

TURFMAKER

SERVICE AND PARTS

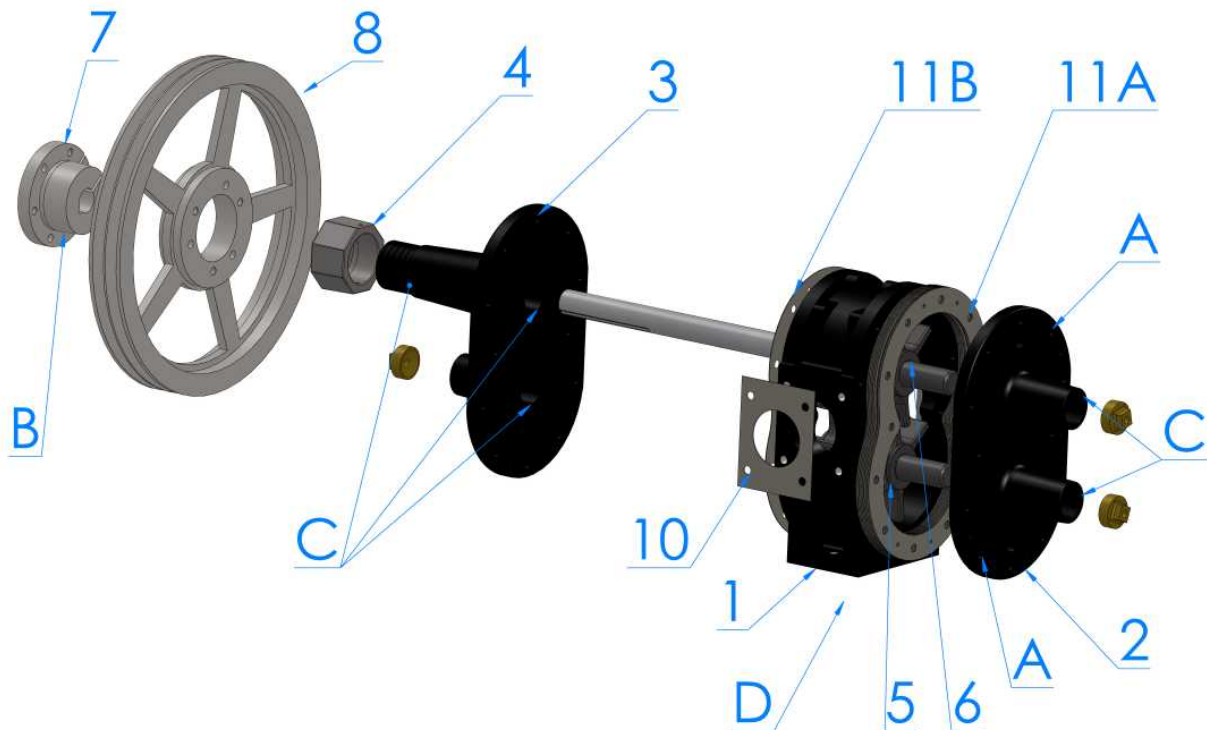
MANUAL

HHP 116 Skid – Double Chain Gear Box

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PUMP MAINTENANCE



ITEM NO.	PART NO	DESCRIPTION	QTY.
1	52002	Center Case	1
2	52052	Back End Plate	1
3	52051	Front End Plate	1
4	55090	Octagonal Nut	1
5	53001	Idler Gear	1
6	53002	Drive Gear	1
7	28062	Bushing - 1 1/8 QD SF	1
8	28026	Sheave 2-5v 15.0 QD SF	1
9	28092	Key, .375SQ X 2.0"	1
10	55021	Flange Gasket	2
11	55020	Center Case Gasket	UP TO 10
12	55024	Packing Material	3
13	55001	Bushing 2 1/2" - Standard	5
14	55071	End Plug With Zerks	3
15	55061	Drain Plug	2
16	41253	7/16"-14 X 1 1/4" 18-8 SS Hex Cap Screw	2
17	41252	7/16"-14 X 1" 18-8 SS Hex Cap Screw	8
18	41271	7/16" 18-8 SS Split Lock Washer	10

PERIODIC REMOVAL OF CENTER CASE GASKETS TO IMPROVE PUMP PRESSURE

The pump will lose pressure with use over time. Removal of gaskets can restore pump performance.

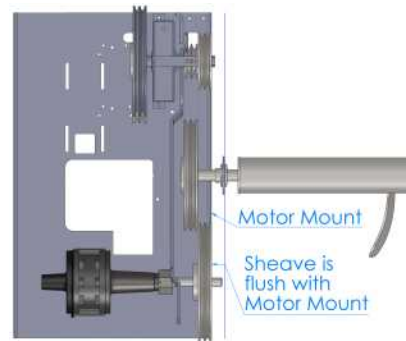
1. Turn off motor and remove the key during maintenance.
2. Remove the 12 hex cap screws from Back End Plate (2)
3. Using 2 of the cap screws, push the Back End Plate off the Center Case (1) by inserting the screws into the alternate holes (A) in the Back End Plate.
4. Remove one or more Center Case Gaskets (11A) from Center Case. If Center Case Gaskets are fused together, replace with new gaskets.
5. Replace Back End Plate and tighten screws to 30ft lbs.
6. Test the pump for proper adjustment by manually turning Sheave (8) on drive gear by hand. The Sheave can be accessed by removal of the sheet metal behind the pump or the Access Panel below the Pump Control Lever. If the pump turns freely, remove more gaskets. If unable to turn the pulley, put an additional gasket back into the pump. Repeat step 4.

PUMP REBUILD AND GEAR REPLACEMENT

Pumps can typically be rebuilt one time before wear on the Center Case requires replacement of the pump.

1. Turn off motor and remove the key during maintenance.
2. Remove the 12 hex cap screws from Back End Plate (2)
3. Using 2 of the cap screws, push the Back End Plate off the Center Case (1) by inserting the screws into the alternate holes (A) in the Back End Plate.
4. Remove Sheet Metal panels behind pump to allow access to maintenance area.
5. Remove the 3 hex cap screws from the Bushing (7) and insert them into the three alternate holes (B), and push the Sheave (8) away from the Bushing (7). Apply equal pressure to the three screws to avoid cracking the Bushing. Remove Sheave and Bushing from drive shaft and pull Key out of slot on shaft.
6. Loosen the set screws on the Octagonal Nut (4) and remove.
7. Remove the Drive Gear (6) and Idler Gear (5) sliding them out of the Center Case.
8. Check the 5 bronze bearings (C) in End Plates (2 & 3) for excessive wear. If bearings are worn, remove pump from the machine. Press out and replace bearings.

9. Replace Drive and Idler Gears.
10. Replace Graphite Packing Rope inside the Octagonal Nut. Return Nut to Drive Gear shaft and tighten. After running water through the pump if may be necessary to tighten this Nut
11. Replace Center Case Gaskets (11A) with 9 new Center Case Gaskets.
12. Replace Back End Plate and tighten screws to 30ft lbs.
13. Grease the pump with 3 shots for each of the three short necks and 5 shots in the longer drive shafts of the pump.
14. Position pump belt, Bushing, Key and Sheave on drive shaft. The tank side face of the Sheave should be located so that it lines up with the back face of the motor mount when all 3 of the Bushing Hex cap screws are tightened. Proper torque is 25ft lbs. The Bushing will pull the Sheave towards the side Bushing with the Hex cap screws so be sure to allow for this movement when aligning the Sheave with the back of the motor mount.
15. Check to insure that the Sheave is properly aligned with back side of motor mount. If not, remove and repeat step 14.
16. Before testing the pump, add 3 shots of oil to lubricate the gears.
17. Test the pump for proper adjustment by manually turning Sheave (8) on drive gear by hand. If the pump turns freely, remove more gaskets. If unable to turn the pulley, put an additional gasket back into the pump. Repeat step 11.
18. Replace all sheet metal in its original position to insure safety.



PUMP REPLACEMENT

Pumps can typically be rebuilt one time before wear on the Center Case requires replacement of the pump.

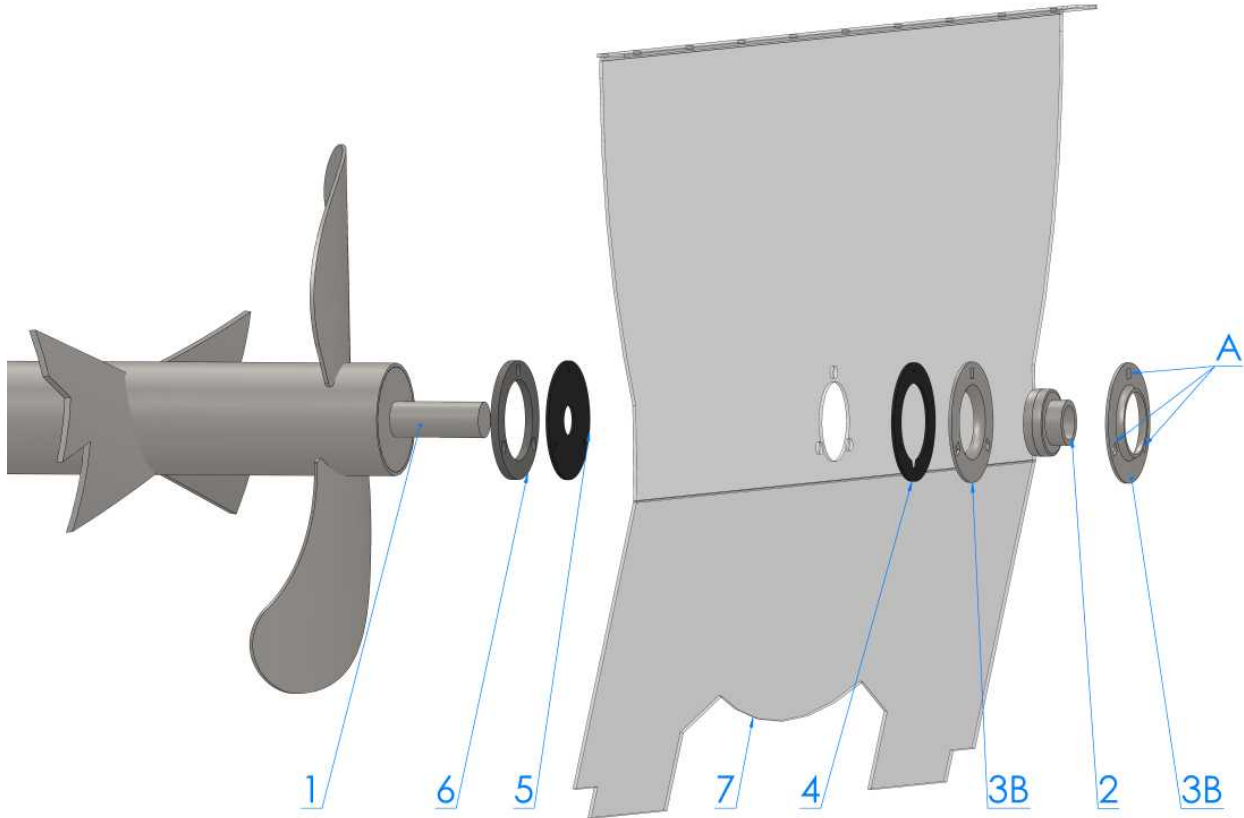
1. Turn off motor and remove the key during maintenance.
2. Remove Sheet Metal panels behind pump to allow access to maintenance area.
3. Remove the 8 Hex cap screws that hold the plumbing to the pump sides.
4. Remove the 3 hex cap screws from the Bushing (7) and insert them into the three alternate holes (B), and push the Bushing away from the Sheave (8). Apply equal pressure to the three screws to avoid cracking the Bushing.
5. Remove the 2 hex cap screws (D) from underside of the Pump.

6. Remove Old Pump.
7. Place the Bushing, Key and Sheave from the old pump onto the drive shaft of the new pump and set pump on motor mount.
8. Secure new Pump (part no. 50101) to the motor mount with provided hex cap screws. Insure that the pump drive shaft is perpendicular to the back side of the motor mount. After pump is properly positioned adjust the retaining bolt located on the post behind the left side of the pump so the bolt head touches the neck of the Front End Plate. Lock bolt in place.
9. Position pump belt, Bushing, Key and Sheave on drive shaft. The tank side face of the Sheave should be located so that it lines up with the back face of the motor mount when all 3 of the Bushing hex cap screws are tightened. Proper torque is 25ft lbs. The Bushing will pull the Sheave towards the pump so be sure to allow for this movement when aligning the Sheave with the back of the motor mount.
10. Check to insure that the Sheave is properly aligned with back side of motor mount. If not, remove and repeat step 9.
11. Replace all sheet metal in its original position to insure safety.

PUMP PARTS REPAIR LIST

PART NO	DESCRIPTION	QTY.
50101	TURFMAKER STANDARD PUMP	
55021	FLANGE GASKET	
55020	CENTER CASE GASKET	
55024	PACKING MATERIAL	
55001	BUSHING 2 1/2" - STANDARD	
53001	IDLER GEAR	
53002	DRIVE GEAR	
55040	REBUILD KIT	
	FLANGE GASKET	2
	CENTER CASE GASKETS	10
	PACKING MATERIALS	3
	BUSHING 2 1/2" - STANDARD	5

AGITATOR MAINTENANCE



ITEM NO.	PART NO	DESCRIPTION	QTY.
1	10282	Agitator 74" Tank	1
2	28201	Agitator Bearing	1
3A	28242	Outer Flange	2
3B	28242	Inner Flange	2
4	28251	Agitator Rubber Seal - Outside Tank	1
5	28252	Agitator Rubber Seal – Inside Tank	1
6	28255	SS Ring - Agitator Seal	1
7		Tank End	
8	41204	3/8"-16 x 1 3/4" 18-8 SS Hex Cap Screw	3
9	41216	3/8"-16 18-8 SS Hex Nut	3
10	41221	3/8" 18-8 Split Lock Washer	3
11	40225	3/8" Galvanized Sealing Washer	3

FRONT BEARING REPLACEMENT

1. Turn off motor and remove the key during maintenance.
2. Remove the three 3/8" hex cap screws (A) that hold the Outer Flange (3A) to Tank End (7). Cutting the bolts may be necessary. Replacement hardware is provided in the repair kit.
3. Loosen set screws from Agitator Bearing (2)
4. Loosen and remove the Agitator Bearing (2) from the drive shaft of the Agitator. Corrosion between the bearing and shaft may require the use of cutting tools to remove the bearing. Use caution to insure that the drive shaft of the Agitator is not harmed.
5. Remove the Inner Flange (3B).
6. Remove both the Inside and Outside Seals (4 & 5)
7. Use emery cloth to polish the drive shaft making the installation of the new bearing easier.
8. Go to the instructions for Back Bearing Replacement at this time if both bearings are being replaced, otherwise proceed to step 9.
9. Place new Inside Seal (5) over end of drive shaft and work it through the hole in the Tank End to the inside of the tank.
10. From inside the tank insert the three hex cap screws and sealing washers through the Stainless Steel ring, Inner Rubber Seal and Tank wall.
11. Sandwich the Bearing (2) between the two Flanges (3A & 3B). Align the small hole on the Inner Flange (3B) with the grease zerk of the Outer Flange (3A).
12. Align the notch of the Outside Seal (4) with the grease zerk of the Flanges and slide the whole assembly over end of drive shaft and bolts.
13. Place lock washers and nuts on hex cap screws and tighten to 12ft lbs of torque.

BACK BEARING REPLACEMENT

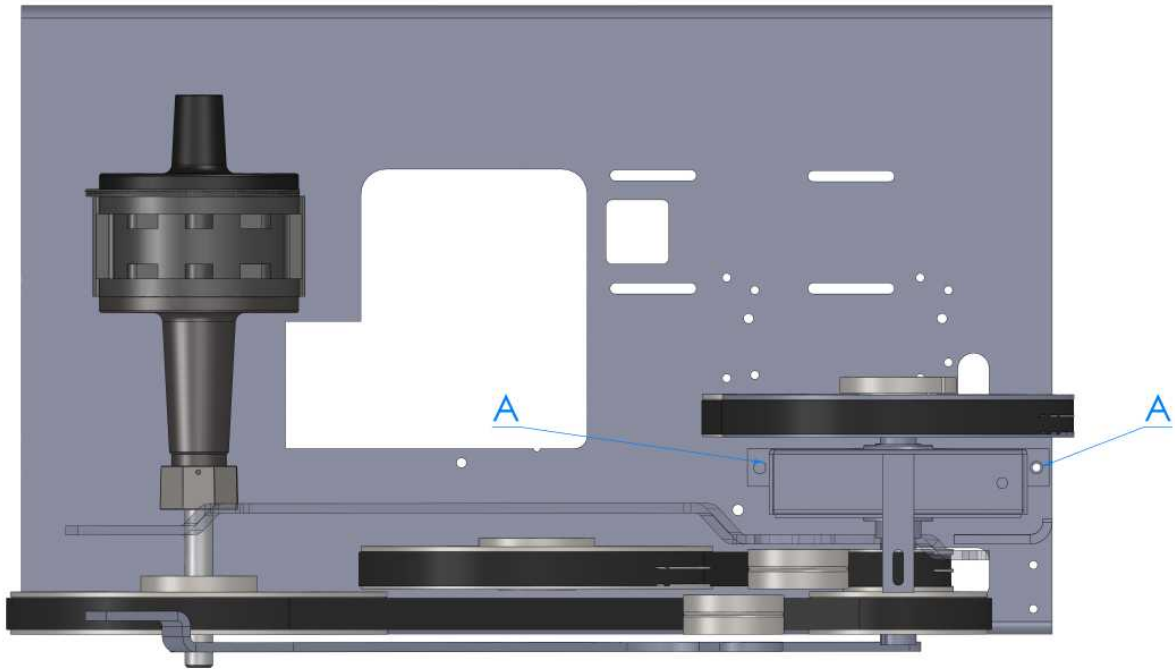
1. Turn off motor and remove the key during maintenance.
2. Remove the Front Bearing from the Agitator shaft. See directions above.
3. Place the Agitator Handle in its idle position.
4. Remove Sheet Metal panels to allow access to maintenance area.

5. Remove the three 3/8" hex cap screws (A) that hold the Outer Flange (3A) to Tank End (7). Cutting the bolts may be necessary. Replacement hardware is provided in the repair kit.
6. Loosen set screw from Agitator Bearing (2)
7. Loosen and remove the Agitator Bearing (2) from the drive shaft of the Agitator. Corrosion between the bearing and shaft may require the use of cutting tools to remove the bearing. Use caution to insure that the drive shaft of the Agitator is not harmed.
8. Remove the Inner Flange (3B).
9. Remove both the Inside and Outside Seals (4 & 5)
10. Use emery cloth to polish the drive shaft making the installation of the new bearing easier.
11. Go to the instructions for Back Bearing Replacement at this time if both bearings are being replaced, otherwise proceed to step 12.
12. Place new Inside Seal (5) over end of drive shaft and work it through the hole in the Tank End to the inside of the tank.
13. From inside the tank insert the three hex cap screws and sealing washers through the Stainless Steel ring, Inner Rubber Seal and Tank wall.
14. Sandwich the Bearing (2) between the two Flanges (3A & 3B). Align the small hole on the Inner Flange (3B) with the grease zerk of the Outer Flange.
15. Align the notch of the Outside Seal (4) with the grease zerk of the Flanges and slide the whole assembly over end of drive shaft and bolts.
16. Place lock washers and nuts on hex cap screws and tighten to 12ft lbs of torque.
17. Replace all sheet metal in its original position to insure safety.

AGITATOR PART REPAIR LIST

PART NO	DESCRIPTION	QTY.
28221	Front Bearing Kit (all seals, etc.)	
	Bearing and Flange Assembly Front	1
	Agitator Rubber Seal – Outside Tank	1
	Agitator Rubber Seal – Inside Tank	1
	3/8"16 1 3/4 18-8 SS Hex Cap Screws	3
	3/8"16 18-8 SS Hex Nut	3
	3/8" 18-8 SS Split Lock Washer	3
	3/8" Galvanized Sealing Washer	3
28222	Rear Bearing Kit (all seals, etc.)	
	Bearing and Flange Assembly Back	1
	Agitator Rubber Seal – Outside Tank	1
	Agitator Rubber Seal – Inside Tank	1
	3/8"16 1 3/4 18-8 SS Hex Cap Screws	3
	3/8"16 18-8 SS Hex Nut	3
	3/8" 18-8 SS Split Lock Washer	3
	3/8" Galvanized Sealing Washer	3

DRIVE SYSTEM MAINTENANCE



BELT REPLACEMENT

1. Turn off motor and remove the key during maintenance.
2. Place the Pump Handle and Agitator Handle in their idle positions.
3. Remove Sheet Metal panels behind motor to allow access to maintenance area.
4. Remove the 2 hex cap screws from the base of the Gear Box (A).
5. Turn the Gear Box clockwise slightly to allow more slack in belts.
6. Remove Pump Belt by sliding off the lower Gear Box Sheave toward the Tank End.
7. Remove the Agitator Belt in the same manner.
8. Replace belts in the reverse order.
9. Locate the Gear Box in position and bolt in place to 20ft lbs of torque.
10. Replace all sheet metal in its original position to insure safety.

BELT LIST

PART NO	DESCRIPTION
28442	Pump Belt for all Models 2-5VX950
28475	Agitator Belt 3-5VX710
28469	Engine Belt 3-5VX600
29305	4" Spring
29304	3½ " Spring (Used on models 2009 and older)