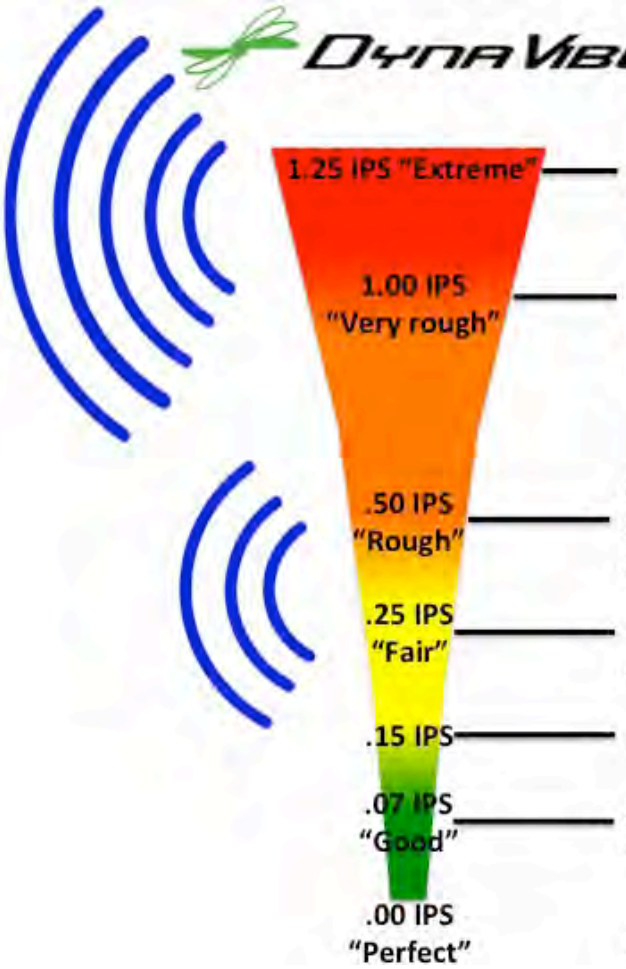
Dynamic balancing chart

This checklist must be performed prior to performing dynamic balancing

- Blade reflex edge must be the same throughout both blades. Use Rotorway tool for this application.
- Static balance must be performed. Rotormast must be 100% level. Perform in no wind indoor condition in both directions. Spend time on this – it makes the rest a heck of a lot easier to perform.
- Lead/lag must be performed. Tap the rotorblade with mallet to loosen the elastomerics. Use bubble level on both blades. Bearings might bind – loosen them with small metal pieces to make sure the blade tieters freely. When perfectly balanced, the blade will allways go back to level – and when tietering one blade by hand, the other will follow perfectly.
- This will most properly go out of balance again and requires some spins ups to be in perfect balance – and will fall out of balance as you fly.
- *IMPORTANT – when you do balancing, make sure you battery is in good condition. You WILL break off teeth on the ring gear, if you try to start your helicopter with a low battery level, and it is expensive as well as annoying to change this ring gear!*
- Hover tracking must be performed – do ONLY tracking via pitch links at this time, and allways track the high blade low (to not take away to autorotation capabilities from the helicopter)
- Now it is time for dynamic balancing. The dynamic balancing is more or less to check if everything above was done correctly – if the above is done correctly, your dynamic balance should be spot on.
- Mount accelerometer in the same pane as the main rotor disc and the tail rotor disc. Secure wires with wirestraps to the cockpit. Be sure to avoid all moving parts!
- Mount the optic sensor to be able to sense the reflective tape on the master blade on main and tail rotor
- Mount reflective tape on the master blade on the main and tail rotor
- Use the remote switch to measure the vibration
- Take the helicopter to hover and make a reading.
- Use this scheme to determine if additional balancing is required.
- If yes, plot it into the polar diagram.
- Put an AN bolt on the master blade, and do another reading in hover. Plot it in the diagram. You now have the first line in the polar diagram, and can determine in what direction you move your vibration with adding to either the master or the slave blade.
- Put a shim on the master pitch link. Plot it in the diagram. Now you can determine putting shims on the pitch links to move the vibrations.
- When in perfect balance, it is time to measure tracking in forward flight. To adjust this, you adjust the reflex edge of the panels from station 3-4 and inwards to the blade root as these will have the largest effect in forward flight.

DynaVibe Prop Vibration Guide



Must remove prop! Static balancing required, then remount prop and dynamically balance.

Static balancing recommended, followed by dynamic balancing. (significant amount of weight may be needed)

Dynamic balancing recommended. Over time, this level of vibration can damage airframe, engine & instruments.

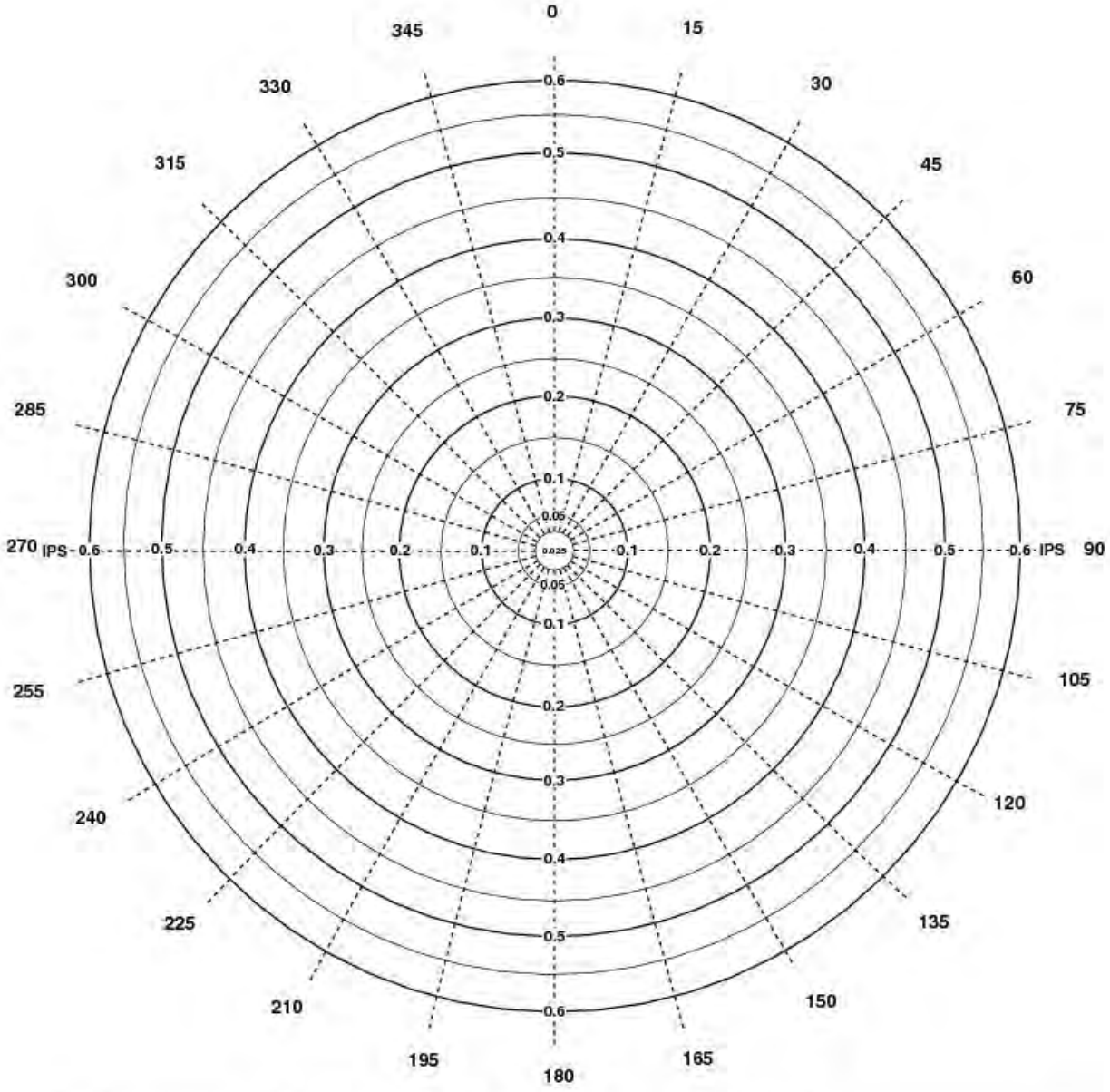
Dynamic balancing recommended to improve performance & passenger comfort.

Maximum acceptable vibration level.

Dynamic balancing not required. Slight vibrations not detectable by pilot or passengers.

For more information visit: www.rpxtech.com

Smart Avionics Polar Chart



Start _____ IPS _____ Deg

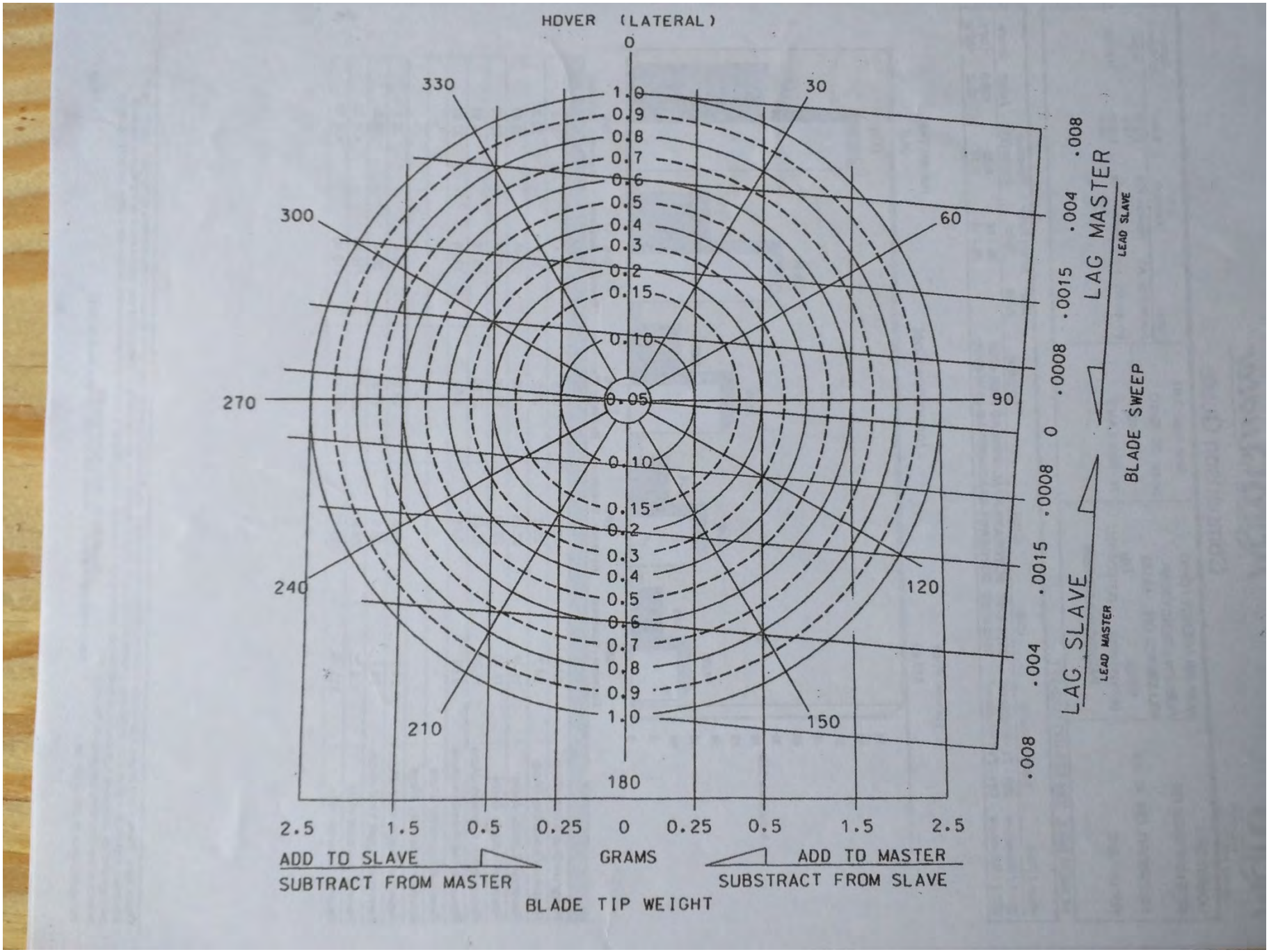
Finish _____ IPS _____ Deg

RPM _____

Aircraft _____

Engineer _____

Date _____


HOVER (LATERAL)
0
30
60
90
120
150
180
210
240
270
300
330
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.15
0.10
0.05
0.10
0.15
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
.008
.004
.0015
.0008
0
.0008
.0015
.004
.008
LAG MASTER
LEAD SLAVE
BLADE SWEEP
LAG SLAVE
LEAD MASTER
2.5
1.5
0.5
0.25
0
0.25
0.5
1.5
2.5
ADD TO SLAVE
SUBTRACT FROM MASTER
GRAMS
ADD TO MASTER
SUBSTRACT FROM SLAVE
BLADE TIP WEIGHT