

What are List filter & Group List filter and how can I use them?

In WinSPC version 8.0 or later, a List filter is a query that will return a list of Parts or Variables that matches the criteria specified. Combining several List filter can reduce the resulting list to just the Parts or Variables that are of interest. A Group List filter is just a separate set (or group) of List filters, with a different set of criteria. Group filters will combine the returned list with other List filters results. Before discussing the different type of filters, the following is an example of List filter and Group filter. Note: List filter(s) return a list of Parts or Variables that meets your criteria and contains all the data that has been collected. A Data filter is used to query the data from the Parts or Variables that the List filter returned. Data filters are discussed in Kb article titled. What are data filtering options and how can I use them?

List filter - example

I work for a company that manufactures marbles. We produce Solid, Swirl, and Cats eye marbles in various colors and sizes. I was requested for a WinSPC report that contains only collection data for the blue marbles we produce (see Figure 1). Also the report should only show the collection data for the blue marbles that have a diameter of $\frac{3}{4}$ of an inch. The resulting list filter would be... (see Figure 2)

Find all Variables...

- whose parents' names begin with "Blue"
- and whose names end with "0.75"

Group list filter - example

Using the information in the above example, I was also requested to include all collection data for the 1 inch diameter Cats eye marbles. This is where we would add a new Group filter, and add the criteria to the list filters of "that are or are within \Marbles\Cats eye" and "whose names end with "1.0"

The new list filter would be... (see Figure 3)

Find all Variables...

- whose parents' names begin with "Blue"
 - and whose names end with "0.75"
- plus all variables...
- that are or are within "\Marbles\Cats eye"
 - and whose names end with "1.0".

This was set up as a demonstration, and there is an easier way to do this as you will see later.

To launch Data Set Builder, open a Query for any of the following: Data Sets, Collection Plans, Parts folders, Parts, or selecting multiple variables.

Before we discuss the different filters, we will discuss how to set up your filters to sort using Parts or Variables. Clicking on the Part or Variable icon you can toggle between Part filters and Variables filters. (see Figure 4)

There are 8 different list filters types; they are Annotations Present, Control Limit Checks, Object List, Object Name, Specification Limit Check, Statistic Value, and Statistic Value (Advanced).

Annotation Present - Figure 5

The Filter Type of Annotations Present you will be able to sort by different Constraint Type, Date Range and Users and Stations. Selectable Constraint Types are Assignable Cause, Corrective Action, or Note. Next you need to define a Match Type. The following is a list of Match Type options and a brief description:

Match Type	Description
Begins With	(Constraint Type text start with the text in the Match List)
Contains	(Constraint Type text contains the text in the Match List)
Ends With	(Constraint Type text ends with the text in the Match List)
Is Present	(Constraint Type exists with the data)

After selecting a Match Type fill in the Match List text that WinSPC will use as the criteria for the search.

Note: If the Match Type of Is Present is selected the Match List will be disabled.

Also on this screen you can refine you search by selecting a Date Range and/or Users and Stations. The Date Range section allows you to filter a list of Parts or Variables that have an Annotation present within the specified Date Range. The following selections are available on the Date Range Type dropdown box:

Unrestricted	Last Year
Today	N Days Ending
Yesterday	N Weeks Ending
This Week	N Months Ending
Last Week	Older Than N Days
This Month	Older Than N Weeks
Last Month	Older Than N Months
This Year	Explicit

The Users and Stations tab screen allows you to be able to filter the list by users and/or stations. Clicking on the [+] box in front of Stations or Users will expand the tree so that you can refine the selection of users or stations. Check or uncheck the desired combination of stations or users to use as filters to populate the list. All boxes are checked by default. By clicking on the checkbox in front of Users or Stations will clear all selections and then select the desired users or stations to apply as filters. If the user or station has a check mark then WinSPC will filter by the selected test. If the box is not checked then WinSPC will ignore that test as criteria. Note: Parameter statements from different headings will be treated like an AND statement. For example if you would like to see a list that was collected on the station WinSPC_Helpdesk and only from the user Dale, select WinSPC_Helpdesk under Stations and Dale under Users. The list would be populated only if user Dale attached an Annotation, in Data Collection, to the data.

If you would like to have WinSPC prompt the operator for input click on the Prompting Options tab and place a checkmark ü in the desired Prompted box. By clicking on the Prompted box it will toggle the checkmark ü on and off. Entering a unique Prompt Caption name can help clarify what information WinSPC is requesting from the operator.

Control Limit Checks

The Filter Type of Control Limit Checks you will be able to filter for recorded violations by selecting a Control Test(s). The options for Constraint Types are At Least, or At Most that will be specified in the In Violation box. Next you need to define a Violation Type of Constant or Percentage, and enter a number in the In Violation box. Finally select the Control Limit Tests to filter against. To select a Control Limit Tests, expand the Control Tests by clicking on the [+] in the Control Limit Tests window to expand the tree. If the control test has a check mark then WinSPC will filter by the selected test. If the box is not checked then WinSPC will ignore that test as criteria.

For Date Range and Users and Stations, refer to Annotations Present section for a description on use for these filters.

If you would like to have WinSPC prompt the operator for input click on the Prompting Options tab and place a checkmark ü in the desired Prompted box. By clicking on the Prompted box it will toggle the checkmark ü on and off. Entering a unique Prompt Caption name can help clarify what information WinSPC is requesting from the operator.

Data Collected - Figure 7

The Filter Type of Data Collected you will be able to filter by Subgroups present and Tag Options. The options for Constraint Types are At Least, or At Most. Next enter the Number of Subgroups to filter against.

For Date Range and Users and Stations, refer to Annotations Present section for a description on use for these filters.

The Tags tab screen (Figure 8) allows you to specify a range or list of tag values to use as a filter. To add a new Tag Parameter click on the green + sign. Click the black arrow „ in front of the newly added tag parameter box to expand the parameter box to access the editable options. Enter a Tag Name and then select one of the following filter options:

Any Range List

Selecting the Any radio button (default) will return a list of Parts or Variable that have a tag attached to the data. Selecting the Range radio button and entering a From: and To: value will yield a list that has tag values that are contained in the specified range. Selecting the List radio button and entering values will yield a list that match the entered tag values. To add a value to the list, type in the value on the line below the List parameter and then click the green plus sign +. To remove an item from the list, select it from the list and click on the red minus sign -. Several values can be added into the list for filtering.

If you would like to have WinSPC prompt the operator for input click on the Prompting Options tab and place a checkmark ü in the desired Prompted box. By clicking on the Prompted box it will toggle the checkmark ü on and off. Entering a unique Prompt Caption name can help clarify what information WinSPC is requesting from the operator.

Object List – Figure 9

The Filter Type of Object List you will be able to filter Variables, Parts/Processes or Collection Plans by expanding the tree and selecting them. Clicking on the [+] box in front of Parts/Processes or Collections Plans will expand the tree so that you can make a selections to include folders, parts, variables, or collection plans. Check or uncheck the desired combination of folders, parts, variables, or collection plans to use as a filter. If the box in front of the object has a check mark then WinSPC will filter by the selected criteria. If the box is not checked then WinSPC will ignore that object as criteria.

If you would like to have WinSPC prompt the operator for input click on the Prompting Options tab and place a checkmark ü in the desired Prompted box. By clicking on the Prompted box it will toggle the checkmark ü on and off. Entering a unique Prompt Caption name can help clarify what information WinSPC is requesting from the operator.

Object Name – Figure 10

The Filter Type of Object Name you will be able to filter by entering a text string for querying Variables, Parts/Processes or Collection Plans. The Object Name screen has three fields to select/fill-in. They are

Match Relation, Match Type, and Match List. Match Relation options are Self, Parent Child, Folder, or Collection Plan. Options will have different meanings depending if you are filtering by Parts or Variables (see above for Parts or Variables icon). The following is a brief description on the different options:

Self – means itself. It is not higher or lower in the tree. Example is you are looking for the part called Nickel and it is in a folder called Nickel that contains other parts, it will only match the part called Nickel (itself).

Parent – means filter by matching higher in the tree and returning a list for all that which is lower in the tree. Example if you are filtering for Variables, its parent would be the Part. Else if you are filtering for Parts, its parent would be the folder.

Child - means filter by matching lower in the tree and returning a list for all which is lower in the tree. Example if you are filtering by Parts you could specify the name of a folder that contains all the parts you would like to be included in the list. There is no Child of a Variable since that is the lowest part of the tree.

Folder – means filter by matching folders and returning a list of Parts or Variables that are lower in the tree.

Collection Plan – means filter by matching the name of a Collection Plan and returning a list of the Variables that are contained in that Collection Plan. There are no Parts that match since Collection Plans will only contain Variables.

The next option is Match Type. Match Type selections are Begins With, Contains, Ends With. These options are self-explanatory.

The Match List is where you enter the text string to use as a filter. Once you have entered the text string, click on the green plus sign +. If you need to remove a previously entered text string, select the text from the list below the Match List input box can click on the red minus sign -.

If you would like to have WinSPC prompt the operator for input click on the Prompting Options tab and place a checkmark ☐ in the desired Prompted box. By clicking on the Prompted box it will toggle the checkmark ☐ on and off. Entering a unique Prompt Caption name can help clarify what information WinSPC is requesting from the operator.

Specification Limit Checks – Figure 11

The Filter Type of Specification Limit Checks will return a list of Parts or Variables that have a specification violation in the collection data. The options for Constraint Types are At Least, or At Most in reference to what will be specified in the In Violation box. Next you need to specify if the Violation Type is a Constant or Percentage. Then enter a number for the In Violation criteria.

For Date Range and Users and Stations, refer to Annotations Present section for a description on use for these filters.

If you would like to have WinSPC prompt the operator for input click on the Prompting Options tab and place a checkmark ☐ in the desired Prompted box. By clicking on the Prompted box it will toggle the checkmark ☐ on and off. Entering a unique Prompt Caption name can help clarify what information WinSPC is requesting from the operator.

Statistic Value – Figure 12

The Filter Type of Statistic Value you will be able to filter by statistical comparisons using an equation based on collection data to return a list of Parts or Variables. There are four fields to create an equation and they are Left Operand, Relational Operator Right Operand Type, and Right Operand. For a list of Operand, see

the list at the end of the Knowledgebase article.

The following is a list for Relational Operator:

Greater Than	Greater Than Or Equal
Less Than	Less Than or Equal
Equal	Not Equal
Increased By	Decreased By
Within	Not Within

Right Operand Type has two choices of Constant or Statistic. Right Operand will change depending on the selection of the Right Operand Type. If the Type selected is constant then you can enter a number for the Right Operand. Else if the type selected is statistic then then you can select from a list of statistic (same as Left Operand list).

You can also select a Date Range Type to filter using a date range to determine which collection data is used in statistical calculations for populating the list.

If you would like to have WinSPC prompt the operator for input click on the Prompting Options tab and place a checkmark ü in the desired Prompted box. By clicking on the Prompted box it will toggle the checkmark ü on and off. Entering a unique Prompt Caption name can help clarify what information WinSPC is requesting from the operator.

Statistic Value (Advanced) – Figure 13

The Filter Type of Statistic Value (Advanced) you will be able to use a statistical equation to filter the list. On the Script Editor you can customize the script to to build an advanced equation.

Operand List

Cp	PR	LowerUAB	NumBelowLRL	AverageCostPerUnit
Cpl	PZI	LowerUBC	NumBelowURL	OptimalMean
Cpu	PZu	LowerCL	NumOutReasonableLimits	OptimalCost
Cpk	PZMin	LowerLBC	ExpBelowLSL	CostOfProcessOffset
Cm	Mu	LowerLAB	ExpAboveUSL	CostOfProcessVariability
Cpm	Sigma	LowerLCL	ExpOutSpecsLimits	ProcessVariabilitySensitivity
Cpkm	Skew	URL	FirstQuartile	OptimalMean_at_(90%-0%)_Sigma
CR	Kurtosis	USL	SecondQuartile	OptimalCost_at_(90%-0%)_Sigma
ZI	Average	Target	ThirdQuartile	ClassicalChiSquaredDegreesOf
Zu	StdDev	LSL	ProcessStepNumber	ClassicalChiSquaredValue
SMin	UpperUCL	LRL	ProcessStepCost	ClassicalChiSquared_p_Value
Pp	UpperUAB	SubgroupCount	PerUnitOfMeasureCost	PearsonChiSquaredDegreesOf
Ppl	UpperUBC	ReadingCount	LSLPercentage	PearsonChiSquaredValue
Ppu	UpperCL	MinReading	LSLReworkCost	PearsonChiSquared_p_Value
Ppk	UpperLBC	MaxReading	USLPercentage	
Pm	UpperLAB	NumBelowLSL	USLReworkCost	
Ppm	UpperLCL	NumAboveLSL	CostOfStepInput	
Ppkm	LowerUCL	NumOutSpecLimits	CostOfStepOutput	

