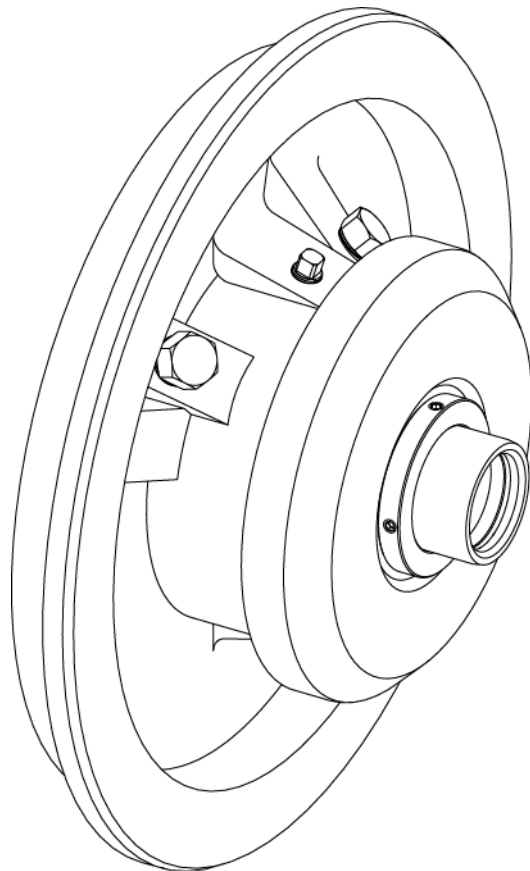


WILFLEY[®]

HEAVY DUTY CENTRIFUGAL PUMPS

Supplemental Assembly Manual



DryLock[®] 3 Static Seal Cartridge

Foreword

This manual contains instructions and guidelines for the assembly of the Wilfley DryLock® 3 static seal cartridge. There are many factors affecting the successful assembly of a seal cartridge, which makes it impossible to create a manual that covers all situations. Therefore, the information contained herein is meant to serve only as a general guideline. If detailed questions or problems arise, contact Wilfley or your authorized Wilfley representative.

Supplemental manuals may be required depending on the configuration of the pump.

It is extremely important that this entire manual be read prior to installation or start-up of the pump.

Use of the equipment on a service other than what was outlined at the time of purchase could void the warranty, unless Wilfley has been consulted and provided written approval in advance.

To assure proper installation, supervision from an authorized Wilfley representative is recommended.

A.R. Wilfley and Sons, Inc. shall not be liable for damage or delays caused by a failure to observe the instructions that are contained in this manual.

Warranty is only valid when genuine Wilfley parts are used. Contact your authorized Wilfley representative for basic warranty information and before making any changes.

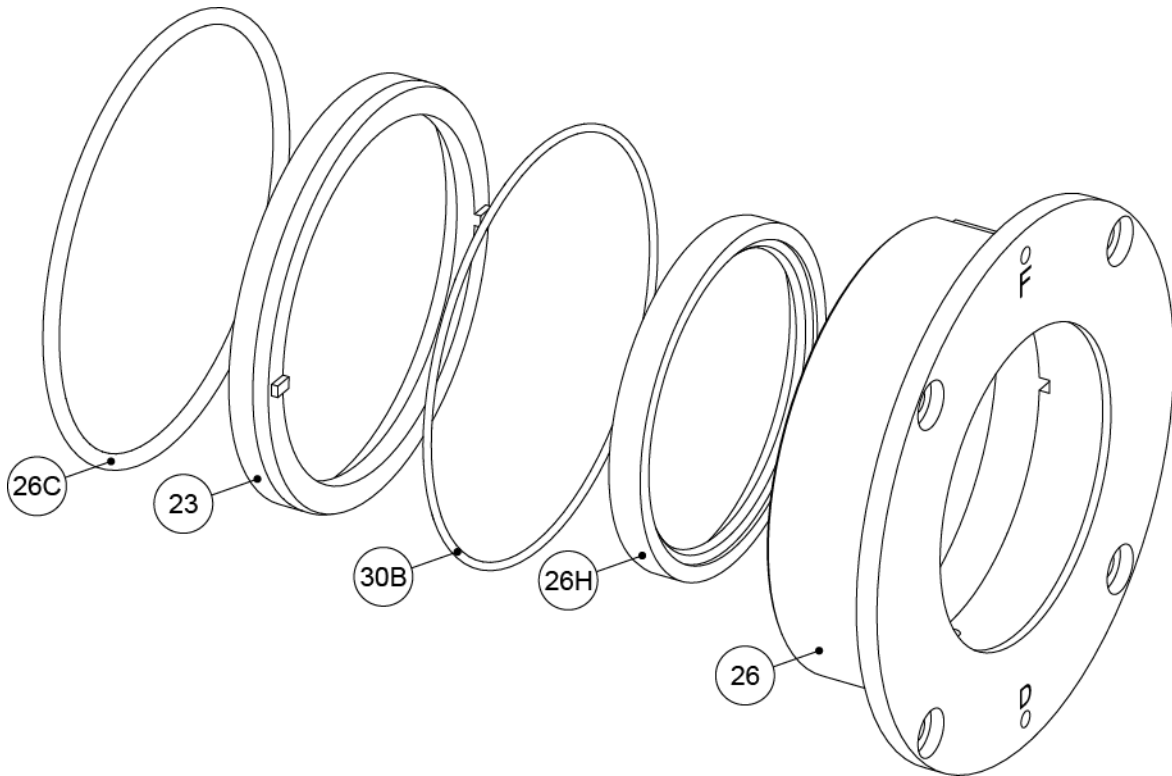
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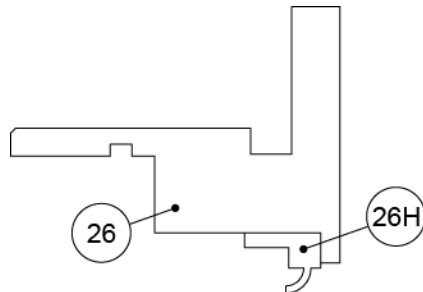
1.0 Stationary Seal Subassembly

1.1 Standard Backup Lip Seal

ITEM NO.	QTY.	DESCRIPTION
23	1	Stationary Seal Ring
26	1	Stationary Seal Carrier
26C	1	O-Ring, Stationary Seal Carrier
26H	1	Lip Seal
30B	1	O-Ring, Stationary Seal Ring



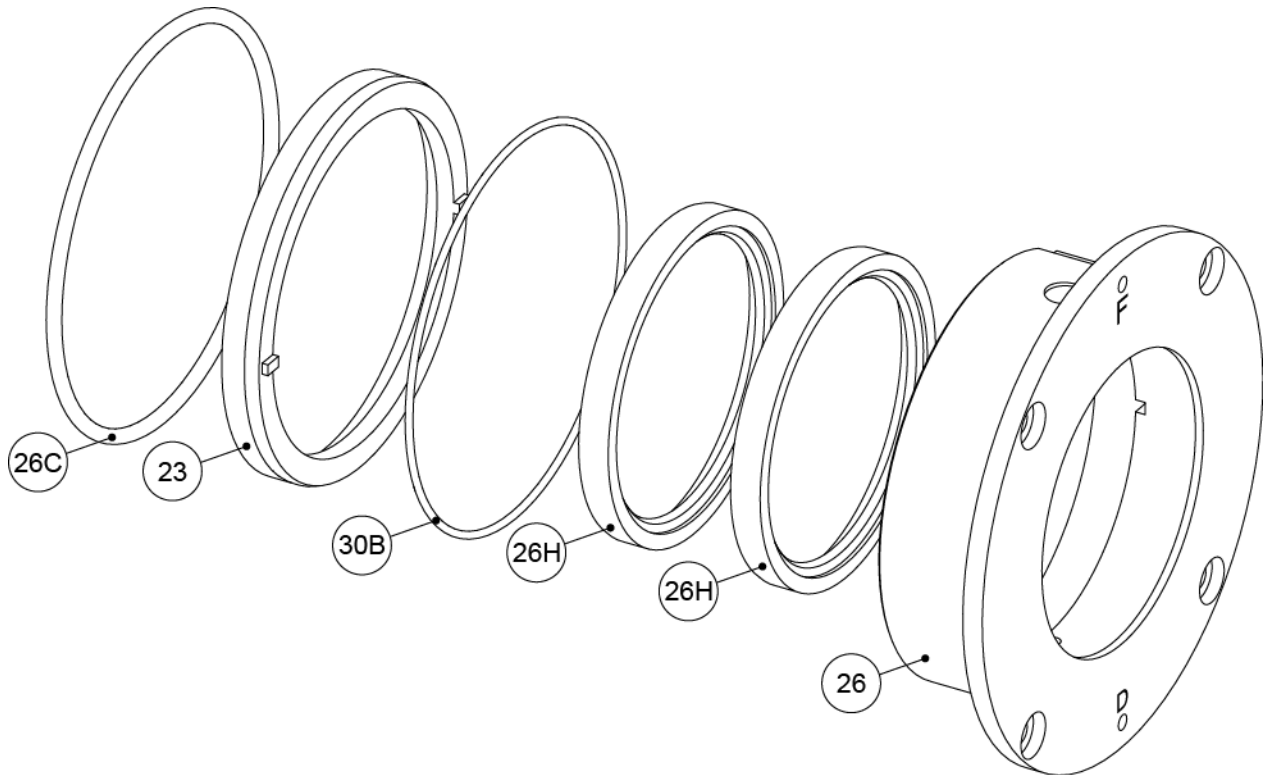
Ensure lip seal (26H) is installed in the correct direction:



1. Press lip seal (26H) into the stationary seal carrier (26).
2. Install o-ring (30B) into the bore of the stationary seal carrier (26).
3. Press stationary seal ring (23) into the stationary seal carrier (26) by hand. Use lubrication if needed.
4. Install o-ring (26C) into the outer diameter groove of the stationary seal carrier (26).

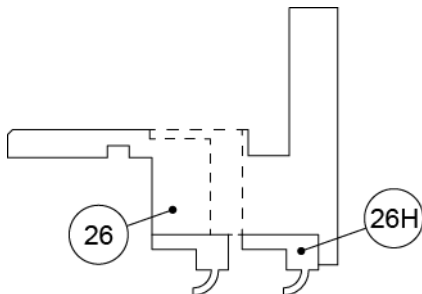
1.2 Dual Backup Lip Seal Option (Grease Vapor Barrier)

ITEM NO.	QTY.	DESCRIPTION
23	1	Stationary Seal Ring
26	1	Stationary Seal Carrier
26C	1	O-Ring, Stationary Seal Carrier
26H	2	Lip Seal
30B	1	O-Ring, Stationary Seal Ring



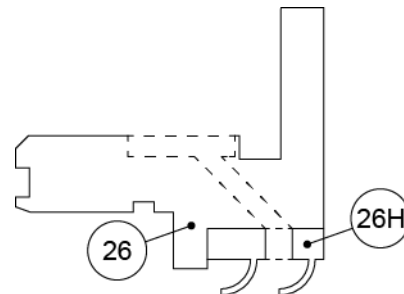
1A7 & 2A7:

Press 2nd lip seal (26H) in until it is flush with the stationary seal carrier (26).



3A7, 4A7, & S3:

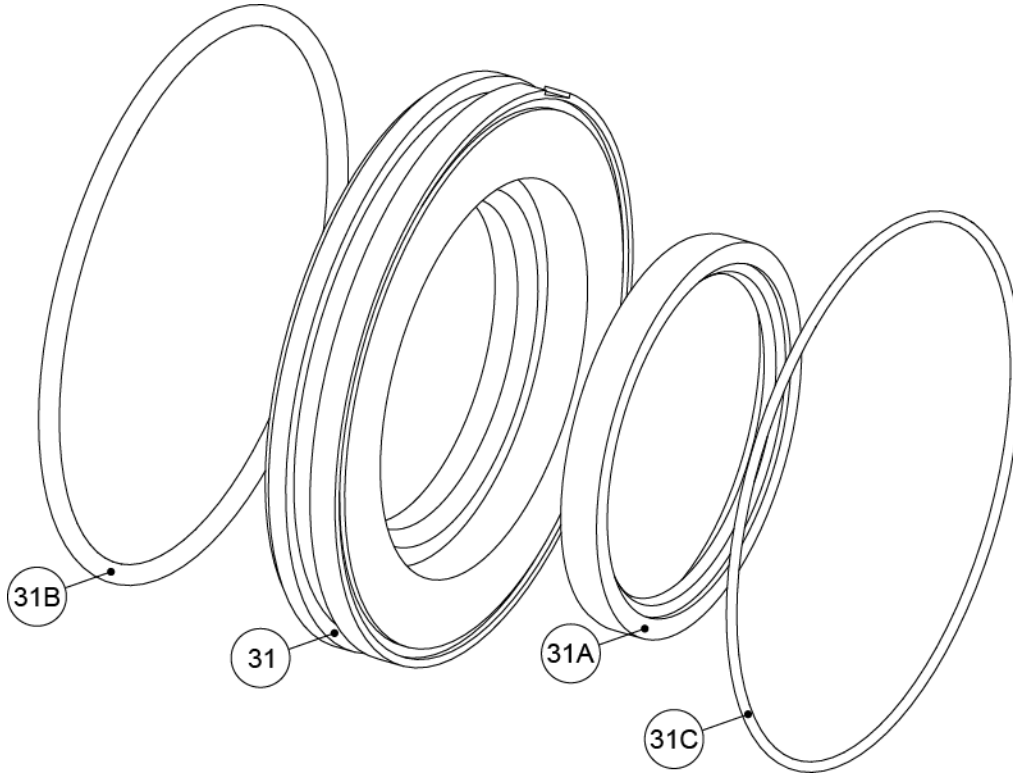
Ensure the hole in the 2nd lip seal (26H) lines up with the hole in the stationary seal carrier (26).



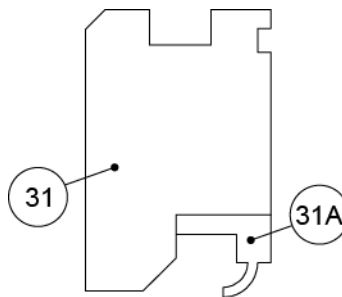
1. Press lip seals (26H) into the stationary seal carrier (26).
2. Install o-ring (30B) into the bore of the stationary seal carrier (26).
3. Press stationary seal ring (23) into the stationary seal carrier (26) by hand. Use compatible lubrication if needed.
4. Install o-ring (26C) into the outer diameter groove of the stationary seal carrier (26).

2.0 Lip Seal Subassembly

ITEM NO.	QTY.	DESCRIPTION
31	1	Lip Seal Carrier
31A	1	Lip Seal
31B	1	O-Ring, Lip Seal Carrier
31C	1	O-Ring, Lip Seal Carrier to Stat Carrier



Ensure lip seal (31A) is installed in the correct direction



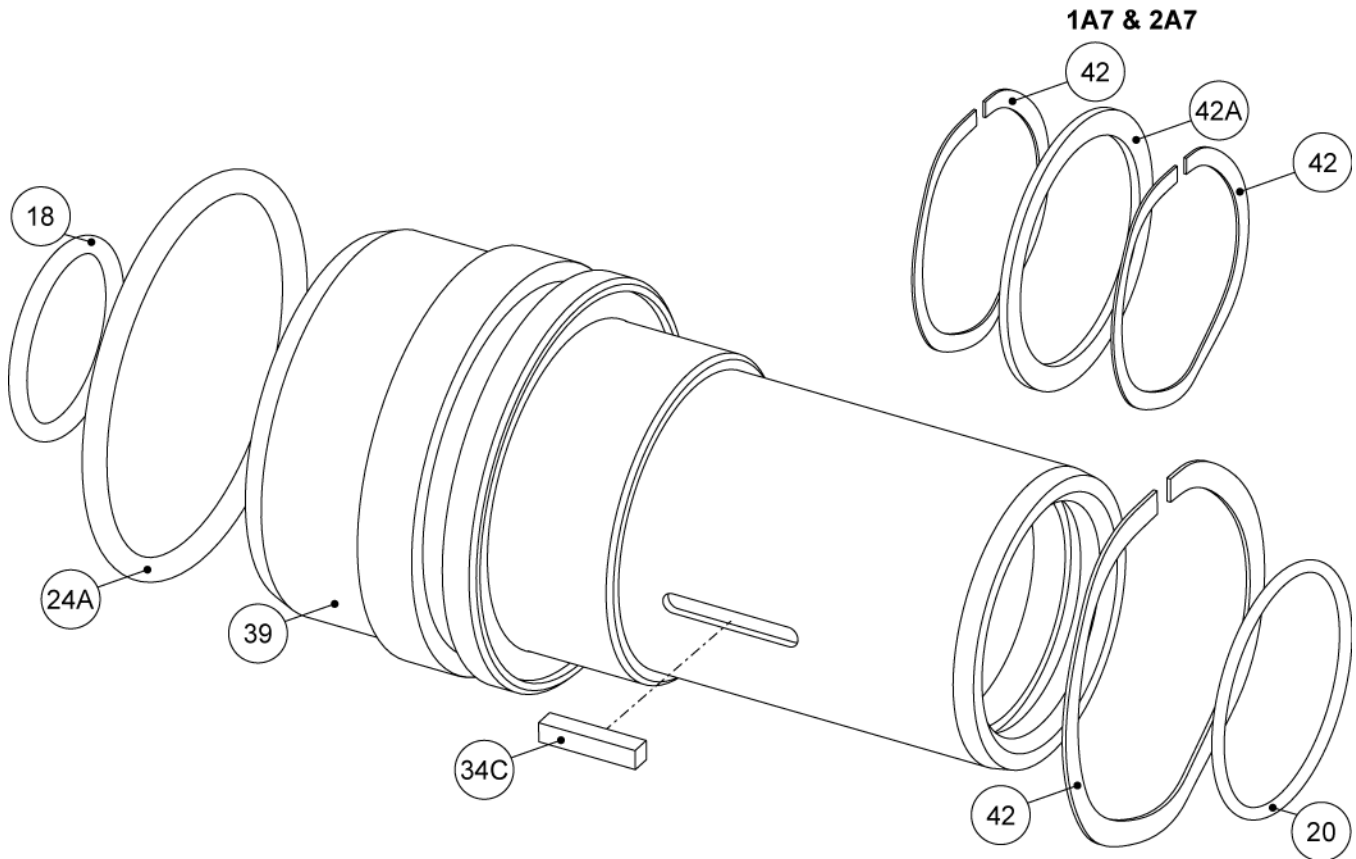
1. Press lip seal (31A) into the lip seal carrier (31).
2. Install o-ring (31B) into the outer diameter groove of the lip seal carrier (31).
3. Install o-ring (31C) into the outer diameter groove of the lip seal carrier (31).

3.0 Shaft Sleeve Subassembly

ITEM NO.	QTY.	DESCRIPTION
18	1	O-Ring, Shaft Sleeve
20	1	O-Ring, Shaft
24A	1	O-Ring, Shaft Sleeve to Rotary Seal
34C*	1	Square Key
39	1	Shaft Sleeve
42**	1-2	DryLock® Spring
42A**	1	Spring Seat

* Reusable DryLock® 1 Components

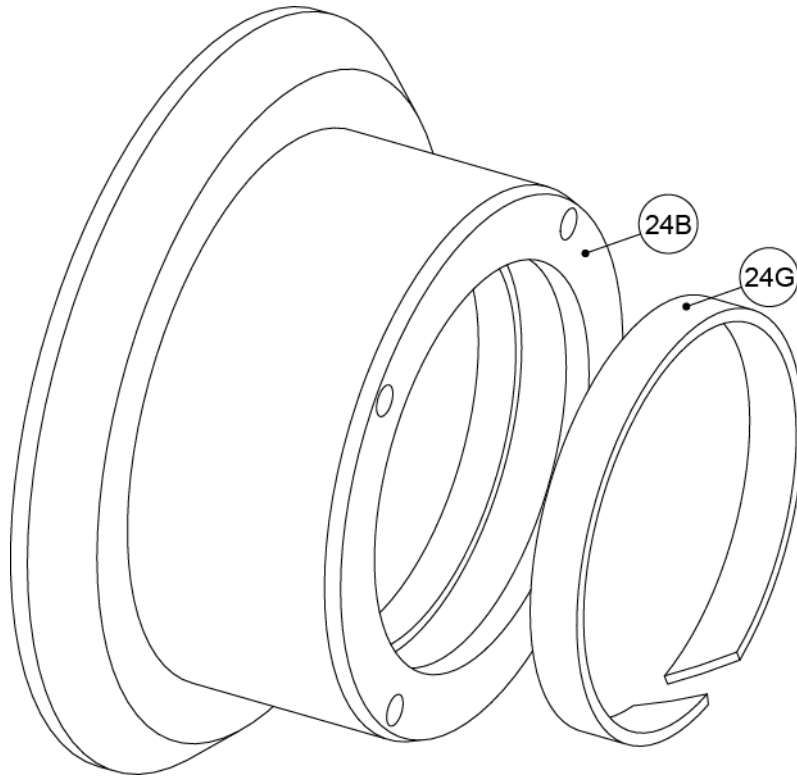
** 1A7 & 2A7 require qty. 2 springs (42) and a spring seat (42A)



1. Install o-ring (24A) into the outer diameter groove of the shaft sleeve (39).
2. Install o-ring (18) into the bore of the shaft sleeve (39).
3. Install o-ring (20) into the bore of the shaft sleeve (39).
4. Install spring (42) into the shaft sleeve (39).
5. Install key (34C) into the shaft sleeve (39).

4.0 Rotary Seal Subassembly

ITEM NO.	QTY.	DESCRIPTION
24B	1	Slide Ring
24G	1	Rotary Seal Sleeve

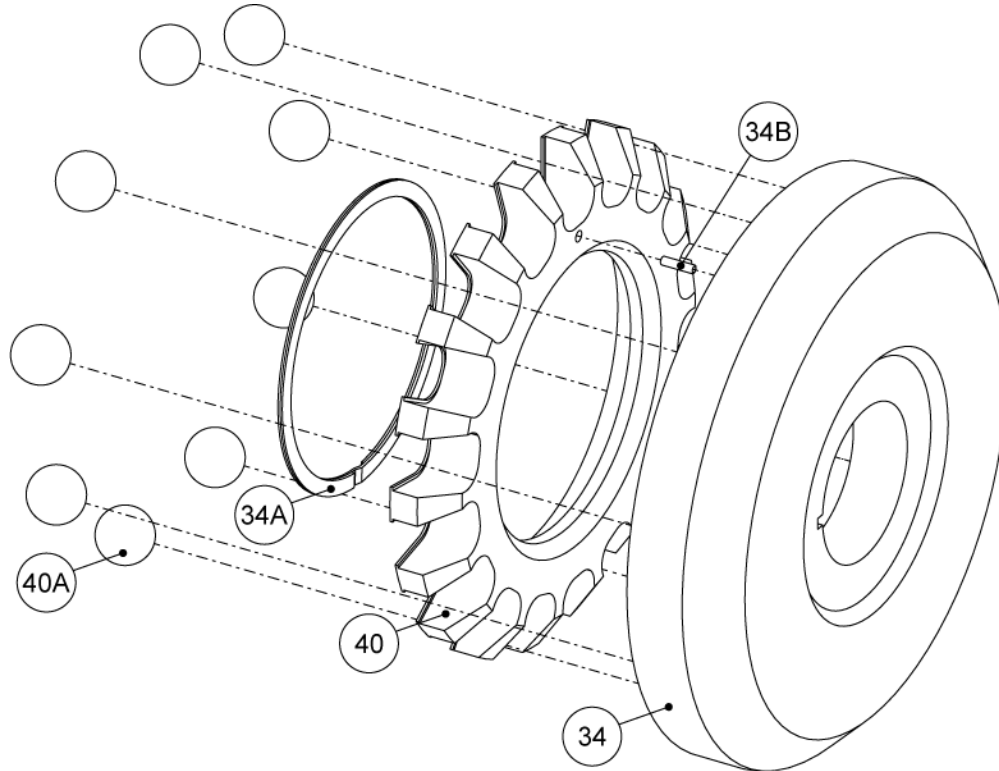


1. Install slide ring (24B) into the bore of the rotary seal sleeve (24G).

5.0 Ball Housing Subassembly

ITEM NO.	QTY.	DESCRIPTION
34*	1	DryLock® Ball Housing
34A*	1	Retaining Ring
34B*	1	Spring Pin
40*	1	Ball Retainer
40A*	TBD	Ball

* Reusable DryLock® 1 Components



1. Install spring pin (34B) in the ball housing (34).
2. Install ball retainer (40) in the ball housing (34) so that the hole lines up with the spring pin (34B).
3. Install the retaining ring (34A) in the ball housing (34) to hold the ball retainer (40) in place.
4. Push balls (40A) into the slots in the ball retainer (40). Ensure that the balls (40A) are symmetrically spaced in the ball retainer (40).

Quantity of balls based on operating speed:

950 RPM	1150 RPM	1450 RPM	1750 RPM	2950 RPM	3550 RPM
18	12	9	6	3	3

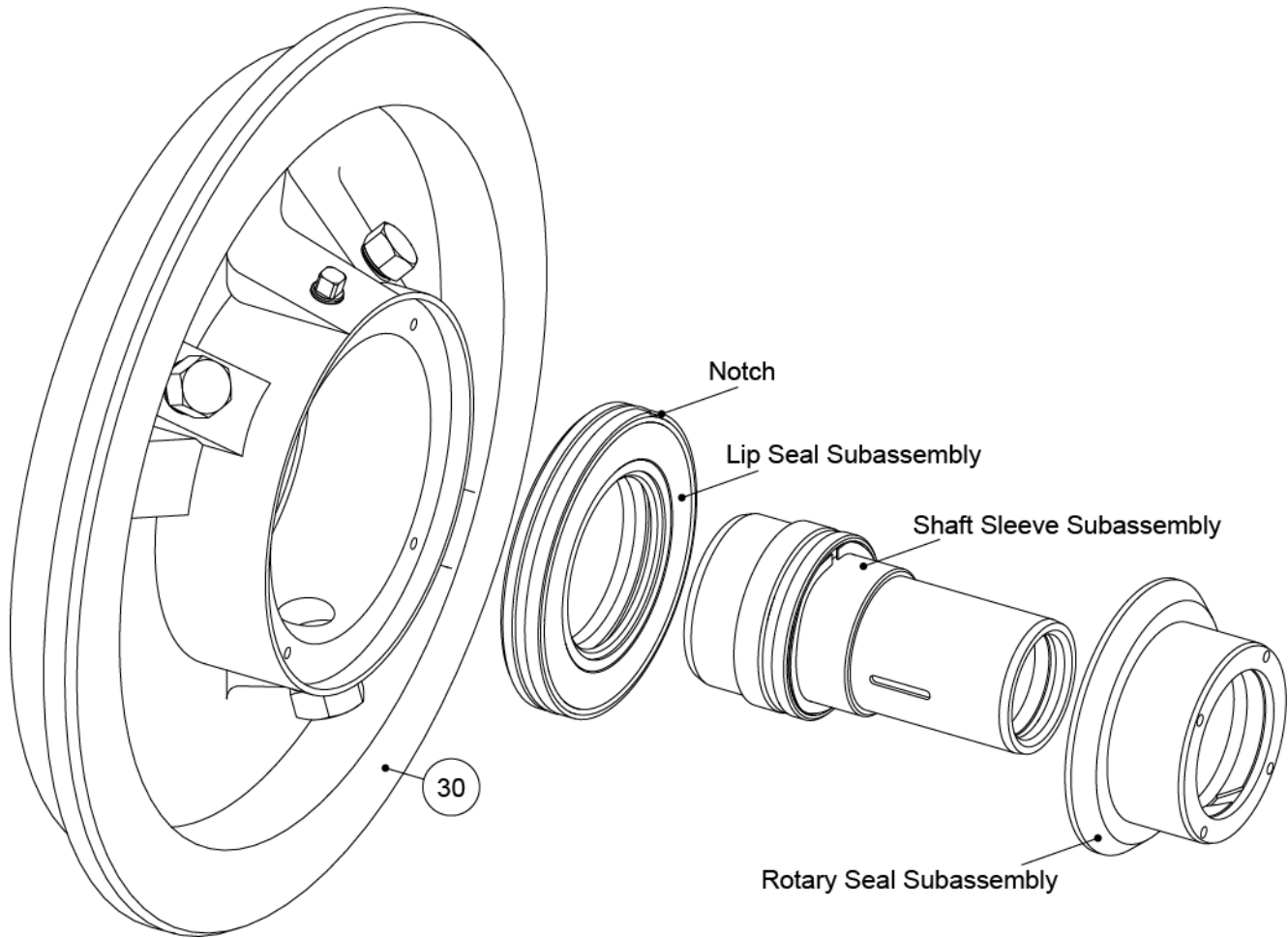
If you are using a variable frequency drive and are operating the pump as various speeds, use 18 balls

6.0 Final Assembly

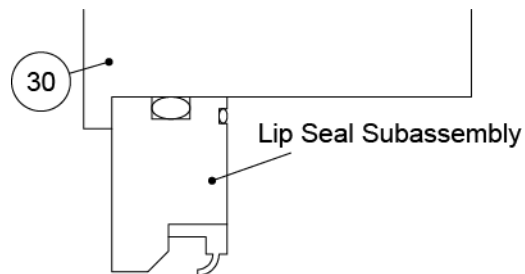
6.1 Step 1

ITEM NO.	QTY.	DESCRIPTION
30*	1	DryLock® Seal Housing

* Reusable DryLock® 1 Components



Ensure lip seal subassembly is installed in the correct direction:

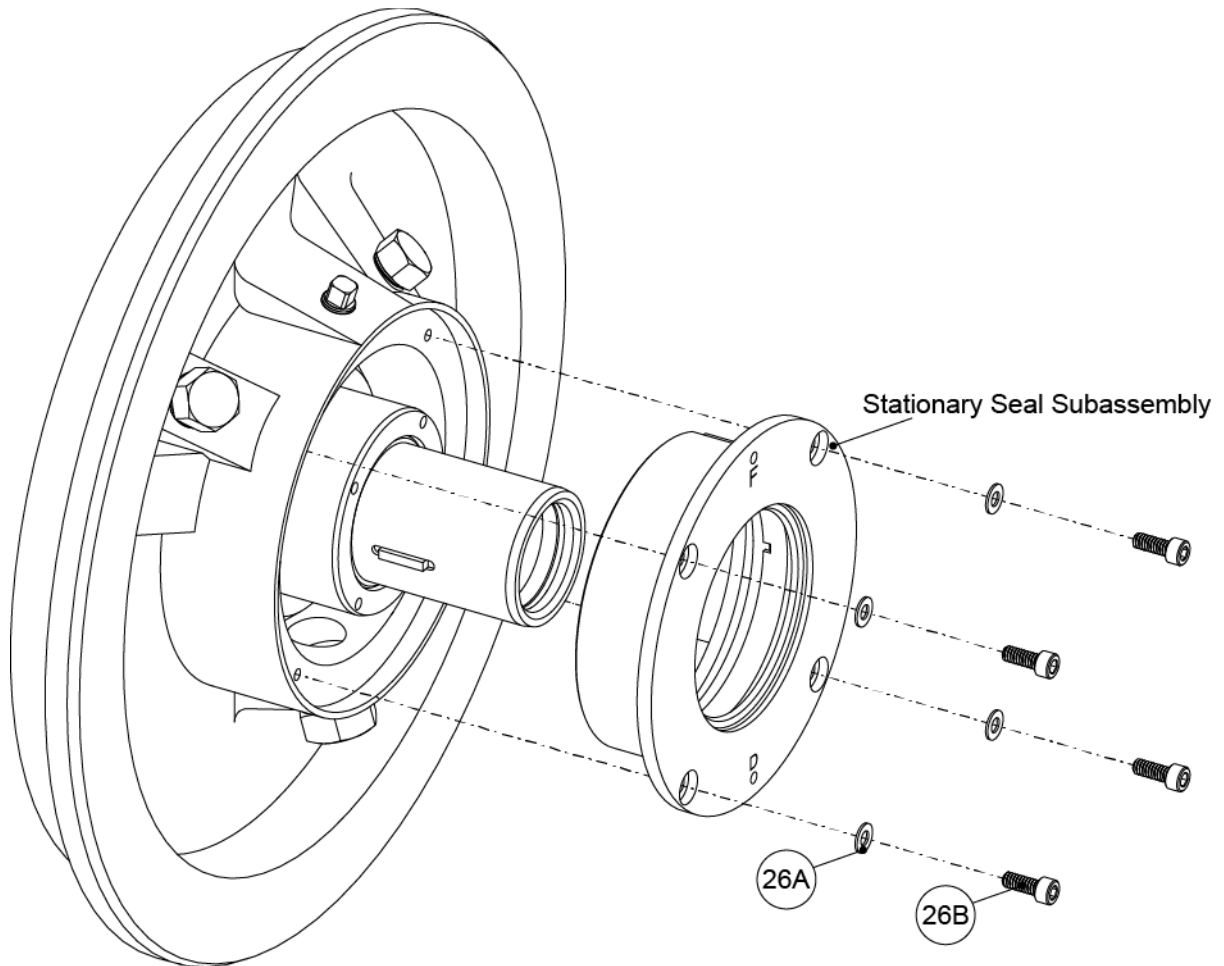


1. Install lip seal subassembly in the seal housing (30). Ensure that the notch in the lip seal carrier (31) is aligned vertically (12 o'clock position) so that it lines up with the correct port.
2. Install shaft sleeve subassembly in the seal housing (30).
3. Install rotary seal subassembly in the seal housing (30).

6.2 Step 2

ITEM NO.	QTY.	DESCRIPTION
26A*	4	Lockwasher
26B*	4	Bolt, Stationary Seal Carrier

* Reusable DryLock® 1 Components



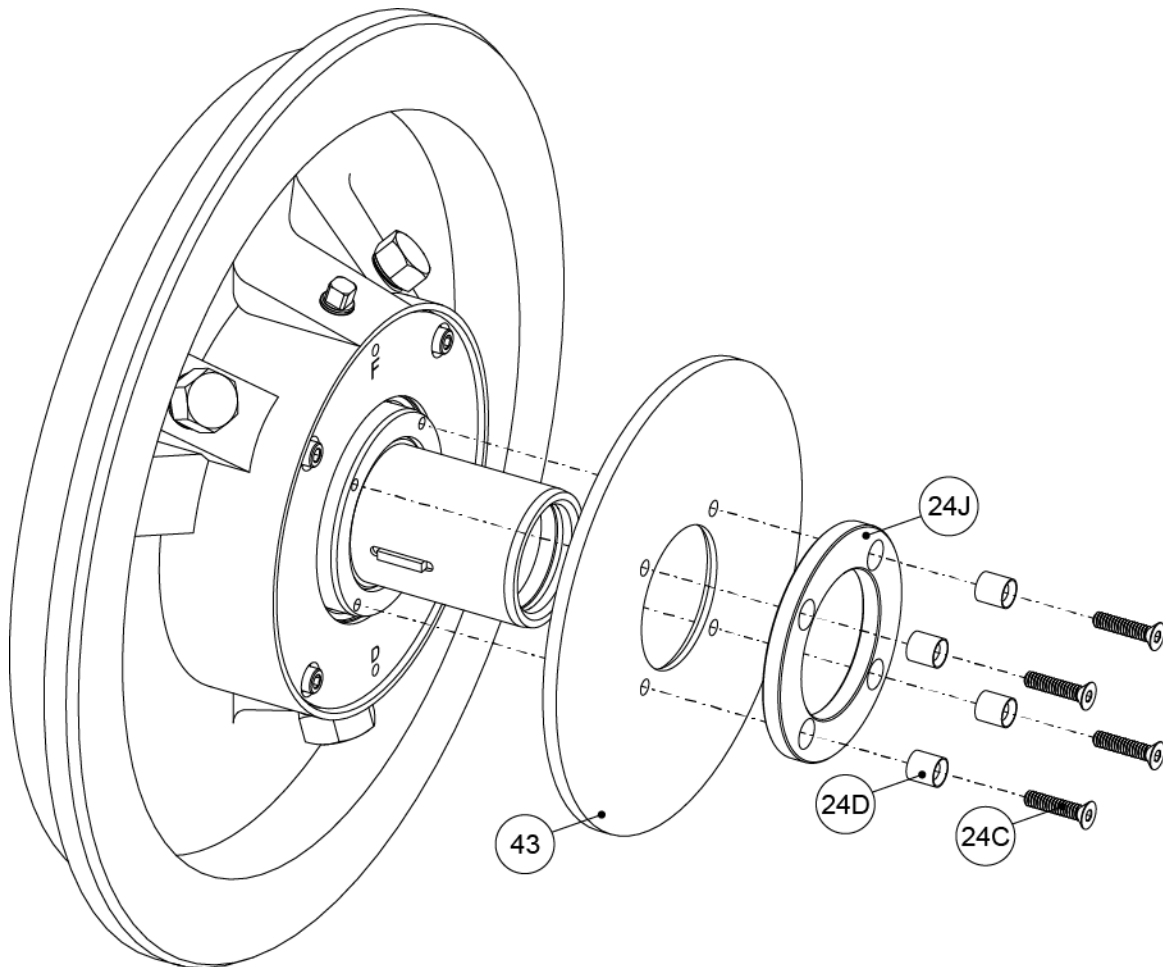
1. Install stationary seal subassembly in the DryLock® 3 assembly. Ensure that the "F" on the stationary seal carrier (26) is aligned vertically (12 o'clock position) so that the ports are lined up.
2. Secure stationary seal subassembly in the DryLock® 3 assembly with bolts (26B) and lockwashers (26A).

6.3 Step 3

6.3.1 1A7 & 2A7

ITEM NO.	QTY.	DESCRIPTION
24C	4	Collar Bolt/Drive Screw
24D	4	Drive Screw Sleeve
24J	1	Spacer Collar
43*	1	Actuator Plate

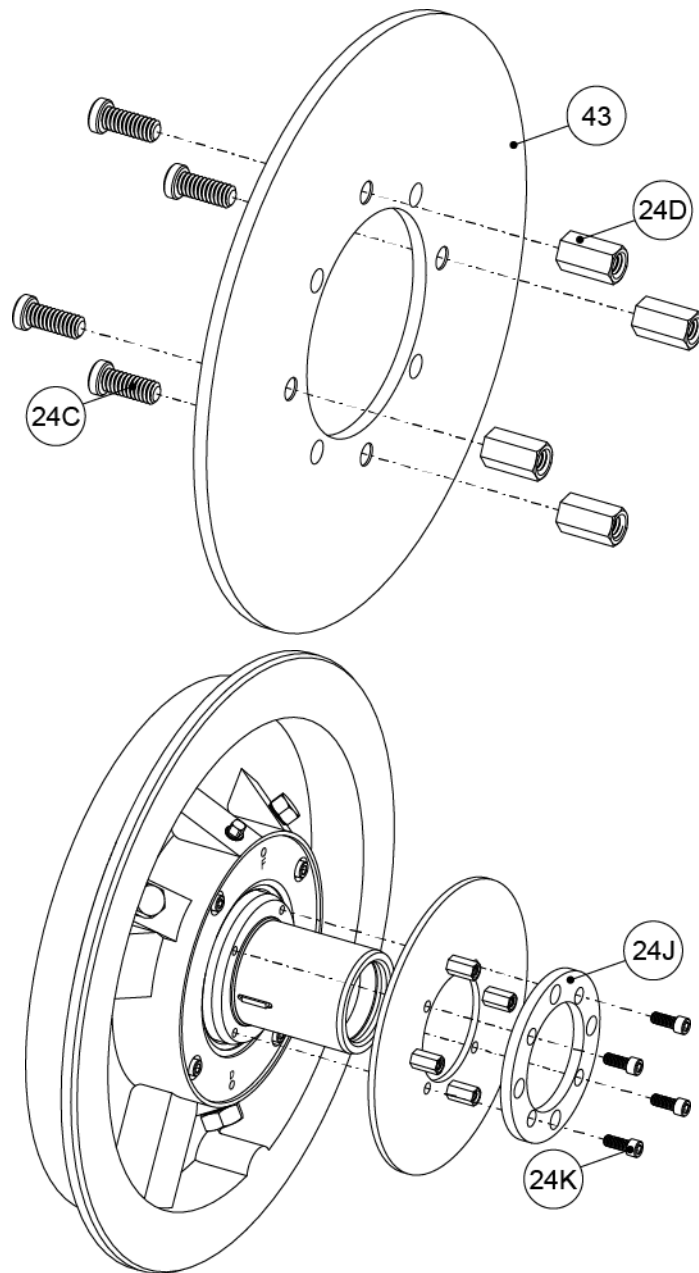
* Reusable DryLock® 1 Components



1. Install actuator plate (43) in the DryLock® 3 assembly.
2. Secure actuator plate (43) in the DryLock® 3 assembly with screws (24C) and sleeves (24D).
3. Install spacer collar (24J) over the sleeves (24D).

6.3.1 3A7, 4A7, & S3

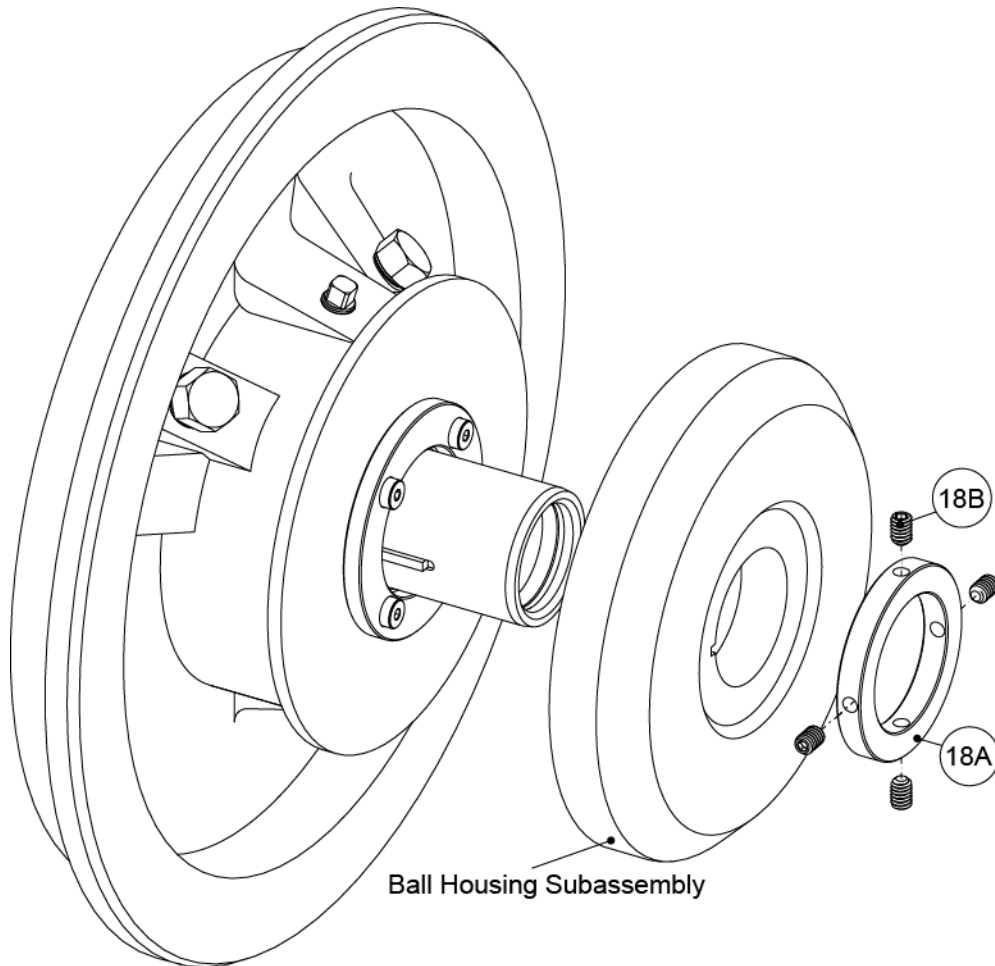
ITEM NO.	QTY.	DESCRIPTION
24C	4	Collar Bolt/Drive Screw
24D	4	Drive Screw Sleeve
24J	1	Spacer Collar
24K	4	Rotary Seal Bolts
43	1	Actuator Plate



1. Install bolts (24C) and sleeves (24D) onto actuator plate (43). These parts should come preassembled.
2. Install actuator plate (43) in the DryLock® 3 assembly.
3. Secure actuator plate (43) in the DryLock® 3 assembly with bolts (24K).
4. Install spacer collar (24J) over the sleeves (24D).

6.4 Step 4

ITEM NO.	QTY.	DESCRIPTION
18A	1	Lock Collar
18B	4	Cup Point Set Screw

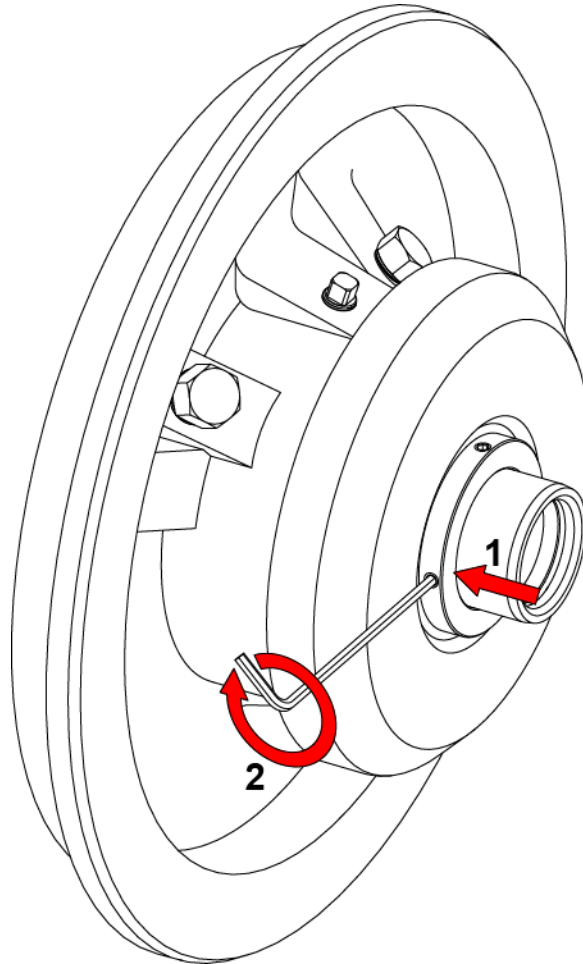


1. Install ball housing subassembly in the DryLock® 3 assembly.
2. Install lock collar (18A) in the DryLock® 3 assembly.
3. Loosely install set screws (18B) in lock collar (18A).

****Assemble the pump and set the impeller clearance per the pump IOM****

7.0 DryLock® 3 Seal Adjustment

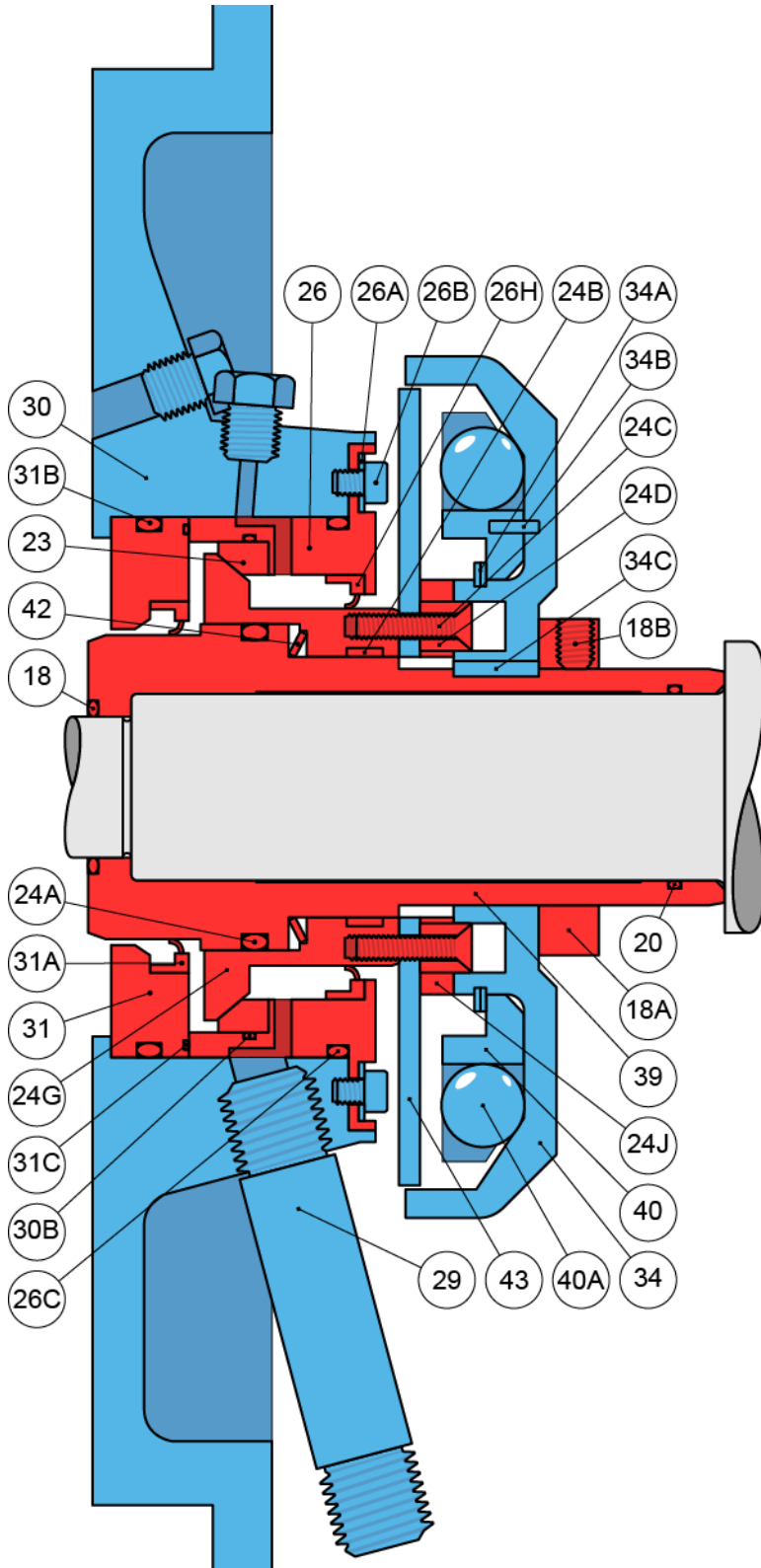
The seal **MUST** be adjusted and locked **AFTER** the pump has been assembled **AND** the impeller clearance has been set according to pump IOM. Before you begin, ensure that the set screws (18B) are loose and that the lock collar (18A) can freely move axially along the shaft sleeve (39).



1. Slide lock collar (18A) against the ball housing (34), but do not compress the seal.
2. Evenly tighten set screws (18B) to lock the position of the lock collar (18A).

****The pump is now ready for use****

8.0 Cross Section (Standard Configuration)



Item No.	Description	Qty.
DryLock® 3 Components		
18	O-Ring, Shaft Sleeve	1
18A	Lock Collar	1
18B	Cup Point Set Screw	4
20	O-Ring, Shaft	1
23	Stationary Seal Ring	1
24A	O-Ring, Shaft Sleeve to Rotary Seal	1
24B	Slide Ring	1
24C	Collar Bolt/Drive Screw	4
24D	Drive Screw Sleeve	4
24G	Rotary Seal Sleeve	1
24J	Spacer Collar	1
24K	Rotary Seal Bolt ¹ (Not Shown)	4
26	Stationary Seal Carrier	1
26C	O-Ring, Stationary Seal Carrier	1
26H	Lip Seal	1
30B	O-Ring, Stationary Seal Ring	1
31	Lip Seal Carrier	1
31A	Lip Seal	1
31B	O-Ring, Lip Seal Carrier	1
31C	O-Ring, Lip Seal Carrier to Stat Carrier	1
39	Shaft Sleeve	1
42	DryLock® Spring	1-2
42A	Spring Seat ² (Not Shown)	1
Reusable DryLock® 1 Components		
26A	Lockwasher	4
26B	Bolt, Stationary Seal Carrier	4
29	Drain Spout	1
30	DryLock® Seal Housing	1
34	DryLock® Ball Housing	1
34A	Retaining Ring	1
34B	Spring Pin	1
34C	Square Key	1
40	Ball Retainer	1
40A	Ball	TBD ³
43	Actuator Plate ⁴	1

1. Frames 3 & 4 only.
2. Frames 1 & 2 only.
3. Quantity varies with pump size and operating speed.
4. Frames 1 & 2 use existing actuator plate. Frames 3 & 4 require a new actuator plate.

9.0 Revision History

Revision	Description	Date
0	Initial Release	Feb. 2015
1	Throttle bushing removed Backup lip seal added	May 2015