Flight computer IWA

Important: **TASout = TAS on outer**, **CASin = CAS on inner**, **MACin = MAC on inner**; **Index is head with TAS in hole**

TIPS: Use of wind rules: points to 170° (= wind from 350° - red scale)

WARNING: Do not confuse drift angle and Wind Correction Angle (WCA). WCA heading in to the wind.
Exemple: In order to correct 6° of left drift, you should turn heading 6° right (WCA)
If WCA is - left then angle drift is + right; if WCA is + right then angle drift is - left
TH = 180° TT - 6° drift right = 174° => - for right, + for left drift as is heading
TH = 260° TT + 2° drift left = 262° => - for right, + for left drift as is heading
TT= 305° TH + 17° drift right = 322° => + for right, - for left drift as is track

Mach to TAS	Mach 0.96, OAT -33°C = TAS 576 kt
1. Airspeed window: align OAT with M 2. Inner scale: align cursor with Mach Number without 0 3. Read on outer scale: TAS	1. Airspeed window: -33 on M flag 2. Inner: 96 (M 0.96) 3. Read outer: 576 => TAS 576 kt

TAS to Mach	OAT -33°C, TAS 510 kt = Mach 0.85
1. Airspeed window: align OAT with M 2. Outer scale: align cursor with TAS 3. Read on inner scale: Mach Number without 0	1. Airspeed window: -33 on M flag 2. Outer: 51 (510 kts) 3. Read inner: 85 => M 0.85

CAS to TAS (bellow 300 kts)	FL180, SAT -30°C, CAS 170 kts = TAS 220 kts
1. Airspeed window: align OAT with Pressure Altitude 2. Inner scale: align cursor with CAS 3. Read on outer scale: TAS	1. Airspeed window: -30 on 18 (18 000 ft / FL180) 2. Inner: 17 (170 kts) 3. Read outer: 22 => TAS 220 kts

CAS to TAS (above 300 kts require compressibility correction)	Pressure altitude 20 000 ft, COAT -40°C, CAS 350 kts
1. Airspeed window: align OAT with Pressure Altitude 2. Inner scale: align cursor with CAS 3. Read on outer scale: TAS 4. Read Compressibility Factor ring red line 5. TAS uncorrected x Compressibility Factor = TAS corrected	1. Airspeed window: -40 on 20 (20 000 ft) 2. Inner: 35 (350 kts) 3. Read outer: 46.4 => TAS uncorrected 464 kts 4. Read Compressibility Factor ring red line then PA 20.000: .97 5. 464 x 0.97 = 450 kt => TAS corrected 450 kts

True Altitude [Altitude window]	Indicated altitude 9300 ft, FL100, OAT -20° = true altitude 8730 ft
1. Altitude window: align Pressure Altitude with OAT 2. Inner scale: align Cursor with Indicated Altitude 3. Read on outer scale: True Altitude	1. Altitude window: 10 on -20 (10 000 ft / FL100) 2. Inner: 93 (9300 ft) 3. Read outer: 87 => True Altitude 8700 ft

Density Altitude [Airspeed window]	Pressure altitude 3500 ft, OAT +35° = density altitude 6900 ft
1. Airspeed window: align OAT with Pressure Altitude 2. Read in Density Altitude window: Density Altitude	1. Airspeed window: 35 on 3.5 (3500 ft) 2. Read density window: 7 => True Altitude 7000 ft

TAS & Heading => GS & Track & drift angle	TAS: 375 kts, True HDG: 124°(T), W/V: 130°(T) / 55 kts; Calculate True track, GS, drift angle: 123° (T), 320 kts, 1° left
1. Index: True Heading (TH) using black ring 2. Hole: TAS 3. Wind rule: move rule to wind direction using red ring 4. Read intersection of WV kt on wind rule and horizontal line: GS 5. Read intersection of WV kt on wind rule and vertical line: drift Calculate True Heading (TH) + for right drift track | - for left drift track = True Track (TT)	1. Index: 124 (TH) 2. Hole: 375 (TAS) 3. Wind rule to 130° (red) 4. Read intersection of 55 kt on wind rule and horizontal line: 320 kts 5. Read intersection of 55 kt on wind rule and vertical line: 1° 124° TH -1° drift left = 123° TT

GS => TAS and drift angle	True HDG: 215°(T), GS: 375 kts, W/V: 235°(T) / 120 kts; Calculate TAS and drift angle
1. Index: True Track (TT) using black ring 2. Wind rule: move rule to wind direction using red ring 3. Move plate to align GS kts horizontal line at intersection of WV	1. Index: 215 (TT) 2. Wind rule to 235° (red) 3. Move plate to align 375 kts (GS) horizontal line at intersection

kt on wind rule 4. Read hole: TAS 5. Read intersection of WV kt on wind rule and vertical line: drift	of 120 kt on wind rule 4. Read hole: 488 kts TAS 5. Read intersection of 120 kt on wind rule and vertical line: 6°

Calculate W/V Calculate drift: True Track (TT) - True Heading (TH) = drift <u>If true track is lower than heading = drift left</u> <u>If true track is higher than heading = drift right</u> 1. Index: True Heading (TH) using black ring 2. Hole: TAS 3. Wind rule: move wind rule to set it to intersect GS kt horizontal line at right and drift vertical line at right 4. Read value on wind rule: WV kt, wind direction using red ring	TAS: 240 kts, GS: 210 kts, True HDG: 145° (T), True Track: 150° (°T); Calculate the W/V: 115/35 kts Calculate drift: 150° - 145° = 5° 1. Index: 145 (TH) 2. Hole: 240 (TAS) 3. Use wind rule to set it to intersect 210 kt horizontal line at right and 5° vertical line at right 4. Read value on wind rule: 35 kt, 115° (red)

Mach number & TAS => GS and drift a) Find TAS 1. Airspeed window: align OAT with M 2. Inner scale: align cursor with Mach Number without 0 3. Read on outer scale: TAS b) Find drift & ground speed Use flight computer 1/2: 1. Index: True Track (TT) using black ring 2. Hole: TAS 3. Wind rule: move rule to wind direction using red ring 4. Read intersection of WV kt on wind rule and vertical line: drift Calculate True Track (TT) <u>- for right drift heading | + for left drift heading</u> = True Heading (TH) Use flight computer 2/2: 1. Index: True Heading (TH) using black ring 2. Hole: TAS 3. Wind rule: move rule to wind direction using red ring 4. Read intersection of WV kt on wind rule and horizontal line: GS kts	Pressure Altitude: 27000 ft, OAT: -35°C, Mach number: 0.45, W/V: 270°/85, Track: 200°(T); Calculate drift and ground speed ? 17L / 228 knots a) Find TAS 1. Airspeed window: -35 on M flag 2. Inner: 45 (M.045) 3. Read outer: 27 => TAS 270 kts b) Find drift & ground speed Use flight computer 1/2: 1. Index: 200 (TT) 2. Hole: 270 (TAS) 3. Wind rule to 270° (red) 4. Read intersection of 85 kt on wind rule and vertical line: 18° left 200° TT + 18° drift left = 218° TH Use flight computer 2/2: 1. Index: 218 (TH) 2. Hole: 270 (TAS) 3. Wind rule to 270° (red) 4. Read intersection of 85 kt on wind rule and horizontal line: 228 kts

Track, W/V, TAS => Heading 1. Index: wind direction using red ring 2. Hole: TAS 3. Wind rule: move rule to track using black ring 4. Read intersection of WV kt on wind rule and vertical line: drift Calculate True Track (TT) <u>+ for right drift track | - for left drift track</u> = True Heading (TH)	Runway 32R (322°), wind 350°(M)/20 kts, TAS 95 kts; Calculate heading 1. Index: 350 on red (Wind) 2. Hole: 95 (TAS) 3. Wind rule to 322° (black) (track - runway heading) 4. Read intersection of 20 kt on wind rule and vertical line: 6° right 322° + 6° drift right = 328°

TAS, Track => W/V Calculate True Heading (TH) <u>+ for right drift track | - for left drift track</u> = True Track (TT) 1. Index: True Heading (TH) using black ring 2. Hole: TAS 3. Wind rule: move rule to intersect GS kt horizontal line at right and drift vertical line at left 4. Read value on wind rule: WV kt, wind direction using red ring	GS: 135 kt, TAS: 125 kt, Track: 342°(T), Heading: 348°(T), Variation: 7° west; Calculate the W/V: 111° / 17 kt 348° - 342° = 6° drift left 1. Index: 348 (TH) 2. Hole: 125 (TAS) 3. Use wind rule to set it to intersect 135 kt horizontal line at right and 6° vertical line at left 4. Read value on wind rule: 17 kt, 111° (red)