

SIMON DeYOUNG CORPORATION

Braiding Machinery Manufacturer

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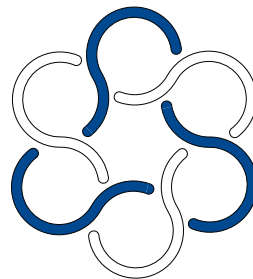
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Company Information

Simon DeYoung Corporation was started in Cleveland, Ohio in 1984 to offer innovative machinery to the braiding industry. The first offering was the SDC Modular Carrier. Its modular design makes this carrier ideal for off-line preparation and maintenance. And its versatility allows it to be used in many types of hose construction.

In 1991 Simon DeYoung and O.M.A. Srl. joined in a venture to combine the SDC Modular Carrier with the O.M.A. Type 240 series braiding machine. This machine has been well accepted as a much needed reliable braiding machine for the hydraulic hose market.

Simon DeYoung continues to provide innovative solutions to this highly challenging industry. The commitment to constant improvement along with personalized customer service has made Simon DeYoung a trusted partner to those in the braiding industry.



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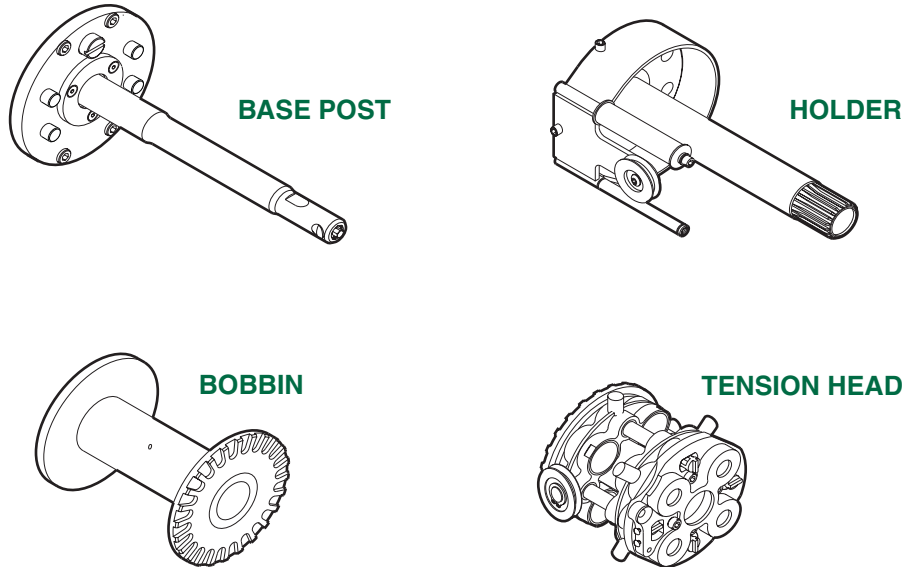
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1.0 Introduction

1.1 SDC Modular Carrier Description

The SDC Modular Carrier stores and dispenses wire with controlled tension as required for forming the braid.

The SDC Modular Carrier consists of the following four components; a BASE POST, HOLDER, TENSION HEAD, and a BOBBIN.



The CARRIER MODULE consists of the TENSION HEAD and HOLDER.

The BASE POST is bolted to the braiding machine shuttle and remains with the shuttle.

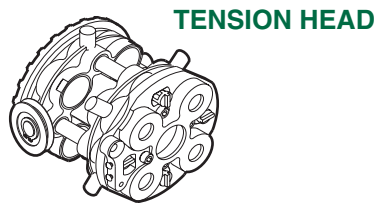
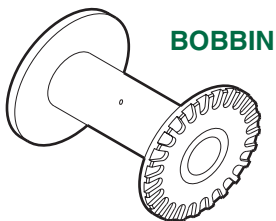
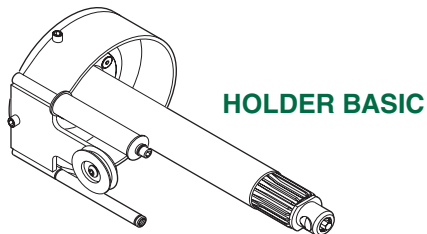
BOBBINS are sold separately. Generally, customers order extras for faster change-over-time.

The Carrier Module can be easily installed or removed from the base post with a quarter turn of the latch located at the end of the base post shaft.

The SDC Basic Carrier consists of the following three components; a HOLDER BASIC, a TENSION HEAD, and BOBBIN.

The HOLDER BASIC is bolted to the braiding machine shuttle and remains with the shuttle.

1.2 SDC Basic Carrier Description



BOBBINS are sold separately. Generally, customers order extras for faster change-over-time.

1.0 Introduction

1.3 Performance Features

Uniform Tension

The compensator on both the SDC Modular Carrier and the SDC Basic Carrier stores and pays out wire as the distance from the carrier to the braiding point changes. The frequency of compensation is equal to the braiding machine's rotor speed.

Example: The amplitude of compensation on a common existing braider is about eight inches. The mechanical advantage of the compensator on the carrier is 8:1, thus the travel of the compensator is only one inch. The compensator's symmetrical design provides a balance that minimizes the friction forces on the compensator resulting in a more uniform tension on the wire and minimizing the wear of the compensator's bushings.

While the travel of the compensator is one inch, the relatively long compensator springs provide a nearly uniform tension in the wire and a near infinite life for the springs.

Low Center of Gravity

Both the SDC Modular Carrier and the SDC Basic Carrier have the bobbin below the tension head and as close to the shuttle as possible. This allows easy access to the tension head for threading, changing springs or inspecting the carrier.

The life of the rolling or sliding elements of the shuttle mechanism is proportional to the maximum moment load when the bobbins are full. Thus the low center of gravity of the full bobbins significantly lengthens the life of the shuttle mechanisms.

SDC Modular Carrier

The SDC Modular Carrier is designed for “off-line” preparation and maintenance in order to minimize the braiding machine down time. The carrier module can be completely threaded and the wire tied off on the cleat near the pay out eyelet. Thus the carriers come to the braiding machine ready to run. To resupply the depleted deck, the empty carriers are removed and replaced with the full and threaded carriers.

Since the carrier’s total mechanism is cycled “off-line”, the maintenance of the carriers can be done at the same time the bobbins are being prepared.

The “off-line” maintenance insures the carriers are always operating in top condition and makes it easy to monitor the performance of the carriers. This procedure maximizes reliability, minimizes product defects and improves overall quality and productivity.

SDC Basic Carrier

The SDC Basic Carrier is the most fundamental design and is made up of the Holder Basic, the Bobbin and the Tension Head. Because this carrier is fixed to the braiding machine the carrier must be serviced and loaded at the braiding machine. The Tension Head is removed when servicing or loading the carrier so the Tension Head can be serviced or prepared off-line. So for the Tension Head some of the off-line advantages of the SDC Modular Carrier are still possible.

2.0 Operation

2.1a Mounting the Base

The only part of the SDC Modular Carrier which is fixed to the braiding machine is the base post. The post is mounted to the shuttle of the braiding machine with four socket head cap screws. The bottom of the base post and the mounting surface of the shuttle, must be clean before mounting the base post. Socket head cap screws, Class 12.9, are provided with the base post.

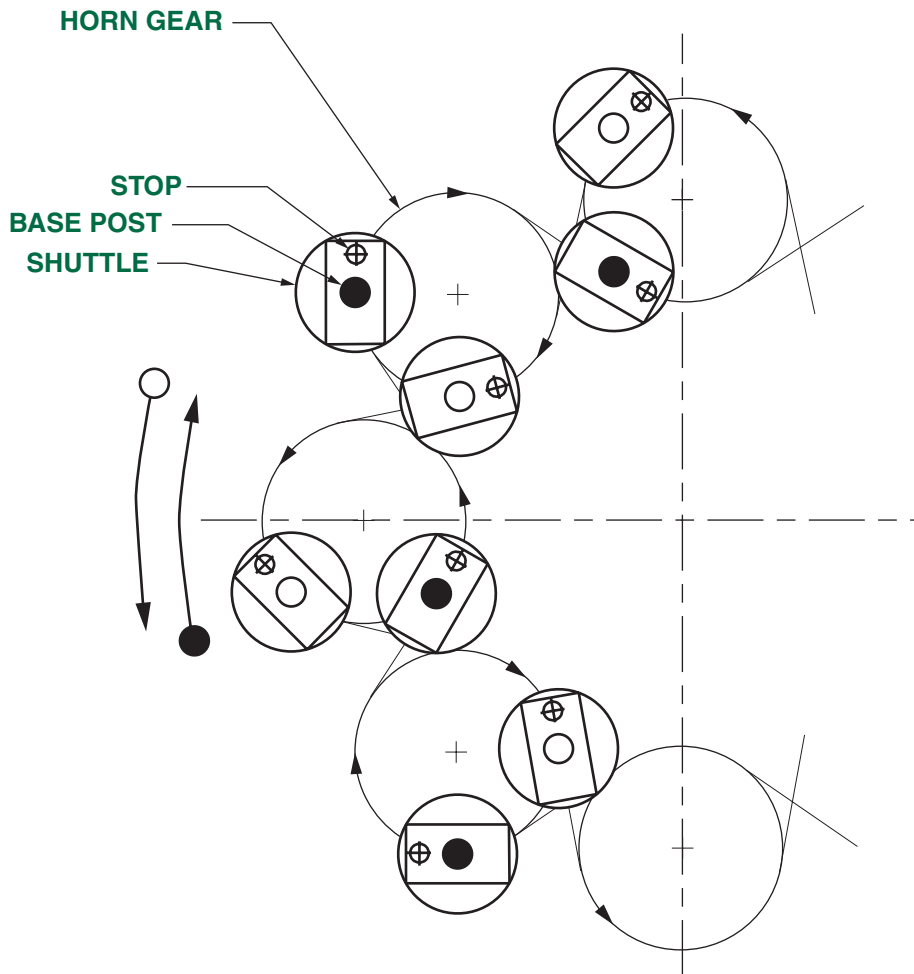
The cap screws must be torqued to 350 inch pounds (39 Nm), minimum torque value.

For additional retaining requirements, a medium strength anaerobic adhesive, such as Loctite No. 242 or Heron Manufacturing No. 423, may be used on the screw threads. Follow the adhesive manufacturer's recommendations for application.

The base post stop must be positioned as shown in the following illustration when mounting the base posts to the braiding machine shuttles. This position will orient the carrier let off eyelet toward the braiding point.

2.1b Mounting the Holder Basic

The Base Holder is secured to the braiding machine with 4 M10 x 25mm socket head cap screws. These should be torqued to 45 - 50 foot pounds (61-68 Nm) and treated with Loctite 242 (blue) or equivalent to prevent loosening of the screws.



Dual Ratchet Bobbin

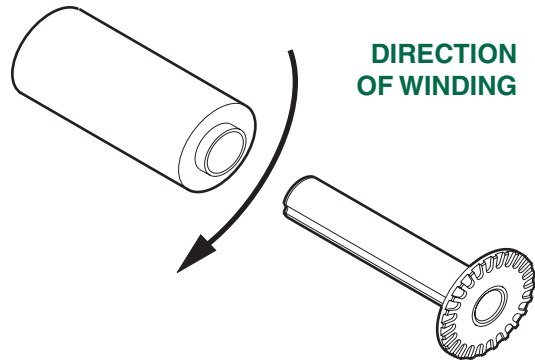
There is no orientation required for the winding direction as the installation of the wound bobbin to the bobbin holder determines the correct wire take off direction.

2.2 Winding the Bobbin

2.0 Operation

Pre-wound Tube Bobbin

Install the Pre-wound Tube Package onto the bobbin barrel with the winding in the clockwise direction when viewing the bobbin from the ratchet end.



Push the package onto the bobbin barrel until the tube meets the ratchet plate.

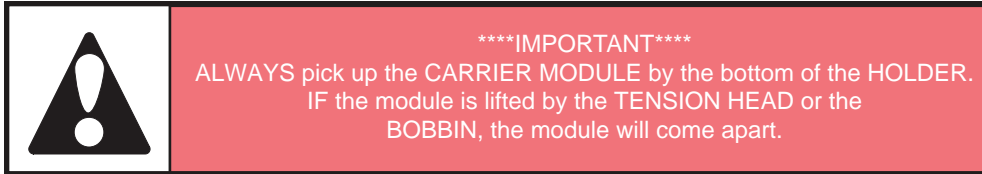
The pre-wound tube bobbin accepts packages wound on plastic core tubes available from Middlefield Plastics, Incorporated. See PARTS section of this manual for applicable part numbers. These plastic core tubes are reusable and provide a cost effective and environmentally sound alternative to the traditional fiberboard core tubes.

2.3a Threading the Modular Carrier

The correct threading of the carrier must start with the wire/textile unwinding from the bobbin in the same lay that it was wound. When all the ends of the same lay are together, lead them around the takeoff roller, around the bottom of the takeoff guide/pulley to the upper most pulley on the tension head located just clockwise from the let-off eyelet. BE SURE ALL ENDS are on the pulley, because a single end caught behind any pulley will cut through the molded trunnion pin during the braiding operation. The threading continues in the clockwise direction until all of the pulleys have been rounded. The wire/textile is then led from the last compensator pulley through the let-off eyelet. At this point, the tension can be checked by pulling off a length using a force measuring gauge. After the threading and check of the tension, the wire/textile can be secured to the cleat on the takeoff eyelet bracket.

2.3b Threading the Basic Carrier

Threading the Basic Carrier is the same as the Modular Carrier, except that it must be done at the braiding machine. For this reason there is usually additional down time compared to the Modular Carrier, although some operators are quite good at loading and threading the carriers at the braiding machine.



The Carrier Module is installed on the braiding machine by placing it on the shaft of the previously installed Base Post. The module is properly installed when the positioner hole engages the base post stop, contacts the thrust washer on the base post and the latch at the end of the shaft is engaged by a quarter turn in the clockwise direction. The latch has a 0.25 inch hex actuator. Use SDC tool number 8905, or other suitable tool to operate the latch. IF the latch cannot be engaged, the teeth on the bobbin ratchet are probably misaligned with the clutch teeth. A small rotation of the Bobbin will allow full engagement and permit the latch to be engaged. When the Carrier Module is installed, the wire from the carrier can be tied into the braiding point.

Installing the Basic Carrier is the same as the Modular Carrier except, that the mounting bolts are different.

The quality of a braided product produced with a low strand tension and small diameter, especially stainless steel wire, may be enhanced by dynamically balancing the carriers.

The balancing may be achieved by using the dual ratchet bobbin and arranging the carrier components so that a set of right and left hand carriers are being used.

A right hand carrier may be converted to a left hand carrier by moving the take-off roller from one holder shaft to the other holder shaft and by removing and reversing the position of the let-off eyelet assembly. All other parts are symmetrical about the carrier axis. The dual ratchet bobbin may be wound in the normal manner and installed on either the left or right hand carrier.

There are two approaches to achieving the desired dynamic balancing. Each approach works well and may be applied at the discretion of the customer.

2.4a Installing the Modular Carrier

2.4b Installing the Basic Carrier

2.5 Dynamic Balancing for Low Tension Applications

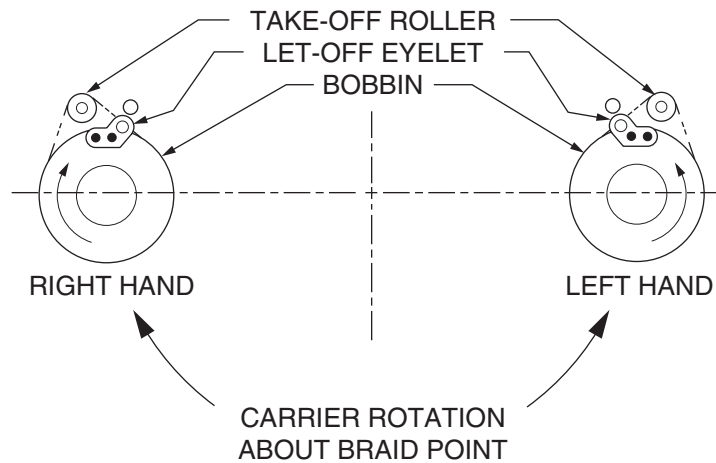
2.0 Operation

Symmetrical Balancing

The right hand carrier modules are installed on the base posts which are rotating in the clockwise direction about the braid point.

The left hand carrier modules are installed on the base posts which are rotating in the counter-clockwise direction about the braid point.

ILLUSTRATION of a **SYMMETRICALLY** BALANCED CARRIER ARRANGEMENT VIEWED from the LATCH END of the CARRIER



Asymmetrical Balancing

The right hand carrier modules are installed on the base posts which are rotating in the counter-clockwise direction about the braid point.

The left hand carrier modules are installed on the base posts which are rotating in the clockwise direction about the braid point.

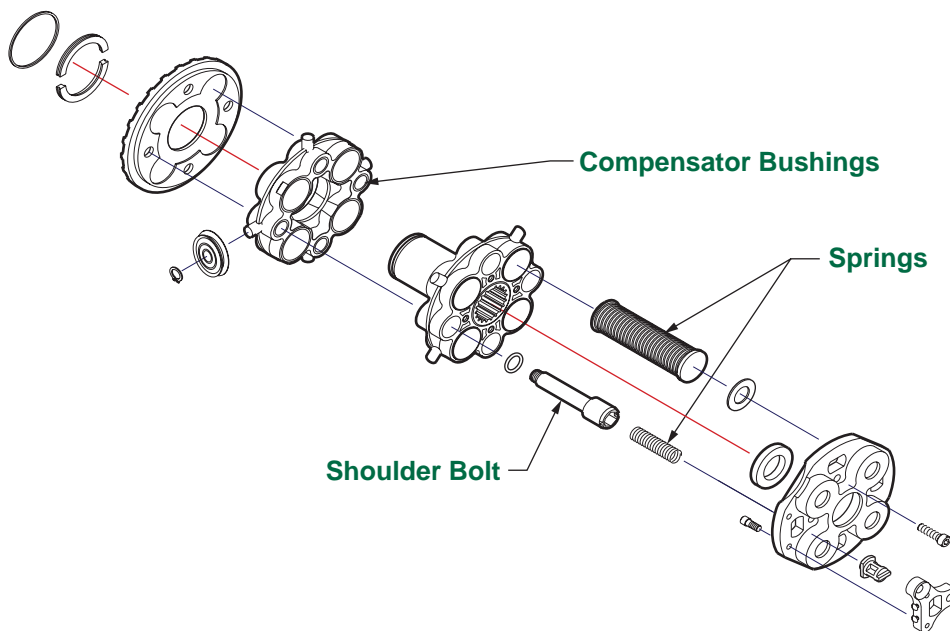
Tension heads and holders should be marked or color coded to prevent the mismatch of left and right hand assemblies during carrier servicing.

Before detailing the specific lubrication points of the carrier, an important point of general consideration should be mentioned. As noted before, the SDC Modular Carrier is designed for “off-line” preparation and maintenance. While the carriers are being prepared, all of the carrier lubrication can be quickly and reliably performed. The lubrication requirements of the carrier are modest, but the “off-line” preparation feature eliminates this task from the braiding line, thus reducing machine down time.

The recommended lubricant is a light spindle oil of about SAE 10 weight. The spindle oil can be applied directly onto the four shoulder bolts. Lubrication of the compensator bushings and springs is critical to the proper operation of the carrier and should be checked at each bobbin change.

3.1 General Lubrication

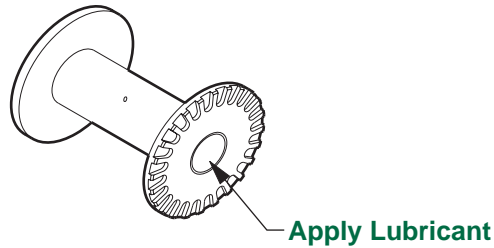
3.2 Lubrication of the Compensator Bushing



3.0 Maintenance

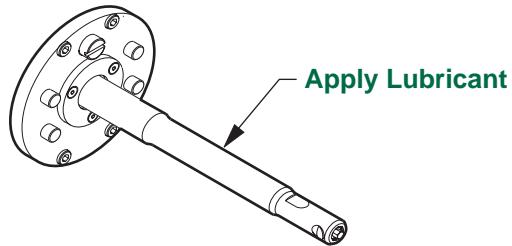
3.3 Lubrication of the Bobbin

The bobbin bushings rotate against the outside diameter of the Holder. The recommended lubricant is a molybdeum (moly) grease with MoSO₂ for wire tension levels above 15 pounds and light spindle oil (SAE 10 weight) for wire tension levels below 15 pounds. Lubrication of the bobbin bushings is important to the operation of the carrier and should be checked once a week.



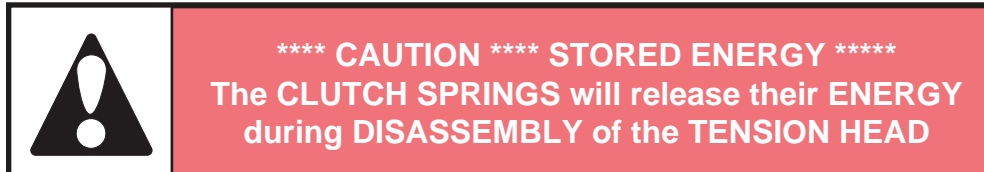
3.4 Lubrication of the Base Post

The recommended lubricant is molybdeum (moly) grease with MoSO₂. A film of lubricant must be maintained on the base post to insure ease of installation and removal of the Carrier Module.



There is no actual adjustment on the carrier to change the wire tension. The only way to change the tension or to dynamically balance the carrier is to change the compensator springs and/or the clutch springs.

Strand tensions shown, page 16, are for determining approximate ranges of tension. Actual strand tension depends upon the type and size of the strand material and should be determined by direct measurement with a suitable force gage.



4.1 Changing the Wire Tension

4.2 Strand Tension Per Spring Combinations

Carriers with Molded Top Retainers

Grip the clutch spring retainer with flat nose pliers and push down to depress the clutch spring. Rotate the retainer through 90 degrees and remove the retainer and spring. Remove all clutch spring retainers and springs.

4.3 Removing the Clutch Springs

Carriers with Aluminum Top Retainers

Use a Phillips screw driver or similar blunt pointed tool to depress the clutch spring retainer. Rotate the retainer latch 1/2 turn to align the latch notch with the spring retainer. Release the depressed retainer slowly. Remove the retainer and the clutch spring.

4.0 Service Adjustment / Replacement

STRAND TENSION in LBS. with Different SPRING Combinations

COMPENSATOR SPRING CASSETTE	CLUTCH SPRING												
	2.38 4y	3.21 2y/2g	4.05 4g	4.73 2g/2r	5.41 4r	6.31 2r/2w	7.2 4w	8.08 2w/2b	8.96 4b	11.93 2b/2o	14. 4c		
2.62 4Y	5	5.83	6.67	7.35									
4.06 2Y/2G	6.44	7.27	8.11	8.79	9.47								
5.5 4G	7.88	8.71	9.55	10.23	10.91	11.81							
6.97 2G/2R	9.35	10.18	11.02	11.70	12.38	13.28	14.17						
8.44 4R		11.65	12.49	13.17	13.85	14.75	15.64	16.52					
9.85 2R/2W			13.9	14.58	15.26	16.16	17.05	17.93	18.81				
11.3 4W				16.03	16.66	17.56	18.45	19.33	20.21	23.23			
12.7 2W/2B					18.11	18.97	19.86	20.74	21.62	24.59	27.		
14.1 4B						20.41	21.26	22.14	23.02	25.99	28.5		

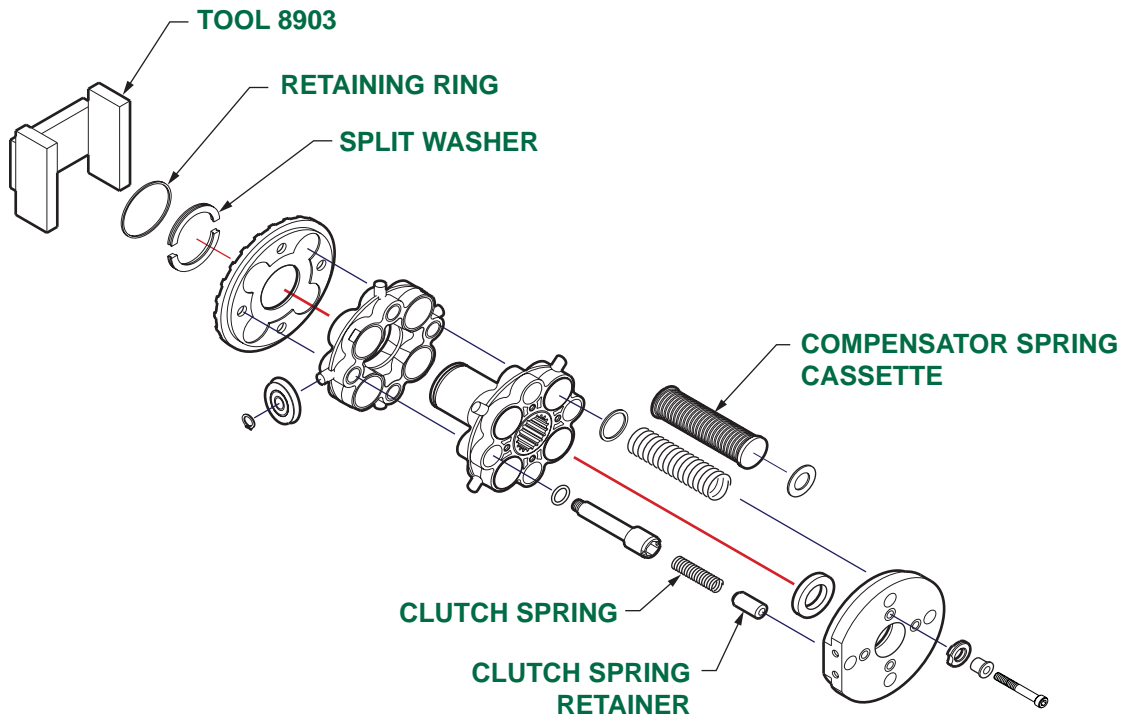
P/N COMP.

9317 Y yellow
 9377 G green
 9318 R red
 9319 W white
 9320 B blue

P/N Clut

9535 y yellow
 9560 g green
 9505 r red
 9506 w white
 9507 b blue
 9547 o orange

NOTE: A filled in BOX indicates a combination we DO NOT recommend.



NOTICE: The compensator springs are restrained by a cassette and do NOT release their energy during disassembly of the tension head.

To disassemble the tension head, use a suitable arbor press, vise or C-clamp. Make sure the top of the tension head is supported against a flat surface and place SDC tool P/N 8903 on the clutch face. Compress the clutch just enough to remove the split washer and retaining ring. Release the compression device and the tension head may be disassembled and the compensator spring cassettes removed. Reverse this procedure to reassemble the tension head.

Product improvement for added value to our customers is an on-going process at Simon DeYoung Corporation.

4.4 Removing the Compensator Springs



****** CAUTION **** STORED ENERGY ******
DO NOT, under any circumstances, attempt to disassemble the compensator spring cassette.

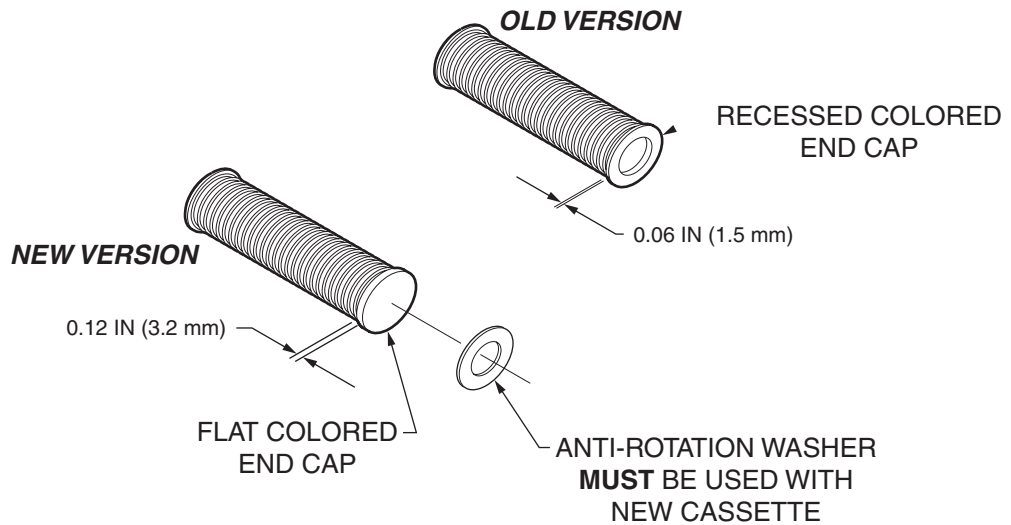
4.0 Service Adjustment / Replacement

4.5 Compensator Spring Service Parts

The compensator spring cassette has been improved to increase its service life. The introduction of an anti-rotation washer as part of this improvement has affected the replacement interchangeability with the earlier versions of the spring cassettes.

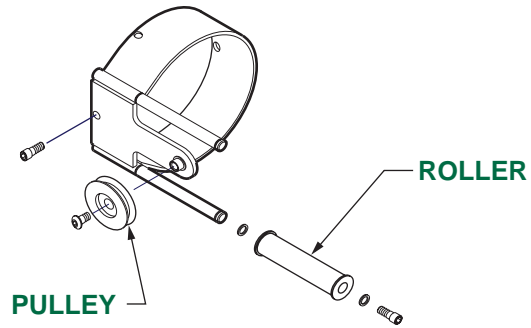
The new and older versions of the spring cassettes may be used together on the same tension head. The ANTI-ROTATION WASHER **MUST** ALWAYS be used with the NEW cassettes.

It is easy to identify the new and older versions of the spring cassettes per the following illustration.



The Take Off Pulley and Roller are secured by standard fasteners and may be disassembled by removing these fasteners.

4.6 Replacing the Take-Off Pulley and Roller

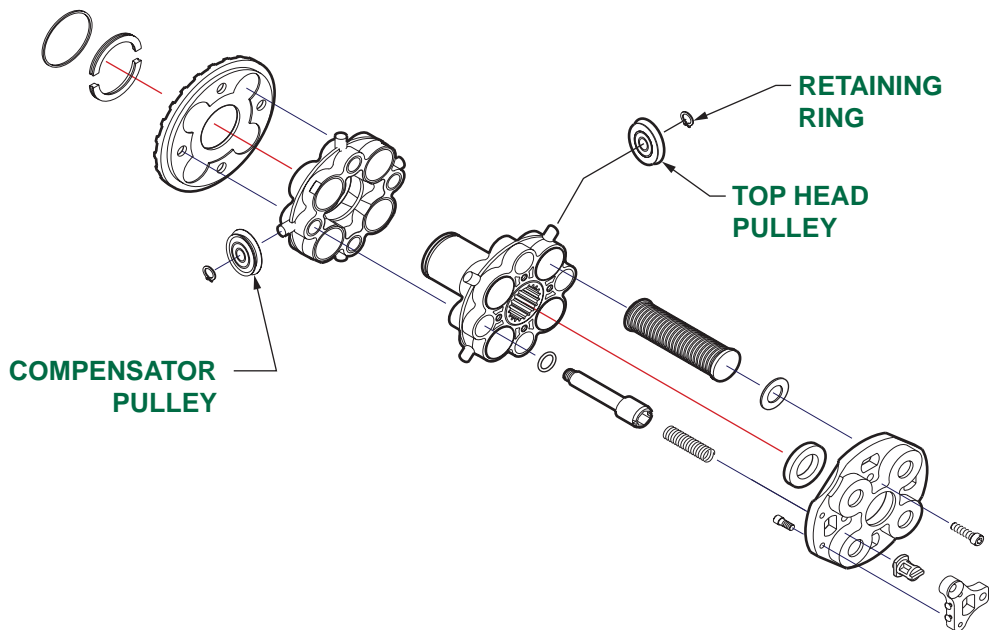


4.0 Service Adjustment / Replacement

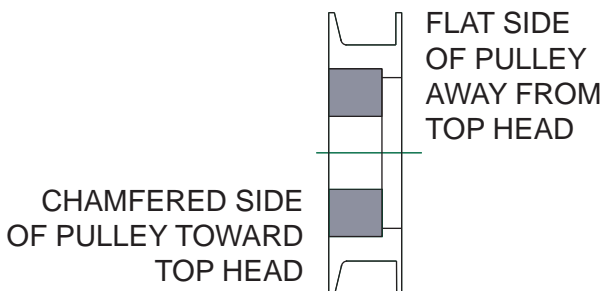
4.7 Replacing the Compensator and Top Head Pulleys

The pulleys are secured on the molded trunnion pins by retaining rings. After removing the retaining ring, insert two small screw drivers behind and on opposite sides of the pulley. The pulley can then be pried off using equal pressure on both sides.

When installing the new pulley, be sure the trunnion pin is clean and free of oil. When replacing the pulley, be sure chamfered side of the pulley is toward the Top Head. (See illustration below.) Use a driver that matches the diameter of the pulley bearings' inner race. An appropriate size deep socket works well.



Install a NEW retaining ring with the sharp edge of the ring facing out and open it only enough to slip over the pin. Be sure the ring is solidly against the bearing inner race.

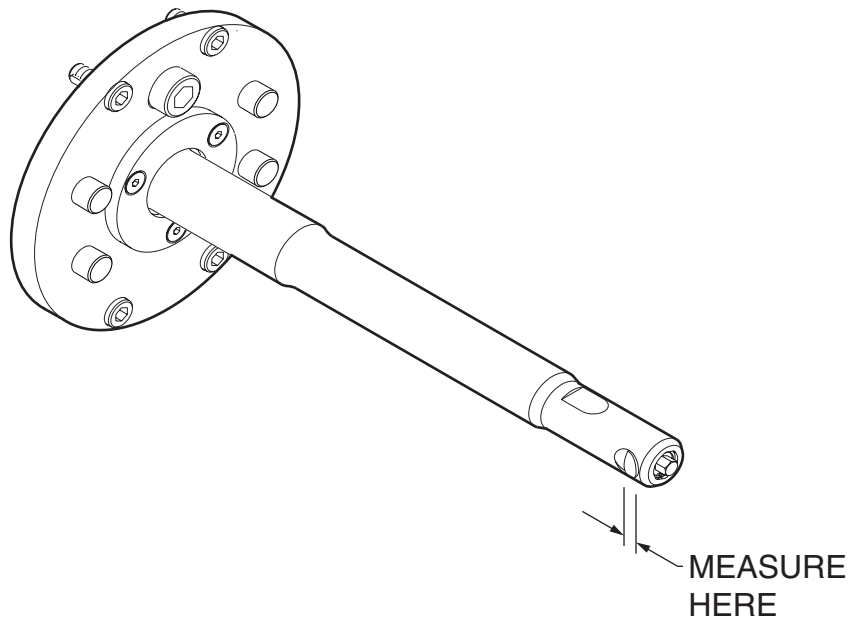


With the latch in the engaged position, measure both latches of the base post as shown in the illustration.

IF the measured dimension is less than 0.19 inches (5 mm), replace the latch assembly, p/n 9344.

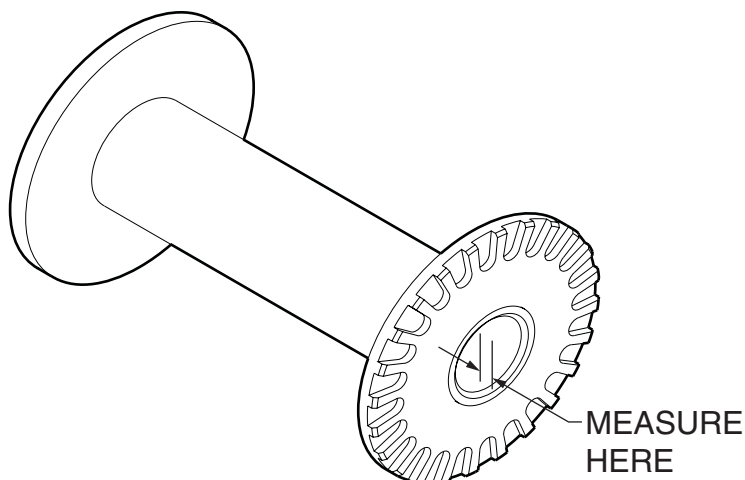
If the latch wear exceeds the specified dimension, engagement of the bobbin clutch may be impaired.

4.8a
Maximum
Allowable Wear
of the Carrier
Module Latch



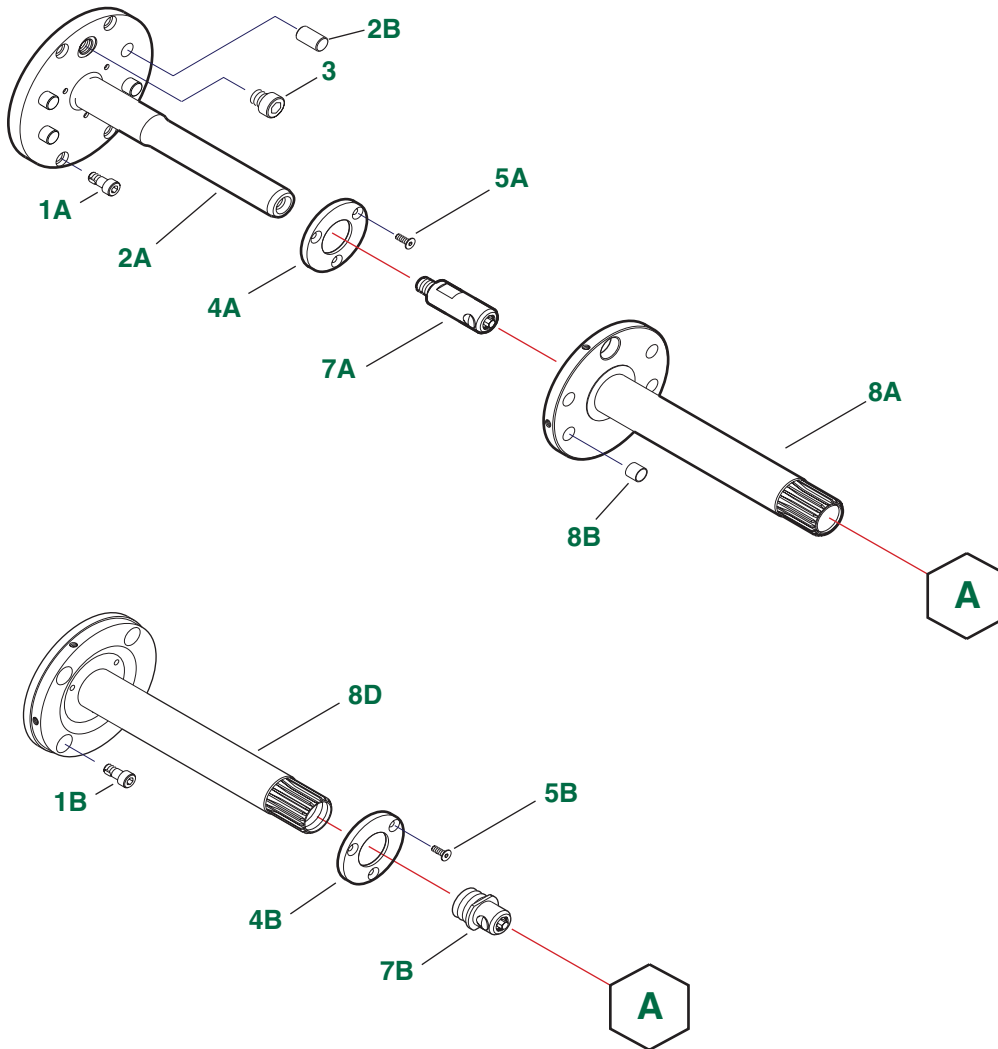
IF the measured dimension is less than 0.019 inches (0.5 mm), either replace the bobbin bushing, p/n 9411, or replace the retaining ring, p/n 9524, with the bronze split washer and retaining ring p/n's 9432 and 9565.

4.8b
Maximum
Allowable Wear
on the Bobbin
Bushing



5.0 PARTS

5.1 6 IN Wire Carriers for 9 IN Horngear Machine

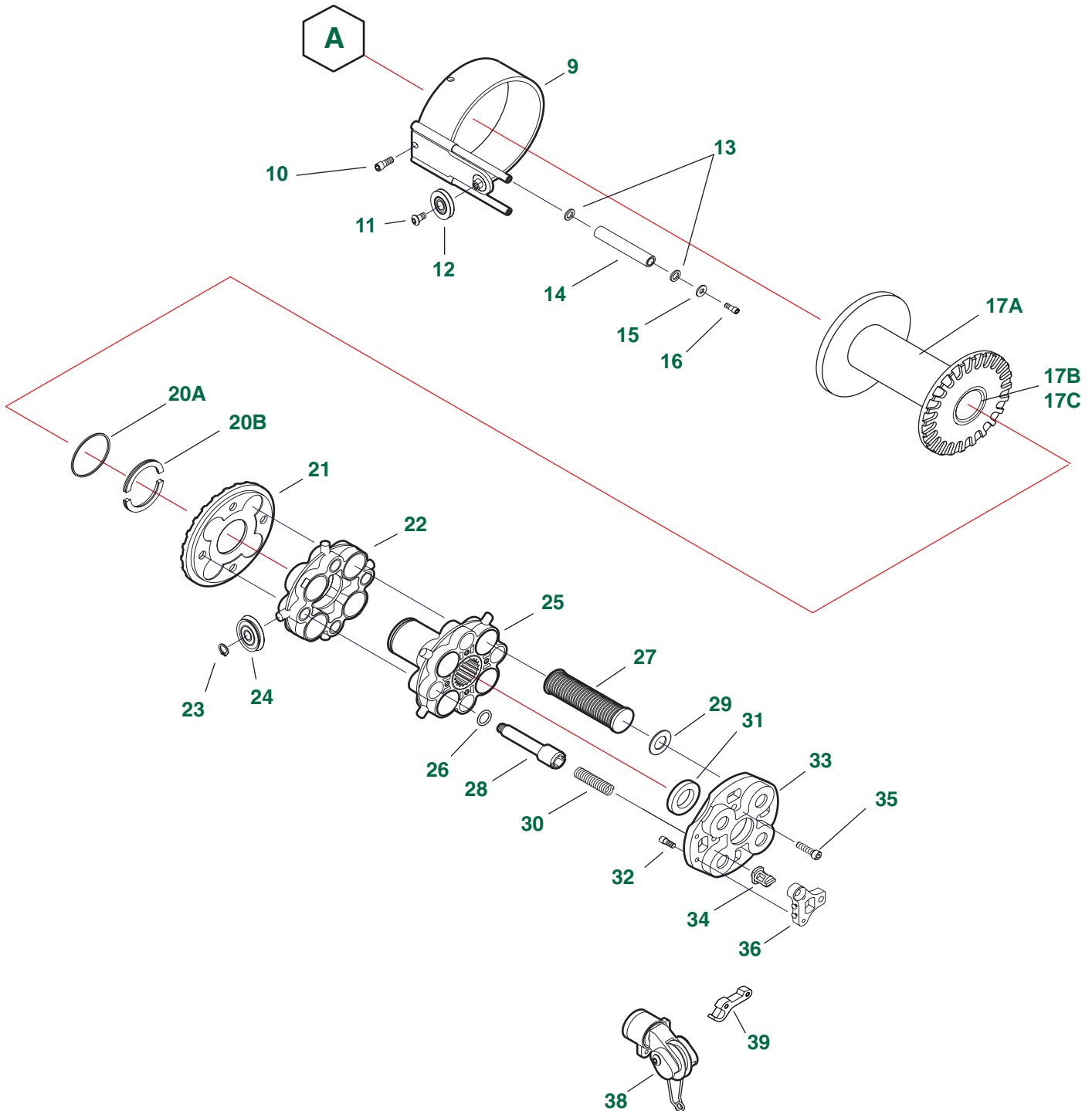


6 IN WIRE Carriers for 9 IN Horngear Machine

Item	P/N	Qty	Part Name	Description
1A	20130	4	Screw, Socket Head	
1B	9567	4	Screw, Socket Head	
2A	9338	1	Base Post without Torque Pins	
2A	9410	1	Base Post with Torque Pins	
2B	9390	4	Torque Pins	
3	9124	1	Stop, Bolt	
4A	9002	1	Thrust Washer	
4B	9425	1	Thrust Washer	
5A	9500	3	Screw, Flat Head Socket	
5B	9566	3	Screw, Flat Head Socket	
7A	9344	1	Latch Assembly	
7B	9412	1	Latch Assembly Base Holder	
8A	9178	1	Holder Tube, 6 IN	
8B	9406	4	Sleeve Bearing	
8D	9420	1	Base Holder, 6 IN	

5.0 PARTS

5.1 6 IN Wire Carriers for 9 IN Horngear Machine

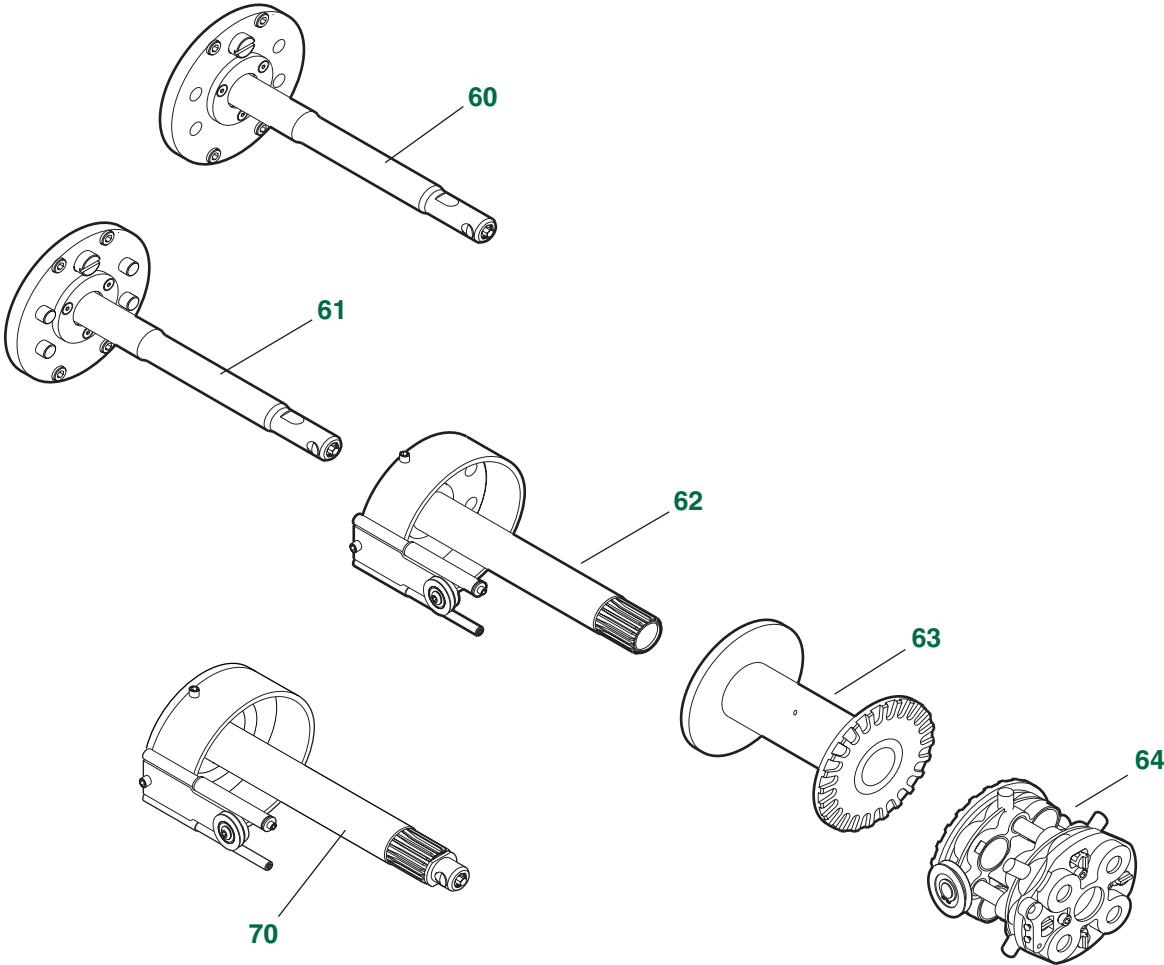


6 IN WIRE Carriers for 9 IN Horngear Machine

Item	P/N	Qty	Part Name	Description
9	9145	1	Roller Take Off	
10	20117	4	Screw, Socket Head	
11	9542	1	Screw, Button Head Socket	
12	9210	1	Pulley Assembly	
13	9142	2	Thrust Washer	
14	9144	1	Roller Assembly	
15	9526	1	Washer	
16	20109	2	Screw, Socket Head	
17A	9146	1	Wire Bobbin 6 IN Dual	
17B	9044	1	Flanged Bushing	
17C	9411	1	Straight Bushing	
20A	9565	1	Retaining Ring	
20B	9432	1	Split Washer	
21	9123	1	Clutch	
22	9247	1	Compensator	
23	9549	8	Retaining Ring	
24	9314	8	Pulley Assembly	
25	9246	1	Top Head	
26	9503	4	O-Ring	
27	9317	4	Spring Cassette, YELLOW	
27	9318	4	Spring Cassette, RED	
27	9319	4	Spring Cassette, WHITE	
27	9320	4	Spring Cassette, BLUE	
27	9377	4	Spring Cassette, GREEN	
28	9008	4	Shoulder Bolt	
29	9303	4	Rubber Washer	
30	9505	4	Clutch Spring, RED	
30	9506	4	Clutch Spring, WHITE	
30	9507	4	Clutch Spring, BLUE	
30	9535	4	Clutch Spring, YELLOW	
30	9547	4	Clutch Spring, ORANGE	
30	9560	4	Clutch Spring, GREEN	
31	9119	1	Latch Washer	
32	20109	2	Screw, Socket Head Cap	
33	9060	1	Retainer	
34	9062	4	Clutch Spring Retainer	
35	20121	4	Screw	
36	9149	1	Eyelet Bracket Assembly, 3/32 IN	
36	91922	1	Eyelet Bracket Assembly, 3/16 IN RH	
36	91923	1	Eyelet Bracket Assembly, 3/16 IN LH	
38	9326	1	Swivel Assembly RH	
38	9327	1	Swivel Assembly LH	
39	9371	1	Forming Pin	

5.0 PARTS

5.1 6 IN Wire Carriers for 9 IN Horngear Machine

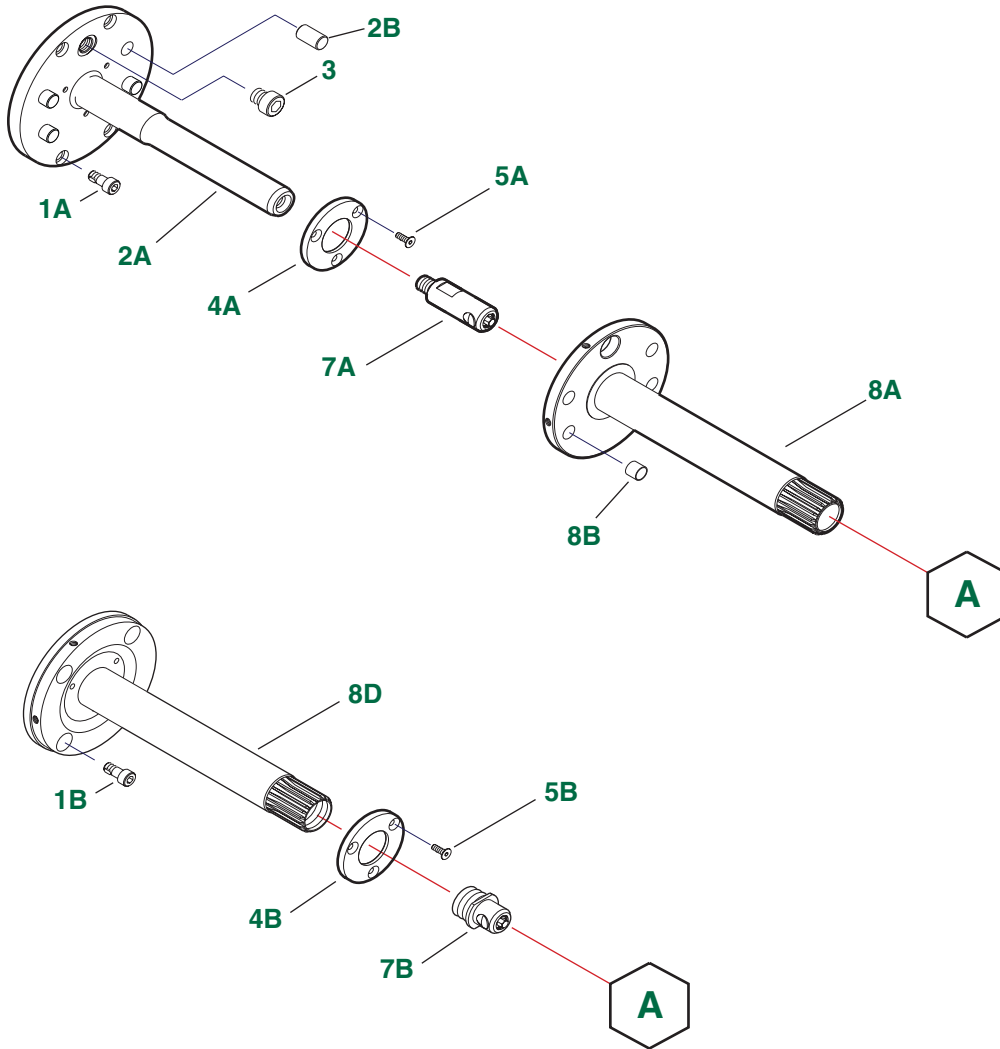


6 IN WIRE Carriers for 9 IN Horngear Machine

Item	P/N	Qty	Part Name	Description
60	0105	1	Base Post Assembly without Torque Pins	
61	0205	1	Base Post Assembly with Torque Pins	
62	03012	1	9 IN HG Bobbin Holder Assembly RH 6 IN	
62	03013	1	9 IN HG Bobbin Holder Assembly LH 6 IN	
63	9146	1	Wire Bobbin 6 IN Dual	
64	06052	1	Tension Head w/ 3/32 IN Eyelet RH	
64	06053	1	Tension Head w/ 3/32 IN Eyelet LH	
64	06112	1	Tension Head w/ 3/16 IN Eyelet RH	
64	06113	1	Tension Head w/ 3/16 IN Eyelet LH	
64	06032	1	Tension Head RH w/ Swivel	
64	06033	1	Tension Head LH w/ Swivel	
64	0603FP	1	Tension Head w/ RH Swivel & Forming Pin	
64	0604FP	1	Tension Head w/ LH Swivel & Forming Pin	
70	08032	1	9 IN HG Holder Basic RH 6 IN	
70	08033	1	9 IN HG Holder Basic LH 6 IN	

5.0 PARTS

5.2 6 IN Wire Carriers for 9.45 IN (240mm) Horngear Machine

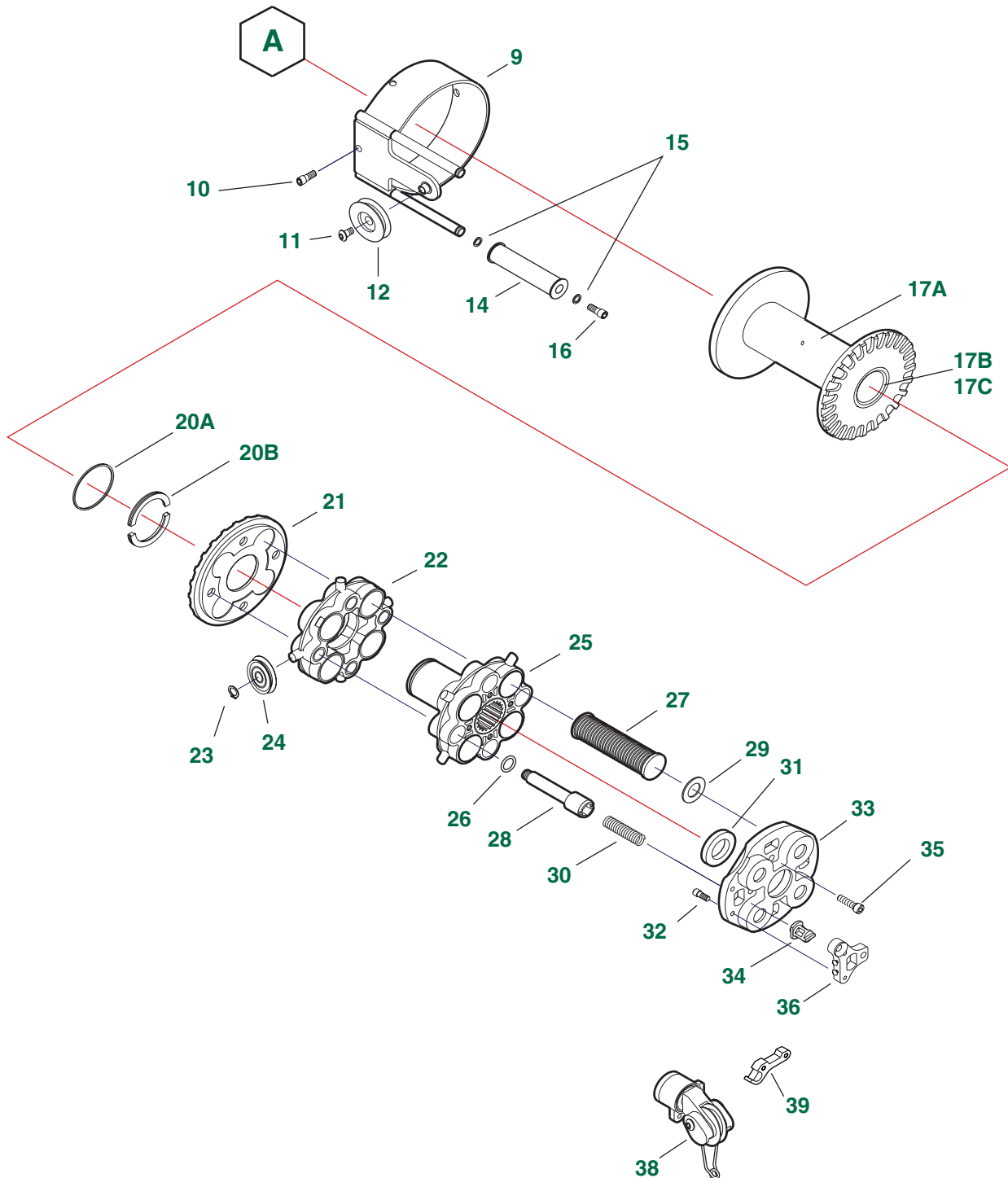


6 IN WIRE Carriers for 9.45IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
1A	9529	4	Screw, Socket Head	
1B	9567	4	Screw, Socket Head	
2A	9338	1	Base Post without Torque Pins	
2A	9410	1	Base Post with Torque Pins	
2B	9390	4	Torque Pins	
3	9124	1	Stop, Bolt	
4A	9002	1	Thrust Washer	
4B	9425	1	Thrust Washer	
5A	9500	3	Screw, Flat Head Socket	
5B	9566	3	Screw, Flat Head Socket	
7A	9344	1	Latch Assembly	
7B	9412	1	Latch Assembly Base Holder	
8A	9178	1	Holder Tube, 6 IN	
8B	9406	4	Sleeve Bearing	
8D	9420	1	Base Holder, 6 IN	

5.0 PARTS

5.2 6 IN Wire Carriers for 9.45 IN (240mm) Horngear Machine

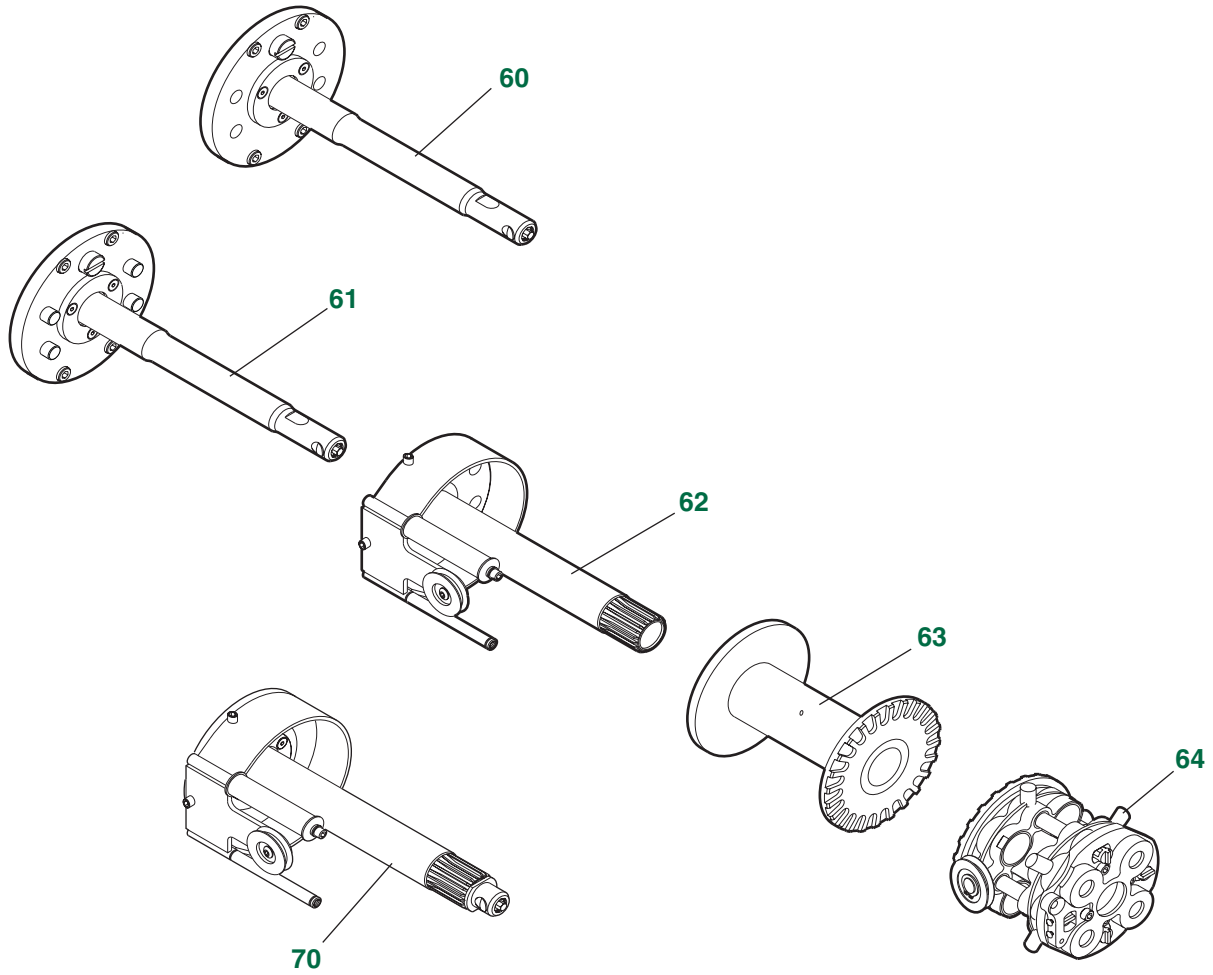


6 IN WIRE Carriers for 9.45IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
9	9201	1	Roller Take Off	
10	20117	4	Screw, Socket Head	
11	9542	1	Screw, Button Head Socket	
12	9210	1	Pulley Assembly	
12	9234	1	Pulley Assembly, Large Flange	
14	9206	1	Roller Assembly	
15	20221	2	Washer	
16	20117	2	Screw, Socket Head	
17A	9146	1	Wire Bobbin 6 IN Dual	
17B	9044	1	Flanged Bushing	
17C	9411	1	Straight Bushing	
20A	9565	1	Retaining Ring	
20B	9432	1	Split Washer	
21	9123	1	Clutch	
22	9247	1	Compensator	
23	9549	8	Retaining Ring	
24	9314	8	Pulley Assembly	
24	9237	8	Pulley Assembly, Wide	
25	9246	1	Top Head	
26	9503	4	O-Ring	
27	9317	4	Spring Cassette, YELLOW	
27	9318	4	Spring Cassette, RED	
27	9319	4	Spring Cassette, WHITE	
27	9320	4	Spring Cassette, BLUE	
27	9377	4	Spring Cassette, GREEN	
28	9008	4	Shoulder Bolt	
29	9303	4	Rubber Washer	
30	9505	4	Clutch Spring, RED	
30	9506	4	Clutch Spring, WHITE	
30	9507	4	Clutch Spring, BLUE	
30	9535	4	Clutch Spring, YELLOW	
30	9547	4	Clutch Spring, ORANGE	
30	9560	4	Clutch Spring, GREEN	
31	9119	1	Latch Washer	
32	20109	2	Screw, Socket Head Cap	
33	9060	1	Retainer	
34	9062	4	Clutch Spring Retainer	
35	20121	4	Screw	
36	9149	1	Eyelet Bracket Assembly, 3/32 IN	
36	91922	1	Eyelet Bracket Assembly, 3/16 IN RH	
36	91923	1	Eyelet Bracket Assembly, 3/16 IN LH	
38	9326	1	Swivel Assembly RH	
38	9327	1	Swivel Assembly LH	
39	9371	1	Forming Pin	

5.0 PARTS

5.2 6 IN Wire Carriers for 9.45 IN (240mm) Horngear Machine

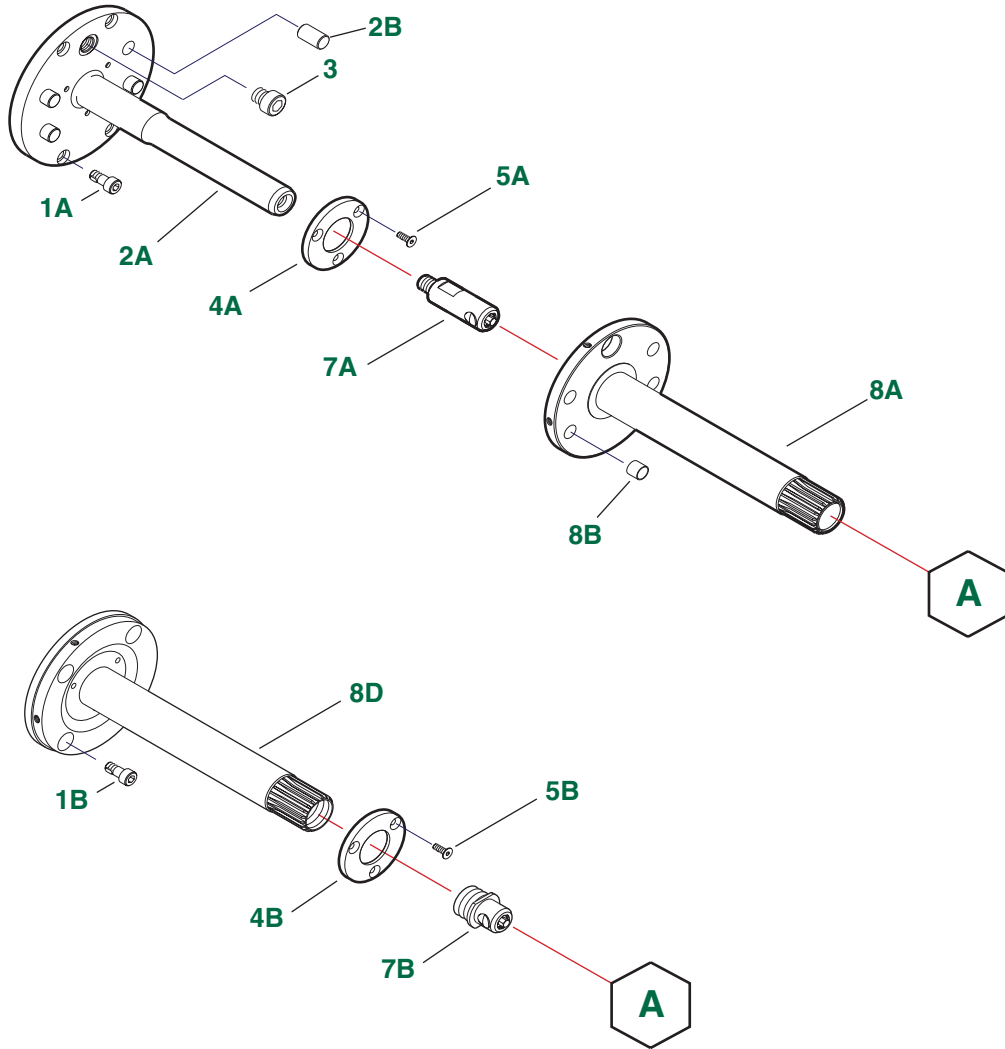


6 IN WIRE Carriers for 9.45IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
60	0105	1	Base Post Assembly without Torque Pins	
61	0205	1	Base Post Assembly with Torque Pins	
62	03022	1	240HG Bobbin Holder Assembly RH 6 IN	
62	03023	1	240HG Bobbin Holder Assembly LH 6 IN	
62	03062	1	240HG Bobbin Holder Assembly RH 6 IN w/ Large Flange Pulley	
62	03063	1	240HG Bobbin Holder Assembly LH 6 IN w/ Large Flange Pulley	
63	9146	1	Wire Bobbin 6 IN Dual	
64	06052	1	Tension Head w/ 3/32 IN Eyelet RH	
64	06053	1	Tension Head w/ 3/32 IN Eyelet LH	
64	06112	1	Tension Head w/ 3/16 IN Eyelet RH	
64	06113	1	Tension Head w/ 3/16 IN Eyelet LH	
64	06112W	1	Tension Head w/ 3/16 IN Eyelet & Wide Pulleys RH	
64	06113W	1	Tension Head w/ 3/16 IN Eyelet & Wide Pulleys LH	
64	06032	1	Tension Head w/ Swivel RH	
64	06033	1	Tension Head w/ Swivel LH	
64	06032W	1	Tension Head w/ Swivel & Wide Pulleys RH	
64	06033W	1	Tension Head w/ Swivel & Wide Pulleys LH	
64	0603FP	1	Tension Head w/ Swivel & Forming Pin RH	
64	0604FP	1	Tension Head w/ Swivel & Forming Pin LH	
64	0603FPW	1	Tension Head w/ Swivel, Forming Pin & Wide Pulleys RH	
64	0604FPW	1	Tension Head w/ Swivel, Forming Pin & Wide Pulleys LH	
70	08022	1	240HG Holder Basic RH 6 IN	
70	08023	1	240HG Holder Basic LH 6 IN	
70	08062	1	240HG Holder Basic RH 6 IN w/ Large Flange Pulley	
70	08063	1	240HG Holder Basic LH 6 IN w/ Large Flange Pulley	

5.0 PARTS

5.3 6 IN Heavy Duty WIRE Carriers for 9.45IN (240mm) Horngear Machine

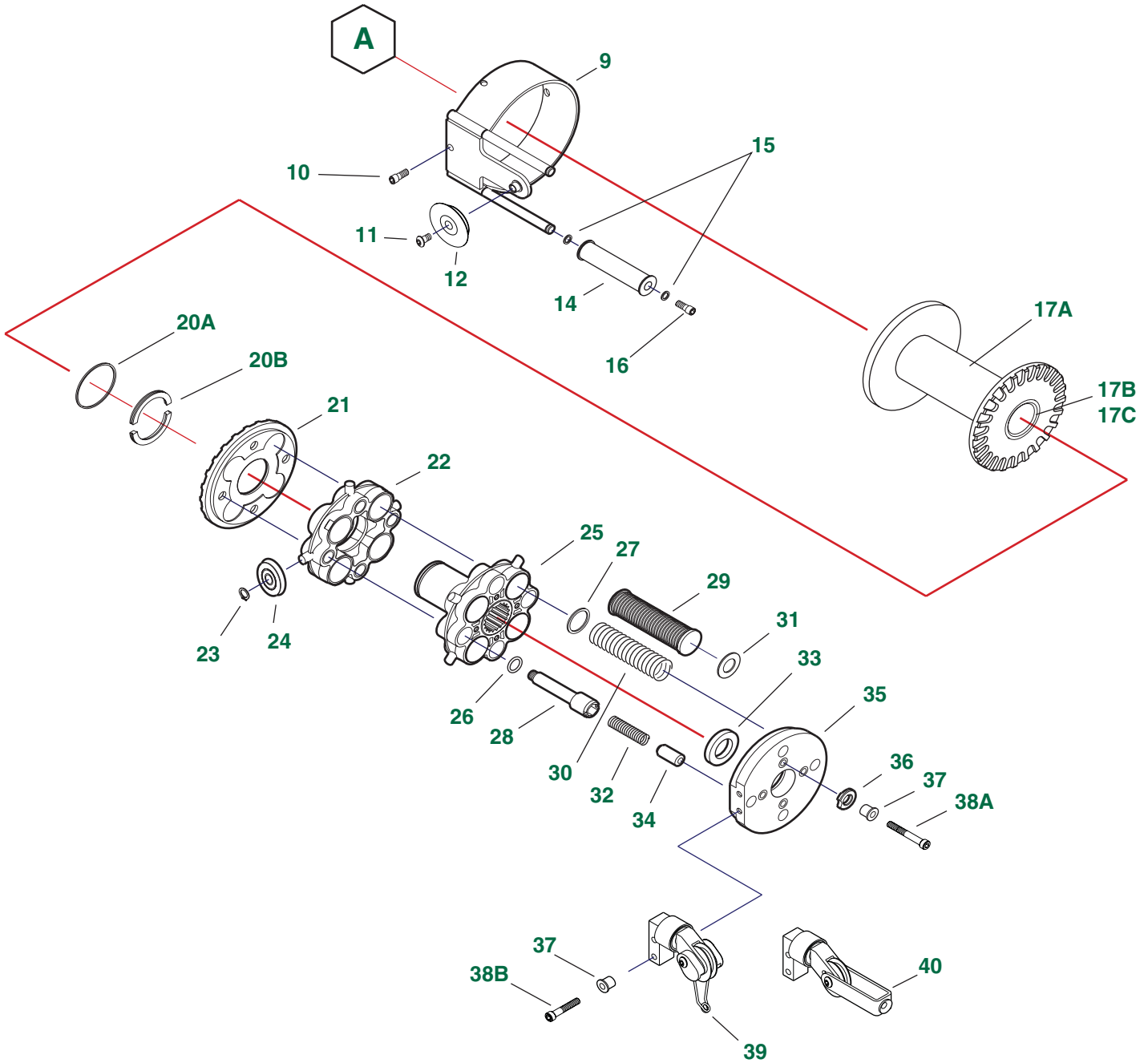


6 IN Heavy Duty WIRE Carriers for 9.45IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
1A	9529	4	Screw, Socket Head	
1B	9567	4	Screw, Socket Head	
2A	9338	1	Base Post without Torque Pins	
2A	9410	1	Base Post with Torque Pins	
2B	9390	4	Torque Pins	
3	9124	1	Stop, Bolt	
4A	9002	1	Thrust Washer	
4B	9425	1	Thrust Washer	
5A	9500	3	Screw, Flat Head Socket	
5B	9566	3	Screw, Flat Head Socket	
7A	9344	1	Latch Assembly	
7B	9412	1	Latch Assembly Base Holder	
8A	9178	1	Holder Tube, 6 IN	
8B	9406	4	Sleeve Bearing	
8D	9420	1	Base Holder	

5.0 PARTS

5.3 6 IN Heavy Duty WIRE Carriers for 9.45IN (240mm) Horngear Machine

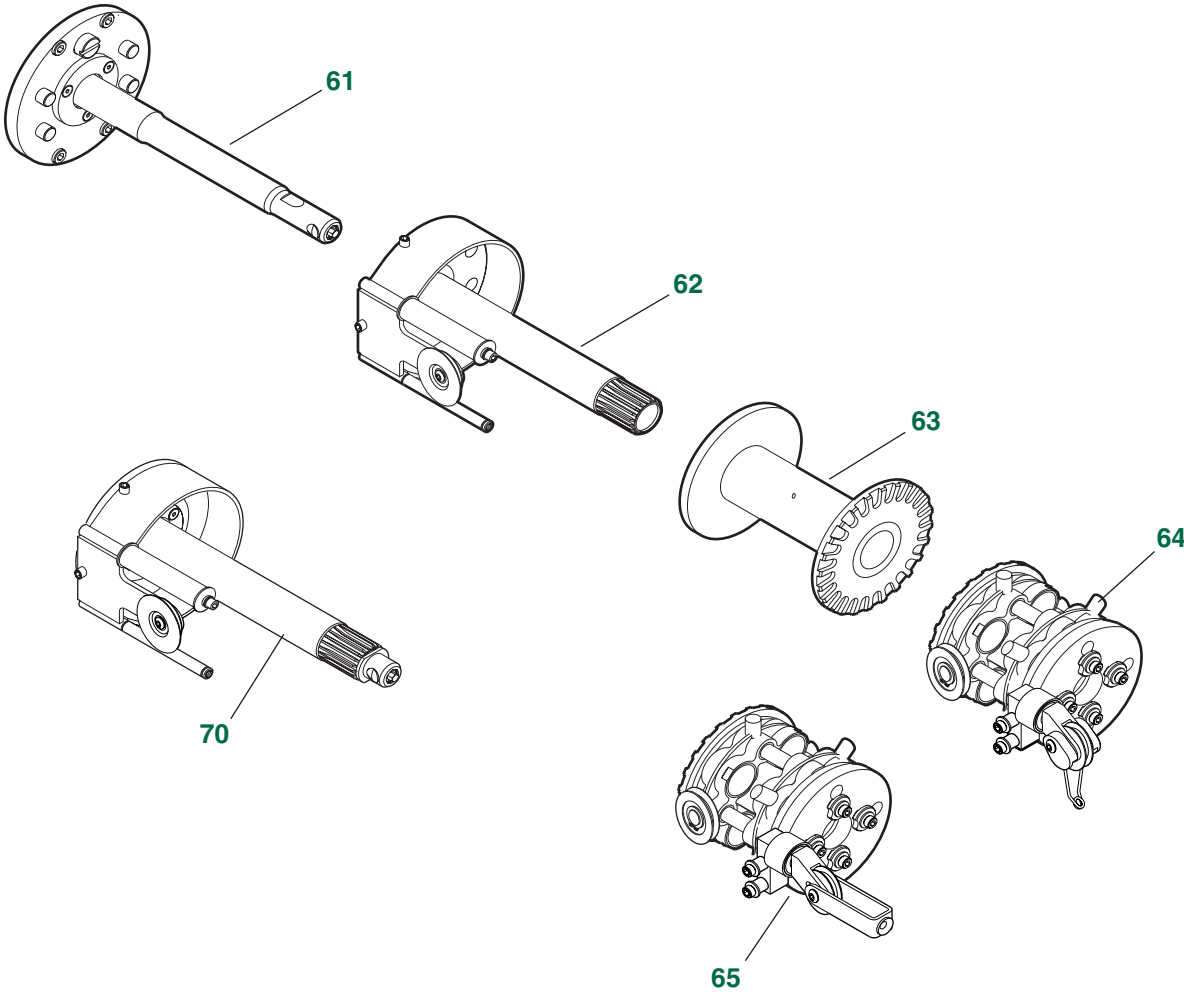


6 IN Heavy Duty WIRE Carriers for 9.45IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
9	9201	1	Roller Take Off	
10	20117	4	Screw, Socket Head	
11	9542	1	Screw, Button Head Socket	
12	9234	1	Pulley Assembly, Large Flange	
14	9206	1	Roller Assembly	
15	20221	2	Washer	
16	20117	2	Screw, Socket Head	
17A	9146	1	Wire Bobbin 6 IN Dual	
17B	9044	1	Flanged Bushing	
17C	9411	1	Straight Bushing	
20A	9565	1	Retaining Ring	
20B	9432	1	Split Washer	
21	9123	1	Clutch	
22	9247	1	Compensator	
23	9549	8	Retaining Ring	
24	9314	8	Pulley Assembly	
24	9237	8	Pulley Assembly, Wide	
25	9246	1	Top Head	
26	9503	4	O-Ring	
27	9064	1	Washer	
28	9008	4	Shoulder Bolt	
29	9317	4	Spring Cassette, YELLOW	
29	9318	4	Spring Cassette, RED	
29	9319	4	Spring Cassette, WHITE	
29	9320	4	Spring Cassette, BLUE	
29	9377	4	Spring Cassette, GREEN	
30	9543	4	Compensator Spring, BLACK	
31	9303	4	Rubber Washer	
32	9505	4	Clutch Spring, RED	
32	9506	4	Clutch Spring, WHITE	
32	9507	4	Clutch Spring, BLUE	
32	9535	4	Clutch Spring, YELLOW	
32	9547	4	Clutch Spring, ORANGE	
32	9560	4	Clutch Spring, GREEN	
33	9119	1	Latch Washer	
34	9244	4	Clutch Spring Retainer	
35	9245	1	Aluminum Retainer	
36	9243	4	Latch	
37	9242	6	Short Bushing	
38A	20124	4	Screw	
38B	20122	2	Screw	
39	9431	1	Swivel Assembly (Either LH or RH)	
40	9373	1	Swivel Assembly w/ Strap (Either LH or RH)	

5.0 PARTS

5.3 6 IN Heavy Duty WIRE Carriers for 9.45IN (240mm) Horngear Machine

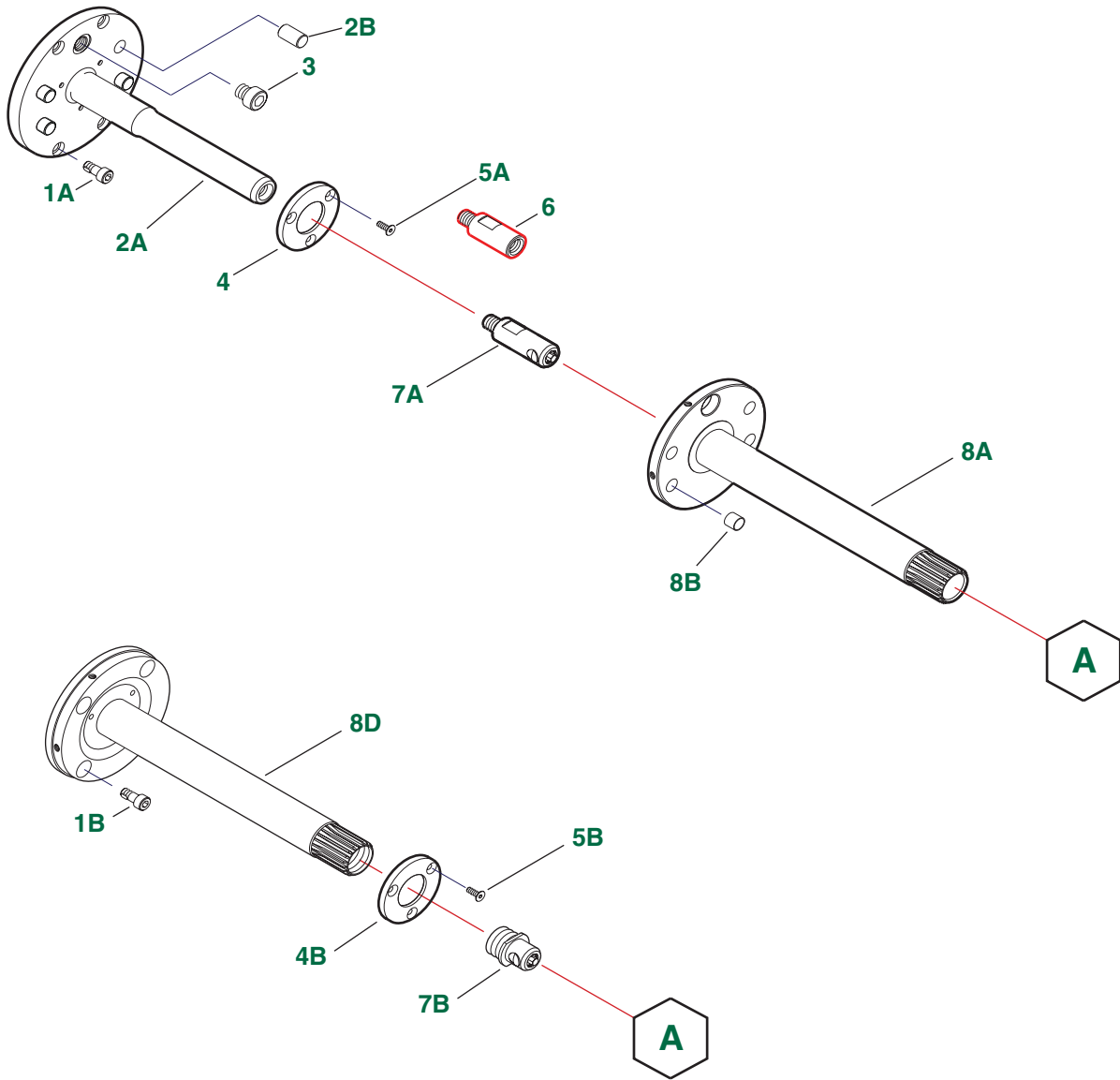


6 IN Heavy Duty WIRE Carriers for 9.45IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
61	0205	1	Base Post Assembly with Torque Pins	
62	03062	1	240HG Bobbin Holder Assembly for Heavy Duty RH 6 IN w/ Large Flange Pulley	
62	03063	1	240HG Bobbin Holder Assembly for Heavy Duty LH 6 IN w/ Large Flange Pulley	
63	9146	1	Wire Bobbin 6 IN Dual	
64	0607RH.....	1	Tension Head w/ Aluminum Retainer & Wire Bail Swivel RH	
64	0607LH.....	1	Tension Head w/ Aluminum Retainer & Wire Bail Swivel LH	
64	0607RHW.....	1	Tension Head w/ Aluminum Retainer, Wire Bail Swivel, & Wide Pulleys RH	
64	0607LHW	1	Tension Head w/ Aluminum Retainer, Wire Bail Swivel, & Wide Pulleys LH	
65	0609RH.....	1	Tension Head w/ Aluminum Retainer & Large Strap Swivel RH	
65	0609LH.....	1	Tension Head w/ Aluminum Retainer & Large Strap Swivel LH	
65	0609RHW	1	Tension Head w/ Aluminum Retainer, Large Strap Swivel & Wide Pulleys RH	
65	0609LHW	1	Tension Head w/ Aluminum Retainer, Large Strap Swivel & Wide Pulleys LH	
70	08062	1	240HG Holder Basic RH 6 IN w/ Large Flange Pulley	
70	08063	1	240HG Holder Basic LH 6 IN w/ Large Flange Pulley	

5.0 PARTS

5.4 8 IN WIRE & TEXTILE Carriers for 9.45 IN (240 mm) Horngear Machine

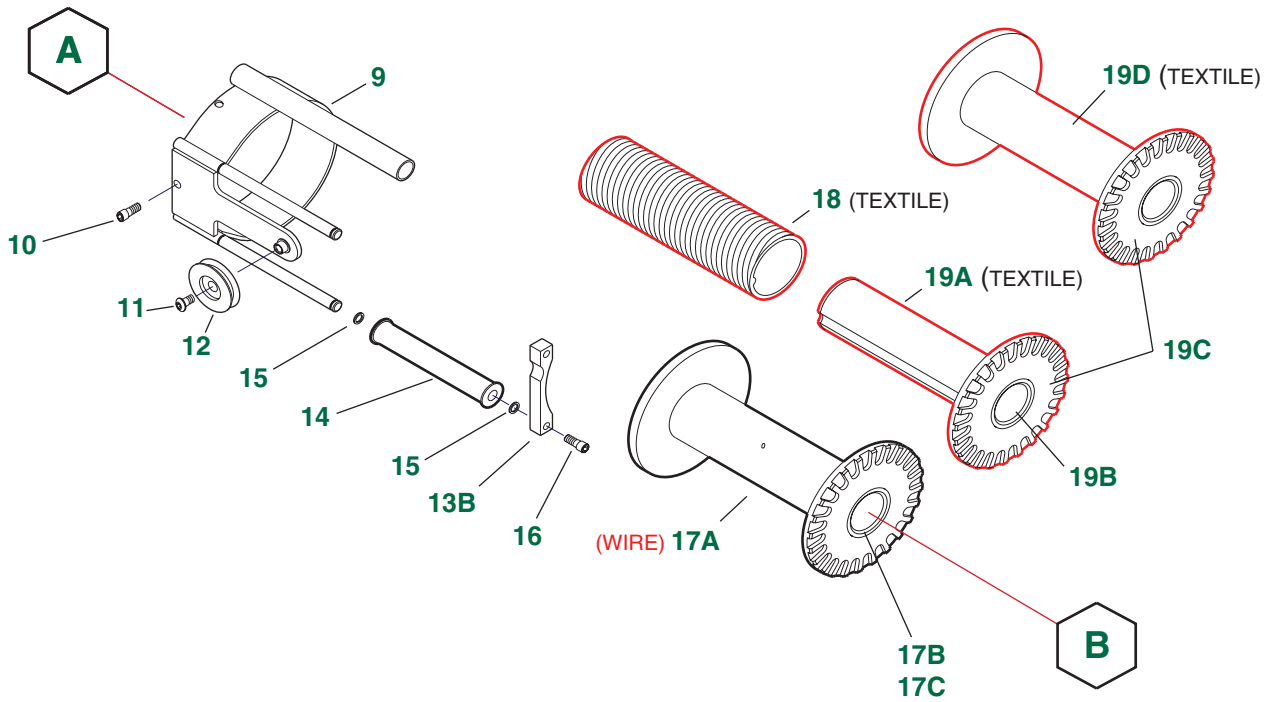


8 IN WIRE & TEXTILE Carriers for 9.45 IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
1A	9529	4	Screw, Socket Head	
1B	9567	4	Screw, Socket Head	
2A	9338	1	Base Post without Torque Pins	
2A	9410	1	Base Post with Torque Pins	
2B	9390	4	Torque Pins	
3	9124	1	Stop, Bolt	
4	9002	1	Thrust Washer	
4B	9425	1	Thrust Washer	
5A	9500	3	Screw, Flat Head Socket	
5B	9566	3	Screw, Flat Head Socket	
6	9256	1	Extender	
7A	9344	1	Latch Assembly	
7B	9412	1	Latch Assembly Base Holder	
8A	9252	1	Holder Tube	
8B	9406	4	Bushing	
8D	9435	1	Base Holder	

5.0 PARTS

5.4 8 IN WIRE & TEXTILE Carriers for 9.45 IN (240 mm) Horngear Machine

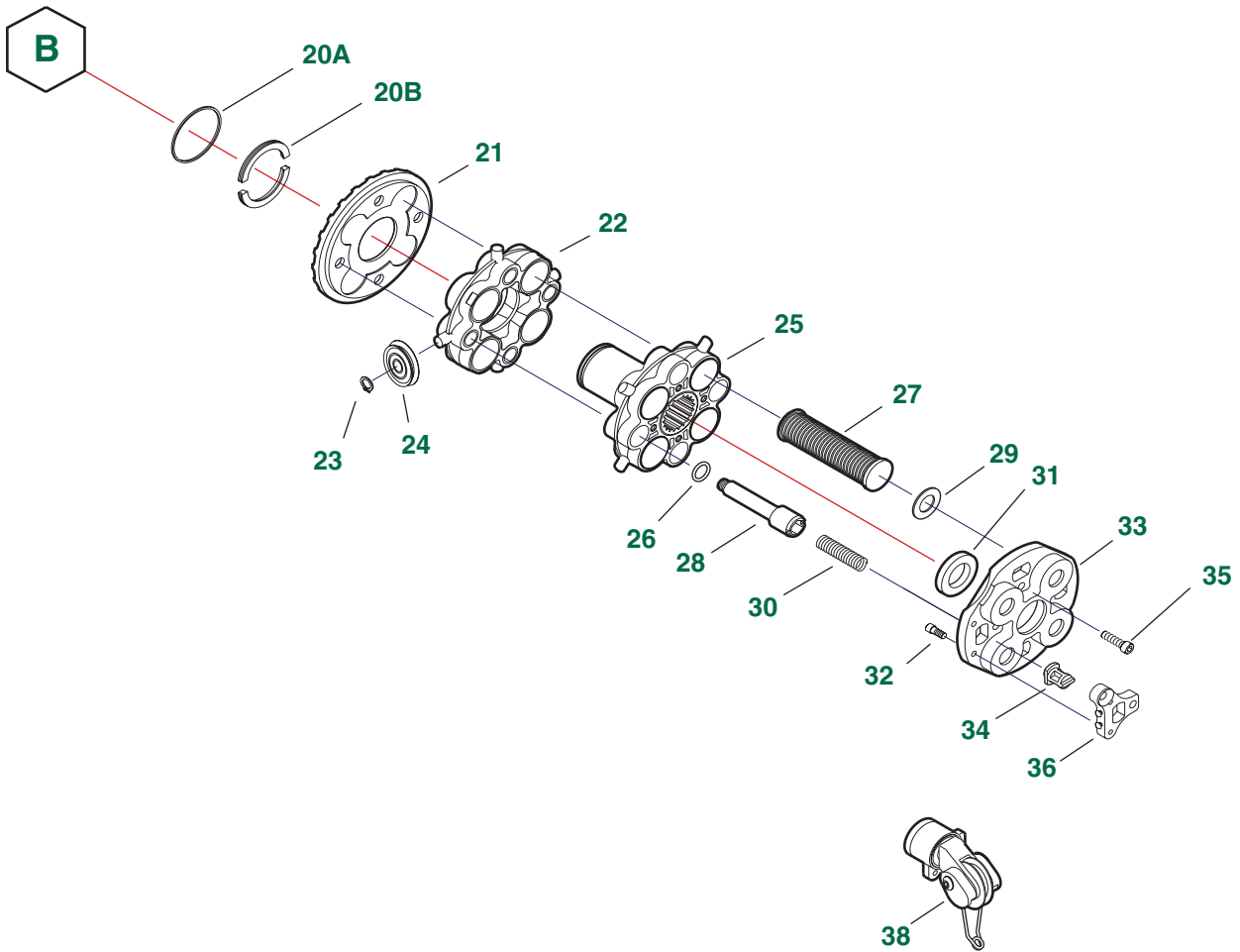


8 IN WIRE & TEXTILE Carriers for 9.45 IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
9	9285	1	Roller Take Off, RH	
9	9285L	1	Roller Take Off, LH	
10	20117	4	Screw, Socket Head	
11	9542	1	Screw, Button Head Socket	
12	9210	1	Pulley Assembly	
12	9234	1	Pulley Assembly, Large Flange	
13B	9414	1	Bridge	
14	9283	1	Roller Assembly	
15	20221	2	Washer	
16	20120	2	Screw, Socket Head	
17A	9305	1	Wire Bobbin 8 IN Dual	
17B	9044	1	Flange Bushing	
17C	9411	1	Straight Bushing	
18	9260	1	Core Tube 8 IN	
19A	9257	1	Textile Core Tube Holder Barrel	
19B	9157	2	Molded Bushing	
19C	9261	2	Molded Ratchet	
19D	9436	1	Textile Bobbin Barrel 8 IN	

5.0 PARTS

5.4 8 IN WIRE & TEXTILE Carriers for 9.45 IN (240 mm) Horngear Machine

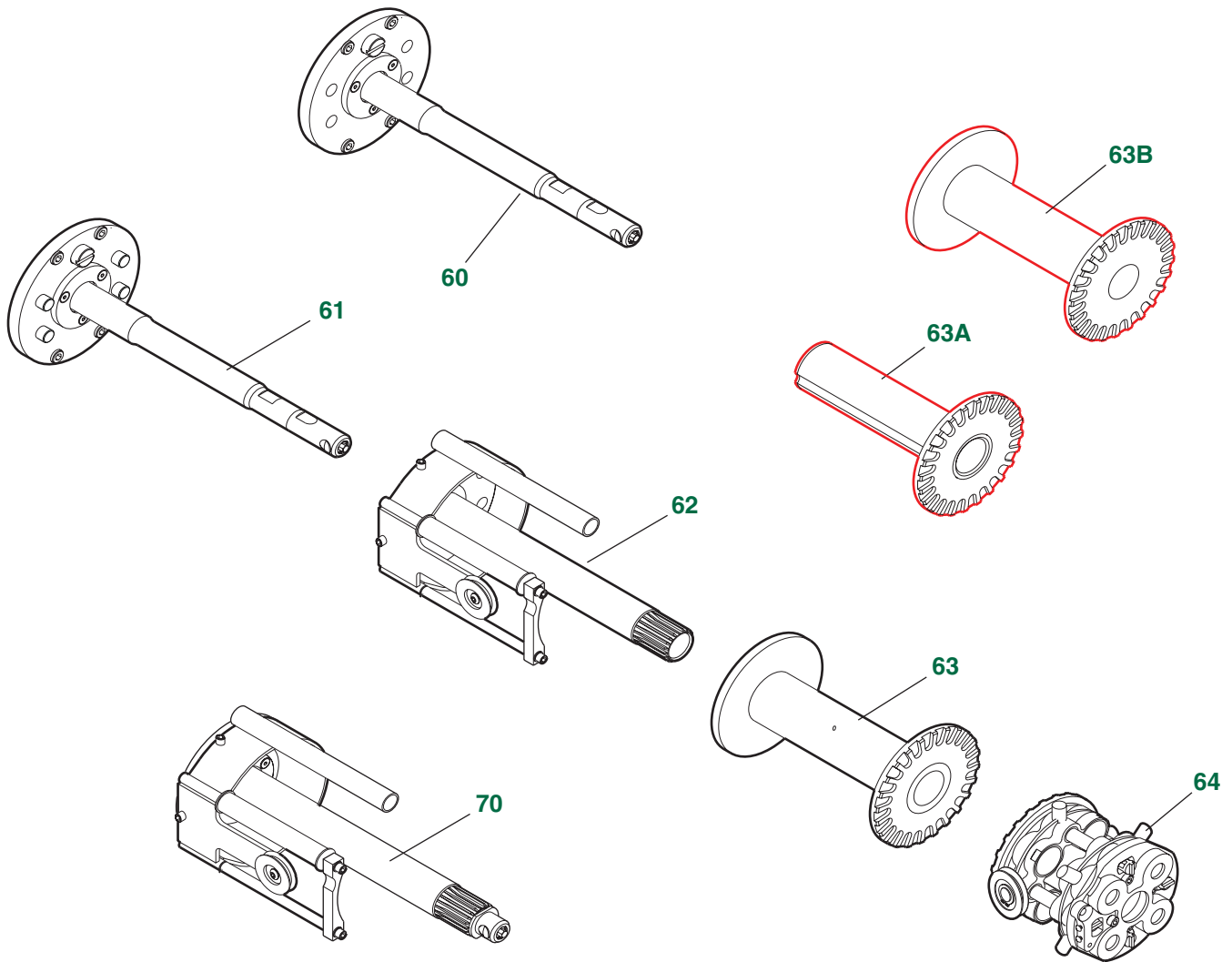


8 IN WIRE & TEXTILE Carriers for 9.45 IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
20A	9565	1	Retaining Ring	
20B	9432	1	Split Washer	
21	9123	1	Clutch	
22	9247	1	Compensator	
23	9549	8	Retaining Ring	
24	9314	8	Pulley Assembly	
24	9237	8	Pulley Assembly Wide	
25	9246	1	Top Head	
26	9503	4	O-Ring	
27	9317	4	Spring Cassette, YELLOW	
27	9318	4	Spring Cassette, RED	
27	9319	4	Spring Cassette, WHITE	
27	9320	4	Spring Cassette, BLUE	
27	9377	4	Spring Cassette, GREEN	
28	9008	4	Shoulder Bolt	
29	9303	4	Rubber Washer	
30	9505	4	Clutch Spring, RED	
30	9506	4	Clutch Spring, WHITE	
30	9507	4	Clutch Spring, BLUE	
30	9535	4	Clutch Spring, YELLOW	
30	9547	4	Clutch Spring, ORANGE	
30	9560	4	Clutch Spring, GREEN	
31	9119	1	Latch Washer	
32	20109	2	Screw, Socket Head Cap	
33	9060	1	Retainer	
34	9062	4	Clutch Spring Retainer	
35	20121	4	Screw, Socket Head Cap	
36	91922	1	Eyelet Bracket Assy, RH 3/16 IN Radius eyelet	
36	91923	1	Eyelet Bracket Assy, LH 3/16 IN Radius eyelet	
38	9326	1	Swivel Assembly RH	
38	9327	1	Swivel Assembly LH	

5.0 PARTS

5.4 8 IN WIRE & TEXTILE Carriers for 9.45 IN (240 mm) Horngear Machine

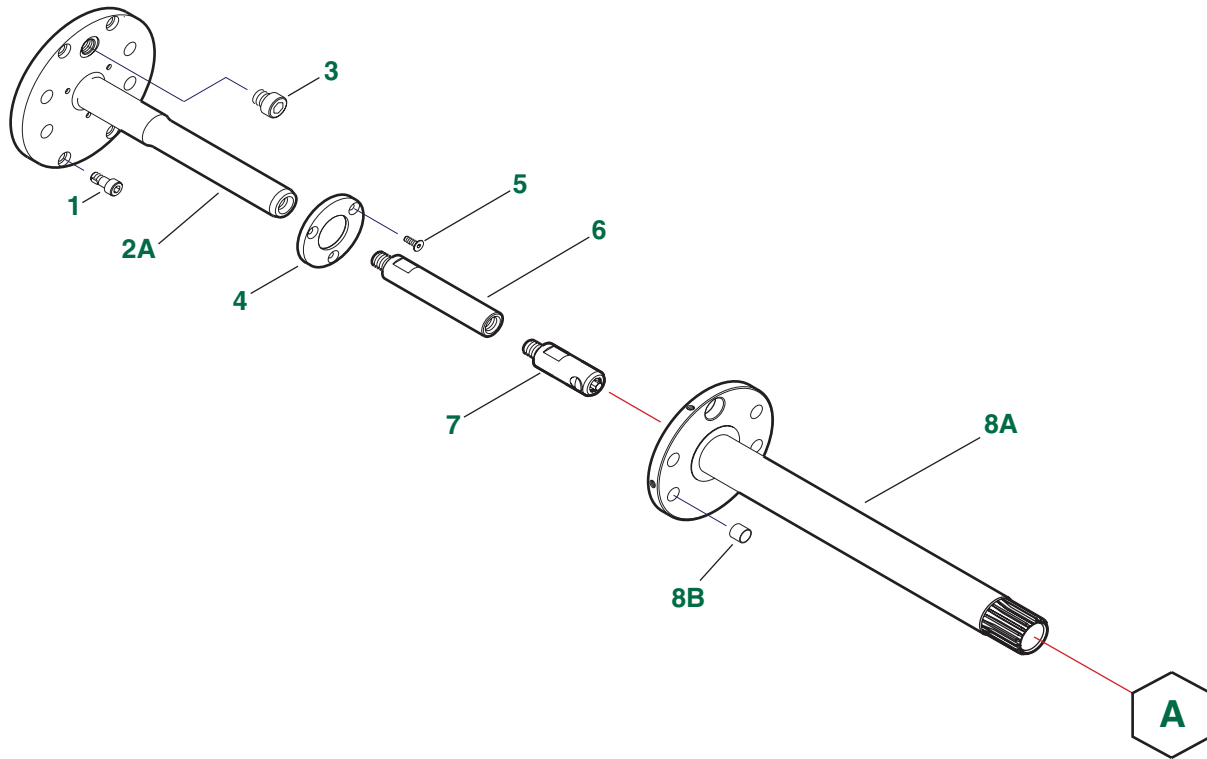


8 IN WIRE & TEXTILE Carriers for 9.45 IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
60	0106	1	Base Post Assembly without Torque Pins	
61	0206	1	Base Post Assembly with Torque Pins	
62	03042	1	240HG Bobbin Holder Assy RH 8 IN w/ Takeoff Rod & Bridge	
62	03043	1	240HG Bobbin Holder Assy LH 8 IN w/ Takeoff Rod & Bridge	
62	03162	1	240HG Bobbin Holder Assy RH 8 IN w/ Takeoff Rod, Bridge, & Large Flange Pulley	
62	03163	1	240HG Bobbin Holder Assy LH 8 IN w/ Takeoff Rod, Bridge, & Large Flange Pulley	
63	9305	1	Wire Bobbin 8 IN Dual	
63A	9262	1	Textile Core Tube Holder 8 IN	
63B	9263	1	Textile Bobbin 8 IN	
64	06112	1	Tension Head w/ 3/16 IN Eyelet RH	
64	06113	1	Tension Head w/ 3/16 IN Eyelet LH	
64	06112W	1	Tension Head w/ 3/16 IN Eyelet & Wide Pulleys RH	
64	06113W	1	Tension Head w/ 3/16 IN Eyelet & Wide Pulleys LH	
64	06032	1	Tension Head RH w/ Swivel	
64	06033	1	Tension Head LH w/ Swivel	
64	06032W	1	Tension Head RH w/ Swivel & Wide Pulleys RH	
64	06033W	1	Tension Head LH w/ Swivel & Wide Pulleys LH	
70	08042	1	240HG Holder Basic RH 8 IN w/ Takeoff Rod & Bridge	
70	08043	1	240HG Holder Basic LH 8 IN w/ Takeoff Rod & Bridge	
70	08072	1	240HG Holder Basic RH 8 IN w/ Takeoff Rod, Bridge, & Large Flange Pulley	
70	08073	1	240HG Holder Basic LH 8 IN w/ Takeoff Rod, Bridge, & Large Flange Pulley	

5.0 PARTS

5.5 11 IN TEXTILE Carriers for 9 IN Horngear Machine

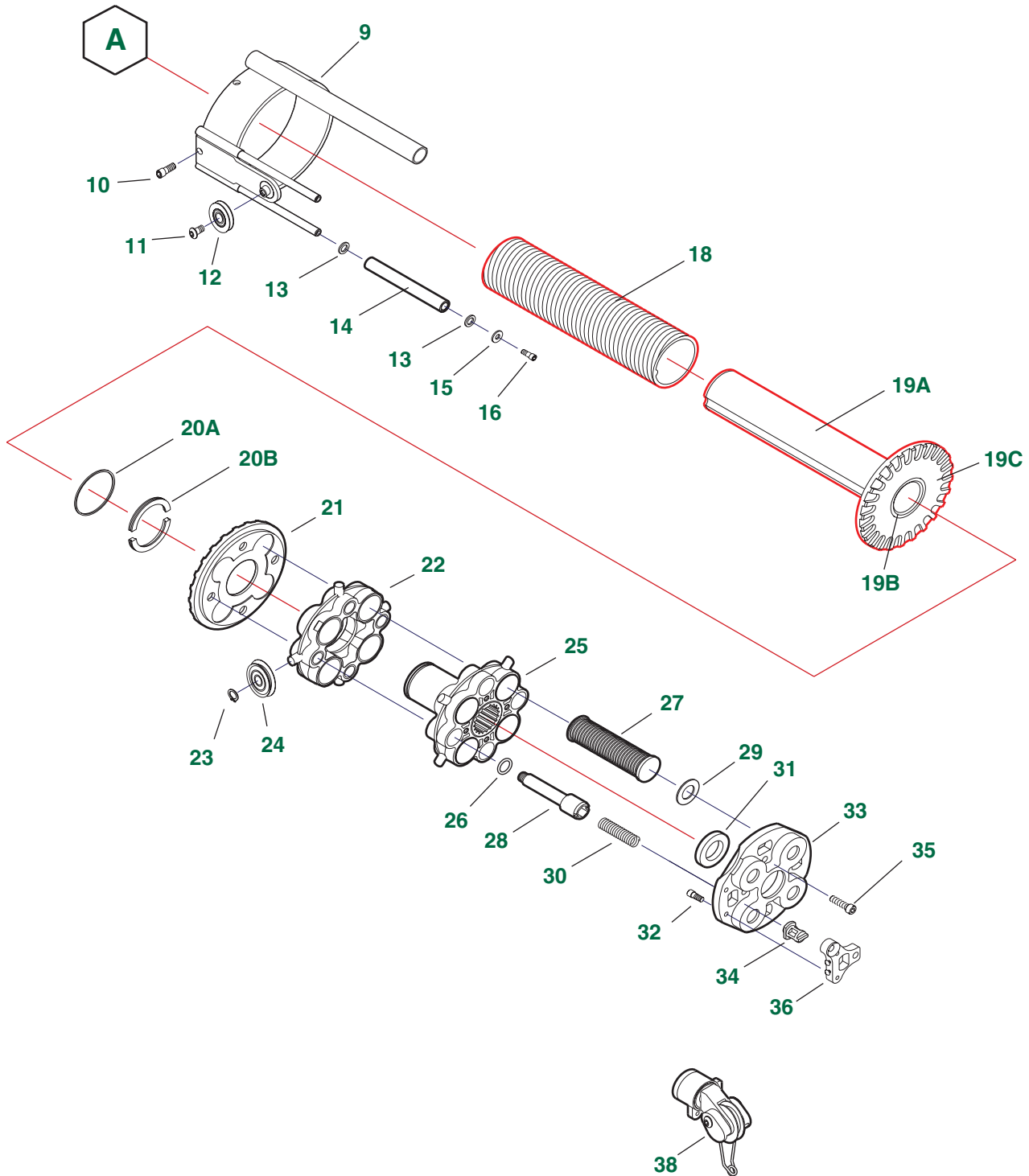


11 IN Textile Carrier for 9 IN Horngear Machine

Item	P/N	Qty	Part Name	Description
1	20130	4	Screw, Hex Socket Head	
1	9529	4	Screw, Socket Head	
2A	9338	1	Base Post without Torque Pins	
3	9124	1	Stop, Bolt	
4	9002	1	Thrust Washer	
5	9500	3	Screw, Flat Head Socket	
6	9162	1	Extender	
7	9344	1	Latch Assembly	
8A	9179	1	Holder Tube, 11 inch	
8B	9406	4	Bushing	

5.0 PARTS

5.5 11 IN TEXTILE Carriers for 9 IN Horngear Machine

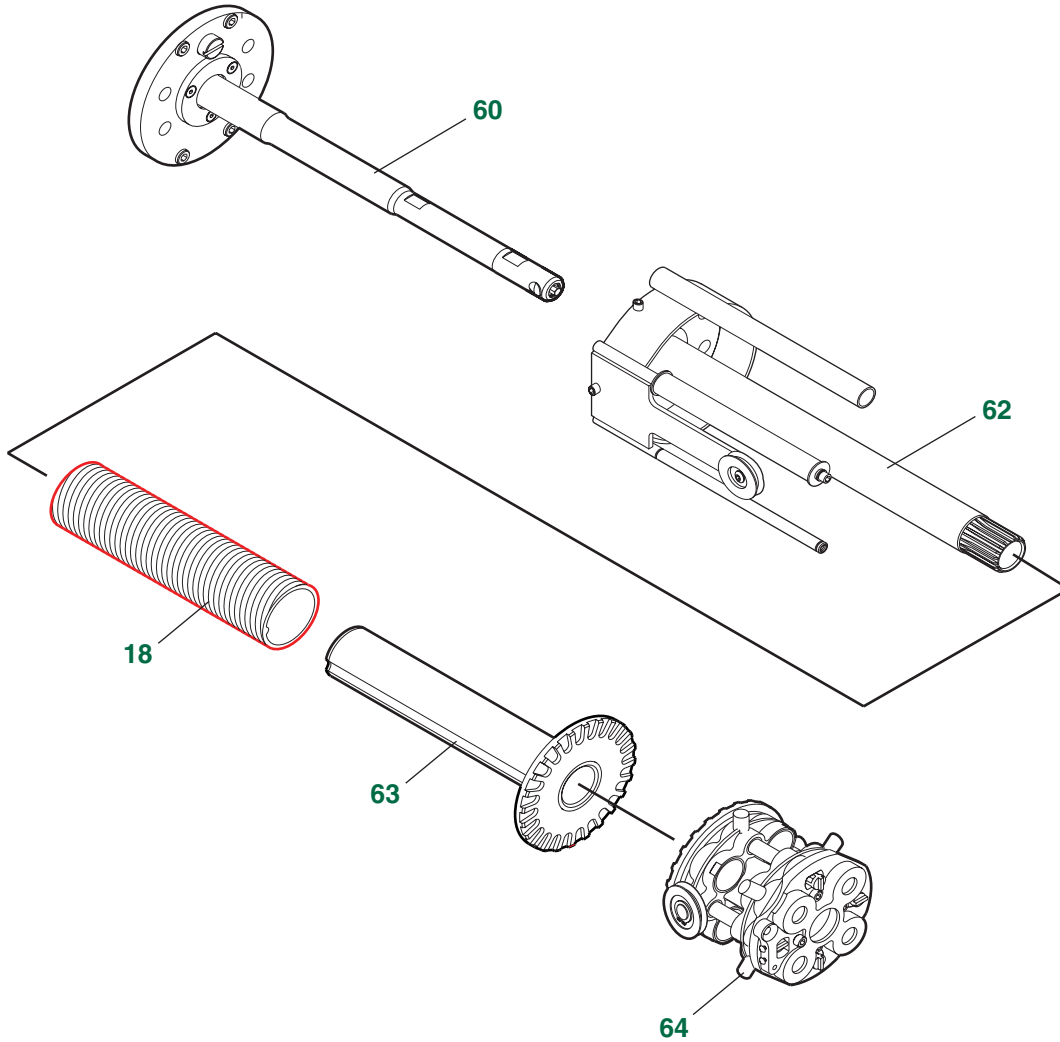


11 IN Textile Carrier for 9 IN Horngear Machine

Item	P/N	Qty	Part Name	Description
9	9168	1	Roller Take Off, RH	
9	9168L	1	Roller Take Off, LH	
10	20117	4	Screw, Socket Head	
11	9542	1	Screw, Button Head Socket	
12	9210	1	Pulley Assembly	
13	9142	2	Thrust Washer	
14	9165	1	Roller Assembly	
15	9526	1	Washer	
16	20109	1	Screw, Socket Head	
18	9290	1	Core Tube 10 IN	
19A	9287	1	Textile Core Tube Holder Barrel	
19B	9157	2	Molded Bushing	
19C	9261	1	Molded Ratchet	
20A	9565	1	Retaining Ring	
20B	9432	1	Split Washer	
21	9123	1	Clutch	
22	9247	1	Compensator	
23	9549	8	Retaining Ring	
24	9314A	8	Pulley Assembly, Polished	
25	9246	1	Top Head	
26	9503	4	O-Ring	
27	9317	4	Spring Cassette, YELLOW	
27	9318	4	Spring Cassette, RED	
27	9319	4	Spring Cassette, WHITE	
27	9320	4	Spring Cassette, BLUE	
27	9377	4	Spring Cassette, GREEN	
28	9008	4	Shoulder Bolt	
29	9303	4	Rubber Washer	
30	9505	4	Clutch Spring, RED	
30	9506	4	Clutch Spring, WHITE	
30	9507	4	Clutch Spring, BLUE	
30	9535	4	Clutch Spring, YELLOW	
30	9547	4	Clutch Spring, ORANGE	
30	9560	4	Clutch Spring, GREEN	
31	9119	1	Latch Washer	
32	20109	2	Screw, Socket Head Cap	
33	9060	1	Retainer	
34	9062	4	Clutch Spring Retainer	
35	20121	4	Screw, Socket Head Cap	
36	91922	1	Eyelet Bracket Assembly, 3/16 IN RH	
36	91923	1	Eyelet Bracket Assembly, 3/16 IN LH	
38	9326	1	Swivel Assembly RH	
38	9327	1	Swivel Assembly LH	

5.0 PARTS

5.5 11 IN TEXTILE Carriers for 9 IN Horngear Machine

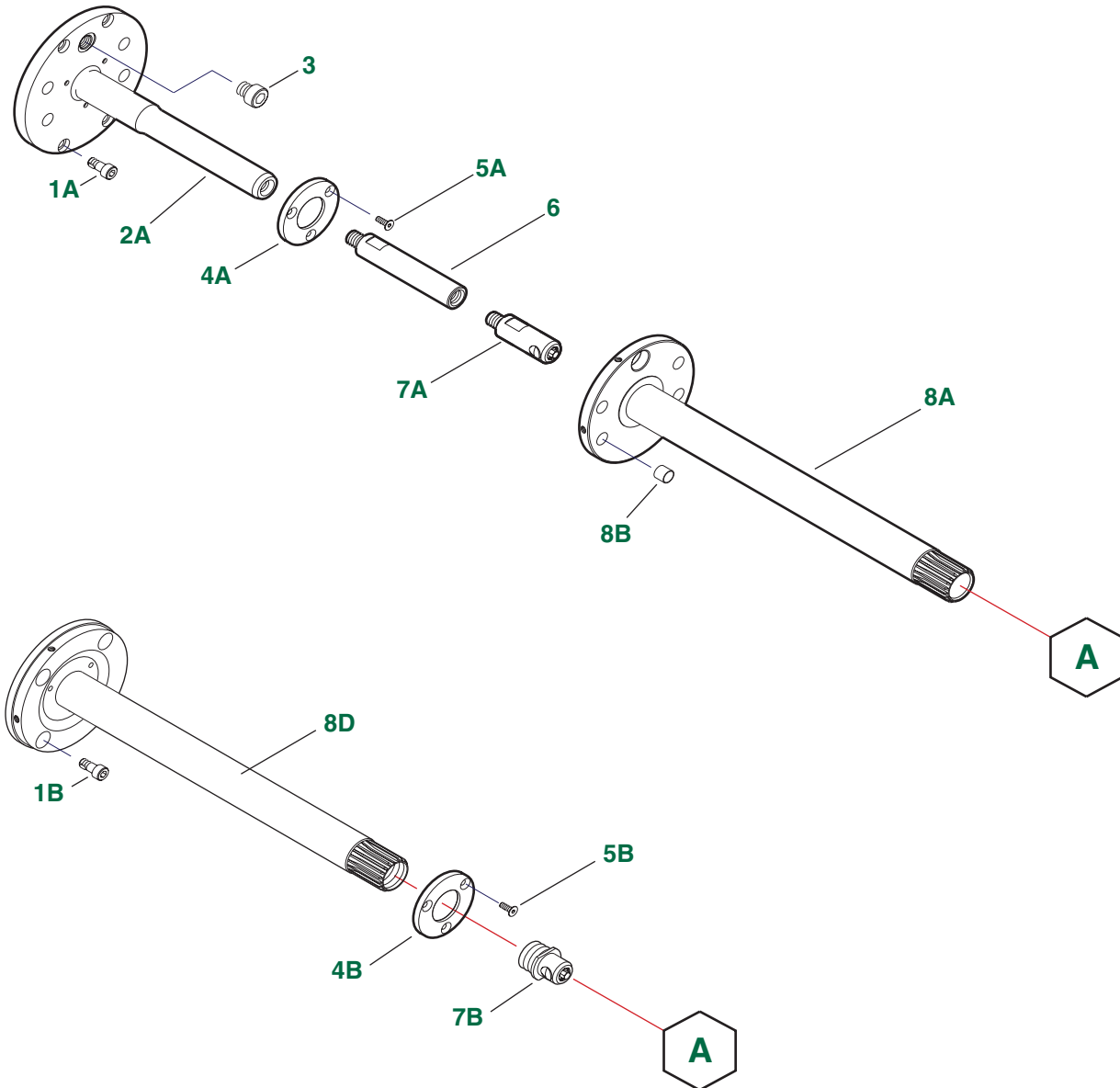


11 IN Textile Carrier for 9 IN Horngear Machine

Item	P/N	Qty	Part Name	Description
18	9290	1	Textile Core Tube 10 IN	
60	0108	1	Base Post Assembly without Torque Pins	
62	03072	1	9 IN HG Holder Assembly RH 11 IN	
62	03073	1	9 IN HG Holder Assembly LH 11 IN	
63	9286	1	Textile Core Tube Holder 11 IN	
64	06112	1	Tension Head 3/16 IN Eyelet RH	
64	06113	1	Tension Head 3/16 IN Eyelet LH	
64	06032	1	Tension Head RH w/ Swivel	
64	06033	1	Tension Head LH w/ Swivel	

5.0 PARTS

5.6 12 IN TEXTILE Carriers for 9.45 IN (240mm) Horngear Machine

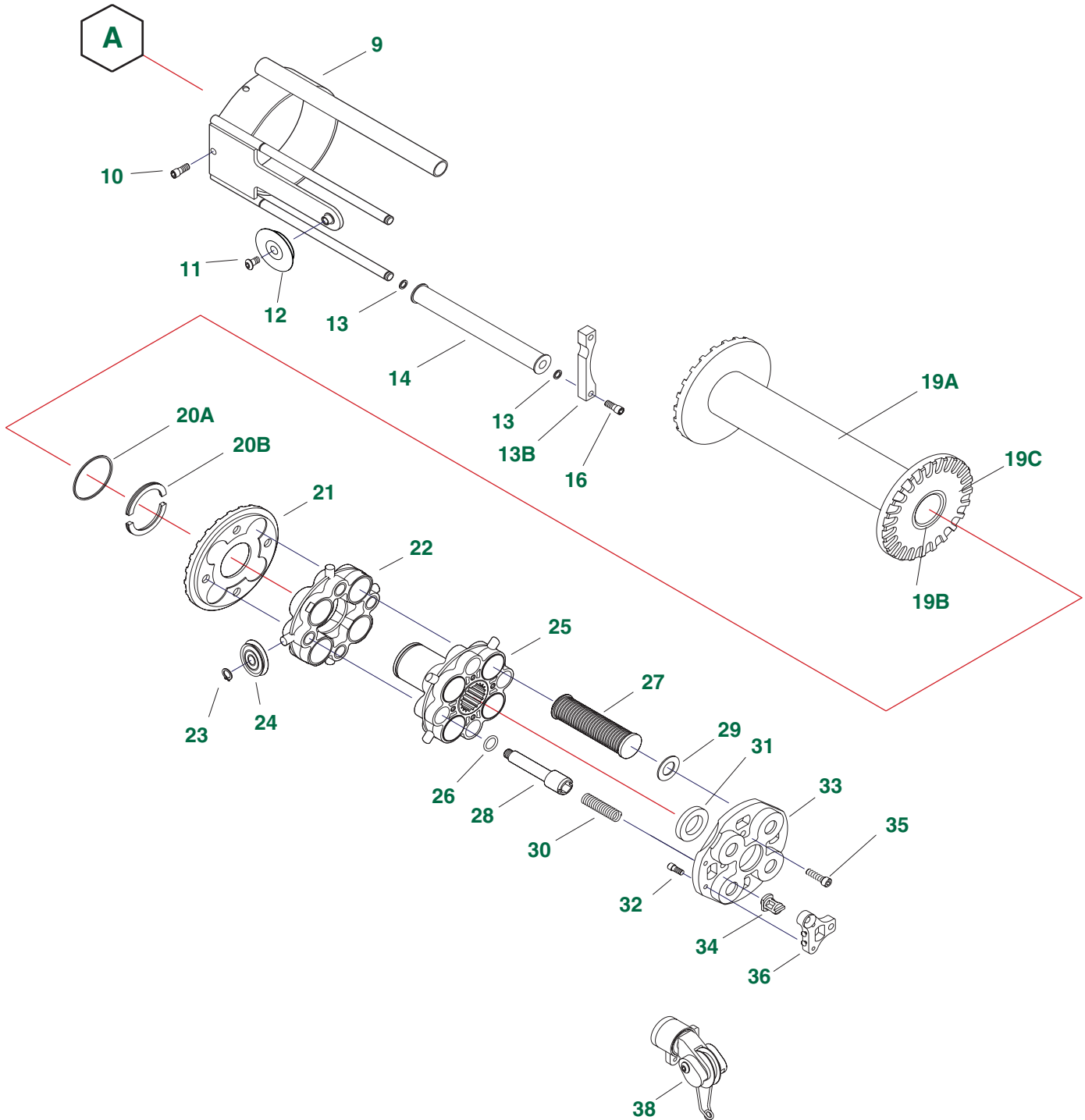


12 IN Textile Carrier for 9.45 IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
1A	9529	4	Screw, Hex Socket Head	
1B	9567	4	Screw, Hex Socket Head	
2A	9338	1	Base Post without Torque Pins	
3	9124	1	Stop, Bolt	
4A	9002	1	Thrust Washer	
4B	9425	1	Thrust Washer	
5A	9500	3	Screw, Flat Head Socket	
5B	9566	3	Screw, Flat Head Socket	
6	9264	1	Extender	
7A	9344	1	Latch Assembly	
7B	9412	1	Latch Assembly Base Holder	
8A	9266	1	Holder Tube, 12 inch	
8B	9406	4	Bushing	
8D	9428	1	Base Holder, 12 IN	

5.0 PARTS

5.6 12 IN TEXTILE Carriers for 9.45 IN (240mm) Horngear Machine

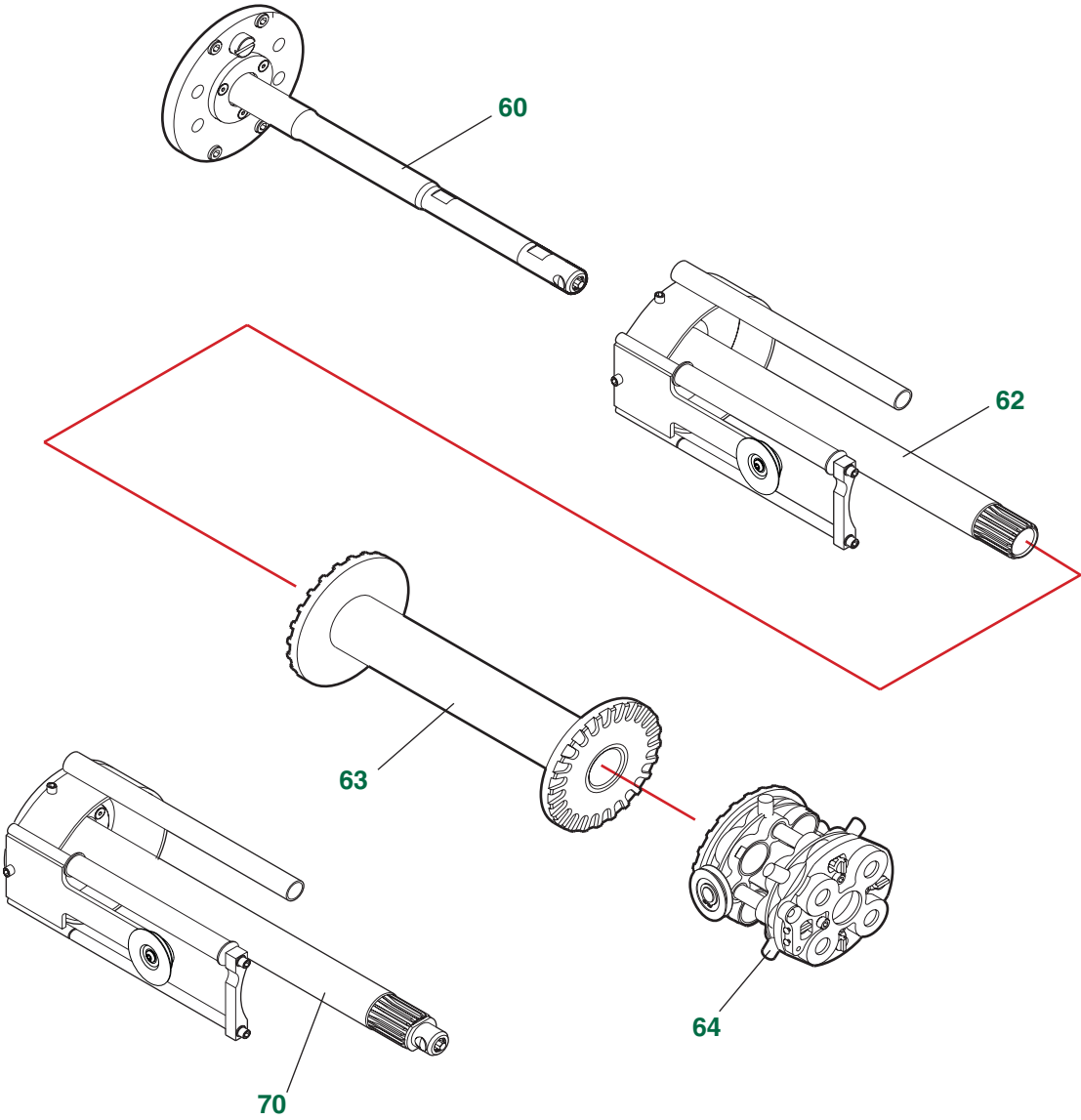


12 IN Textile Carrier for 9.45 IN (240mm) Horngear Machine

Item	P/N	Qty	Part Name	Description
9	9274	1	Roller Take Off, RH	
9	9274L	1	Roller Take Off, LH	
10	20117	4	Screw, Socket Head	
11	9542	1	Screw, Button Head Socket	
12	9210	1	Pulley Assembly, Polished	
12	9234	1	Pulley Assembly, Large Flange	
13	20221	2	Washer	
13B	9414	1	Bridge	
14	9278	1	Roller Assembly	
16	20120	2	Screw, Socket Head	
19A	9267	1	Bobbin Barrel	
19B	9157	2	Molded Bushing	
19C	9261	2	Molded Ratchet	
20A	9565	1	Retaining Ring	
20B	9432	1	Split Washer	
21	9123	1	Clutch	
22	9247	1	Compensator	
23	9549	8	Retaining Ring	
24	9314	8	Pulley Assembly, Polished	
24	9237	8	Pulley Assembly, Wide	
25	9246	1	Top Head	
26	9503	4	O-Ring	
27	9317	4	Spring Cassette, YELLOW	
27	9318	4	Spring Cassette, RED	
27	9319	4	Spring Cassette, WHITE	
27	9320	4	Spring Cassette, BLUE	
27	9377	4	Spring Cassette, GREEN	
28	9008	4	Shoulder Bolt	
29	9303	4	Rubber Washer	
30	9505	4	Clutch Spring, RED	
30	9506	4	Clutch Spring, WHITE	
30	9507	4	Clutch Spring, BLUE	
30	9535	4	Clutch Spring, YELLOW	
30	9547	4	Clutch Spring, ORANGE	
30	9560	4	Clutch Spring, GREEN	
31	9119	1	Latch Washer	
32	20109	2	Screw, Socket Head Cap	
33	9060	1	Retainer	
34	9062	4	Clutch Spring Retainer	
35	20121	4	Screw, Socket Head Cap	
36	91922	1	Eyelet Bracket Assembly, 3/16 IN RH	
36	91923	1	Eyelet Bracket Assembly, 3/16 IN LH	
38	9326	1	Swivel Assembly RH	

5.0 PARTS

5.6 12 IN TEXTILE Carriers for 9.45 IN (240mm) Horngear Machine



12 IN Textile Carrier for 9.45 IN (240mm) Horngear Machine

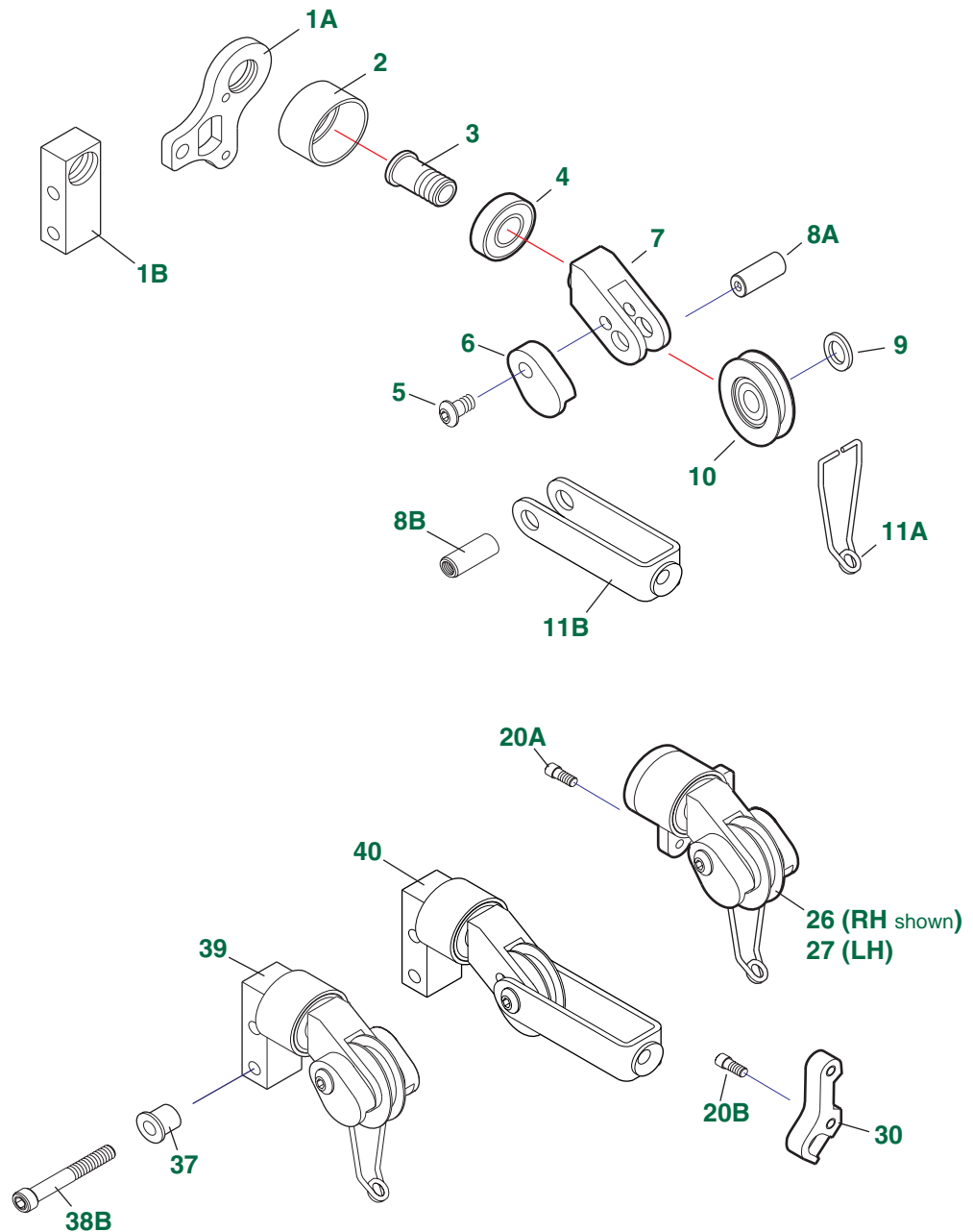
Item	P/N	Qty	Part Name	Description
60	0107	1	Base Post Assembly without Torque Pins	
62	03052	1	240HG Bobbin Holder Assembly RH 12 IN	
62	03053	1	240HG Bobbin Holder Assembly LH 12 IN	
62	03082	1	240HG Bobbin Holder Assembly RH 12 IN w/ Large Flange Pulley	
62	03083	1	240HG Bobbin Holder Assembly LH 12 IN w/ Large Flange Pulley	
63	9269	1	Textile Bobbin 12 IN	
64	06112	1	Tension Head w/ 3/16 IN Eyelet RH	
64	06113	1	Tension Head w/ 3/16 IN Eyelet LH	
64	06112W	1	Tension Head w/ 3/16 IN Eyelet & Wide Pulleys RH	
64	06113W	1	Tension Head w/ 3/16 IN Eyelet & Wide Pulleys LH	
64	06032	1	Tension Head RH w/ Swivel	
64	06033	1	Tension Head LH w/ Swivel	
64	06032W	1	Tension Head RH w/ Swivel & Wide Pulleys	
64	06033W	1	Tension Head LH w/ Swivel & Wide Pulleys	
70	08052	1	240HG Holder Basic RH 12 IN	
70	08053	1	240HG Holder Basic LH 12 IN	
70	08082	1	240HG Holder Basic RH 12 IN w/ Large Flange Pulley	
70	08083	1	240HG Holder Basic LH 12 IN w/ Large Flange Pulley	

5.0 PARTS

5.7 Swivel LET-OFF

The Swivel Let-Off may be used to replace the conventional eyelet let-off on all tension heads. It is available in either a right hand or left hand assembly. (See Section 2.5, Dynamic Balancing for Low Tension Applications.)

The right hand assembly is the standard configuration supplied with the Modular Carrier unless otherwise specified by the customer.



Swivel LET-OFF

Item	P/N	Qty	Part Name	Description
1A	9292	1	Plate	
1B	9227	1	Bracket	
2	9293	1	Housing	
3	9400	1	Swivel Shank	
4	9548	2	Bearing	
5	9561	2	Screw	
6	9298W	2	Retainer, WHITE	
6	9298B	2	Retainer, BLACK	
7	9403	1	Clevis	
8A	9221	1	Shaft	
8B	9233	1	Shaft	
9	9222	2	Shim	
10	9223	1	Pulley Assembly	
11A	9217	1	Tiller, Wire Bail	
11B	9232	1	Tiller, Strap	
20A	20109	2	Screw, Socket Head	
20B	20109	2	Screw, Socket Head	
26	9326	1	Swivel Assembly RH	
27	9327	1	Swivel Assembly LH	
30	9371	1	Forming Pin	
37	9242	2	Short Bushing	
38B	20122	2	Screw	
39	9431	1	Swivel Assembly (Either LH or RH)	
40	9373	1	Swivel Assembly w/ Strap (Either LH or RH)	

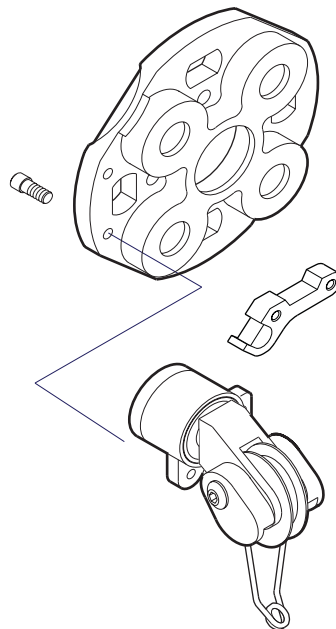
5.0 PARTS

5.8 Carbide forming PIN

When tensions exceed 15 pounds consideration should be given to using a large radius (0.188 inch) eyelet in combination with a carbide forming pin or a swivel let-off in combination with a carbide forming pin.

The forming pin is located on the top head just before the compensator. In this position the wire in contact with the forming pin is moving in one direction (toward the braiding point). This means that there is no back and forth scrubbing of the wire during forming as would be encountered with forming the wire at the let-off eyelet (after the compensator). If forming is not required the carbide forming pin is simply by-passed. Using the carbide forming pin with the let-off eyelet allows for the radius of the eyelet to be large (0.188 inches) to minimize heat and friction. Again this system is ideal for brass coated high strength steel wire with tensions of less than approximately 20 pounds.

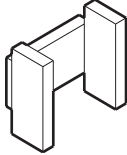
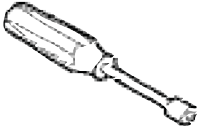
Using the carbide forming pin with the swivel let-off eliminates heat and friction at the let-off. This system is ideal for all types of stainless steel wire because the wire rolls on a pulley supported on a ball bearing. This not only eliminates friction and heat, but also eliminates damage to the wire and the debris associated with the damage. The debris from stainless steel wire creates a house cleaning problem and introduces abrasive dust to the moving parts of the carrier and the braiding machine.



5.0 PARTS

5.9.1 Tool & Publication List

TOOLS

Number	Name	Illustration	Price/Each
8903	Tension Head Assembly		\$25.00
8905	Carrier Module Latch		\$12.00

Please order TOOLS by number.

PUBLICATIONS

Name	Price/Each
SDC Modular Carrier Operation/Service/Parts Manual	\$10.00

5.9.2 Parts Ordering Information

REPLACEMENT PARTS

Please specify part number, customer, and machine when ordering replacement parts. Please call us for price and delivery. CALL, FAX, or e-mail orders for TOOLS, PUBLICATIONS, or REPLACEMENT PARTS to:

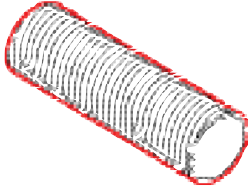
Simon DeYoung Corp.
15010 Bershire Industrial Parkway
Middlefield, OH 44062
USA

Phone: 440-834-3000
Fax: 440-834-3001
V-mail 440-273-3087
1-877-426-6472
email: simondeyoung@yahoo.com

Core Tubes (SDC 9260 & 9290) should be ordered directly from the following supplier:

Middlefield Plastics, Inc.
P.O. Box 708
Middlefield, OH 44062
USA

Phone: 440/834-4638
Fax: 440/834-1247

Number	Name	Illustration
9260	8 inch Core Tube (Textile)	
9290	10 inch Core Tube (Textile)	