



Canada Revenue
Agency

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du Canada

Payroll Deductions Formulas for Computer Programs

105th Edition
Effective January 1, 2017



Is this guide for you?

Use this guide if you are a payroll software provider or a company which develops its own in-house payroll solution.

This guide has the formulas you need to determine federal, provincial (except Quebec), and territorial income taxes, Canada Pension Plan (CPP) contributions, and employment insurance (EI) premium deductions. The formulas also let you calculate payroll deductions for special cases such as commission, pension income, bonuses, and retroactive pay increases.

The formulas used in this guide to calculate statutory deductions have been approved for purposes of the *Income Tax Act*, the *Canada Pension Plan*, and the *Employment Insurance Act*, as well as their related regulations and any amendments proposed to these acts.

For more information on income amounts that are subject to payroll deductions, see Publication T4001, *Employers' Guide – Payroll Deductions and Remittances*.

If you have questions about the formulas in this guide, contact your tax services office or tax centre. For the address and telephone numbers of your tax services office or tax centre, see the listings in the government section of your telephone book or visit cra.gc.ca.

Distribution of this guide

This guide is available in electronic format only.

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We provide an electronic service that can notify you immediately, free of charge, of any changes for payroll deductions.

To subscribe, go to cra.gc.ca/lists and enter your business's email address for each mailing list that you want to join.

Payroll Deductions Online Calculator

For your payroll deductions, you can use our Payroll Deductions Online Calculator (PDOC). The calculator includes an option to help you make sure that enough Canada Pension Plan contributions and employment insurance premiums have been withheld for full-year employees.

It calculates payroll deductions for the most common pay periods, as well as the applicable province (except Quebec) or territory. The calculation is based on exact salary figures.

PDOC is available at cra.gc.ca/pdoc.

Payroll Deductions Tables

You can download Publication T4032, *Payroll Deductions Tables* and Publication T4008, *Payroll Deductions Supplementary Tables*, from our webpage at cra.gc.ca/payroll. You can also choose to print only the pages or information that you need.

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La version française de cette publication est intitulée *Formules pour le calcul informatisé des retenues sur la paie* – 105^e édition.

What's new for January 1, 2017?

This guide reflects some income tax changes recently announced which, if enacted as proposed, would be effective January 1, 2017. At the time of publishing, these proposed changes were not law. We recommend that you use the Payroll Deductions Online Calculator (PDOC), Publication T4032, *Payroll Deductions Tables*, or Publication T4008, *Payroll Deductions Supplementary Tables*, and the formulas in this guide for withholding, starting with your first payroll in 2017.

Federal changes

Indexing

The income tax thresholds and many of the personal amounts on the federal Form TD1, *Personal Tax Credits Return*, are indexed for 2017. Indexing means that the values are adjusted based on changes to the consumer price index. The federal indexing factor for 2017 is 1.4%.

Federal income thresholds

The income thresholds and personal amounts are indexed. The current and previous figures can be found in chapter 9 – “Summary sheets” at the end of the publication.

The claim code amounts are also indexed. The revised figures can be found in chapter 3 – “Claim codes”.

Federal personal amounts

Some federal personal amounts were increased as a result of federal indexing.

| | |
|--|----------|
| Basic personal amount..... | \$11,635 |
| Family caregiver amount for infirm children under age 18 | 2,150 |
| Age amount..... | 7,225 |
| Pension income amount | 2,000 |
| Disability amount | 8,113 |
| Spouse or common-law partner amount..... | 11,635 |
| Amount for an eligible dependant..... | 11,635 |
| Caregiver amount..... | 4,732 |
| Amount for infirm dependants age 18 or older | 6,883 |

For complete information on all personal amounts for 2017, see the 2017 federal Form TD1, *Personal Tax Credits Return*.

Canada employment credit

The Canada employment credit (factor K4) is the lesser of:

- (i) $0.15 \times A$; and
- (ii) $0.15 \times \$1,178$.

Note

For the Canada employment credit, A is the annual gross income from office or employment before deductions. This is the same amount you usually report in box 14 of a T4 slip. As administrative relief, you can use the regular factor A (annual taxable income) for this calculation, except when the total income is superannuation or pension benefits.

Federal labour-sponsored funds tax credit

The federal tax credit for **federally** registered Labour-Sponsored Venture Capital Corporations (LSVCCs) is now eliminated. The federal tax credit for **provincially** registered LSVCCs will be the lesser of: (i) \$750 and (ii) 15% of the amount deducted or withheld during the year for the acquisition, by the employee, of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

Canada Pension Plan (CPP)

For 2017, the maximum pensionable earnings are **\$55,300**, and the basic exemption for the year is **\$3,500**. The contribution rate for employees is **4.95%**.

The maximum an employee can contribute for the year is **\$2,564.10**. The employer's contribution is an amount equal to the total of the employee's contributions.

For insurance companies that need the year's maximum pensionable earnings before rounding, the amount for this year is **\$55,384.31**.

Quebec Pension Plan (QPP)

For 2017, the QPP contribution rate for employees is **5.4%**. The maximum an employee can contribute for the year is **\$2,797.20**. The employer's contribution is an amount equal to the total of the employee's contributions.

Employment insurance (EI)

For 2017 in Canada (except Quebec), the maximum annual insurable earnings are **\$51,300** and the EI premium rate is **1.63%**, for a maximum annual premium of **\$836.19**. In Quebec, the premium rate is **1.27%**, for a maximum annual premium of **\$651.51**.

At the time of publication, the Quebec Parental Insurance Plan (QPIP) maximum earnings amount is not known. In order to publish in a timely manner, we have placed a "N/A" to designate "Not available" in the spots where the QPIP maximum amount is reported or the calculated result is impacted. Consult the Revenu Québec website for the QPIP maximum earnings amount.

When an employee changes province or territory of employment during the year but stays with the same employer, the maximum premium for the year will vary based on the province or territory where the first \$51,300 of insurable earnings are paid.

Example:

An employee makes \$30,000 of insurable earnings in Ontario, changes their province of employment to Quebec, and makes an extra \$40,000 with the same employer. The employee's maximum premium is calculated as follows:

| | | | | | |
|-------------|-----------------|---|-------|---|-----------------|
| In Ontario: | \$30,000 | × | 1.63% | = | \$489.00 |
| In Quebec: | <u>\$21,300</u> | × | 1.27% | = | <u>\$270.51</u> |
| Totals: | \$51,300 | | | = | \$759.51 |

Provincial and territorial tax changes

You will find below the provincial and territorial tax changes effective January 1, 2017. The current and previous figures can be found in chapter 9 – "Summary sheets" at the end of the publication.

Some of the provincial and territorial claim codes amounts are also indexed. The revised figures can be found in chapter 3 – "Claim codes".

Please note that there is no change for Nova Scotia, Prince Edward Island, Quebec, or Outside Canada.

Alberta

The income thresholds are indexed. Personal amounts have been indexed. The provincial indexing factor for 2017 is 1.3%.

For complete information on personal amounts, see Form TD1AB.

British Columbia

The income thresholds and tax reduction values are indexed. The provincial indexing factor for 2017 is 1.8%.

For complete information on personal amounts, see Form TD1BC.

Provincial tax reduction

The provincial tax reduction for British Columbia is indexed and is calculated as follows:

- If net income is less than or equal to \$19,749, the reduction is equal to the lesser of (i) basic provincial tax and (ii) \$444.
- If net income is more than \$19,749 and less than or equal to \$32,220.91, the reduction is equal to the lesser of (i) basic provincial tax and (ii) $\$444 - [(\text{Annual net income} - \$19,749) \times 3.56\%]$.
- If net income is more than \$32,220.91, there is no reduction.

Manitoba

The income thresholds and basic personal amount are indexed. The indexing factor for 2017 is 1.5%.

For complete information on personal amounts, see Form TD1MB.

New Brunswick

The income thresholds and personal amounts are indexed. The indexing factor for 2017 is 1.4%.

For complete information on personal amounts, see Form TD1NB.

Newfoundland and Labrador

The income thresholds and personal amounts are indexed. The provincial indexing factor for 2017 is 2.0%.

For complete information on personal amounts, see Form TD1NL.

Northwest Territories

The income thresholds and personal amounts are indexed. The indexing factor for 2017 is 1.4%.

For complete information on personal amounts, see Form TD1NT.

Nunavut

The income thresholds and personal amounts are indexed. The indexing factor for 2017 is 1.4%.

For complete information on personal amounts, see Form TD1NU.

Ontario

The income thresholds and personal amounts have been indexed. The provincial indexing factor for 2017 is 1.6%.

For complete information on personal amounts, see Form TD1ON.

Ontario provincial surtax

The Ontario provincial surtax thresholds for 2017 are as follows:

- If the basic provincial tax payable (T4) is less than or equal to \$4,556, the surtax payable (V1) is \$0.
- If the basic provincial tax payable (T4) is more than \$4,556 and less than or equal to \$5,831, the surtax payable (V1) is 20% of the basic provincial tax payable that is over \$4,556.
- If the basic provincial tax payable (T4) is more than \$5,831, the surtax payable (V1) is the total of 20% of the basic provincial tax payable that is over \$4,556 and 36% of the basic provincial tax payable that is over \$5,831.

Provincial tax reduction

The provincial tax reduction for Ontario has changed as a result of provincial indexing. When possible, you should implement the Y factor based on the total of the applicable amounts shown on the employee's or pensioner's Form TD1ON. If you do not use the Y factor, any over deduction of tax will be adjusted when the individual files an income tax and benefit return.

The provincial tax reduction amounts for 2017 are as follows:

- \$235 for the basic personal amount;
- \$434 for each dependant under age 19*; and
- \$434 for each dependant with a disability that the employee or pensioner has claimed on Form TD1ON.

- * Since the tax reduction for dependants under age 19 is not shown on Form TD1ON, the employee or pensioner will have to provide the employer or payer with a written or electronic request to include such amounts.

The reduction is equal to twice the individual's personal amounts minus the Ontario income tax. The reduction cannot be more than the Ontario income tax otherwise payable. There is no reduction when that tax is more than twice the personal amounts.

Saskatchewan

The income thresholds and personal amounts for Saskatchewan are indexed. The indexing factor for 2017 is 1.4%.

For complete information on personal amounts, see Form TD1SK.

Yukon

The income thresholds and personal amounts are indexed. The indexing factor for 2017 is 1.4%.

For complete information on personal amounts, see Form TD1YT.

Territorial Canada employment credit

Yukon's territorial Canada employment credit, designated as factor K4P, has been increased to \$1,178.

Chapter 1 – General information

Rounding procedures

For all mathematical calculations in this guide, use the following rounding rules except when we specify otherwise.

For income tax deductions

If the figure calculated for an employee's income tax deduction for a certain pay period has three or more digits after the decimal point, increase the second digit after the decimal point by one if the third digit is five or more, and drop the third digit. If the third digit after the decimal point is less than five, drop the third digit.

For Canada Pension Plan (CPP) basic exemption and contributions

Determine an employee's basic exemption for a pay period by dividing the annual basic exemption by the number of pay periods in the calendar year. If the figure has three or more digits after the decimal point, drop the third digit after the decimal point.

When the employee's contribution to CPP for the pay period has three or more digits after the decimal point, increase the second digit after the decimal point by one if the third digit is five or more, and drop the third digit. If the third digit after the decimal point is less than five, drop the third digit.

For employment insurance (EI) premiums

When the employee's or employer's EI premium for the pay period has three or more digits after the decimal point, increase the second digit by one if the third digit is five or more, and drop the third digit. If the third digit after the decimal point is less than five, drop the third digit.

Tax deductions comparison

When the tax deductions amount using Option 1 in this guide is compared to the tax deductions amount in Publication T4032, *Payroll Deductions Tables*, the amounts will not necessarily be the same. Any difference results from the fact that the amounts in Publication T4032 are based on:

- (i) the mid-point of the range of remuneration under the "Pay" column;
- (ii) the federal tax credit for Canada Pension Plan or Quebec Pension Plan contributions and employment insurance premium deductions is based on the amount determined in item (i); and
- (iii) the midpoint of the "Claim code" amounts on federal, provincial, and territorial TD1 forms is used, except for code 1 where the actual basic personal non-refundable tax credit amount is used. For claim code 0, no personal tax credits amounts are used when calculating the tax deduction amounts.

Chapter 2 – Personal tax credits returns (TD1 forms)

Federal Form TD1, 2017 Personal Tax Credits Return

Form TD1 was revised for 2017.

A separate worksheet, TD1-WS, is available for employees or pensioners who want to calculate partial claims for some of the federal personal tax credits amounts.

Indexing of personal amounts

Each year, certain personal tax credit amounts are indexed based on changes to the consumer price index. Since only some of the amounts are indexed, we recommend that you record separately in your payroll records each item shown on the employee's or pensioner's TD1 form. This will allow you to automatically increase the applicable indexed claim amounts when necessary. This also means you will not have to ask your employees or pensioners to file a new TD1 form when indexing applies.

You can use the following method to calculate the value of TC or TCP (personal tax credits amount) when indexing applies:

| | Description | Amount |
|----|---|----------|
| 1. | Enter the total claim amount reported on Form TD1..... | \$ _____ |
| 2. | Minus: any pension income amount, tuition fees, and full- or part-time education amounts claimed on Form TD1* | \$ _____ |
| 3. | Amount subject to annual indexing (line 1 minus line 2)..... | \$ _____ |
| 4. | Enter the indexing factor that applies for the year × <u>see **</u> | |
| 5. | Multiply line 3 by line 4 (rounded to the nearest dollar)..... | \$ _____ |
| 6. | Enter the amount from line 2 (non-indexed amounts) | \$ _____ |
| 7. | Revised factor TC or TCP (total of personal tax credits amounts) (line 5 plus line 6)..... | \$ _____ |

* For Alberta and Ontario only, do not include any amounts on line 2, since all Alberta and Ontario credits are indexed.

** Some changes to Yukon personal amounts are not directly attributable to indexing, because they have harmonized amounts with the federal values.

No indexing applies to Nova Scotia or Prince Edward Island.

Chapter 3 – Claim codes

You have to deduct tax according to the claim code. The claim code depends on the total personal amount an employee claims on Form TD1.

Claim code 0

This code represents **no claim** amount allowed. If the federal claim code is 0 because the employee is a non-resident, the provincial claim code must also be 0.

Federal, provincial, and territorial claim codes

The claim amounts that correspond to the federal claim codes are different than the claim amounts that correspond to the provincial or territorial claim codes. Below is a listing of claim codes and amount ranges.

2017 Federal claim codes

| Claim code | Total claim amount (\$) | Option 1, TC = (\$) | Option 1, K1 = (\$) |
|------------|-------------------------|---------------------|---------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 11,635.00 | 11,635.00 | 1,745.25 |
| 2 | 11,635.01 – 13,858.00 | 12,746.50 | 1,911.98 |
| 3 | 13,858.01 – 16,081.00 | 14,969.50 | 2,245.43 |
| 4 | 16,081.01 – 18,304.00 | 17,192.50 | 2,578.88 |
| 5 | 18,304.01 – 20,527.00 | 19,415.50 | 2,912.33 |
| 6 | 20,527.01 – 22,750.00 | 21,638.50 | 3,245.78 |
| 7 | 22,750.01 – 24,973.00 | 23,861.50 | 3,579.23 |
| 8 | 24,973.01 – 27,196.00 | 26,084.50 | 3,912.68 |
| 9 | 27,196.01 – 29,419.00 | 28,307.50 | 4,246.13 |
| 10 | 29,419.01 – 31,642.00 | 30,530.50 | 4,579.58 |

2017 Alberta claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 18,690.00 | 18,690.00 | 1,869.00 |
| 2 | 18,690.01 – 21,424.00 | 20,057.00 | 2,005.70 |
| 3 | 21,424.01 – 24,158.00 | 22,791.00 | 2,279.10 |
| 4 | 24,158.01 – 26,892.00 | 25,525.00 | 2,552.50 |
| 5 | 26,892.01 – 29,626.00 | 28,259.00 | 2,825.90 |
| 6 | 29,626.01 – 32,360.00 | 30,993.00 | 3,099.30 |
| 7 | 32,360.01 – 35,094.00 | 33,727.00 | 3,372.70 |
| 8 | 35,094.01 – 37,828.00 | 36,461.00 | 3,646.10 |
| 9 | 37,828.01 – 40,562.00 | 39,195.00 | 3,919.50 |
| 10 | 40,562.01 – 43,296.00 | 41,929.00 | 4,192.90 |

2017 British Columbia claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 10,208.00 | 10,208.00 | 516.52 |
| 2 | 10,208.01 – 12,505.00 | 11,356.50 | 574.64 |
| 3 | 12,505.01 – 14,802.00 | 13,653.50 | 690.87 |
| 4 | 14,802.01 – 17,099.00 | 15,950.50 | 807.10 |
| 5 | 17,099.01 – 19,396.00 | 18,247.50 | 923.32 |
| 6 | 19,396.01 – 21,693.00 | 20,544.50 | 1,039.55 |
| 7 | 21,693.01 – 23,990.00 | 22,841.50 | 1,155.78 |
| 8 | 23,990.01 – 26,287.00 | 25,138.50 | 1,272.01 |
| 9 | 26,287.01 – 28,584.00 | 27,435.50 | 1,388.24 |
| 10 | 28,584.01 – 30,881.00 | 29,732.50 | 1,504.46 |

2017 Manitoba claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 9,271.00 | 9,271.00 | 1,001.27 |
| 2 | 9,271.01 – 10,964.00 | 10,117.50 | 1,092.69 |
| 3 | 10,964.01 – 12,657.00 | 11,810.50 | 1,275.53 |
| 4 | 12,657.01 – 14,350.00 | 13,503.50 | 1,458.38 |
| 5 | 14,350.01 – 16,043.00 | 15,196.50 | 1,641.22 |
| 6 | 16,043.01 – 17,736.00 | 16,889.50 | 1,824.07 |
| 7 | 17,736.01 – 19,429.00 | 18,582.50 | 2,006.91 |
| 8 | 19,429.01 – 21,122.00 | 20,275.50 | 2,189.75 |
| 9 | 21,122.01 – 22,815.00 | 21,968.50 | 2,372.60 |
| 10 | 22,815.01 – 24,508.00 | 23,661.50 | 2,555.44 |

2017 New Brunswick claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 9,895.00 | 9,895.00 | 957.84 |
| 2 | 9,895.01 – 12,090.00 | 10,992.50 | 1,064.07 |
| 3 | 12,090.01 – 14,285.00 | 13,187.50 | 1,276.55 |
| 4 | 14,285.01 – 16,480.00 | 15,382.50 | 1,489.03 |
| 5 | 16,480.01 – 18,675.00 | 17,577.50 | 1,701.50 |
| 6 | 18,675.01 – 20,870.00 | 19,772.50 | 1,913.98 |
| 7 | 20,870.01 – 23,065.00 | 21,967.50 | 2,126.45 |
| 8 | 23,065.01 – 25,260.00 | 24,162.50 | 2,338.93 |
| 9 | 25,260.01 – 27,455.00 | 26,357.50 | 2,551.41 |
| 10 | 27,455.01 – 29,650.00 | 28,552.50 | 2,763.88 |

2017 Newfoundland and Labrador claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 8,978.00 | 8,978.00 | 781.09 |
| 2 | 8,978.01 – 10,917.00 | 9,947.50 | 865.43 |
| 3 | 10,917.01 – 12,856.00 | 11,886.50 | 1,034.13 |
| 4 | 12,856.01 – 14,795.00 | 13,825.50 | 1,202.82 |
| 5 | 14,795.01 – 16,734.00 | 15,764.50 | 1,371.51 |
| 6 | 16,734.01 – 18,673.00 | 17,703.50 | 1,540.20 |
| 7 | 18,673.01 – 20,612.00 | 19,642.50 | 1,708.90 |
| 8 | 20,612.01 – 22,551.00 | 21,581.50 | 1,877.59 |
| 9 | 22,551.01 – 24,490.00 | 23,520.50 | 2,046.28 |
| 10 | 24,490.01 – 26,429.00 | 25,459.50 | 2,214.98 |

2017 Northwest Territories claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 14,278.00 | 14,278.00 | 842.40 |
| 2 | 14,278.01 – 16,733.00 | 15,505.50 | 914.82 |
| 3 | 16,733.01 – 19,188.00 | 17,960.50 | 1,059.67 |
| 4 | 19,188.01 – 21,643.00 | 20,415.50 | 1,204.51 |
| 5 | 21,643.01 – 24,098.00 | 22,870.50 | 1,349.36 |
| 6 | 24,098.01 – 26,553.00 | 25,325.50 | 1,494.20 |
| 7 | 26,553.01 – 29,008.00 | 27,780.50 | 1,639.05 |
| 8 | 29,008.01 – 31,463.00 | 30,235.50 | 1,783.89 |
| 9 | 31,463.01 – 33,918.00 | 32,690.50 | 1,928.74 |
| 10 | 33,918.01 – 36,373.00 | 35,145.50 | 2,073.58 |

2017 Nova Scotia claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 8,481.00 | 8,481.00 | 745.48 |
| 2 | 8,481.01 – 10,081.00 | 9,281.00 | 815.80 |
| 3 | 10,081.01 – 11,681.00 | 10,881.00 | 956.44 |
| 4 | 11,681.01 – 13,281.00 | 12,481.00 | 1,097.08 |
| 5 | 13,281.01 – 14,881.00 | 14,081.00 | 1,237.72 |
| 6 | 14,881.01 – 16,481.00 | 15,681.00 | 1,378.36 |
| 7 | 16,481.01 – 18,081.00 | 17,281.00 | 1,519.00 |
| 8 | 18,081.01 – 19,681.00 | 18,881.00 | 1,659.64 |
| 9 | 19,681.01 – 21,281.00 | 20,481.00 | 1,800.28 |
| 10 | 21,281.01 – 22,881.00 | 22,081.00 | 1,940.92 |

2017 Nunavut claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 13,128.00 | 13,128.00 | 525.12 |
| 2 | 13,128.01 – 15,622.00 | 14,375.00 | 575.00 |
| 3 | 15,622.01 – 18,116.00 | 16,869.00 | 674.76 |
| 4 | 18,116.01 – 20,610.00 | 19,363.00 | 774.52 |
| 5 | 20,610.01 – 23,104.00 | 21,857.00 | 874.28 |
| 6 | 23,104.01 – 25,598.00 | 24,351.00 | 974.04 |
| 7 | 25,598.01 – 28,092.00 | 26,845.00 | 1,073.80 |
| 8 | 28,092.01 – 30,586.00 | 29,339.00 | 1,173.56 |
| 9 | 30,586.01 – 33,080.00 | 31,833.00 | 1,273.32 |
| 10 | 33,080.01 – 35,574.00 | 34,327.00 | 1,373.08 |

2017 Ontario claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 10,171.00 | 10,171.00 | 513.64 |
| 2 | 10,171.01 – 12,362.00 | 11,266.50 | 568.96 |
| 3 | 12,362.01 – 14,553.00 | 13,457.50 | 679.60 |
| 4 | 14,553.01 – 16,744.00 | 15,648.50 | 790.25 |
| 5 | 16,744.01 – 18,935.00 | 17,839.50 | 900.89 |
| 6 | 18,935.01 – 21,126.00 | 20,030.50 | 1,011.54 |
| 7 | 21,126.01 – 23,317.00 | 22,221.50 | 1,122.19 |
| 8 | 23,317.01 – 25,508.00 | 24,412.50 | 1,232.83 |
| 9 | 25,508.01 – 27,699.00 | 26,603.50 | 1,343.48 |
| 10 | 27,699.01 – 29,890.00 | 28,794.50 | 1,454.12 |

2017 Prince Edward Island claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 8,000.00 | 8,000.00 | 784.00 |
| 2 | 8,000.01 – 9,600.00 | 8,800.00 | 862.40 |
| 3 | 9,600.01 – 11,200.00 | 10,400.00 | 1,019.20 |
| 4 | 11,200.01 – 12,800.00 | 12,000.00 | 1,176.00 |
| 5 | 12,800.01 – 14,400.00 | 13,600.00 | 1,332.80 |
| 6 | 14,400.01 – 16,000.00 | 15,200.00 | 1,489.60 |
| 7 | 16,000.01 – 17,600.00 | 16,800.00 | 1,646.40 |
| 8 | 17,600.01 – 19,200.00 | 18,400.00 | 1,803.20 |
| 9 | 19,200.01 – 20,800.00 | 20,000.00 | 1,960.00 |
| 10 | 20,800.01 – 22,400.00 | 21,600.00 | 2,116.80 |

2017 Saskatchewan claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 16,065.00 | 16,065.00 | 1,767.15 |
| 2 | 16,065.01 – 18,132.00 | 17,098.50 | 1,880.84 |
| 3 | 18,132.01 – 20,199.00 | 19,165.50 | 2,108.21 |
| 4 | 20,199.01 – 22,266.00 | 21,232.50 | 2,335.58 |
| 5 | 22,266.01 – 24,333.00 | 23,299.50 | 2,562.95 |
| 6 | 24,333.01 – 26,400.00 | 25,366.50 | 2,790.32 |
| 7 | 26,400.01 – 28,467.00 | 27,433.50 | 3,017.69 |
| 8 | 28,467.01 – 30,534.00 | 29,500.50 | 3,245.06 |
| 9 | 30,534.01 – 32,601.00 | 31,567.50 | 3,472.43 |
| 10 | 32,601.01 – 34,668.00 | 33,634.50 | 3,699.80 |

2017 Yukon claim codes

| Claim code | Total claim amount (\$) | Option 1, TCP = (\$) | Option 1, K1P = (\$) |
|------------|-------------------------|----------------------|----------------------|
| 0 | No claim amount | 0.00 | 0.00 |
| 1 | 11,635.00 | 11,635.00 | 744.64 |
| 2 | 11,635.01 – 13,858.00 | 12,746.50 | 815.78 |
| 3 | 13,858.01 – 16,081.00 | 14,969.50 | 958.05 |
| 4 | 16,081.01 – 18,304.00 | 17,192.50 | 1,100.32 |
| 5 | 18,304.01 – 20,527.00 | 19,415.50 | 1,242.59 |
| 6 | 20,527.01 – 22,750.00 | 21,638.50 | 1,384.86 |
| 7 | 22,750.01 – 24,973.00 | 23,861.50 | 1,527.14 |
| 8 | 24,973.01 – 27,196.00 | 26,084.50 | 1,669.41 |
| 9 | 27,196.01 – 29,419.00 | 28,307.50 | 1,811.68 |
| 10 | 29,419.01 – 31,642.00 | 30,530.50 | 1,953.95 |

Chapter 4 – Glossary

All factor definitions appear only in the Glossary unless further details are required in specific situations.

| Factor | Meaning (for complete details, see the formulas) |
|-----------|--|
| A | Annual taxable income |
| B | Gross bonus, retroactive pay increase, vacation pay when vacation is not taken, accumulated overtime payment or other non-periodic payment |
| B1 | Gross bonuses, retroactive pay increases, vacation pay when vacation is not taken, accumulated overtime payments or other non-periodic payments year-to-date (before the pay period) |
| C | Canada (or Quebec) Pension Plan contributions for the pay period |
| D | Employee's year-to-date Canada Pension Plan contribution with the employer (cannot be more than the annual maximum) |
| D1 | Employee's year-to-date employment insurance premium with the employer |
| E | Total commission expenses deductions reported on Form TD1X |
| EI | Employment insurance premiums for the pay period |
| F | Payroll deductions for the pay period for employee contributions to a registered pension plan (RPP) for current and past services, a registered retirement savings plan (RRSP), to a pooled registered pension plan (PRPP), or a retirement compensation arrangement (RCA). For tax deduction purposes, employers can deduct amounts contributed to an RPP, RRSP, PRPP, or RCA by or on behalf of an employee to determine the employee's taxable income |
| F1 | Annual deductions such as child care expenses and support payments, requested by an employee or pensioner and authorized by a tax services office or tax centre |
| F2 | Alimony or maintenance payments required by a legal document dated before May 1, 1997, to be payroll-deducted authorized by a tax services office or tax centre |
| F3 | Employee registered pension plan or registered retirement savings plan contributions deducted from the current non-periodic payment. You can also use this field or design another to apply other tax-deductible amounts to the non-periodic payment, such as union dues |
| F4 | Employee registered pension plan or registered retirement savings plan contributions deducted from the year-to-date non-periodic payments. You can also use this field or design another to apply other tax-deductible amounts to the non-periodic payment, such as union dues |
| G | Gross commission amount including gross salary at the time of payment, plus any taxable benefits for commission-remunerated employees who have filled out Form TD1X. When an employee has not filed Form TD1X, tax is calculated the regular way |
| HD | Annual deduction for living in a prescribed zone, as shown on Form TD1 |

| Factor | Meaning (for complete details, see the formulas) |
|---------------|---|
| I | Gross remuneration for the pay period. This includes overtime earned and paid in the same pay period, pension income, qualified pension income, and taxable benefits, but does not include bonuses, retroactive pay increases, or other non-periodic payments |
| I1 | Total remuneration for the year reported on Form TD1X. This include commission payments, salary (where applicable), non-periodic payments, and taxable benefits |
| IE | Insurable earnings for the pay period including insurable taxable benefits, bonuses, and retroactive pay increases |
| K | Federal constant. The constant is the tax overcharged when applying the 20.5%, 26%, 29%, and 33% rates to the annual taxable income A |
| KP | Provincial or territorial constant |
| K1 | Federal non-refundable personal tax credit (the lowest federal tax rate is used to calculate this credit) |
| K1P | Provincial or territorial non-refundable personal tax credit (the lowest tax rate is used to calculate this credit) |
| K2 | Federal Canada (or Quebec) Pension Plan contributions and employment insurance premiums tax credits for the year (the lowest federal tax rate is used to calculate this credit). Note: If an employee has already contributed the maximum CPP, EI, or QPIP for the year with the employer, use the maximum CPP, EI, or QPIP deduction to determine the credit for the rest of the year. If, during the pay period in which the employee reaches the maximum, the CPP, EI, or QPIP, when annualized, is less than the annual maximum, use the maximum annual deduction(s) in that pay period |
| K2P | Provincial or territorial Canada Pension Plan contributions and employment insurance premiums tax credits for the year (the lowest provincial or territorial tax rate is used to calculate this credit). If an employee reaches the maximum CPP or EI for the year with an employer, the instructions in the note for the K2 factor also apply to the K2P factor. For employees paid by commission, use the federal K2 formula for commissions and replace the lowest federal rate in the K2 formula with the lowest provincial or territorial tax rate |
| K2Q | Quebec Pension Plan contributions, employment insurance premiums, and Quebec Parental Insurance Plan premiums federal tax credits for the year (the lowest federal tax rate is used to calculate this credit) |
| K3 | Other federal tax credits (such as medical expenses and charitable donations) authorized by a tax services office or tax centre |
| K3P | Other provincial or territorial tax credits (such as medical expenses and charitable donations) authorized by a tax services office or tax centre |
| K4 | Canada employment credit (the lowest federal tax rate is used to calculate this credit) |
| K4P | Provincial or territorial Canada employment credit (only applies to Yukon) |
| L | Additional tax deductions for the pay period requested by the employee or pensioner as shown on Form TD1 |
| LCF | Federal labour-sponsored funds tax credit |
| LCP | Provincial or territorial labour-sponsored funds tax credit (only applies to New Brunswick, Newfoundland and Labrador, Nova Scotia, Manitoba, Saskatchewan, British Columbia, and Yukon) |
| M | Accumulated federal and provincial or territorial tax deductions (if any) to the end of the last pay period |
| M1 | Year-to-date tax deducted on all payments included in B year-to-date |
| N | The number of days since the last commission payment. The minimum basic exemption amount of \$67.30 is included in the formula in line with CPP legislation |
| P | The number of pay periods in the year |
| PI | Pensionable income for the pay period, or the gross income plus any taxable benefits for the pay period, including bonuses and retroactive pay increases where applicable |
| PR | The number of pay periods left in the year (including the current pay period) |
| R | Federal tax rate that applies to the annual taxable income A |
| S | Provincial tax reduction (only applies to Ontario and British Columbia) |
| S1 | Annualizing factor |
| T | Estimated federal and provincial or territorial tax deductions for the pay period |
| T1 | Annual federal tax deduction |
| T2 | Annual provincial or territorial tax deduction (except Quebec) |
| T3 | Annual basic federal tax |
| T4 | Annual basic provincial or territorial tax |
| TB | Tax deductions, i.e., bonuses or retroactive pay increases, payable now |

| Factor | Meaning (for complete details, see the formulas) |
|--------|--|
| TC | "Total claim amount" reported on federal Form TD1. If Form TD1 is not filed by the employee or pensioner, TC is the basic personal amount, and for non-resident individuals, TC is \$0. If the claim code is E, T = \$0. If the province is Ontario, even if the claim code is E, the Ontario Health Premium is payable on annual income over \$20,000 |
| TCP | "Total claim amount" reported on the provincial or territorial Form TD1. If that form is not filed, TCP is the provincial or territorial basic personal amount |
| U1 | Union dues for the pay period paid to a trade union, an association of public servants, or dues required under the law of a province to a parity or advisory committee or similar body |
| V | Provincial or territorial tax rate for the year (does not apply to Quebec, outside Canada, or in Canada beyond the limits of any province or territory) |
| V1 | Provincial or territorial surtax calculated on the basic provincial or territorial tax (only applies to Prince Edward Island and Ontario) |
| V2 | Additional tax calculated on taxable income (only applies to Newfoundland and Labrador's Temporary Deficit Reduction Levy and the Ontario Health Premium) |
| Y | Additional provincial or territorial tax reduction based on applicable amounts reported on the provincial or territorial Form TD1 |
| YTD | Year-to-date |

Chapter 5 – Option 1 – Tax formula

This option determines the federal and provincial or territorial tax deductions on salary, wages, taxable benefits, pension income, commissions, and other periodic payments. This option can also be used to calculate the tax on a bonus or other non-periodic payment.

We use Option 1, with the exception of a few factors, to determine the tax deduction amounts in Publication T4032, *Payroll Deductions Tables*, and T4008, *Payroll Deductions Supplementary Tables*, for each province and territory, as well as for Canada beyond the limits of any province or territory and outside Canada.

Outline of Option 1

In general, the Option 1 steps are as follows:

1. Determine the net taxable income for the pay period (pay minus allowable deductions) and multiply it by the number of pay periods in the year to get an estimated annual taxable income amount. This annual taxable income amount is factor A.
2. Calculate the basic federal tax on the estimated annual taxable income, after allowable federal personal tax credits. The basic federal tax is factor T3.
3. Calculate the annual federal tax payable. This is factor T1.
4. Calculate the basic provincial or territorial tax on the estimated annual taxable income, after allowable provincial or territorial personal tax credits. The annual basic provincial or territorial tax is factor T4.
5. Calculate the annual provincial or territorial tax deduction. This is factor T2.
6. To get the estimated federal and provincial or territorial tax deductions for a pay period, add the federal and provincial or territorial tax, and divide the result by the number of pay periods. This is factor T.

Special rules apply to determine the annual income for employees paid by commissions. A calculation is provided to determine the tax deductions for bonuses, retroactive pay increases, and other non-periodic payments.

Note

If an employee or a pensioner has income from another source from which no tax has been deducted (for example, investment income or support payments), they could have a tax liability when they file an income tax and benefit return for the year. The employee or pensioner can ask for more tax deductions, factor L, using Form TD1.

Formula to calculate annual taxable income (A)

$$A = \text{Annual taxable income}$$

$$= [P \times (I - F - F_2 - U_1)] - HD - F_1$$

If the result is negative, $T = L$.

Only for employees paid by commission:

$$A = I_1 - F^* - F_2^* - U_1^* - HD - F_1 - E$$

If the result is negative, $T = L$.

* Estimated deduction amounts for the year. For registered retirement savings plan (RRSP) contributions included in F, you will need to find out from your employee paid by commission the estimated or expected annual deduction. We recommend that you caution employees not to exceed their RRSP contribution limit for the year.

P = The number of pay periods in the year:

Weekly $P = 52$ (or 53 where applicable)

Biweekly $P = 26$ (or 27 where applicable)

Semi-monthly $P = 24$

Monthly $P = 12$

Other $P = 10, 13, 22$, or any other number of pay periods for the year

F2 = In situations where a garnishment or a similar order of a court or competent tribunal states that the alimony or maintenance payment cannot be more than a certain percentage of the employee's net salary (net salary as defined in the garnishment or order), more calculations may be required, as follows:

1. Calculate the tax deduction amount and the net salary amount using the alimony or maintenance amount shown in the garnishment or order.
2. Determine the alimony or maintenance payment to be withheld (F2). This will be either the maximum allowable as a percentage of the employee's net salary calculated in 1. or the amount shown in the garnishment or order, whichever is less.
3. Determine the tax deduction for the pay period using the F2 amount in 2.

F1 = If the F1 amount is implemented after the first pay period in the year, F1 must be adjusted using the following formula:

$$(P \times F_1) / PR$$

Formula to calculate basic federal tax (T₃)

$$T_3 = \text{Annual basic federal tax}$$

$$= (R \times A) - K - K_1 - K_2 - K_3 - K_4$$

If the result is negative, $T_3 = \$0$.

Only for employees in Quebec:

$$(R \times A) - K - K_1 - K_2Q - K_3 - K_4$$

If the result is negative, $T_3 = \$0$.

R =

2017 Federal tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (R) | Constant (\$) (K) |
|---|-------------|-------------------|
| 0 – 45,916 | 0.150 | 0 |
| 45,916 – 91,831 | 0.205 | 2,525 |
| 91,831 – 142,353 | 0.260 | 7,576 |
| 142,353 – 202,800 | 0.290 | 11,847 |
| 202,800 – and over | 0.330 | 19,959 |

$$K1 = 0.15 \times TC$$

$$K2 = [(0.15 \times (P \times C, \text{maximum } \$2,564.10)) + (0.15 \times (P \times EI, \text{maximum } \$836.19))]*$$

Only for employees in Quebec:

K2Q = Quebec Pension Plan contributions, employment insurance premiums, and Quebec Parental Insurance Plan premiums federal tax credits for the year

$$= [(0.15 \times (P \times C, \text{maximum } \$2,797.20)) + (0.15 \times (P \times EI, \text{maximum } \$651.51)) + (0.15 \times (P \times IE \times 0.00548, \text{maximum } N/A))]*$$

In either case, for the rest of the pay periods in the year, $(P \times C)$, $(P \times EI)$, or $(P \times IE \times 0.00548)$ (as applicable) is replaced by the maximum annual deduction(s). This modification ensures that the employee will get the maximum CPP, EI, and QPIP tax credit for the rest of the pay periods in the year.

If you want to use a year-to-date method to calculate CPP, EI, and QPIP federal tax credits, $(P \times C)$ and $(P \times EI)$ can be modified as follows:

$(P \times C)$ is changed to the lesser of:

- (i) \$2,564.10; and
- (ii) Year-to-date $C + (PR \times C)$.

$(P \times EI)$ is changed to the lesser of:

- (i) \$836.19; and
- (ii) Year-to-date $EI + (PR \times EI)$.

Only for employees in Quebec:

$(P \times EI)$ is changed to the lesser of:

- (i) \$651.51; and
- (ii) Year-to-date $EI + (PR \times EI)$.

$(P \times IE \times 0.00548)$ is changed to the lesser of:

- (i) N/A ; and
- (ii) Year-to-date $QPIP + (PR \times IE \times 0.00548)$.

Only for employees paid by commission:

$$K2 = [(0.15 \times (0.0495 \times (I1 - \$3,500)^*, \text{maximum } \$2,564.10)) + (0.15 \times (0.0163 \times I1, \text{maximum } \$836.19))]$$

* If the resulting amount is negative, enter \$0.

Only for employees in Quebec:

$$K2Q = [(0.15 \times (0.054 \times (I1 - \$3,500)^*, \text{maximum } \$2,797.20)) + (0.15 \times (0.0127 \times I1, \text{maximum } \$651.51)) + (0.15 \times (0.00548 \times I1, \text{maximum } N/A))]$$

* If the resulting amount is negative, enter \$0.

Note

The preceding is subject to the rules in chapter 7 – “Canada Pension Plan (CPP)” and chapter 8 – “Employment Insurance (EI)” of this document and the instructions in Guide T4001 *Employers’ Guide – Payroll Deductions and Remittances*.

K3 = If the K3 amount is implemented after the first pay period in the year, K3 must be adjusted using the following formula:

$$(P \times K3)/PR$$

K4 = The lesser of:

- (i) $0.15 \times A$; and
- (ii) $0.15 \times \$1,178$.

Note

For the Canada employment credit, A is the annual gross income from office or employment before deductions. This is the same amount you normally report in box 14 of the T4 slip(s). As administrative relief, you are authorized to use the regular factor A (annual taxable income) for this calculation, except when the total income is superannuation or pension benefits.

Formula to calculate the annual federal tax payable (T_1)

T_1 = Annual federal tax deduction, except for employees in Quebec, outside Canada, and in Canada beyond the limits of any province or territory

$$= (T_3 - LCF)^*$$

* If the result is negative, enter \$0.

Only for employees in Quebec:

$$T_1 = [(T_3 - LCF)^* - (0.165 \times T_3)]^*$$

* If the result is negative, enter \$0.

Only for employees outside Canada and in Canada beyond the limits of any province or territory:

$$T_1 = [T_3 + (0.48 \times T_3) - LCF]^*$$

* If result is negative, enter \$0.

LCF = The lesser of:

(i) \$750; and

(ii) 15% of the amount deducted or withheld during the year for the acquisition, by the employee, of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

Note

If the shares are invested in a registered retirement savings plan, the amount invested can be used to determine the annual taxable income amount.

Tax calculation formula for bonuses, retroactive pay increases, and other non-periodic payments

Introduction

Generally, the tax on a bonus (or retroactive pay increase) is calculated by finding the tax on the total of regular annual income **plus** any previous bonuses **plus** the current bonus and subtracting the tax on the total of regular annual income **plus** any previous bonuses. The difference will be the tax on the current bonus.

In the optional year-to-date method outlined below, instead of annualizing the current income, use year-to-date income values and year-to-date deductions as the annual income with and without the bonus. In either case the tax on the bonus is as follows:

TB = The difference between:

(i) the annual tax amount ($T_1 + T_2$) based on the instructions in Step 1 below; and

(ii) the annual tax amount ($T_1 + T_2$) based on the instructions in Step 2 below.

(1) Regular bonus calculation

Step 1

Determine the annual tax ($T_1 + T_2$) based on the annual taxable income (factor A) with the non-periodic payment payable now. The formula to calculate factor A is as follows:

$$A = ([P \times (I - F - F_2 - U_1)] - HD - F_1)^* + (B - F_3)^{**} + (B_1 - F_4)^{**}$$

* If the result is negative, enter \$0.

** Result cannot be negative, and result cannot be negative after deducting CPP and EI.

Note

If the result above is **\$5,000 or less**, deduct 15% tax (10% in Quebec) from the bonus or retroactive pay increase.

Step 2

Determine the annual tax ($T_1 + T_2$) based on the annual taxable income (factor A) without the non-periodic payment payable now. The formula to calculate factor A is as follows:

$$A = ([P \times (I - F - F_2 - U_1)] - HD - F_1)^* + (B_1 - F_4)^{**}$$

* If the result is negative, enter \$0.

** Result cannot be negative, and result cannot be negative after deducting CPP and EI.

If there is no current I, use the most recent I.

(2) Year-to-date bonus calculation (optional)

Step 1

Determine the annual tax ($T_1 + T_2$) based on the annual taxable income (factor A) with the non-periodic payment payable now. The annual taxable income (factor A) is based on a year-to-date concept, plus the estimated income for the rest of the pay periods in the year. YTD means year-to-date (before this pay period). The formula to calculate factor A is as follows:

$$A = [(IYTD - FYTD - F_2YTD - U_1YTD) + (PR \times (I - F - F_2 - U_1)) - F_1 - HD]^* + (B - F_3)^{**} + (B_1 - F_4)^{**}$$

* If the result is negative, enter \$0.
** Result cannot be negative, and result cannot be negative after deducting CPP and EI.

Note

If the result above is **\$5,000 or less**, deduct 15% tax (10% in Quebec) from the bonus or retroactive pay increase.

Step 2

$$A = [(IYTD - FYTD - F_2YTD - U_1YTD) + (PR \times (I - F - F_2 - U_1)) - F_1 - HD]^* + (B_1 - F_4)^{**}$$

* If the result is negative, enter \$0.
** Result cannot be negative, and result cannot be negative after deducting CPP and EI.

Example for year-to-date bonus calculation method

In this example, an employee got a retroactive pay increase from \$1,000 to \$1,100 per week that applies to 25 weeks. Therefore, a retroactive pay increase payment of \$2,500 is payable now. \$1,000 will be directed to the employee's RRSP. Thirty pay periods have passed and 22 pay periods remain in the year. Year-to-date income is \$30,000, year-to-date RPP is \$1,350, and year-to-date union dues are \$150. The current income is \$1,100 with RPP withheld of \$45 and union dues of \$5. The employee received a previous bonus of \$1,000 with only CPP, EI, and tax withheld from it.

Step 1

$$\begin{aligned} A &= \text{Annual taxable income with the non-periodic payment payable now} \\ &= [(IYTD - FYTD - F_2YTD - U_1YTD) + (PR \times (I - F - F_2 - U_1)) - F_1 - HD]^* + (B - F_3)^{**} + (B_1 - F_4)^{**} \\ &= [(\$30,000 - \$1,350 - \$0 - \$150) + (22 \times (\$1,100 - \$45 - \$0 - \$5)) - \$0 - \$0] + (\$2,500 - \$1,000) + (\$1,000 - \$0) \\ &= \$28,500 + (22 \times \$1,050) + \$1,500 + \$1,000 \\ &= \$54,100 \end{aligned}$$

Step 2

$$\begin{aligned} A &= \text{Annual taxable income without the non-periodic payment payable now} \\ &= [(IYTD - FYTD - F_2YTD - U_1YTD) + (PR \times (I - F - F_2 - U_1)) - F_1 - HD]^* + (B_1 - F_4)^{**} \\ &= [(\$30,000 - \$1,350 - \$0 - \$150) + (22 \times (\$1,100 - \$45 - \$0 - \$5)) - \$0 - \$0] + (\$1,000 - \$0) \\ &= \$28,500 + (22 \times \$1,050) + \$1,000 \\ &= \$52,600 \end{aligned}$$

After you have calculated the annual taxable income, factor A, in steps 1 and 2, calculate the factors T_1 and T_2 in the same way as for regular remuneration.

Note

The formula above can be used to calculate the tax deductions on non-periodic payments such as accumulated overtime not paid in the same pay period earned, paid vacation not taken by the employee, and bonuses.

Formula to calculate annual basic provincial or territorial tax (T_4)

$$T_4 = (V \times A) - KP - K_1P - K_2P - K_3P - K_4P$$

If the result is negative, $T_4 = \$0$.

Formulas to calculate the annual provincial or territorial tax deduction (T_2)

$$T_2 = T_4 + V_1 + V_2 - S - LCP$$

If the result is negative, $T_2 = \$0$.

Only for employees in Quebec:

$$T_2 = \$0$$

Only for employees outside Canada and in Canada beyond the limits of any province or territory:
T₂ = \$0

Alberta

$$T_2 = T_4 + V_1 - S - LCP$$

If the result is negative, $T_2 = \$0$.

Where:

$$T_4 = (V \times A) - KP - K_1P - K_2P - K_3P$$

Where V and KP are based on the value of A in the 2017 Alberta tax rates and income thresholds table.

2017 Alberta tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 126,625 | 0.10 | 0 |
| 126,625 – 151,950 | 0.12 | 2,533 |
| 151,950 – 202,600 | 0.13 | 4,052 |
| 202,600 – 303,900 | 0.14 | 6,078 |
| 303,900 – and over | 0.15 | 9,117 |

$$K_1P = 0.10 \times TCP$$

$$K_2P = [(0.10 \times (P \times C, \text{maximum } \$2,564.10)) + (0.10 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$V_1, S, \text{ and } LCP = \$0$$

British Columbia

$$T_2 = T_4 + V_1 - S - LCP$$

If the result is negative, $T_2 = \$0$.

Where:

$$T_4 = (V \times A) - KP - K_1P - K_2P - K_3P$$

Where V and KP are based on the value of A in the 2017 British Columbia tax rates and income thresholds table.

2017 British Columbia tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 38,898 | 0.0506 | 0 |
| 38,898 – 77,797 | 0.0770 | 1,027 |
| 77,797 – 89,320 | 0.1050 | 3,205 |
| 89,320 – 108,460 | 0.1229 | 4,804 |
| 108,460 – and over | 0.1470 | 7,418 |

$$K_1P = 0.0506 \times TCP$$

$$K_2P = [(0.0506 \times (P \times C, \text{maximum } \$2,564.10)) + (0.0506 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$V_1 = \$0$$

$$S = \text{Where } A \leq \$19,749, S \text{ is equal to the lesser of:}$$

- (i) T_4 ; and
- (ii) \$444.

- = Where $A > \$19,749 \leq \$32,220.91$, S is equal to the lesser of:
 - (i) T₄; and
 - (ii) $\$444 - [(A - \$19,749) \times 3.56\%]$.
- = Where $A > \$32,220.91$
- = \$0

LCP = The lesser of:

- (i) \$2,000; and
- (ii) 15% of the amount deducted or withheld during the year for the acquisition by the employee of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

Manitoba

T₂ = $T_4 + V_1 - S - LCP$
 If the result is negative, T₂ = \$0.

Where:

T₄ = $(V \times A) - KP - K_1P - K_2P - K_3P$

Where V and KP are based on the value of A in the 2017 Manitoba tax rates and income thresholds table.

2017 Manitoba tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 31,465 | 0.1080 | 0 |
| 31,465 – 68,005 | 0.1275 | 614 |
| 68,005 – and over | 0.1740 | 3,776 |

K_{1P} = $0.108 \times TCP$

K_{2P} = $[(0.108 \times (P \times C, \text{maximum } \$2,564.10)) + (0.108 \times (P \times EI, \text{maximum } \$836.19))]*$

V₁ and **S** = \$0

LCP = The lesser of:

- (i) \$1,800; and
- (ii) 15% of the amount deducted or withheld during the year for the acquisition by the employee of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

New Brunswick

T₂ = $T_4 + V_1 - S - LCP$
 If the result is negative, T₂ = \$0.

Where:

T₄ = $(V \times A) - KP - K_1P - K_2P - K_3P$

Where V and KP are based on the value of A in the 2017 New Brunswick tax rates and income thresholds table.

2017 New Brunswick tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 41,059 | 0.0968 | 0 |
| 41,059 – 82,119 | 0.1482 | 2,110 |
| 82,119 – 133,507 | 0.1652 | 3,506 |
| 133,507 – 152,100 | 0.1784 | 5,269 |
| 152,100 – and over | 0.2030 | 9,010 |

$$K1P = 0.0968 \times TCP$$

$$K2P = [(0.0968 \times (P \times C, \text{maximum } \$2,564.10)) + (0.0968 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$V1 \text{ and } S = \$0$$

$$LCP = \text{The lesser of:}$$

(i) \$2,000; and

(ii) 20% of the amount deducted or withheld during the year for the acquisition by the employee of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

Newfoundland and Labrador

$$T2 = T4 + V1 + V2 - S - LCP$$

If the result is negative, $T2 = \$0$.

Where:

$$T4 = (V \times A) - KP - K1P - K2P - K3P$$

Where V and KP are based on the value of A in the 2017 Newfoundland and Labrador tax rates and income thresholds table.

2017 Newfoundland and Labrador tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 35,851 | 0.087 | 0 |
| 35,851 – 71,701 | 0.145 | 2,079 |
| 71,701 – 128,010 | 0.158 | 3,011 |
| 128,010 – 179,214 | 0.173 | 4,932 |
| 179,214 – and over | 0.183 | 6,724 |

$$K1P = 0.087 \times TCP$$

$$K2P = [(0.087 \times (P \times C, \text{maximum } \$2,564.10)) + (0.087 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$V1 \text{ and } S = \$0$$

$$V2 = \text{when } A \leq \$50,000, V2 = \$0.$$

when $A > \$50,000 \leq \$55,000$, $V2 = 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$50,000$.

when $A > \$55,000 \leq \$60,000$, $V2 = \$100 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$55,000$.

when $A > \$60,000 \leq \$65,000$, $V2 = \$200 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$60,000$.

when $A > \$65,000 \leq \$70,000$, $V_2 = \$300 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$65,000$.

when $A > \$70,000 \leq \$75,000$, $V_2 = \$400 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$70,000$.

when $A > \$75,000 \leq \$80,000$, $V_2 = \$500 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$75,000$.

when $A > \$80,000 \leq \$100,000$, $V_2 = \$600 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$80,000$.

when $A > \$100,000 \leq \$125,000$, $V_2 = \$700 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$100,000$.

when $A > \$125,000 \leq \$175,000$, $V_2 = \$800 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$125,000$.

when $A > \$175,000 \leq \$250,000$, $V_2 = \$900 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$175,000$.

when $A > \$250,000 \leq \$300,000$, $V_2 = \$1,000 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$250,000$.

when $A > \$300,000 \leq \$350,000$, $V_2 = \$1,100 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$300,000$.

when $A > \$350,000 \leq \$400,000$, $V_2 = \$1,200 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$350,000$.

when $A > \$400,000 \leq \$450,000$, $V_2 = \$1,300 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$400,000$.

when $A > \$450,000 \leq \$500,000$, $V_2 = \$1,400 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$450,000$.

when $A > \$500,000 \leq \$550,000$, $V_2 = \$1,500 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$500,000$.

when $A > \$550,000 \leq \$600,000$, $V_2 = \$1,600 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$550,000$.

when $A > \$600,000$, $V_2 = \$1,700 + 10\% \times$ the lesser of:

(i) \$1,000; and

(ii) $A - \$600,000$.

LCP = The lesser of:

(i) \$2,000; and

(ii) 20% of the amount deducted or withheld during the year for the acquisition by the employee of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

Northwest Territories

$$T_2 = T_4 + V_1 - S - LCP$$

If the result is negative, $T_2 = \$0$.

Where:

$$T_4 = (V \times A) - KP - K_1P - K_2P - K_3P$$

Where V and KP are based on the value of A in the 2017 Northwest Territories tax rates and income thresholds table.

2017 Northwest Territories tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 41,585 | 0.0590 | 0 |
| 41,585 – 83,172 | 0.0860 | 1,123 |
| 83,172 – 135,219 | 0.1220 | 4,117 |
| 135,219 – and over | 0.1405 | 6,619 |

$$K_1P = 0.059 \times TCP$$

$$K_2P = [(0.059 \times (P \times C, \text{maximum } \$2,564.10)) + (0.059 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$V_1, S, \text{ and } LCP = \$0$$

Nova Scotia

$$T_2 = T_4 + V_1 - S - LCP$$

If the result is negative, $T_2 = \$0$.

Where:

$$T_4 = (V \times A) - KP - K_1P - K_2P - K_3P$$

Where V and KP are based on the value of A in the 2017 Nova Scotia tax rates and income thresholds table.

2017 Nova Scotia tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 29,590 | 0.0879 | 0 |
| 29,590 – 59,180 | 0.1495 | 1,823 |
| 59,180 – 93,000 | 0.1667 | 2,841 |
| 93,000 – 150,000 | 0.1750 | 3,613 |
| 150,000 – and over | 0.2100 | 8,863 |

$$K_1P = 0.0879 \times TCP$$

$$K_2P = [(0.0879 \times (P \times C, \text{maximum } \$2,564.10)) + (0.0879 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$V_1 \text{ and } S = \$0$$

$$LCP = \text{The lesser of:}$$

(i) \$2,000; and

(ii) 20% of the amount deducted or withheld during the year for the acquisition by the employee of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

Nunavut

$$T_2 = T_4 + V_1 - S - LCP$$

If the result is negative, $T_2 = \$0$.

Where:

$$T_4 = (V \times A) - KP - K_1P - K_2P - K_3P$$

Where V and KP are based on the value of A in the 2017 Nunavut tax rates and income thresholds table.

2017 Nunavut tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 43,780 | 0.040 | 0 |
| 43,780 – 87,560 | 0.070 | 1,313 |
| 87,560 – 142,353 | 0.090 | 3,065 |
| 142,353 – and over | 0.115 | 6,623 |

$$K_1P = 0.040 \times TCP$$

$$K_2P = [(0.040 \times (P \times C, \text{maximum } \$2,564.10)) + (0.040 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$V_1, S, \text{ and } LCP = \$0$$

Ontario

$$T_2 = T_4 + V_1 + V_2 - S - LCP$$

If the result is negative, $T_2 = \$0$.

Where:

$$T_4 = (V \times A) - KP - K_1P - K_2P - K_3P$$

Where V and KP are based on the value of A in the 2017 Ontario tax rates and income thresholds table.

2017 Ontario tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 42,201 | 0.0505 | 0 |
| 42,201 – 84,404 | 0.0915 | 1,730 |
| 84,404 – 150,000 | 0.1116 | 3,427 |
| 150,000 – 220,000 | 0.1216 | 4,927 |
| 220,000 – and over | 0.1316 | 7,127 |

$$K_1P = 0.0505 \times TCP$$

$$K_2P = [(0.0505 \times (P \times C, \text{maximum } \$2,564.10)) + (0.0505 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$V_1 = \begin{cases} \text{Where } T_4 \leq \$4,556, \\ V_1 = \$0 \\ \text{Where } T_4 > \$4,556 \leq \$5,831, \\ V_1 = 0.20 \times (T_4 - \$4,556) \\ \text{Where } T_4 > \$5,831, \\ V_1 = 0.20 \times (T_4 - \$4,556) + 0.36 \times (T_4 - \$5,831) \end{cases}$$

$$V_2 = \begin{cases} \text{Where } A \leq \$20,000, V_2 = \$0 \\ \text{Where } A > \$20,000 \leq \$36,000, V_2 = \text{the lesser of:} \\ \quad (i) \$300; \text{ and} \\ \quad (ii) 0.06 \times (A - \$20,000). \\ \text{Where } A > \$36,000 \leq \$48,000, V_2 = \text{the lesser of:} \\ \quad (i) \$450; \text{ and} \\ \quad (ii) \$300 + (0.06 \times (A - \$36,000)). \end{cases}$$

Where $A > \$48,000 \leq \$72,000$, V_2 = the lesser of:

- (i) \$600; and
- (ii) $\$450 + (0.25 \times (A - \$48,000))$.

Where $A > \$72,000 \leq \$200,000$, V_2 = the lesser of:

- (i) \$750; and
- (ii) $\$600 + (0.25 \times (A - \$72,000))$.

Where $A > \$200,000$, V_2 = the lesser of:

- (i) \$900; and
- (ii) $\$750 + (0.25 \times (A - \$200,000))$.

Note

The Ontario Health Premium (OHP) is not reduced by the Ontario tax reduction (factor S). The OHP is not related to the employer health tax for Ontario. Include the OHP in the total federal and provincial tax deducted on T4 slips.

| | | |
|----------|---|---|
| S | = | The lesser of: |
| | | (i) $T_4 + V_1$; and |
| | | (ii) $[2 \times (\$235 + Y)] - [T_4 + V_1]$. |
| | | If the result is negative, $S = \$0$. |
| | | Where: |
| | | Y = The total of the following amounts: |
| | | ▪ \$434 multiplied by the number of disabled dependants as shown on Form TD1ON; and |
| | | ▪ \$434 multiplied by the number of dependants under age 19 for which the employee or pensioner has made a written or electronic request. |

Note

If Y is not used, any over deduction of tax will be considered when the individual files their income tax and benefit return. When possible, use the Y factor.

LCP = \$0

Prince Edward Island

T₂ = $T_4 + V_1 - S - LCP$
If the result is negative, $T_2 = \$0$.

Where:

T₄ = $(V \times A) - KP - K_1P - K_2P - K_3P$

Where V and KP are based on the value of A in the 2017 Prince Edward Island tax rates and income thresholds table.

2017 Prince Edward Island tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 31,984 | 0.098 | 0 |
| 31,984 – 63,969 | 0.138 | 1,279 |
| 63,969 – and over | 0.167 | 3,134 |

K_{1P} = $0.098 \times TCP$

K_{2P} = $[(0.098 \times (P \times C, \text{maximum } \$2,564.10)) + (0.098 \times (P \times EI, \text{maximum } \$836.19))]*$

V₁ = Where $T_4 \leq \$12,500$,
 $V_1 = \$0$
Where $T_4 > \$12,500$,
 $V_1 = 0.10 \times (T_4 - \$12,500)$

S and **LCP** = \$0

Quebec

In this publication, we refer to the annual provincial or territorial tax deduction as factor T2. However, factor T2 does not apply in the province of Quebec. Quebec administers its own provincial income tax and Quebec Pension Plan contributions. If you have questions about the formulas for Quebec, please contact Revenu Québec:

Revenu Québec
3800, rue de Marly
Québec (Québec) G1X 4A5

Telephone:.....1-800-567-4692

Outside Canada:.....1-418-659-4692

Quebec employers whose employees receive income from tips and gratuities should review the section called “Calculating payroll deductions for employees in the hotel and restaurant business in Quebec,” in Publication T4032QC, *Payroll Deductions Tables*.

Saskatchewan

$$T_2 = T_4 + V_1 - S - LCP$$

If the result is negative, $T_2 = \$0$.

Where:

$$T_4 = (V \times A) - KP - K_1P - K_2P - K_3P$$

Where V and KP are based on the value of A in the 2017 Saskatchewan tax rates and income thresholds table.

2017 Saskatchewan tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 45,225 | 0.11 | 0 |
| 45,225 – 129,214 | 0.13 | 905 |
| 129,214 – and over | 0.15 | 3,489 |

$$K_1P = 0.11 \times TCP$$

$$K_2P = [(0.11 \times (P \times C, \text{maximum } \$2,564.10)) + (0.11 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$V_1 \text{ and } S = \$0$$

$$LCP = \text{The lesser of:}$$

(i) \$1,000; and

(ii) 20% of the amount deducted or withheld during the year for the acquisition by the employee of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

Yukon

$$T_2 = T_4 + V_1 - S - LCP$$

If the result is negative, $T_2 = \$0$.

Where:

$$T_4 = (V \times A) - KP - K_1P - K_2P - K_3P - K_4P$$

Where V and KP are based on the value of A in the 2017 Yukon tax rates and income thresholds table.

2017 Yukon tax rates and income thresholds

| Annual taxable income (A) More than – Not more than (\$) | Rate (V) | Constant (\$) (KP) |
|---|-------------|--------------------|
| 0 – 45,916 | 0.064 | 0 |
| 45,916 – 91,831 | 0.090 | 1,194 |
| 91,831 – 142,353 | 0.109 | 2,939 |
| 142,353 – 500,000 | 0.128 | 5,643 |
| 500,000 – and over | 0.150 | 16,643 |

$$K1P = 0.064 \times TCP$$

$$K2P = [(0.064 \times (P \times C, \text{maximum } \$2,564.10)) + (0.064 \times (P \times EI, \text{maximum } \$836.19))]*$$

$$K4P = \text{The lesser of:}$$

- (i) $0.064 \times A$; and
- (ii) $0.064 \times \$1,178$.

Note

For the Canada employment credit, A is the annual gross income from office or employment before deductions. This is the same amount you normally report in box 14 of the T4 slip(s). As administrative relief, you are authorized to use the regular factor A (annual taxable income) for this calculation, except when the total income is superannuation or pension benefits.

$$V1 = \$0$$

$$S = \$0$$

$$LCP = \text{The lesser of:}$$

- (i) \$1,250; and
- (ii) 25% of the amount deducted or withheld during the year for the acquisition by the employee of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

Outside Canada and in Canada beyond the limits of any province or territory:

$$V, V1, V2, S, \text{ and } LCP = \$0$$

Formula to calculate the estimated federal and provincial or territorial tax deductions (T) for the pay period

$$T = [(T1 + T2)/P] + L$$

You can round the resulting amount to the nearest multiple of \$0.05 or \$0.01.

Only for employees in Quebec, outside Canada, and in Canada beyond the limits of any province or territory:

$$T = (T1/P) + L$$

You can round the resulting amount to the nearest multiple of \$0.05 or \$0.01.

For employees paid by commission who have filled out Form TD1X:

$$T = \text{The tax to be deducted on the current commission payment (factor G)}$$

$$= [(T1 + T2)/(I1/(G - F - F1))] + L$$

You can round the resulting amount to the nearest multiple of \$0.05 or 0.01.

Note: The F and F1 amounts used here are additional amounts that were not known or considered when calculating the Annual taxable income (A) variable.

Chapter 6 – Option 2 – Tax formula based on cumulative averaging

Option 2 formulas are intended for employees whose pay varies considerably from one pay period to the next. In the Option 2 formulas, the amount of tax to be deducted is based on the projected annual taxable income (including bonuses) compared to the amount of tax already deducted in the year. Option 2 works well for employees who are employed for a full calendar year. If the employee's income is relatively stable for each pay period, there will not be much difference in the tax deductions with Option 2 compared to Option 1.

The following sections explain in detail how Option 2 works. The initialism **YTD** used in this option means **year-to-date** and applies to payments or deductions for the current year, but not the payment payable now and the deductions for the current pay period.

Calculation of income

In Option 2, the actual year-to-date income plus the current income is projected over the rest of the pay periods in the year. For example, an employee received a total of \$20,000 in 20 previous pay periods and \$500 in the current pay period, and there are 5 pay periods left. The projected income for the year using Option 2 will be \$25,380.95 $[(\$20,000 + \$500) \times 26/21]$.

To determine year-to-date income, you have to use the year-to-date taxable income. Therefore, you will have to store and use the year-to-date values for each pay period factor, such as RPP (factor F) and union dues (U1).

Calculation of tax for the pay period

For Option 2, you calculate the tax on the projected income for the year, and then find the tax amount that is proportional to the number of pay periods that have occurred (including the current pay period). Compare the result to the tax deducted in the year-to-date. The difference is the tax payable on the current income.

Continuing the above example, if the total federal and provincial or territorial tax on \$25,380.95 is \$3,560.17, the proportional year-to-date tax is \$2,875.52 $(\$3,560.17/26 \times 21)$. If the total tax deducted year-to-date is \$2,736.40, the tax on the current income of \$500 is \$139.12 $(\$2,875.52 - \$2,736.40)$. The tax values used in this example are fictitious.

Special situations

When you change tax options during the year, we recommend that you reset the S1 factor to the first pay period. For example, if your pay period is weekly and the tax option is changed for the first pay period after July 1, then S1 should be reset to 52/1 instead of 52/27. In this way, the tax deductions that have been made under the previous option are not considered when calculating the deductions under the new option. This modification could also apply when an employee starts employment with you during the year.

When there are tax changes during the year, the first pay period after the change will show a significant adjustment to balance the new annual tax with the tax deducted at the old rates. We recommend that you reduce this impact by resetting the S1 factor or by averaging the tax increase or decrease over the rest of the pay periods.

Note

If an employee or a pensioner has income from another source from which no tax has been deducted (for example, investment income or rental income), they could have a tax liability when they file an income tax and benefit return for the year. The employee or pensioner can ask for more tax deductions, factor L, using Form TD1.

Formula to calculate annual taxable income (A)

A = Projected annual taxable income
= $[S1 \times (I - F - F2 - U1)] + B1 - HD - F1$
If the result is negative, A = \$0.

S1 = This is a set of two numbers: the number of total pay periods (or the employee's pay periods if the employees worked less than the total pay periods) divided by the applicable number of the current pay period. For examples, see the chart below. Also, see the information under "Special situations."

| Examples | 52pp | 26pp | 24pp | 12pp |
|-----------------------------|-------|-------|-------|-------|
| 1st pay period, S1 = | 52/1 | 26/1 | 24/1 | 12/1 |
| 2nd pay period, S1 = | 52/2 | 26/2 | 24/2 | 12/2 |
| 3rd pay period, S1 = | 52/3 | 26/3 | 24/3 | 12/3 |
| Etc., last pay period, S1 = | 52/52 | 26/26 | 24/24 | 12/12 |

- I** = Gross pay for the pay period. This includes overtime earned and paid in the same pay period, pension income, qualified pension income, and taxable benefits, plus IYTD, but does not include amounts in factor B.
- F** = Payroll deductions for the pay period for employee contributions to a registered pension plan for current and past services, a registered retirement savings plan (RRSP), or a retirement compensation arrangement plus FYTD.

Note

For full details, see the description under Option 1.

- F2** = Alimony or maintenance payments required by a legal document dated before May 1, 1997, to be deducted at source from the employee's salary for the pay period plus F2YTD. The legal document could be a garnishment or a similar order of a court or competent tribunal.

Note

For full details, see the description under Option 1.

- U1** = Union dues for the pay period, plus U1YTD.
- B1** = Year-to-date (before this pay period) non-periodic payments such as bonuses, retroactive pay increases, vacation pay when vacation is not taken, and accumulated overtime. Since tax on a current non-periodic payment is calculated separately, do not include the current non-periodic payment in calculating A.

Note

For overtime earned and paid in the same pay period, the payment is included with the I factor. Also, when the employee gets vacation pay and takes vacation, the income is included in the I factor. If you want to make deductions such as RRSP contributions from the bonus payment, see the instructions in Option 1 for using factors F3 and F4.

Formula to calculate basic federal tax (T₃)

- T₃** = $(R \times A) - K - K_1 - K_2 - K_3 - K_4$
If the result is negative, T₃ = \$0.

Only for employees in Quebec:

- T₃** = $(R \times A) - K - K_1 - K_2Q - K_3 - K_4$
If the result is negative, T₃ = \$0.

- R** =

Federal tax rates and income thresholds for 2017

| Annual taxable income (A) More than – Not more than (\$) | Rate (R) | Constant (\$) (K) |
|---|-------------|-------------------|
| 0 – 45,916 | 0.150 | 0 |
| 45,916 – 91,831 | 0.205 | 2,525 |
| 91,831 – 142,353 | 0.260 | 7,576 |
| 142,353 – 202,800 | 0.290 | 11,847 |
| 202,800 – and over | 0.330 | 19,959 |

- A** = Projected annual taxable income
- K₁** = $0.15 \times TC$

$$K2 = [(0.15 \times (0.0495 \times ((S1 \times PI) + B1 - \$3,500)^*, \text{maximum } \$2,564.10)) + (0.15 \times (0.0163 \times ((S1 \times IE) + B1), \text{maximum } \$836.19))]$$

Only for employees in Quebec:

$$K2Q = [(0.15 \times (0.054 \times ((S1 \times PI) + B1 - \$3,500)^*, \text{maximum } \$2,797.20)) + (0.15 \times (0.0127 \times ((S1 \times IE) + B1), \text{maximum } \$651.51)) + (0.15 \times (0.00548 \times S1 \times IE) + B1), \text{maximum } N/A)]$$

Note

* If the result is negative, enter \$0.

Where:

PI = Pensionable income for the pay period, or the gross income plus any taxable benefits for the pay period, plus PIYTD

IE = Insurable earnings for the pay period including insurable taxable benefits for the pay period, plus IEYTD

The above has to follow the rules in chapter 7 – “Canada Pension Plan (CPP)” and chapter 8 – “Employment Insurance (EI)” of this publication and the instructions contained in Guide T4001, *Employers’ Guide – Payroll Deductions and Remittances*.

$$K4 = \text{The lesser of:}$$

- (i) $0.15 \times A$; and
- (ii) $0.15 \times \$1,178$.

Note

For the Canada employment credit, A is the annual gross income from office or employment before deductions. This is the same amount you normally report in box 14 of the T4 slip(s). As administrative relief, you are authorized to use the regular factor A (annual taxable income) for this calculation, except when the total income is superannuation or pension benefits.

Formula to calculate the federal tax payable (T₁)

$$T1 = \text{Annual federal tax deduction except for Quebec, outside Canada, and in Canada beyond the limits of any province or territory}$$

$$= (T3 - LCF)^*$$

* If the result is negative, enter \$0.

Only for Quebec:

$$T1 = (T3 - LCF)^* - (0.165 \times T3)$$

* If the result is negative, enter \$0.

Only for outside Canada or in Canada beyond the limits of any province or territory:

$$T1 = [T3 + (0.48 \times T3) - LCF]^*$$

* If the result is negative, enter \$0.

$$LCF = \text{The lesser of:}$$

- (i) \$750; and
- (ii) 15% of the amount deducted or withheld during the year for the acquisition by the employee of approved shares of the capital stock of a prescribed labour-sponsored venture capital corporation.

Note

If the shares are invested in an RRSP, then the amount invested can be used to determine the annual taxable income amount.

Formula to calculate provincial and territorial tax payable (T₂)

We have not repeated the entire explanation for the provincial and territorial variables. Effective January 1, 2017, the variables for Option 2 are the same as for Option 1, except for factor K2P, which is as follows:

$$K2P = [(Lowest \text{ provincial or territorial tax rate} \times (0.0495 \times ((S1 \times PI) + B1 - \$3,500)^*, \text{maximum } \$2,564.10)) + (lowest \text{ provincial or territorial tax rate} \times (0.0163 \times ((S1 \times IE) + B1), \text{maximum } \$836.19))]$$

* If the result is negative, enter \$0.

Replace the lowest provincial or territorial tax rate with the appropriate rate for the province or territory that applies to the employee or pensioner.

Only for Quebec:

$T_2 = \$0$

Only for outside Canada or in Canada beyond the limits of any province or territory:

$T_2 = \$0$

Formula to calculate the estimated federal and provincial or territorial tax deductions (T) for the pay period

$T = [((T_1 + T_2 - M_1)/S_1) - M]^* + L$

* If the result is negative, $T = L$.

The resulting amount can be rounded to the nearest multiple of \$0.05 or \$0.01.

Only for employees in Quebec, outside Canada, and in Canada beyond the limits of any province or territory:

T = Estimated federal tax deduction for the pay period**

= $[((T_1 - M_1)/S_1) - M]^* + L$

* If the result is negative, $T = L$.

** The resulting amount can be rounded to the nearest multiple of \$0.05 or \$0.01.

M = Do not include any year-to-date extra tax deductions requested by the employee, (factor L). Tax already deducted on non-periodic payments such as bonuses, is included in factor M_1 .

M_1 = Accumulated federal and provincial (or territorial) tax deductions on non-periodic payments such as bonuses, if any, to the last pay period. Do not include any year-to-date extra tax deductions for the year requested by the employee, (factor L) or any tax included in factor M. The T factor (tax deduction for the pay period) will not include the tax on the non-periodic payment. The tax to be deducted on a current non-periodic payment is kept in another field (TB).

TB = Estimated federal and provincial or territorial tax deduction on a non-periodic payment for the pay period

= Step 1 minus Step 2 below (if negative, $TB = \$0$)

Step 1

Projected annual taxable income including B_1 and B payable now

= $[S_1 \times (I - F - F_2 - U_1)] + B_1 + B - HD - F_1$

Step 2

Projected annual taxable income including B_1 , but not B payable now

= $[S_1 \times (I - F - F_2 - U_1)] + B_1 - HD - F_1$

Chapter 7 – Canada Pension Plan (CPP)

Formula to determine CPP contributions for employees receiving salary or wages

C = The lesser of:

(i) $\$2,564.10^* - D$; and

(ii) $0.0495^{**} \times [PI - (\$3,500/P)]$

If the result is negative, $C = \$0$.

* Use $\$2,797.20$ for employees employed in Quebec.

** Use 0.054 for employees employed in Quebec.

Formula to determine CPP contributions—only for employees paid by commission

$$C = \text{The lesser of:}$$

- (i) $\$2,564.10^* - D$; and
- (ii) $0.0495^{**} \times [G - (\$3,500 \times N/365, \text{ minimum } \$67.30)]$
If the result is negative, $C = \$0$.

* Use \$2,797.20 for employees employed in Quebec.
** Use 0.054 for employees employed in Quebec.

Note

For both formulas, round the resulting amount to the nearest \$0.01. The maximum amount for the year [amount (i) above] will vary according to the rules in the section called “Special CPP Situations.”

Each employer needs to deduct CPP contributions based on the employee’s pensionable income, without regard to any other earnings the employee may have had with another employer in the same year. Accordingly, you must use the maximum above even if the employee works for you less than 12 months. Similarly, you are not entitled to a refund of the employer’s share of CPP if the employee works for you less than 12 months.

For payments where the employee receives remuneration such as a bonus, retroactive pay increase, vacation pay when vacation is not taken, or accumulated overtime pay, and the payment is not included with the regular remuneration for the current pay period, you should introduce a code or use the factor B with the record. Also do this if a non-periodic payment is made and no regular remuneration is paid in the pay period. You do this to avoid allowing the basic exemption for the pay period ($\$3,500/P$) in the formula described above.

The basic exemption amount ($\$3,500/P$) used to determine the employee’s contributions for the pay period has to stay the same throughout the year, regardless of whether an employee has worked in each week of the pay period.

Also, you should determine the number of pay periods at the start of the year (for example, for weekly, you can have 52 or 53 pay periods and, for biweekly, you can have 26 or 27 pay periods.) This is to make sure that you have deducted employee contributions properly.

Special CPP situations

You will have to either start or stop deducting CPP contributions under the following circumstances:

Your employee turns 18 – Start deducting CPP contributions for the first pay dated in the month after the employee turns 18.

Your employee turns 70 – Deduct CPP contributions up to and including the last pay dated in the month in which the employee turns 70.

Employee's CPP basic exemption for various pay periods

| Pay period | Basic exemption (\$) |
|-------------------|----------------------|
| Annually (1) | 3,500.00 |
| Semi-annually (2) | 1,750.00 |
| Quarterly (4) | 875.00 |
| Monthly (12) | 291.66 |
| Semi-monthly (24) | 145.83 |
| Biweekly (26) | 134.61 |
| Biweekly (27) | 129.62 |
| Weekly (52) | 67.30 |
| Weekly (53) | 66.03 |
| 22 pay periods | 159.09 |
| 13 pay periods | 269.23 |
| 10 pay periods | 350.00 |
| Daily (240) | 14.58 |
| Hourly (2000) | 1.75 |

Chapter 8 – Employment Insurance (EI)

Formula to calculate EI premiums

The formula below will allow you to determine, in your payroll calculations, the premium payable by an insured person under the *Employment Insurance Act*. The formula is:

EI = The lesser of:

- (i) \$836.19 – D1; and
- (ii) $0.0163 \times \text{IE}$.

Only for employees in Quebec:

- EI** = the lesser of
- (i) \$651.51 – D1; and
 - (ii) $0.0127 \times \text{IE}^*$.

* Round the resulting amount(s) in (ii) to the nearest \$0.01.

Note

When an employee changes province of employment during the year but stays with the same employer, the maximum premium for the year is based on the province where the first \$51,300 of insurable earnings is paid.

Chapter 9 – Summary sheets

Summary sheet for January 2017

You can use this sheet as a quick summary for inputting the new figures into your programs.

| Tax bracket rates | | | | | | Basic amount | Index rate | CEC |
|-----------------------|--|--------|--------|--------|--------|--------------|------------|-------|
| | 1st | 2nd | 3rd | 4th | 5th | | | |
| Federal | 0.15 | 0.205 | 0.26 | 0.29 | 0.33 | 11,635 | 1.4% | 1,178 |
| AB | 0.10 | 0.12 | 0.13 | 0.14 | 0.15 | 18,690 | 1.3% | |
| BC | 0.0506 | 0.077 | 0.105 | 0.1229 | 0.147 | 10,208 | 1.8% | |
| MB | 0.108 | 0.1275 | 0.174 | | | 9,271 | 1.5% | |
| NB | 0.0968 | 0.1482 | 0.1652 | 0.1784 | 0.203 | 9,895 | 1.4% | |
| NL | 0.087 | 0.145 | 0.158 | 0.173 | 0.183 | 8,978 | 2.0% | |
| NT | 0.059 | 0.086 | 0.122 | 0.1405 | | 14,278 | 1.4% | |
| NS | 0.0879 | 0.1495 | 0.1667 | 0.175 | 0.21 | 8,481 | – | |
| NU | 0.04 | 0.07 | 0.09 | 0.115 | | 13,128 | 1.4% | |
| ON | 0.0505 | 0.0915 | 0.1116 | 0.1216 | 0.1316 | 10,171 | 1.6% | |
| PE | 0.098 | 0.138 | 0.167 | | | 8,000 | – | |
| *QC | The Quebec abatement is 16.5%. | | | | | | | |
| SK | 0.11 | 0.13 | 0.15 | | | 16,065 | 1.4% | |
| YT | 0.064 | 0.09 | 0.109 | 0.128 | 0.15 | 11,635 | 1.4% | 1,178 |
| Outside Canada | The Outside Canada surtax rate is 48%. | | | | | | | |

| Tax bracket income thresholds | | | | | | V1 rate | V1 amount | LCP rate | LCP amount | S |
|-------------------------------|--|---------|---------|---------|---------|------------|---------------|----------|------------|-----|
| | 1st | 2nd | 3rd | 4th | 5th | | | | | |
| Federal | 0 | 45,916 | 91,831 | 142,353 | 202,800 | | | 0.15 | 750 | |
| AB | 0 | 126,625 | 151,950 | 202,600 | 303,900 | | | | | |
| BC | 0 | 38,898 | 77,797 | 89,320 | 108,460 | | | 0.15 | 2,000 | 444 |
| MB | 0 | 31,465 | 68,005 | | | | | 0.15 | 1,800 | |
| NB | 0 | 41,059 | 82,119 | 133,507 | 152,100 | | | 0.20 | 2,000 | |
| NL | 0 | 35,851 | 71,701 | 128,010 | 179,214 | | | 0.20 | 2,000 | |
| NT | 0 | 41,585 | 83,172 | 135,219 | | | | | | |
| NS | 0 | 29,590 | 59,180 | 93,000 | 150,000 | | | 0.20 | 2,000 | |
| NU | 0 | 43,780 | 87,560 | 142,353 | | | | | | |
| ON | 0 | 42,201 | 84,404 | 150,000 | 220,000 | 0.2 & 0.36 | 4,556 & 5,831 | | | 235 |
| PE | 0 | 31,984 | 63,969 | | | 0.1 | 12,500 | | | |
| *QC | The Quebec abatement is 16.5%. | | | | | | | | | |
| SK | 0 | 45,225 | 129,214 | | | | | 0.20 | 1,000 | |
| YT | 0 | 45,916 | 91,831 | 142,353 | 500,000 | | | 0.25 | 1,250 | |
| Outside Canada | The Outside Canada surtax rate is 48%. | | | | | | | | | |

* **Note:** Quebec calculates its own amounts, so we do not include figures for that province here.

Summary sheet for January 2016

You can use this sheet as a quick summary for inputting the new figures into your programs.

| Tax bracket rates | | | | | | 6 th | Basic amount | Index rate | CEC |
|-----------------------|--------|--|--------|--------|--------|-----------------|--------------|------------|-------|
| | 1st | 2nd | 3rd | 4th | 5th | | | | |
| Federal | 0.15 | 0.205 | 0.26 | 0.29 | 0.33 | | 11,474 | 1.3% | 1,161 |
| AB | 0.10 | 0.12 | 0.13 | 0.14 | 0.15 | | 18,451 | 1.3% | |
| BC | 0.0506 | 0.077 | 0.105 | 0.1229 | 0.147 | | 10,027 | 0.9% | |
| MB | 0.108 | 0.1275 | 0.174 | | | | 9,134 | – | |
| NB | 0.0968 | 0.1482 | 0.1652 | 0.1784 | 0.21 | 0.2575 | 9,758 | 1.3% | |
| NL | 0.077 | 0.125 | 0.133 | 0.143 | 0.153 | | 8,802 | 0.4% | |
| NT | 0.059 | 0.086 | 0.122 | 0.1405 | | | 14,081 | 1.3% | |
| NS | 0.0879 | 0.1495 | 0.1667 | 0.175 | 0.21 | | 8,481 | – | |
| NU | 0.04 | 0.07 | 0.09 | 0.115 | | | 12,947 | 1.3% | |
| ON | 0.0505 | 0.0915 | 0.1116 | 0.1216 | 0.1316 | | 10,011 | 1.5% | |
| PE | 0.098 | 0.138 | 0.167 | | | | 7,708 | – | |
| *QC | | The Quebec abatement is 16.5%. | | | | | | | |
| SK | 0.11 | 0.13 | 0.15 | | | | 15,843 | 1.3% | |
| YT | 0.064 | 0.09 | 0.109 | 0.1280 | 0.15 | | 11,474 | 1.3% | 1,161 |
| Outside Canada | | The Outside Canada surtax rate is 48%. | | | | | | | |

| Tax bracket income thresholds | | | | | | 6 th | V ₁ rate | V ₁ amount | LCP rate | LCP amount | S |
|-------------------------------|-----|--|---------|---------|---------|-----------------|---------------------|-----------------------|----------|------------|-----|
| | 1st | 2nd | 3rd | 4th | 5th | | | | | | |
| Federal | 0 | 45,282 | 90,563 | 140,388 | 200,000 | | | | 0.05 | 250 | |
| AB | 0 | 125,000 | 150,000 | 200,000 | 300,000 | | | | | | |
| BC | 0 | 38,210 | 76,421 | 87,741 | 106,543 | | | | 0.15 | 2,000 | 436 |
| MB | 0 | 31,000 | 67,000 | | | | | | 0.15 | 1,800 | |
| NB | 0 | 40,492 | 80,985 | 131,664 | 150,000 | 250,000 | | | 0.20 | 2,000 | |
| NL | 0 | 35,148 | 70,295 | 125,500 | 175,700 | | | | 0.20 | 2,000 | |
| NT | 0 | 41,011 | 82,024 | 133,353 | | | | | | | |
| NS | 0 | 29,590 | 59,180 | 93,000 | 150,000 | | | | 0.20 | 2,000 | |
| NU | 0 | 43,176 | 86,351 | 140,388 | | | | | | | |
| ON | 0 | 41,536 | 83,075 | 150,000 | 220,000 | | 0.2 & 0.36 | 4,484 & 5,739 | | | 231 |
| PE | 0 | 31,984 | 63,969 | | | | 0.1 | 12,500 | | | |
| *QC | | The Quebec abatement is 16.5%. | | | | | | | | | |
| SK | 0 | 44,601 | 127,430 | | | | | | 0.20 | 1,000 | |
| YT | 0 | 45,282 | 90,563 | 140,388 | 500,000 | | | | 0.25 | 1,250 | |
| Outside Canada | | The Outside Canada surtax rate is 48%. | | | | | | | | | |

* **Note:** Quebec calculates its own amounts, so we do not include figures for that province here.