

# WORKBOOK

## Ventilation System Solutions





With more than 25 years in the business,  
we understand our customer needs:  
reliable quality products,  
quick decisions, on time delivery  
and local support.  
And that's just what we offer.

# Problems and solutions

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This Workbook is intended for inspiration and better understanding of how to achieve the best operation and cost efficiency for various technical solutions and how to optimize the integration and functioning.

We work to bring solutions for air pollution control inside production facilities, bringing care of employees health and improved work efficiency and environmental care.

SovPlym offers its customers a full range of services for the design, production equipment supply, installation and engineering set up, warranty and after sales.

## Welding, cutting, blasting

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Welding  
Cutting  
Blasting

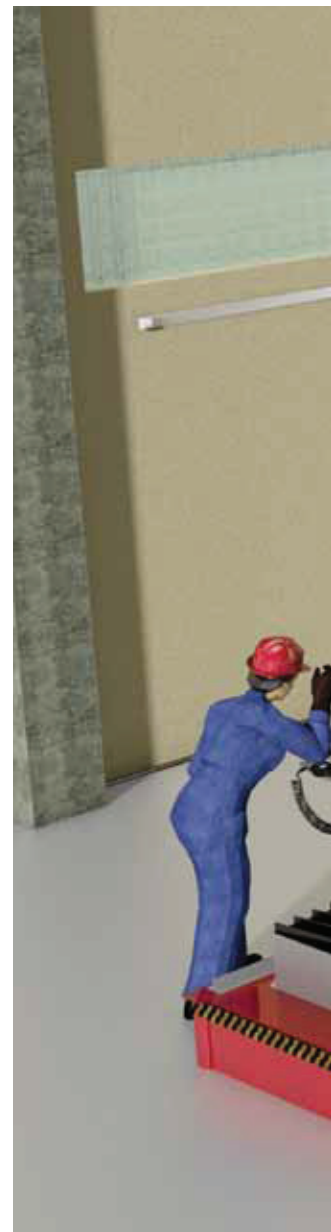
# Thermal cutting

## **MAIN PROBLEM:**

Large amount of smoke in the cutting zone. The task is capturing of the smoke and cleaning the air. The size of sheets being cut: up to 2x6m.

## **SOLUTION:**

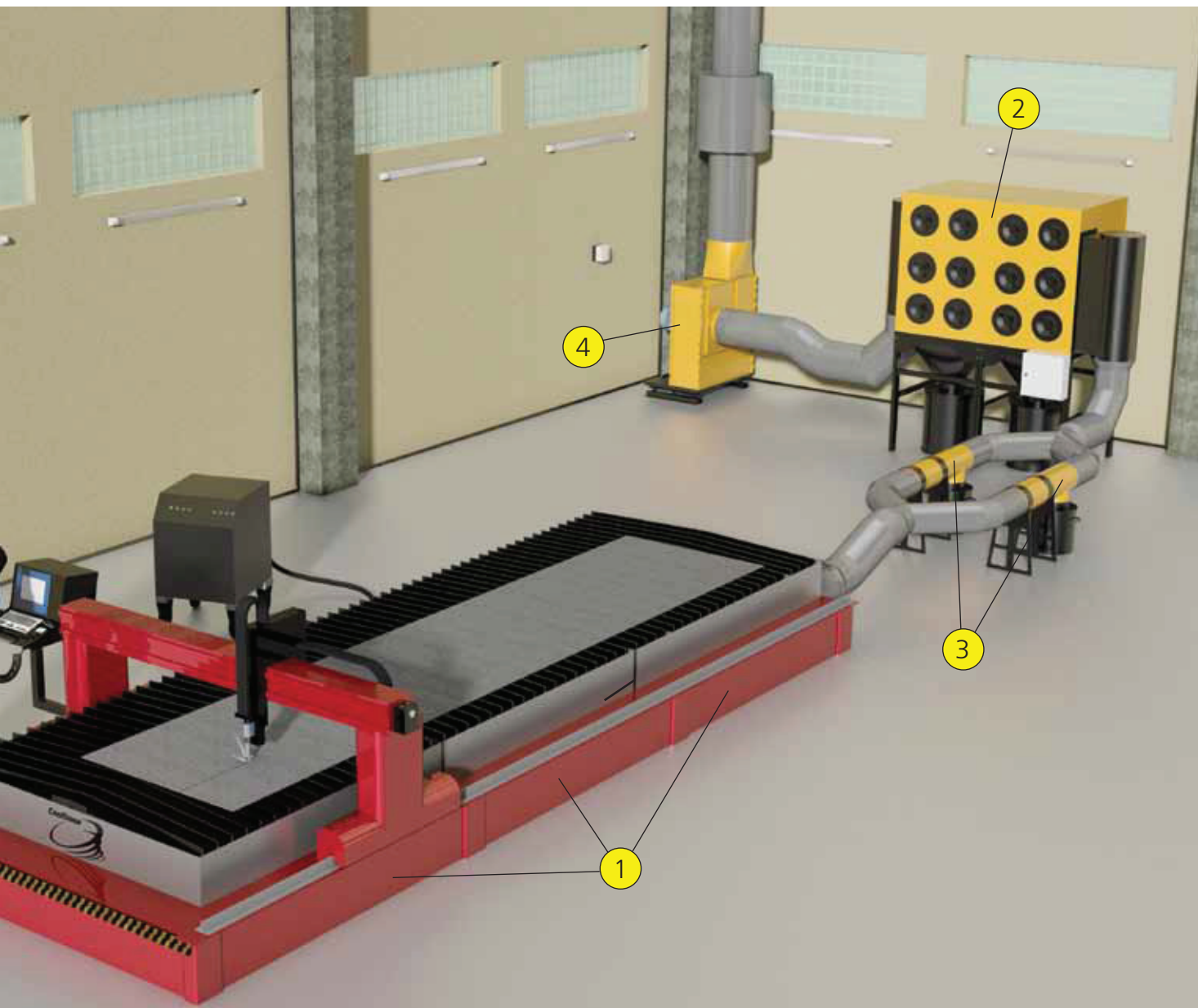
Sectional exhaust table made of standard modules 2x2m put in one row with one side extraction along the table length due to small width of the table. Air filtration via stationary 12 cartridge mechanical filter. Cyclones used as pre-separators.











Sectional exhaust table CCT view 1



Sectional exhaust table CCT view 2



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
		Sectional exhaust table <b>CCT 20x20</b> for thermal cutting consisting of several modules and intended for placing the sheet metal and removing of the combustion products allocated during thermal cutting.	3
		Stationary self-cleaning filter <b>DCSC-S-12-T12</b> designed to clean the air from dust particles; welding, plasma, laser, gas cutting aerosols and similar particles released during various manufacturing processes in industrial shops.	1
		Direct flow cyclones <b>CPO-2500</b> are being used for cleaning dusty environments from medium - coarse dust. Cyclone design provides its installation (inset) directly into the duct through which, the polluted air is moving.	2
		High pressure fan <b>TEF-9000</b> .	1



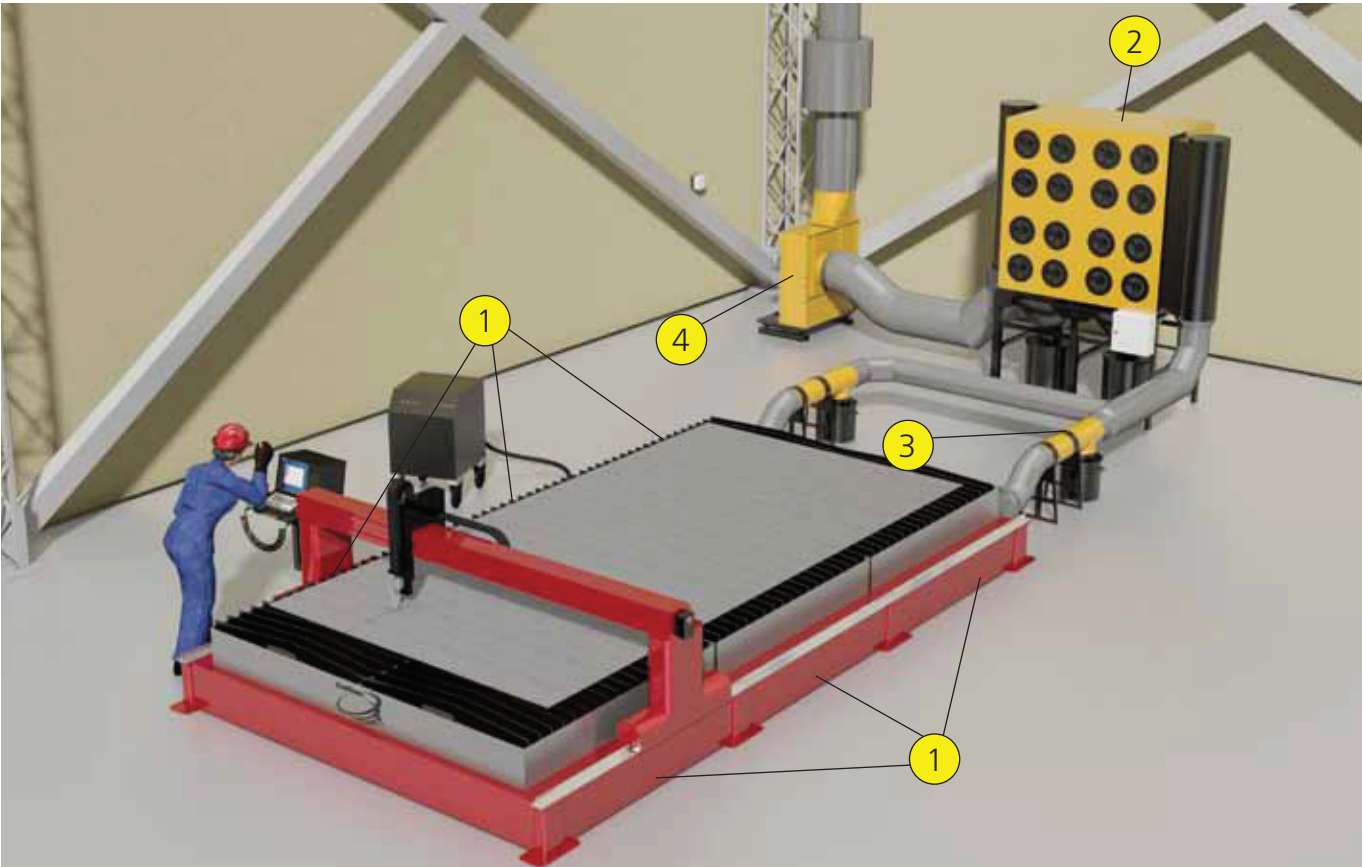
# Thermal cutting

**MAIN PROBLEM:**





Large amount of smoke in the cutting zone.  
The task is capturing of the smoke and cleaning the air. Cutting of wide sheets of metal (up to 3x6m).

**SOLUTION:**

Sectional exhaust table made of standard modules 1,5x2m put in two rows with two side extraction along the table length. Air filtration via stationary 16 cartridge mechanical filter. Cyclones used as pre-separators for coarse dust.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	①	Sectional exhaust <b>CCT 15x20</b> table for thermal cutting consisting of several modules and intended for placing the sheet metal and removing of the combustion products allocated during thermal cutting.	6
	②	Stationary self-cleaning filter <b>DCSC-S-16-T12</b> designed to clean the air from dust particles; welding, plasma, laser, gas cutting aerosols and similar particles released during various manufacturing processes in industrial shops.	1
	③	Direct flow cyclones <b>CPO-4000</b> are being used for cleaning dusty environments from medium - coarse dust. Cyclone design provides its installation (inset) directly into the duct through which, the polluted air is moving.	2
	④	High pressure fan <b>TEF-9000</b> .	1



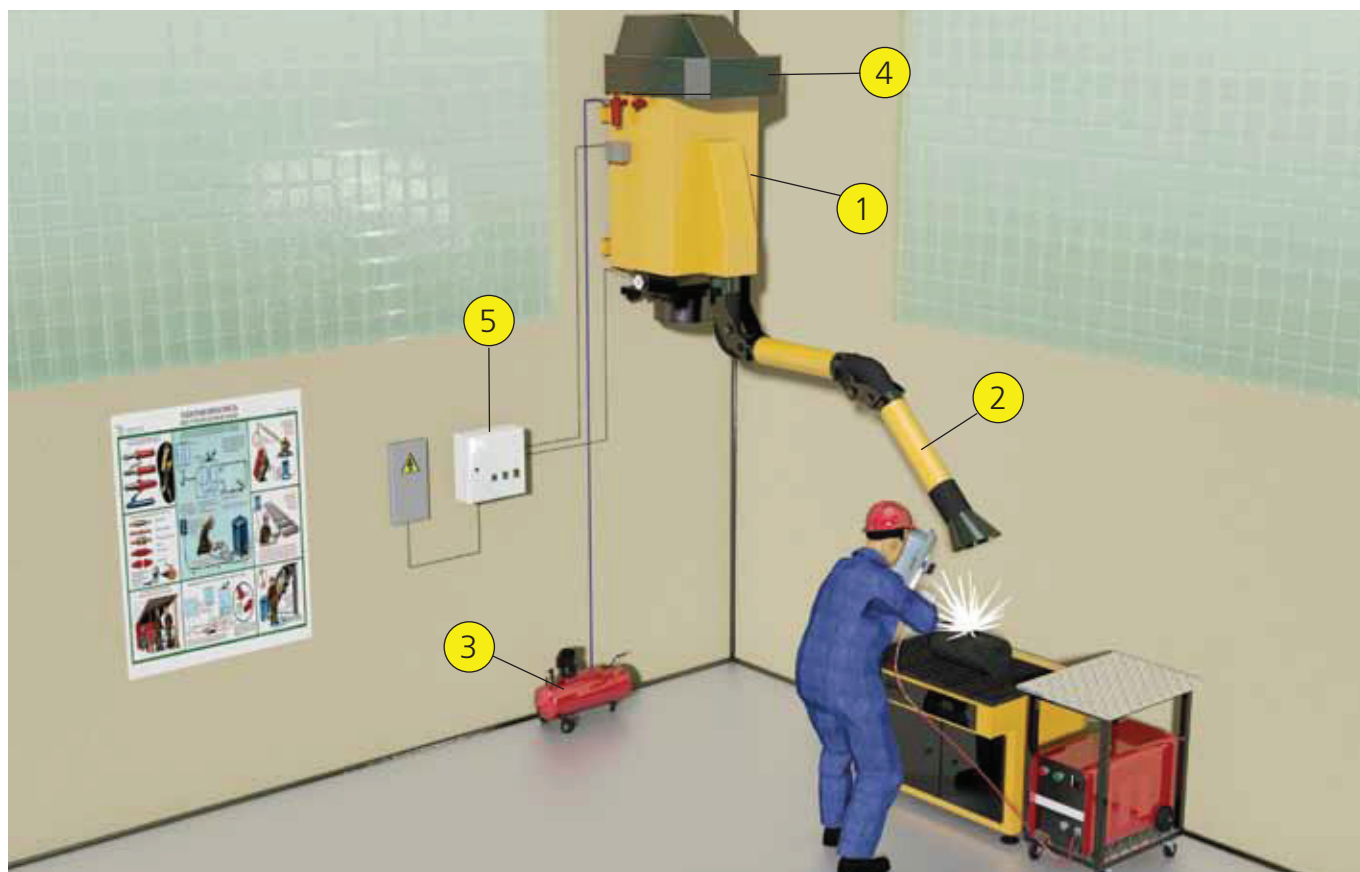
# Welding Filters

## MAIN PROBLEM:









Single workplace for welding of small parts.  
Extraction and filtration of welding fumes is necessary.

## SOLUTION:

Extraction arm BEA fixed to hanging self-cleaning filter.



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
		Extraction arm <b>BEA-M-2HL</b> with lamp in the hood. Two buttons on top of the hood (lamp switching on/off, fan switching on/off). Length – 2m. Direct mounting on the filter.	1
		Mechanical filter <b>DCSC-W-1-00-P12</b> with self-cleaning system, mounted on the wall, connected to the compressor  and equipped with the fan in noise reduction jacket  .	1
		Control unit, allowing connection of up to 4 extraction arms with integrated lighting.	1

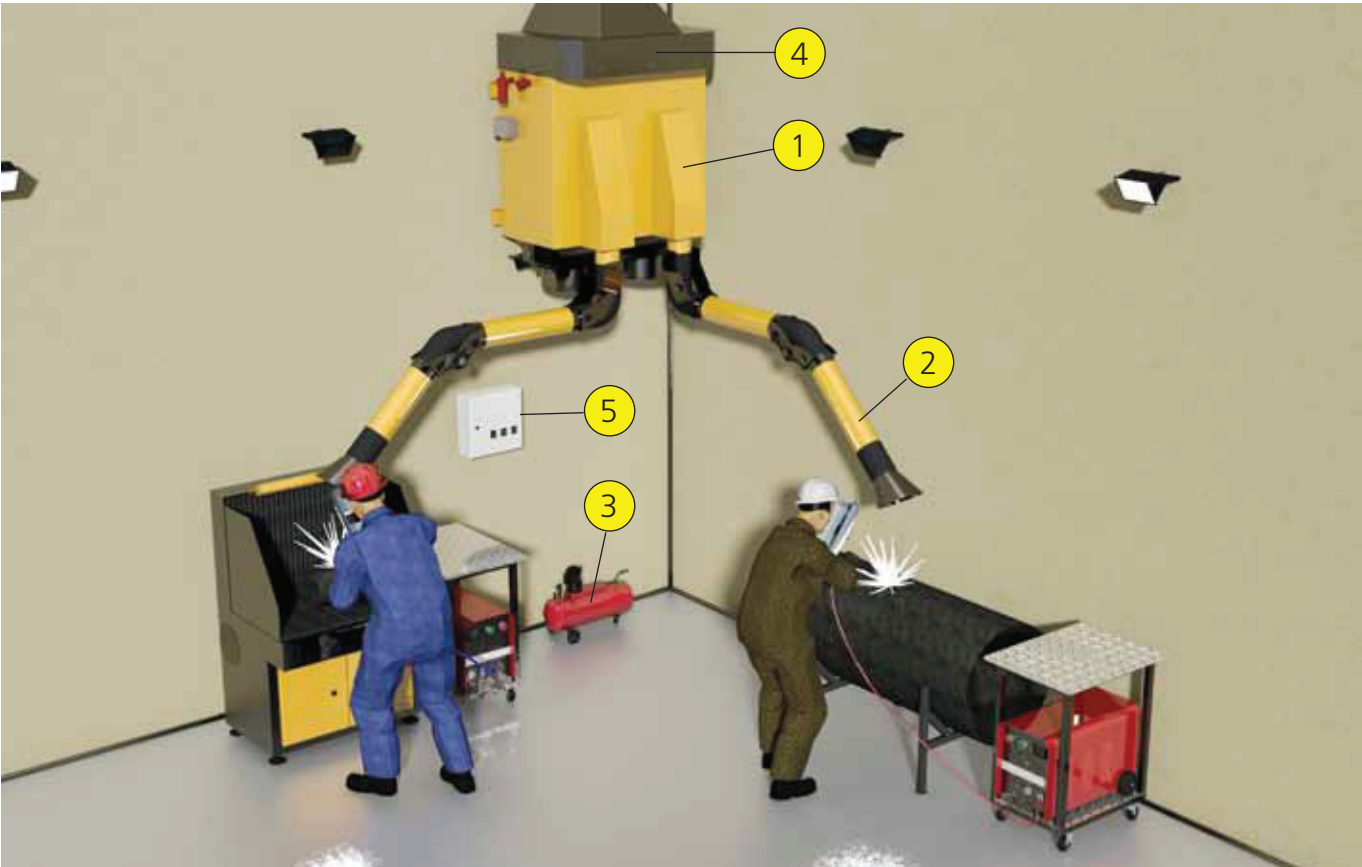
# Welding Filters

**MAIN PROBLEM:**




Two small welding posts near to each other need removing and filtration of welding fumes.

**SOLUTION:**

Used was the mechanical self-cleaning filter with direct connection of two extraction arms. Filter was equipped with the fan in noise reducing jacket. Also a compressor was installed for producing the compressed air for filter's self-cleaning system.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	①	Hanging self-cleaning filter <b>DCSC-W-2x160-00-P12</b> , suitable for direct connection of two extraction arms. Supplied with the fan in noise reducing jacket ④ and using the compressor ③ for self-cleaning system.	1
	②	Extraction arm <b>BEA-M-2HL</b> . With lighting installed in the nozzle. Reach radius – 2 m. Connected directly to the filter. Buttons to switch on the lighting and fan are located on the extraction arm's nozzle.	2
	⑤	Control unit, allowing connection of up to 4 extraction arms with integrated lighting.	1

# Welding Filters

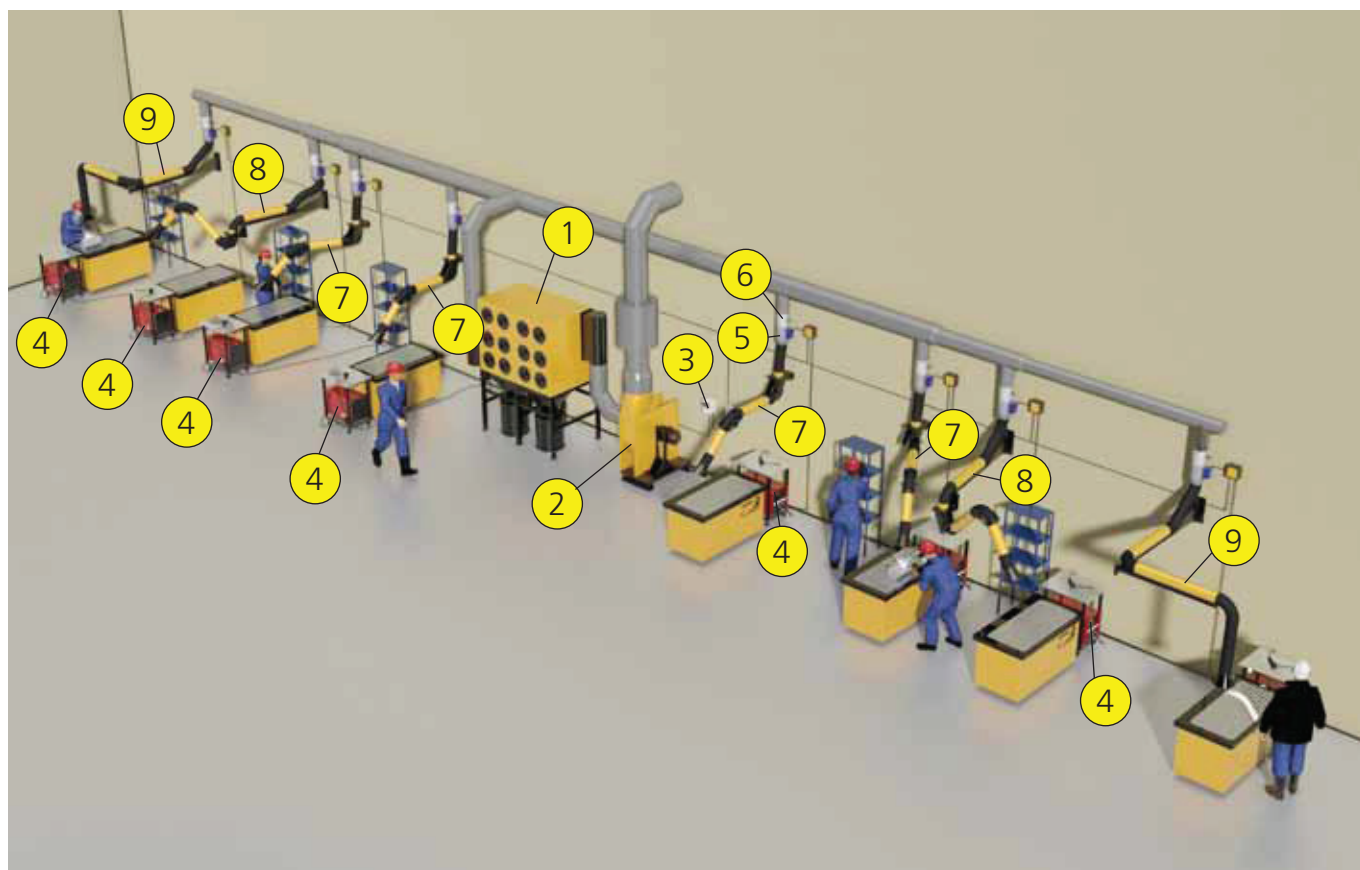
## MAIN PROBLEM:

8 various welding posts in a row need a system of extraction and filtration of welding fume.






## SOLUTION:

Several types of extraction arms, depending on

the type of workplace and demanded reach radius, are fixed to the wall near each work place. All extraction arms are connected to two duct lines, leading to single central filter unit. Whole system is equipped with automatics, ensuring only necessary productivity, depending on the number of actually working welders.



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	①	Central mechanical filter with self-cleaning system <b>DCSC-S-12-T12</b> . Includes 12 PTFE cartridges.	1
	②	Extraction fan <b>TEF-9000nr</b> . Productivity: 3500-9000 m³/h. Pressure: 2000-3600 Pa. Works with the automatic system, including: frequency inverter ③, welding cable sensors ④, automatic dampers ⑤.	1
	⑦	Extraction arm <b>BEA-M-3H</b> . Reach radius – 3 m. Wall mounting. Used with manual damper ⑥ for airflow regulation, and automatic damper ⑤ as a part of automatics system.	4
	⑧	Extraction arm <b>EF-M-4530</b> . Reach radius – 7 m. Wall mounting. Used with manual damper ⑥ for airflow regulation, and automatic damper ⑤ as a part of automatics system.	2
	⑨	Extraction arm <b>EC-8016</b> . Reach radius – 8 m. Wall mounting. Used with manual damper ⑥ for airflow regulation, and automatic damper ⑤ as a part of automatics system.	2

# Welding Filters

## **MAIN PROBLEM:**

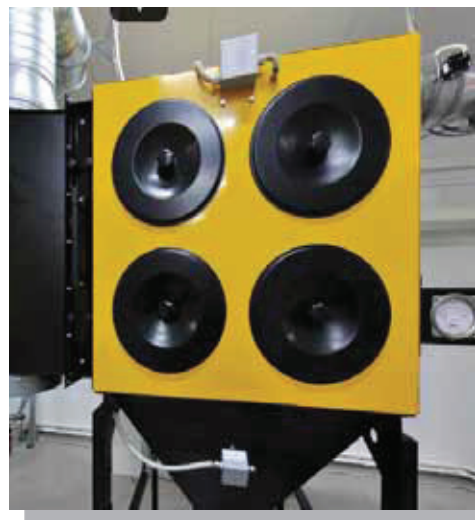
Several welding workplaces in a row need extraction and filtration of welding fume.

## **SOLUTION:**

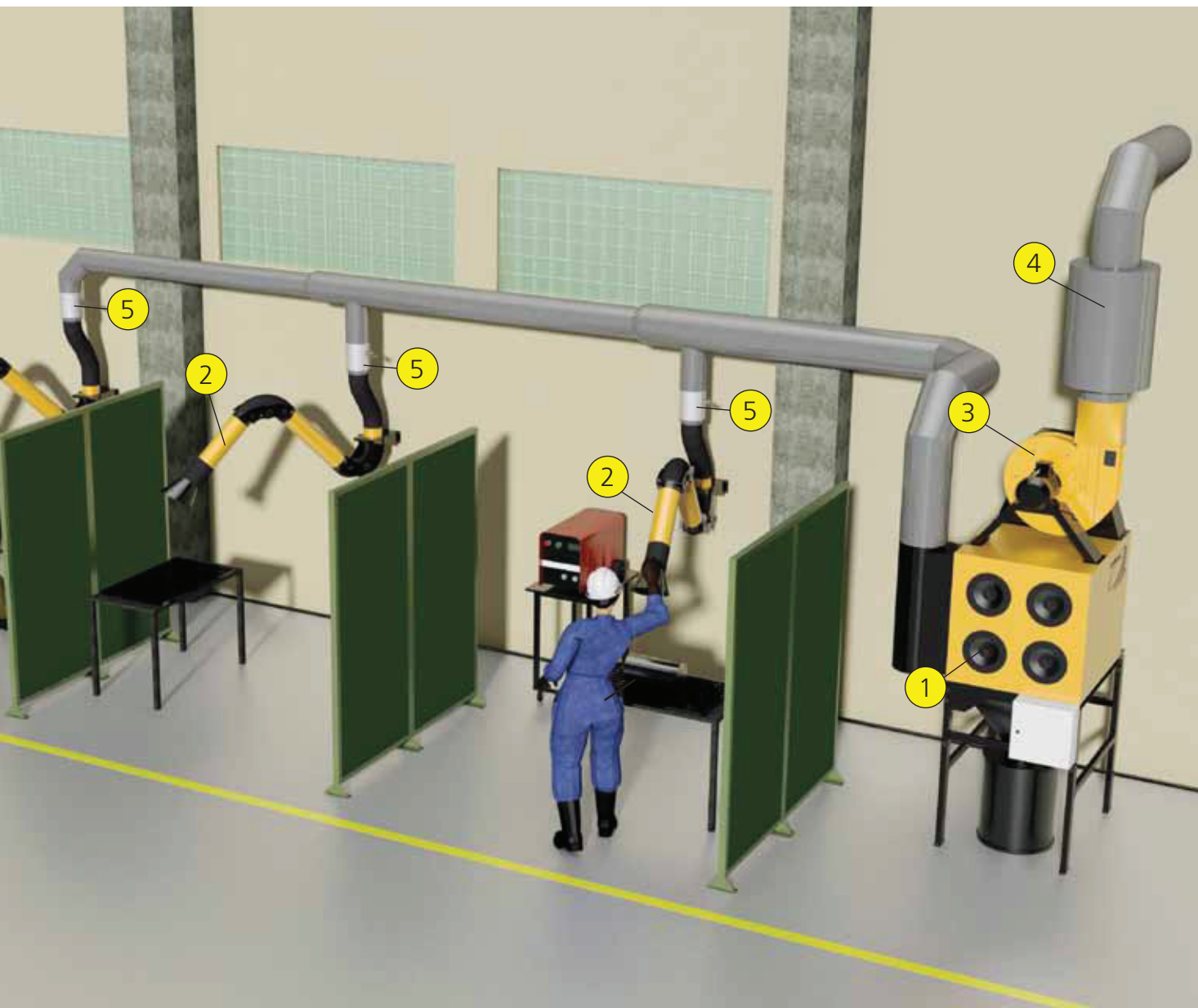
Extraction arms, installed for each work place, are connected to one duct line, leading to central filter unit and extraction fan.












DCSC-S-4-T12 with 4 PTFE cartridges view 1



DCSC-S-4-T12 with 4 PTFE cartridges view 2



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
		Extraction arm <b>BEA-M-2H</b> . Reach radius – 2 m. Mounted on the wall with the universal holder from the delivery set.	3
		Mechanical self-cleaning cartridge filter. <b>DCSC-5-4-T12</b> with 4 PTFE cartridges. Needs compressed air supply.	1
		Extraction fan <b>VMD-6000</b> . Productivity: 1000-4000 m <sup>3</sup> /h. Pressure: 1200-2380 Pa. Specially designed for installation on DCSC filter. Used with a silencer  .	1
		Manual dampers for air flow regulation.	3



# Welding Filters

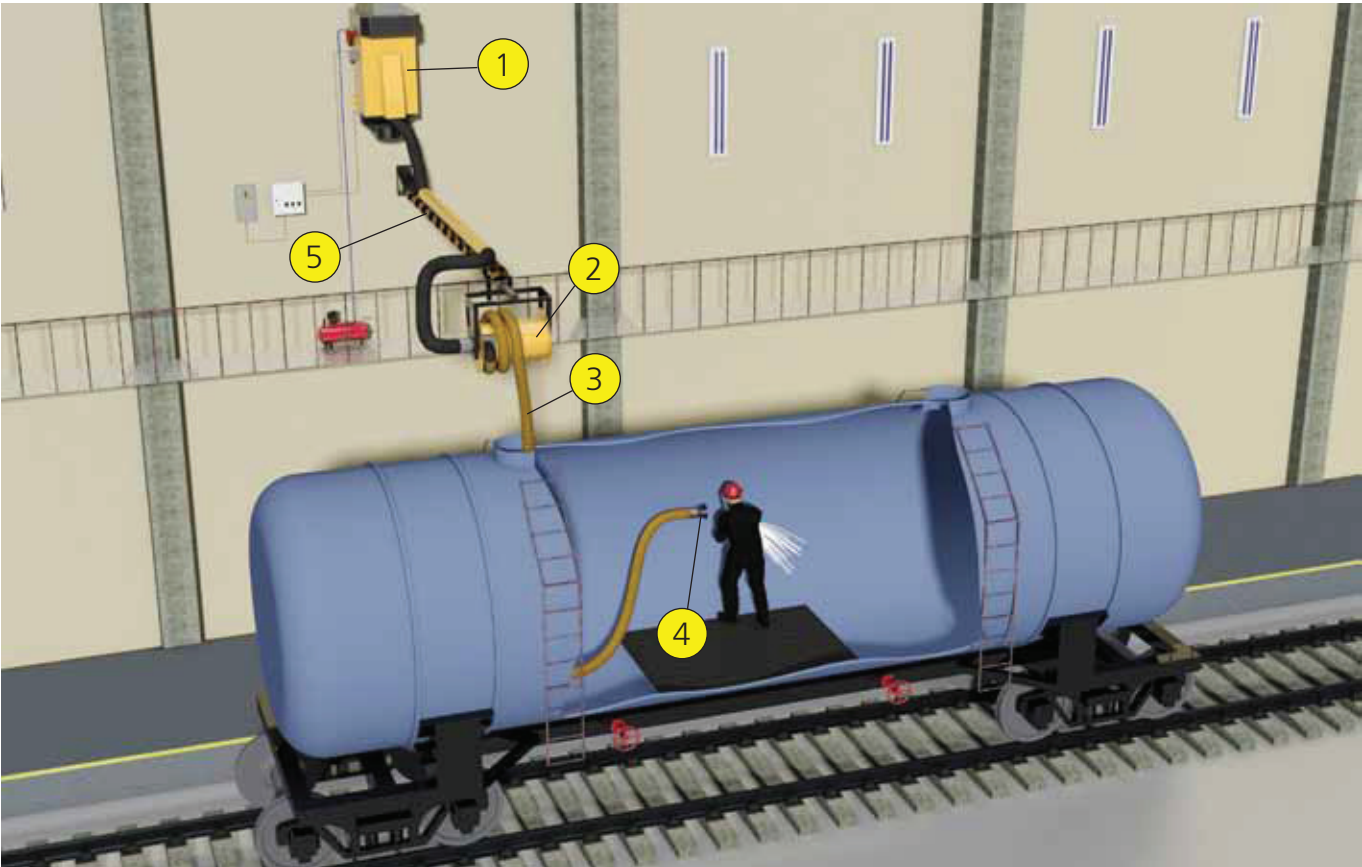
**MAIN PROBLEM:**

Extraction of welding fumes needed while working inside the tank along with following filtration.



**SOLUTION:**

The long extraction hose, necessary for the operation, is mounted on the hose reel. The hose reel is fixed on the wall with the help of console along with mechanical filter.

**Alternative:** High vacuum with on-tool extraction.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	①	Filter unit with fan in noise reduction jacket, supplied with compressor for self-cleaning system.	1
	②	Hose reel <b>ARM-150-12.5</b> with extraction hose <b>HoseSP-150-150</b> ③ and a nozzle with magnetic holder <b>sPV-150</b> ④. Mounted on console <b>sSA-4.5</b> ⑤.	1



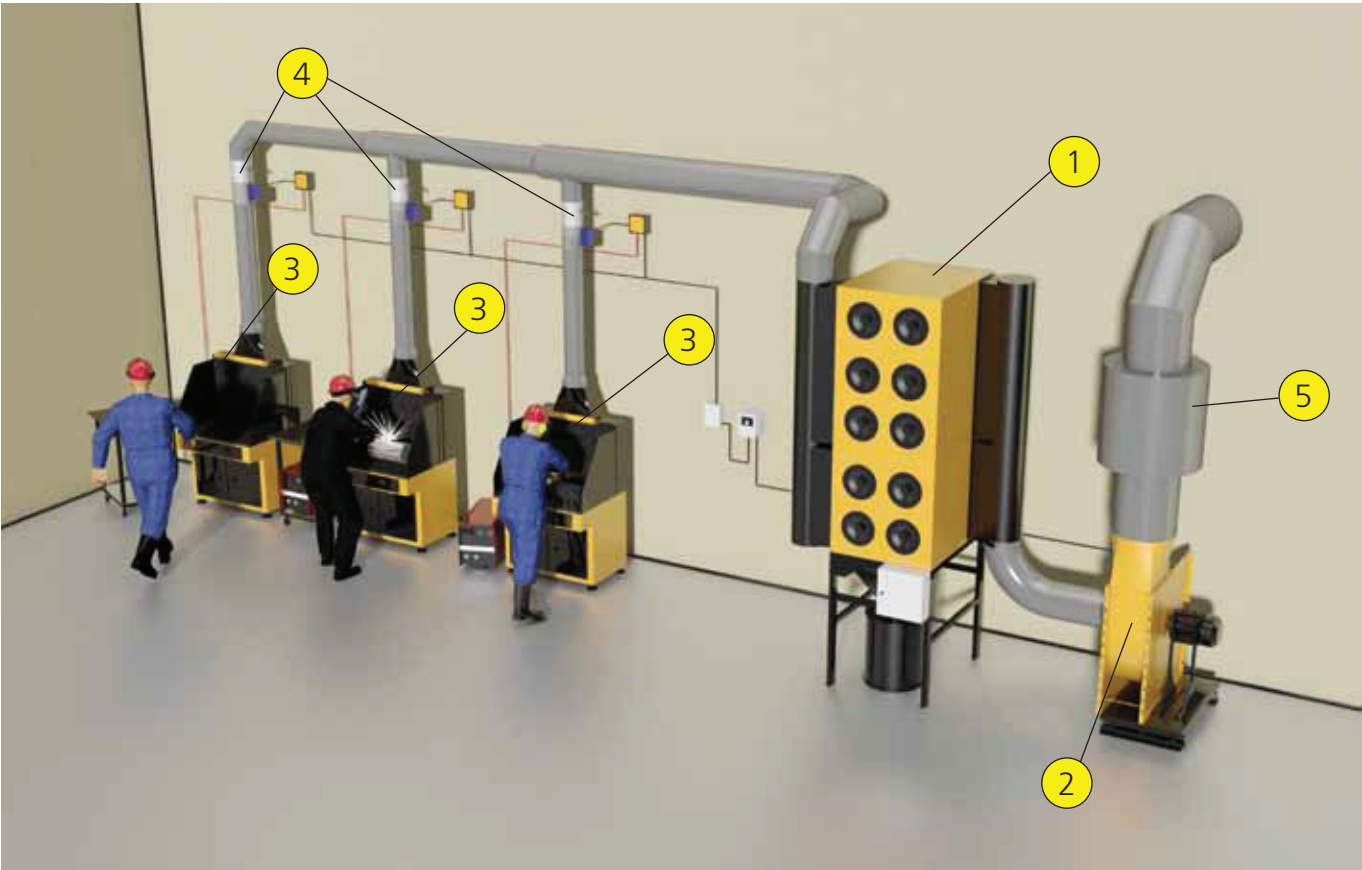
# Welding Filters

**MAIN PROBLEM:**




Welding and grinding works at three working places need removal of dust and welding fumes.

**SOLUTION:**

Welding & grinding tables, making individual work places for processing of small parts, are connected to a duct line, leading to the central filter.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	①	Central mechanical filter with self-cleaning system <b>DCSC-S-10-T12</b> . Includes 10 PTFE cartridges.	1
	②	Extraction fan <b>TEF-9000nr</b> . Productivity: 3500-9000 m³/h. Pressure: 2000-3600 Pa. Installation with a silencer ⑤.	1
	③	Welding-grinding Table <b>WT-CCZ-2500</b> for welding, cleaning, grinding, polishing and similar processes. Connected to the central duct line via manual dampers ④ for adjusting of the air flow.	3

# Limited space welding

## **MAIN PROBLEM:**

Single worker needs extraction of welding fumes while working in confined space of container.

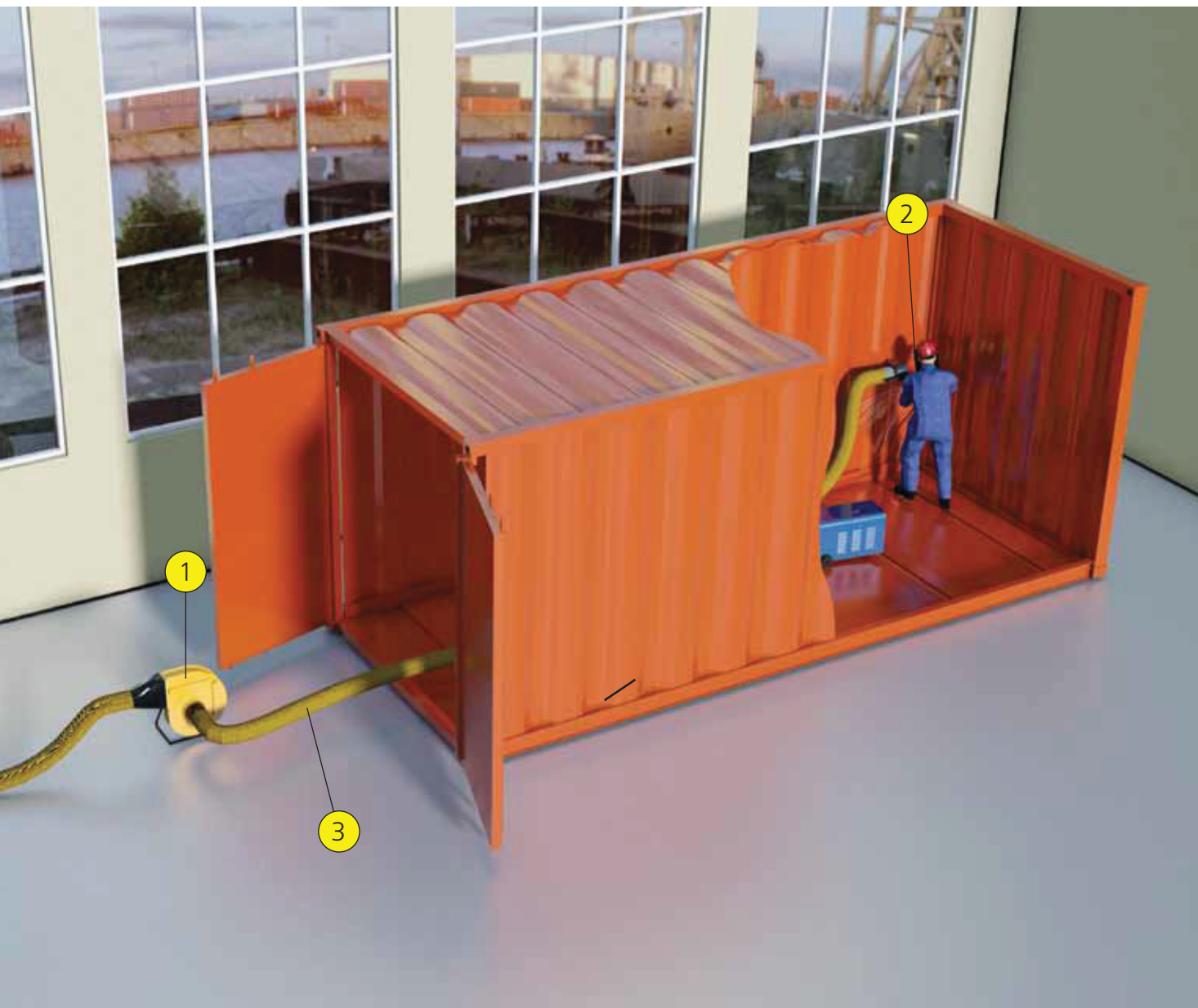
## **SOLUTION:**

Extraction fan is used with flexible abrasion resistant hose and nozzle with magnetic holder, which can be fixed to any metal parts.



**Alternative:** High vacuum with on-tool extraction.



Stationary fan on tube frame



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	①	Stationary fan on tube frame for on-floor installation with a 220V engine, equipped with an automatic breaker and 5 m long cable with a plug.	1
	②	Magnetic air intake funnel Ø160mm, fixed to a hose ③.	1

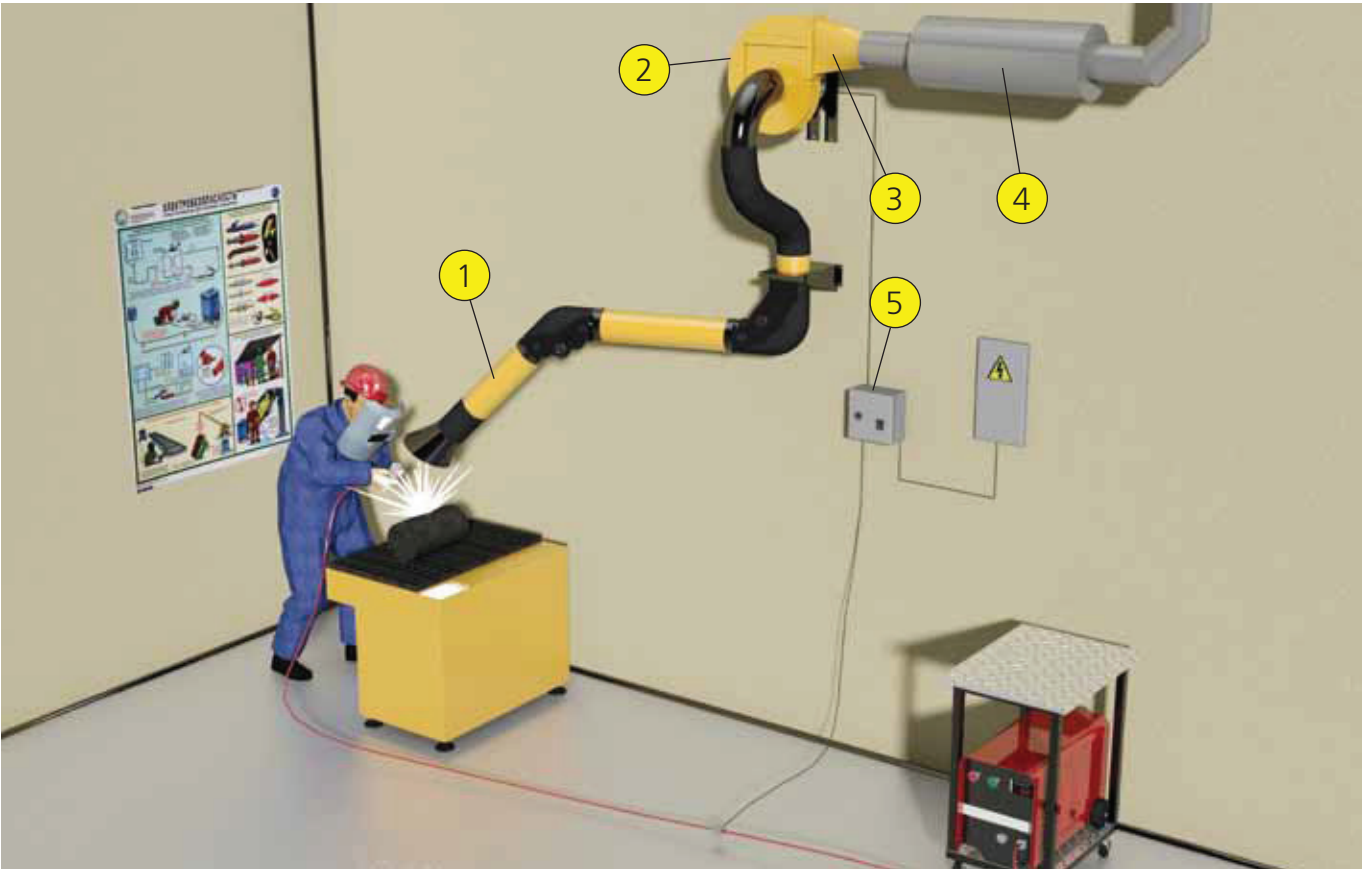
# Welding Fans

**MAIN PROBLEM:**









Welding post close to the wall. Captured welding fume is directed outside of premises without filtration.

**SOLUTION:**

Extraction arm with radial fan combined with energy saving automatics.



**EQUIPMENT USED FOR SOLUTION:**

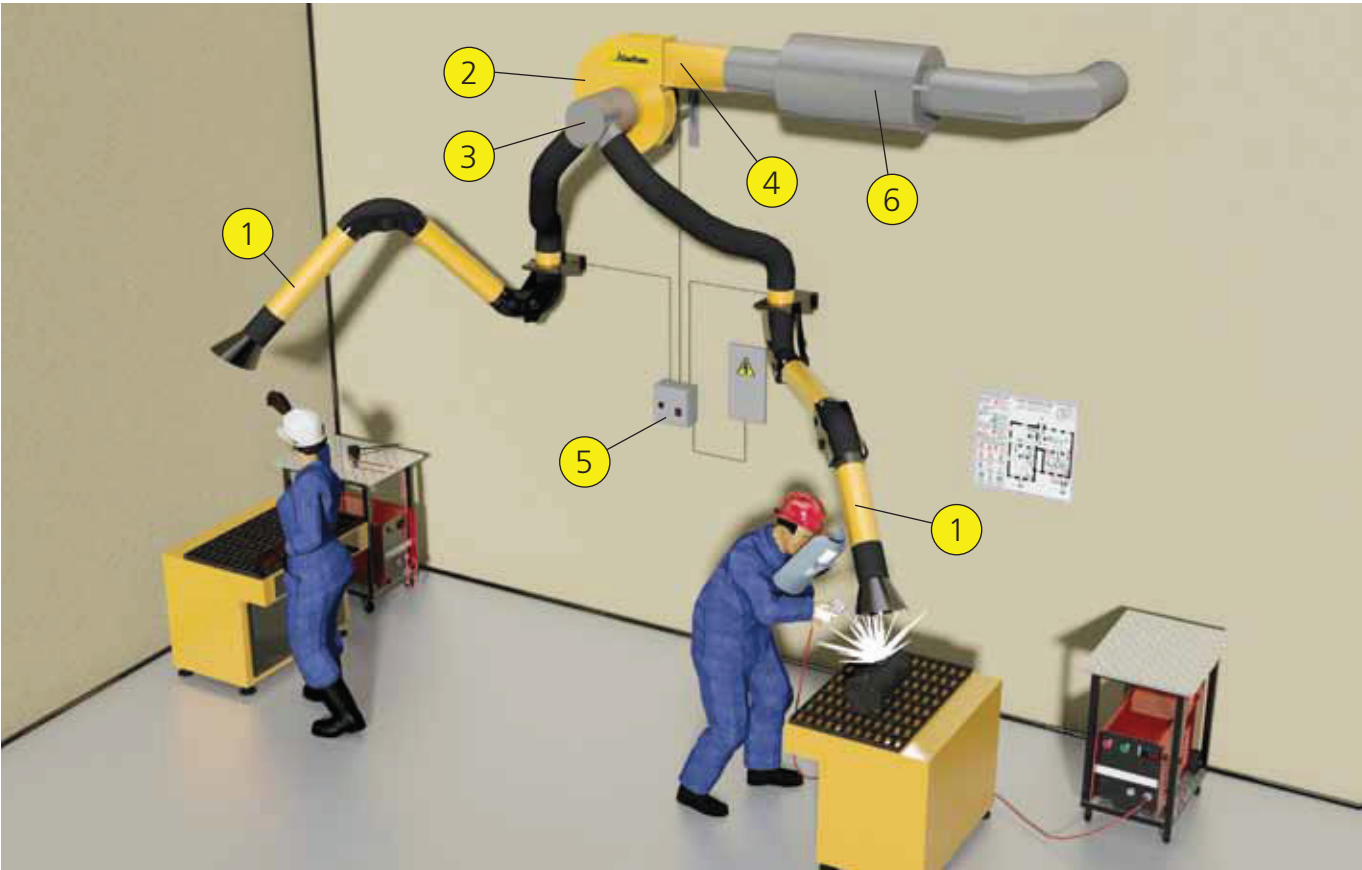
Equipm.	Pos. on pic.	Description	Pcs
		Extraction arm <b>BEA-M-2HL</b> . Working radius – 2 m. Universal mounting bracket for mounting on the wall or any other construction.	1
		Extraction fan <b>VMK-2100</b> . Equipped with a connection piece  and a silencer  .	1
		Control unit, allowing connection of up to 4 extraction arms with integrated lighting.	1

**MAIN PROBLEM:**




Two welder's work places. Welding fume extraction needed with no filtration. Insufficient lighting of work place. Work is being carried out on tables. Size of welded parts: small.

**SOLUTION:**

Installation of extraction arms at each work place, connected to one central fan, equipped with silencer.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	①	Extraction arm <b>KUA-M-3HL</b> with lamp in the hood. Two buttons on top of the hood (lamp switching on/off, fan switching on/off). Length – 3 m. Universal mounting bracket for mounting on the wall or any other construction.	2
	②	Extraction fan <b>VMK-4000</b> . Equipped with a T-joint ③, connection piece ④ and silencer ⑥. Air flow 3000 m³/h. Pressure: 500-3000 Pa.	1
	⑤	Control unit, allowing connection of up to 4 extraction arms with integrated lighting.	1

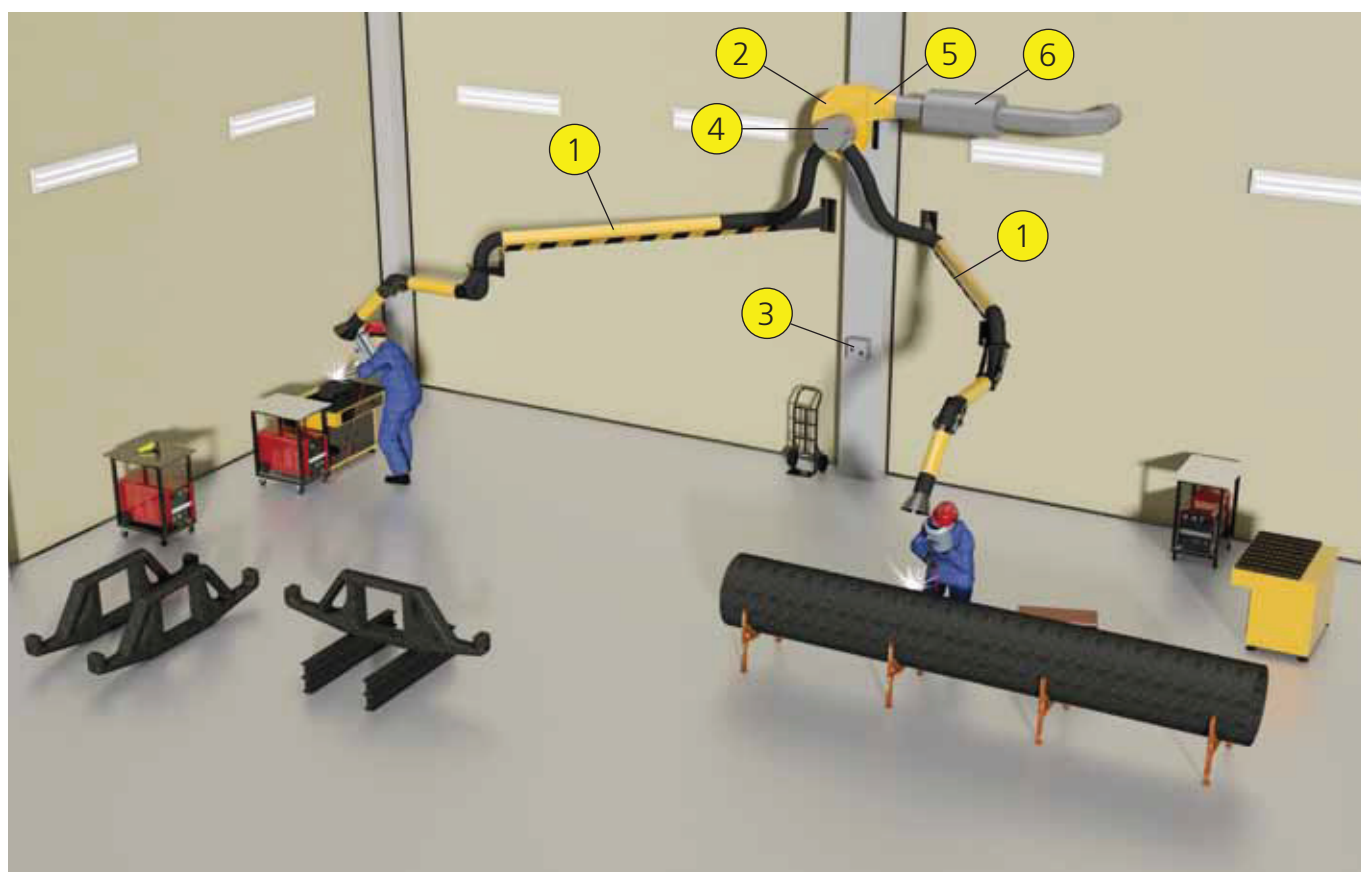


## MAIN PROBLEM:









Two welding workplaces close to each other and to the wall. No filtration needed. Large parts may be welded.

## SOLUTION:

Two extraction arms with consoles connected to extraction fan.



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
		Extraction arm with console <b>EF-M-4530-L</b> . Working radius – 7 m. Lighting installed into the hood and operated by the switch in the hood via control unit  . Fan can be switched on/off by the second switch in the hood.	2
		Extraction fan <b>VMK-4700</b> allowing connection of two extraction arms via T-joint  . Productivity: 1000-4000 m³/h. Pressure: 1200-2380 Pa. Used with a silencer  and a connection piece  .	1

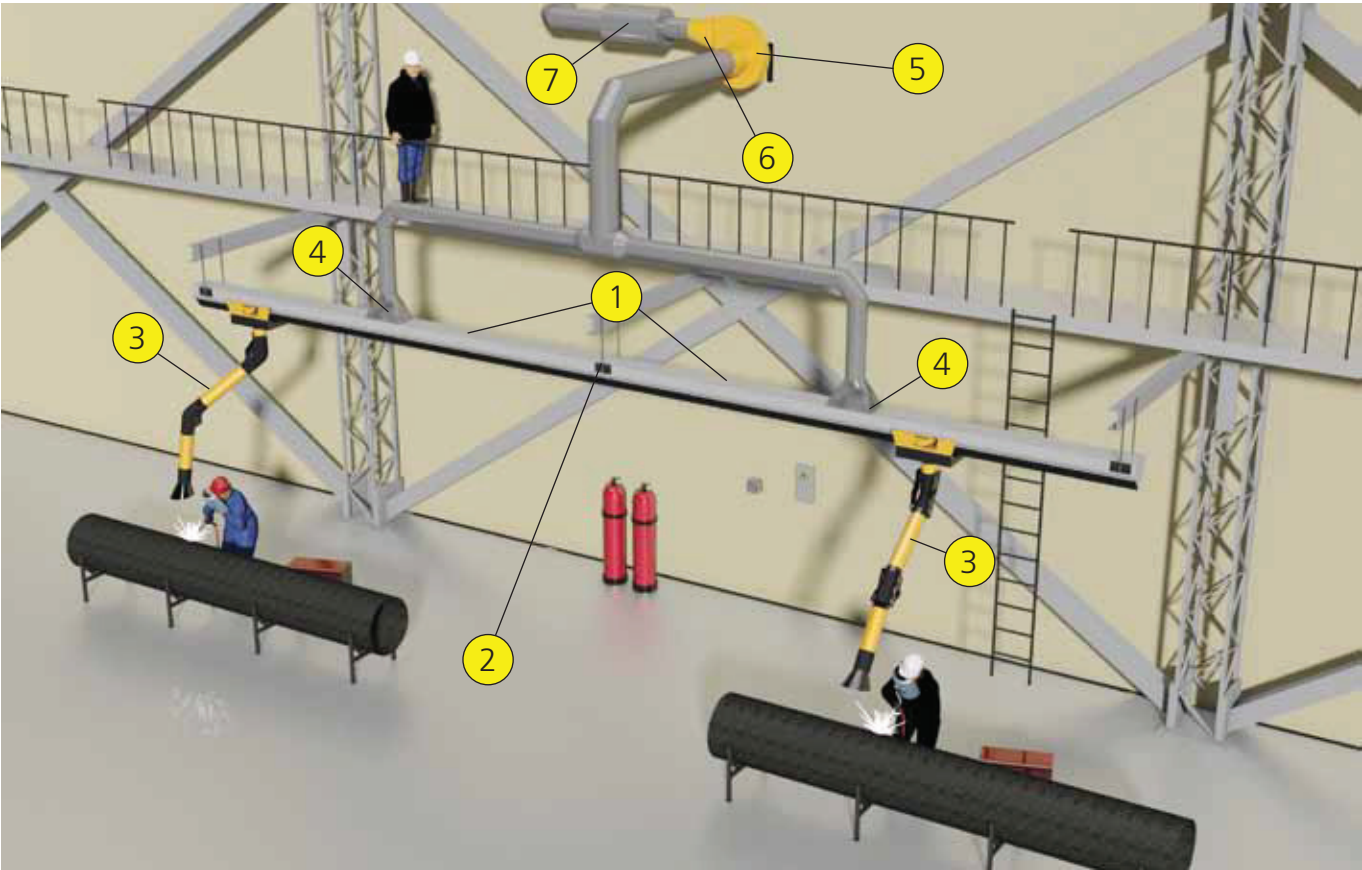


**MAIN PROBLEM:**











Welded parts 3 to 12 meters long. Extraction without filtration needed.

**SOLUTION:**

Optimal solution was installation of exhaust rail along the welding area with two extraction arms on carriages, moving along the rail.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
		Extraction rail 6 m long. Rail segments are being connected with connection piece  . Connection to ducting via duct adapter  .	2
		Extraction arm. Installed on carriage allows moving along the exhaust rail.	2
		Extraction fan <b>VMK-4700</b> with universal mounting bracket. Installed with connection piece  and silencer  . Productivity: 1000-4000 m <sup>3</sup> /h. Pressure: 1200-2380 Pa.	1

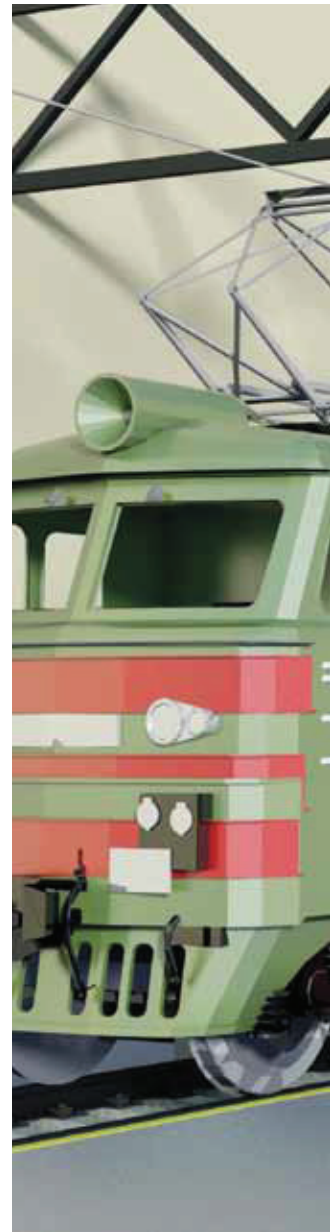
# Welding Extraction arms

## **MAIN PROBLEM:**

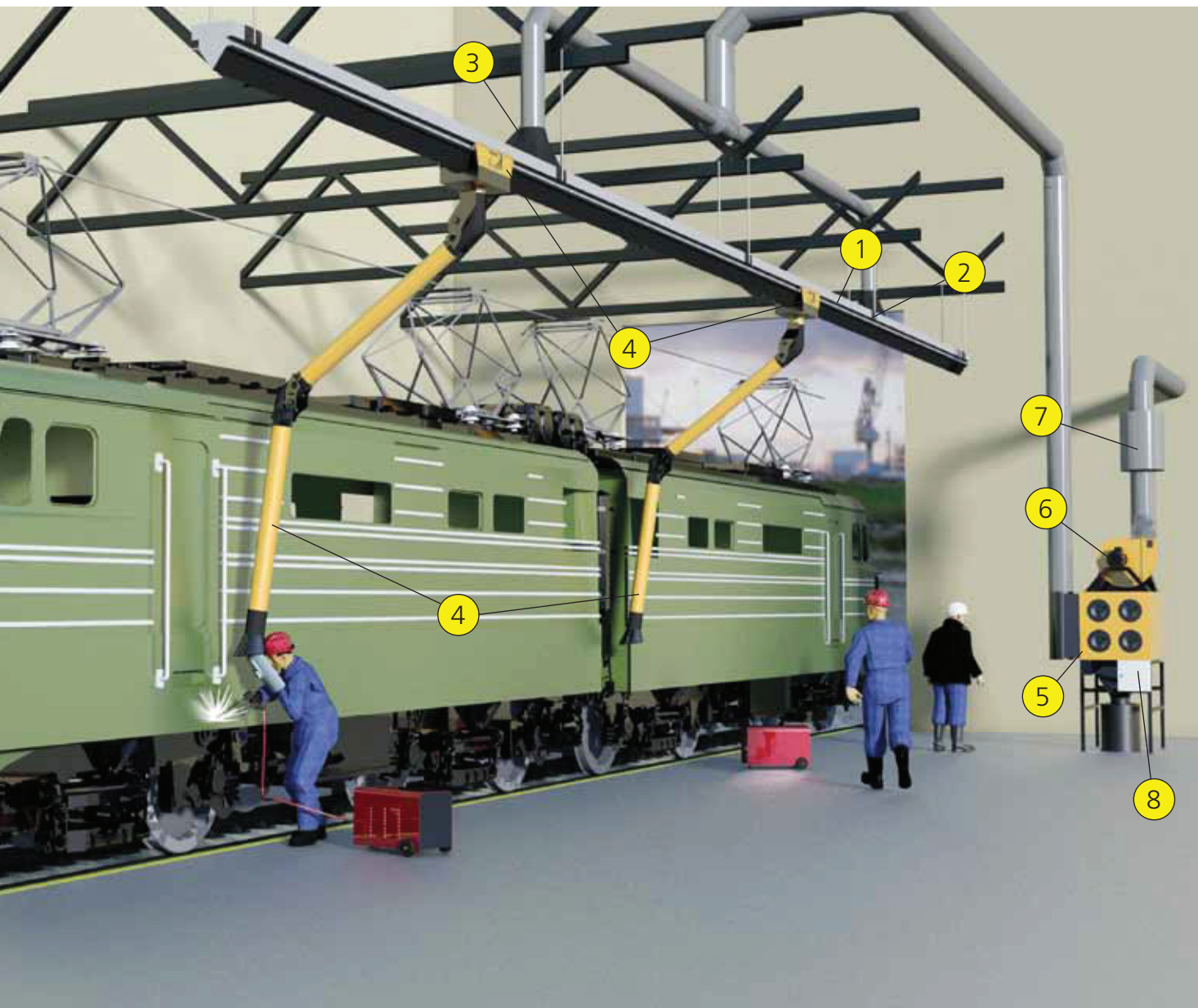
Wagon repair shop. Long premises (working area 24m long), in which welding can be done in any point along the workshop by only two welders. Welding fume extraction needs to be done along with filtration inside the workshop.

## **SOLUTION:**












Fixed number of welders allows using of two extraction arms. Installation on the exhaust rail makes it possible to extract welding fume along the whole workshop. Exhaust rail is connected to the mechanical filter with self-cleaning system.



Wagon repair shop



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
		Extraction rail 6 m long. Rail segments are being connected with connection piece  . Connection to ducting via duct adapter  .	3
		Extraction arm. Installed on carriage allows moving along the exhaust rail.	2
		Modular self-cleaning filter <b>DCSC-4-P12</b> with extraction fan  , equipped with a silencer  and control unit  .	1



**MAIN PROBLEM:**

Welding of large parts in selected area. Extraction of welding fumes needed with filtration.

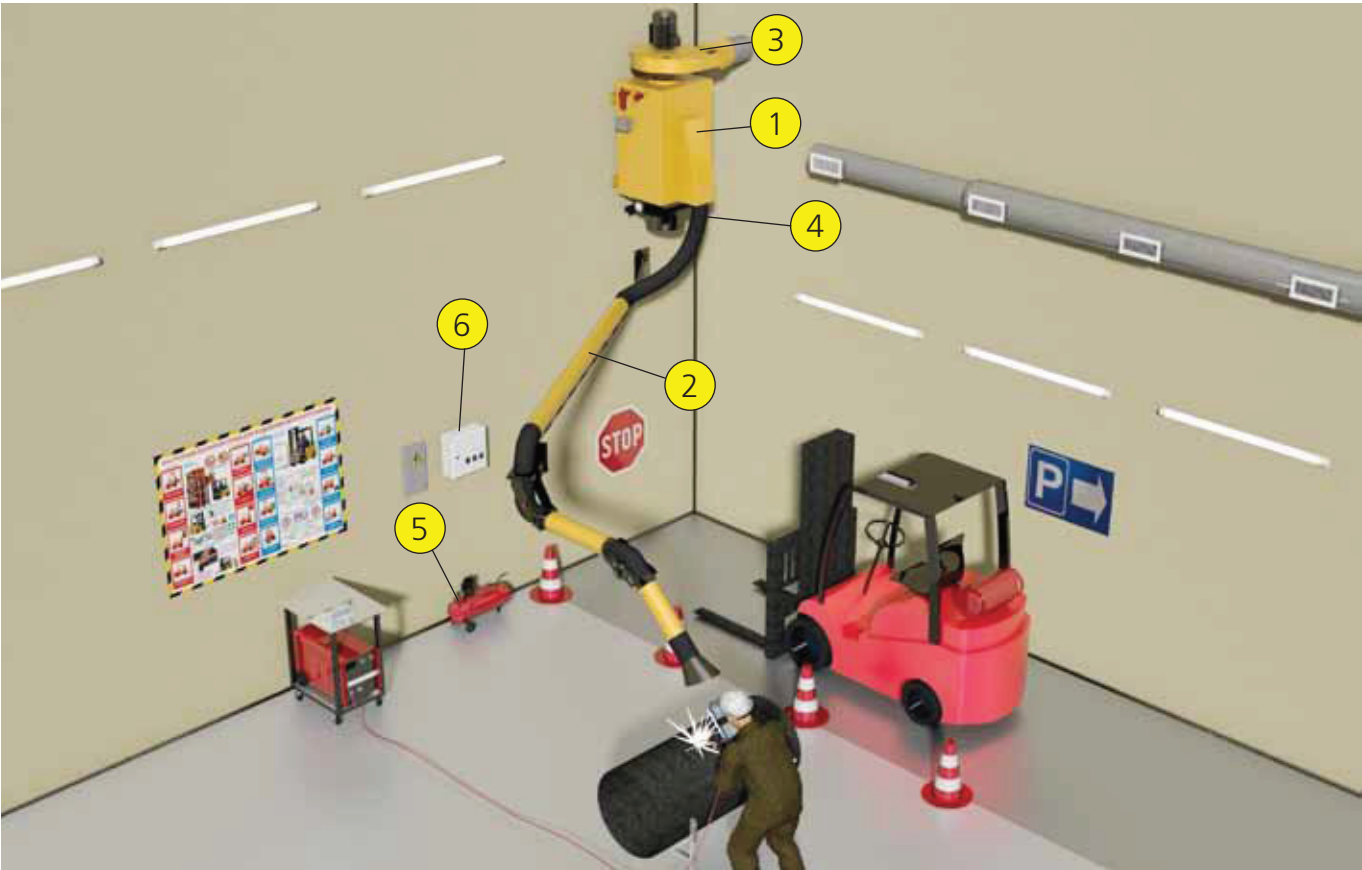
**SOLUTION:**

Hanging mechanical filter with self-cleaning




system is used with extraction arm on console.

Both are mounted separately on the wall and connected by a hose.

Reach of extraction arm covers the demanded area. Filter unit provides air filtration from welding fume, allowing recirculation of captured and cleaned air.



**EQUIPMENT USED FOR SOLUTION:**

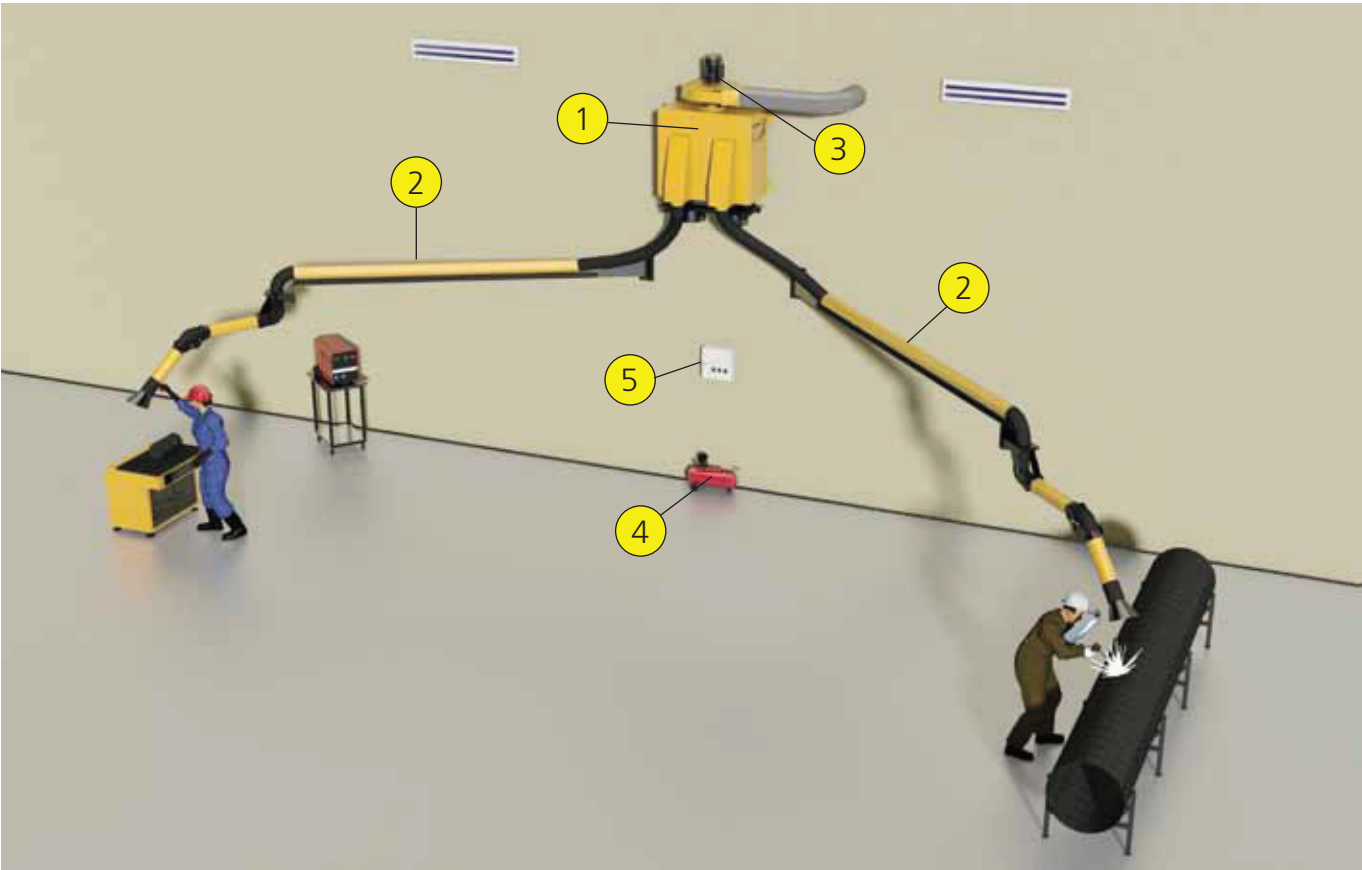
Equipm.	Pos. on pic.	Description	Pcs
	①	Filter unit <b>DCSC-W-1-00-P12</b> with fan in noise reduction jacket ③, supplied with compressor ⑤ for self-cleaning system.	1
	②	Extraction arm with console, mounted on the wall and connected to the filter with a piece of flexible hose and nipple ④ fixed on the filter.	1
	⑤	Control unit for fan and filter operation.	1

**MAIN PROBLEM:**




Two welding posts are located at a medium distance from each other. Working most of the time simultaneously. Removing and filtration of welding fumes is needed.

**SOLUTION:**

Two extraction arms with consoles are mounted on the wall and connected to a hanging mechanical filter with flexible hoses. Filter is equipped with a fan in noise reducing jacket and has a self-cleaning system, allowing long time work between cartridge changes.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	①	Hanging self-cleaning filter <b>DCSC-W-2x160-00-P12</b> , suitable for connection of two extraction arms. Supplied with the fan in noise reducing jacket ③ and using the compressor ④ for self-cleaning system.	1
	②	Extraction arm with console <b>EF-M-4530-L</b> . Reach radius – 7 m.	2
	⑤	Control unit for fan and filter operation.	1

# Welding Tables

**MAIN PROBLEM:**




Single workplace with jobs like grinding and welding needs extraction of dust and welding fumes.

**SOLUTION:**

Welding & grinding table used as a workplace and connected to a mechanical filter, mounted on the wall above the table.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	①	Mechanical filter <b>DCSC-W-200-00</b> with self-cleaning system and integrated fan in noise reducing jacket ④. Supplied with compressor ③ for self-cleaning system.	1
	②	Welding-grinding Table <b>WT-CCZ-2500</b> for welding, cleaning, grinding, polishing and similar processes. Installed under the filter in order to save space, due to small amount of dust and rare need in access to filter's dust bins.	1
	⑤	Control unit, for fan and filter operation.	1



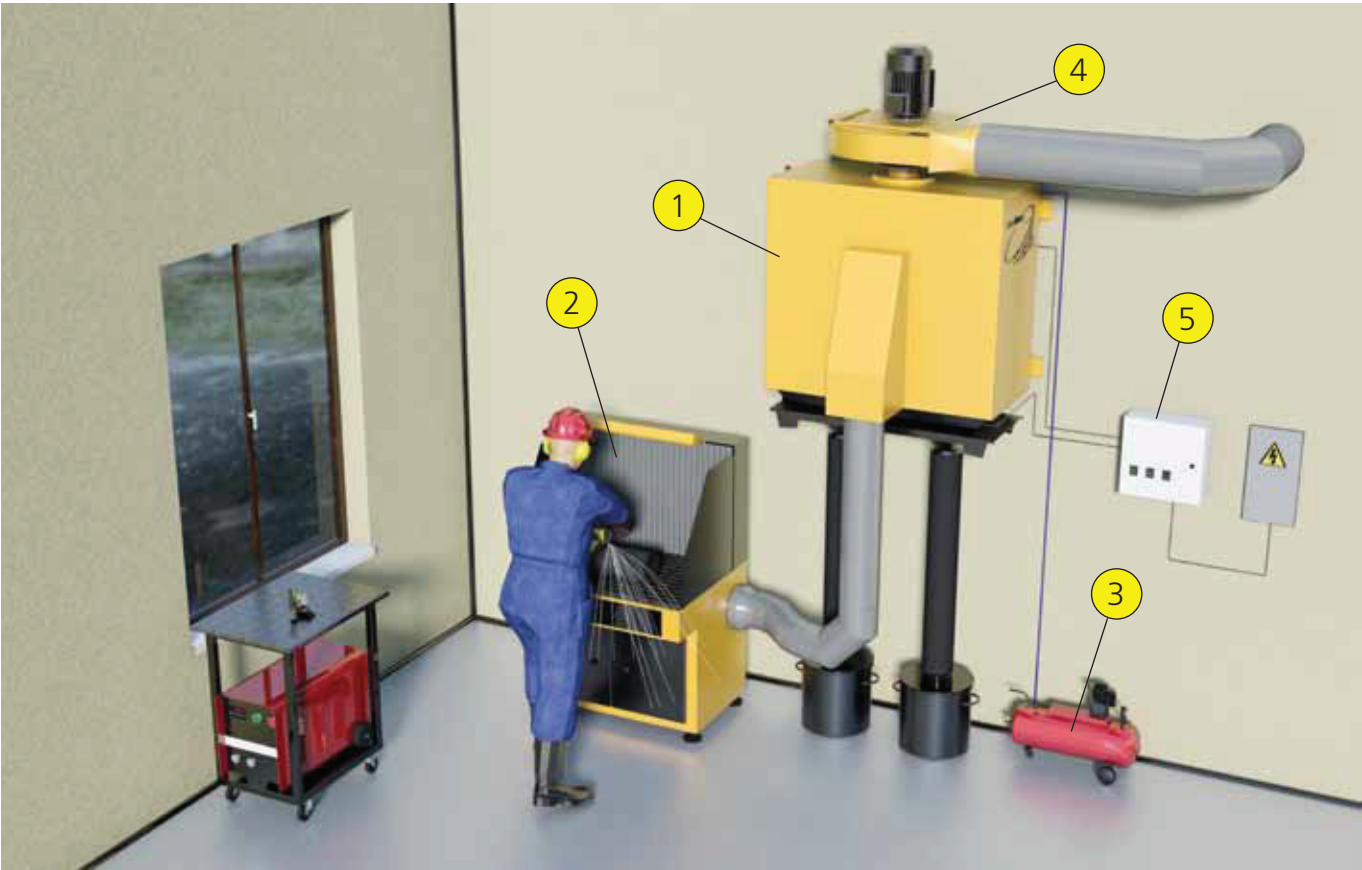
# Welding Tables

**MAIN PROBLEM:**




Single workplace with jobs like grinding and welding needs extraction of dust and welding fumes.

**SOLUTION:**

Welding & grinding table used as a workplace and connected to a mechanical filter, mounted on the wall next to the table, and equipped with detached dust bins.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	①	Mechanical filter <b>DCSC-W-200-00</b> with self-cleaning system and integrated fan in noise reducing jacket ④. Supplied with a compressor ③ for self-cleaning system.	1
	②	Welding-grinding Table <b>WT-CCZ-2500</b> for welding, cleaning, grinding, polishing and similar processes. Installed next to the filter, due to large amount of dust and need in often access to filter's dust bins.	1
	⑤	Control unit for operation of fan and filter operation.	1

# Vehicle Exhaust Removal

Vehicle Exhaust Removal

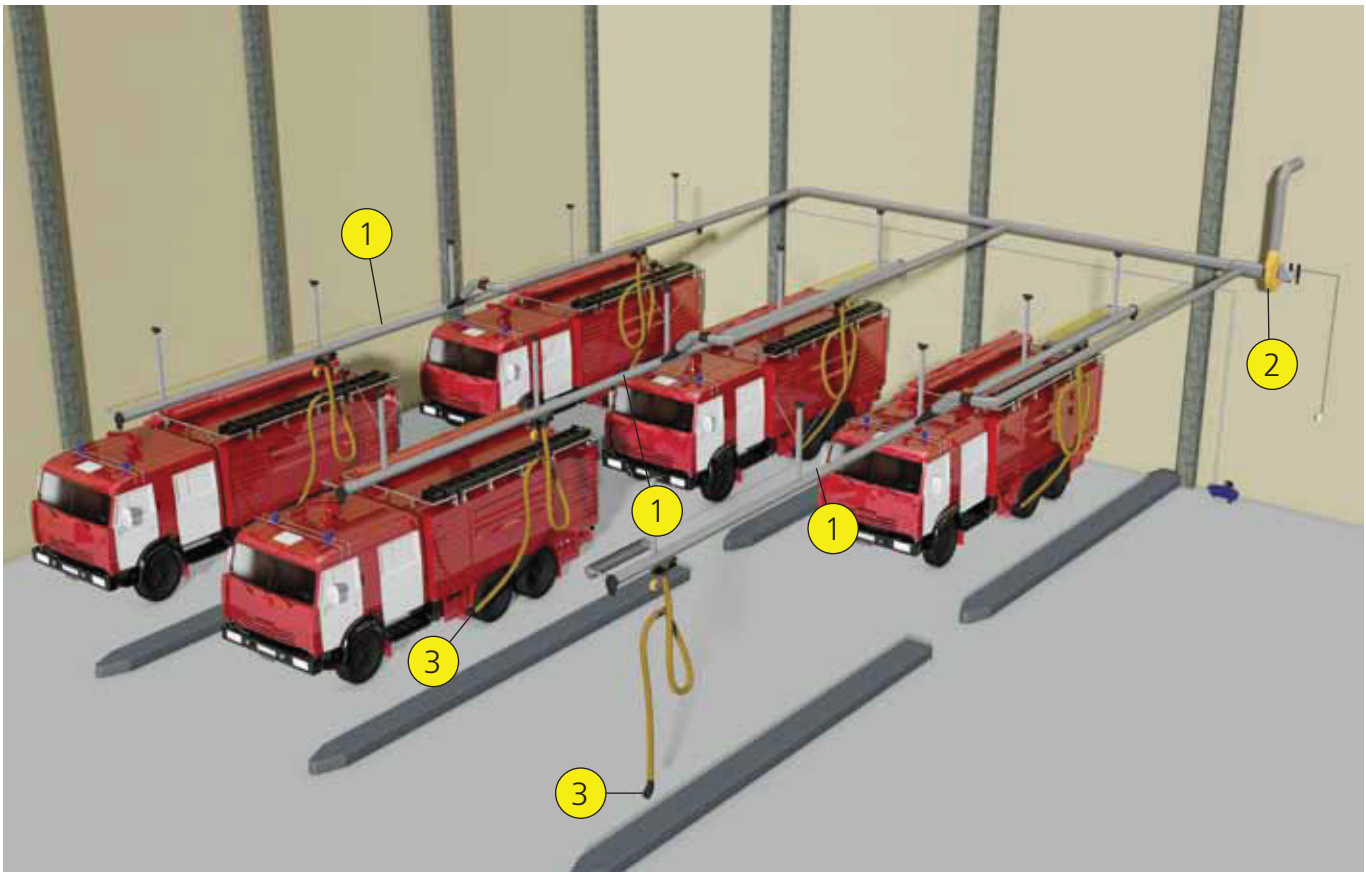
Emergency responders

MAIN PROBLEM:



Fire station garage needs exhaust gas removal system.

SOLUTION:

Three straight rail systems for two fire-engines each are connected to central exhaust fan.



EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	1	Straight rail system <b>ARR</b> , allowing parking of two cars behind each other and providing automatic disconnection of pneumatic gas intake nozzle 3 as cars leave the garage.	3
	2	Exhaust fan <b>VMK-4700</b> with <b>automatic start/stop system</b> .	1

# Vehicle Exhaust Removal Military

## **MAIN PROBLEM:**

Extraction of exhaust gases needed for the warm up of truck's engines in the military garage.

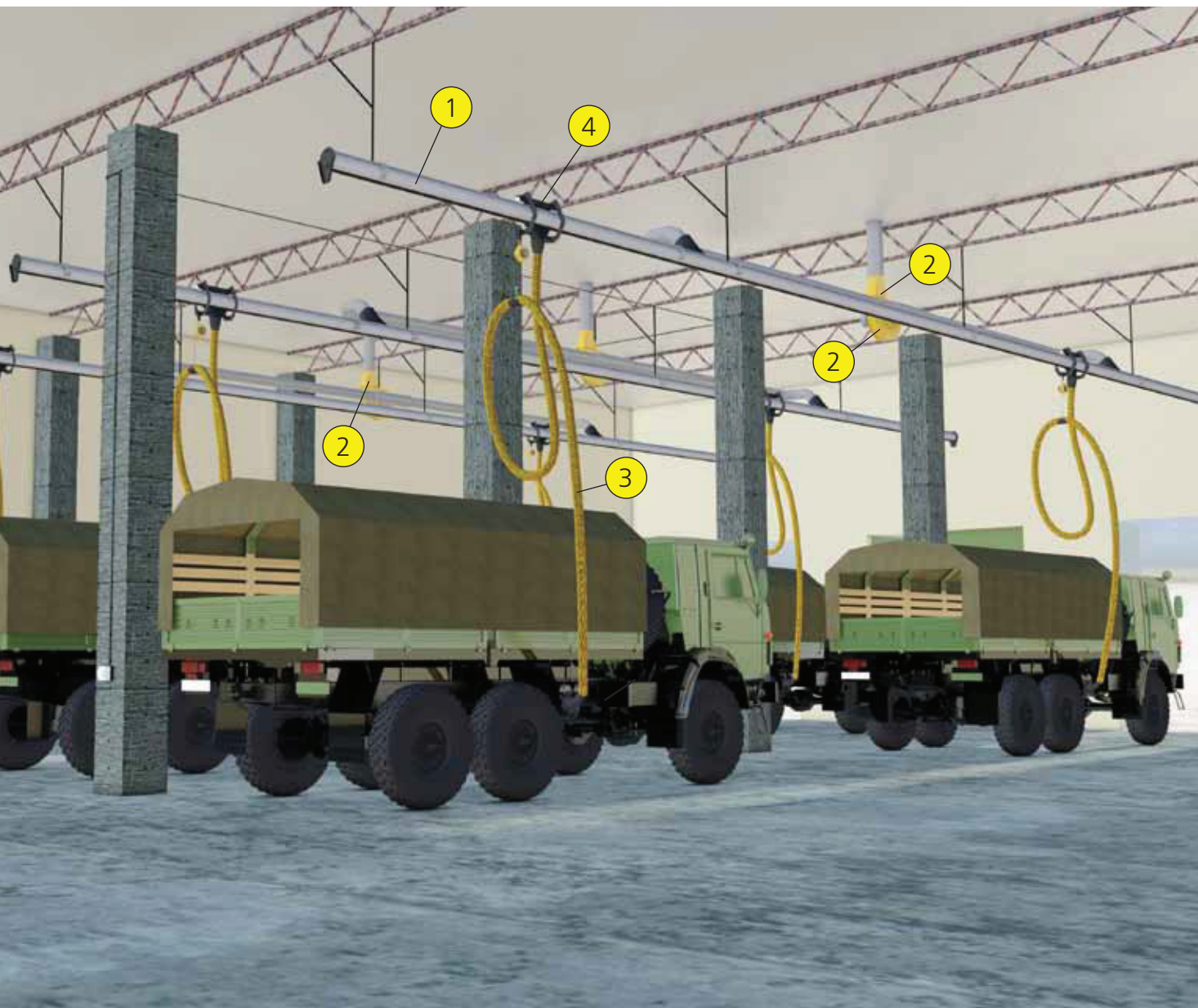
## **SOLUTION:**

Installed, several rail systems with two carriages each, allowing parking two cars one behind each other.





Straight rail system parts





## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	①	Straight rail system for removal of exhaust gases <b>ARST-20.3</b> with two carriages and 7.5 m thermal resistant hose ③ at each carriage ④.	3
	②	Extraction fan <b>VMK-3000</b> equipped with a <b>thermal relay starter</b> .	3

# Vehicle Emergency responders

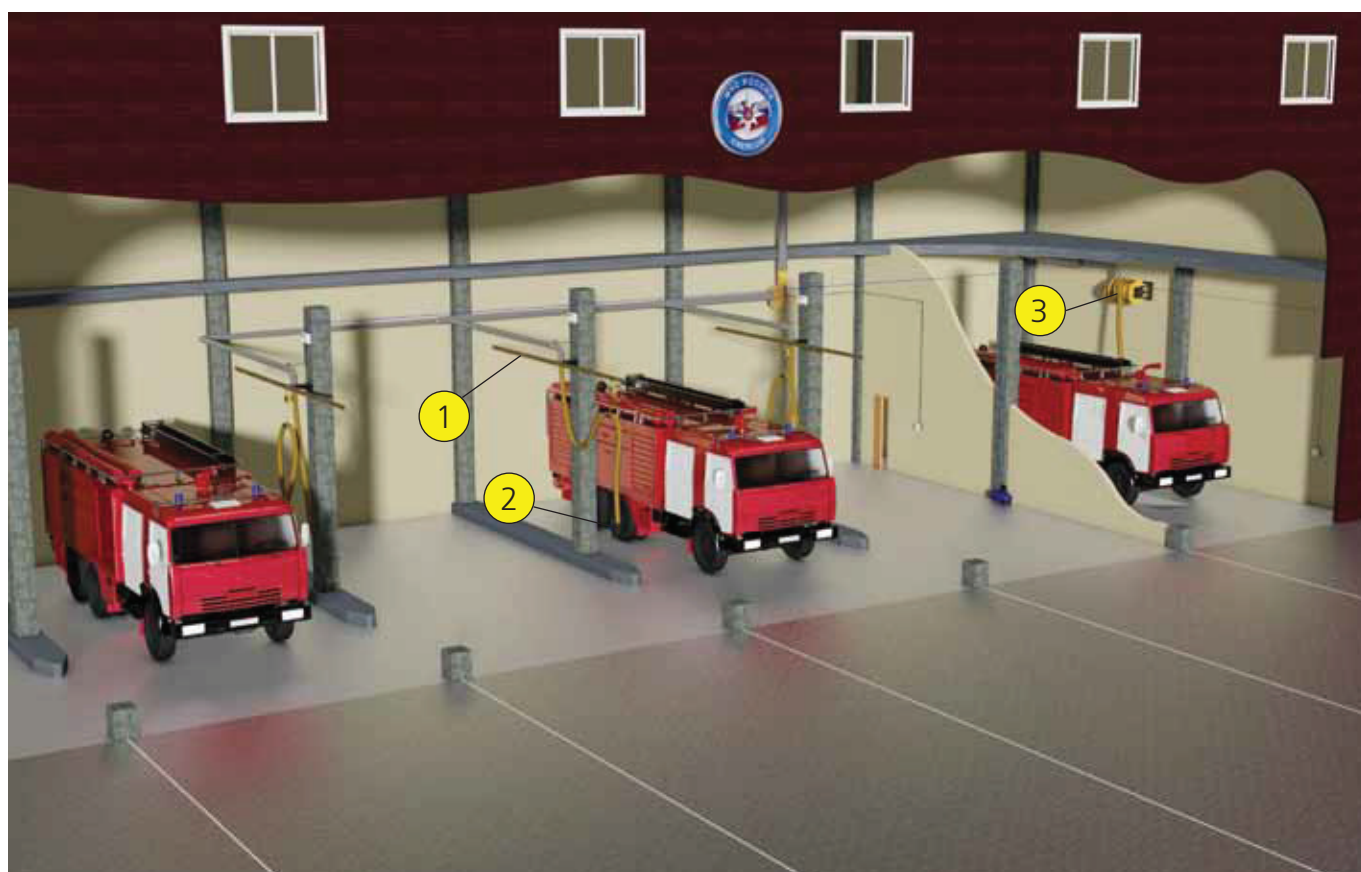
## Exhaust Removal

### MAIN PROBLEM:



Extraction of exhaust gases needed for four fire-engines. Three cars on duty. One car in repair box.

### SOLUTION:

Cars on duty demand self-disconnecting systems of exhaust gas removal.



### EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	①	Exhaust gas removal system with sliding balancer for fire and rescue stations <b>ARSL-6-125</b> with pneumatic gas intake nozzle ②. All systems connected to a central <b>VMK-4700</b> fan, <b>used with automatics system</b> .	3
	③	Extraction reels <b>ARM-125-5/7,5</b> ③ for exhaust gas removal. Designed for removal of exhaust gases from various types of vehicles in the repair boxes, garages and transport companies with fixed working places. Used with individual fan <b>VMFA-1800</b> , mounted directly on the hose reel.	1



Vehicle

Exhaust Removal

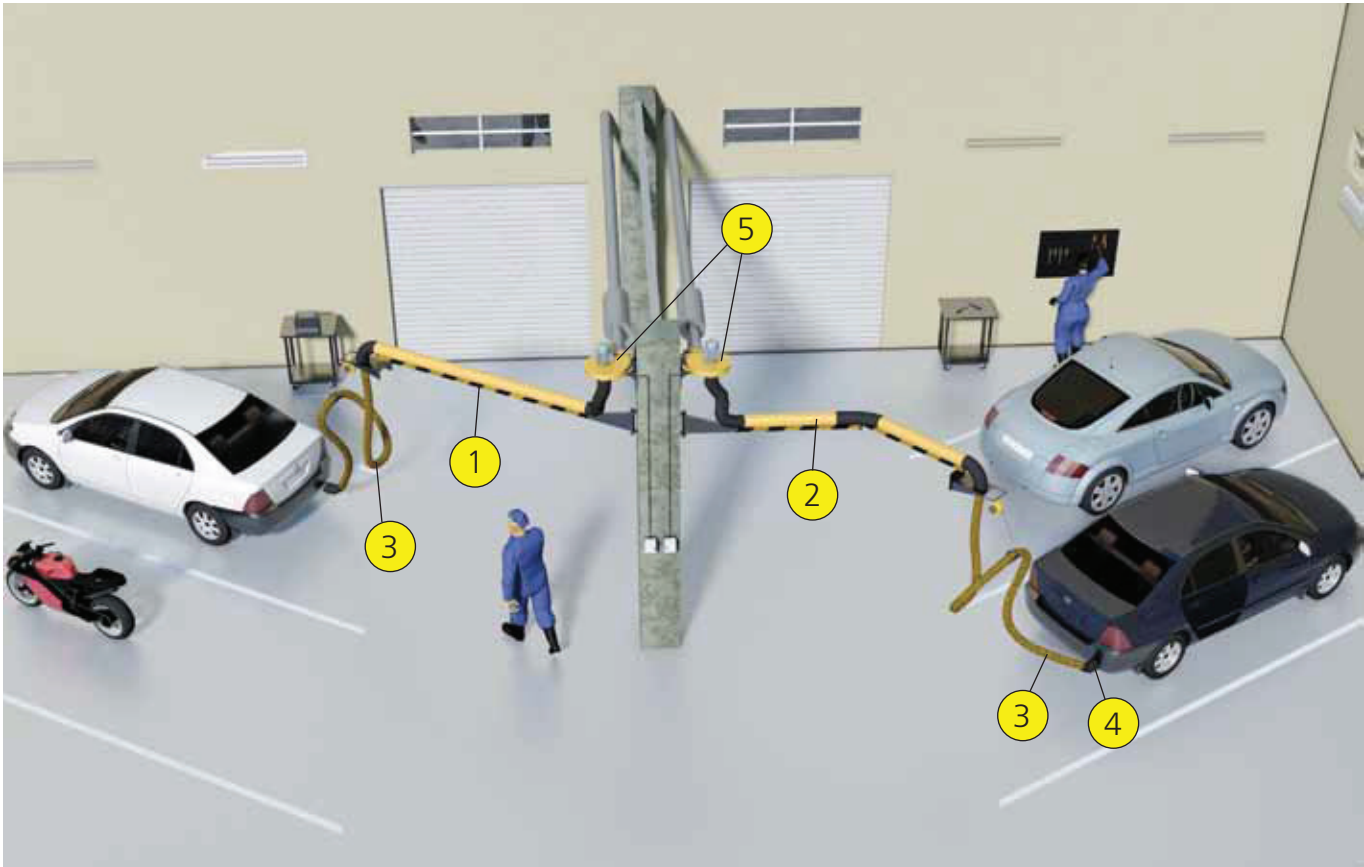
Car service & repairs

MAIN PROBLEM:



Car repair shop has several workplaces at a distance from each other. Only two can be working with running engines at a time.

SOLUTION:

Installation of two hanging extraction units with extended reach radius. Each with individual fan.



EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	<div>1</div> <div>2</div>	Hanging extraction units <b>VEGA-025/75</b> (4.5m reach) and <b>VEGA-3515/100</b> (7m reach) with thermal resistant hoses <b>HoseSP-150</b> <div>3</div> and rubber intake nozzles <b>iGripR</b> <div>4</div> .	2
	<div>5</div>	Exhaust fan VMK-2100 with silencer. Productivity: 500-1600m³/h. Pressure: 1000-1600Pa.	2

# Vehicle Exhaust Removal

## Car service & repairs

### **MAIN PROBLEM:**

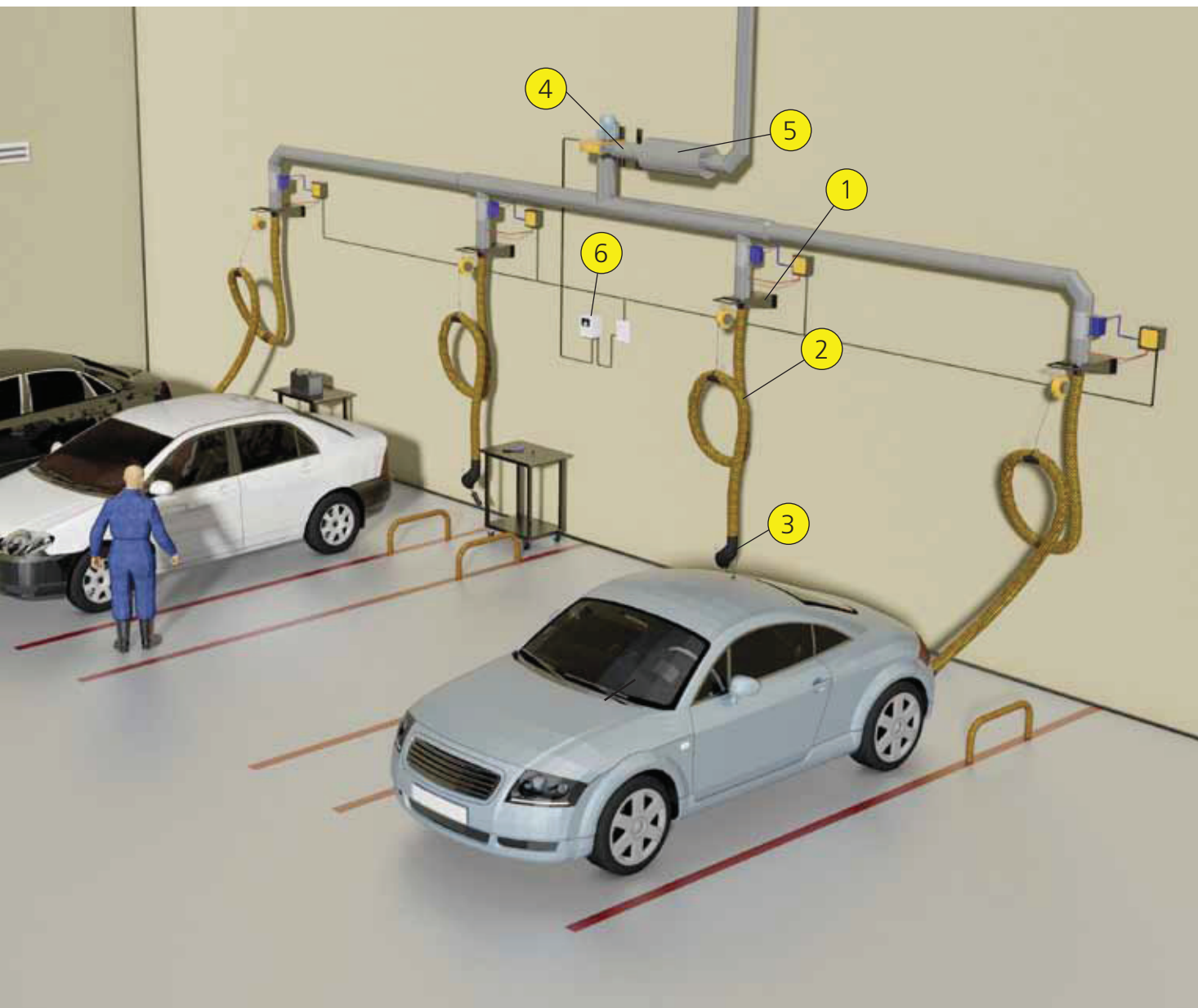
Several car repair work places, situated along one wall, need extraction of exhaust gases.

### **SOLUTION:**




Simplest devices, consisting of mounting plate, hose and a balances are mounted at each work place and connected by a common duct line to a central fan.



iDrop-125-3 devices



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	①	<b>iDrop-125-3</b> devices with 5 m of thermal resistant hose <b>HoseSP-150-125</b> ② and rubber gas intake nozzle <b>iGripR-125/150</b> ③.	3
	④	Central exhaust fan <b>VMK-3000</b> with silencer ⑤.	1
	⑥	Automatic control unit <b>sPCU-1000</b> maneuvering the central fan.	1

Vehicle

Car service & repairs

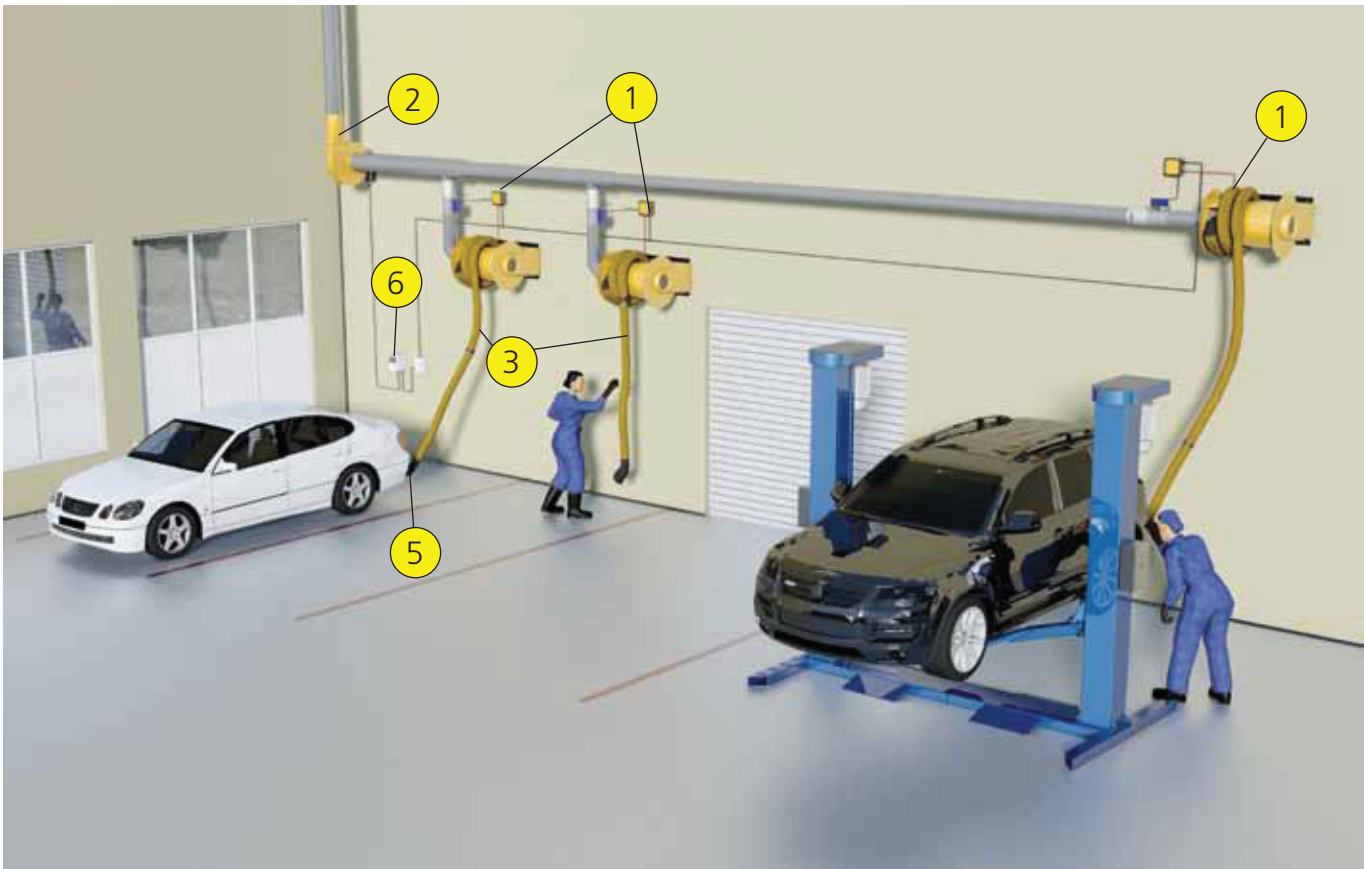
Exhaust Removal

MAIN PROBLEM:




Three work places in car repair shop need vehicle exhaust removal systems.

SOLUTION:

Each work place equipped with a hose reel, consisting of a frame and a drum. All reels are connected to a central fan with common duct line.



EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	1	Extraction reel <b>ARS-100-5/7.5</b> with thermal resistant hose <b>HoseSP-150-100</b> and rubber gas intake nozzle <b>iGripR-100/150</b> .	3
	2	Exhaust fan <b>VMK-4700</b> . Productivity: 1000-4000m³/h. Pressure: 1200-2380 Pa.	1
	6	Automatic control unit <b>sPCU-1000</b> maneuvering the central fan.	1

# Vehicle Car service & repairs

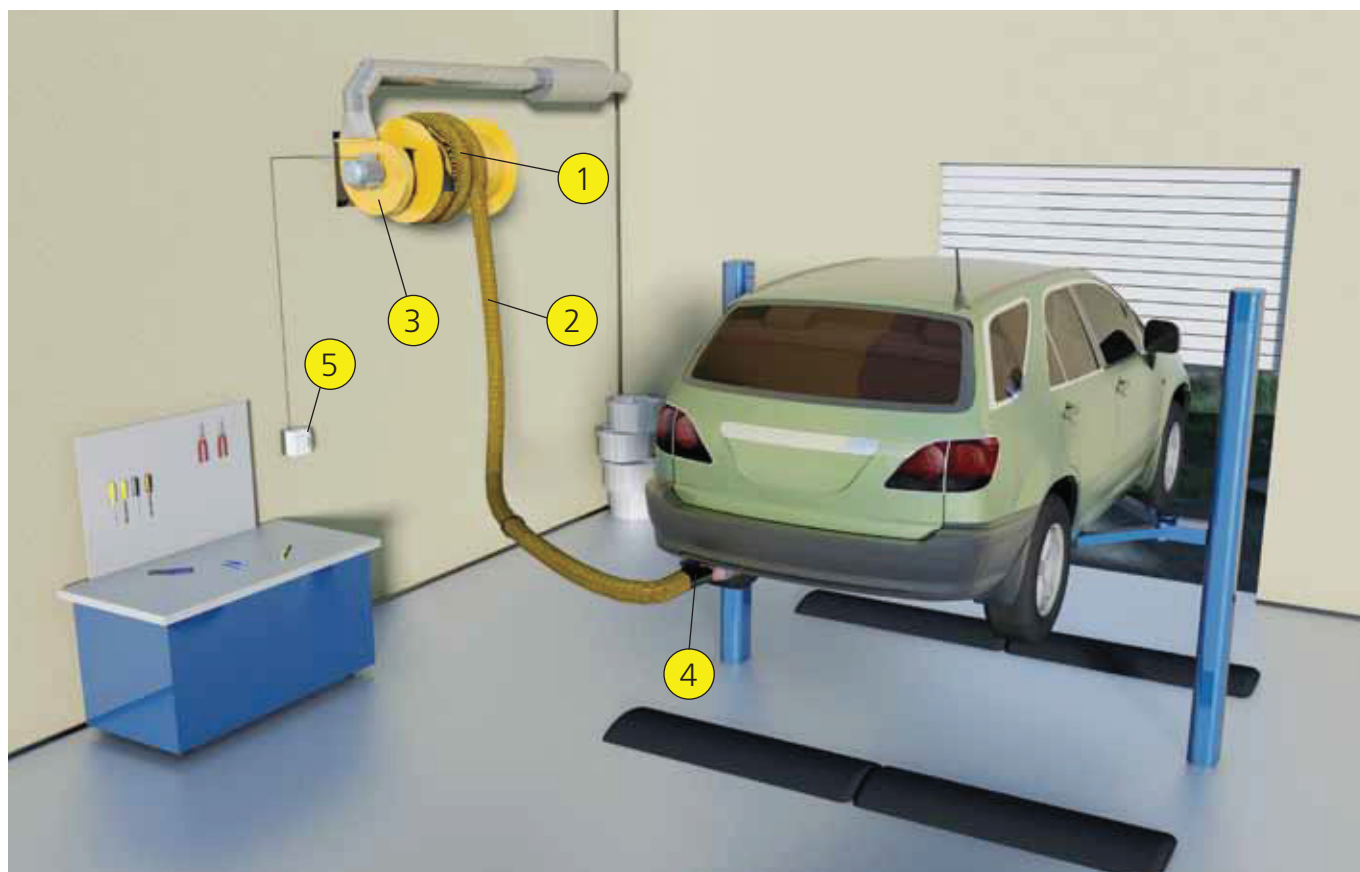
## Exhaust Removal

### MAIN PROBLEM:









Single work post in a car repair shop. Extraction of exhaust gases needed.

### SOLUTION:

A hose reel with individual fan mounted directly on the reel.



### EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
		Hose reel <b>ARS-100-10</b> with thermal resistant hose <b>HoseSP-150-100</b>  and extraction fan <b>VMFA-1800</b>  ,	1
		Rubber gas intake nozzle with mechanical clamp <b>iGripR-100/150G</b> .	1
		Control unit, for automatic fan switching on/off.	1



# Vehicle Exhaust Removal

## Car service & repairs

### **MAIN PROBLEM:**

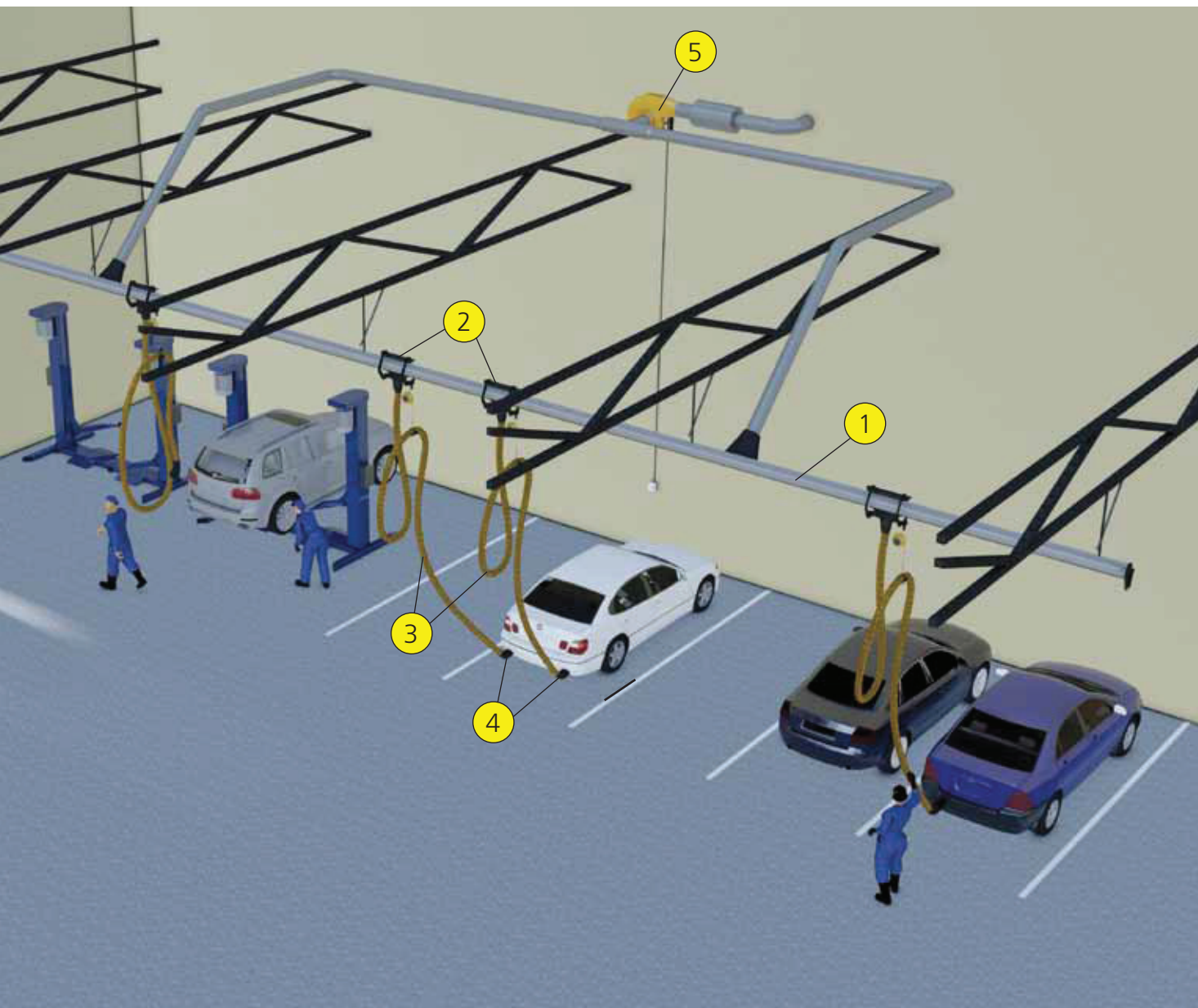
Car service and repair shop has several workplaces along the wall. Each of which can be working with running engines, but not more than 3 at a time.

### **SOLUTION:**



Straight exhaust rail with 3 carriages is mounted along all workplaces. Each carriage can be moved to the necessary workplace.



Straight rail system



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	①	Straight rail system <b>ARST-23.2</b> (length – 23.2 m) with three carriages <b>SEC-100</b> ②, thermal resistant hoses <b>HoseSP-150-100</b> ③ and rubber gas intake nozzles <b>iGripR-100/150</b> ④.	1
	⑤	Central exhaust fan <b>VMK-4700</b> with a silencer. Productivity: 1000-4000 m³/h. Pressure: 1200-2380 Pa.	1

Vehicle

Exhaust Removal

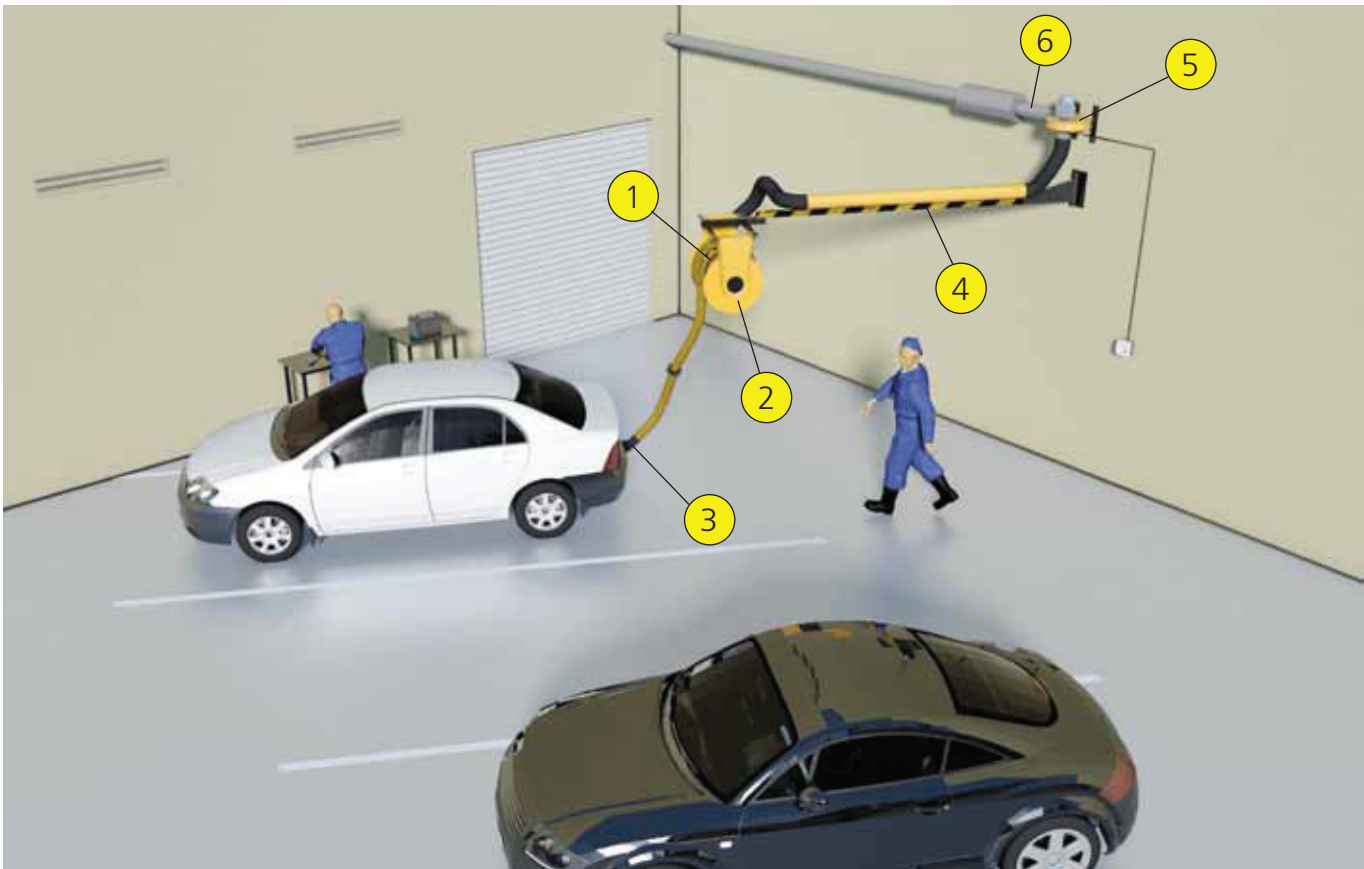
Car service & repairs

MAIN PROBLEM:




Car service and repair shop for 3 work places, situated close to each other, and only one of which can deal with running engine.

SOLUTION:

Hose reel is mounted on the extension crane, allowing to reach any of three workplaces and to move it to the wall when it is not being used.



EQUIPMENT USED FOR SOLUTION:

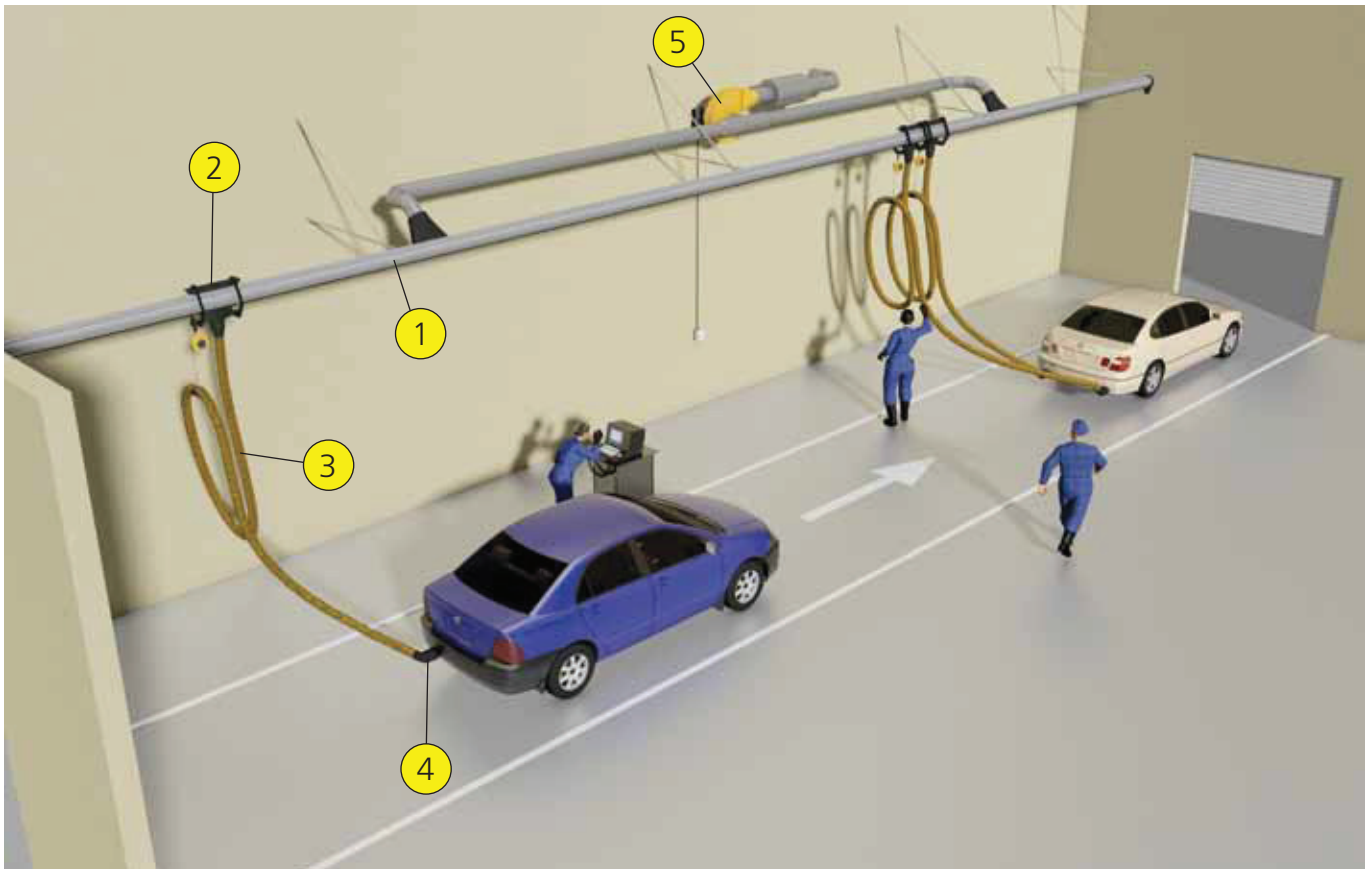
Equipm.	Pos. on pic.	Description	Pcs
	1	Extraction reel <b>ARS-100-10</b> with thermal resistant hose <b>HoseSP-150-100</b> (2) and gas intake nozzle <b>iGripR-100/150</b> (3).	1
	4	Turning console <b>sSA-3.5</b> (length – 3.5 m).	1
	5	Exhaust fan <b>VMK-2100</b> with silencer (6). Productivity: 500-1600 m³/h. Pressure: 1000-1600 Pa.	1

**MAIN PROBLEM:**




Diagnostics line demands organization of exhaust gases removal while cars are moving inside the workshop.

**SOLUTION:**

Straight rail system with three carriages, using the gas intake nozzles with mechanical clamp.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	1	Straight rail system <b>ARST-23.2</b> (length – 23.2 m) with three carriages <b>sEC-100</b> (2), thermal resistant hoses <b>HoseSP-150-100</b> (3) and rubber gas intake nozzles <b>iGripR-100/150G</b> (4).	1
	4	Rubber gas intake nozzle with mechanical clamp <b>iGripR-100/150G</b> .	3
	5	Exhaust fan <b>VMK-3000</b> with silencer. Productivity: 500-2300 m³/h. Pressure: 900-1500 Pa.	1

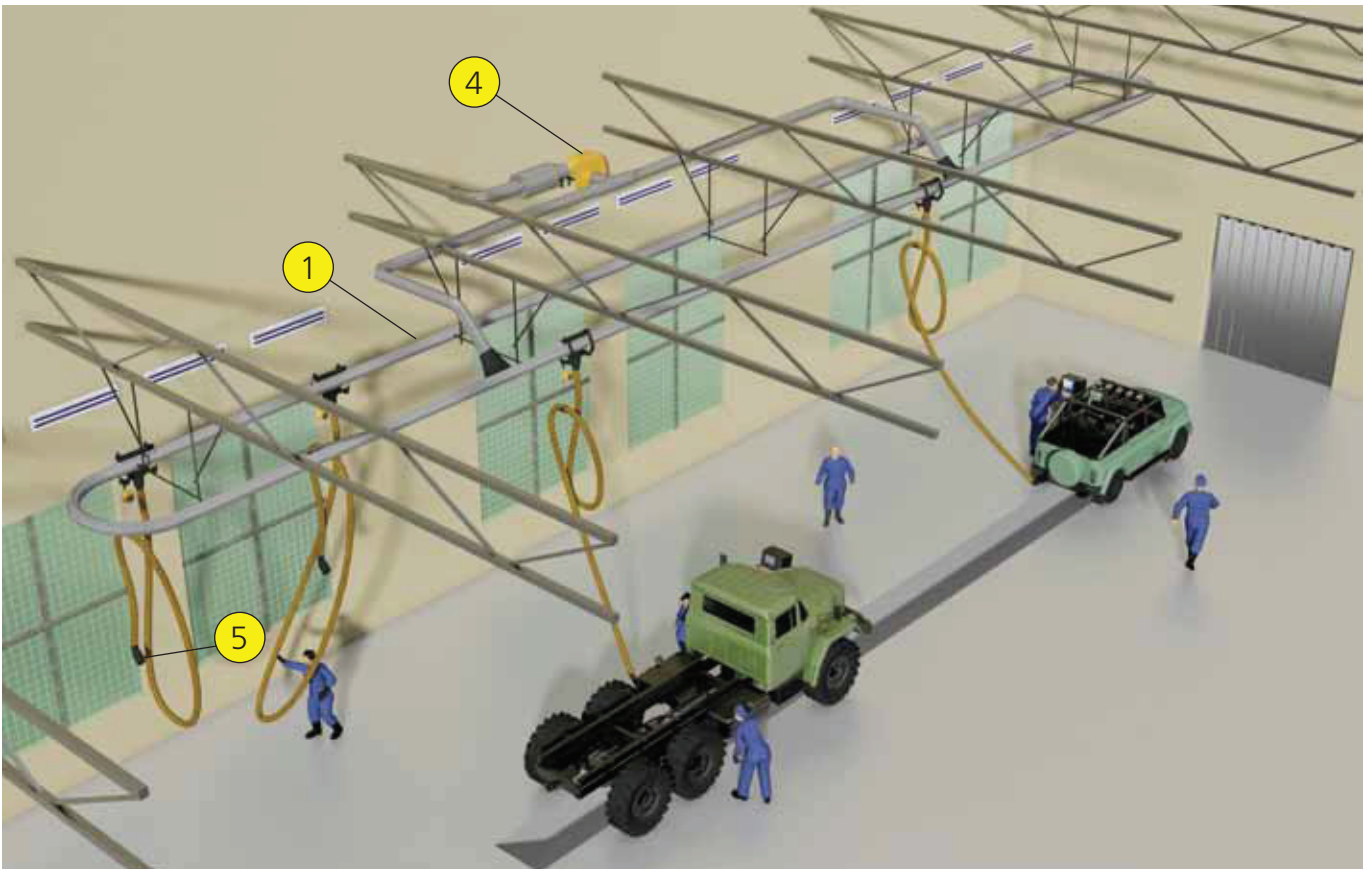


**MAIN PROBLEM:**




Several cars on the line need extraction of exhaust gases. Next vehicle gets on line before previous one leaves.

**SOLUTION:**

Loop rail system allows following the cars with exhaust hose on the line and return of the carriages back to the beginning of the line while other carriages are in use.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	1	Loop rail system with four carriages equipped with thermal resistant hoses <b>HoseSP-150-100</b> and rubber gas intake nozzles <b>iGripR-100/150G</b> .	1
	4	Rubber gas intake nozzle <b>iGripR- 100/150G</b> with special clamp, allowing fixing of the nozzle on the exhaust pipe while vehicle is moving.	4
	5	Radial fan with starter. Productivity: 1500-5000 m³/h. Pressure: 1400-2500 Pa.	1



### MAIN PROBLEM:



Trucks technical service station has workplaces that need removal of exhaust gases.

### SOLUTION:

Electrically driven hose reels were used due to high ceilings. All reels are connected to the central fan via common duct line.



### EQUIPMENT USED FOR SOLUTION:

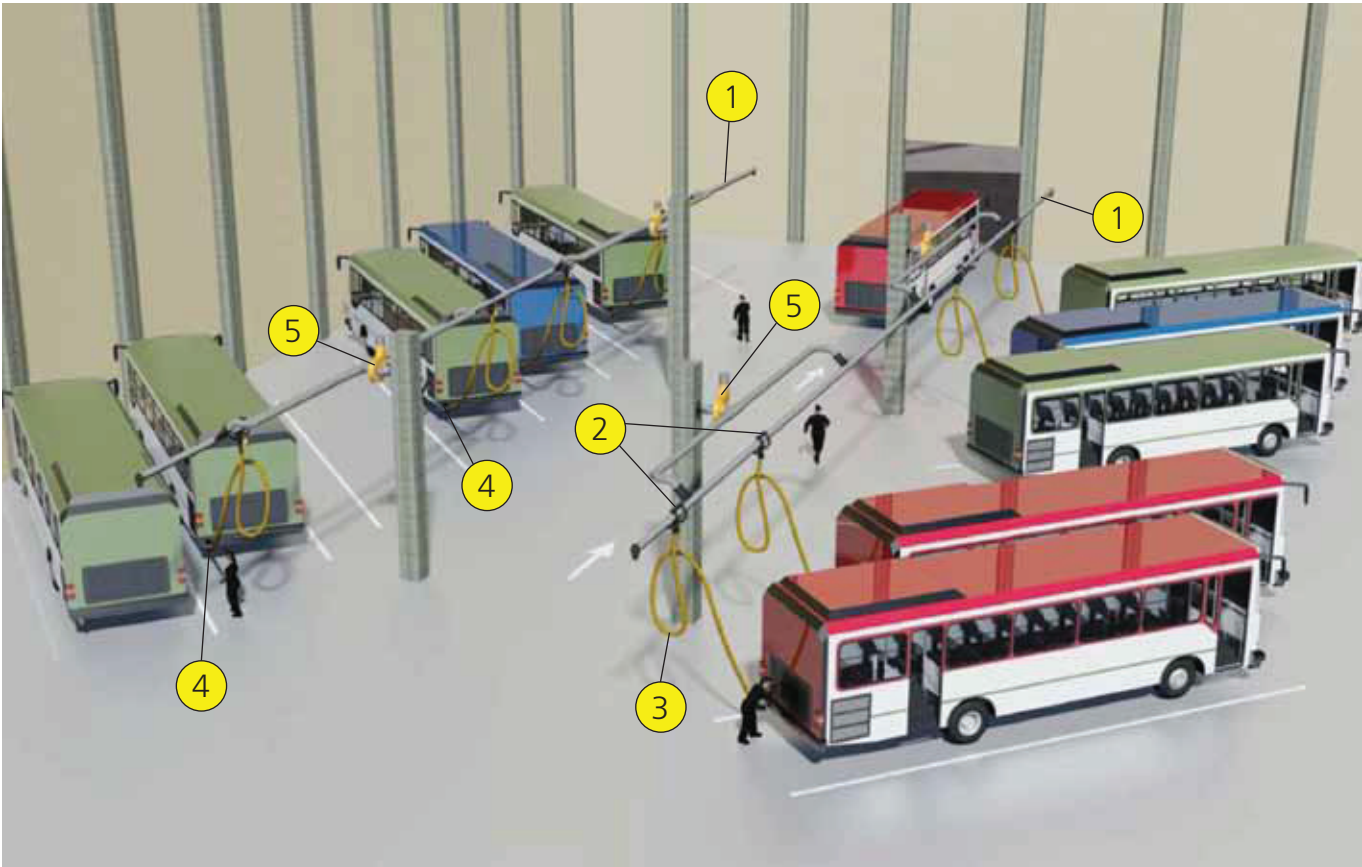
Equipm.	Pos. on pic.	Description	Pcs
	①	Exhaust hose reel <b>ARM-150-12.5</b> with electrical motor, allowing lowering of exhaust hose with the help of remote control in case of high ceilings inside the building. Reels are equipped with the thermal resistant hose <b>HoseSP-150-150</b> ② and metal gas intake nozzle <b>iGripST-150x200</b> ③.	4
	④	Exhaust fan <b>VMK-6000</b> with automatic start/stop system. Productivity: 1500-5000 m³/h. Pressure: 1400-2500Pa.	1

MAIN PROBLEM:



Bus garage needs exhaust gases removal system for the time of engines warm-up and preparation of the brake system before going out to the route.

SOLUTION:

Two rows of bus's parking lots allow using long rail systems with necessary number of carriages.



EQUIPMENT USED FOR SOLUTION:

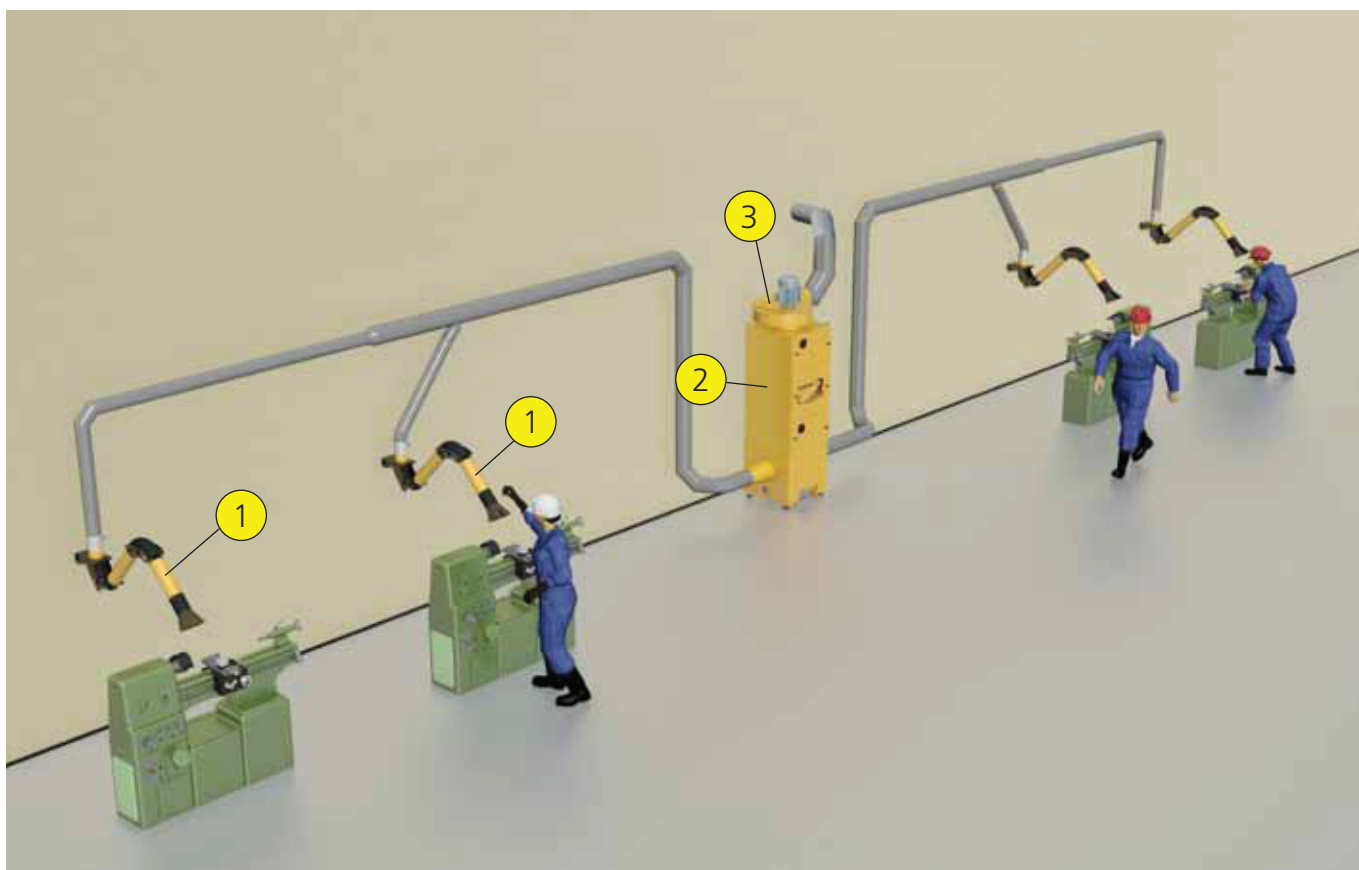
Equipm.	Pos. on pic.	Description	Pcs
	1	Straight rail system <b>ARST-20.3</b> (length – 20.3 m) with four carriages <b>sEC-150</b> 2, thermal resistant hoses <b>HoseSP-150-150</b> 3 and rubber gas intake nozzles <b>iGripST-150x200</b> 4.	2
	5	Central exhaust fan <b>VMK-4700</b> . Productivity: 1000-4000 m³/h. Pressure: 1200-2380 Pa.	4

## MAIN PROBLEM:







Workshop with open type turning machines.  
Extraction of oil mist needed with filtration and recirculation of cleaned air.

## SOLUTION:

Extraction arms at each machine are connected via common duct line to mechanical oil mist filter. Filter unit is equipped with HEPA module in order to allow recirculation of cleaned air.



## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
		Exhaust arm <b>LabArm-125-2H</b> for capturing of oil mist at the source of its emission in case of open type metal processing machines.	4
		Oil mist filter <b>MT-32</b> . Equipped with bag main filter and HEPA module as a fine filter.	1
		Central exhaust fan <b>VMA-6000</b> . Productivity: 1500-5000 m <sup>3</sup> /h. Pressure: 1400-2500 Pa.	1

# Machining and metal fabrication

## Oilmist filters

### **MAIN PROBLEM:**

Workshop with closed type (working chamber is always closed during the work process) metal processing centers (CNC) with small volume of the working chamber. Individual extraction and cleaning of air from oil mist needed for each machine.

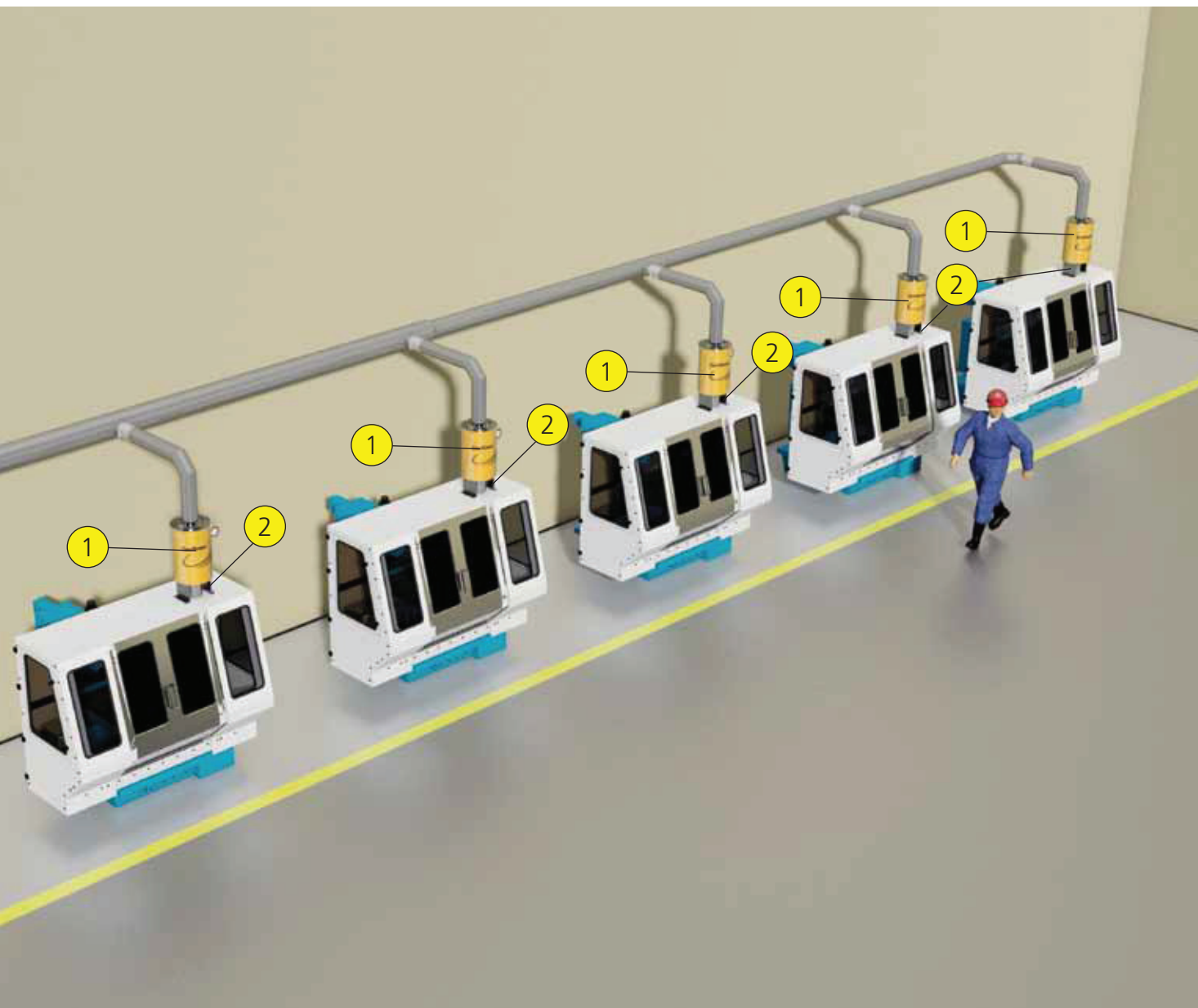
### **SOLUTION:**

Installation of individual filters is possible either directly on top of the CNC center's working chamber or besides the machine on the mounting column sPA, depending on the type and positioning of the CNC center.





Cyclone type filter





## EQUIPMENT USED FOR SOLUTION:

Equipm.	Pos. on pic.	Description	Pcs
	①	Cyclone type filter <b>MM</b> for mechanical cleaning of the air from oil mist. Estimated air flow – 500 m <sup>3</sup> /h.	5
	②	Mounting brackets <b>MB-MW/S1</b> for installation of the filter directly on the machine tool.	5

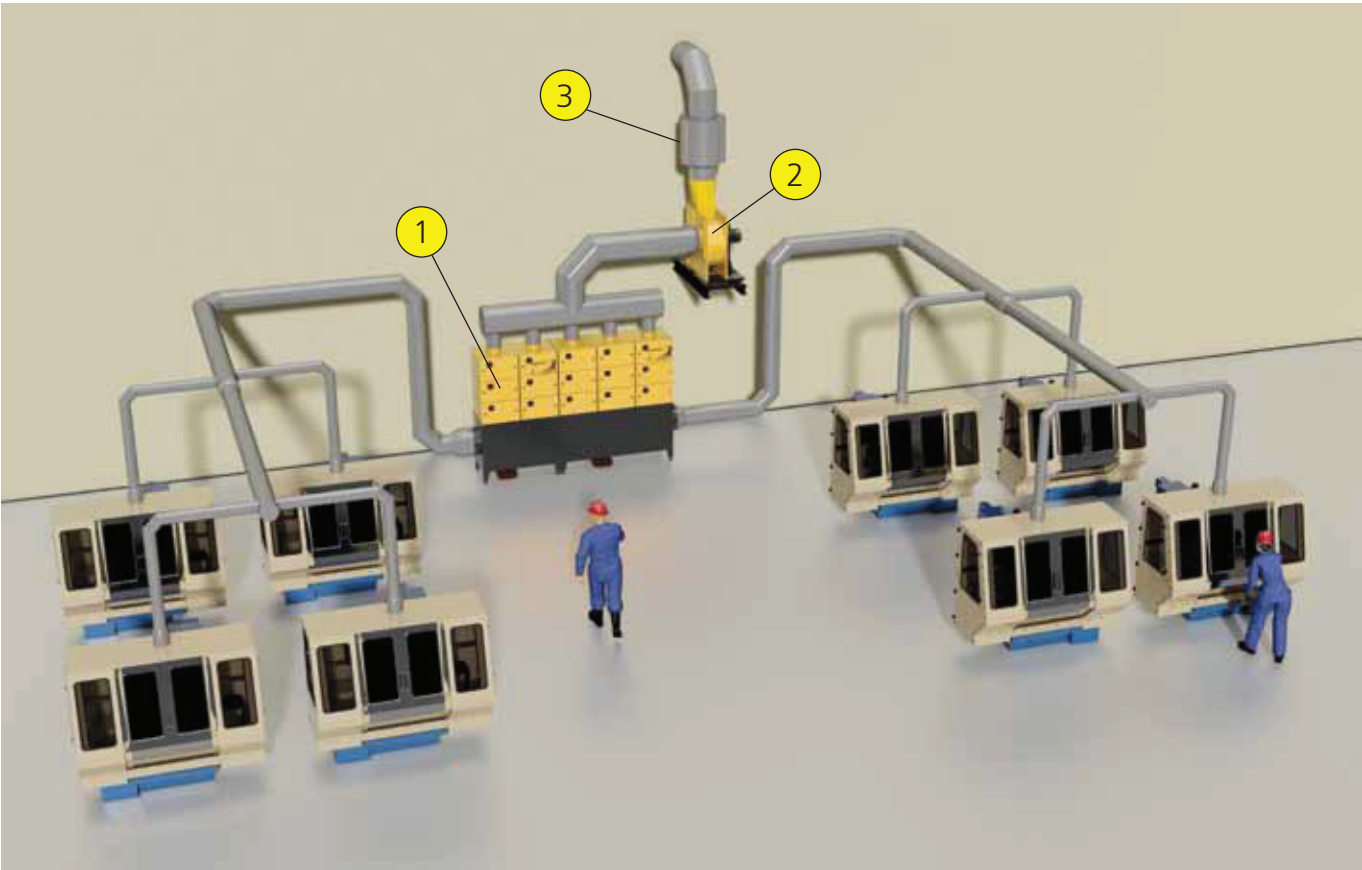


**MAIN PROBLEM:**



Workshop with 8 closed type (working chamber is always closed during the work process) metal processing centers (CNC) with large volume working chamber. Extraction of oil mist needed with filtration via one central filter unit and recirculation of cleaned air.

**SOLUTION:**

CNC centers are combined into common ventilation system, connected to a central filtration unit, which is a modular mechanical oil mist filter, equipped with fine HEPA module in order to allow recirculation of cleaned air. Extraction is being done directly from the working chamber of CNC centers.



**EQUIPMENT USED FOR SOLUTION:**

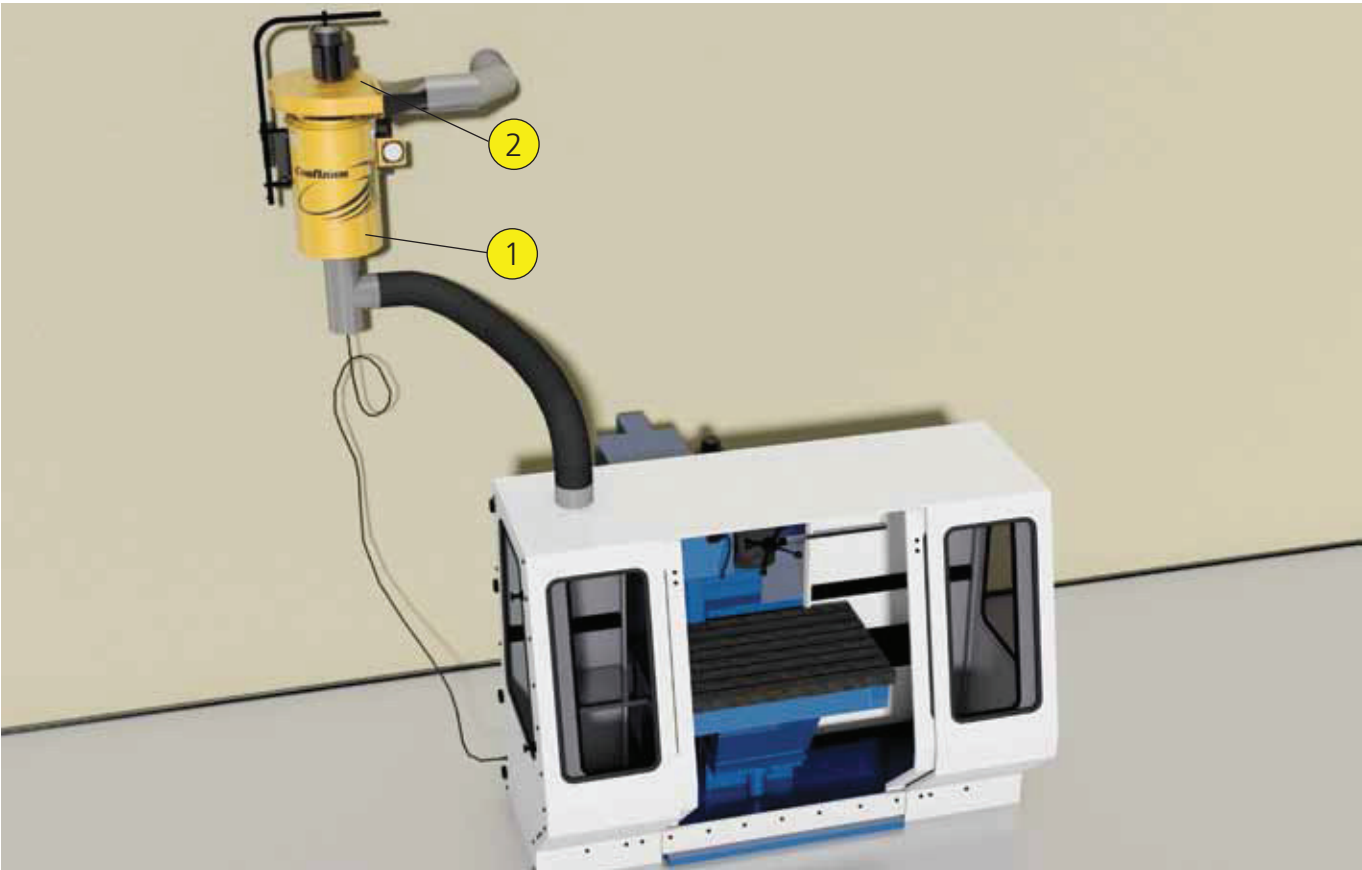
Equipm.	Pos. on pic.	Description	Pcs
	①	Modular oil mist filter <b>MT-42/5</b> . Equipped with self-drying main cartridges and H13 HEPA module as a final fine filter.	1
	②	Central exhaust fan <b>TEF-11000</b> with a silencer ③. Productivity: 4000-9000 m³/h. Pressure: 2100-4200 Pa.	1

**MAIN PROBLEM:**



Single closed type (working chamber is always closed during the work process) metal processing center (CNC) with small volume of the working chamber. Needed is an extraction and cleaning of air from oil mist.

**SOLUTION:**

Wall mounting of the cyclone oil mist filter next to the CNC center.



**EQUIPMENT USED FOR SOLUTION:**

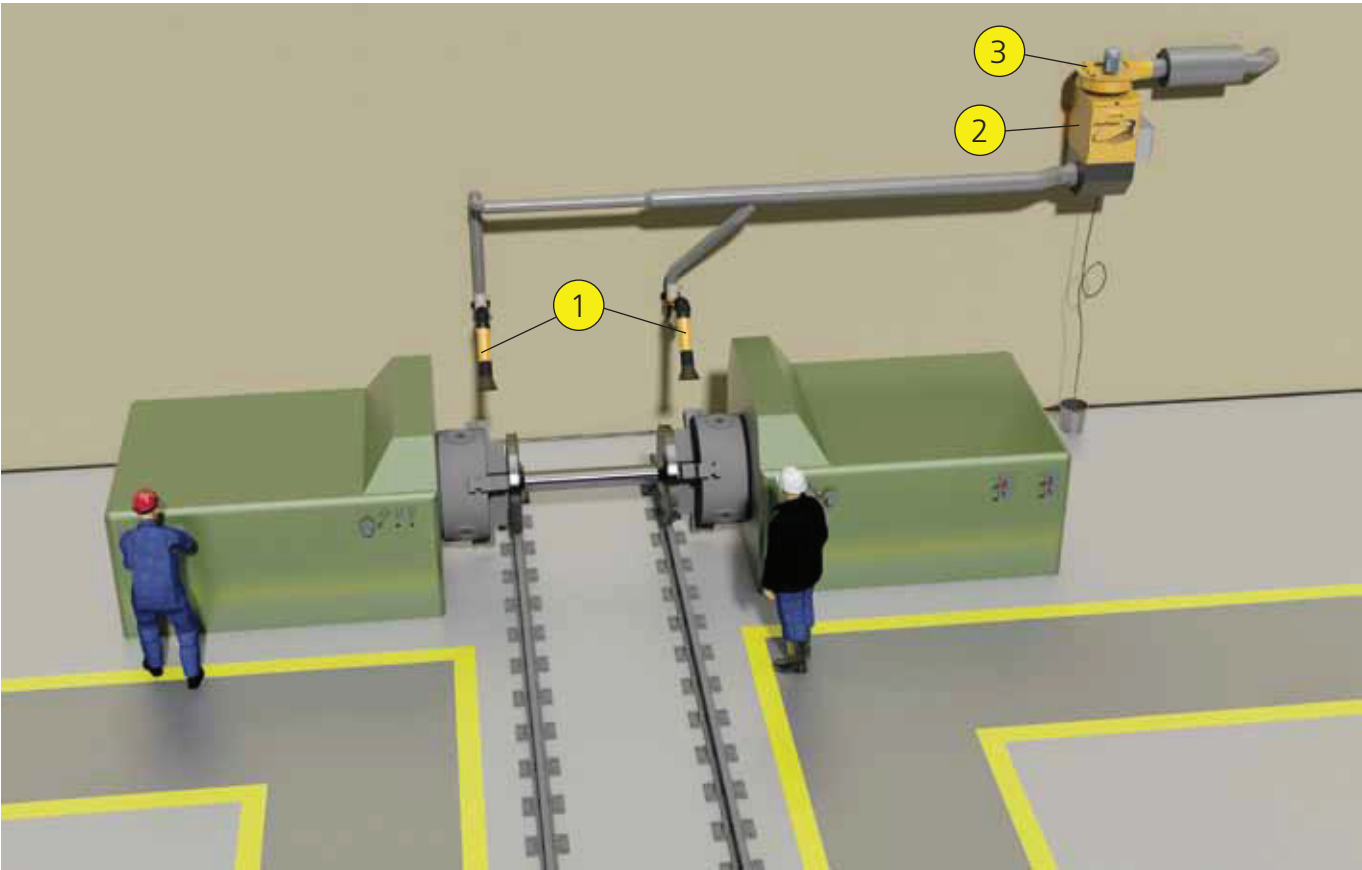
Equipm.	Pos. on pic.	Description	Pcs
	①	Cyclone type filter <b>MM</b> for mechanical cleaning of the air from oil mist. Estimated air flow – 500 m³/h. Connection to the working chamber via flexible hose.	1
	②	Exhaust fan <b>VMA-1800</b> with pressure adapter <b>sNPR-90</b> . Productivity: 300-1200 m³/h. Pressure: 1000-1530 Pa.	1

**MAIN PROBLEM:**




Workshop with open type turning machines.  
Extraction of oil mist needed with filtration and  
recirculation of cleaned air.

**SOLUTION:**

Extraction arms at each machine are connected  
via common duct line to mechanical oil mist  
filter. Filter unit is equipped with HEPA module in  
order to allow recirculation of cleaned air.



**EQUIPMENT USED FOR SOLUTION:**

Equipm.	Pos. on pic.	Description	Pcs
	①	Extraction arm <b>BEA-M-3H</b> . Reach radius – 3m.	2
	②	Electrostatic oil mist filter <b>ESPO-3000</b> .	1
	③	Exhaust fan <b>VMA-4000</b> with silencer. Productivity: 800-4000 m³/h. Pressure: 600-2300 Pa.	1