

INSTALLATION, MAINTENANCE AND CALIBRATION MANUAL

0146-5007

Rev. 4



Powerbloc

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WARNING

must be modified or installed
by a qualified technician

You have purchased a quality product proudly made in Canada by CVTech IBC.

IMPORTANT NOTICE

Skilled staff should carry out Variable-Speed Drive maintenance and repair operations.

-  Identifies operations where a risk of serious injury exists when instructions are not properly followed.
-  Identifies a step where there is a risk of part deterioration or component malfunction.
-  Identifies that a liquid substance must be added.

The Tightening Torque Values shown must be precisely applied.

Pictures are used for representation purposes only. Items may differ from illustrations.

LIMIT OF LIABILITY

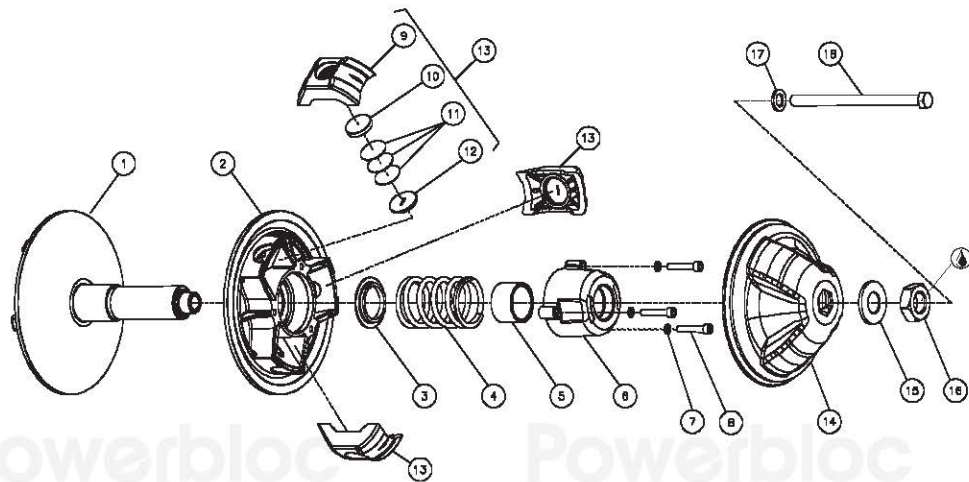
In no event shall CVTech be liable for damages or injuries due to poor text interpretation, improper Variable-Speed Drive handling or misuse of the recommended tools.

MAINTENANCE FREQUENCY

The CVTech Variable-Speed Drive requires no lubrication. It is designed to run dry. It is recommended to make a visual check of the CVT at 3000 miles (5000 km).

**For all questions, please contact our Technical Support Department :
info@cvtech-aab.com - Telephone : 1 800 518-7220**

Powerbloc



	Qty
1 Fixed Flange	1
2 Sliding Flange	1
3 Spring Seat	1
4 Spring	1
5 Stroke Limiter	1 or 0
6 Spring Cover	1
7 Lock Washer	3
8 Hexagon Socket Head Cap Screw	3
9 Block	3
10 Weight	According to calibration
11 Weight	According to calibration
12 Threaded Cap	According to calibration
13 Block Assembly	3
14 Cap	1
15 Flat Washer	1
16 Nut	1
17 Lock Washer	1
18 Fixing Bolt	1 or 0

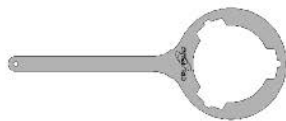
TOOL SELECTION



5055-0002*
Professional compression tool



5055-0004*
Economic compression tool



0155-1018*
Maintaining tool



Puller*
depends on application
(see catalog)





***(Not included with your driver pulley)**

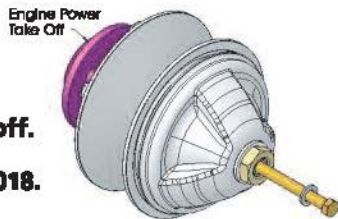
PULLEY REMOVAL FROM THE VEHICLE

1

Remove the Fixing Bolt (18) from the Engine Power Take-off.

Use maintaining tool #0155-1018.

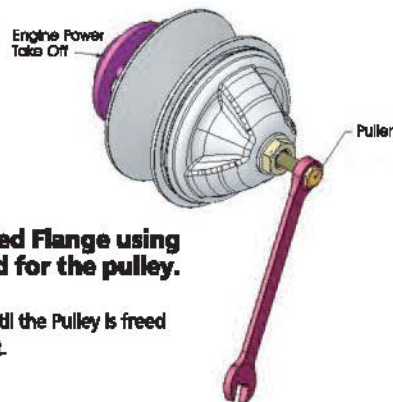
-  Remember that fixing bolts may be left hand threaded
-  Mark the direction of Belt Rotation thereby ensuring correct rotation after reassembling.
-  **DO NOT HIT THE DRIVE PULLEY IN ANY WAY.**
-  **TO KEEP THE PULLEY BALANCED, YOU MUST TAKE NOTE OF ORDER IN WHICH THE PARTS ARE ASSEMBLED.**



2

Remove the Fixed Flange using the Puller suited for the pulley.

Screw-in the Puller until the Pulley is freed from the Engine Shaft.





DRIVER PULLEY DISASSEMBLY

1

**Remove cap holding nut (16).
Use maintaining tool
#0155-1018.**



-  Assuming it is possible that the existing alignment marks on the sliding sheave, the fixed sheave and identification number of the cap (14) could be difficult to detect, it is advisable to mark with a line the orientation of the cap with the sliding and fixed sheaves so the parts will be reassembled in the same way.
-  Take note of the orientation of the washer (15) under the cap holding nut.

2

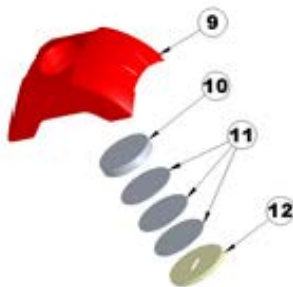
**Use compression tool # 5055-0002
(professional) or # 5055-0004 (economic).
Use a vise to maintain the compression tool
while working.**

**With the compression tool, exert a light
pressure on the spring cover. Then, remove
the 3 screws holding the spring cover. Slowly
release pressure on spring cover until the
cover and the spring are freed.**

-  Note the sequence and orientation of parts before you remove them.

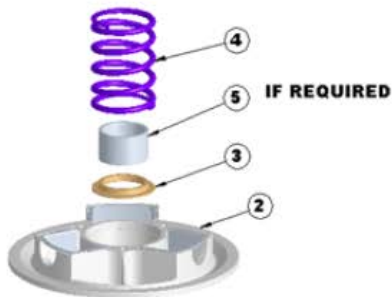


PARTS REMOVAL FROM BLOCKS

1


-  Unscrew the threaded cap (12) using a wide enough screwdriver blade to avoid damaging it. (Items may differ from illustration.)
-  Take note of sequence and orientation of parts.

ASSEMBLING THE SLIDING FLANGE

1


Assemble the components (3, 4 and 5) into the Sliding Flange (2).
(Item 5 is not present on all drive pulley.)

2

To assemble the Sliding Flange, use the Compression Tool.
Use a Vise to secure the Compression Tool # 5055-0002 (professional) or # 5055-0004 (economic).

Align the spring cover (6) in its pocket then insert the 3 screw.

 Apply specified Torque Value.

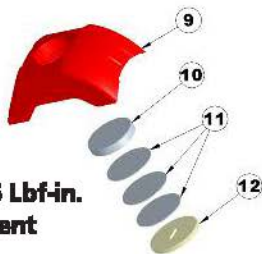
SCREW	Lbf-in	N-m
M6	68 to 105	8 to 12
M8	185 to 248	21 to 28



FINAL ASSEMBLY

1 Assemble blocks as illustrated.

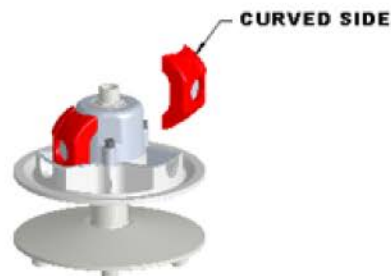
Using a Torque Screwdriver with a wide flat blade bit to avoid any damage to the threaded cap (12). Apply a tightening Torque of 13 to 35 Lbf-in. (1,5 to 4 N-m). (Items may look different than illustrated.)



 Take note of sequence and orientation of components. Make sure all components are well seated inside the block (9) threaded housing.

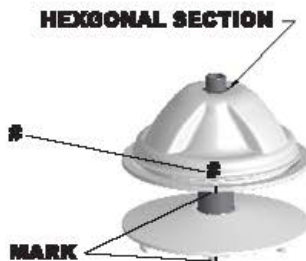
 Make sure all three blocks have the same number of weights.

2 Having mounted the sliding flange (2) on top of the fixed flange (1), insert all three blocks (13) with their curved side upward.



FINAL ASSEMBLY

- 3** Assemble cap (14) making sure the hex opening engage on hex section of the shaft.



- !** Remember to re-align with the markings made at factory or the one you have made at the beginning. There should be a mark on fixed sheave (1), sliding sheave (2) and cap (14). (Cap part number was used as mark at factory assembly time)

4

- !** On Powerbloc 80 fixed flange shaft threads, use Loctite #271 brand thread locker.
Place washer (15) and Nut (16).
- i** Make sure the hollowed part of the washer (15) is facing the cap (14).

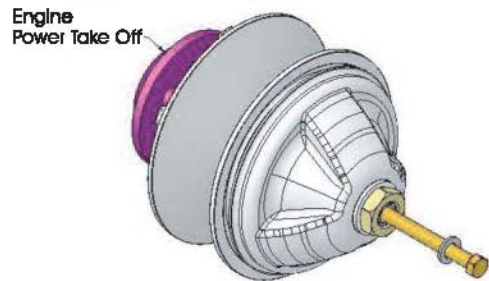
Tighten by hand until hex opening in the Cap is secured on hex section of the shaft.

Preventing rotation of the cap with Maintaining tool # 0155-1018, use a Torque Wrench to apply the following Torque to the nut.
Use maintaining tool #0155-1018.

PULLEY	Lb-ft	N-m
Powerbloc 50	88 to 100	120 to 135
Powerbloc 80	95 to 110	130 to 150

ASSEMBLY ON ENGINE

Clean engine and pulley taper surface from any contaminant. Using a torque wrench and the maintaining tool # 0155-1018, apply manufacturer specified torque to the fixing bolt. Run the engine for few minutes and torque again the mounting screw.



RING GEAR OR FLY WHEEL REMOVAL AND INSTALLATION

-  Certain models of vehicle are originally equipped with a flywheel.
It's important to reinstall that flywheel on Powerbloc.

1 REMOVAL

Heat holding Screws to facilitate the Ring Gear Removal.

-  Do not heat above 150°C (300°F)

2 INSTALLATION

-  Use Loctite #271 Brand Threadlocker.
-  Using a Torque Screwdriver apply the following Torque value to the 6 holding screws :

SCREW	Lbf-ft	N-m
M6	9	12
M8	20	27


FINE TUNE RPM ADJUSTMENT ON A POWERBLOC 80

All our Powerbloc clutches have been calibrated for your specific model. Depending of your location, elevation, vehicle condition and configuration (long or short track), your cvt clutch may need to be fine tuned. There are some simple principles to understand and follow to properly calibrate a CVT clutch.

- 1 Clean and inspect for any wear or damage to your secondary clutch. (To work properly cvt needs to be clean.)
- 2 Make sure that you have the proper belt and that it is in good condition.

BELT ADJUSTMENT

Refer to your OEM operator manual.

-  To be able to give its maximum performance at full throttle, the RPM of the engine should be set as specified by the manufacturer. You can rise or lower the RPM in the following way.

PRINCIPLES OF CALIBRATION

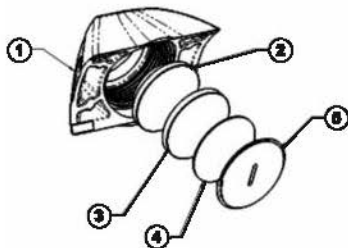
Calibration weight in the blocks determines RPM.

Need more RPM = reduce block weight mass.

Need less RPM = add bloc weight mass.

-  Add or remove equal number of weight to each block.

FINE TUNE RPM ADJUSTMENT ON A POWERBLOC 80



Powerbloc 50 Calibration part

#	PART NUMBER	DESCRIPTION	WEIGHT
1	0130-3007	Red block	
1	0130-3006	Black block	
2	0135-3001	Calibration weight	21 gr
3	0135-2049	Calibration weight	43 gr
4	X-81-3	Calibration weight	3.4 gr
5	X-7	Threaded cap	1.5 gr

Powerbloc 80 Calibration part

#	PART NUMBER	DESCRIPTION	WEIGHT
1	1130-3001	Block	44 gr
2	1135-3001	Calibration weight	5.7 gr
3	1135-3002	Calibration weight	29.0 gr
4	1135-3003	Calibration weight	54.5 gr
5	1150-3001	Threaded cap	3.33 gr

 Follow installation, maintenance and calibration manual to assemble or disassemble driver pulley.

FINE TUNE THE ENGAGEMENT

SPEED UPON ENGAGEMENT :

Though Block weight has a direct effect upon the engine RPM at which the vehicle starts moving, it is mainly the choice of the spring that determines Pulley speed engagement. There is a wide selection of Springs for the CVTech Pulley range.

CVTech Pulleys are factory pre-calibrated, thereby offering an engagement speed that satisfies most users. However, engagement speed may be modified by changing the spring. A lighter spring will reduce the engagement speed, thereby allowing for smoother starts and improved vehicle control at very low speeds. Inversely, a heavier spring will produce engagement speed, which is more aggressive and competitive.

POWERBLOC 50/80

NUMBER	COLOR CODE (REFERENCE)	LOAD UPON ENGAGEMENT (Newtons)	LOAD AT MAXIMUM SPEED (Newtons)
		(to 72mm)	(to 45mm)
0151-1002	purple/blue/green	618	1050
0151-1003	purple/purple/yellow	730	987
0151-1004	purple/purple/ green	728	1110
0151-1006	purple/yellow/ green	489	1070
0451-1100	purple/white/white	200	500
0451-1101	purple/white/yellow	200	700
0451-1102	purple/white/orange	200	900
0451-1104	purple/white/red	200	1300
0451-1105	purple/white/purple	200	1600
0451-1107	purple/yellow/yellow	300	700
0451-1108	purple/yellow/orange	300	900
0451-1109	purple/yellow/pink	300	1100
0451-1110	purple/yellow/red	300	1300



FINE TUNE THE ENGAGEMENT

POWERBLOC 50/80

NUMBER	COLOR CODE (REFERENCE)	LOAD UPON ENGAGEMENT (Newtons)	LOAD AT MAXIMUM SPEED (Newtons)
		(à 72mm)	(à 45mm)
0451-1113	purple/orange/yellow	400	700
0451-1114	purple/orange/orange	400	900
0451-1115	purple/orange/pink	400	1100
0451-1116	purple/orange/red	400	1300
0451-1118	purple/pink/white	500	700
0451-1119	purple/pink/yellow	500	900
0451-1120	purple/pink/orange	500	1100
0451-1121	purple/pink/pink	500	1300
0451-1124	purple/red/yellow	600	900
0451-1128	purple/purple/white/red	700	900
0451-1129	purple/purple/yellow/red	700	1100
0451-1130	purple/purple/orange/yellow	700	1300
0451-1131	purple/purple/pink/yellow	700	1600

POWERBLOC 50/80

NUMBER	COLOR CODE (REFERENCE)	LOAD UPON ENGAGEMENT (Newtons)	LOAD AT MAXIMUM SPEED (Newtons)
		(à 72mm)	(à 45mm)
0451-1132	purple/green/white/red	800	1100
0451-1133	purple/green/yellow/red	800	1300
0451-1134	purple/green/orange/yellow	800	1600
0451-1135	purple/blue/white/red	900	1300
0451-1137	purple/blue/orange	600	850
0451-1138	purple/blue/pink	640	1440

i Follow installation, maintenance and calibration manual to disassemble driver pulley. At final assembly, change spring until desired behaviour is reached.