Asprova's "Pocket manual series No.9

Using only one resource per time slot

Two examples of a method for controlling the number of operations that use sub-resources and are allocated to the same time slot

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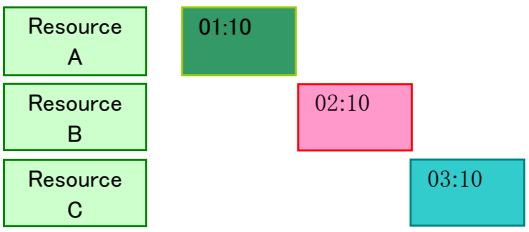
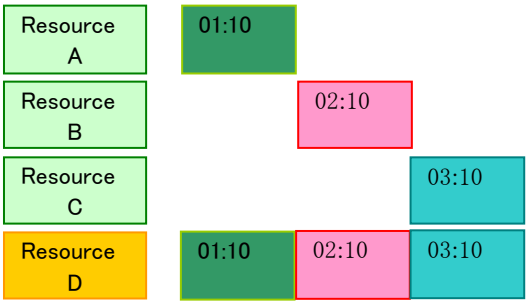
Using only one resource in the same time slot

It frequently occurs that only one of many resources will be required during the same time frame. For example, push cars, jigs or cranes may be used together and if one of those is working, the others cannot be operated. An illustration of that allocation is shown in Fig. 1.



▲ Fig. 1 Resources A, B and C are all used at the same time; just one cannot be used

To remedy a situation like that, assign a dummy sub-resource with the Integrated master table.



▲ ▲ Fig. 2 Registering a sub-resource (D) allows the operation of only one resource (A, B or C) in the same time slot

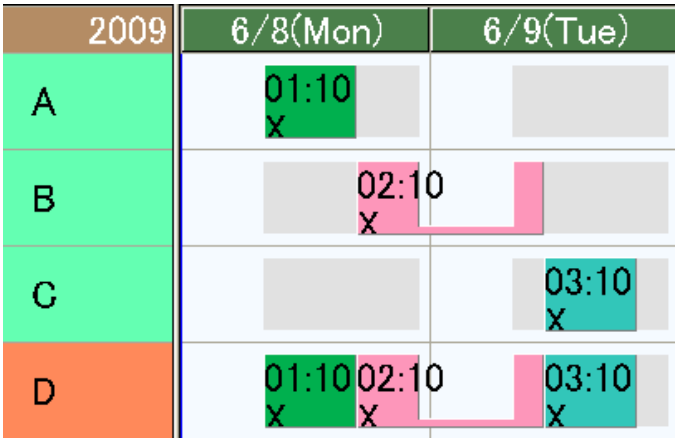
Help
"Setting a sub resource"(Help No. 16280)
"Specifying metal molds and processing tools"(Help No. 234000)

The integrated master table and resource Gantt chart for actually assigned and allocated data (knowledge009.ar4) are shown in Fig. 3 and Fig. 4.

In the example above, only the manufacturing task is assigned; the setup and teardown times can be completely controlled in the same way. Figs. 5 and 6 are the assignment (integrated master table) of at least one resource, A, B or C and the results (Gantt resource chart) of that assignment.

	Item	Process code	Instruction type	Instruction code	Resource /Item
1	X	10	Use instru	M	A
2			Use instru	M	B
3			Use instru	M	C
4			Use instru	Dummy	D

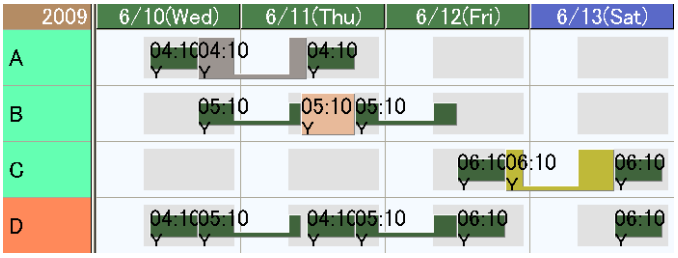
▲ Fig. 3 Integrated master table that realizes Fig. 2



▲ Fig. 4 Allocated Resource Gantt chart in the same format as Fig. 2

	Item	Process code	Instruction type	Instruction code	Resource /Item	Setup	Production	Teardown
1	Y	10	Use instr	M	A	480	10.8mp	480
2			Use instr	M	B	480	10.8mp	480
3			Use instr	M	C	480	10.8mp	480
4			Use instr	Dummy	D	0		0

▲ Fig. 5 Assignment of setup time in which only one resource will be used.

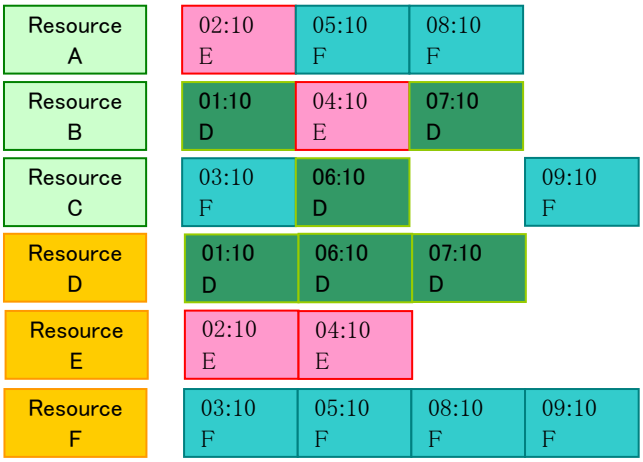


▲ Fig. 6 Gantt resource chart for using only one resource in setup time.

Help "Setup time"(Help No. 781000)

Avoiding manufacturing the same product in same time slot

This application example introduces a situation in which we do not want to make the same product item in the same time slot. The point about using a sub-resource is the same as above, and a sub-resource is prepared for each product item. The example in Fig. 7 uses dummy sub-resources D, E and F so that product items D, E, and F will not be manufactured in the same time slot.

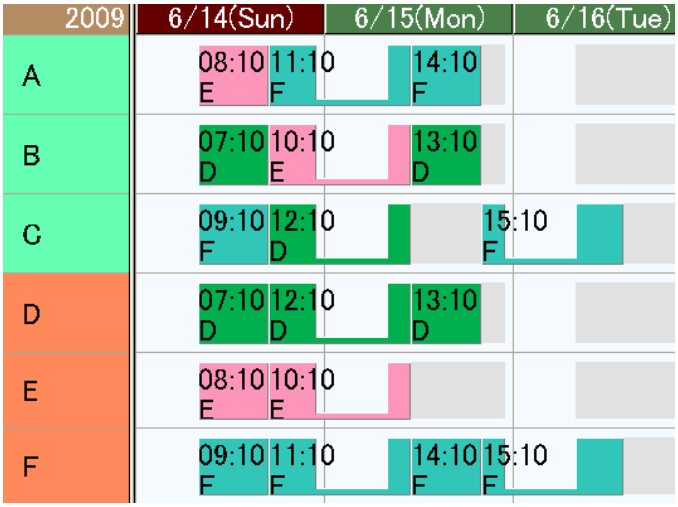


▲ Fig. 7 Example of when we do not want to make the same product items D, E and F in the same time slot. This is achieved using sub-resources D, E and F.

Fig. 8 shows an actual example of setting the Integrated master table and Fig. 9 shows the results of rescheduling.

	Item	Process code	Instruction type	Instruction code	Resource /Item	Setup	Production	Teardown
1	D	10	Use instr	Dummy	D		0	
2			Use instr	M	G		10.8mp	
3	E	10	Use instr	Dummy	E		0	
4			Use instr	M	G		10.8mp	
5	F	10	Use instr	Dummy	F		0	
6			Use instr	M	G		10.8mp	

▲ Fig. 8 Integrated master table (resources A、B and C are assigned to resource group G).



▲ Fig. 9 Gantt resource chart after allocation. Setup so that the same product will not be made in the same time slot.

In conclusion

That is how we can frequently employ techniques that use sub-resources to provide certain restrictions. The example shown here is a basic method which can be used in a variety of ways to provide restrictions.

For more information

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