Why damage your runway?
You just have to remove the rubber!
Outline

- General TrackJet® attributes
- TrackJet® arguments

Arguments

- Rubber removal on asphalt runways
- Rubber removal on concrete runways
- Demarking

VacuFlex®

- VacuFlex® direct suction system

Versions

- Unimog® Airport
- Unimog® Power Pack
- Basis Overaasen
- Supra Airport
- Truck based Power Pack
- Truck Semi Trailer
- Power Pack Demarking

References

- Reference list, contact data
- Reference letters
As a revolutionary water jetting method, the TrackJet® system creates a completely new runway maintenance situation with very high pressure and extremely little water consumption optimally for both asphalt and concrete surfaces. For the first time, the TrackJet® concept enables airport authorities to carry out rubber removal tasks ecologically, even using their own equipment and personnel. Previous investments are written off in no time at all. The TrackJet® system consumes approximately 10% of water compared to common water jetting systems. On account of an operating pressure of 2,500 bar its requirement adds up to 1.7 m³/h. At normal performance rate of 600–800 m²/h this means only 2.5 l/m²! Therefore the TrackJet® can usually work a whole night shift without needing fresh water supply and without waste water having to be removed.

...economic and ecologically beneficial!

Water consumption...

The advantages are obvious:

- smaller transportation volume of fresh water to the runway
- smaller transportation volume of sewage from the runway
- smaller deposit volume of waste water / rubber mixture
- less impact on groundwater
- less equipment for water transportation
- fewer personnel

Weigel Hochdrucktechnik GmbH & Co. KG
Am Galgenturm 2
D 97638 Mellrichstadt
GERMANY
+49 9776 709090
+49 9776 70909200
info@trackjet.de
www.trackjet.de
Arguments

Fuel consumption...

The TrackJet® system requires approximately 7 litres of diesel fuel for 100 m² rubber removal which is half that of ordinary jetting systems. This is possible thanks to the low drive power of 160 kW.

...taking care of your runway!

Operating results...

Thanks to the special, innovative jet configuration and the computer-controlled regulation of all operating parameters the TrackJet® system takes care of your runway. Nevertheless, optimal friction values of up to 0.9 are being measured! For more detailed information, see the “References” section.
Personnel expenditure...

Only 1 operator is required to run the TrackJet®.
Owing to the extremely small amount of water consumed, there is no need to transport removed material and dirty water within 6 hours. Thus safety regulations and costs for personnel working on the facilities no longer present a problem.

Thanks to top work-method efficiency!

24-hour-applicability...

If you have your own TrackJet® system, you can use it independently of subcontractor firms whenever you need it! You can interrupt the cleaning process any time when traffic threatens to intensify. Afterwards, the runway is immediately clear for safe use: owing to the small amount of consumed water, skidding is eliminated!
You can use the TrackJet® system in both summer and winter at temperatures over +2° C. There’s no need to worry about surface icing since you can attach the top-efficient VacuFlex® suction system to the TrackJet®.
The TrackJet® system is an add-on unit which can be operated on suitable carrier vehicles with adequate PTO gearing. Possible carrier vehicles are our snow cutter–blower Supra 4001 or an Unimog® from type U 400 upwards with the following pre-conditions of

- approx. 160 kW
- PTO speed 1000 rpm
- and extra slow speed modus

This design enables you to use an already existing fleet of vehicles and thus achieve a prompt write-off of investments.

---

Demarking work can be done with the TrackJet® system extremely efficiently and quickly without leaving “phantom markings” behind. The treated ground is optimally prepared for a new coating with modern marking systems. Cleaning joints is also a further attractive option in using the TrackJet®. But the TrackJet® system is not only designed for airport missions, all kinds of road surfaces can be treated as well!

Our customers testify their savings of up to 60% in comparison with commissioning subcontractors to do the cleaning. Do not hesitate to order an individual estimate of costs at any time you require!
The TrackJet® system

- is completely different from all conventional water jetting procedures
- works at extremely high pressure and therefore only requires very little water for optimal high surface cleaning performance
- works gently and selectively
- provides a constant operational performance by computer-controlled parameters, which is achieved by no other known method
Asphalt

Rubber layer on asphalt runway

Rubber removed by TrackJet®

No damage to grooved edges!
No damage to joint sealing!

AntiSkid® – coated asphalt runway:
Rubber removed by TrackJet®

Cleaned by TrackJet®:
No damage to joint sealing
Asphalt

Heavy, over-aged multilayer markings on asphalt runway

No damage to surface structure!
No rubber left in grooving!

Multilayer markings removed by TrackJet®

Asphalt runway cleaned by TrackJet®

Grooved asphalt runway cleaned by TrackJet®
Concrete runway:
Rubber removed by TrackJet®

Concrete runway, AGL light:
Housing and prisms cleaned by TrackJet®

Dramatic improvement of friction values!
No damage to sealing joints and prisms!

Concrete runway:
Centre light cleaned by TrackJet®

Concrete runway, grooved:
Surface cleaned by TrackJet®
Concrete

This proves it!

- no damage to micro- and macro structure
- no damage to groovings
- no damage to grooved edges
- no damage to AntiSkid® - layers
- dramatic improvement of friction values
The TrackJet® system can be used to remove any kind of marking materials such as:

- Dispersions, 1- or 2- components
- Thermoplastics, e.g. sprayed or layer plastics
- Reactive systems, e.g. cold plastics
- High-solid paints, 1 or 2- components
Demarking

No “phantom lines” are created!
No damage to surfaces!

Multilayer markings on concrete runway

Markings removed by TrackJet®

Multilayer colour markings already partially removed on concrete runway by TrackJet®

Multilayer colour markings already partially removed on concrete runway by TrackJet®
Satellite tools...

Trackjet® satellite tools also perform excellently for demarcation work in confined areas, for instance this TrackJet® mobile jetting vehicle can be used to remove markings in indoor car parks and basement garages.

...various possibilities of extension!

Other tools, such as high-pressure jetting pistols and surface cleaners etc. are TrackJet® system-compatible. Don’t hesitate to contact us for more information!
This proves it!

- use on any surface
- removal of almost all marking materials
- no remaining of “phantom markings”
- low water consumption
- low operating costs per unit area
- direct suction and therefore immediate removal of wastewater and old marking material
- preservation of surfaces

Pilots just love TrackJet® ...
The TrackJet® VacuFlex® direct suction system provides an extremely convenient method of carrying out maintenance work on all surfaces, meanwhile leaving a completely clean and residue-free surface behind it! Even the used water is sucked up again. So the processed area can be used again immediately after the task is completed!

...residue-free work through direct suction!
The TrackJet® Vacuflex® System consists of a direct suction element which leads water and removed markings directly from the TrackJet® nozzle into the VacuFlex® trailer.

The TrackJet® Vacuflex® trailer contains both a freshwater supply AND a wastewater collection tank combined in 1 holder. Within the holder there is the “rubber bag”, a flexible membrane which hermetically separates fresh water and spoil area. Therefore dirt contamination of freshwater is impossible.

...easy disposal!

The tank volume is continuously adjusted to requirements, the decreasing freshwater volume corresponds to the increasing wastewater volume. After work you can take out solid and liquid components easily.

Areas of application...

Because of the innovative precision–high-pressure–water-jet–method, the TrackJet® VacuFlex® System is suitable for:

• demarking
• roughening asphalt surfaces
• removing rubber abrasion marks on runways
• etc.
Arguments

This proves it!

- reduction of tank volume to a minimum owing to in- and out- balance-system
- halving of refill intervals and good manoeuvrability compared to systems with fixed chamber volume
- high economy by elimination of additional supply and disposal vehicles
- simple disposal of spoil
- prompt quality-control of cleaning results
- immediate traffic-readiness of processed surface owing to direct suction of wastewater and removed substances
Technique

Dimension and weights

- Length: approx. 7,500 mm
- Width: approx. 2,500 mm
- Height: approx. 3,200 mm
- Suction capacity: 800 m³/h at —0.2 bar
- Total axle load: 9,000 kg

Lightening

- Complete lightening, 24 volt
- 6 chamber rear lights
- Lateral marker lights
- No. plate illumination under ride protection
- Lateral marker lights
- Number plate illumination under ride protection

Trailer chassis

- Two-axle chassis, unsupported construction
- Permissible gross weight 18 t, with turntable and standardised forked drawbar

Axle unit

- 2 low-maintenance ROR axles
- Parable springs

Tyres

- 4x 385/ 65 R 22.5

Brake unit

- Two-line compressed air-brake unit
- Spring-type cylinder brake as parking brake
- Swap-proof coupling heads with hose line for connection to motor vehicle
- Complete anti-blocking system with sensors on both axles

Equipment

- 1/4 plastic wing on front axle
- Rear axle wing with rubber mudguards
- 2 stop wedges in brackets
- Galvanised under ride protection
- Side collision protection

Tank

- Cylindrical steel tank (ST37)
- Volume approx. 10,000 litres (optional 20,000ltrs)
- Membrane inner chamber as storage for freshwater
- Exterior chamber with flushing jet ring and vacuum connection for wastewater
- Manhole at the tank apex above water chamber
- Tank installed at approx. 1.5° inclination
- Rear doors
- Durable, flexible synthetic bubble inlay for separation of chamber with drain hole at front side
- At height of 100 mm supported surface of bubble to facilitate runoff of water
Tank draining

- Drainage of mud chamber via rear drain
- Additional possibility of pressurisation via vacuum pump

Tank filling

- Fill control of water and mud shock-resistant chamber
- Tubular inspection glasses shock-resistant

System advantages

- Low system weight
- Very good manoeuvrability of trailer

Suction and drainage connection

- DIN 100 connectors in lower area of rear floor and exterior ball gate valve with sealing cover
- Galvanised steel drainage chute

Vacuum pump

- Suction capacity approx. 800 m³/h
- 2,500 l/min
- Required power approx. 6.6 kW
- Vacuum capacity preset to approx. 0.2 bar

Vacuum pump drive

- Fully hydraulic via main vehicle hydraulic oil pump
- Own diesel engine option

Suction safety

- Compact safety unit for vacuum pump
- Suction nipple with overflow safety device for mud chamber evacuation
- Changeover valve in suction and delivery line
- Manual switching between “suction”, “ventilate” and “delivery”
- Monitoring element
- Vacuum manometer on rear vehicle superstructure

Suction and supply lines

- Suction line from wastewater chamber to the front side for vacuum suction
- Water line ND 50 fed laterally to the front to supply main vehicle with freshwater

Warning markings

- Reflecting film in accordance with DIN 30710
- Technical and acceptance inspections
- TÜV inspections

Paintwork

- Acryl-based uniform superstructure paintwork
- Standard RAL colours according to our customer’s wishes!
Outline

**Unimog Airport**

**Unimog Power Pack**

**Basis Overaasen**
**Blower/ Sweeper**

**Supra Airport**

**Truck based Power Pack Road/Airport**

**Truck Semi Trailer**

**Unimog Power Pack Demarking**
<table>
<thead>
<tr>
<th></th>
<th>Unimog Airport</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TrackJet® front module “Airport”</td>
</tr>
<tr>
<td>2</td>
<td>Unimog U400/500</td>
</tr>
<tr>
<td>3</td>
<td>Water vessel</td>
</tr>
<tr>
<td>4</td>
<td>Water trailer with direct waste-evacuating-system</td>
</tr>
<tr>
<td>5</td>
<td>Water trailer</td>
</tr>
</tbody>
</table>

**Applications**

- Rubber removal: ++++
- Paint marking removal: +++
- Grip improvement: ++++
- Contracting: ++++

* + = minor applicable        ++ = applicable              +++ = well applicable                 ++++ = excellently applicable
1 TrackJet® Front module
2 Unimog U 300/400/500
3 TrackJet® Power Pack High pressure unit
4 VacuFlex® Water trailer with direct waste evacuating
5 Water trailer

Applications

- Rubber removal
- Paint marking removal
- Grip improvement
- Contracting

* = minor applicable  ** = applicable  *** = well applicable  **** = excellently applicable
Basis Overaasen

1. Trailer truck with crawling gear or hydrostatic drive
2. Snow sweeper blower chassis “Overaasen”
3. TrackJet® nozzle carrier unit “Overaasen”
4. TrackJet® Hydraulik Power Pack “Overaasen”
5. VacuFlex® water trailer with direct waste evacuating system
6. Water trailer
7. Water vessel

Applications

| Rubber removal | ++++ |
| Paint marking removal | + |
| Grip improvement |
| Contracting |

* = minor applicable, ** = applicable, *** = well applicable, **** = excellently applicable
1 TrackJet® front module

2 Snow clearing machine chassis
   Schmidt Supra 4000

3 VacuFlex®
   Water trailer with direct waste evacuating

4 Water trailer

Applications

<table>
<thead>
<tr>
<th>Application</th>
<th>++ = minor applicable</th>
<th>++ = applicable</th>
<th>+++ = well applicable</th>
<th>++++ = excellently applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber removal</td>
<td></td>
<td></td>
<td></td>
<td>++++</td>
</tr>
<tr>
<td>Paint marking removal</td>
<td></td>
<td>++</td>
<td></td>
<td>+++</td>
</tr>
<tr>
<td>Grip improvement</td>
<td></td>
<td></td>
<td>+++</td>
<td>++++</td>
</tr>
<tr>
<td>Contracting</td>
<td></td>
<td>++</td>
<td></td>
<td>+++</td>
</tr>
</tbody>
</table>

+ = minor applicable        ++ = applicable        +++ = well applicable        ++++ = excellently applicable
Truck based Power Pack

1. TrackJet® front module
2. Trailer truck with crawling gear or hydrostatic
3. Water vessel
4. TrackJet® Power Pack high pressure unit
5. VacuFlex® Water trailer with direct waste evacuating system
6. Water trailer

 Applications

- Rubber removal ++++
- Paint marking removal +++
- Grip improvement +++
- Contracting +++

+ = minor applicable    ++ = applicable    +++ = well applicable    ++++ = excellently applicable
### Truck Semi Trailer

1. **TrackJet®** front module
2. **TrackJet®** Power Pack high pressure unit
3. Semi trailer
4. **VacuFlex®** Water trailer with direct waste evacuating system
5. Water trailer

### Applications

<table>
<thead>
<tr>
<th>Application</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber removal</td>
<td>++++</td>
</tr>
<tr>
<td>Paint marking removal</td>
<td>+</td>
</tr>
<tr>
<td>Grip improvement</td>
<td>++++</td>
</tr>
<tr>
<td>Contracting</td>
<td>++++</td>
</tr>
</tbody>
</table>

+ = minor applicable
++ = applicable
+++ = well applicable
++++ = excellently applicable
## Power Pack Demarking

<table>
<thead>
<tr>
<th></th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TrackJet® front module</td>
</tr>
<tr>
<td>2</td>
<td>Unimog U 300/400</td>
</tr>
<tr>
<td>3</td>
<td>TrackJet® Power Pack high pressure unit</td>
</tr>
<tr>
<td></td>
<td>VacuFlex® Water trailer with direct waste evacuating system</td>
</tr>
<tr>
<td>5</td>
<td>Water trailer</td>
</tr>
</tbody>
</table>

### Applications:
- Rubber removal
- Paint marking removal: ++++
- Grip improvement
- Contracting: ++++

* = minor applicable  
** = applicable  
*** = well applicable  
**** = excellently applicable
Reference list airports...

- Aberdeen
- Abu Dhabi
- Amsterdam Schiphol
- Al Ain
- Athens
- Bari
- Bergen
- Birmingham
- Bologna
- Brescia
- Bristol Filton
- Brussels
- Brussels South-Charleroi
- Cheju
- Doncaster Robin Hood
- Edingburgh
- Faro
- Frankfurt-Hahn
- Funchal Madeira
- Geneva
- Glasgow International
- Glasgow Prestwick
- Göteborg Landvetter
- Hamburg
- Hanover
- Ho Chi Minh City
- Incheon Seoul
- Kimpo Seoul
- Lask
- Leeds Bradford
- Liège
- Lisbon
- London City
- London Gatwick
- London Heathrow
- London Stansted
- Manchester
- Moscow, Domodedovo
- Munich FJS
- Napoli
- Nato Airbase Hohn
- Newcastle
- New Delhi
- Paderborn-Lippstadt
- Paris Orly
- Oporto
- Prague
- Pusan Kimhae
- Rome Fiumicino
- Rotterdam
- Saarbrücken-Ensheim
- Salzburg
- Stockholm Arlanda
- St. Petersburg, Pulkovo
- Tirana
- Treviso
- Turin
- US Airforce Base Incirlik
- Venice Marco Polo
- Vienna
- Vigo
- Zurich Unique

- Reserved for your airport!