

# The Leading Standard for Line Balancing

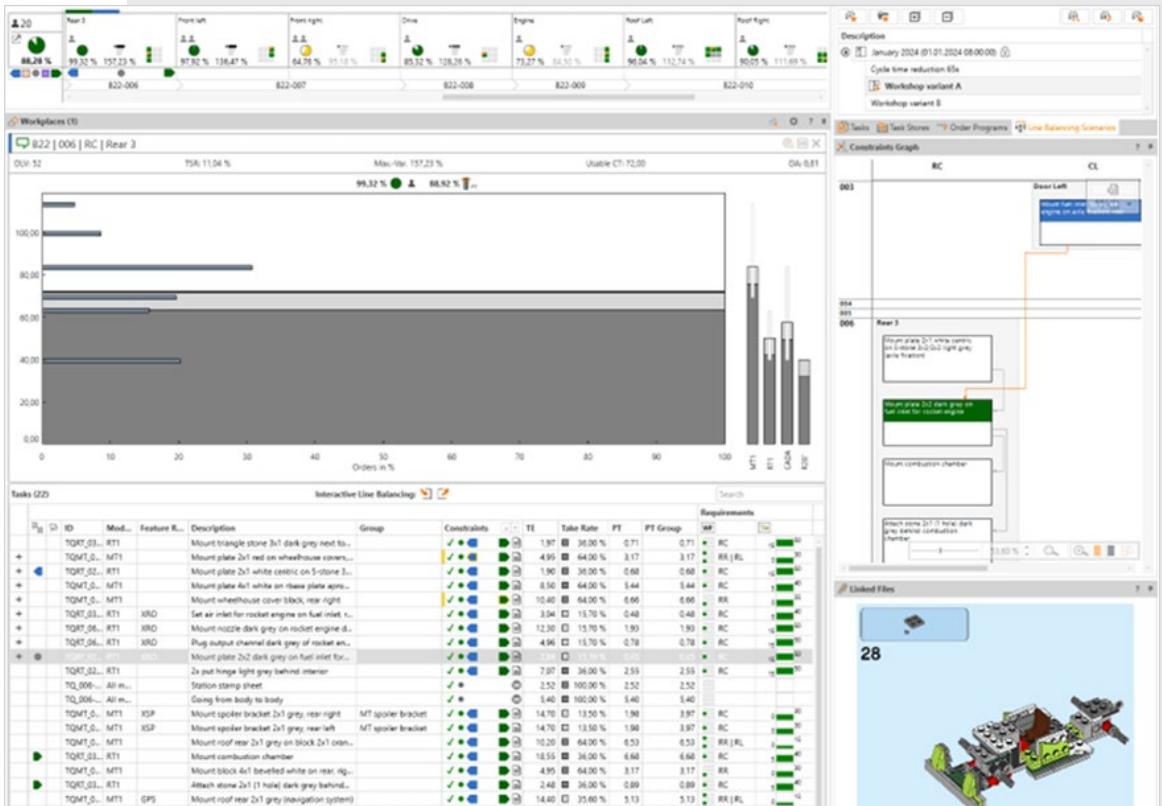
Smooth production in multi-variant assembly lines with less planning effort

Participants:

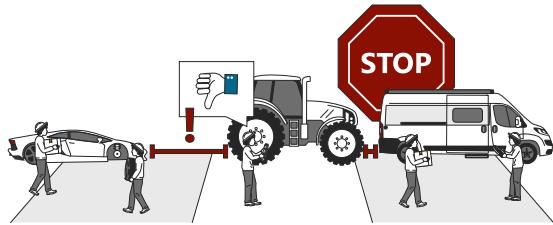
Kunde 1

Kunde 2

TAKTIQerin



# Our Mission Rethinking Planning – With Heart, Mind, and Algorithm



## The Problem

### Increasing Complexity, Rigid Planning

Increasing number of variants, fluctuating demand, and new cycle concepts are constantly increasing the complexity of production planning.

However, planners continue to lose valuable time with slow, inflexible software.

Decisions remain intransparent, potential untapped. This leads to low efficiency and loss of output.



## The Solution

### Innovative Algorithms, Intuitive Software

During their research and practical experience in final assembly back in 2010, founders Dr. Altemeier and Dr. Danne recognized that:

Only modern algorithms can sustainably increase efficiency in variant-rich lines and prevent unit losses.

Since then, over 180 years of experience have gone into the development of TAKTIQ.



## The Impact

### Production Planning Revolutionized Worldwide

Today, manufacturers worldwide rely on what makes TAKTIQ unique:

Complete variant mapping, dynamic assembly rate and utilization calculation, realistic simulations, and interactive and automatic line balancing.

For greater stability, transparency, and efficiency in production planning.

# We Are TAKTIQ

## Our Values



### Production Needs no Standstill

That's why we drive  
innovation forward!

**1**

Year  
Development in  
a month

**15**

Years of  
innovation and  
progress

### Appreciative Partnerships

And exchange of experiences with our customers

**6500**

Users

**89**

Well-known customers

**250**

Exchange events per year

### Global Impact In different variants

**50%**

Less planning effort

**12%**

Greater efficiency

**18**

Countries in action

**11**

Manufacturing industries

**100%**

Greater planning reliability



# Our References & Focus

## Focus

- 20 Sek. – 1 Std. cycle time
- 15 – 1.000 workplaces
- 100 – 2.500.000 tasks
- 10 – 10<sup>27</sup> order variants

## Industries manufacturing With TAKTIQ

- Automotive
- Agricultural Machinery
- Buses
- Cranes
- Excavator
- Forklift
- Motorhomes
- Tier 1 Supplier
- Transporter
- Trucks
- Vans

**Dethleffs**

**FENDT**



**EHG**



**AKKODIS**

**DAF**

**EDAG**



**LIEBHERR**

**AS** ARVATO SYSTEMS

**Miele**



Mercedes-Benz



**PICANOL**

**VALTRA**

**FREIGHTLINER**®

**HYMER**

**CLAAS**

**EvoBus**



DAIMLER TRUCK

**Baxter**



**RESRG**  
AUTOMOTIVE

**SOLUTION**

**FERCHAU**

**LEAR**

**SHACMAN**



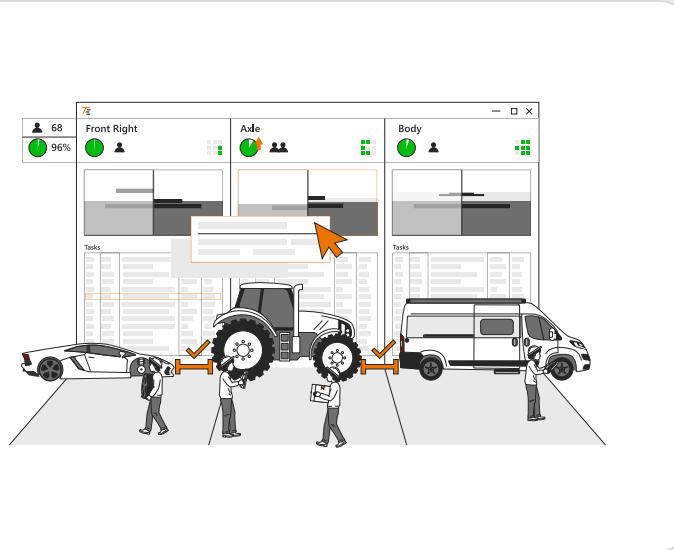
**W**

**WACKER NEUSON**  
all it takes!

# TAKTIQ

**The Leading Standard  
for Line Balancing and  
Maximum Efficiency**

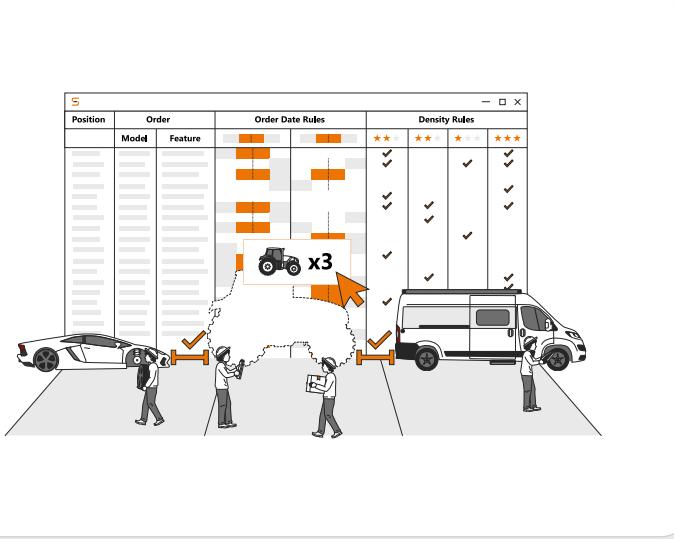
**Experience now**



# SEQUIQ

**The Quickest Order  
Sequencing for Smooth  
Production**

**Experience now**



# Two Leading Solutions

**Perfectly aligned**

Take advantage of the synergies of our software products to raise the efficiency and quality of your planning and production to an even higher level.



# TAKTIQ Modules

Freely combine and Perfectly Align with the Requirements of Your Production



Line Balancing



Process Requirements



Order Program Scenarios



Ergonomics



Time Management



Assembly Instructions



Order Preview



Sequence Requirements

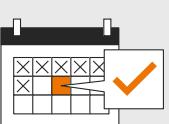


# Line Balancing

Optimally distribute workers and tasks to workplaces for efficient and smooth production



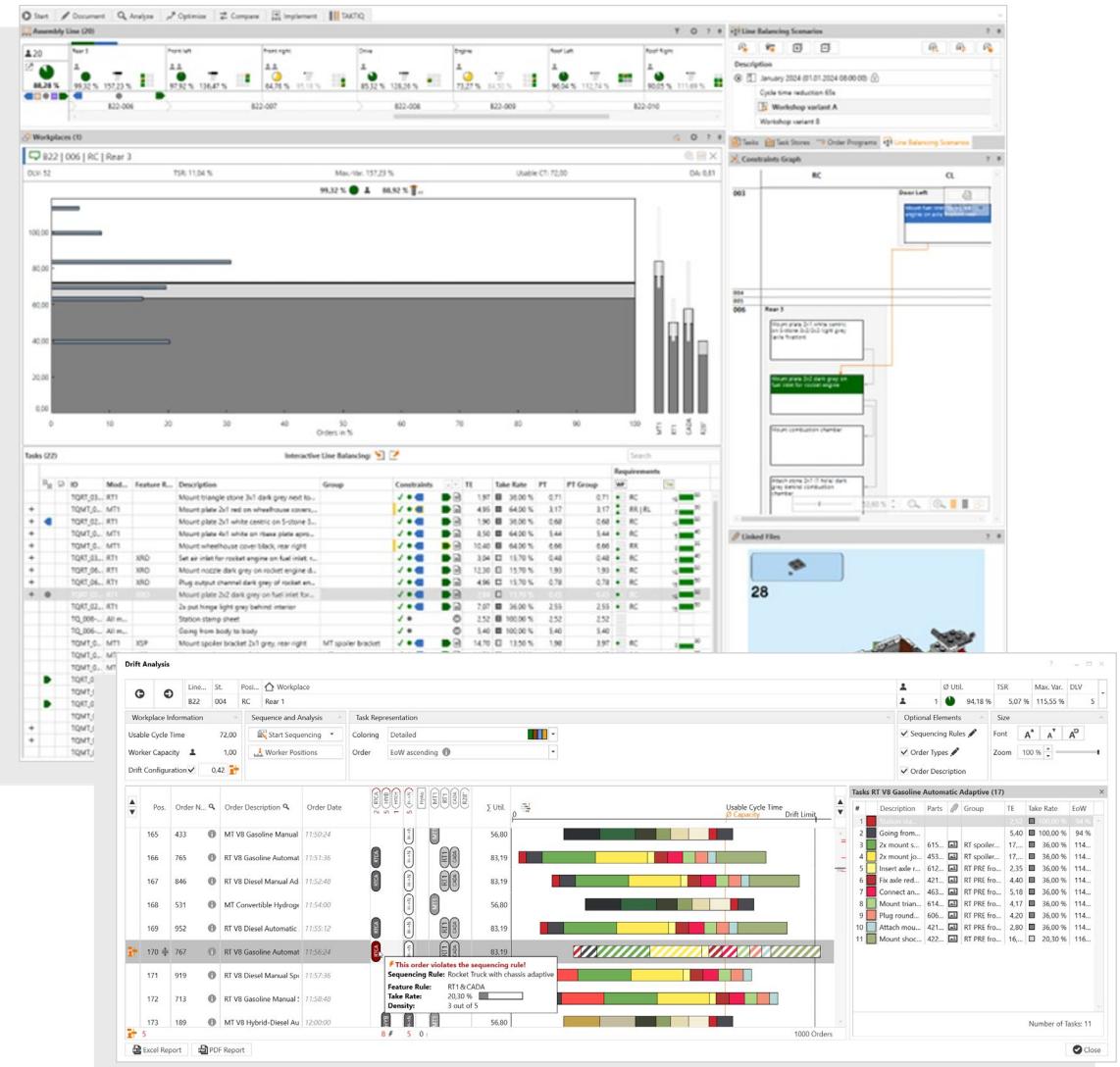
Maximum Efficiency



Smooth Production



Reduced Planning Effort



# Your Benefits

Line Balancing with TAKTIQ



## Valuable Information in Seconds

- Interactive and automatic line balancing
- Calculate, simulate and evaluate alternative planning scenarios extremely quickly (> 1,000,000 solutions in 5 seconds)
- Compare different cycle times and line balancing solutions
- Consider multiple order programs (variants and mix) and evaluate utilization and added value
- Flexible variant linking with any feature rules (And, Or, Not, Bracketing)

## One Tool for Everything

- Documentation, simulation and optimization in one
- Integrated planning with additional modules: Time Management, Ergonomics, Order Preview, Order Sequencing and more

## Convince Yourself Today

Try your free demo now or book your free live-demonstration at [taktiq.de/experience](http://taktiq.de/experience)

## Ensure Feasibility

- Evaluate variants and production times in detail
- Use extensive analysis functions and visualized key figures (time spread, drift, ...)

## Learn Quickly, Plan Intuitively

- Clear and easy to understand visual representations
- Modern user-friendly interfaces
- Automatic workshop protocols and reports
- Smooth multi-user planning with time versioned plan states (when using a server)

## Permanent Technical Pioneer

- You always remain highly innovative through our agile development process
- Regular updates with new features are inspired by impulses from our customers



As a standard for line balancing, TAKTIQ already covers many areas of production planning. If you want to go even deeper in adjacent planning areas, you can benefit from our partnerships.

### Process Planning



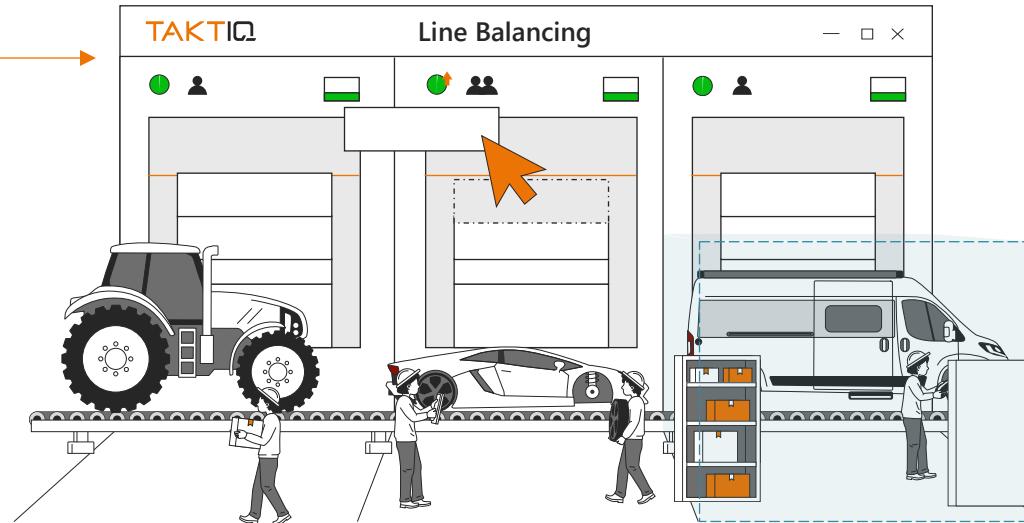
**PTC Windchill**  
Product lifecycle management in 3D and with real-time data



**Delmia**  
Digital planning and production based on the 3DEXPERIENCE platform



**TiCon**  
Detailed time recording and analysis



### Workstation Design



**Work Designer**  
Process optimization and ergonomics analysis in 3D



**ipolog**  
3D simulation with logistics planning

# Interfaces

Easily integrate TAKTIQ into your IT landscape



## Excel Im-/Export

Want to **test everything** first before investing in a long-term interface?

Simply export our Excel template directly from TAKTIQ, enter your data in the marked columns, and import it back in. We're happy to help!



## Standard Interfaces

Connect your IT landscape **yourself, quickly and easily** with TAKTIQ thanks to our standard interfaces.

With our sample interfaces, your IT colleagues can already get an idea of the scope and structure.

Interface



## Additional Interfaces

We already have interfaces to systems such as **TiCon, ema, ipolog, Windchill, Dassault, SAP**, and also customer-internal systems.

We are also happy to program an interface for **halocline, Siemens Teamcenter**, and other systems upon request.

# Leading Manufacturers Rely on TAKTIQ

And these are the reasons



## Safety and Stability

Dynamic utilization simulation and previews help you avoid bottlenecks and keep your production stable.



## Plan Faster. Respond Smarter.

By using intelligence and automation in the planning process, you save valuable time and increase your responsiveness.



## Efficiency at a New Level

Automatic or interactive – modern line balancing ensures maximum efficiency and harmony in production.



## Focused. Innovative. Leading.

With in-depth knowledge and practical expertise, we support manufacturers as partners. By focusing on line balancing, we are constantly driving innovation.



## Flexible and Future-Proof

Our established solution integrates seamlessly, remains adaptable to future requirements, and impresses with its rapid responsiveness.



## Transparency at Every Stage of Planning

Complete variant mapping and dynamic take rate and utilization calculations form the basis for stable, data-driven decisions.



## Working Easily and Happily

High accessibility and supportive workflows create a user experience that motivates and inspires.



# Process Requirements

Record line balancing requirements (predecessors, heights, working positions, tools) to ensure feasible solutions



Identify More Potential



Ensure Feasibility



Enable Interactive and Automatic Line Balancing

Constraints

Number	Tool ID	Models	Description	TE/ER	Constraints	Requirements	Allowed Workplaces
010   B22   010   CR   Roof Right	RT1	5	Attach triangle stone white to rear corner of interior, right	36.000 %	✓	✓	002   B22   Sil...
011   B22   011   RC   Spoiler	RT1	10	Mount windsheild, right	36.000 %	✓	✓	003   B22   Do...
012   B22   012   CR   Rear	RT1	10	Attach roof slab white to interior	10.99 TE	✓	✓	004   B22   Re...
013   B22   013   FL   Rear	RT1	10	Mount plate 2x1 (1 knob) dark green on roof slab white	2.63 TE	✓	✓	005   B22   Re...
014   B22   014   RC   Rear	RT1	10	All models Station stamp sheet	2.52 TE	✓	✓	006   B22   Re...
015   B22   015   CL   Rear	RT1	10	All models Going from body to body	5.40 TE	✓	✓	007   B22   Re...
016   B22   016   FL   Rear	MT1	10	Mount ventilation grille 2x1 bevelled black on rear, left	16.95 TE	✓	✓	008   B22   Re...
017   B22   017   RC   Rear	RT1	10	Mount roof outer parts rear, left	2.69 TE	✓	✓	009   B22   Re...
018   B22   018   CL   Rear	RT1	10	2x mount triangle stone 1x1 smooth light grey on top of air...	5.76 TE	✓	✓	010   B22   Re...
019   B22   019   FL   Rear	MT1	10	Mount ventilation grille 2x1 bevelled black on rear, right	16.95 TE	✓	✓	011   B22   Re...

Constraints Graph

RC

Rear 2

Mount plate 2x1 red on wheelhouse covers, rear

Rear 3

MT spoiler bracket

2 Tasks

005

006

007

008

009

010

011

395 shown, 395 tasks total



# Your Benefits

With TAKTIQ Process Requirements

## Optimize Production Even Further

- Identify optimization potentials more easily (reduce walking distances, avoid height changes, identify redundant tools)
- Speed up workshops and avoid overlooked requirements
- Use suggestion mechanisms and automatic line balancing
- Identify and resolve limiting constraints

## Simple Maintenance, Great Benefits

- Easily maintain detailed requirements (height, working position, tools, ...)
- Manual and automatic task shifts meet all requirements
- Pre-evaluate investments in additional tools, shopping cart concepts and rebuilds

## Convince Yourself Today

Try your free demo now or book your free live-demonstration at [taktiq.de/experience](http://taktiq.de/experience)

## Objective Feasibility Check

- Clearly define requirements and always comply
- Live feedback on compliance and violation of maintained constraints
- One-click simulation across multiple scenarios
- Avoid discussions

## Everything in Sight

- Height profile in assembly line clearly visualized
- Directly detect conflicts in assembly areas
- Interactive constraints graph visualizes relationships between tasks
- Recognize and resolve large task groups and limiting constraints

## Collect and Secure Knowledge Centrally

- Document production knowledge directly and pass it on easily
- Train new colleagues more quickly



# Order Program Scenarios

Analyze order programs in detail as well as generate and simulate them based on sales forecasts



Generate Order Programs Close to Reality



Increase the Quality of Analyses



Extreme Responsiveness

Order Program [RT1, MT1] (1000) x

Order Features (124) Order Variants (279)

Order...	Weighting	Original Take Rate	Target Take Rate	Take Rate	0%	100%	Description	Category	Category
MV6G	★★★	9,80 %	6,80 %	9,80 %		+3,00 %	Motor V6 Gasoline	MOT	Mot
MV6D	★★★	12,10 %	8,90 %	12,10 %		+3,20 %	Motor V6 Diesel	MOT	Mot
MHYD	★★★	6,60 %	4,00 %	6,60 %		+2,60 %	Motor Hydrogen	MOT	Mot
MH8G	★★★	2,60 %	2,60 %	2,60 %		0,00 %	Motor Hybrid V8 Gasoline	MOT	Mot
MH8D	★★★	4,50 %	4,50 %	4,50 %		0,00 %	Motor Hybrid V8 Diesel	MOT	Mot
MH6G	★★★	4,30 %	4,30 %	4,30 %		0,00 %	Motor Hybrid V6 Gasoline	MOT	Mot
MH6D	★★★	4,10 %	4,10 %	4,10 %		0,00 %	Motor Hybrid V6 Diesel	MOT	Mot
MELE	★★★	5,40 %	8,00 %	5,40 %		-2,60 %	Motor Electric	MOT	Mot
XWI	★★★	31,20 %	31,20 %	31,20 %		0,00 %	Winch	XTRA	Extra
XTQ	★★★	21,40 %	21,40 %	21,40 %		0,00 %	TAKTIQ Sticker	XTRA	Extra
XSP	★★★	29,20 %	29,20 %	29,20 %		0,00 %	Spoiler	XTRA	Extra
XRO	★★★	15,70 %							
VUI		11,20 %							

Report

Generate Order Program [Order Program [RT1, MT1]]

Set piece count per model ★★★★ i

Model	Piece count (original)	Target piece count (relati...	Target piece count (absolu...
MT1	640	64,00	640
RT1	360	36,00	360

Target piece count 1000

Parameterization

Keep each feature at least once

Keep each order variant at least once

Precision ● Duration ●

Generate Order Program Cancel



# Your Benefits

With TAKTIQ Order Program Scenarios

## Interactive and Live

- Adjust feature frequencies without having to edit individual order variants
- Automatic check of buildability rules when manually changing variants
- Simultaneous adjustment of several take rates and total number of orders
- Split order programs easily according to rules

## Plan Realistically

- Simulation based on different forecasts
- Detailed analysis of order variants incl. frequencies and correlation of features
- Buildability always guaranteed, as only existing order variants are used

## Record-Breaking Processing Power

Mathematical optimization technology generates order program according to targets with minimum deviation

## Many Options, Easy Navigation

- Create features and use them for optimization or analysis as desired
- Sort order features into categories and easily find them again

## Convince Yourself Today

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## Perfect Addition

Evaluate the effect of alternative order programs in combination with the modules line balancing and optimal sequencing rules



# Ergonomics

Determine and optimize ergonomic load per worker and perform live ergonomics assessment during line balancing



Certified  
Ergonomics



Maximum  
Efficiency &  
Ergonomics



Rapid  
Revaluation



approved by

**Ergonomic Strains**

Workplace / Task	Description	Linked Models	Feature Rule	Require...	Is co...	Duration	Take Rate	Planne...	Posture	Trunk Rotation	Trunk tilt	Reach	Grip type	Fin...
	Fix tank with screws				!	2,70		0,49						
	Visual control of the assembly work				!	0,54		0,10						
⑤ TQMT_009f_MT1	Mount block 4x2 black (tank gasoline) o...	MT1	FGAS			11,16	18,40 %	2,05						
	Insert tank				!	5,76		1,06						
	Remove 3 screws from container				!	2,16		0,40						
	Fix tank with screws				!	2,70		0,50						
	Visual control of the assembly work				!	0,54		0,10						
⑤ TQMT_009e1_MT1	Mount block 4x2 black (tank gasoline for...	MT1	FGHY			6,98	6,90 %	0,48						
	Place tank (small) and snap into place				!	3,78		0,26						
	Apply lubricant													
	Pull up hose and attach to tank													
	Visual control													
	Refill lubricant													
⑤ TQMT_009d_MT1	Mount block 4x2 black (batter...													
	Place battery													

**Ergonomic Evaluation**

Line... St... Pos... Workplace

Total Result: 25,00 Points

Total Body	25,0	Posture	15,0	Action Forces	4,5	Loads	5,5	Extra Points	0,0	Forces	0,3	Posture	0,0	Extra Points	0,0	Organization	10,5	Upper Limbs	3,5
------------	------	---------	------	---------------	-----	-------	-----	--------------	-----	--------	-----	---------	-----	--------------	-----	--------------	------	-------------	-----

General

Physical Hierarchy: B22 | 007 | FL  
Organizational Hierarchy: Assembly | 3626 | B | 2  
Description: Front left

Force percentile P40 (for execution)  
Gender: Mostly men

Gross Shift Duration [Min]: 480  
Breaks/Shift [Min]: 10,0 (1,0 Break(s))  
Net Shift Duration [Min]: 470  
Capacity [TE]: 144,0  
Piece Count in Reference Shift: 195,0

Postures

Description	Norm. Duration	Base Posture	Trunk Rotation	Trunk Bending	Reach
Standing upright with support	56,0 s 60 s	2 Points	6,3 Points	3 Points	1,8 Points
Sitting upright	3,2 s 60 s	0 Points			1,8 Points

15,0 Points - 15 Points

Action Forces

Info

Finger Forces

Standing upright | forward | 35 N | Dynamic |  
Thumb | 40,0 N | Static |

Arm Forces

Standing upright | forward | 100 N | Dynamic |  
Shoulder strongly bent | forward | 100 N | Dynamic |  
Standing strongly bent | B | forward | 70 N | Dynamic |  
Standing bent | A+ | (up) | 55 N | Dynamic |

Export



# Your Benefits

With TAKTIQ Ergonomics

## Established Standards

- Assessment of ergonomic loads of workers by EAWS® or individual assessment methods of our customers.
- First company to be officially certified as EAWS® compliant by the German MTM Society



## Automatic Line Balancing

Automatic line balancing procedures take ergonomic limit values into account (point or traffic light system)

## Convince Yourself Today

Try your free demo now or book your free live-demonstration at [taktiq.de/experience](http://taktiq.de/experience)

## Realizable Workshop Results

- Integrated evaluation of ergonomics when developing new line balancing solutions.
- Better solutions and shorter planning time through direct live assessment of the ergonomic impact of each change (shift of tasks, order program, cycle time or shift schedule change)

## Interactive Line Balancing

- Suggestions for shifting tasks with live calculation of resulting ergonomic effects.
- Achieve highest efficiency & ergonomic goals!

## Faster (Re)Evaluation

- Documentation of ergonomic loads at the tasks level and simultaneous assessment of ergonomics at the workplace level
- Reuse of all determined ergonomic loads at tasks



# Time Management

Define time requirements for tasks easily with time analyses building blocks and recognize added value



Time Management and Line Balancing in One



Time Analyses Building Blocks Defined Centrally



Clear and Understandable

Workplace / Task

Workplace / Task	Description	Linked Mod...	Time...	Quantity	Frequen...	Ergono...	TE-Time	VA	Value	NVA%
B22   001   CL   Axle	TQRT_014a_RT1 Connect block 2x1 dark green centric with bumper light grey TQRT_014a_...	RT1					2,52		0,00	2,52
	Install block 2x1 dark green (winch), front	RT1								
TQ_001-a1	Station stamp sheet	All models	70	1,000	1,000,000	1,000,000	2,52		0,00	2,52
TQ_001-b1	Stamping	All models	25	6,000	1,000,000	1,000,000	5,40		0,00	5,40
TQMT_010a_...	Going from body to body	All models	25	6,000	1,000,000	1,000,000	5,40		0,00	5,40
TQMT_010b_...	Walkway	All models	25	6,000	1,000,000	1,000,000	5,40		0,00	5,40
TQMT_010a_...	Mount plate 4x1 orange on underbody plate, center rear	MT1	205				10,62	✓	10,62	0,00
	Mount plate	MT1	115	1,000	1,000,000	1,000,000	4,14	✓	4,14	0,00
	Fix plate	MT1	75	2,000	1,000,000	1,000,000	5,40	✓	5,40	0,00
	Check fixing	MT1	15	2,000	1,000,000	1,000,000	1,08	✓	1,08	0,00
TQMT_009c_...	Install plate 4x1 orange (wiring heating seat), center rear	MT1	200				7,76	■	7,56	0,20
	Mounting workflow	MT1	80	1,000	1,000,000	1,000,000	2,88	✓	2,88	0,00
	Laying cables	MT1	20	2,000	1,000,000	1,000,000	1,44	✓	1,44	0,00
	Take clamps out of box	MT1	45	2,000	1,000,000	1,000,000	3,24	✓	3,24	0,00
	Fasten cable in two places with clamps	MT1	55	1,000	0,1000	1,000,000	0,20		0,00	0,20
	#Cleanup (every 10 tasks)	MT1	160	1,000	1,000,000	1,000,000	5,76	✓	5,76	0,00
	Replace clamp container	MT1	20	4,000	1,000,000	1,000,000	2,88	✓	2,88	0,00
	Remove 4 screws from container	MT1	25	4,000	1,000,000	1,000,000	3,60	✓	3,60	0,00
	Fix tank with screws	MT1	35	1,000	1,000,000	1,000,000	1,26	✓	1,26	0,00
	Attach hose to tank	MT1	18	1,000	1,000,000	1,000,000	1,08	✓	1,08	0,00
TQMT_009e_...	Mount block 4x2 black (0	MT1	255				14,58	✓	14,58	0,00
	Place battery	MT1	92,35							
	Mount battery	MT1	99,95							
	Wire battery	MT1	92,47							
TQMT_009g_...	Mount block 4x2 b	MT1	19				0,00	✓	0,00	0,00
	Insert tank	MT1	98,86							
	Remove 3 screws from	MT1	99,50							
	Fix tank with screws	MT1	99,33							
	... Attach hose to tank	MT1	99,69							
	Visual control of the assembly	MT1	95,61							
TQMT_009h_M...	Mount block 4x2 b	MT1	19				0,00	✓	0,00	0,00
	Insert tank	MT1	99,03							
	Remove 3 screws from	MT1	99,95							
	Fix tank with screws	MT1	99,33							

Assembly Line (20)

Workplace	Count	Progress (%)
Axle	19	92,35 %
Chassis	1	99,95 %
Chassis 2	1	92,47 %
VM Axle	1	0,00 %
Sills Left	1	98,86 %
Sills Right	1	99,50 %
Door Left	1	0,00 %
Door Right	1	99,69 %
Rear 1	1	95,61 %

Workplaces (1)

DLV: 12 TSR: 4,61 % Max-Var. 122,94 % Usable CT: 72,00

99,03 %

99,95 %

Interactive Line Balancer

Tasks (16)

ID	Models	Description
TQ_001-a1	All models	Station stamp sheet
TQ_001-b1	All models	Going from body to body
+ TQRT_004b_RT1	RT1	Mount axle bracket 2x1 dark green centric with bumper light grey
+ TQRT_004a_RT1	RT1	Mount axle bracket 2x1 dark green (winch), front
+ TQMT_002b_MT1	MT1	Turn underbody plate 14x2 grey by 180° - empirical
+ TQMT_011b_MT1	MT1	Mount sill bracket side cover 4x1/2x1 grey centric with bumper light grey

Constraints

Search

TE Take Rate PT

W 2,52 100,00 %

W 5,40 100,00 %

4,75 36,00 %

4,75 36,00 %

5,00 64,00 %

36,90 64,00 %



# Your Benefits

With TAKTIQ Time Management

## Uniform Time Measurement

- Define modules and analyses centrally and use them on tasks
- Set performance levels and bonuses and deductions centrally
- Make value creation transparent through value added and non-value added
- Analyze frequency of use and proportions of time blocks

## Work Simpler

- Easy maintenance both at the task and across a workplace or the entire line
- Fast reuse of blocks that were used last or frequently
- Drag & drop of blocks to new time analyses lines
- Format comments and headings within time analyses
- Clear selection of blocks from customizable data cards

## Define Own Standards

Working with any (also individual) modular systems (e.g. UAS)

## Faster to the Goal

- Combined use of estimation times and time analyses
- Fast identification of missing time analyses and active estimation times
- Transparent and comprehensible presentation

## Convince Yourself Today

Try your free demo now or book your free live-demonstration at [taktiq.de/experience](http://taktiq.de/experience)

## Live Adjustment

Live update of all time analyses in case of adjustments of time analyses building blocks



# Assembly Instructions

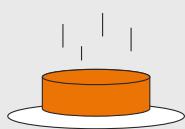
Communicate planning results to production via Excel or PDF and train workers with digital assembly instructions in TAKTIQ



Save Time in  
the Long Run



Secure and Pass  
On Knowledge



Generate Work  
Instructions  
Automatically

Legend:

- + = safety
- Q = quality
- A = archive
- CC = critical features
- SC = significant features
- P = positioning
- Eyes = visual
- Hand = touch
- Hand with caution = touch with caution
- Pencil = marker
- Gear = function
- Speaker = noise
- F = measure
- Start/End = start/end

No.	Task Description	Symbol	Part No.	Reference	Position	Picture Index (Photo)	Tool
10	Check the connection of the module connectors of the cable channel with the markers	<span style="color: green;">Q</span>					
20	Check whether the column seal is correct with the markers						
30	Check whether the fuse is connected to the ambient lighting						
40	Change of position from position A to C						
50	Check the presence and conformity of the assembly of the left dashboard clips Install the left fan Clad the panel Assemble the clips Assemble the fan Check the fan	<span style="color: red;">-</span> <span style="color: green;">+</span> <span style="color: blue;">-</span>					
60	Check the position of the fuse Install the right fan Clad the panel Assemble the clips Assemble the fan Check the fan						

Digital Assembly Instructions

Options: Font Size: 3 View Options: Description, Is Visible, Highlighted

Description	Is Visible	Highlighted
Group	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Take Rate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Models	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Engines	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Feature Rule	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Variant Split Feature Rule	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Task comment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Constraints comment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Assembly Usage Description	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Master Data

Description: Plug fixation block into block 2x1 (2 holes) light grey, front left  
Group: RT PRE axle front left  
TE: 11.50 (VA: 11.50, NVA: 0.00)  
Take Rate: 36.00 %  
Models: RT1

Linked Files

1:1

7

1 2 3 4

1/1 TQRT-007.png

Tasks

#	Description	Parts	Group	TE	Take Rate	EoW	Models	Feature Rule
1	Yes Station stamp sheet			2.52	100.00 %	99 %	All models	
2	Yes Going from body to body			5.40	100.00 %	99 %	All models	
3	Yes Prepare spoiler base plate 6x2 black	379526	MT PRE spoiler	4.90	13.50 %	192 %	MT1	XSP
4	Yes Mount cover plate 4x2 smooth white on spoiler base plate 6x2 black	4560178	MT PRE spoiler	22.61	13.50 %	192 %	MT1	XSP
5	Yes Place sticker TAKTIQ		MT PRE spoiler	10.00	6.40 %	199 %	MT1	XSP & XTL
6	Yes Turn spoiler module upside down 180 degrees		MT PRE spoiler	21.84	13.50 %	192 %	MT1	XSP
7	Yes Mount spoiler hinge 2x1 black on spoiler module, left	4515368	MT PRE spoiler	12.24	13.50 %	192 %	MT1	XSP
8	Yes Mount spoiler hinge 2x1 black on spoiler module, right	4515368	MT PRE spoiler	12.24	13.50 %	192 %	MT1	XSP
9	Yes Turn spoiler module back by 180 degrees		MT PRE spoiler	22.68	13.50 %	192 %	MT1	XSP
10	Yes Mount ventilation grille 2x1 bevelled black on spoiler module, right	4541191	MT PRE spoiler	14.50	13.50 %	192 %	MT1	XSP
11	Yes Mount ventilation grille 2x1 bevelled black on spoiler module, left	4541191	MT PRE spoiler	14.50	13.50 %	192 %	MT1	XSP
12	Yes Plug fixation block into block 2x1 (2 holes) light grey, front left	412171	RT PRE axle front left	11.5	36.00 %	187 %	RT1	
13	Yes Plug axle suspension block onto fixation block, front left	6280394	RT PRE axle front left	16.00	36.00 %	187 %	RT1	
14	Yes Insert axle into block 2x1 (2 holes) light grey, front left	6083620	RT PRF axle front left	12.18	36.00 %	187 %	RT1	

Number of Tasks: 23

Close



# Your Benefits

With TAKTIQ Assembly Instructions

## Easily Train Production

- Autoplay for qualification with images and videos
- Flexible customization of the interface and displayed attributes as needed (shown content, font sizes, image representations)

## Customize to Own Needs

- Individual format template with e.g. company- and country-specific language, design, logos
- Completely individual specifications of attributes (torques, tools, icons for sensitive or dangerous activities, etc.) as well as information on the document (inspector, version, releaser, etc.)
- Placement of images on extra pages according to specifications

## Convince Yourself Today

Try your free demo now or book your free live-demonstration at [taktiq.de/experience](http://taktiq.de/experience)

## Generate Work Instructions Automatically

- Automatic adjustment of assembly instructions after moving tasks or adjusting tasks and workplaces
- Constantly updated illustration of the sequence at the workplace by linking tasks with images
- Summary and highlighting of attributes and cells automatically in the document
- Export to Excel or PDF according to individual specifications

## One Time Effort, Every Time Benefit

- Information on tasks automatically moves with them when they are moved
- Linked files are available during scheduling, training and export instructions



# Order Preview

Secure quantities and ensure smooth production through early detection of bottlenecks and better control of short-term capacity measures



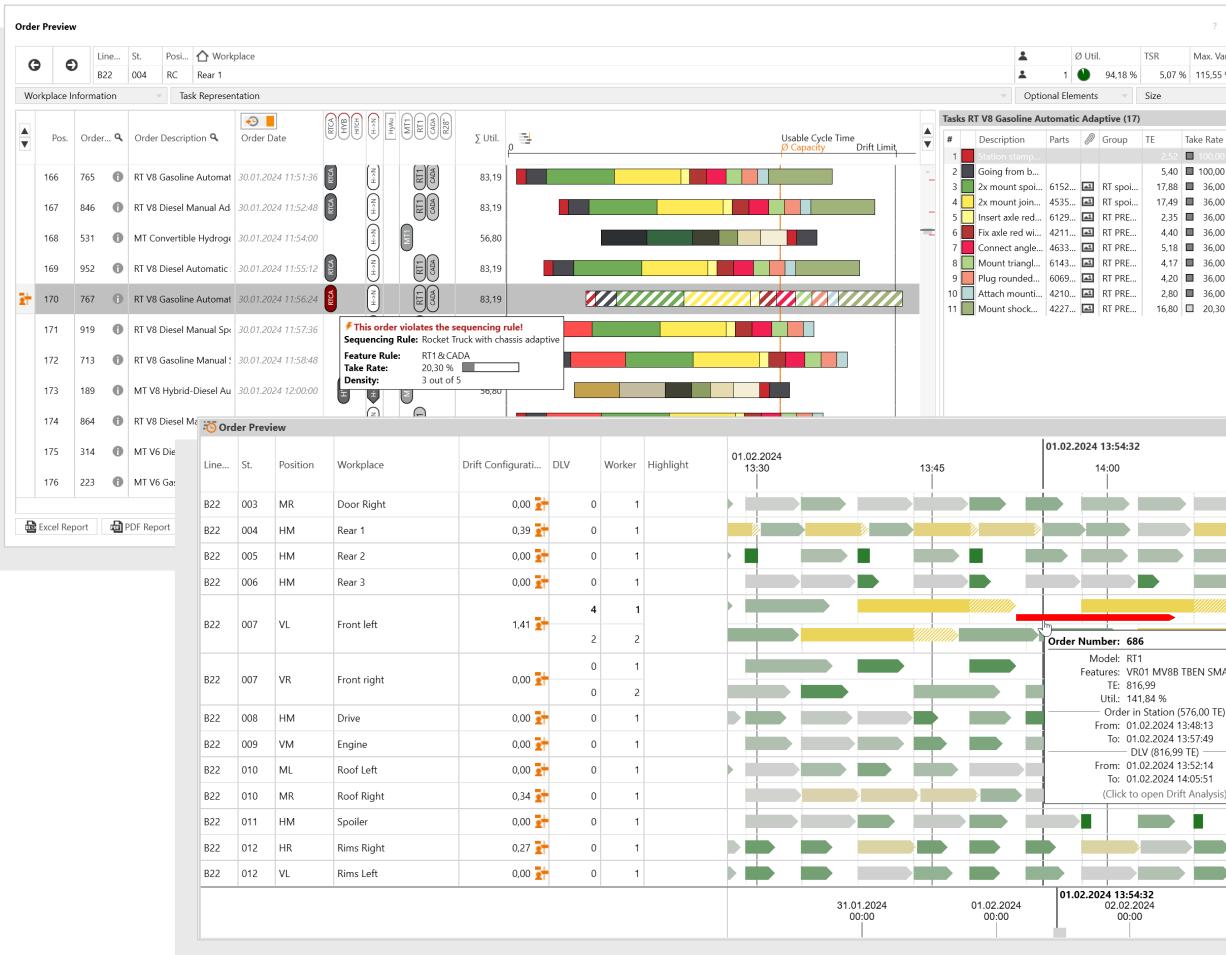
## Avoid Bottlenecks



## Make Detailed Predictions



Increase  
product Quality





# Your Benefits

With TAKTIQ Order Preview

## React Early

- Live calculation of expected order dates based on real dates
- Feedback from external system or manual specification
- Alert support personnel in a targeted and timely manner

## Accurately Predict the Timing and Content of Bottlenecks

- Pre-calculate order deadlines at each station, taking into account plant structure, shift schedules, break times and disruptions
- Calculate expected drift limit violations based on individual drift configuration per workplace

## Work and Navigate Intuitively

- Update view live based on current time
- Automatically enter at the beginning of the shift with the appropriate data
- Flexible zoom of the view
- Display detailed contents and drift behavior of an order on demand
- Overview through individually marked order types

## Integrate Data Easily

Integration into MES systems for the transfer of real dates

## Beautiful To Look At

Visualization of the detailed drift behavior per workplace

## Convince Yourself Today

Try your free demo now or book your free live-demonstration at [taktiq.de/experience](https://taktiq.de/experience)



# Sequence Requirements

Create sequencing rules analytically,  
verify and optimize effectiveness



Optimal Production  
Sequences



Smooth Order  
Scheduling Process



Increased  
Responsiveness

Sequencing Rules

05.02.2024 19:23:15 - 08.02.2024 06:15:45 (90 Orders)

Density Neighborhood Block Capacity Exclusion

Active	No.	Short Descr.	Description	Feature Rule	Density	Take Rate	Tension	Uniform Distribution	Uniform Distribution-Rate	Weighting	Violations	Comment
<input type="checkbox"/>	1	WSPO	Steering Wheel Sport	WSPO	1 out of 2	25,56 %	0,51	<input checked="" type="checkbox"/>	79,10 %	★★★★★	0	-Inactive-
<input checked="" type="checkbox"/>	2	RTCA	Rocket Truck with chassis adaptive	RT1 & CADA	3 out of 5	21,11 %	0,35	<input type="checkbox"/>	-	★★★★★	0	
<input checked="" type="checkbox"/>	3	HYB	Hybrid	FGHY   EDHY	1 out of 2	20,00 %	0,40	<input type="checkbox"/>	-	★★★★★	0	
<input checked="" type="checkbox"/>	4	V8	V8 Gasoline/Diesel/Hybrid	MVBD   MV8G   MHBD   MH8G	3 out of 4	53,33 %	0,71	<input type="checkbox"/>	-	★★★★★	0	
<input checked="" type="checkbox"/>	5	HITCH	Hitch	XHII	1 out of 2	10,00 %	0,20	<input checked="" type="checkbox"/>	71,60 %	★★★★★	0	

Number of Rules: 5, Violations: 0

Edit Multiple Rules Simultaneously

Active Weighting edit for Selected All

Derive Sequencing Rules

Line... St. Pos... Workplace

B22 004 RC Rear 1

Density	Feature Rule	Controlled Orders	Unnecessarily contr. Orders	Tension	Ø DLV	WC-DLV
-	Without Sequencing Rules	-	-	-	30	107
2 out of 5	R28S   VR05   VR01   VR07   VR03	36,00 %	0,00 %	0,90	0	30
2 out of 3	CADA   R28S	51,70 %	0,00 %	0,78	1	49
	Add more restrictive sequencing rule	36,00 %	0,00 %	0,54	10	99
	Add less restrictive sequencing rule	51,70 %	0,00 %	0,69	16	94
	Add manually defined sequencing rule: 4 out of 5	51,70 %	0,00 %	0,65	23	95
	3 out of 4 R28S   VR05   VR01   VR07   VR03	36,00 %	0,00 %	0,48	23	107

Allow &-Connections  Include Negation  Multiple Rules  Focus on fast results

Generate Close



# Your Benefits

With TAKTIQ Sequence Requirements

## Valuable Information in Seconds

- Simulate 1000 order schedules in a few seconds
- Evaluate expected impact of rule sets on sequencing and on bottlenecks in production
- Obtain well-founded predictive ability for "what-if" scenarios

## Interactive Rule Derivation

- Recognize control-relevant order features and feature combinations for program planning and sequencing
- Derive distance rules automatically
- Recognize control-relevant orders and automatically describe them with rules
- Recognize maximum take rate for critical features

## Convince Yourself Today

Try your free demo now or book your free live-demonstration at [taktiq.de/experience](http://taktiq.de/experience)

## Get an Overview and Use It

- Transparency about limit values of your own production
- Recognize and react to bottlenecks and potentials at an early stage

## Reduce Rules, Increase Quality

- Avoid unnecessary rules with overlap and impact analyses
- Rule sets can always be sequenced

## Making Versatile Use of Findings

Receive recommendations for adjustments to line balancing and sequencing parameters

**TAKTIQ**

# Achieve Harmony in Your Production!

Thank you for your attention

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