

# PDG 5000 PROPANE MANUAL



SASE Company, Inc. 800.522.2606 | www.SASECompany.com

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Congratulations on your decision to get the Power of SASE behind you! SASE is committed to excellence, excellence in the quality of products we sell and excellence in service and support after the sale. It is important to us that your business continues to succeed and grow, and we know that the right products, service and support can have a great impact on your bottom line.

SASE has made great strides in the concrete preparation and polishing industry over the years. With a 40,000 square foot distribution and service facility in Seattle, a 22,000 square foot distribution and service facility in Knoxville, and local sales and technical support representatives throughout the United States, SASE is able to provide unsurpassed service and technical support for the contractor.

At SASE we engineer and manufacture our own equipment, which allows us to be in control of the quality of the equipment we sell. SASE offers a complete line of concrete preparation and polishing equipment, our newest introduction being our new line of PDG planetary diamond grinders, which is setting a new standard for the concrete grinding and polishing industry. SASE is also the leader in diamond tooling technology.

We look forward to a long and prosperous partnership with you! Thank you again for choosing SASE. You won't regret having the Power of SASE behind your company!

Sincerely,

SASE Company, Inc.

Jim Weder

President

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## SAFETY WARNING: Operate in large open ventilated areas only. Must not be run indoors or enclosed areas.

#### Introduction

The SASE PLANETARY DIAMOND GRINDERS are designed for wet or dry grinding of marble, terrazzo, granite and concrete. Their applications range from rough grinding through to a polished finish.

It is extremely important all users be familiar with the contents of SASE manuals before commencing operation of either machine. Failure to do so may result in damage to machinery or expose operator to unnecessary dangers.



#### **IMPORTANT**



Only staff that has received the necessary training, both practically and theoretically concerning their usage should operate the machinery.

#### **Hazards**

While, this machine is easy to use and has been used safely for many years, there are risks involved in operating any large propane machinery.

- Toxic Emission Exposure
- Fire Relate Incidents
- Mechanical action of moving and hot machine parts

#### **Toxic Emission Exposure**

The major toxic gasses created when spent propane is exhausted are:

- Carbon monoxide (CO) Over exposure to carbon monoxide results in brain damage, or death.
- Oxides of nitrogen (NOx) Can damage lung tissue, aggravates respiratory diseases.
- ❖ Hydrocarbons (HC) Can damage lungs.

We have included a sensor to test the air around the machine to limit exposure to toxic levels of emissions. Without proper ventilation, this sensor will shut down the machine after 30 seconds of use.

#### Fire Relate Incidents

The fire related incidents are few, because of strict fire safety prevention laws, regulations, devices, and practices. Some common causes of fire related hazards.

- Over fill If the tank is too full, and the pressure is vented indoors, that gas can start a fire, or be trapped dangerously in a room.
- Improper storage The storage location must be safe from extreme temperature, but also safe from theft, and tampering.
- Uneducated users The end user that does not understand the danger of improper use can cause unthinkable damage.

#### Mechanical Action of Moving and Hot Machine Parts

Several parts of this machine are understood to be dangerous.

The front of the machine has a grill indicating it is "HOT", this is an understatement. The muffler can reach nearly 1000F Degrees after use, and air venting from the motor side, can reach 800F to 1000F degrees as well.

The Grind Head has a rotation and a counter rotation, keep body parts clear of the moving grinder head.

The handle is heavy. Failure to lock the handle in place can result in operator injury.

During operation, the entire machine has a force of its own. If you lose control of the machine, it will walk away without you. The operator has to maintain control of the machine while it is on the ground. The machine moving freely can damage finished floor sections, or wall sections. Not to mention anyone caught by the grind head would be injured.

#### **Preventative Maintenance**

Preventing the hazard is the best case scenario. Preventative Maintenance (PM) is the responsibility of the operator.

- Check and clean air filter regularly
- Check Oil and adjust level as needed
- Keep a Log Book for all service done.
- Check fuel cylinder for overfill before taking them into a building
- Be SURE that adequate ventilation is in use.
- Properly store propane fuel cylinders and machines.
- ❖ Be aware of changes in operation, smell, noise, etc. while operating
- Report to management ANY safety concerns.
- Follow manufacturer recommendations for all motor maintenance.

#### **Propane Cylinder**

The cylinder used is classified as a DOT 4E240 cylinder. The service pressure the cylinder is designed for is at 20 PSI. The cylinder has a pressure relief if it reaches an excess of 300 PSI. If the tank is overfilled, this pressure relief will become active once the tank comes up to room temperature.

- Pressure relief is highly flammable!
- Never store the propane tank on the machine.
- Follow local and national regulation when using, storing and filling propane.

In the case of pressure relief catching fire, it is necessary to cool the cylinder. Use non-flammable cooling liquid, or a fire extinguisher, to lower the temperature of the cylinder. The flow of gas should stop, when the cylinder is cooled. Shutting off the flow of gas should extinguish the fire the gas was fueling.

Propane cylinders are above the capacity for storage in a place frequented by the public. So, storage on site at a grocery store would be against national fire safety code. NFPA 58 chapters 5 and 8

#### Storage

The machine should always be stored in a cool, dry place when not in use.

Do not store the machine with propane attached.

The propane cylinder has to be stored in accordance with local and national regulation. Do not overlook the danger of propane fire or explosion!

#### **Operation**

#### **Break-Down**

The machine can be divided into two main parts.

- Chassis/Frame section This comprises the handle bars, body panels, Propane tank, Steel frame and wheels.
- Head this comprises the motor, cover, grinding/satellite/ planetary heads and internal components

The machine has been manufactured to allow movement between the chassis and head via the connection point. This movement is important during the grinding process as it creates a "floating" effect for the head. The floating gives the head a self leveling effect, negating the need to adjust the height of the head as the machine passes over floor areas with different slopes or undulations.

#### Set-Up

Position the grinder in the working area. Make sure there are diamonds underneath the machine, and that the head locks are tight.



#### **IMPORTANT**



Planetary head and grinding heads are set to turn in opposite directions of each other. (as shown in this depiction)



- When using the machine, each grinding head must always have the same diamond type and number of diamonds as the other heads.
- **Second Second S**
- The Rubber skirt must be adjusted so that a good seal is established, between the floor and the drum.

When setting the height of the handle, the operator is the guide. The comfort of the operator during grinding is key. The handlebar should rest right at the operator's hip bone. When the machine is running, there will be a grinding force to one side that can be felt through the handlebars. Use the hip to resist this force instead of the arms.

#### **Transportation**

When transporting, it is important to ensure the machinery is properly secured at all times to eliminate "bouncing". Ensure the chassis or frame section of the machine is secured down at all times when in transit. The machine should always be transported under cover limiting the exposed to natural elements – in particular rain and snow. The machine should not be lifted by handle, motor, chassis or other parts. Transportation of the machine is best done on a pallet/skid to which the machine must be firmly secured. Do not attempt to slide the tines/forks from a fork lift under grinding heads unless on a pallet/skid. Failure to do so can cause extreme damage to grinding heads of machine and internal parts.

#### **Control Panel**

The operator controls consist of a number of toggles and switches, giving 4 separate controls.

Ignition Turn to "START" until motor starts, leave in "ON" until

finished. Turn to "OFF", for motor stop.

Speed Control The motor is connected to a throttle cable for speed

control. Twist to lock/Unlock, Pull for fast, push for slow.

**Clutch** Engage/disengage the drum rotation

NEVER ENGAGE/DISENGAGE CLUTCH ABOVE 2000 RPM!



#### **Machine Power-Up**

- Connect battery harness & propane tank.
- Turn Key to "START" position for a moment
- Turn Key to "ON" position

#### **Drum Rotation**

- The green switch controls the electric clutch.
- Do not engage the clutch above 2000 RPM's

In case of emergency stop, disengaging the clutch above 2000 RPM's could be harmful to the motor. As some situations are more important than the service life of your machine, we recommend you use your discretion.

#### Speed / Throttle

The grinding speed should start low and increase as the operator becomes more comfortable with the application. Be sure that the RPM's do not exceed 2000 when starting and stopping the drum rotation. The machine should be running and the drum rotating before speed selection is fine tuned.



**IMPORTANT** 



It is recommended that machinery be transported with a set of diamonds attached at all times to ensure protection of locking mechanism for diamond plates.

#### **Determining Diamond Selection**

#### **Diamond Background**

Diamond abrasives usually consist of 2 components:

- Diamond powder (also known as diamond crystals or grit). By changing the size of the diamond powder or grit, we can change how coarse or fine the scratches will be that are left behind from the grinding process.
- A binding agent (metal or resin). Diamond powder is mixed and suspended in either a metal or resin binding agent. When suspended in a metal bond matrix, the finished product is referred to as a Metal Bond or Sintered diamond segment. When suspended in a resin bond matrix, the finished product is referred to as a Resin Bond diamond segment or pad.

#### **General Diamond Principles**

#### Diamond Grit Size:

Changing the size of the diamond grit to a smaller particle/ grit size will affect the performance of the diamond tool in the following ways:

- Create a finer scratch pattern.
- Increase the life of the diamond tool.

The opposite will occur when changing to a larger particle/grit size.

#### The Binding Agent/Metal Bond or Resin Bond:

Increasing hardness of bond will

- Increase life of diamond tool.
- Decrease production rate.
- Cause diamond tool to leave finer scratches in dry grinding applications (when compared to a softer bond diamond tool with the same diamond grit size).
- A hard bond matrix should be used on a soft floor and a soft bond matrix should be used on a hard floor.

#### Grinding disc set-up:

The set-up of diamond segments on the grinding heads of the machine will influence the performance of the machine, the productivity levels and also the finished floor quality.

There are basically two types of diamond configurations that can be used when grinding:

- 1. Half set of diamonds when there are diamonds placed at three alternating positions on the diamond holder discs. ( See pictures on upper right).
- 2. Full set of diamonds when there are diamonds placed at each of the six positions on the diamond holder discs. (See pictures on middle right).

#### **Changing of Diamonds**

Different applications often require different selections of diamond tooling. There will be many occasions when the grinding discs need to be changed.

Following is a guide for this procedure.

#### Preparation

Turn off the clutch, and then turn the key to the off position.

As an extra precaution, unplug battery from motor, to avoid unintentional starting of the machine while changing disc, which could result in serious injury.



#### **WARNING**



It is highly recommended to have a set of gloves ready, as diamonds can get very hot, especially during dry grinding applications.

#### Changing

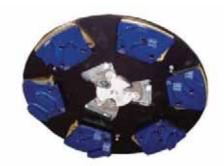
- 1. Set handle in upright position.
- Pull back on handle to lift grinding head off the ground (Illustrated middle right).
- 3. Lay machine back on the ground
- Put on gloves.
- 5. Remove grinding disc from flex plate.
- 6. Check to ensure that all discs are secure.
- Once new diamonds have been attached, reverse procedure to lower machine to ground.
- As new diamonds may be a different height than the set being previously used, re-adjust skirt to ensure good seal is established with the floor.



## HALF-SET OF DIAMONDS

When the diamonds are set-up as a half-set, they tend to follow the surface of the floor. The half-set diamond configuration

should only be used when an extremely flat floor finish is not required.



## FULL-SET OF DIAMONDS

Diamonds that are set-up as a full-set tend to not follow the surface of the floor. If the floor is wavy the machine will grind the high areas yet miss the low spots. The full-set

diamond configuration should be used when a very flat floor finish is desired.

#### **Personal Safety**



Please read the operator's manual carefully and make sure you understand the instructions before using the machine.



WARNING! Dust forms when grinding which can cause injuries if inhaled. Use an approved breathing mask. Always provide for good ventilation while machine is in use.

#### Always wear approved:



Protective helmet



**Dust Mask** 



Non-slip boots with steel toe



Hearing protection



Protective goggles



Protective gloves



#### WARNING



Under no circumstances may the machine be started without observing the safety instructions.

At no time should lifting of machinery be attempted without mechanical means such as a hoist or a forklift.

Should the user fail to comply with these, SASE Company Inc or its representatives are free from all liability both directly and indirectly.

Read through these operating instructions and make sure that you understand the contents before starting to use the machine.

Should you, after reading these safety instructions, still feel uncertain about the safety risks involved you must not use the machine, please contact your SASE representative for more information.

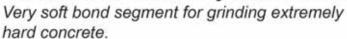
#### Reminder

- Always check oil level before starting.
- Only qualified personnel should be allowed to operate machinery.
- Never use a machine that is faulty. Carry out the checks, maintenance and service instructions described in this manual. All repairs not covered in this manual must be performed by a repairer nominated by either the manufacturer or distributor.
- Always wear personal safety equipment such as sturdy non-slip boots, ear protection, dust mask and approved eye protection.
- The machine should not be used in areas where potential for fire or explosions exist.
- Machinery should only be started when grinding heads are resting on the ground.
- The machine should not be started without the rubber dust skirt attached. It is essential a good seal between floor and machine be established for safety, especially when operating in dry grinding applications.
- When changing the grinding discs ensure the unit is OFF by turning the Key "OFF", and set the clutch to "OFF". Disconnecting the battery would add another layer of protection.
- The machine should not be lifted by handles, motor, chassis or other parts. Transportation of the machine is best done on a pallet / skid to which the machine must be firmly secured.
- Extreme caution must be used when moving machinery by hand on an inclined plane. Even the slightest slope can cause forces/ momentum making the machinery impossible to brake manually.
- Never use the machine if you are tired, if you have consumed any alcohol, or if you are taking medication that could affect your vision, your judgment or your coordination.
- Never use a machine that has been modified in any way from its original specification.
- Be on your guard for electrical shocks. Avoid having body contact with lightning conductors/metal in the ground.
- Do not disconnect the static strap, this should discharge a great deal of static that is generated during grinding concrete..
- Follow Propane gas safety regulations at all times.



#### Diamond Tooling Quick Reference Chart

#### Yellow Series - Extremely Hard Concrete





GRITS 25 | 40 | 80 | 150

#### Gold Series - Hard to Very Hard Concrete





GRITS 16 | 25 | 40 | 80 | 150 | 300

#### Blue Series - Medium to Hard Concrete

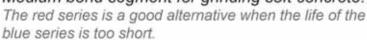
Soft bond segment for grinding medium to hard concrete.



GRITS 6 | 16 | 25 | 40 | 80 | 150 | 300

#### Red Series - Soft to Medium Concrete

Medium bond segment for grinding soft concrete.



GRITS 16 | 25 | 40 | 80 | 150 | 300



#### Black Series - Soft Concrete

Hard bond segment for grinding soft concrete.

GRITS 16 | 25 | 40 | 80 | 150 | 300



#### Orange Series - Very Soft Concrete



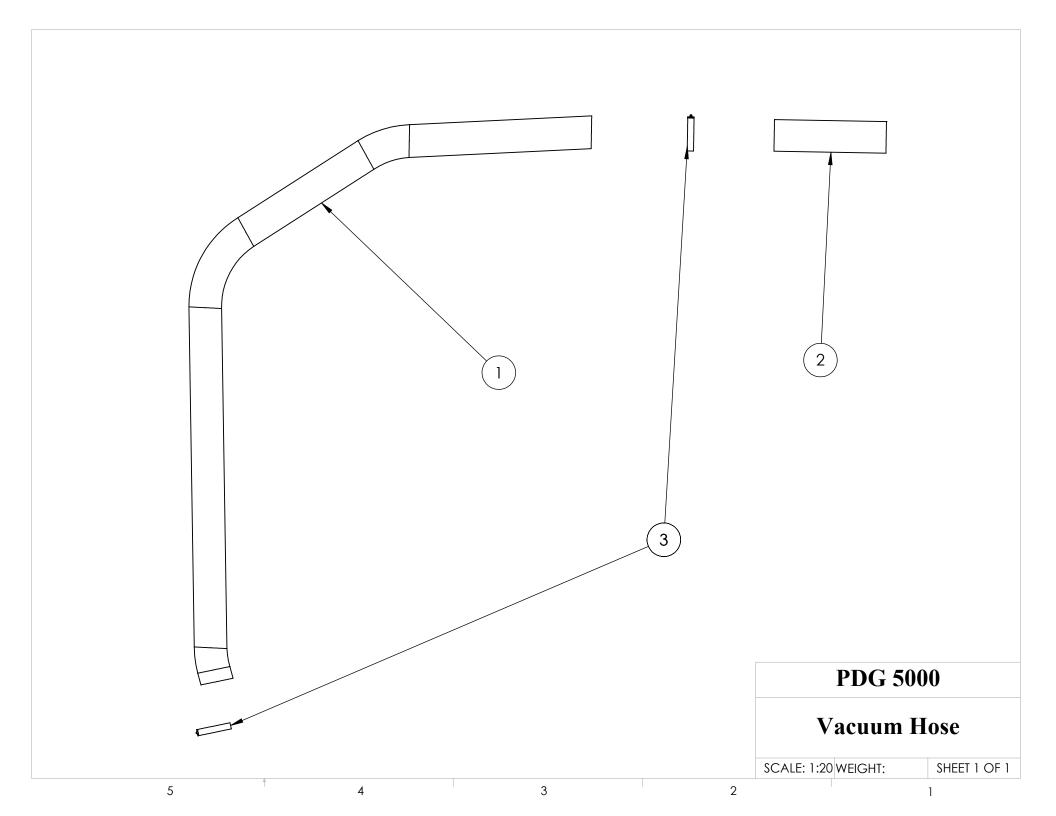
Very hard bond segment for grinding very soft concrete.

GRITS 16 | 25 | 40 | 80 | 150 | 300

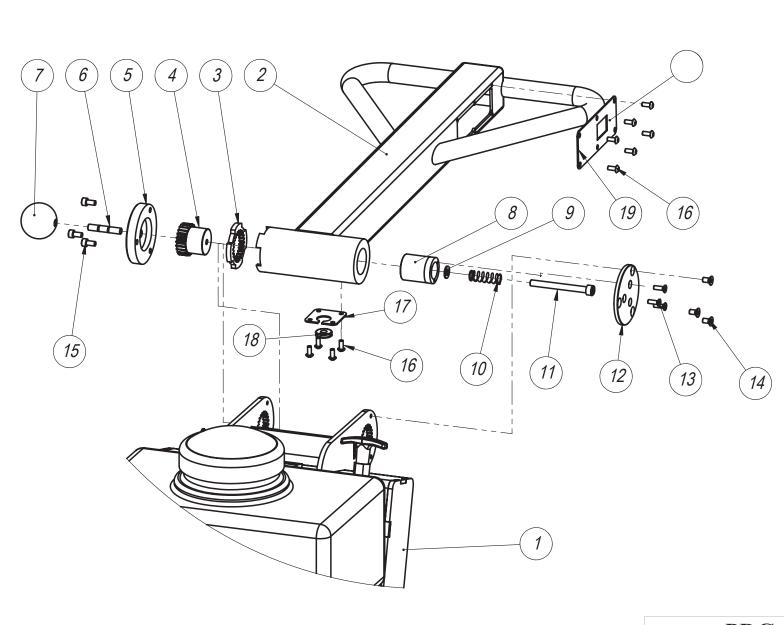
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## **SAFTY WARNING**

CARBON MONOXIDE can cause severe nausea, fainting or death. Do not operate engine in closed or confined area without proper ventilation! A CO (Carbon Monoxide) monitor is recommended when operating inside.



Item No.	Part No.	Description	Quantity
1	VAC.HS2.00000	Hose, 2 inch, Vacuum	4ft
2	VAC.WCN.2020	Coupler, 2 inch, Vacuum	12
3	NB.52.101	Clamp, 2 inch, Hose	1



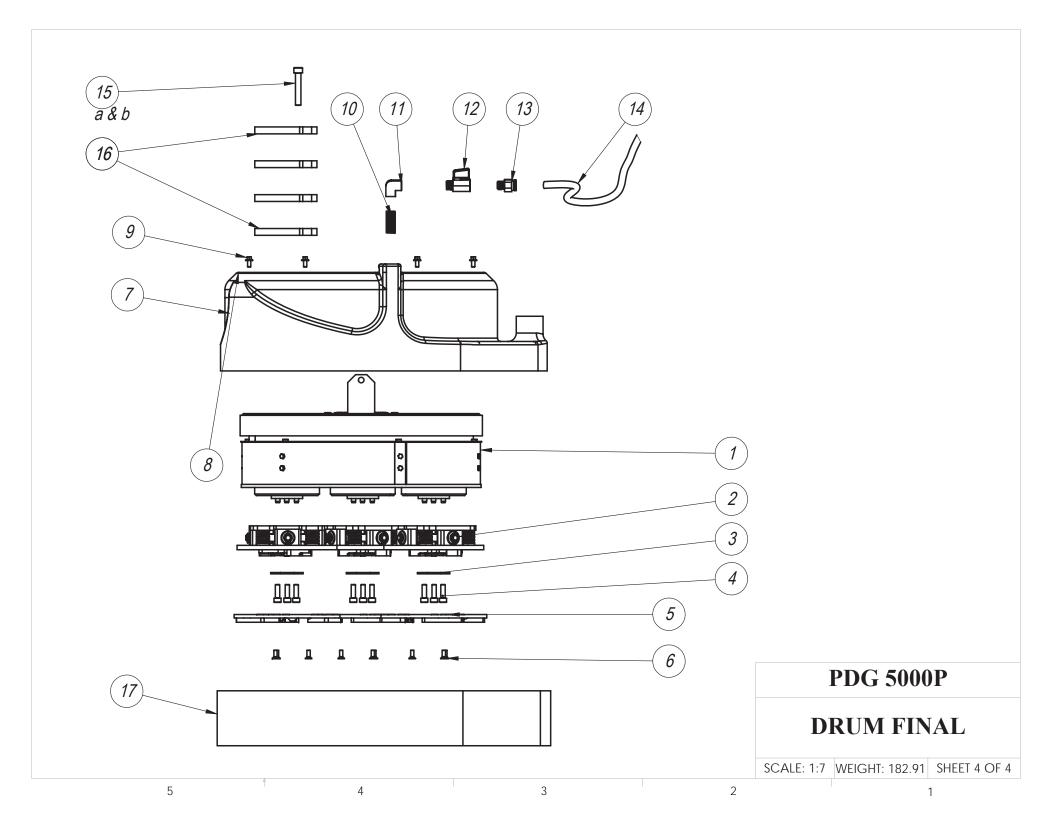
## **PDG 5000**

### HANDLE ASSEMBLY

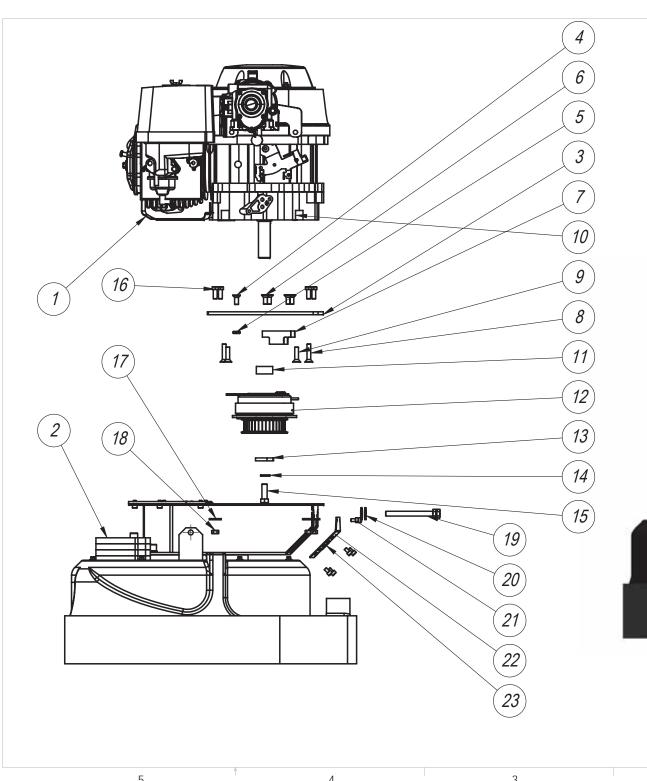
SCALE: 1:5 WEIGHT: 182.56 SHEET 1 OF 1

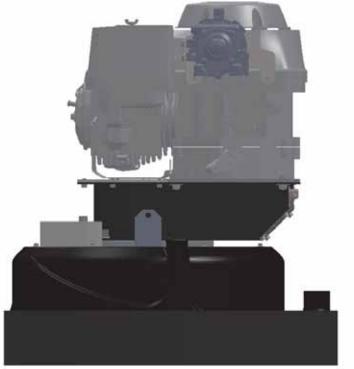
3 2

		Handle Assembly	
Item No.	Part No.	Description	Quantity
1	PDG.51006.00	FRAME, PROPANE	1
2	PDG.50110.50	HANDLE, STEM V2	1
3	PDG.50053.50	SPLINE, FEMALE	1
4	PDG.45054.50	LOCK, STEM MALE	1
5	PDG.45052.52	COVER, STEM LOCK ACTION	1
6	NB.82.100	STUD, DOUBLE END THREADED M8 -1.25 X 50	1
7	PDG.45072.00	KNOB, BALL THREADED	1
8	PDG.45070.00	LOCK, STEM FEMALE	1
9	NB.30.111	WASHER, FLAT M8 ZINC	1
10	PDG.45073.00	SPRING, RETURN COMPRESSION M13.75 X 1.25 X 41.5	1
11	NB.12.220	SCREW, SOCKET HEAD CAP M8-1.25 X 120 12.9	1
12	PDG.45071.00	CAP, STEM LEFT	1
13	NB.13.119	SCREW, FLAT HEAD SOCKET CAP M5-0.8 X 16	3
14	NB.13.113	SCREW, FLAT HEAD SOCKET CAP M6 -1.0 X 10	3
15	NB.12.108	SCREW, SOCKET HEAD CAP M6 -1.0 X 12 ZINC	3
16	NB.16.116	SCREW, BUTTON HEAD M5 X 12 ZINC	10
17	PDG.50087.00	COVER, WITH HOLE	1
18	PDG.50076.00	GROMMET, RUBBER 1/2" ID 1 1/8" OD	1
19	PDG.51011.00	PANEL, CLUTCH SWITCH	1



		DRUM FINAL	
Item No.	Part No.	Description	Quantity
1	PDG.5000.85	DRUM, COMPLETE	1
2	PDG.5000.90	FLEXHEAD, COMPLETE W/ GREEN SPRING	3
3	NB.20.212	WASHER, LOCK M8	9
4	NB.10.218	SCREW, SOCKET HEAD CAP M8 X 20	9
5	SEE PAGE	TOOLING, COMPLETE	3
6	NB.13.216	SCREW, FLAT HEAD SOCKET CAP M8-1.25 X 16	9
7	PDG.50060.00	SHROUD, MOLDED VACUUM 5000	1
8	PDG.20249.00	RUBBER, EPDM GASKET	8
9	NB.11.109	SCREW, FLANGED HEX HEAD CAP M6-1.0 X 12 NON-SERRATED	6
10	PDG.20267.00	NIPPLE, 1/4" X CLOSE GALV	2
11	PDG.20268.00	ELBOW, BRASS FEMALE 1/4 NPT X 1/4 NPT	2
12	PDG.20247.00	VALVE, 1/4 BALL	2
13	PDG.20246.00	FITTING, PUSH TO CONNECT 3/8 X 1/4	2
14	PDG.20262.00	TUBING, WATER	5 FT
15	NB.12.238	SCREW, SOCKET HEAD CAP M10-1.5 X 60	2
15	NB.30.110	WASHER, FLAT M10 ZINC	2
16	PDG.51008.00	WEIGHT, PRO DRUM	4
17	PDG.50082.00	DUST SKIRT, RUBBER DUST	1





## **PDG 5000**

### BELT BOX UPPER

SCALE: 1:50 WEIGHT: 181.82 SHEET 1 OF 1

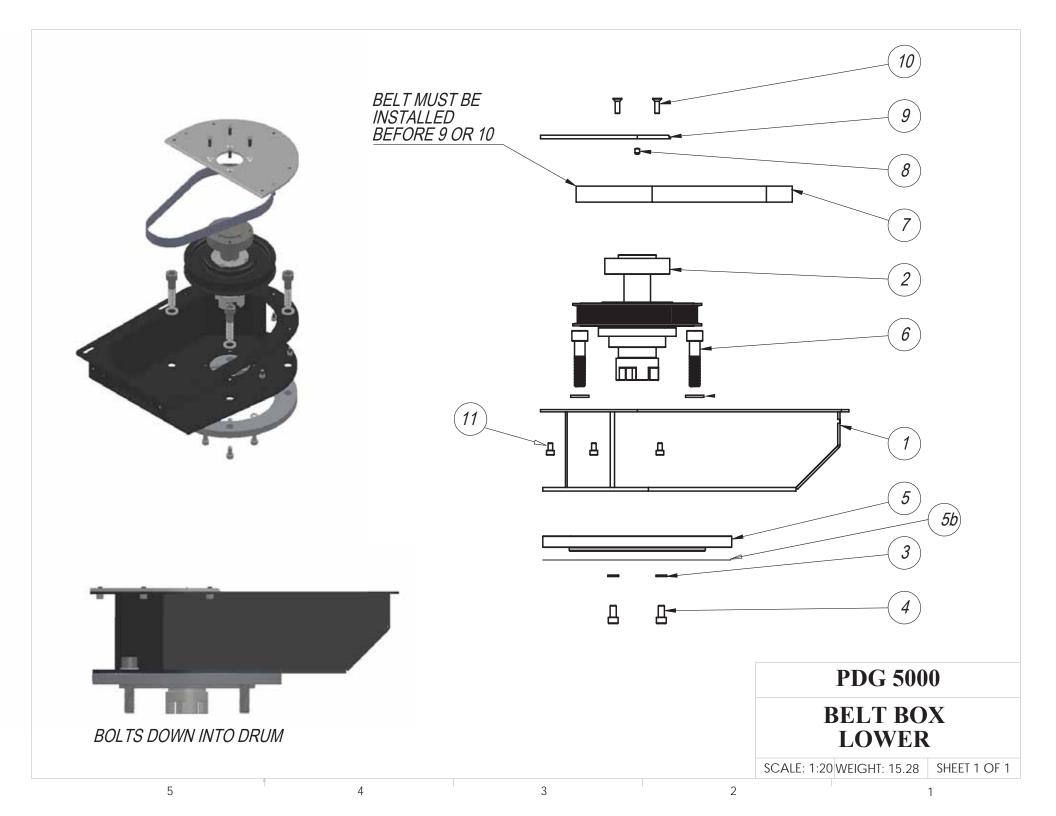
5 4 3

		BELT BOX UPPER	
Item No.	Part No.	Description	Quantity
1	PDG.5A033.00	ENGINE, GXV390 W/ CONVERSION	1
2	SEE PAGE	DRUM AND LOWER BOX PARTS	1
3	PDG.51002.00	PLATE, MOTOR	1
4	NB.13.218	SCREW, FLAT HEAD SOCKET CAP M8 -1.25 X 20	1
5	NB.20.127	NUT, HEXAGONAL JAM M8	1
6	NB.13.218	SCREW, FLAT HEAD SOCKET CAP M8 -1.25 X 20	4
7	PDG.51037.00	BLOCK, TENSIONER	2
8	NB.13.125	SCREW, FLAT HEAD SOCKET 5/16-24 X 2 10.9 ZINC	2
9	NB.13.126	SCREW, FLAT HEAD SOCKET 5/16-24 X 2-1/4 10.9 ZINC	2
10	NB.10.117	NUT, 5/16 (NUT GOES ON 9)	2
11	PDG.51012.01	SPACER, CLUTCH LIFT	1
12	PDG.51030.00	CLUTCH,	1
13	PDG.51013.00	RETAINER, CLUTCH BEARING	1
14	NB.30.406	WASHER, 7/16	1
15	NB.10.261	HEX BOLT 7/16-20 2 1/4"	1
16	NB.10.114	SCREW, HEX M8 X 20 ZINC	4
17	NB.30.111	WASHER, FLAT M8 ZINC	4
18	NB.20.114	NUT, HEXAGONAL M8	4
19	NB.10.245	SCREW, HEX M10-1.5 X 120 FULL THREAD 10.9 ZINC	2
20	NB.30.110	WASHER, FLAT M10 ZINC	2
21	PDG.51004.00	COVER, REAR	1
22	NB.12.106	SCREW, SOCKET HEAD M6	6
23	PDG.50076.00	GROMMET, RUBBER 1/2" ID 3/4" OD	1

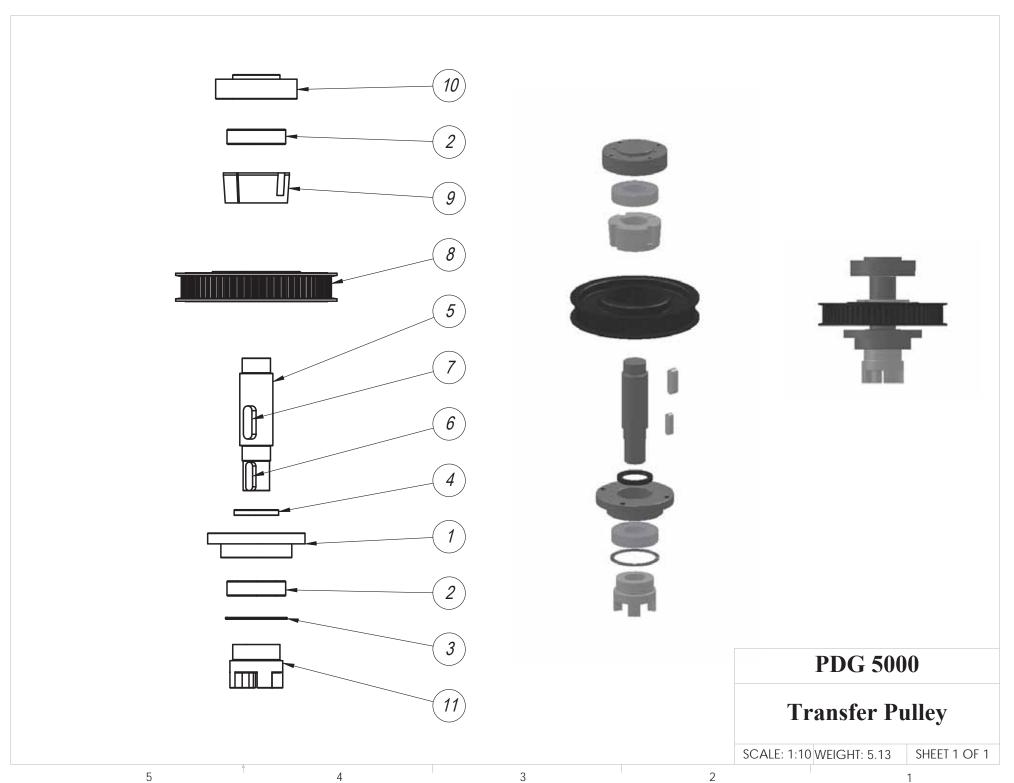
#### MOTOR LIFT:

Use 4 spacers(PDG.51021.00) between #1 and #2, to lift the motor away from the belt box.

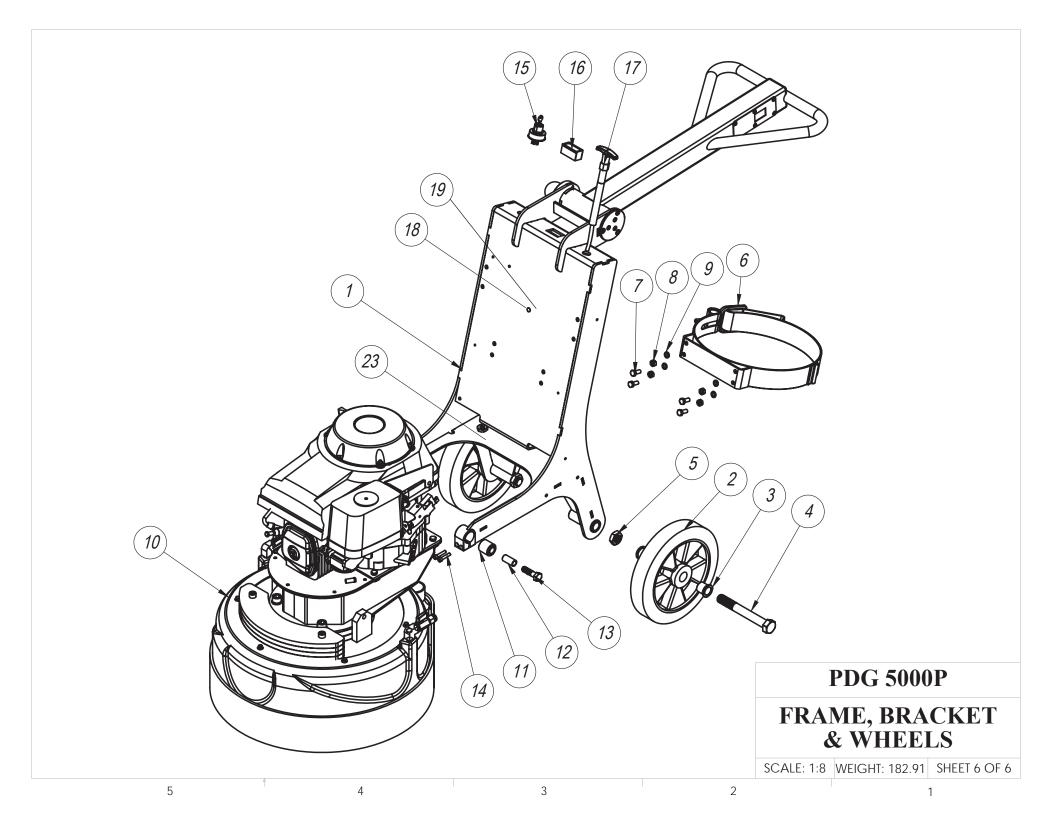
Governor screw on motor gets throttled using 1 NB.20.160. (LocTite 263 to hold in place)



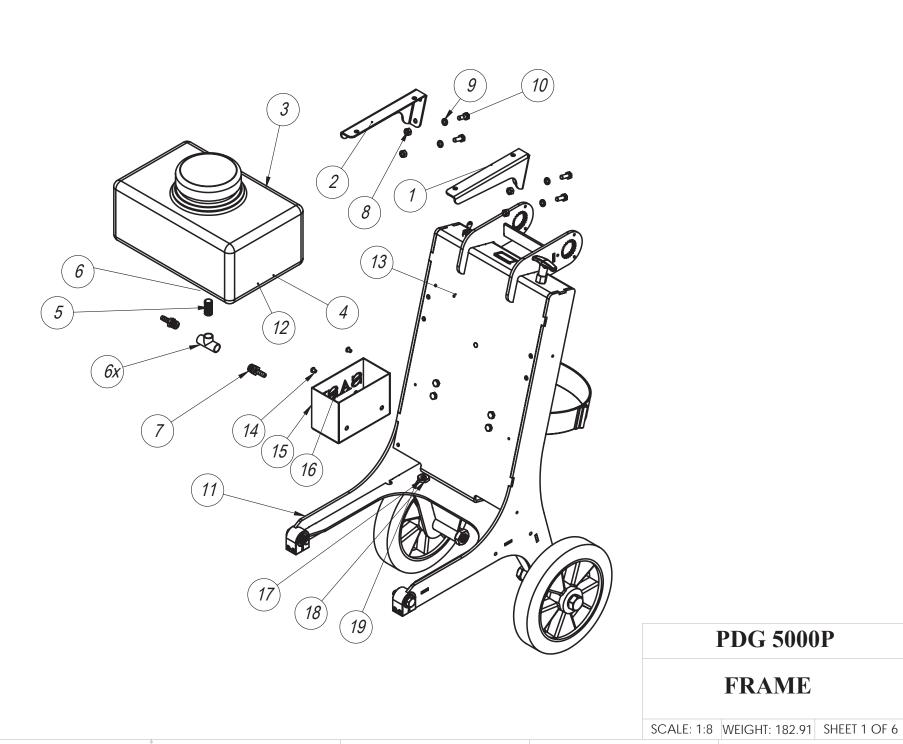
	Lower Box			
Item No.	Part No.	Description	Quantity	
1	PDG.51000.00	HOUSING, BELT	1	
2	SEE PAGE	ASSEMBLY	1	
3	NB.30.212	WASHER, LOCK M8 ZINC	4	
4	NB.12.213	SCREW, SOCKET HEAD CAP M8-1.25 X 16 12.9 ZINC	4	
5	PDG.45039.00	SPACER, MOTOR ROTO	2	
6	NB.12.268	SCREW, SOCKET HEAD CAP M14-2.0 X 60 10.9 ZINC	4	
7	PDG.51034.00	BELT	1	
8	NB.50.156	PIN, DOWEL M6 X 8MM	2	
9	PDG.51003.00	COVER, TOP	1	
10	NB.13.116	SCREW, FLAT HEAD TORX SOCKET CAP M6 -1.0 X 20	4	
11	NB.12.106	SCREW, SOCKET HEAD M6	6	



	Transfer Pulley			
Item No.	Part No.	Description	Quantity	
1	PDG.51015.00	HOUSING, LOWER BEARING	1	
2	PDG.51028.00	BEARING, 6206 2RS1	2	
3	NB.40.132	RING, SMALLEY INTERNAL RETAINING M62	1	
4	PDG.51027.00	SEAL, SHAFT	1	
5	PDG.51001.00	SHAFT, TRANSFER	1	
6	NB.70.112	KEY, MOTOR M8 X 7 X 25	1	
7	NB.70.119	KEY, SQUARE M10 X 35	1	
8	PDG.51035.00	SPROCKET, 8MX-63S-21	1	
9	PDG.51036.00	BUSHING, 2012 35MM TAPERLOCK	1	
10	PDG.51016.00	HOUSING, UPPER BEARING	1	
11	PDG.51029.00	SPIDER, LOVEJOY CJ24/32 RED	1	
11	PDG.51018.00	COUPLING, LOVEJOY FLEX SIZE 24 HUB 28	1	



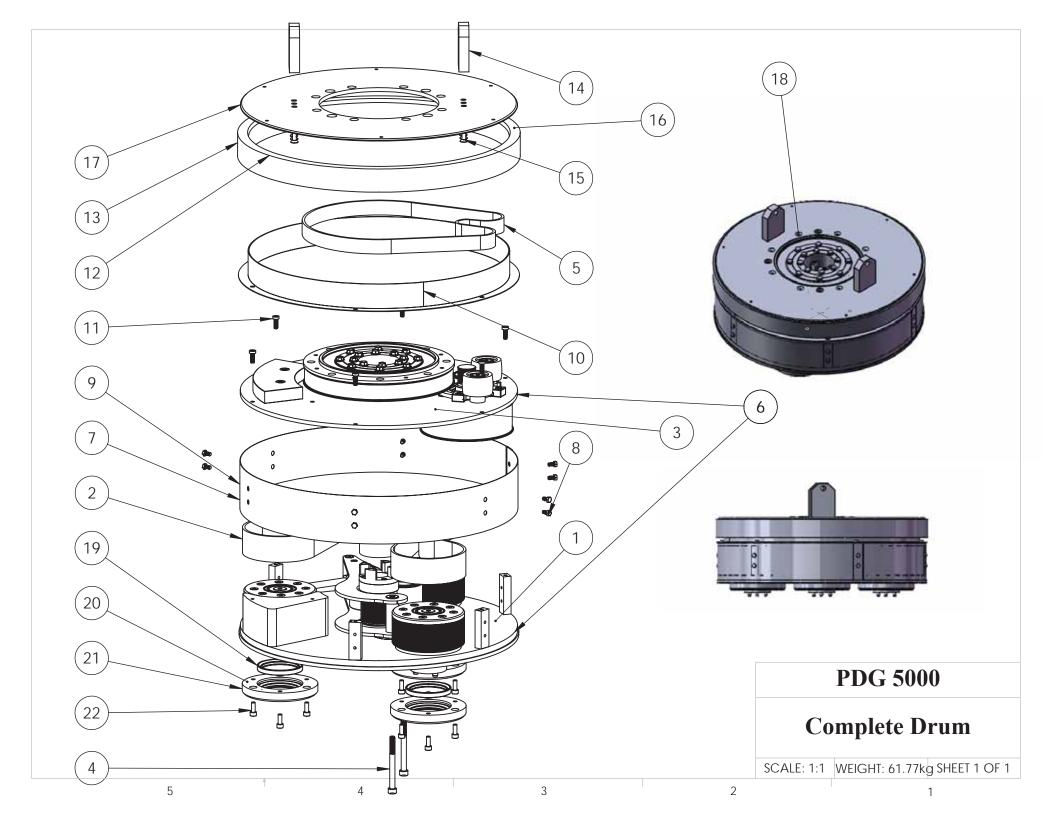
tem No.	Part No.	Description	Quantity
1	SEE PAGE	FRAME W/ HANDLE	1
2	PDG.45077.00	WHEEL	2
3	PDG.20255.60	BUSHING, WHEEL AXLE	4
4	NB.10.253	SCREW, HEX M20-2.5 X 160 ZINC	2
5	NB.20.110	NUT, JAM M20 - 2.5	2
6	PDG.51009.00	BRACKET, PROPANE TANK	1
7	NB.10.114	SCREW, HEX M8 X 20	4
8	NB.30.212	WASHER, LOCK M8	4
9	NB.20.114	NUT, HEX M8	4
10	SEE PAGE	DRUM WITH MOTOR	1
11	PDG.45075.50	BUSHING, 1.3 OD 1.15 ID 1.18 LG	1
12	PDG.45086.00	SLEEVE, CARRIAGE BOLT	1
13	NB.10.129	SCREW, HEX HEAD CAP M12 X 50	1
14	NB.12.119	SCREW, SOCKET HEAD CAP M6-1.0 X 30 12.9 ZINC	4
15	PDG.83214.00	SWITCH, IGNITION	1
16	PDG.83212.00	METER, HOUR/TACH DIGITAL	1
17	PDG.83211.50	CABLE, THROTTLE VERNIER	1
18	NB.52.202	CLAMP, LOOP 3/4" WIDE, 2-1/2" ID	1
19	NB.11.119	SCREW, FLANGED HEX HEAD CAP M8-1.25 X 12 NON-SERRATED ZINC	1
20	PDG.51019.00	HARNESS, WIRING	1
21	NB.52.201	CLAMP, ADEL 3/8"	2
22	NB.16.113	SCREW, HEX HEAD CAP M5-0.8 X 10 ZINC 8.8	2
23	PDG.83232.00	SOFT START	1



3 2

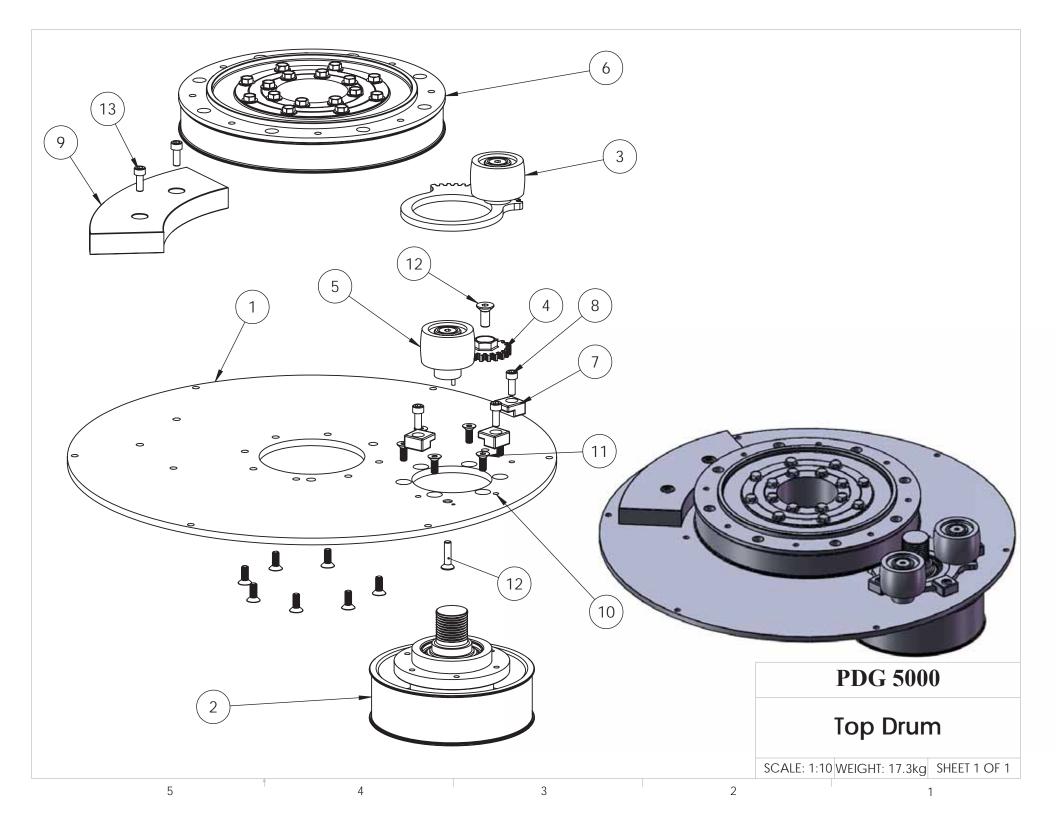
		PROPANE FRAME	
Item No.	Part No.	Description	Quantity
1	PDG.51007.01	BRACKET, WATER TANK LEFT	1
2	PDG.51007.02	BRACKET, WATER TANK RIGHT	1
3	PDG.51031.00	TANK, WATER	1
4	NB.10.260	SCREW, HEX 5/16-18 X 3/4 ZINC	4
5	PDG.20267.00	NIPPLE, 1/4" X CLOSE GALV	1
6	PDG.51032.00	FITTING, 1/4 NPT BULK HEAD	1
6x	PDG.51044.00	FITTING, 1/4 NPT 'T'	1
7	PDG.20246.00	FITTING, PUSH TO CONNECT 3/8 X 1/4	2
8	NB.20.143	NUT, M8 -1.25 NYLOC	4
9	NB.30.111	WASHER, FLAT M8X17X1.6	4
10	NB.10.114	SCREW, HEX M8 X 20	4
11	SEE PAGE	FRAME, W/ WHEELS	1
12	PDG.51039.00	STICKERS, KIT 5K PRO	1
13	HON.253.4915	REGULATOR, RECTIFIER PROPANE GXV390	1
13	NB.11.108	SCREW, FLANGED HEX HEAD CAP M6 -1.0 X 16 NON-SERRATED ZINC	2
14	NB.16.119	SCREW, BUTTON HEAD SOCKET M8 X 12	2
15	PDG.51010.00	BOX, BATTERY	1
15	PDG.83208.00	LINER, FELT FOR BATTERY BOX	1
16	PDG.51040.00	BATTERY, 12V	1
17	PDG.51038.00	FITTING, BRASS 1/8" NPT THROUGH WALL	1
18	PDG.51043.00	NIPPLE, 1/8" X CLOSE BRASS	1
19	Part Of Motor	VACUUM SOLENIOD	1

	OTHER PARTS FOR MOTOR			
Item No.	Part No.	Description	Quantity	
а	HON2092971	BOLT	2	
b	HON2534931	HARNESS, SUB WIRE PROPANE GXV390	1	
С	HON7445026	COIL, 10 AMP PROPANE GXV390	1	



		Complete Drum	
Item No.	Part No.	Description	Quantity
1	See Page 22	Bottom Drum Assembled	1
2	PDG.45042.00	BELT, MAIN PJ18 M1872	1
3	See Page 16	Top Plate Assembled	1
4	NB.12.264	SCREW, SOCKET HEAD CAP M8-1.25 X 85 ZINC	2
5	PDG.45056.00	BELT, TOP 380PJ10	1
6	PDG.20291.00	BUTYL FLEX	5 oz
7	PDG.45041.00	SHROUD, BTM BELT DUST	1
8	NB.16.113	SCREW, HEX HEAD CAP M5-0.8 X 10 ZINC 8.8	10
9	PDG.20287.00	TAPE, PRESERVATION HEAT SHRINK 3" WHITE	15 ft
10	PDG.45037.00	RING, UPPER DUST	1
11	NB.12.116	SCREW, SOCKET HEAD CAP M6-1.0 X 20 12.9 ZINC	7
11b	NB.30.215	WASHER, M6 INTERNAL LOCK	6
12	PDG.45078.00	SEAL, TOP BELT	1
13	PDG.20269.00	ZIP TIE, 48"	2
14	PDG.45038.50	EAR, MOUNTING V2	2
15	NB.13.218	SCREW, FLAT HEAD SOCKET CAP M8 -1.25 X 20	6
16	PDG.20292.00	CHEMREX CX-948	9 oz
17	PDG.45040.00	PLATE, STATIONARY	1
18	NB.13.116	SCREW, FLAT HEAD SOCKET CAP M6 -1.0 X 20	8
19	PDG.20286.02	SEAL, AXLE NITRILE AL. SLURRY COVERS	3
20	PDG.20294.00	SILICONE, CRYSTAL CLEAR	1.5 oz
21	PDG.50085.00	COVER, PLANETARY SLURRY ALUMINUM	3
22	NB.12.111	SCREW, SOCKET HEAD CAP M6 -1.0 X 16 12.9 ZINC	9

		Complete Drum Supplemental	
2	PDG.45042.00	Belt tension over longest span 121-145 Hz	1
4	NB.12.264	Red Loctite 263	2
5	PDG.45056.00	Belt tension over longest span 223-267 Hz	1
8	NB.16.113	Red Loctite 263	10
11	NB.12.116	Red Loctite 263	7
15	NB.13.218	Red Loctite 263	6
18	NB.13.116	Red Loctite 263, anti-sieze applied to countersink.	8
22	NB.12.111	Red Loctite 263	9

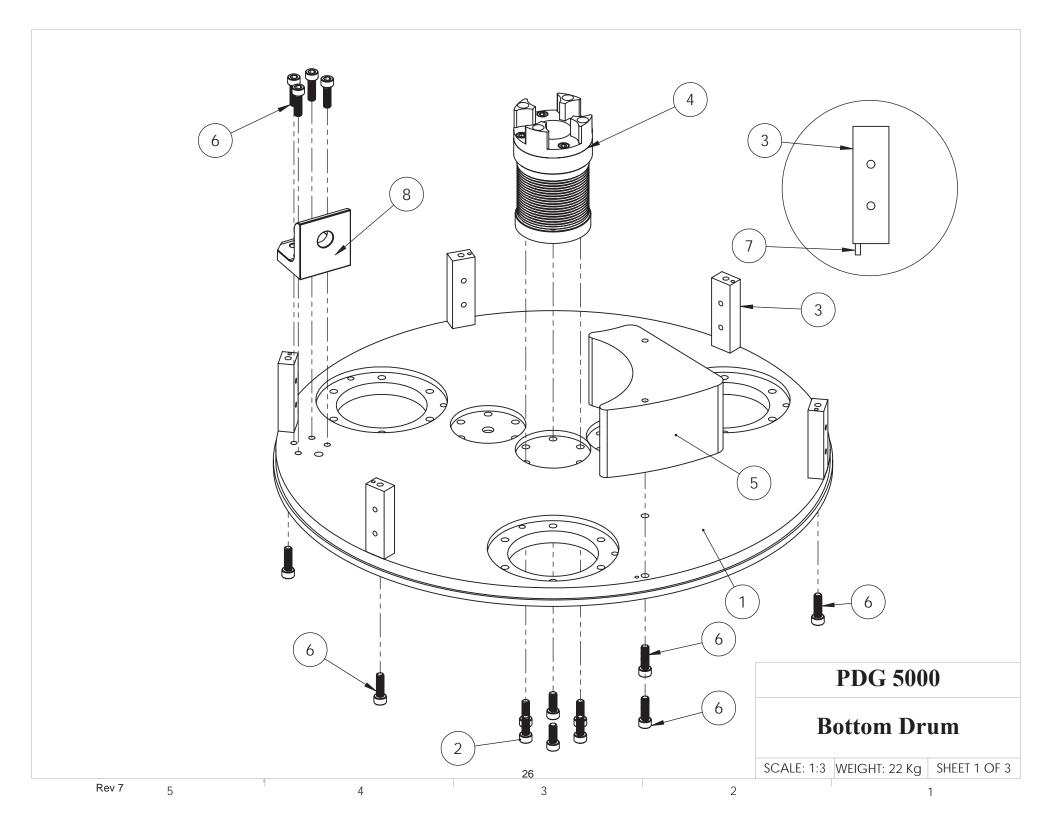


Top Drum				
Item No.	Part No.	Description	Quantity	
1	PDG.50022.00	Top Plate	1	
2	PDG.4A004.00	Steel PTO Assembled	1	
3	PDG.4A003.00	Top Tightener Assembled	1	
4	PDG.45030.00	Top Tightener Actuator	1	
5	PDG.4A002.00	Top Idler Assembled	1	
6	PDG.4A001.00	Drum Sheave Assembled	1	
7	PDG.45058.00	Tightener Clamp	3	
8	NB.12.108	M6-1.0x12 Socket Head Cap Screw	3	
9	PDG.50036.00	Upper Counter Weight Half Moon	1	
10	NB.25.101	M10 Out/M6 In, Threaded Insert (Required in aluminum Top Plate)	0	
11	NB.13.115	M6-1.0x16 Flat Countersunk Head Screw	13	
12	NB.13.218	M8-1.25x20 Flat Countersunk Head Screw	2	
13	NB.10.218	M8-1.25x20 Socket Head Cap Screw	2	

Top Drum Supplemental				
8	NB.12.108	Red LocTite 263	3	
10	NB.25.101	Red LocTite 263	0	
11	NB.13.115	Red LocTite 263	13	
12	NB.13.218	Red LocTite 263	2	
13	NB.10.218	Red LocTite 263	2	

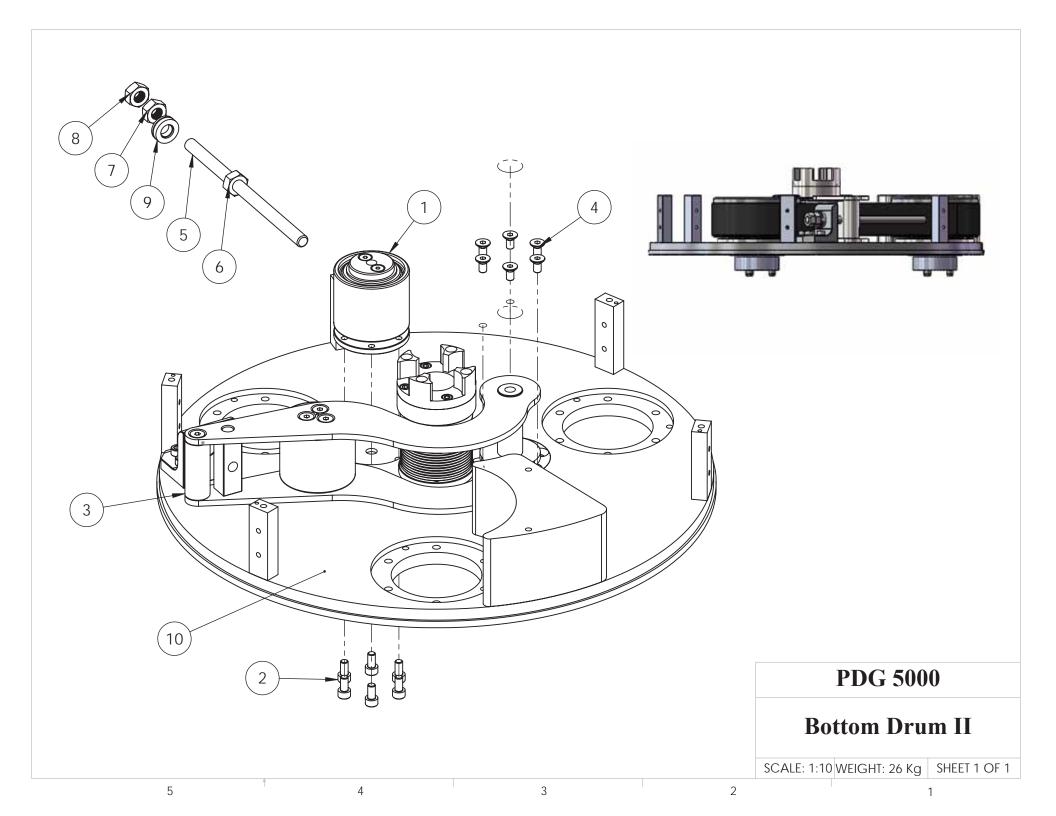
Start with #1, Insert #5, Bolt down with #12, then remove the sheave from #5. Insert #2, bolt down with #11. Insert #3, Insert #7, bolt down with #8. replace the sheave to #5. Insert #4, bolt down with #12.

Now CHECK the height of #3 and #5. If they are even, go on. If they are uneven, Insert NB.31.101 spacer to level them. The rest of the parts can be added once #3 and #5 are in place and even at the top edge.



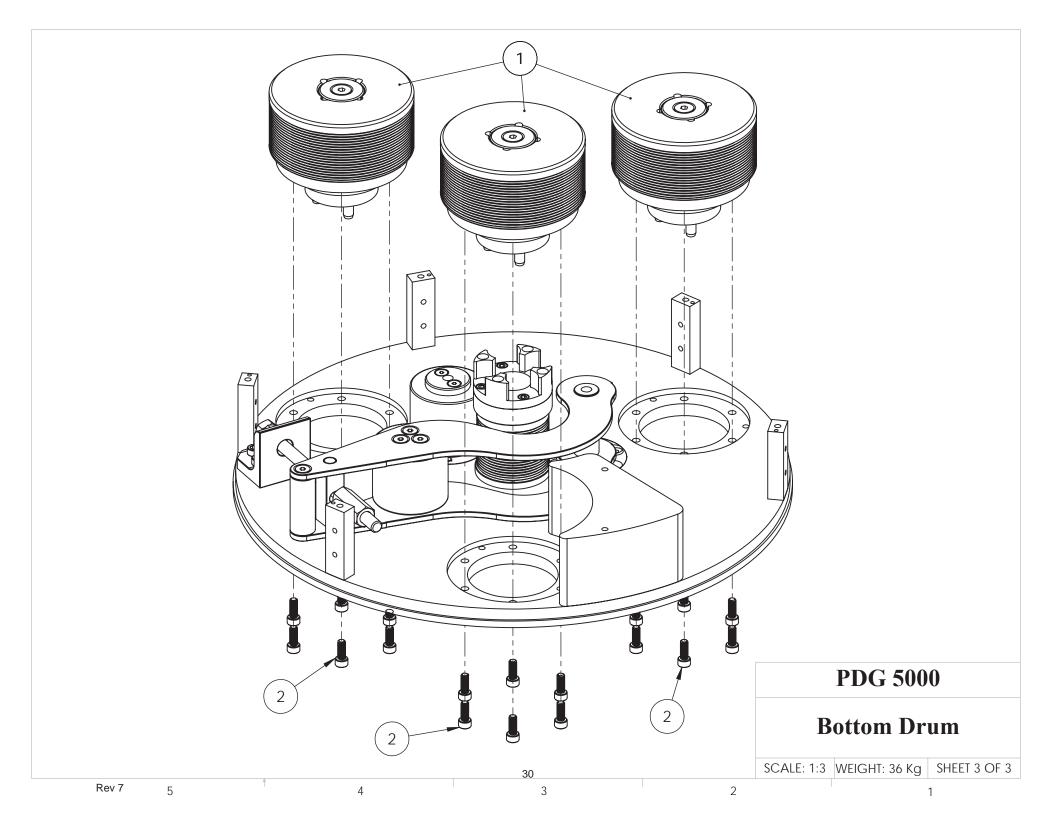
Bottom Drum I				
Item No.	Part No.	Description	Quantity	
1	PDG.45021.00	PLATE, BTM DRUM	1	
2	NB.12.108	SCREW, SOCKET HEAD CAP M6 -1.0 X 12 ZINC	6	
3	PDG.45016.00	STANCHION, PERIMETER	5	
4	PDG.4A006.00	SUBASSEM, MAIN BELT SPINDLE	1	
5	PDG.45019.00	WEIGHT, BALANCE	1	
6	NB.12.116	SCREW, SOCKET HEAD CAP M6-1.0 X 20 12.9 ZINC	11	
7	NB.50.145	PIN, SPIRAL M3 X 12	5	
8	PDG.45017.25	POST, REACTION	1	

Bottom Drum I Supplemental				
2	NB.12.108	Red LocTite 263	6	
6	NB.12.116	Red LocTite 263	11	



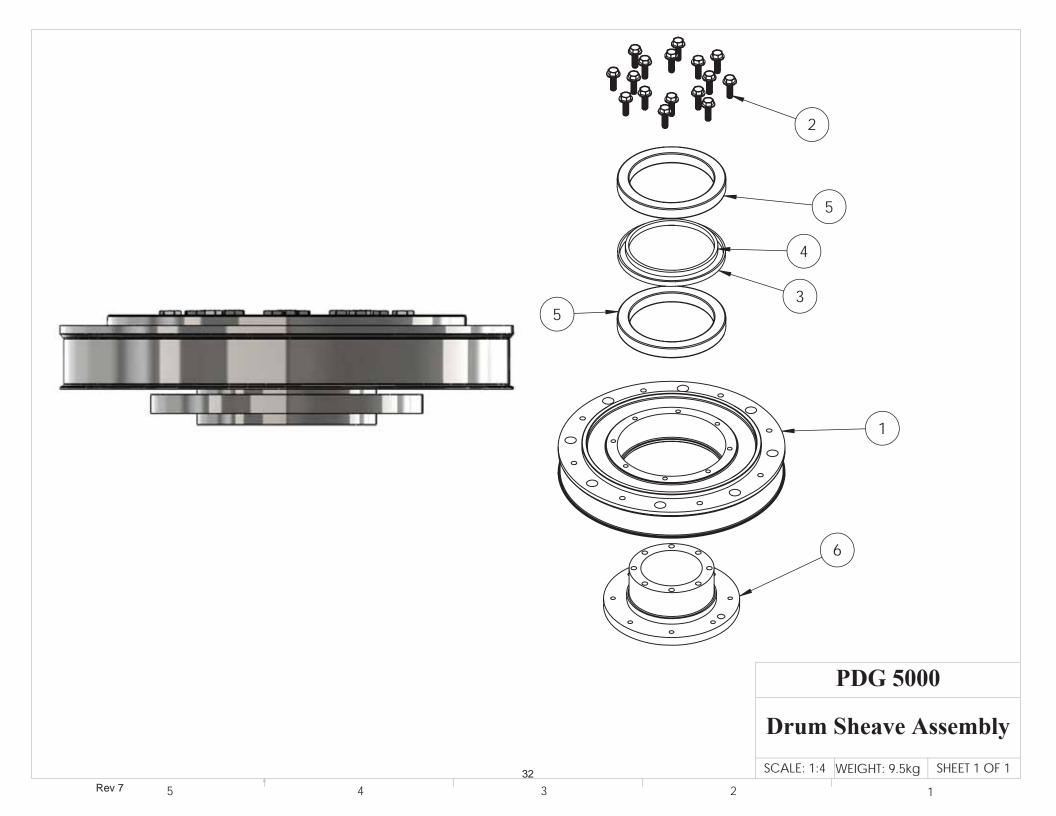
	Bottom Drum II				
Item No.	Part No.	Description	Quantity		
1	PDG.4A007.00	SUBASSEM, MAIN IDLER	1		
2	NB.12.108	SCREW, SOCKET HEAD CAP M6 -1.0 X 12 ZINC	6		
3	PDG.4A005.00	SUBASSEM, MAIN TIGHTENER	1		
4	NB.13.118	SCREW, FLAT HEAD SOCKET CAP M6 -1.0 X 12	6		
5	PDG.45018.25	ROD, TIGHTENER	1		
6	NB.20.119	NUT, COUPLING M10 -1.5	1		
7	NB.20.137	NUT, JAM M10-1.5 ZINC	1		
8	NB.20.131	NUT, NYLOC M10 ZINC	1		
9	NB.32.101	WASHER, SPHERICAL M10	1		
10	See Page 18	Bottom Drum I	1		

Bottom Drum II Supplemental			
2	NB.12.108	Red LocTite 263	6
4	NB.13.118	Red LocTite 263	6
5	PDG.45018.25	Red LocTite 263, where #3, #6 and #7 mount. #8 gets no LocTite	1
8	NB.20.131	Tighten to #7, all the way to one end of #5(threaded rod). Do Not LocTite	1



	Bottom Drum III				
Item No.	Part No.	Description	Quantity		
1	PDG.5A008.00	SUBASSEM, PLANETARY	3		
2	NB.12.111	SCREW, SOCKET HEAD CAP M6 -1.0 X 16 12.9	18		
3	See Page 20	Bottom Drum II	1		

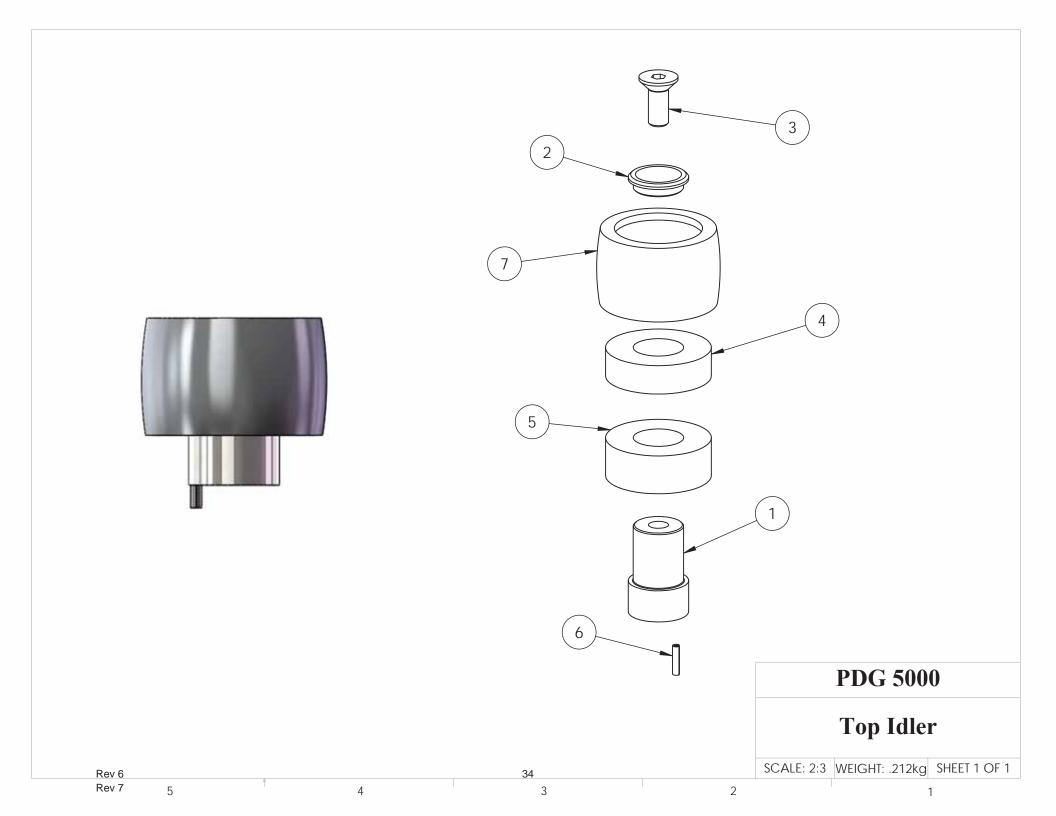
Bottom Drum III Supplemental			
1	PDG.5A008.00	Butyl Flex is added on the flat face where bolts enter, through the bottom drum.	3
2	NB.12.111	Red LocTite 263	18



	Drum Sheave			
Item No.	Part No.	Description	Quantity	
1	PDG.45032.00	SHEAVE, STATIONARY DRUM	1	
2	NB.11.110	SCREW, FLANGED HEX HEAD M6 -1.0 X 20 NON	16	
3	PDG.45033.00	SPACER, OUTER STAT SHEAVE	1	
4	PDG.45034.00	SPACER, INNER STAT SHEAVE	1	
5	PDG.20224.00	BEARING, 61818-2RS	2	
6	PDG.45031.00	SPINDLE, MAIN DRUM SHEAVE	1	

		î .
PDG.4A001.00	SUBASSEM, DRUM SHEAVE	1

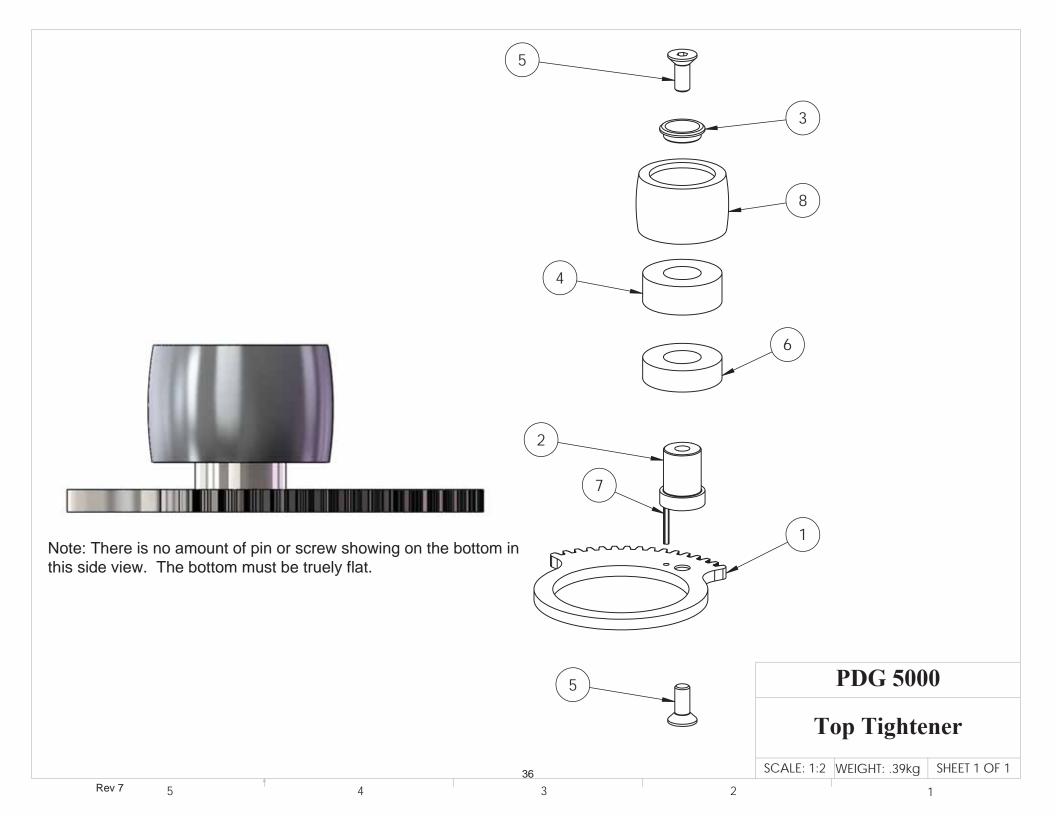
	Drum Sheave Supplemental			
2	NB.11.110	Red LocTite 263	16	



Top Idler			
Item No.	Part No.	Description	Quantity
1	PDG.45029.00	SPINDLE, TOP IDLER	1
2	PDG.45027.00	CAP, BEARING	1
3	NB.13.218	SCREW, FLAT HEAD SOCKET CAP M8 -1.25 X 20	1
4	PDG.20278.00	BEARING, 6004-2RS	1
5	PDG.20280.00	BEARING, 63004-2RSJ	1
6	NB.50.145	PIN, SPIRAL M3 X 12	1
7	PDG.45104.00	SHEAVE, TOP TIGHTENER	1

PDG.4A002.00	SUBASSEM, TOP IDLER	1
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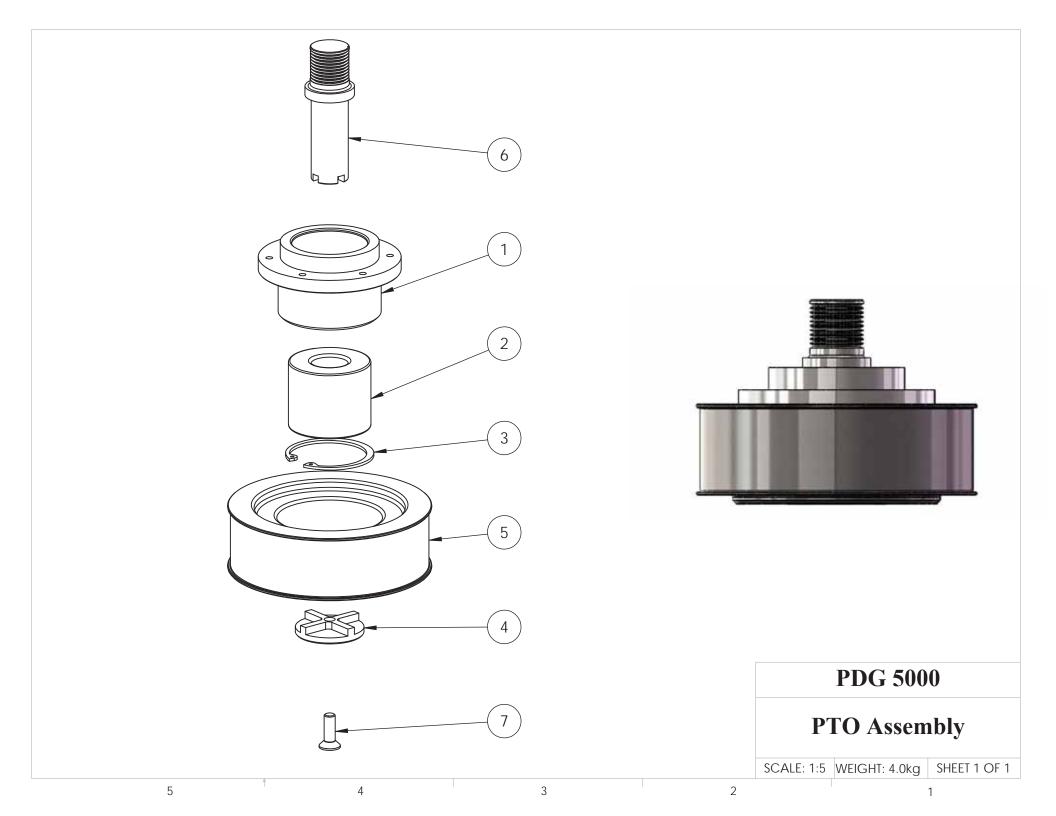
Top Idler Supplemental			
3	NB.13.218	Red LocTite 263	1



	Top Tightener			
Item No.	Part No.	Description	Quantity	
1	PDG.45026.00	GEAR, TOP TIGHTENER	1	
2	PDG.45028.00	SPINDLE, TOP TIGHTENER	1	
3	PDG.45027.00	CAP, BEARING	1	
4	PDG.20280.00	BEARING, 63004-2RSJ	1	
5	NB.13.218	SCREW, FLAT HEAD SOCKET CAP M8 -1.25 X 20	2	
6	PDG.20278.00	BEARING, 6004-2RS	1	
7	NB.50.145	PIN, SPIRAL M3 X 12	1	
8	PDG.45104.00	SHEAVE, TOP TIGHTENER	1	

PDG.4A003.00	SUBASSEM, TOP TIGHTENER	1

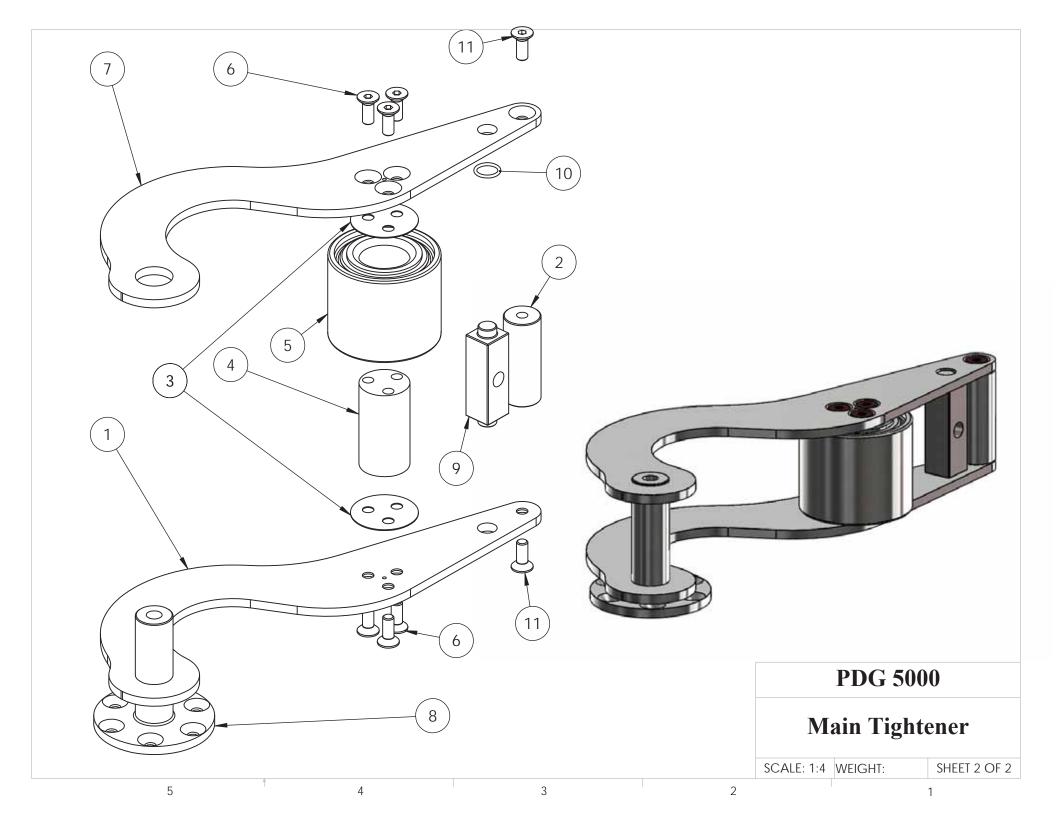
Top Tightener Supplemental			
5	NB.13.218	Red LocTite 263	2
7	NB.50.145	Insert pin into 2 all the way, Careful not to crush either end in the process. Then	1
,	110.00.140	2&7 into 1. fasten bottom screw, fasten top screw.	l



	Power Take Off (PTO)				
Item No.	Part No.	Description	Quantity		
1	PDG.45003.00	HOUSE, PLANETARY BEARING	1		
2	PDG.20248.00	BEARING, 513071-2RS	1		
3	NB.40.123	RING, INTERNAL RETAINING M60	1		
4	PDG.50004.00	RETAINER, SHEAVE STEEL	1		
5	PDG.50023.00	SHEAVE, PTO STEEL	1		
6	PDG.45025.00	AXLE, PTO	1		
7	NB.13.222	SCREW, FLAT HEAD SOCKET M8 -1.25 X 25 ZINC	1		

PDG.4A004.00	SUBASSEM, PTO	1

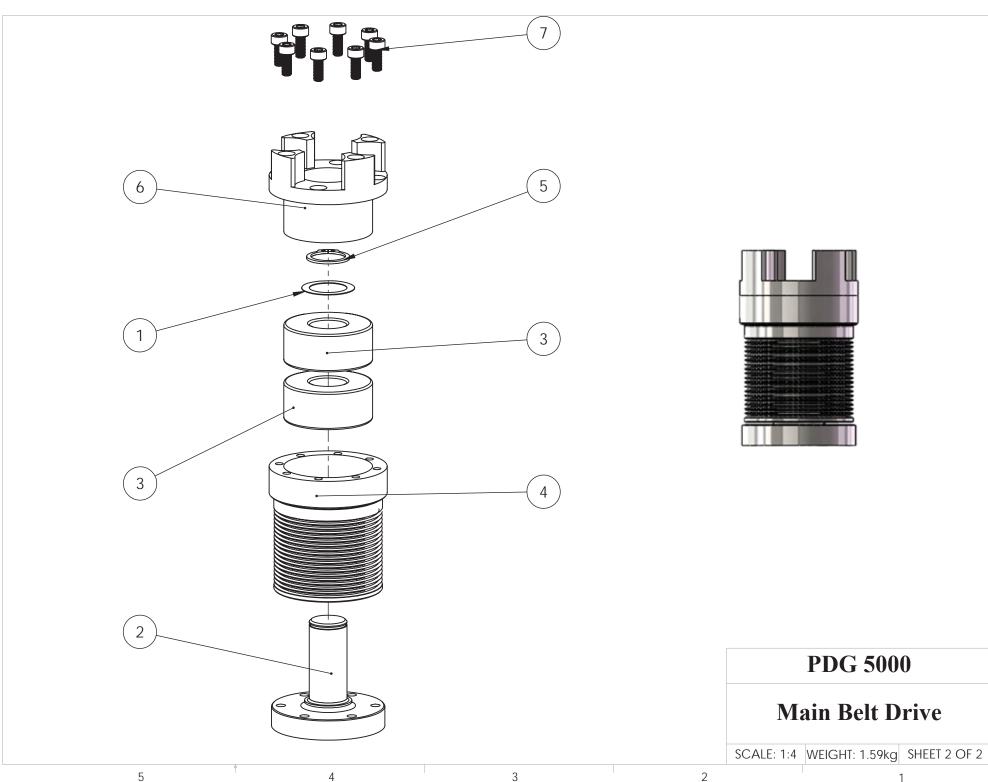
Power Take Off (PTO)			
7	NB.13.222	Red LocTite 263, Torque 35 Ft-Lbf	1



	Main Tightener		
Item No.	Part No.	Description	Quantity
1	PDG.45010.00	PLATE, BTM TIGHTENER	1
2	PDG.45013.00	STANCION, TIGHTENER	1
3	PDG.45015.00	SPACER, BEARING	2
4	PDG.45014.00	SPINDLE, TIGHTENER BEARING	1
5	PDG.20248.00	BEARING, 513071-2RS	1
6	NB.13.116	SCREW, FLAT HEAD SOCKET CAP M6 -1.0 X 20	6
7	PDG.45011.00	PLATE, TOP TIGHTENER	1
8	PDG.45012.00	POST, TIGHTENER PIVOT	1
9	PDG.45020.25	GRUDEGEON, TENSIONER	1
10	PDG.45080.00	O-RING, TIGHTENER DASH013	1
11	NB.13.115	SCREW, FLAT HEAD SOCKET M6 -1.0 X 16	2

PDG.4A005.00	SUBASSEM, MAIN TIGHTENER	1
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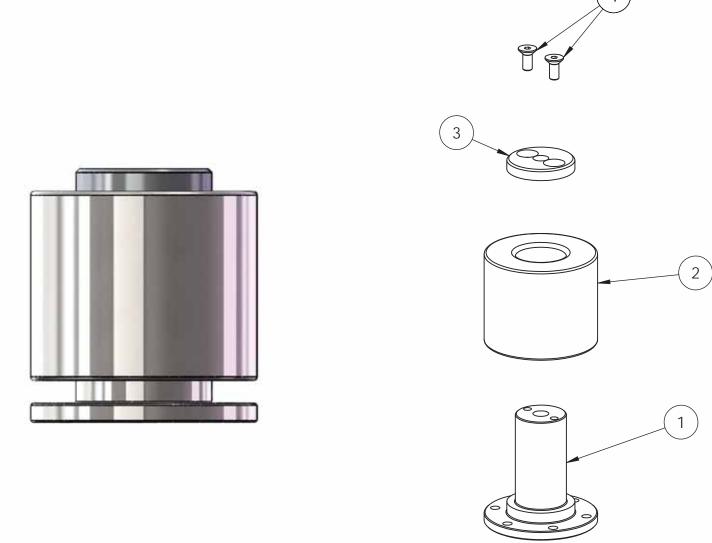
Main Tightener Supplemental			
6	NB.13.116	Red LocTite 263	6
10	PDG.45080.00	This is easy to lose.	1
11	NB.13.115	Red LocTite 263	2



Main Belt Drive			
Item No.	Part No.	Description	Quantity
1	NB.30.122	WASHER, SPRING M30.5 X 46.5 X 6	1
2	PDG.45008.00	SPINDLE, MAIN DRIVE	1
3	PDG.20220.00	BEARING, 3204-2RS	2
4	PDG.45007.00	SHEAVE, MAIN DRIVE	1
5	NB.40.104	RING, EXTERNAL RETAINING M20	1
6	PDG.45009.00	COUPLER, DRIVEN MOTOR	1
7	NB.12.090	SCREW, SOCKET HEAD CAP M5 -0.8 X 16	8

PDG.4A006.00	SUBASSEM, MAIN BELT SPINDLE	1
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Main Belt Drive Supplemental			
3	PDG.20220.00	3 into 4 outter race press, 3 over 2 inner race press.	2
7	NB.12.090	Red LocTite 263	8



**Main Idler** 

**PDG 5000** 

SCALE: 1:2 WEIGHT: 1.25kg SHEET 1 OF 1

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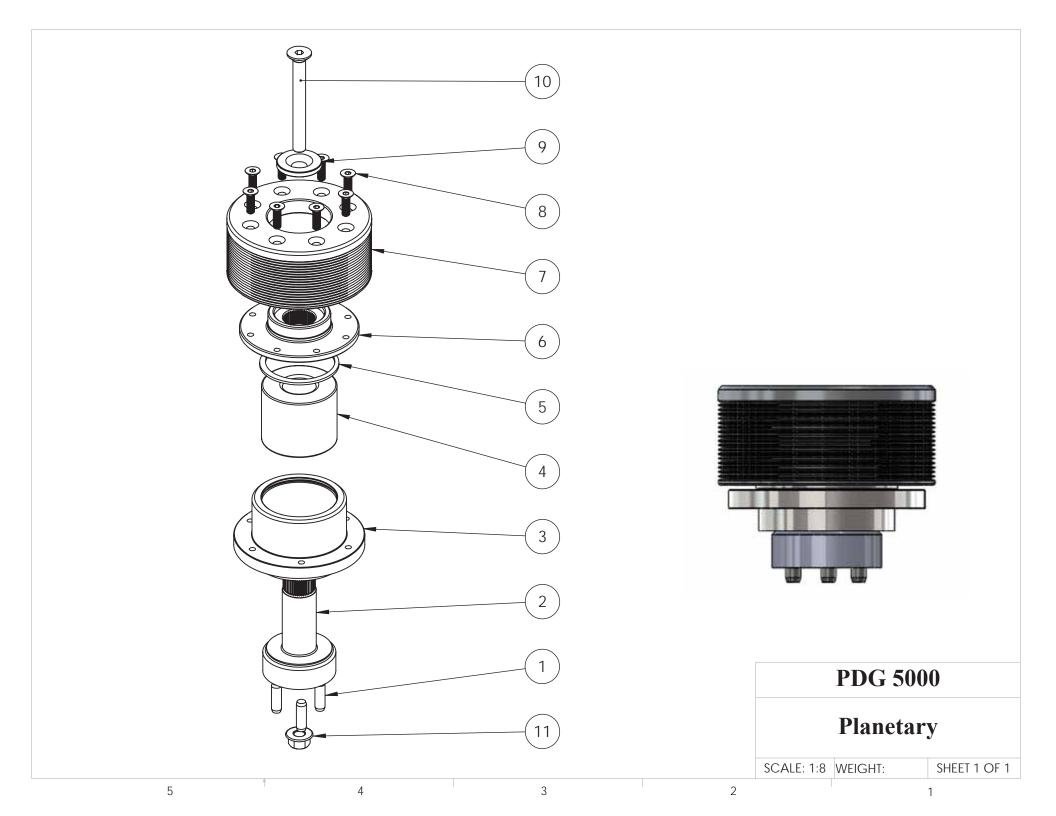
Rev 7 5 4 3

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Main Idler			
Item No.	Part No.	Description	Quantity
1	PDG.45005.00	SPINDLE, MAIN IDLER	1
2	PDG.20248.00	BEARING, 513071-2RS	1
3	PDG.45006.00	RETAINER, IDLER BEARING	1
4	NB.13.119	SCREW, FLAT HEAD SOCKET CAP M5-0.8 X 16	2

PDG.4A007.00	SUBASSEM, MAIN IDLER	1

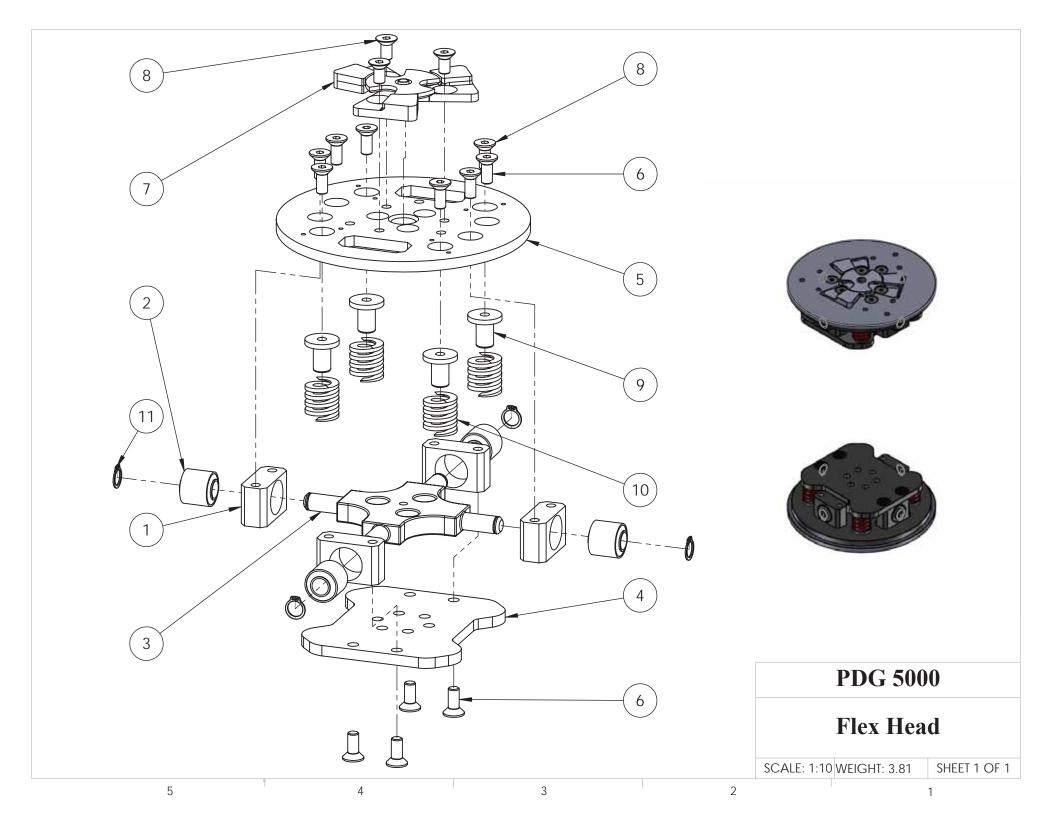
		Main Idler Suplemental	
4	NB.13.119	Red LocTite 263	2



	Planetary		
Item No.	Part No.	Description	Quantity
1	NB.50.143	PIN, HARDENED M8 X 26	3
2	PDG.50001.00	AXLE, PLANETARY	1
3	PDG.45003.00	HOUSE, PLANETARY BEARING	1
4	PDG.20248.00	BEARING, 513071-2RS	1
5	NB.40.123	RING, INTERNAL RETAINING M60	1
6	PDG.50001.50	ROTOR, SPINDLE	1
7	PDG.50002.00	SHEAVE, PLANETARY	1
8	NB.13.116	SCREW, FLAT HEAD SOCKET CAP M6 -1.0 X 20	8
9	PDG.50003.00	WASHER, SPINDLE TOP	1
10	NB.13.253	SCREW, SOCKET FLAT HEAD CAP M10-1. X 90	1
11	NB.20.122	NUT, HEX FLANGE M10-1.5	1

PDG.5A008.00   SUBASSEM, PLANETARY 3
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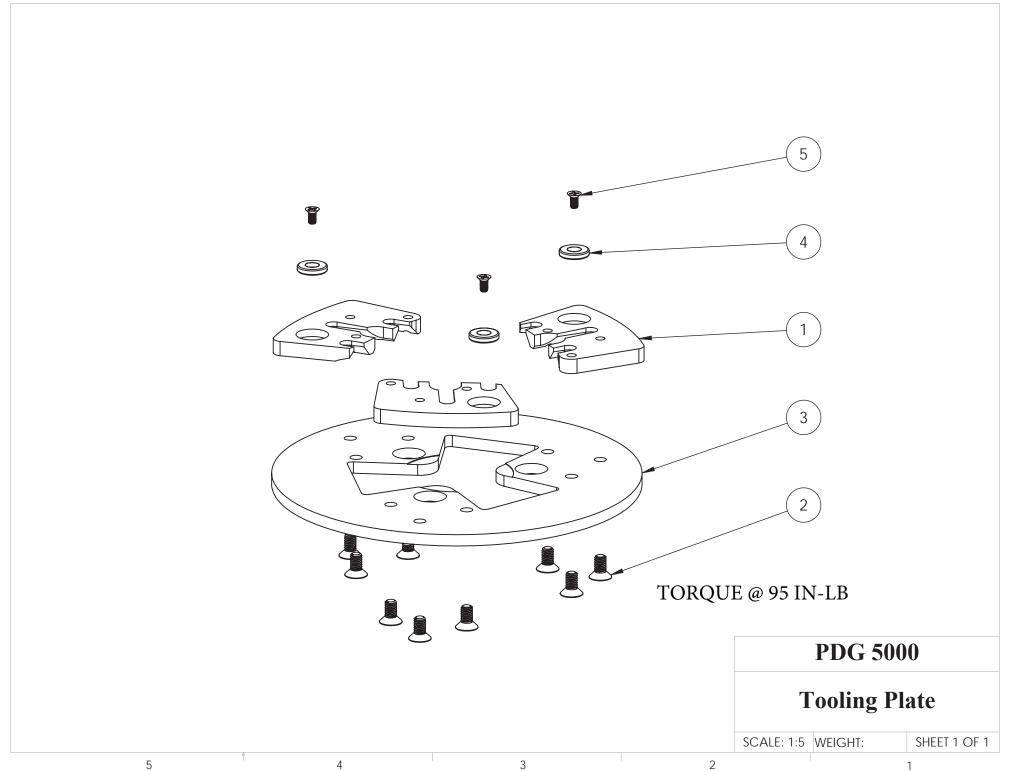
Planetary Supplemental				
8	NB.13.116	Red LocTite 263	8	
10	NB.13.253	Red LocTite 263, at tip.	1	
11	NB.20.122	Tighten to 40 ft-lbf, with #10 captured.	1	



	Flex Head				
Item No.	Part No.	Description	Quantity		
1	PDG.20103.00	YOKE, SUSPENSION	4		
2	PDG.20109.00	BUSHING, YOKE	4		
3	PDG.20102.01	ELEMENT, CENTER STUDDED	1		
4	PDG.20100.50	PLATE, DRIVING	1		
5	PDG.20101.01	PLATE, DRIVEN	1		
6	NB.13.218	SCREW, FLAT HEAD SOCKET CAP M8 -1.25 X 20	8		
7	PDG.20104.25	LOCK, SHAMROCK PLATE ASSEM	1		
8	NB.13.216	SCREW, FLAT HEAD SOCKET CAP M8-1.25 X 16 ZINC	7		
9	PDG.20106.25	POST, SPRING	4		
10	PDG.20106.53	SPRING, DIE GREEN	4		
11	NB.40.113	RING, EXTERNAL 1/2"	4		

PDG.5000.90	FLEX HEAD, COMPLETE	1
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Flex Head Supplemental				
6	NB.13.218	Red LocTite 263	8	
8	NB.13.216	Red LocTite 263	7	

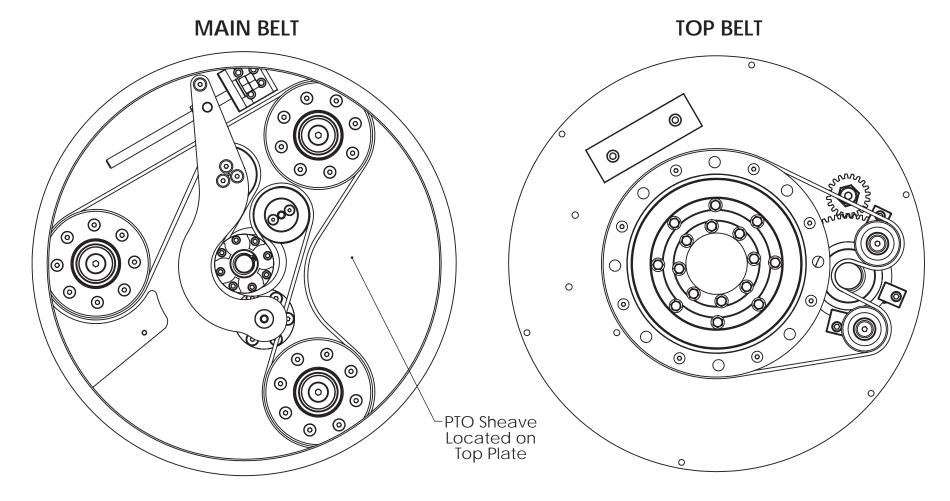


Tooling Plates					
Item No.	Part No.	Description	Quantity		
1	HOL.904134	QCS METAL BOND ADAPTERS	3		
2	NB.13.118	SCREW, FLAT HEAD SOCKET CAP M6 X 16	9		
3	PDG.50015.00	PLATE, TOOLING PDG5K	1		
4	PDG.20295.00	MAGNET, 5/8" OD X 1/8" THICK WITH CS HOLE NORTH	3		
5	NB.13.110	SCREW, M4 X 6 FLAT HEAD PHILLIPS S/S	3		

Tooling Plates Supplemental				
5	NB.13.110	Green LocTite 609	3	
2	NB.13.118	Red LocTite 263	9	

# **BELT TENSIONS**

132 ±12 Hz 245 ±22 Hz or 12-15 ft/lb



# **PDG 5000**

# **Belt Paths**

SCALE: 1:1 WEIGHT: 61.77kg SHEET 1 OF 1

5 4 3



### MANUFACTURER'S WARRANTY POLICY

### Included in this warranty are the following pieces of equipment:

Planetary Diamond Grinders: PDG 8000, PDG 6000, PDG 5000, Edge Pro 180

Dust Extractors: Bull 1250, Bull 300, Bull 45

Scarifiers: SC12E, SC10E, SC8E

#### Our Commitment to our customer:

SASE Company ("SASE") equipment is warranted to be free of defects in workmanship and materials for a period of one (1) year from original date of purchase. In the event that you should have a claim SASE shall repair, replace or remedy the defective parts resulting from the faulty design, materials or workmanship. Note: This warranty is only valid for equipment either sold by SASE or by an authorized wholesaler or distributor.

#### **Limitations:**

- Warranty does not apply to cosmetic damage, damage due to lightning, electrical surges, fire, flood, or other acts of God, accident, misuse, abuse, repair or alteration by other than factory service (unless service center was approved in writing by SASE), negligence, or improper or neglected maintenance as recommended by SASE.
- Common ware parts, such as belts, bearings, seals, filters, dust skirts, wheels, etc., are exempt from warranty.
- SASE is not responsible for loss of income or down time as a result faulty design, materials or workmanship.
- Warranty coverage is valid once a warranty registration card is filled out and returned to SASE.
- A \$100 labor charge may be assessed on the items returned for warranty repair in which no fault is found. Freight charges and associated fees will then become the responsibility of the customer in such an instance.
- Damages which are caused during transportation are not covered under warranty. Such damage claims should be filed with the freight carrier.

#### Claims:

In the unlikely event that you should experience a defect please contact your SASE representative or a SASE service technician by calling 1.800.522.2606. Please have all pertinent information readily available such as, invoice with date of purchase, model and serial number, and an explanation of the issue. SASE will respond immediately with a corrective action.

Freight responsibility for approved warranty claims:

If the piece of equipment was purchased within 90 days of warranty claim, SASE will arrange for ground freight and will assume all ground freight charges to send the customer the parts required or to send the equipment to an authorized SASE repair center. This includes inbound and outbound ground freight and all fees (duties, fuel surcharges) associated with the shipment.

If the piece of equipment was purchased beyond 90 days and prior to one (1) year of warranty claim, SASE will cover 50% of all ground freight charges, including inbound and outbound freight and all fees (duties, fuel surcharges) associated with the shipment.



### PRODUCT & WARRANTY REGISTRATION

### WARRANTY IS VOID IF NOT RETURNED AND REGISTERED WITH SASE WITHIN 30 DAYS OF PURCHASE

COMPANY	′					
NAME AND TITLE						
STREET A	DDRESS					
CITY		s <sup>-</sup>	TATE	ZIP	COUNTRY	
PHONE _			EMAIL			
DATE OF	PURCHASE		SE	RIAL NUMBER		
INVOICE NUMBER OF PURCHASE						
	PDG 8000 PDG 6000 PDG 5000 EDGE PRO 180 SC8E					
	SC10E	SC12E	BULL 1250	BULL 300	BULL 45	

PLEASE FILL OUT IN FULL AND SUBMIT TO: SASE COMPANY 2475 STOCK CREEK BLVD ROCKFORD TN, 37853 FAX: 865.745.4110 EMAIL: JohnA@SASECompany.com

QUESTIONS? CALL 800.522.2606



Corporate Office 26423 79th Ave South Kent, WA 98032-7321 1.800.522.2606 (P) 1.877.762.0748 (F) www.SASECompany.com sales@SASECompany.com

## **Certificate of Declaration and Conformity:**

(Applies to Europe only)

## **SASE Planetary Diamond Grinders**

PDG 4500 230 volt 50/60 HZ single phase 8464.20.0120 PDG 6000 460 volt 50/60 HZ three phase 8464.20.0120 PDG 6000 380 volt 50/60 HZ three phase 8464.20.0120 PDG 6000 230 volt 50/60 HZ three phase 8464.20.0120 PDG 8000 230 volt 50/60 HZ three phase 8464.20.0120 PDG 8000 380 volt 50/60 HZ three phase 8464.20.0120 PDG 8000 460 volt 50/60 HZ three phase 8464.20.0120 PDG 8000 460 volt 50/60 HZ three phase 8464.20.0120

SASE Company hereby certifies that the above listed Planetary Diamond Grinders are classified within the following EU directives of conformity for CE markings:

EU Machinery directive 2006/42/EC
EU Low voltage directive 2006/95/EC
EU Electromagnetic compatibility directive 2004/108/EC

and further conform with the following EU Harmonized Standards:

EN 60745-2-3:2007 EN 60204-1:2006 + A1:2009

EN 6100-6-3:2007 EN 61000-6-1:2007