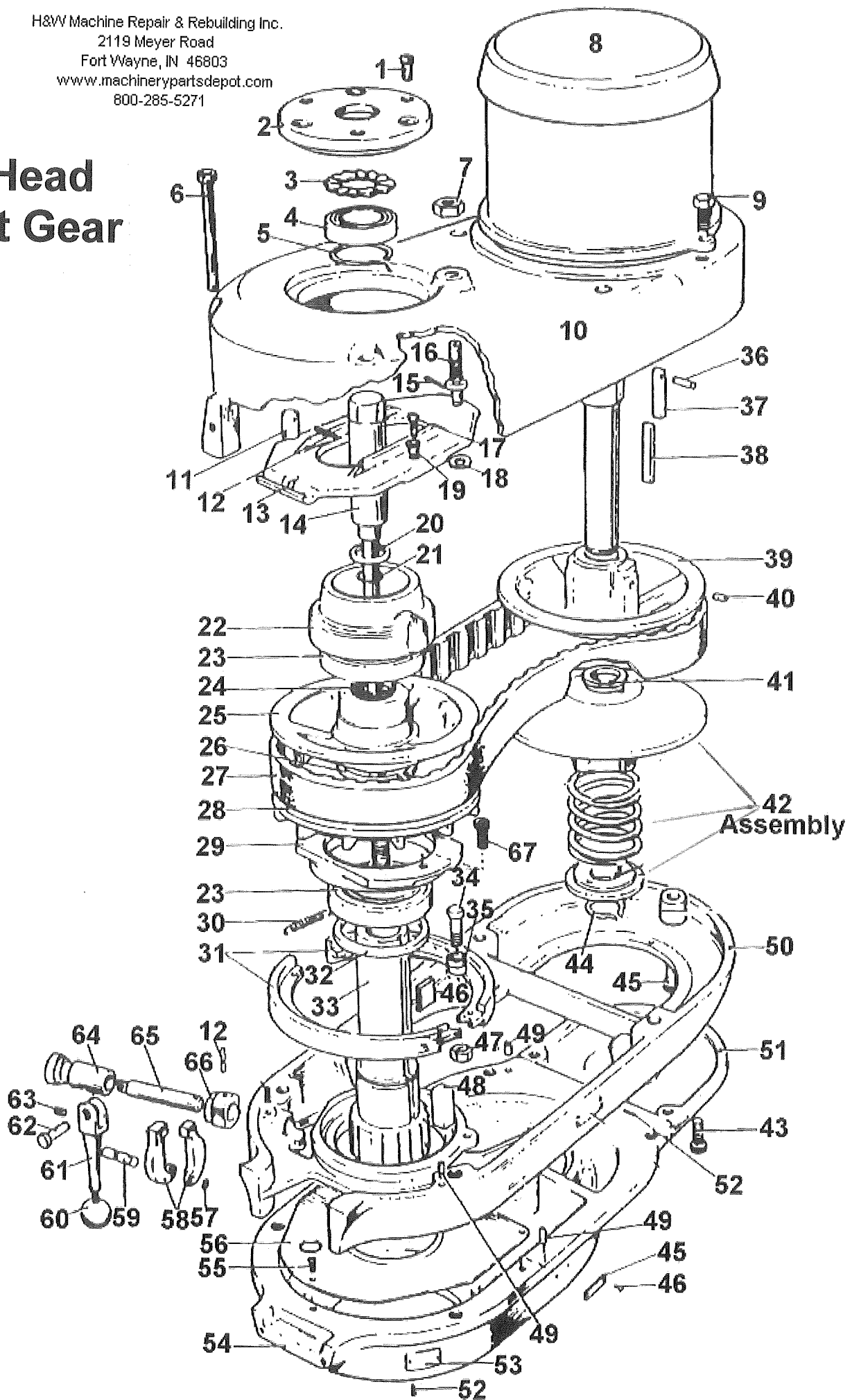
#### **Spindle Pulley Hub (1537) Assembly**

1. Remove the 2 SHCS holding the assembly to the **Belt Housing Base** (1/50/1575) and tap out with a rubber mallet as required.
2. Remove the **Snap Ring** (1/26/1560) from the **Spindle Pulley Hub** (1/33/1537 or 1117) just above the **Vari-Disc** (1/28/1561).
3. Using an arbor press, remove the **Spindle Pulley Hub** (1/33/1537 or 1117) and **Spindle Pulley Spacer** (1/32/1564) from the **Stationary Vari-Disc** (1/28/1561).
4. Remove the **Brake Bearing Cap** (1/29/1127) and bearing from the **Stationary Vari-Disc** (1/28/1561).
5. Clean all components and reassemble using new bearings.

**If you run into any problems or need additional parts please call:**

**Barry Walker**  
**H&W Machine Repair & Rebuilding Inc.**  
**2119 Meyer Road**  
**Fort Wayne, IN 46803**  
**(800) 285-5271**

# 2J Head Front Gear

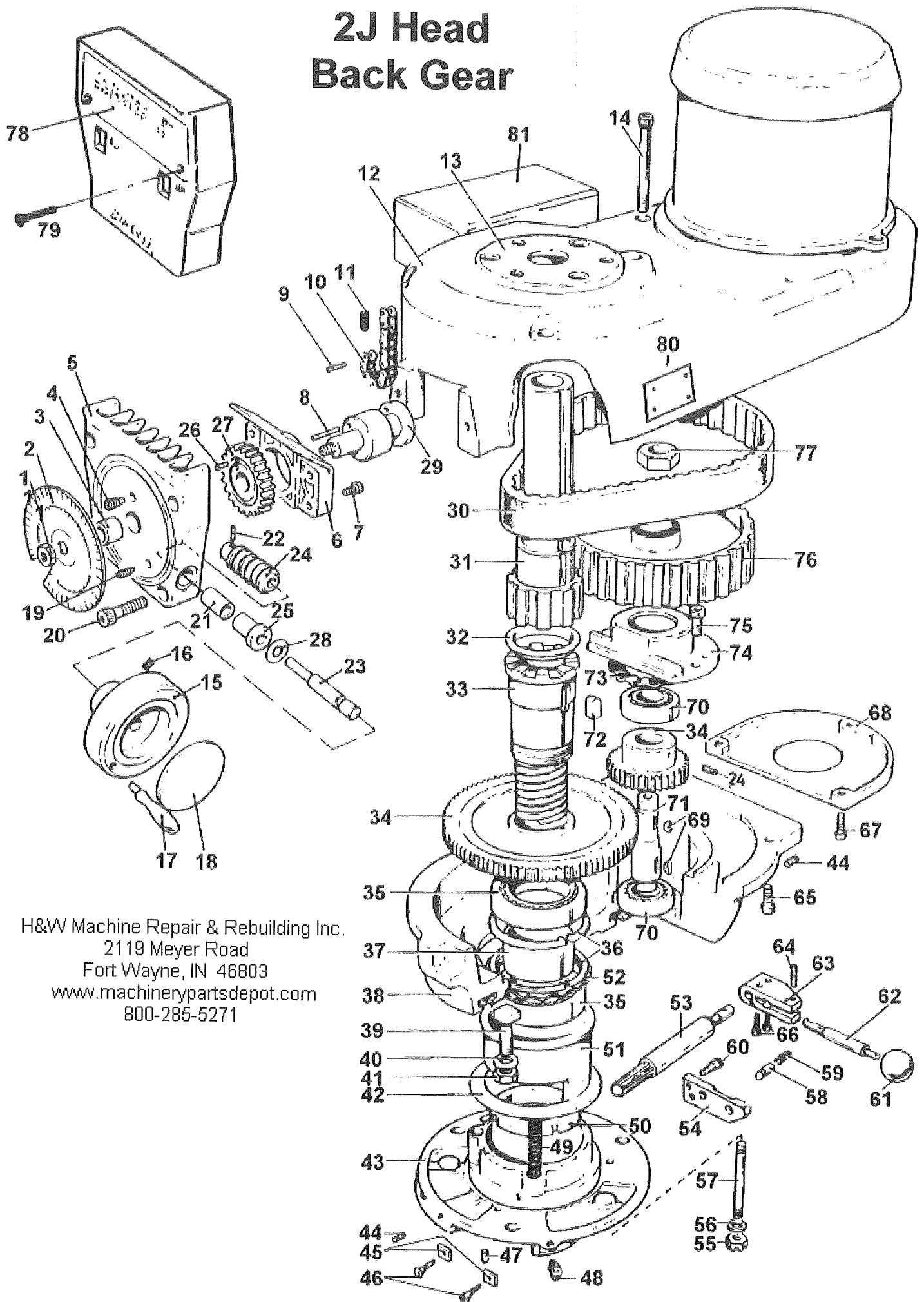


# 2J Head Front Gear

Item #	H&W Number	Description
1	1195	Socket Head Cap Screw
2	1468	Top Bearing Cap
3	1508	Wave Spring Washer
4	1542	Ball Bearing
5	1543	Snap Ring
6	1544	Socket Head Cap Screw
7	1545	Hex Jam Nut
8	1550001	New 2hp Motor
	1546	1.5hp Rebuilt Motor
	1547	2hp Rebuilt Motor
9	1548	Hex Bolt
10	1575	Belt Housing
11	1464	Speed Change Chain Stud
12	1463	Roll Pin
13	1551	Speed Change Plate
14	1026	Drawbar Assembly
15	1552	Cotter Pin
16	1553	Speed Change Plate Pivot Stud
17	1554	Socket Head Cap Screw
18	1555	Washer
19	1556	Pivot Sleeve
20	6001	Drawbar Washer
21	6002	"O" Ring
22	1557	Spindle Pulley Bearing Sliding
23	1558	Ball Bearing
24	1126	Plastic Insert
25	1559	Adjustable Drive Varidisc
26	1560	Retaining Ring
27	1105	Drive Belt
28	1561	Stationary Drive Varidisc
29	1127	Brake Bearing Cap
30	1562	Brake Spring
31	1563	Brake Shoe Set
32	1564	Spindle Pulley Spacer
33	1537	2hp Spindle Pulley Hub Assy.
	1117	1.5hp Spindle Pulley Hub Assy.
34	1565	Hex Head Screw
35	1566	Brake Shoe Pivot Sleeve
36	1407	2hp Roll Pin
	1567	1.5hp Roll Pin
37	1597	2hp Motor Pulley Key
	1568	1.5hp Motor Pulley Key
38	1035-B	2hp Varidisc Pulley Key
	1035-A	1.5hp Varidisc Pulley Key

Item #	H&W Number	Description
39	1598	2hp Motor Stationary Varidisc
	1569	1.5hp Motor Stationary Varidisc
40	1307	Socket Set Screw
41	1114	2hp Plastic Insert
	1113	1.5hp Plastic Insert
42	1036	2hp Motor Varidisc Assembly
	1037	1.5hp Motor Varidisc Assembly
43	1524	Socket Head Cap Screw
44	1599	Snap Ring, 2HP
	1571	Snap Ring, 1-1/2HP
45	1579	Hi-Low Range Nameplate
46	1578	Drive Screw
47	1523	Socket Head Set Screw
48	1573	Key
49	1574	Taper Pin
50	1575	Belt Housing Base
51	1525	Motor Pulley Cover
52	1578	Drive Screw
53	1581	Quill Feed Nameplate
54	1494	Gear Housing
55	1584	Round Head Screw
56	1585	Gear Housing Plate
57	1030-03	Snap Ring
58	1588	Brake Operating Finger
59	1587	Brake Finger Pivot Stud
60	1259	Plastic Ball
61	1261	Brake Lock Handle
62	1262	Brake Lock Pin
63	1260	Socket Set Screw
64	1592	Sleeve For Brake Lock Shaft
65	1593	Brake Lock Shaft
66	1594	Brake Lock Cam
67	6008	Socket Head Cap Screw
NS	1547-08	2hp Motor Shaft & Rotor
NS	1546-08	1.5hp Motor Shaft & Rotor
NS	1036-C	2hp Spring Collar
NS	1037-C	1.5hp Spring Collar

# 2J Head Back Gear



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# 2J Head Back Gear

Item #	H&W Number	Description
1	1132-03	Hex Nut
2	1455-B	2hp Spindle Speed Dial
	1455-A	1.5hp Spindle Speed Dial
3	1348	Bronze Bearing
4	1457	Dog Point Set Screw
5	1458	Speed Changer Housing
6	1603	Plastic Bearing Block
7	1460	Socket Head Cap Screw
8	1462	Dowell Pin
9	1463	Roll Pin
10	1465	Speed Changer Chain
11	037-0113	Chain Stud
12	1575	Belt Housing
13	1468	Top Bearing Cap
14	1469	Socket Head Cap Screw
15	1476	Speed Change Hub
16	6012	Socket Set Screw
17	1474	Speed Change Handle
18	1475	Caution Plate
19	1307	Socket Set Screw
20	1480	Socket Head Cap Screw
21	1486	Oilite Bushing
22	1356	Dowell Pin
23	1473-A	Speed Changer Shaft
24	1343	Worm Gear
25	1472	Oilite Bushing
26	6013	Roll Pin
27	1487	Speed Change Spur Gear
28	1471	Wavy Spring Washer
29	1488	Speed Change Drum
30	1536	2hp Timing Belt
	1115	1.5hp Timing Belt
31	1537	2hp Spindle Pulley Hub
	1117	1.5hp Spindle Pulley Hub
32	1489	Timing Pulley Clutch Sleeve
33	1161	Splined Gear Hub
34	1490	Spindle Bull Gear Set
35	1491	6908zz Ball Bearing
36	1492	Snap Ring
37	1493	Bull Gear Spacer
38	1494	Gear Housing
39	1495	T-Bolt
40	1496	Flat Washer

Item #	H&W Number	Description
41	1497	Hex Jam Nut
42	1498	Bearing Gear Sleeve Washer
43	1499	Fixed Clutch Bracket
44	1500	Socket Set Screw
45	1501	Guide
46	1152	Flat Head Machine Screw
47	1503	Dowell Pin
48	1504	Oil Cup
49	1505	Compression Spring
50	1506	Bearing Locknut
51	1507	Bearing Sleeve
52	1508	Wave Spring Washer
53	1509	Bull Gear Shaft Pinion
54	1510	Hi-Low Detent Plate
55	1511	Hex Nut
56	1512	Lock Washer
57	1513	Stud
58	1516	Hi-Low Detent Plunger
59	1517	Spring
60	1502	Socket Head Cap Screw
61	1259	Plastic Ball
62	1520	Hi-Low Shift Crank
63	1521	Hi-Low Pinion Block
64	1522	Roll Pin
65	1523	Socket Head Cap Screw
66	1518	Socket Head Cap Screw
67	1524	Socket Head Cap Screw
68	1525	Motor Pulley Cover
69	1279	Woodruf Key
70	1277	6203zz Ball Bearing
71	1529	Bull Gear Pinion Counter Shaft
72	1530	Square Key
73	1531	Wavy Spring Washer
74	1533	Bull Gear Pinion Bearing Cap
75	1534	Socket Head Cap Screw
76	1539	2hp Timing Belt Pulley
	1146	1.5hp Timing Belt Pulley
77	1258	Jam Nut
78	1478	Speed Change Name Plate
79	1477	Flat Head Machine Screw
80	1582	Lubrication Plate
81	1466	Drum Switch





# Quill Housing Assembly

Item #	H&W Number	Description
1	1270	Round Head Screw
2	1303	Bevel Pinion Washer
3	1304	Feed Bevel Pinion Gear
4	1305	Feed Worm Gear Shaft Sleeve
5	1306	Worm Cradle Bushing
6	1307	Socket Set Screw
7	1308	Worm Gear Spacer
8	1309	Feed Drive Worm Gear
9	1310	Feed Drive Worm Gear Shaft
10	1311	Key
11	1179	Woodruff Key
12	1313	Locknut
13	1314	Washer
14	1316	Feed Reverse Bevel Gear
15	1317	Feed Engage Pin
16	1318	Worm Gear Cradle
17	1319	Worm Gear Cradle Throw Out
18	1320	Shift Sleeve
19	1299	Shift Pin
20	1300	Compression Spring
21	1295	Roll Pin
22	1297	Shift Crank
23	1259	Plastic Ball
24	1326	Socket Head Cap Screw
25	1254	Socket Set Screw
26	1328	Cluster Gear Shaft Upper Bush.
27	1329	Cluster Gear Assembly
28	1331	Key
29	1330	Key
30	1332	Cluster Gear Shaft
31	1333	Retaining Ring
32	1334	Bevel Gear Bearing
33	1335	Bevel Gear Thrust Spacer
34	1336	Feed Reverse Bevel Pinion
35	1337	Feed Driving Gear
36	1338	Key
37	1339	Cluster Gear Input Shaft
38	1340	Feed Drive Gear
39	1341	Needle Bearing

Item #	H&W Number	Description
40	1342	Bushing
41	1343	Worm Speed Control Gear
42	1344	Feed Worm Shaft Bushing
43	1345	Socket Set Screw
44	1346	Socket Set Screw
45	1347	Feed Worm Shaft Thrust Washer
46	1348	Oilite Bearing
47	1349	Feed Reverse Bevel Gear
48	1350	Feed Reverse Clutch
49	6027	Socket Set Screw
50	6028	Dog Point Set Screw
51	1120	Reverse Clutch Rod
52	1353	Roll Pin
53	1354	Feed Worm Shaft
54	1355	Dowell Pin
55	1356	Dowell Pin
56	1357	Feed Shift Rod
57	1358	Socket Set Screw
58	1360	Feed Gear Shift Fork
59	1361	Cluster Gear Shift Crank
60	1363	Cluster Gear Cover
61	1370	Socket Head Cap Screw
62	1371	Clutch Ring Pin
63	1372	Clutch Ring
64	6028	Socket Head Cap Screw
65	1374	Brass Plug
66	1375	Overload Clutch Locknut
67	1138	Safety Clutch Spring
68	1139	Overload Clutch
69	1376	Overload Clutch Sleeve
70	1377	Spring Washer
71	1378	Round Head Screw
72	1108	Compression Spring
73	1383	Overload Clutch Lever Plunger
74	1384	Quill Pinion Shaft Bushing
75	1385	Pinion Shaft Worm Gear Spacer
76	1386	Overload Clutch Worm Gear
77	1140	Overload Clutch Ring
78	1381	External Retaining Ring



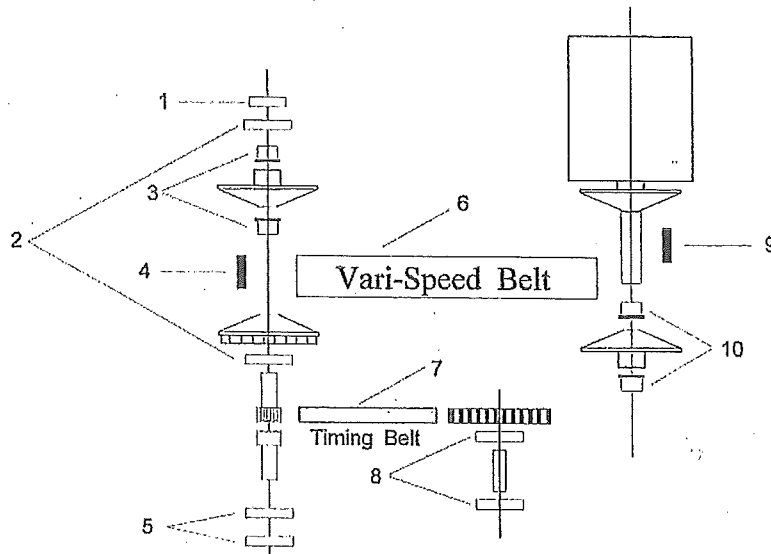
# Quill Housing Assembly

Item #	H&W Number	Description
.79	1405	Dowell Pin
80	1388	Overload Clutch Trip Lever
81	1389	Overload Clutch Washer
82	1390	External Retaining Ring
83	1391	Clutch Arm Cover
84	1393	Locknut
85	1387	Dowell Pin
86	1394	Cam Rod
87	1395	Trip Handle
88	1397	Feed Trip Bracket
89	1195	Socket Head Cap Screw
90	1030	Reverse Feed Knob Assembly
91	1401	Handwheel Clutch
92	1404	Handwheel Clutch Spring
93	1405	Roll Pin
94	1406	Cam Rod Sleeve
95	1407	Roll Pin
96	1408	Compression Spring
97	1409	Trip Plunger
98	1410	Feed Trip Plunger Bushing
99	1411	Trip Plunger Bushing
100	1412	Feed Trip Plunger
101	1413	Handwheel
102	1414	Spindle
103	1415	Quill Skirt
104	1416	Locknut
105	1417	Lockwasher
106	1418	Ball Bearing
107	1419	Bearing Sleeve
108	1420	Noise Piece
109	1421	Spindle Dirt Shield
110	1422	Spindle Bearing Set
111	1423	Bearing Spacer Set
112	1307	Socket Set Screw
113	1137	Collet Alignment Screw
114	1424	Special Socket Set Screw
115	1425	Quill
116	6030	Steel Nut
117	1426	Socket Set Screw

Item #	H&W Number	Description
118	1033-02	Feed Trip Lever
119	1427	Trip Lever Pin
120	037-0248	Indicator Rod
121	1428	Quill Lock Sleeve, Tapped
122	1151	Lock Handle
123	1435	Round Head Screw
124	1164	Felt Washer
125	1429	Quill Lock Bolt
126	1430	Quill Lock Sleeve, Untapped
127	037-0249	Thumb Screw, Indicator Rod
128	1431	T-Bolt
129	1432	Lower Clamping Bolt Spacer
130	1433	Hex Nut
131	1434	Washer
132	1165	Micrometer Scale
133	1053	Quick Nut Assembly
134	1438	Quill Stop Nut
135	1033	Quill Stop Micro-Screw
136	1439	Socket Head Cap Screw
137	1440	Quill Pinion Shaft
138	1442	Spring Pin
139	1445	Woodruff Key
140	1124	Pinion Shaft Hub Screw
141	1402	Steel Ball
142	1403	Compression Spring
143	1021	Quill Downfeed Handle
144	1448	Quill Pinion Hub
145	1112	Clockspring Assembly
146	1449	Quill Pinion
147	1033-03	Reverse Trip Ball Lever
148	1451	Feed Reverse Trip Plunger
149	1452	Reverse Trip Ball Lever Screw
150	1096	Worm Gear
151	6029	Woodruff Key
152	1453	Socket Set Screw
153	1097	Adjusting Worm Shaft
154	1454	Quill Housing
155	037-0246	Oil Cup
156	1315	Key

# Upper Head Rebuild Kits for 1-1/2 and 2 HP Bridgeport Mill

## 1-1/2 HP Head

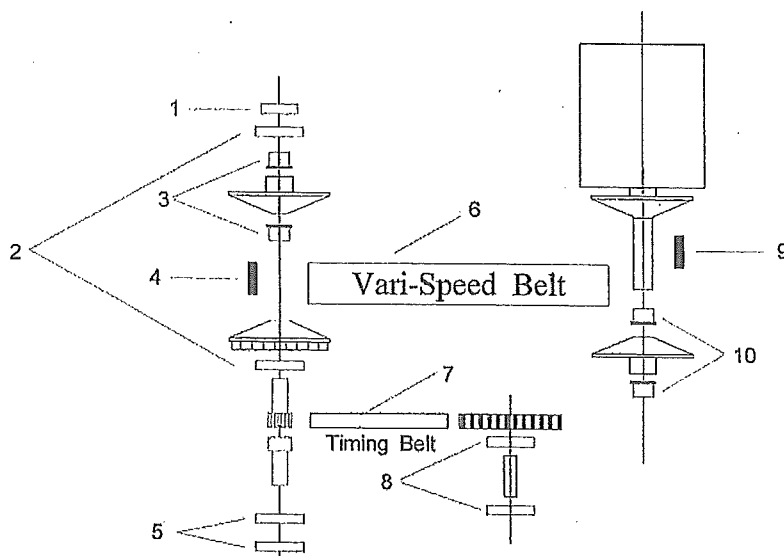


## RBK-15

1 Bearing	1542 (2)
2 Bearings	1558 (2)
3 Plastic Inserts	1126 (2)
4 Plastic Key	1095 (1)
5 Bearings	1491 (2)
6 Vari-Speed Drive	
Belt	1105 (1)
7 Timing Belt	1115 (1)
8 Bearings	1277 (2)
9 Plastic Key 1035-B	(1)
10 Plastic Inserts	1113 (2)
11 Tubes of Grease	(2)
	(not shown)

Numbered parts are those found in an Upper Head Rebuild Kit

## 2 HP Head



## RBK-20

1 Bearing	1542 (2)
2 Bearings	1558 (2)
3 Plastic Inserts	1126 (2)
4 Plastic Key	1095 (1)
5 Bearings	1491 (2)
6 Vari-Speed Drive	
Belt	1105 (1)
7 Timing Belt	1536 (1)
8 Bearings	1277 (2)
9 Plastic Key 1035-A	(1)
10 Plastic Inserts	1114 (2)
11 Tubes of Grease	(2)
	(not shown)

*Ask about Acu-Rite or Newall Digital Readouts, Bijur Lubrication Parts, Servo Power Feeds, Maxi-Torque-Rite Power Drawbars or Bison Chucks and Tooling*

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## H&W Machine Repair & Rebuilding, Inc.

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Telephone 260-422-0020 or 800-285-5271  
Fax 260-423-9476  
[bwalkhw@gmail.com](mailto:bwalkhw@gmail.com)

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#### **Parts For Your Bridgeport Mills**

We stock almost every part you will need for your manual Series I Bridgeport mills. If you need Drive Belts, Drawbars, Variable Speed Discs, Keys, Inserts or any other parts we either have them in stock or can get them.

#### **Other Parts & Accessories**

Do you have another brand mill or type of machine? We still may be able to help you. We can either supply you with parts or may be able to help you find the parts you need using our extensive network of contacts.

Do you need a Digital Readout, Power Feed, Power Drawbar, Lubrication System, Collets or any other accessory for you machinery? We are distributors for many of the top names in the world like Acu-Rite, Newall, Servo, Bijur, Maxi Torque-Rite and many more.

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