

Lesson 14

SORTING, FILTERING, AND SUMMING UP LINE-ITEM REPORTS

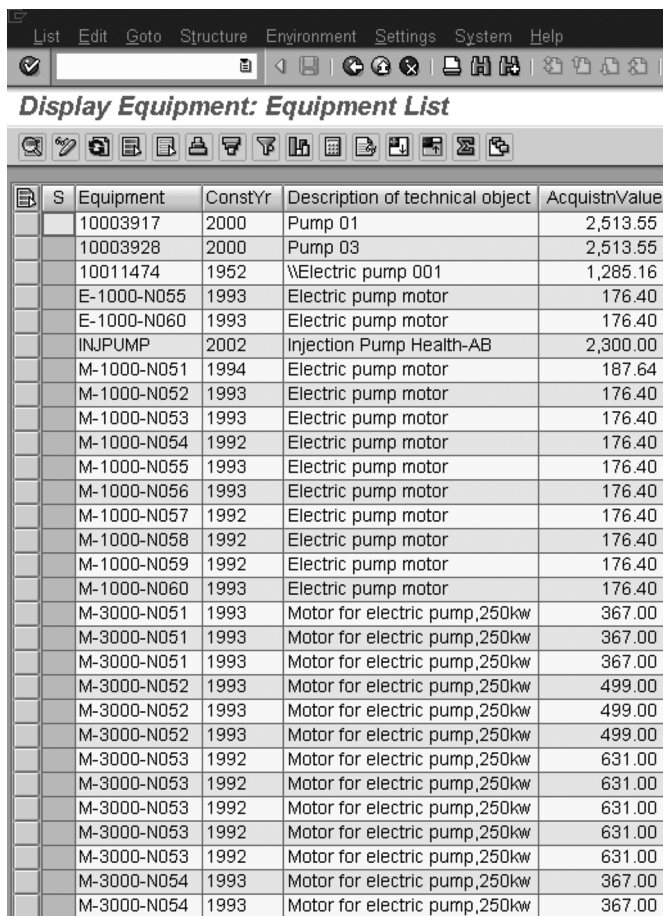
This is the first of two lessons on customizing the layouts and contents of line-item reports. It deals with the procedures for sorting, filtering, and summing up their data.

Line-item reports are the typical format for the output of *list-display transactions*, which generate lists of related objects (see the *Coda* at the end of this book) as well as the hit lists of code searches (see Lesson 10). They are also found on the initial and output screens of some *create*, *display*, and *change transactions*, including many purchasing and human resources transactions.

Each row in a line-item report displays the data about a single object, such as a vehicle, material, or business expenditure. The data are arrayed in columns, which are capped by **headers** that identify the data, and the rows are usually organized vertically by default according to the contents of the first column.

For example, we demonstrate some of the procedures in this lesson on the output of the *IH08 list-display transaction*. This output consists of a line-item report on mechanical equipment that is operated and maintained by physical plants in a company. When we run this transaction for plants in our company, the default output contains four columns of data (Figure 14.1):

- Equipment (that is, an equipment type code)
- Construction Year
- Description of technical object
- Acquisition value



S	Equipment	ConstYr	Description of technical object	AcquistnValue
	10003917	2000	Pump 01	2,513.55
	10003928	2000	Pump 03	2,513.55
	10011474	1952	\Electric pump 001	1,285.16
	E-1000-N055	1993	Electric pump motor	176.40
	E-1000-N060	1993	Electric pump motor	176.40
	INJPUMP	2002	Injection Pump Health-AB	2,300.00
	M-1000-N051	1994	Electric pump motor	187.64
	M-1000-N052	1993	Electric pump motor	176.40
	M-1000-N053	1993	Electric pump motor	176.40
	M-1000-N054	1992	Electric pump motor	176.40
	M-1000-N055	1993	Electric pump motor	176.40
	M-1000-N056	1993	Electric pump motor	176.40
	M-1000-N057	1992	Electric pump motor	176.40
	M-1000-N058	1992	Electric pump motor	176.40
	M-1000-N059	1992	Electric pump motor	176.40
	M-1000-N060	1993	Electric pump motor	176.40
	M-3000-N051	1993	Motor for electric pump,250kw	367.00
	M-3000-N051	1993	Motor for electric pump,250kw	367.00
	M-3000-N051	1993	Motor for electric pump,250kw	367.00
	M-3000-N052	1993	Motor for electric pump,250kw	499.00
	M-3000-N052	1993	Motor for electric pump,250kw	499.00
	M-3000-N052	1993	Motor for electric pump,250kw	499.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
	M-3000-N054	1993	Motor for electric pump,250kw	367.00
	M-3000-N054	1993	Motor for electric pump,250kw	367.00

Figure 14.1 The default version of the output of the *IH08* transaction is a line-item report with four columns of data. Each line displays the data on one piece of equipment.

However, you can change the default layout and content of a line-item report directly on its output screen in several ways. For example, we customized our sample report in these ways, which are shown in Figure 14.2.

- We arranged or *sorted* the line items in order of their equipment code, then clustered those line items with the same code so that they appear as **groups** in the first column.
- Within each group, we sorted the line items in order of their construction year, then clustered those line items with the same construction year so that they appear as **subgroups** in the second column.

- We filtered the report to eliminate line items with an acquisition value of less than \$1,000. (Notice the absence of any dollar value less than \$1,000 in the **Acquisition value column**.)
- We attached a grand total for the acquisition values of all the equipment to the very bottom line of the report (A).
- We subtotaled the acquisition values for each equipment-code group (for example, B) and construction-year subgroup (for example, C).

S	Equipment	ConstYr	Description of technical object	AcquistnValue
	TEX-15	1993	Elektr. Pumpe 001	1,285.16
		1993		1,285.16
	TEX-15			1,285.16
	TEX-16	1993	Elektr. Pumpe 001	1,285.16
		1993		1,285.16
	TEX-16			1,285.16
	TEX-17	1993	Elektr. Pumpe 001	1,285.16
		1993		1,285.16
	TEX-17			1,285.16
	TEX-18	1993	Elektr. Pumpe 001	1,285.16
		1993		1,285.16
	TEX-18			1,285.16
	TEX-19	1993	Elektr. Pumpe 001	1,285.16
		1993		1,285.16
	TEX-19			1,285.16
	TEX-20	1993	Elektr. Pumpe 001	1,285.16
		1993		1,285.16
	TEX-20			1,285.16
	TEY-18	2007	Electric pump 001	1,285.16
			Electric pump 001	1,285.16
			Electric pump 001	1,285.16
		2007		3,855.48
	TEY-18			3,855.48
	TEY-19	2007	Electric pump 001	1,285.16
		2007		1,285.16
	TEY-19			1,285.16
	TEY-20	2007	Electric pump 001	1,285.16
		2007		1,285.16
	TEY-20			1,285.16
				89,786.39

Figure 14.2 Our version of the output of the *IH08* transaction, after we customized the line-item report with filters, sorts, and sums.

We demonstrate in this lesson the procedures for customizing line-item reports in these ways, using examples from several initial screens, output screens and the hit lists of search screens.

Sorting and Grouping Line-item Reports

The **sorting** function rearranges the rows of line-item reports according to the contents of one or more selected data columns (which we call the *sorting columns*). You can rearrange these rows in either alphanumerical (for example, *A to Z* or *1 to 1000*) or reverse alphanumerical order in one of two ways.

The first method makes use of the **Sort ascending** (A) and **Sort descending** (B) buttons (Figure 14.3). We demonstrate their use in the next three examples.



Figure 14.3 The **Sort ascending** (A) and **Sort descending** (B) buttons.

Example 1: Single-Column Sort of a Line-item Report

Our first example demonstrates a single-column sort on the output of the *Cost Center Actual/Plan/Variance (A/P/V) transaction*¹ (Figure 14.4). This transaction displays the budget of a department (or *cost center*) in a line-item format.

Each row of the A/P/V report shows the budget for a single cost category or *cost element*, which is identified in its first column (Figure 14.4). Each row displays the *actual* and *planned costs* for a cost element and the difference or *variance* between them in dollar values and percentages. The report is organized in order of the cost element code, which ranges from 400000 to 799000. This sorting column (the first) is automatically highlighted to distinguish it from the other data columns.

We can sort the contents of this line-item report according to the contents of another column by using the **Sort ascending** and **Sort descending buttons** in its application toolbar (A). For an example, we can rearrange the rows in order of

1. We have not used the transaction code in this name because it is very long and clumsy: *S_ALR_87013611*.

Report Edit Goto View Extras Settings System Help

Cost centers: actual/plan/variance Date: 12/13/04 Page: 2 / 4

Cost Center/Group * Column: 1 / 2

Person responsible:

Reporting period: 12 2004

Cost elements	Act. costs	Plan costs	Abs. var.	Var. (%)
400000 Raw Materials 1	1,510.00	24,748.69	23,238.69	93.90
400001 Raw mat. scrapped	23.01	120,369.36	120,346.35	99.98
400010 Raw Materials 2		770.76	770.76	100.00
403000 Operating Supplie		538,145.20	538,145.20	100.00
404000 Spare parts	10.00	35,351.24	35,341.24	99.97
405000 Pkg. material con		120,617.69	120,617.69	100.00
405200 Usage OfficeSuppl		236.16	236.16	100.00
410000 OEM products cons		90,939.12	90,939.12	100.00
415000 External procurem		110,676.96	110,676.96	100.00
415100 0000415100		12,500.00	12,500.00	100.00
416100 Electricity Base		25,413.52	25,413.52	100.00
416200 Electricity Usage		736,536.18	736,536.18	100.00
416300 Water	140.85	33,580.80	33,439.95	99.58
416302 0000416302	80.00		80.00	
417000 Purchased service	688.89	55,783.93	55,095.04	98.77
417001 Purchased service	92.00		92.00	
420000 Direct labor cost		2,134,876.20	2,134,876.20	100.00

Figure 14.4 The default output of the *Cost Center Actual/Plan/Variance* transaction, with the rows sorted in order of increasing cost element code.

their actual costs, with those rows with the highest costs at the top of the report and those with the lowest at the bottom, by following this two-step procedure.

Procedure

Single-Column Sort of a Line-item Report

Step 1. Click the header of the **Actual costs** column (Figure 14.4B) to select and highlight it.

Step 2. Click the **Sort descending** button.

This procedure reorganized the report so that its rows are organized in order of descending actual costs (Figure 14.5). In addition, it placed a **sort-descending icon** in the header of the **Actual Costs** column (A) to indicate that the report is arranged in that order.

Report Edit Goto View Extras Settings System Help

Cost centers: actual/plan/variance Date: 12/13/2004 Page: 2 / 4

Cost Center/Group * Column: 1 / 2

Person responsible:

Reporting period: 1 to 12 2004

Cost elements	Act. costs	Plan costs	Abs. var.	Var. (%)
892000 Change inv. finis	50,600.00		50,600.00	
470000 Occupancy costs	3,636.36	243,825.92	240,189.56	98.51
400000 Raw Materials 1	1,510.00	24,748.69	23,238.69	93.90
417000 Purchased service	688.89	55,783.93	55,095.04	98.77
416300 Water	140.85	33,580.80	33,439.95	99.58
417001 Purchased service	92.00		92.00	
893020 Inv. Chg. Recv Int.	44.84		44.84	
890000 Cons. semifin. prod	40.00		40.00	
400001 Raw mat. scrapped	23.01	120,369.36	120,346.35	99.98
404000 Spare parts	20.00	35,351.24	35,341.24	99.97
895000 Factory output pr	17.00		1.00	
476000 Office supplies	9.28	106,076.04	106,076.04	100.00
476100 Data proc. materi	5.93	172,282.35	172,282.35	100.00
476500 Misc. admin. cost	4.84	66,771.96	66,771.96	100.00
476900 Miscellaneous cos	1.96	153,954.02	153,954.02	100.00
479000 Bank Charges	1.24	4,795.04	4,795.04	100.00
474220 Travel Exp. Hotel		10,829.28	10,829.28	100.00

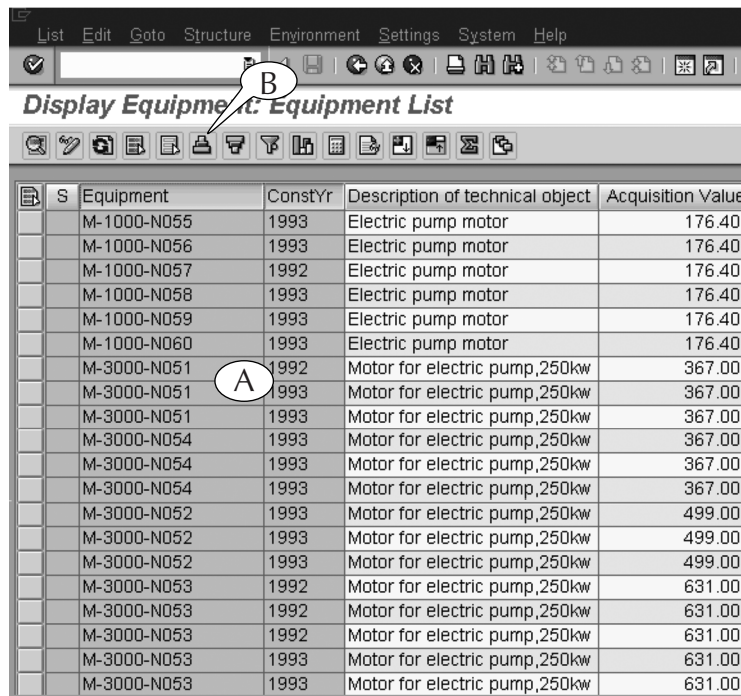
Figure 14.5 The customized output of the *Cost Center Actual/Plan/Variance* transaction, with the rows sorted in order of descending actual costs.

End Procedure

Example 2: Multiple-Column Sort of a Line-item Report

This second example demonstrates a multiple-column sort on the output of the *IH08* transaction, which displays data about equipment in a line-item format. The rows in the default version of this report are organized in order of the equipment code, which appears in the first column (Figure 14.6).

We can rearrange this report so that the rows are organized first in order of increasing equipment code (we will call this the “primary sorting column”), then in order of increasing construction year (we will call this the “secondary sorting column”), by following this next procedure.



S	Equipment	ConstYr	Description of technical object	Acquisition Value
	M-1000-N055	1993	Electric pump motor	176.40
	M-1000-N056	1993	Electric pump motor	176.40
	M-1000-N057	1992	Electric pump motor	176.40
	M-1000-N058	1993	Electric pump motor	176.40
	M-1000-N059	1993	Electric pump motor	176.40
	M-1000-N060	1993	Electric pump motor	176.40
	M-3000-N051	1992	Motor for electric pump,250kw	367.00
	M-3000-N051	1993	Motor for electric pump,250kw	367.00
	M-3000-N051	1993	Motor for electric pump,250kw	367.00
	M-3000-N054	1993	Motor for electric pump,250kw	367.00
	M-3000-N054	1993	Motor for electric pump,250kw	367.00
	M-3000-N054	1993	Motor for electric pump,250kw	367.00
	M-3000-N052	1993	Motor for electric pump,250kw	499.00
	M-3000-N052	1993	Motor for electric pump,250kw	499.00
	M-3000-N052	1993	Motor for electric pump,250kw	499.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
	M-3000-N053	1993	Motor for electric pump,250kw	631.00
	M-3000-N053	1993	Motor for electric pump,250kw	631.00

Figure 14.6 The default output of the *IH08* transaction, with the rows sorted in order of increasing equipment code.

Procedure

Multiple-Column Sort of a Line-item Report

Step 1. Click-and-drag across the headers of the sorting columns (if they are next to one another) to select and highlight them (A).

Note: When you use this method, the first (left) column becomes the primary sorting column, the second becomes the secondary sorting column, and so on. See the next lesson for instructions on rearranging the orders of columns if it is necessary.

or alternatively

Press and hold the **Ctrl** key on your keyboard, click the headers of the sorting columns to select and highlight them, then release the **Ctrl** key.

Note: When you use this method, click the primary sorting column first, the secondary sorting column second, and so on.

Step 2. Click the **Sort ascending** button (B) in the application toolbar.

This procedure had *three* effects on the line-item report (Figure 14.7):

- It clustered all the rows with the same equipment code into **groups** (A), and sorted the groups in order of increasing code.

This grouping occurs automatically whenever there are rows with the same data in the sorting columns.

- It clustered all the rows in each group with the same construction year into **subgroups** (B), and sorted the subgroups in order of increasing year.
- It placed icons in the headers of the **Equipment** and **Construction Year** columns (C) to indicate that they are sorted.

S	Equipment	ConstYr	Description of technical object	Acquisition Value
	M-1000-N055	1993	Electric pump motor	176.40
	M-1000-N056	1993	Electric pump motor	176.40
	M-1000-N057	1992	Electric pump motor	176.40
	M-1000-N058	1993	Electric pump motor	176.40
	M-1000-N059	1993	Electric pump motor	176.40
	M-1000-N060	1993	Electric pump motor	176.40
	M-3000-N051	1992	Motor for electric pump,250kw	367.00
		1993	Motor for electric pump,250kw	367.00
			Motor for electric pump,250kw	367.00
	M-3000-N052	1993	Motor for electric pump,250kw	499.00
			Motor for electric pump,250kw	499.00
	M-3000-N053	1992	Motor for electric pump,250kw	631.00
			Motor for electric pump,250kw	631.00
			Motor for electric pump,250kw	631.00
		1993	Motor for electric pump,250kw	631.00
			Motor for electric pump,250kw	631.00
	M-3000-N054	1993	Motor for electric pump,250kw	367.00
			Motor for electric pump,250kw	367.00
			Motor for electric pump,250kw	367.00

Figure 14.7 The customized output of the *IH08* transaction, with the rows grouped and sorted by model number and construction year.

End Procedure

Example 3: Single-Column Sort of a Hit List

This third example demonstrates the method of sorting the hit lists of search screens.

Search hit lists are usually displayed in a line-item format, and occasionally you will see the **Sort ascending** and **Sort descending** buttons somewhere on their screens (see Figure 13.13 on page 163 for an example). When this occurs, you can use the same procedures that were described in the last two examples to rearrange their contents.

When the hit list screen does not display these two buttons, you can still rearrange their contents by simply double-clicking the header of a data column.

For example, the hit list for a search for plant codes is a two-column line-item report (Figure 14.8A). However, it is organized in order of the plant code, and the plant names are randomly organized. When you scroll through the hit list, it is hard to find a plant by its name because of this lack of organization.

You can solve this problem by double-clicking the header of the **Name** column: One double-click reorganizes it in alphabetical order (B), and a second click reorganizes it in reverse alphabetical order (not shown here).

PIPI	Name 1
0001	Werk 0001
1000	Werk Hamburg
1200	Dresden
2000	Heathrow / Hayes
2010	DC London
2200	Paris
2400	Milano Distribution Center
2500	Rotterdam Distribution Center
2700	Werk Biel / Bienne
3000	New York
3200	Atlanta
3299	Jasper
3700	Orlando
3800	Denver Distribution center
3900	Central Inventory
4510	SAP Plant - Eastern Canada

PIPI	Name 1
3200	Atlanta
3900	Central Inventory
2010	DC London
3800	Denver Distribution center
1200	Dresden
2000	Heathrow / Hayes
3299	Jasper
2400	Milano Distribution Center
3000	New York
3700	Orlando
2200	Paris
2500	Rotterdam Distribution Center
4520	SAP Plant - Central Canada
4510	SAP Plant - Eastern Canada
4540	SAP Plant - Maintenance Plant
4530	SAP Plant - Western Plant

Figure 14.8 The hit list for a plant code search, in the default order (A) and reorganized in order of plant name (B).

We described the means of reorganizing the line-item reports of output screens and hit lists here. You will also find line-item tables on the screens of some *create*, *display*, and *change transactions*. They can be reorganized in the same manner.

For instance, the initial screen of the *ME51N transaction*, which creates requisitions for materials and services, contains a line-item table for entering data about those items (see Figure 9.3 on page 106). This table has its own application toolbar, which includes the **Sort ascending** and **Sort descending buttons**. You can use them in the same way that you would use them on an output screen.

Filtering Line-item Reports

The **filtering** function edits the contents of line-item reports and shortens them by removing rows that contain certain data values, or *filtering criteria*, in specified columns.

You can filter a report whenever you see the **Threshold button** (also called the **Set filter button** on some screens) in the application toolbar of the output screen of a report (Figure 14.9). To start this procedure, click the header of the column that contains the filtering criteria to select and highlight it, then click this button.



Figure 14.9 Click the **Threshold button** to start the process of filtering line-item reports.

This action calls up the **Determine values for filter criteria screen** (Figure 14.10), which contains data entry fields for each filtering criteria that you want to apply to the report. You can search for and enter codes and texts in these fields, attach selection options to them, and enter multiple codes and ranges, by following the procedures that were described in Part III of this book.

The base of the filter screen contains a row of command buttons, including the **Enter button** (A), which has the same effect as hitting the **Enter key** on your keyboard, and the **Cancel button** (B), which erases the screen and returns you to the main screen. You can delete one filtering criterion by clicking inside one of its data entry fields and then clicking the **Delete row button** (C), or you can delete all the filtering criteria on the screen by simply clicking the **Delete button** (D).

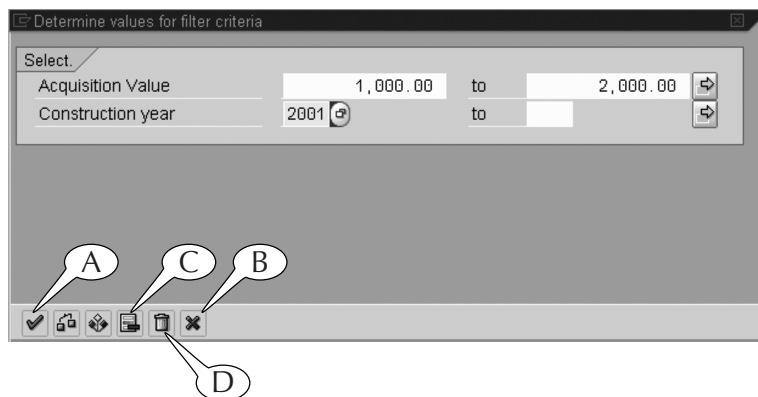


Figure 14.10 Enter your filter criteria on the **Determine values for filter criteria** screen as you would enter them on any initial screen.

*Don't see the **Threshold** button on your screen? Follow the menu path **Settings > Options** to call up the **Options** screen (Figure 14.11), select the **Expert mode** option (A) and hit the **Enter** key on your keyboard.*

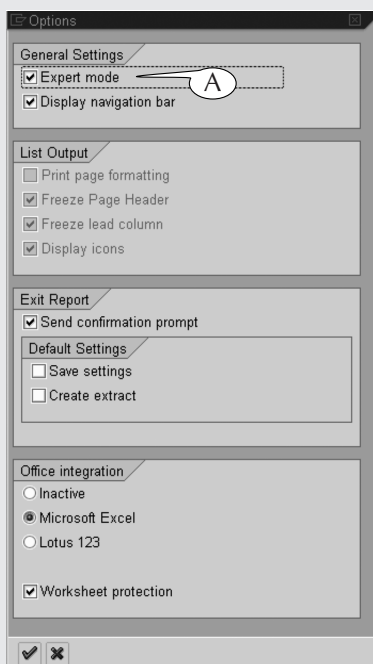


Figure 14.11 You must select the **Expert mode** option on the **Options** screen in order to see the **Threshold** button on the output screen.

We now illustrate the filtering of line-item reports with two examples.

Example 1: Filtering the Line-item Report of the IH08 Transaction

Once again, we use the output of the *IH08 transaction*, which displays data about equipment, to demonstrate the procedure for filtering a line-item report. The report is generated by a list-display transaction, and it was originally set up to display data on *every* pump operated and maintained by a physical plant (Figure 14.12).

Display Equipment: Equipment List

S	Equipment	Description of technical object	Acquisition Value	ConstYr
	10003917	Pump 01	2,513.55	2000
	10003928	Pump 03	2,513.55	2000
	10011474	\Electric pump 001	1,285.16	1952
	E-1000-N055	Electric pump motor	176.40	1993
	E-1000-N060	Electric pump motor	176.40	1993
	INJPUMP	Injection Pump Health-AB	2,300.00	2002
	M-1000-N051	Electric pump motor	187.64	1994
	M-1000-N052	Electric pump motor	176.40	1993
	M-1000-N053	Electric pump motor	176.40	1993
	M-1000-N054	Electric pump motor	176.40	1992
	M-1000-N055	Electric pump motor	176.40	1993
	M-1000-N056	Electric pump motor	176.40	1993
	M-1000-N057	Electric pump motor	176.40	1992
	M-1000-N058	Electric pump motor	176.40	1992
	M-1000-N059	Electric pump motor	176.40	1992
	M-1000-N060	Electric pump motor	176.40	1993
	M-3000-N051	Motor for electric pump,250kw	367.00	1993
	M-3000-N051	Motor for electric pump,250kw	367.00	1993
	M-3000-N051	Motor for electric pump,250kw	367.00	1993
	M-3000-N052	Motor for electric pump,250kw	499.00	1993
	M-3000-N052	Motor for electric pump,250kw	499.00	1993
	M-3000-N052	Motor for electric pump,250kw	499.00	1993
	M-3000-N052	Motor for electric pump,250kw	499.00	1993
	M-3000-N053	Motor for electric pump,250kw	631.00	1992
	M-3000-N053	Motor for electric pump,250kw	631.00	1992
	M-3000-N053	Motor for electric pump,250kw	631.00	1992
	M-3000-N053	Motor for electric pump,250kw	631.00	1992
	M-3000-N053	Motor for electric pump,250kw	631.00	1992
	M-3000-N053	Motor for electric pump,250kw	631.00	1992
	M-3000-N053	Motor for electric pump,250kw	631.00	1992
	M-3000-N054	Motor for electric pump,250kw	367.00	1993
	M-3000-N054	Motor for electric pump,250kw	367.00	1993
	M-3000-N054	Motor for electric pump,250kw	367.00	1993

Figure 14.12 The unfiltered output of the *IH08 transaction*.

Suppose we want to limit this line-item report to all those pumps in our plant that cost between \$1,000 and \$2,000. We can edit it along those lines by following this next procedure.

Procedure

Filtering a Line-item Report

- Step 1.** Click the header of the **Acquisition value column (A)** to select and highlight it, then click the **Threshold button (B)**.
- Step 2.** The **Determine values for filter criteria screen** appears with data entry fields for the acquisition value (Figure 14.13).
 - Enter *1000* in the first field and *2000* in the second field. Do not use commas or dollar signs.
 - Hit the **Enter key** on your keyboard.

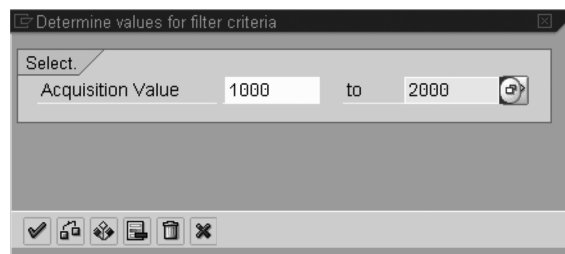


Figure 14.13 Filtering the report to limit it to pumps with acquisition values of \$1,000 to \$2,000.

- Step 3.** The line-item report returns, and now displays only the data for pumps with an acquisition value of \$1,000 to \$2,000 (Figure 14.14). A small icon also appears in the header of the **Acquisition value column (A)** to indicate that the report is filtered according to the contents of that column.

Suppose we want to further limit this report to all pumps that were constructed after 2001. We would continue in this way:

- Step 4.** Click the header of the **Construction year column (Figure 14.14B)** to select and highlight it, then click the **Threshold button (C)**.
- Step 5.** The **Determine values for filter criteria screen** returns with a second set of data entry fields for the construction year (Figure 14.15A).

Display Equipment: Equipment List

S	Equipment	Description of technical object	AcquistnValue	ConstYr
	10011474	\Electric pump 001	1,285.16	1952
	P-1000-N001	Electric pump 001	1,285.16	1993
	P-1000-N002	Electric pump 002	1,183.74	1993
	P-1000-N003	Electric pump 003	1,221.58	1993
	P-1000-N004	Electric pump 004	1,375.63	1993
	P-1000-N005	Electric pump 005	1,370.21	1994
	P-1000-N006	Electric pump 006	1,309.27	1992
	P-1000-N007	Electric pump 007	1,210.43	1993
	P-1000-N008	Electric pump 008	1,312.90	1993
	P-1000-N009	Electric pump 009	1,313.51	1992
	P-1000-N010	Electric pump 010	1,256.14	1991
	P-1000-N011	Electric pump 011	1,199.44	1992
	P-1000-N012	Electric pump 012	1,209.10	1992
	PP-PUMP02	Cool-Water Pump	1,500.00	1999
	TEQ-00	Electric pump 001	1,285.16	1993
	TEQ-01	Electric pump 001	1,285.16	1993
	TEQ-02	Electric pump 001	1,285.16	1993
	TEQ-03	Electric pump 001	1,285.16	1993
	TEQ-04	Electric pump 001	1,285.16	1993
	TEQ-05	Electric pump 001	1,285.16	1993
	TEQ-06	Electric pump 001	1,285.16	1993
	TEQ-07	Electric pump 001	1,285.16	1993
	TEQ-08	Electric pump 001	1,285.16	1993
	TEQ-09	Electric pump 001	1,285.16	1993
	TEQ-10	Electric pump 001	1,285.16	1993
	TEQ-11	Electric pump 001	1,285.16	1993
	TEQ-12	Electric pump 001	1,285.16	1993
	TEQ-13	Electric pump 001	1,285.16	1993
	TEQ-14	Electric pump 001	1,285.16	1993
	TEQ-15	Electric pump 001	1,285.16	1993

Figure 14.14 The filtered output of the *IH08* transaction.

- Double-click inside the first of the two **Construction year** fields to call up the **Maintain Selection Option** screen (see Figure 12.3 on page 144), and double-click the *green greater than (>)* option to attach it to the **Construction year** fields (B).
- Enter *2001* in the first **Construction year** field.
- Hit the **Enter** key on your keyboard.

Determine values for filter criteria

Select

Acquisition Value 1,000.00 to 2,000.00

Construction year 2001 to A

Figure 14.15 Adding a second filter to the output of the *IH08* transaction, this time using a selection option.

Step 6. The line-item report returns, and now displays only the data for those pumps that were acquired after 2001 at a cost of \$1,000 to \$2,000 (Figure 14.16).

Display Equipment: Equipment List

S	Equipment	Description of technical object	AcquistriValue	ConstYr
	TEY-18	Electric pump 001	1,285.16	2007
	TEY-18	Electric pump 001	1,285.16	2007
	TEY-18	Electric pump 001	1,285.16	2007
	TEY-19	Electric pump 001	1,285.16	2007
	TEY-20	Electric pump 001	1,285.16	2007

Figure 14.16 The twice-filtered output of the *IH08* transaction.

End Procedure

Example 2: Filtering the Line-item Report of the Cost Center A/P/V Transaction

We return to the output of the *Cost Center Actual/Plan/Variance (A/P/V) transaction* (Figure 14.17) to demonstrate the use of a second filtering screen that you may encounter in some modules.

We filter this line-item report according to the contents of the **Abs variance column** (A), which shows the numerical differences between the actual and planned costs of cost elements. Notice that some of the values in this column are positive, and some are negative. We can apply a filter to the report that removes

those line items with variance values less than \$5,000, *regardless of whether they are positive or negative*, by following this next procedure.

Cost centers: actual/plan/variance

Cost centers: actual/plan/variance Date: 12/13/2004 Page: 2 / 4
 Column: 1 / 2
 Cost Center/Group *
 Person responsible:
 Reporting period: 1 to 12 2004

Cost elements	Act. costs	Plan costs	Abs. var.	Var. (%)
400000 Raw Materials 1	1,510.00	24,748.69	23,238.69	93.90
400001 Raw mat. scrapped	23.01	120,369.36	120,346.35	99.98
400010 Raw Materials 2	770.76		770.76	100.00
403000 Operating Supplie		538,145.20	538,145.20	100.00
404000 Spare parts	10.00	35,351.24	35,341.24	99.97
405000 Pkg. material con		120,617.69	120,617.69	100.00
405200 Usage OfficeSuppl	236.16		236.16	100.00
410000 OEM products cons		90,939.12	90,939.12	100.00
415000 External procurem		110,676.96	110,676.96	100.00
415100 0000415100		12,500.00	12,500.00	100.00
416100 Electricity Base		25,413.52	25,413.52	100.00
416200 Electricity Usage		736,536.18	736,536.18	100.00
416300 Water	140.85	33,580.80	33,439.95	99.58
416302 0000416302	80.00		80.00	
417000 Purchased service	688.89	55,783.93	55,095.04	98.77
417001 Purchased service	92.00		92.00	
420000 Direct labor cost		2,134,876.20	2,134,876.20	100.00
421000 Indirect labor co		13,559.48	13,559.48	100.00
430000 Salaries		8,320,457.90	8,320,457.90	100.00
430900 Other sal. expens	1,360.07		1,360.07	100.00
431900 Holiday premium		176,820.01	176,820.01	100.00
435000 Annual Bonus		812,095.16	812,095.16	100.00
440000 Legal social expe		604,280.41	604,280.41	100.00

Figure 14.17 The default output of the *Cost Center Actual/Plan/Variance* transaction. Notice that there are positive and negative dollar values in the **Abs var** column.

Procedure

Filtering Positive and Negative Values in a Line-item Report 1

- Step 1.** Click the header of the **Abs var** column to select and highlight it (Figure 14.17A), then click the **Threshold** button (B).
- Step 2.** The **Maintain Threshold Value Conditions for Selection 001** screen appears (Figure 14.18). It contains two sets of identical field areas in which you can apply one or two filters. We use the first set of field areas in the top half of the screen to apply one filter in this procedure.
 - Select the *Active option* (A) to activate the top filter.

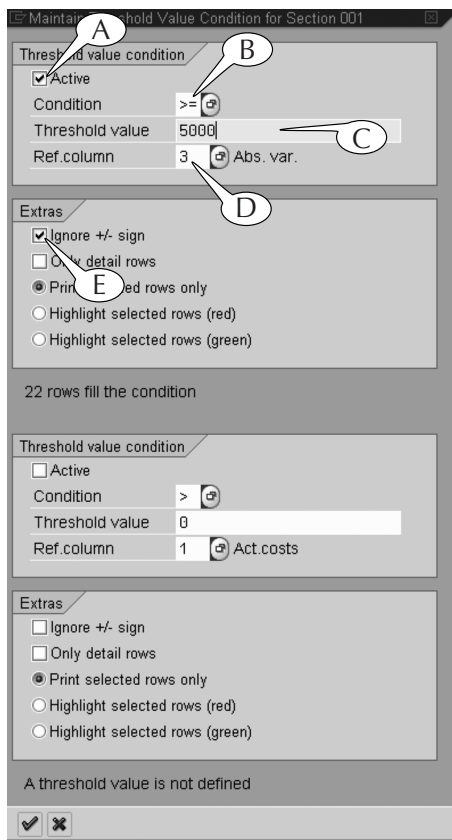


Figure 14.18 The **Maintain Threshold Value Conditions** screen contains field areas for two separate filters. We use it to apply one filter to the report.

- Step 3.** Enter the *greater than or equal to (>=)* condition code in the **Condition field (B)** by doing the following.
- Click inside the field to call up the **Threshold value condition search screen** (Figure 14.19).

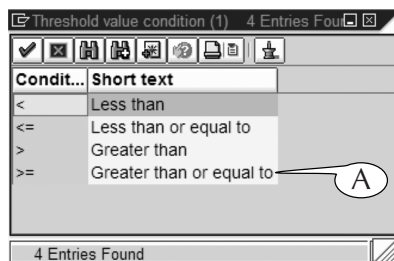


Figure 14.19 Select a condition code from this screen.

- Double-click the *greater than or equal to condition code* (A), and it is entered in the **Condition field** (Figure 14.18B).
- Step 4.** Enter 5000 (again, without a dollar sign or comma) in the **Threshold value field** (Figure 14.18C).
- Step 5.** Verify that the correct filtering column is entered in the **Ref column field** (D). If it is not, click its search button to call up a list of columns, and double-click the correct one to enter it there.
- Step 6.** Select the *Ignore +/- sign option* (E). This action sets the filter to remove all line items with variances less than \$5,000 whether they are positive or negative.
- Step 7.** Hit the **Enter** key on your keyboard to return to the output screen, where the filter is now applied to the line-item report (Figure 14.20). Notice that a filter icon (A) is attached to the header of the **Abs var column**.

Cost centers: actual/plan/variance

Cost centers: actual/plan/variance Date: 12/13/2004 Page: 2 / 4

Cost Center/Group * Column: 1 / 2

Person responsible:

Reporting period: 1 to 12 2004

Cost elements	Act.costs	Plan costs	Abs. var.	Var. (%)
400000 Raw Materials 1	1,510.00	24,748.69	23,238.69	93.90.
400001 Raw mat. scrapped	23.01	120,369.36	120,346.35	99.98.
403000 Operating Supplie		538,145.20	538,145.20	100.00.
404000 Spare parts	10.00	35,351.24	35,341.24	99.97.
405000 Pkg. material con		120,617.69	120,617.69	100.00.
410000 OEM products cons		90,939.12	90,939.12	100.00.
415000 External procurem		110,676.96	110,676.96	100.00.
415100 0000415100		12,500.00	12,500.00	100.00.
416100 Electricity Base		25,413.52	25,413.52	100.00.
416200 Electricity Usage		736,536.18	736,536.18	100.00.
416300 Water	140.85	33,580.80	33,439.95	99.58.
417000 Purchased service	688.89	55,783.93	55,095.04	98.77.
420000 Direct labor cost		2,134,876.20	2,134,876.20	100.00.
421000 Indirect labor co		13,559.48	13,559.48	100.00.
430000 Salaries		8,320,457.90	8,320,457.90	100.00.
431900 Holiday premium		176,820.01	176,820.01	100.00.
435000 Annual Bonus		812,095.16	812,095.16	100.00.
440000 Legal social expe		604,280.41	604,280.41	100.00.
440100 Soc. secur., sala		1,253,892.96	1,253,892.96	100.00.
449000 Other pers. costs		432,031.09	432,031.09	100.00.
451000 Building maintena		51,314.56	51,314.56	100.00.

Figure 14.20 The filtered output of the *Cost Center Actual/Plan/Variance* transaction, with all line items with variances less than \$5,000 removed.

End Procedure

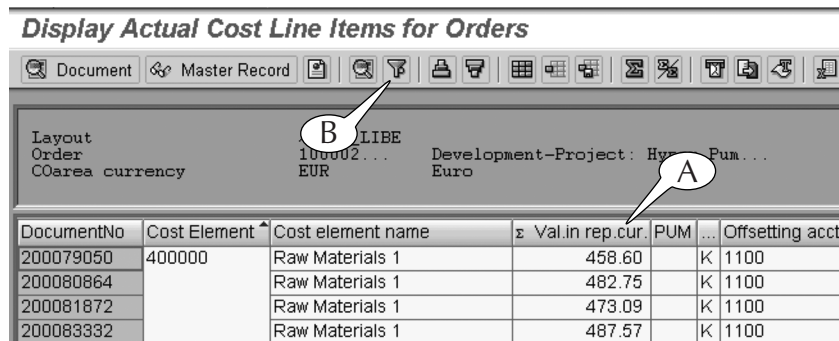
Once you apply a filter by this procedure, you can remove it by recalling the **Maintain Threshold Value Conditions** screen and deselecting the *Active option* (Figure 14.18A).

Example 3: Filtering Positive and Negative Values on the Usual Filter Screen

The **Maintain Threshold Value Conditions for Selection 001** screen (Figure 14.18) is associated with only a few output screens in SAP. However, it is quite convenient for filtering numerical data with both positive and negative values, thanks to the *Ignore +/- option*.

You may encounter positive and negative numerical values on other line-item reports where you have the usual **Determine values for filter criteria** screen at your disposal for filtering them. In these cases, filtering positive and negative numerical values is a little more cumbersome.

For example, consider the example of the line-item report on the **Display Actual Cost Line Items for Orders** screen (Figure 14.21). This report contains the **Val in rep cur column** (A), which displays both positive (credit) and negative (debit) dollar values. If you want to filter this report according to the contents of this column, you will find that the **Determine values for filter criteria** screen contains data entry fields for these dollar values, but no handy *Ignore +/- option* (Figure 14.22).



DocumentNo	Cost Element	Cost element name	Σ Val.in rep.cur.	PUM	Offsetting acct
200079050	400000	Raw Materials 1	458.60	K	1100
200080864		Raw Materials 1	482.75	K	1100
200081872		Raw Materials 1	473.09	K	1100
200083332		Raw Materials 1	487.57	K	1100

Figure 14.21 The line-item report of the **Display Actual Cost Line Items for Order** screen contains the **Val in rep cur column**, where you will find positive and negative dollar values.

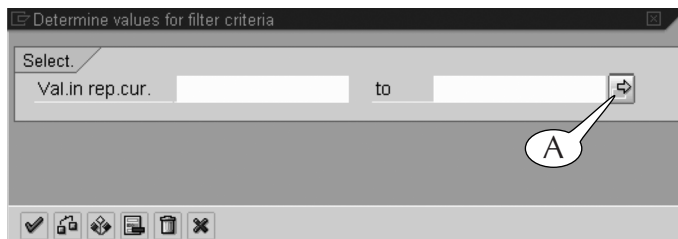


Figure 14.22 Use the multiple selection screen of the **Val in rep cur** fields to filter a data column of positive and negative values.

To apply a filter to these dollar values that takes into account their positive and negative values, you must use the multiple selection option on the **Determine values for filter criteria** screen.

For example, if we wanted to apply the same filter that we used in the previous example, we could click the multiple selection button for the **Val in rep cur fields** on the filter screen (Figure 14.22A) to call up a multiple selection screen (Figure 14.23), and then do the following.

- Click the green **Single vals** tab (Figure 14.23A).
- Enter *5000* in the first field of that screen, and attach a *greater than or equal to selection option* to it. This action filters out all positive values less than \$5,000.

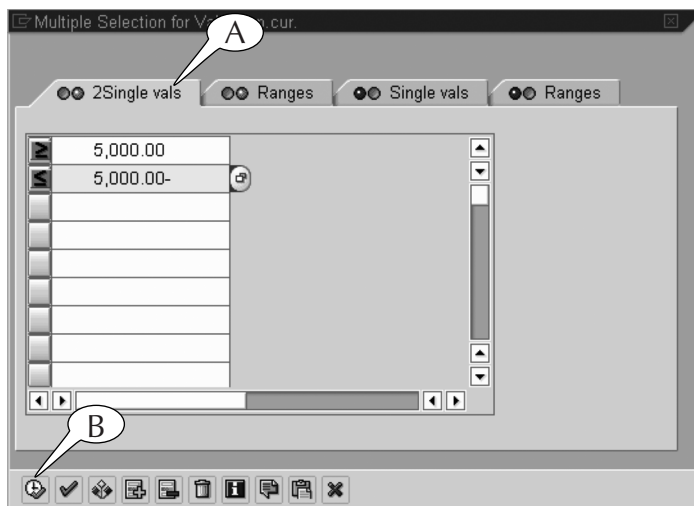


Figure 14.23 Setting up the multiple selection screen to filter out dollar values less than \$5,000, whether they are positive or negative.

- Enter *-5000* in the second field of that screen, and attach a *less than or equal to selection option* to it. This action filters out all negative values greater than \$5,000 (that is, between 0 and -5000).
- Hit the **Copy button (B)** to save your entries and return to the **Determine values for filter criteria screen**.
- Hit the **Enter key** on your keyboard to save your filter and return to the output screen, where the data would be filtered.

We could also set up the multiple selection screen in this way (Figure 14.24):

- Click the red **Interval tab (A)**.
- Enter *-5000* and *5000* in the first line of paired fields. This action filters out all values within this range.
- Hit the **Copy button (B)** to save your entries and return to the **Determine values for filter criteria screen**.
- Hit the **Enter key** on your keyboard to save your filter and return to the output screen, where the data would be filtered.

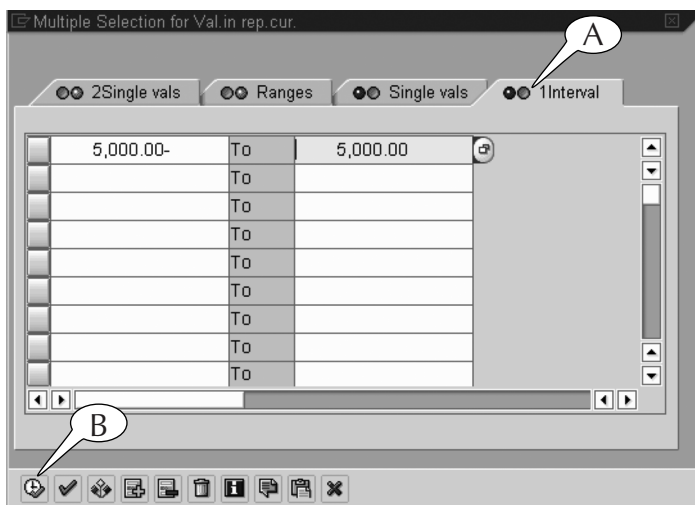


Figure 14.24 Setting up the multiple selection screen to filter out dollar values between -\$5,000 and \$5,000.

Summing Up Data Columns in Line-item Reports

You can attach grand totals beneath the bottom lines of data columns, as well as subtotals beneath the bottom lines of groups and subgroups, in line-item reports. This is possible whenever you see the **Summation button** in the application toolbar of the output screen for the report (Figure 14.25A). This button can only be applied to columns with data such as dollar values and total quantities. It cannot be applied to columns with dates, model number, object codes, text, and the like.

Display Equipment: Equipment List

S	Equipment	ConstYr	Description of technical object	Acquisition Value
	10004171		Electric pump motor	187.64
	10004174		Electric pump motor	180.00
	E-1000-N055	1993	Electric pump motor	176.40
	E-1000-N060	1993	Electric pump motor	176.40
	M-1000-N051	1994	Electric pump motor	187.64
	M-1000-N052	1993	Electric pump motor	176.40
	M-1000-N053	1993	Electric pump motor	176.40
	M-1000-N054	1992	Electric pump motor	176.40
	M-1000-N055	1993	Electric pump motor	176.40
	M-1000-N056	1993	Electric pump motor	176.40
	M-1000-N057	1992	Electric pump motor	176.40
	M-1000-N058	1992	Electric pump motor	176.40
	M-1000-N059	1992	Electric pump motor	176.40
	M-1000-N060	1993	Electric pump motor	176.40
	M-1000-N061		Electric pump motor	0.00
	M-1000-N062		Electric pump motor	0.00

Figure 14.25 The default output of the *IH08 transaction* and its **Summation button** (A).

For example, we can attach a grand total for the acquisition value beneath the bottom line of the line-item report of the *IH08 transaction* with this two-step procedure (Figure 14.25).

Procedure

Summing Up Data in a Column of a Line-item Report

- Step 1.** Click the header of the **Acquisition value column** to select and highlight it (B).
- Step 2.** Click the **Summation button** (A), and the grand total for the selected column appears in a highlighted line at the very bottom of the screen (Figure 14.26A).

Display Equipment: Equipment List

S	Equipment	ConstYr	Description of technical	AcquistnValue
	10004171		Electric pump motor	187.64
	10004174		Electric pump motor	180.00
	E-1000-N055	1993	Electric pump motor	176.40
	E-1000-N060	1993	Electric pump motor	176.40
	M-1000-N051	1994	Electric pump motor	187.64
	M-1000-N052	1993	Electric pump motor	176.40
	M-1000-N053	1993	Electric pump motor	176.40
	M-1000-N054	1992	Electric pump motor	176.40
	M-1000-N055	1993	Electric pump motor	176.40
	M-1000-N056	1993	Electric pump motor	176.40
	M-1000-N057	1992	Electric pump motor	176.40
	M-1000-N058	1992	Electric pump motor	176.40
	M-1000-N059	1992	Electric pump motor	176.40
	M-1000-N060	1993	Electric pump motor	176.40
	M-1000-N061		Electric pump motor	0.00
	M-1000-N062		Electric pump motor	0.00
				2,315.68

Figure 14.26 A grand total appears for the **Acquisition value** column at the bottom of the line-item report.

End Procedure

As soon as we added a grand total to this report, the **Subtotal button** (Figure 14.26B) appears in the application toolbar of its screen. We can use this button to simultaneously group and subtotal line items in this same report.

For an example, we group and subgroup the line items in our sample report by equipment code and construction year, respectively, and subtotal their acquisition values by following this next procedure.

Procedure

Grouping and Subtotaling Data in a Line-item Report

Step 1. Click-and-drag across the headers of the **Equipment code** and **Construction year** columns to select and highlight them (C), *or*

Press and hold the **Ctrl** key on your keyboard, click the headers of the two columns to select and highlight them, then release the **Ctrl** key.

Step 2. Click the **Subtotal button** (B). The line items are automatically grouped and subgrouped, and subtotals for the acquisition value appear on the bottom line of each group and subgroup (Figure 14.27).

Note: If the line items were already grouped and subgrouped before you began this procedure, you could still use the **Subtotal** button for this same result.

Display Equipment: Equipment List

S	Equipment	ConstYr	Description of technical object	Σ	AcquistnValue
	M-3000-N057	1992	Motor for electric pump,250kw		367.00
		1992		.	367.00
	M-3000-N057			..	367.00
	M-3000-N058	1992	Motor for electric pump,250kw		499.00
		1992		.	499.00
	M-3000-N058			..	499.00
	M-3000-N059	1993	Motor for electric pump,250kw		631.00
		1993		.	631.00
	M-3000-N059			..	631.00
	M-3000-N060	1992	Motor for electric pump,250kw		367.00
		1992		.	367.00
	M-3000-N060			..	367.00
	M-3000-N061	1993	Motor for electric pump,250kw		499.00
		1993		.	499.00
	M-3000-N061			..	499.00
	M-3000-N062	1993	Motor for electric pump,250kw		631.00
		1993		.	631.00
	M-3000-N062			..	631.00
	MO-0001	2000	Motor 01		367.00
		2000		.	367.00
	MO-0001			..	367.00
	MO-0002	2000	Motor 02		345.00
		2000		.	345.00
	MO-0002			..	345.00
	MO-0003	2000	Motor 03		367.00
		2000		.	367.00
	MO-0003			..	367.00
				...	2,315.68

Figure 14.27 Groups and subgroups of line items, each with their own bottom-line subtotal of acquisition values.

End Procedure