

**Journal entries using standard cost (Direct material)**

- When Purchasing Material:

Direct Materials Control (Purchased Quantity × S.DM. P)	XX	
DM. Price Variance if (U)	XX	
A/P Control (Purchased Quantity × A.DM. P)		XX
DM. Price Variance if (F)		XX

- When used material in process:

W.I. P Control (SQ allowed for output units × S.DM. P)	XX	
DM. Efficiency Variance if (U)	XX	
Direct Materials Control (Used Quantity × S.DM. P)		XX
DM. Efficiency Variance if (F)		XX

**Journal entries using standard cost (Direct Labor)**

W.I. P Control (SH allowed for output × S.DL.P)	XX	
DL. Price Variance if (U)	XX	
DL. Efficiency Variance (U)	XX	
Wages Payable Control (AH × A.DL.P)		XX
DL. Price Variance if (F)		XX
DL. Efficiency Variance (F)		XX

**Note:** Record the journal entry to write off the direct cost variance (DM. Price, DM. Efficiency, DL. Price and DL. Efficiency) accounts to the Cost of Goods Sold account.

**Example 1:** Hareem Manufacturing has the following standards for one of its products:

Direct materials (4 ft. @ \$10), direct labor (1.5 hrs. @ \$4).

During the most recent year, the following actual results were recorded:

Production 6,000 units, direct materials (25000 ft. purchased and used @ \$8), direct labor (8000 hrs. @ \$5)

Required: Compute and journalize the following variances:

1. DM. price and efficiency variances.
2. DL. Price and efficiency variances.

**Example 2:** Jamie Draperies manufactures curtains. To complete a curtain, Jamie requires the following inputs:

DM. standard:            10 square yards at \$5 per yard  
DML. standard:         5 hours at \$10 per hour

During the second quarter, Jamie Draperies made 1,500 curtains, purchased 14,000 square yards of fabric costing \$68,600 and used 13000 square yards of it. Direct manufacturing labor totaled 7,600 hours for \$79,800.

Required:

- a. Compute the DM. price and efficiency variances for the quarter
- b. Compute the DML. price and efficiency variances for the quarter.
- c. Record the necessary entries.

**Example 3:** The Schuyler Corporation manufactures lamps. It has set up the following standards per finished unit for direct materials and direct manufacturing labor:

Direct materials: 10 lb. at \$4.50 per lb.                                 \$45.00  
Direct manufacturing labor: 0.5 hour at \$30 per hour     15.00

Actual results in January 2017 were as follows:

Direct materials used	98,055 lb
Direct manufacturing labor: 4,900 hours	\$154,350
Materials purchased amounted to 100,000 lb.	\$465,000
Actual output units during January	9850

Required:

1. Compute the January 2017 price and efficiency variances of direct materials and direct manufacturing labor.
2. Prepare journal entries to record the variances in requirement.
3. Write-off the variances in cost of goods sold.

2024  
 4<sup>th</sup> Stage/Accounting  
 Advanced cost

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**Example 4:** Yad manufactures fiberglass surfboards. The standard cost of direct materials is 35 pounds at the price of \$3 per pound and direct manufacturing labor is 11 hours at the rate of \$13 per hour. Following are additional data for the month of July:

Units completed	5,600 units
Direct material purchases	230,000 pounds
Cost of direct material purchases	\$759,000
Actual direct manufacturing labor-hours	43,000 hours
Actual direct manufacturing labor cost	\$623,500
Direct materials efficiency variance	\$1,200 F

Required:

1. Compute direct manufacturing labor variances for July.
2. Compute the actual pounds of direct materials used in production in July.
3. Calculate the direct materials price variance.

**Example 5:** On May 1, 2017, Bovar Company began the manufacture of a new paging machine known as Dandy. The standard costs for a unit of Dandy follow:

Direct materials (3 lb. at \$4 per lb.)	\$12.00
Direct manufacturing labor (1/2 hour at \$20 per hour)	10.00

The following data were obtained from Bovar's records for the month of May:

	Debit	Credit
Direct materials price variance	\$3,500	
Direct materials efficiency variance	2,400	
Direct manufacturing labor price variance	1,890	
Direct manufacturing labor efficiency variance		2,200

Actual production in May was 4,000 units of Dandy

Required:

1. Standard direct manufacturing labor-hours allowed for actual output produced
2. Actual direct manufacturing labor-hours worked
3. Actual direct manufacturing labor wage rate
4. Standard quantity of direct materials allowed (in pounds)
5. Actual quantity of direct materials used (in pounds)
6. Actual direct materials price per pound

**Flexible Budget, Overhead Variances Analysis:** we have two main kinds of overhead variances variable manufacturing overhead variance and fixed manufacturing overhead variance;

1. Variable Manufacturing Overhead Variance: we can reach to it by the following equations, are:

**Journal entries using standard cost (V.O.H)**

Variable Overhead Control (AH × AR)	XX
A/P various other accounts	XX

W.I.P Control (SH allowed for output units × SR)	XX
Variable Overhead Allocated	XX

When we write-off each Actual and Allocated V.O.H and record & efficiency variance as following entry;

each of spending

Variable Overhead Allocated	XX
V.O.H spending Variance (U)	XX
V.O.H efficiency Variance (U)	XX
Variable Overhead Control	XX
V.O.H spending Variance (F)	XX
V.O.H efficiency Variance (F)	XX

When we write-off each spending & efficiency variance as following entry;

Cost of goods sold	XX
V.O.H spending Variance (U)	XX
V.O.H efficiency Variance (U)	XX

Or;

V.O.H spending Variance (F)	XX
V.O.H efficiency Variance (F)	XX
Cost of goods sold	XX

2. Fixed Manufacturing Overhead Variance: we can reach to it by the following equations, are:

**Journal entries using standard cost (F.O.H)**

Fixed Overhead Control (Actual)	XX
Salaries, depreciation, and various other accounts	XX

W.I.P Control (SH allowed for output units × SR) XX

Fixed Overhead Allocated XX

When we write-off each Actual and Allocated V.O.H and record & efficiency variance as following entry; each of spending

Fixed Overhead Allocated XX

F.O.H spending Variance (U) XX

Production Volume Variance (U) XX

Fixed Overhead Control XX

F.O.H spending Variance (F) XX

Production Volume Variance (F) XX

When we write-off each spending & efficiency variance as following entry;

Cost of goods sold XX

F.O.H spending Variance (U) XX

Production Volume Variance (U) XX

Or;

F.O.H spending Variance (F) XX

Production Volume Variance (F) XX

Cost of goods sold XX

**Example 6:** Duvet Company manufactures pillows.

The 2017 operating budget was based on production of 25,000 pillows,

Machine-hours allowed per pillow 0.75 hrs.

Budgeted variable overhead per hour was \$25.

Actual production for 2017 was 27,000 pillows.

Actual machine-hours 19,050 hrs.

Actual variable costs were \$23 per machine-hour.

Required: Calculate the following:

1. Flexible-budget variable overhead variance for 2017.
2. Variable overhead spending variance.
3. Variable overhead efficiency variance.
4. Record the necessary journal entries.

**Example 7:** Soran Company makes watches. For 2017,

Expected fixed overhead costs of \$648,000.

Soran uses direct labor-hours to allocate fixed overhead and anticipate

21,600 hours during the year.

Direct labor-hours allowed per watch 0.04 hrs. (21600/540000)

Expected output of 540,000 units.

Actual output of watches 576000 Watches

Actual fixed overhead cost \$624000

Required: Calculate the following:

1. Flexible-budget fixed overhead variance.
2. Fixed overhead spending variance.
3. production-volume variance.
4. Record the necessary journal entries.

**2024**  
**4<sup>th</sup> Stage/Accounting**  
**Advanced cost**

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**Example 8:** The Brazil division of an American telecommunications company uses standard costing for its machine-paced production of telephone equipment. Data regarding production during June are as follows:

Variable manufacturing overhead costs incurred	\$537,470
Variable manufacturing overhead cost rate	\$7 per standard machine-hour
Fixed manufacturing overhead costs incurred	\$146,101
Fixed manufacturing overhead costs budgeted	\$136,000
Denominator level in machine-hours	68,000
Standard machine-hour allowed per unit of output	1.2
Units of output	66,500
Actual machine-hours used	75,700

Required:

1. Finding flexible-budget variable overhead variances and (spending & Efficiency Variance), then prepare journal entries and write-off.
2. Finding flexible-budget fixed overhead variances and (spending variance)
3. Production-volume variance
4. Prepare journal entries for fixed overhead variances and write-off.

**Example 9:** ProChem, Inc. produces chemicals for large biotech companies. It has the following data for manufacturing overhead costs during August 2017:

	Variable	Fixed
Actual costs incurred	\$35,000	\$16,500
Costs allocated to products	36,000	15,200
Flexible budget	_____	16,000
Actual input × budgeted rate	31,500	_____

Fill in the blanks. Use F for favorable and U for unfavorable:

	Variable	Fixed
(1) Spending variance	\$_____	\$_____
(2) Efficiency variance	_____	_____
(3) Production-volume variance	_____	_____
(4) Flexible-budget variance	_____	_____
(5) Underallocated (overallocated) manufacturing overhead	_____	_____

**Example 10:** Company (DDC), which manufactures expensive brass doorknobs. DDC uses two direct-cost categories: direct materials and direct manufacturing labor. It feels that manufacturing overhead is most closely related to material usage. Therefore, DDC allocates manufacturing overhead to production based upon pounds of materials used.

At the beginning of 2017, DDC budgeted monthly production of 35,000 doorknobs and adopted the following standards for each doorknob:

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Direct materials (brass)	0.3 lb. @ \$10/lb.
Direct manufacturing labor	1.2 hours @ \$17/hour
Manufacturing overhead:	
Variable	\$5/lb.
Fixed	\$15/lb.

Actual results for April 2017 were as follows:

Production	29,000 doorknobs
Direct materials purchased	12,400 lb. at \$11/lb.
Direct materials used	8,500 lbs.
Direct manufacturing labor	29,200 hours for \$671,600
Variable manufacturing overhead	\$65,100
Fixed manufacturing overhead	\$158,000

Required:

1. Direct materials price variance (based on purchases)
2. Direct materials efficiency variance
3. Direct manufacturing labor price variance
4. Direct manufacturing labor efficiency variance
5. Variable manufacturing overhead spending variance
6. Variable manufacturing overhead efficiency variance
7. Production-volume variance
8. Fixed manufacturing overhead spending variance



**Example 11:** The Beal Manufacturing Company's costing system has two direct-cost categories: direct materials and direct manufacturing labor. Manufacturing overhead (both variable and fixed) is allocated to products on the basis of standard direct manufacturing labor-hours (DLH). At the beginning of 2017, Beal adopted the following standards for its manufacturing costs:

Direct materials	5 lb. at \$4 per lb.
Direct manufacturing labor	4 hrs. at \$16 per hr.
Variable O.H	\$8 per DLH
Fixed O.H	\$9 per DLH

The denominator level for total manufacturing overhead per month in 2017 is 37,000 direct manufacturing labor-hours. Beal's budget for January 2017 was based on this denominator level. The records for January indicated the following:

Direct materials purchased	40,300 lb. at \$3.80 per lb.
Direct materials used	37,300 lb.
Direct manufacturing labor	31,400 hrs. at \$16.25 per hr.
Total actual manufacturing overhead (60% Variable)	\$650,000
Actual production	7,600 output units

Required:

1. Direct materials price variance, based on purchases
2. Direct materials efficiency variance
3. Direct manufacturing labor price variance
4. Direct manufacturing labor efficiency variance
5. Total manufacturing overhead spending variance
6. Variable manufacturing overhead efficiency variance
7. Production-volume variance
8. Journalize the above events.