





03 *Preface*

07 *Engineering*

15 *Production*

31 *Motorsport*

39 *Motorsport History*

43 *Human Services*

# HOLZER Firmengruppe

## We make success orderable

The HOLZER Firmengruppe is the innovative high-tech service provider in the areas engineering, production, motorsport and human services. We are a value-orientated full-service enterprise and we perform all phases in the engineering processes – from the very first idea up to the finished product.

In close cooperation with our long-time customers from the automobile and aerospace sectors, we participate in the creation of mobility every day. Since many years, the HOLZER Firmengruppe focuses for example consequently on the inclusion of alternative drive systems. In sustainable projects, we do not only speak of e-mobility but we develop effective and high-performance solutions.

We are proud of our successful and 35 years long experience in professional motorsport with a high international reputation. Our customers appreciate this unique corporate culture. We understand our customer relations always in the spirit of partnerships construed with a long-term perspective that frequently further develop into 'sustainable innovation partnerships'.

You always need an excellent team to achieve outstanding successes. To this effect, our engineers and specialists pursue the targets of our partners every day and thus make success being our best-selling HOLZER product.



*Managing Director Günther Holzer with daughter Katharina and son Thomas*

The HOLZER Firmengruppe is a 100% family-owned enterprise. We are hence not bound by the stock market but:

- by the success of our customers and their clients
- by the well-being of our employees and their families
- and by our environment.

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Innovative strength, highest quality and maximum speed are deeply embedded in the genes of the HOLZER Firmengruppe.

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# HOLZER Engineering

## We set new standards

We support our customers in comprehensive or subordinate projects with excellent developers, design engineers, project and quality managers. Specialized expertise, efficiency and excellent quality make it possible that our experts set new standards in the areas automotive, aviation, mechanical engineering and motorsport.

At record speed from the first customer contact to the finished product. Our process management is directly focused on our customers. We assure high-quality planning, development and design processes and outstanding results.

The Holzer Firmengruppe has a unique innovation system. This system has grown from our roots in motorsport and enables us to be always that one decisive step ahead of others in all our work.

**The result: True success.**

**As an innovative full-service enterprise, we complete all phases in the engineering processes:**

- Project management, preparation of project plans and resource planning
- CAD construction of all components with Siemens NX, Catia and PTC Creo (Pro/E)
- Construction of complex rollover and impact structures
- Huge experience in CFRP design, preparation of Lay-Up-Manuals in coordination with the clients and the suppliers
- Checking and adjustment of the CAD results by means of FEM calculation
- Design and construction of models for wind tunnel and performance testing
- Design and construction of prototypes for driving tests or for demonstration purposes (rapid prototyping)



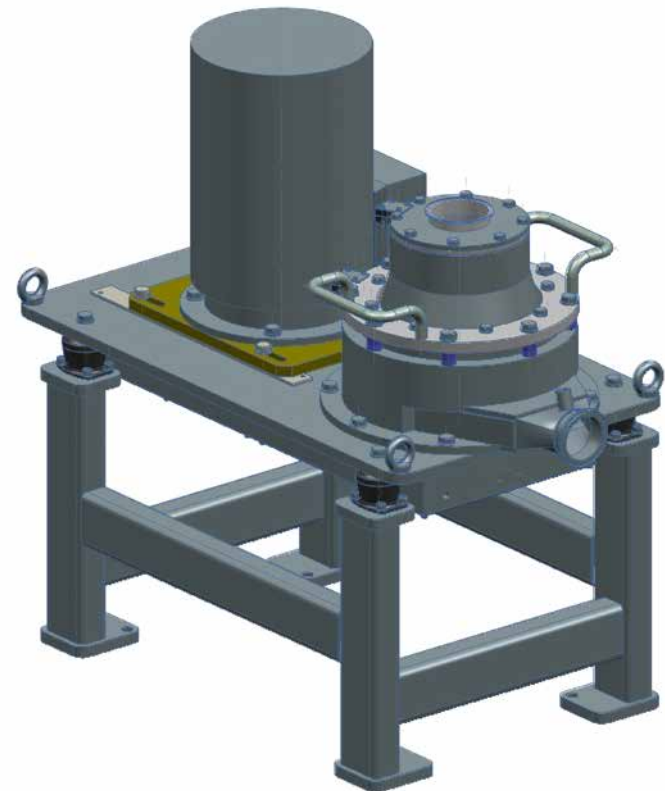
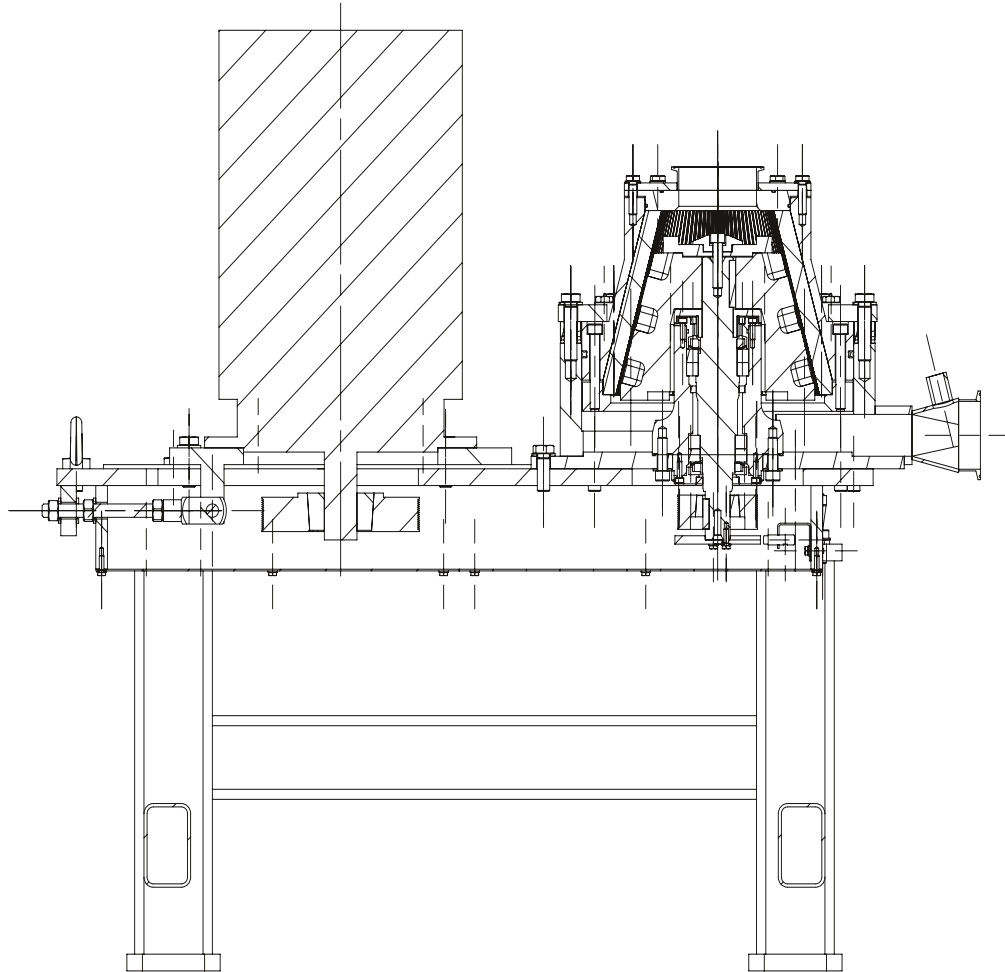
## Special grinding plants

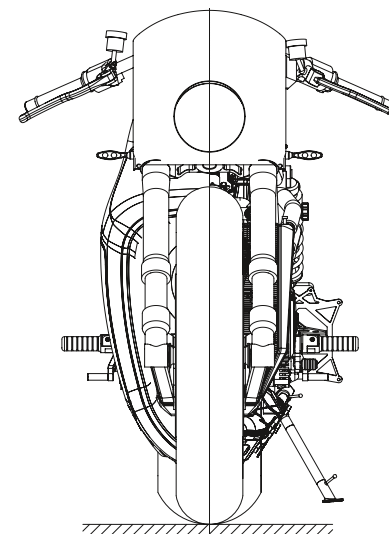
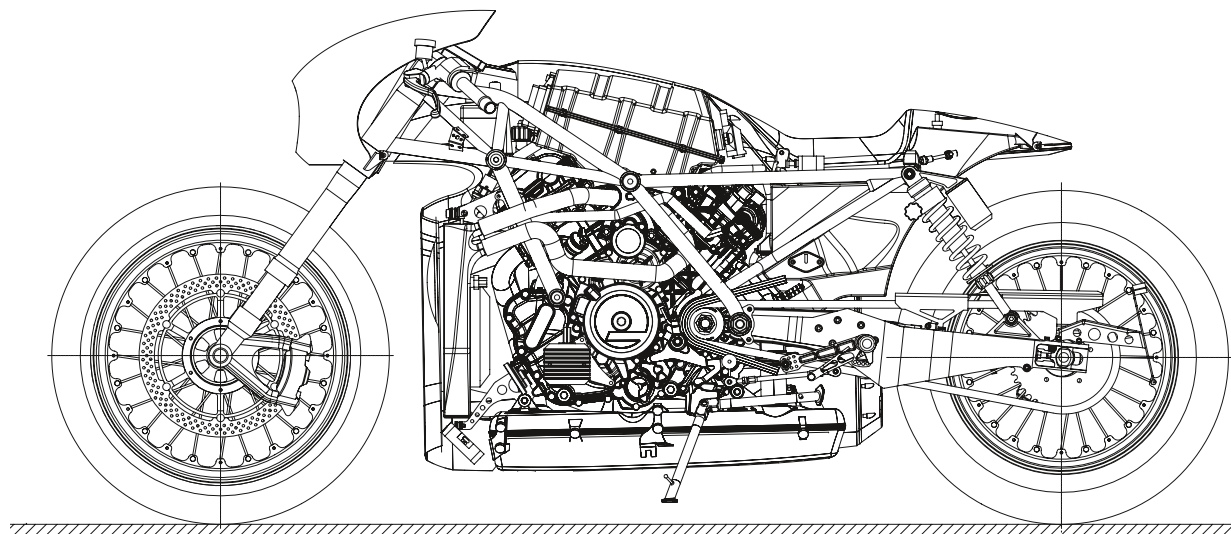
Development partner for the mechanical engineering industry in the field of milling industry/fine grinding.

We meet the highest demands on mechanical engineering conditions, such as for example: high rev speeds in combination with materials and substances which are difficult to machine.



# Mechanical process engineering





## Overall project: Lotus Bike C-01

Development of the whole project – from our customer's idea up to the limited series ready for approval:

- Feasibility study
- Concept development
- Selection and development of the single components
- Checking of the parameters on the concept bike
- Prototype construction and development up to start of production
- Commissioned production, assembly responsibility and commissioning
- Homologation, EU road approval



# In our development work, our target is always to provide innovation

The HOLZER Firmengruppe is already developing and designing fully manufactured vehicles around e-mobility. A significant weight reduction could be achieved due to the use of lightweight materials and also due to a functional and innovative design. Operating costs could furthermore be reduced to a minimum, amongst others

because of an energy recovery system and an outstanding vehicle payload ratio to the kerb weight. The smooth hydraulic steering, the adjustment to get in and out of the vehicle frequently, in combination with the ergonomically perfect design, finally provides a lot of driving pleasure.

## eCargo



Vehicle length	2800 mm
Vehicle width	900 mm
Vehicle height	1700 mm
Kerb weight	ca. 150 kg
Payload approx	ca. 450 kg
Maximum speed cutoff	25 or 45 km/h
Range in-plant	up to 8 hours
Range urban and public traffic	up to 40 km





## Project: eCargo

- Layout development
- Design and development of the complete vehicle
- Functional test of all components
- Driving and safety tests
- Construction of test vehicles and prototypes
- Process development for the series production
- Homologation EU road approval

Please contact us, we are looking forward to an innovation or field test partnership with you.



For urban, in-plant and public traffic use

Very tight turning circle, low vehicle width, passage of bollard elements possible

Loading capacity for a euro pallet, multiple design variants







# HOLZER Production

## We produce precision

The supreme discipline for our development division: Design and production of high-end single parts and components up to small series for motorsport, aviation and industry.

The HOLZER Firmengruppe has a 10,000 sqm large office and production space. State-of-the-art CNC-machines have direct network connection to the CAD-CAM working places. In this way, highest precision and optimal workflow in the manufacturing process are guaranteed in an effective and highly efficient way.

We focus on an outstanding process transparency and speed as well as on worldwide logistics solutions. Our highly motivated staff hereby meets the highest quality standards day and night.

### You are looking for ...

- a production partner for your special series?
- a partner to allocate production volume?
- an outsourcing solution for the manufacturing of high-precision parts, for example made of aluminium, titanium or alloys that are even much more resistant?
- a continuous supply of your product line with high-tech parts on call order with shortest delivery times?

How can we support you? We would like to build up a **long-term production and 'sustainable innovation partnership'** with you, too.

### Extract from our machinery:

#### CAM-supported machining center

Hermle C 600 U, C 20 U, C 800 U, C 30 U  
5-axis simultan, Heidenhain iTNC 530,  
range of traverse 800 x 600 x 500 mm

Hermle U 1000 A  
4-axis simultan, Heidenhain iTNC 430,  
range of traverse 1000 x 720 x 630 mm

Grob G550, G350, G351  
5-axis simultan, Heidenhain iTNC 530,  
range of traverse 800 x 950 x 1020 mm

Reiden RX 10  
5-axis simultan, Heidenhain iTNC 430,  
range of traverse 1000 x 1100 x 810 mm

Mazak turning centres  
QTNX 250 2M 1000,  
QTNX 250 2M 500  
Multi-tasking CNC-turning and milling centre  
Mazak INTEGREX i-200ST

Agie sink erosion machine HS3,  
range of traverse 500 x 350 x 500 mm

Agie wire erosion machine Progress V3,  
range of traverse 500 x 350 x 400 mm

## Swinging fork

Material: special aluminium alloy  
Special characteristic: very precise shape and position tolerances due to high-tech welding method

## Frame part

Material: aluminium alloy  
Special characteristic: low wall thickness, narrow dimensional tolerances, 85% cutting degree



Swinging fork  
Kalex motorcycle  
Moto 2

Frame part  
Kalex motorcycle  
Moto 2





### Hydraulic block for motorsport vehicles

Material: special aluminium alloy

Special characteristic: narrow dimensional tolerances, high cutting degree and use of special tools



### **Wheel carrier Formula 1**

Material: high-tensile aluminium alloy

Special characteristic: over 80% chipping degree for optimum weight reduction



### Media flange

Material: aluminium

Special characteristic: high accuracy due to special taphole geometry

### Special tool Formula 1

Material: titanium

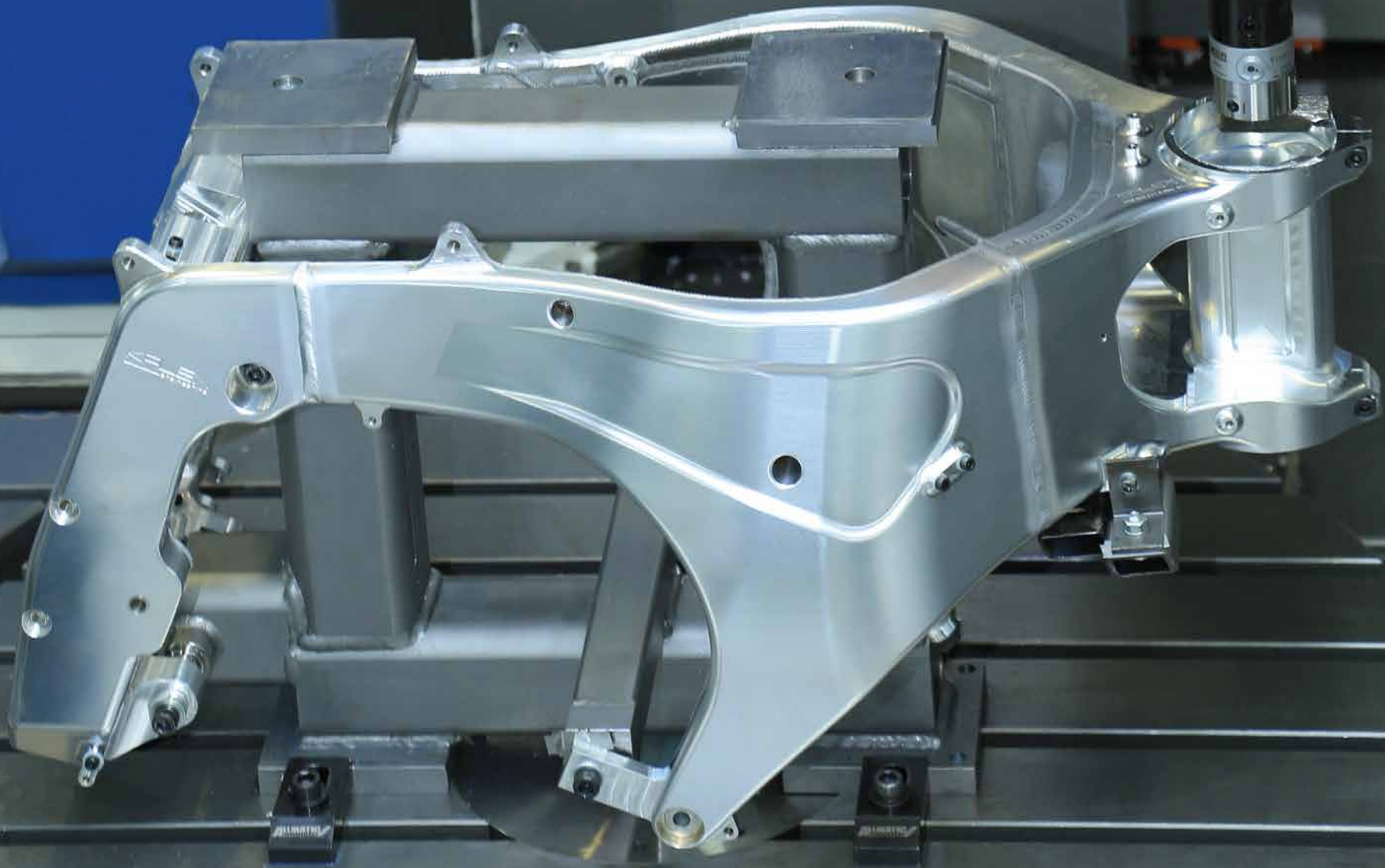
Special characteristic: very high dimensional tolerance and high surface finish





## Kalex frame

Final machining on the  
5-axis milling machine







### **Radiator rally car**

Material: special aluminium alloy from the aerospace sector

Special characteristic: welding assembly produced with specifically developed procedure and technologies purely hand-made



## Wheel carrier long-distance vehicle

Material: steel alloy

Special characteristic: welding assembly with high precision – very precise shape and position tolerances based on our high-tech welding method



We manufacture complex products and assure quality with state-of-the-art measuring techniques



- Quality control certified pursuant to DIN ISO 9001/2015
- QSF-A certified (certified company for aviation, aerospace and supply industry)
- Customer specified 100% quality control with state-of-the-art 3D coordinate measuring machine
- Temperature controlled measuring room
- Measuring of shape and position tolerances
- Measuring of surface accuracy
- Profile measuring with conturograph
- Providing measurement protocols

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In our view perfection is only the first step.  
Our actual target is to inspire our partners.

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### Motorcycle frame Lotus-Bike C-01

Material: special steel alloy used in aviation

Special characteristic: we manufacture purely by hand with highest precision and perform perfect welding in all details



# Bodywork modification Porsche 911 RSR

Material: steel / aluminium mix

Manufacturing process: welding, bonding and riveting

Special characteristic: precise body cut, welding-in of safety cell and structural components







## HOLZER Motorsport

### Success = Speed x Holzer

With our well-coordinated development, construction and engineering team, we very rapidly finish winning race cars for rally, DTM, Formula 1, GT3, Le Mans or one-make cups – as prototype, hand-made unique model or in small series.

There is no other area in which speed, accuracy and quality plays such a decisive factor as in motorsport. Each second, each step counts not only on the race track and in the pit lane. Success depends also on a perfect preparation. It is the professional vehicle assembling and an accurate and highly flexible vehicle component logistics that finally pave the way for breath-taking driver performances.

Since more than 35 years, our partners appreciate the innovative development and design performances of the HOLZER Firmengruppe. Exciting stories arise hereby, just as outstanding successes.











## Final assembly of the BMW M4 GT4

- Sealing and painting of the supplied bodyshell including safety cage
- Disassembly of the dispenser vehicles with correlating recycling process
- Conversion/modification of standard components
- Pre-assembly of all motorsport components/assemblies
- Final assembly, entry into service, functional test and final-assembly inspection
- Roll-out and vehicle delivery directly to the end customer
- Quality management in close cooperation with BMW Motorsport
- Mapping of all process at our premises





## HOLZER Firmengruppe provides comprehensive services in motorsport

- Vehicle selection, feasibility studies and basic conception according to the objectives
- Development, design and assembly in consideration of the applicable regulations
- Full-speed also in the manufacturing process, long-time trustful relationships to the suppliers and in-house production of high-end components
- Vehicle and component testing
- Organisation of high-class motorsport events on national and international level, including support service
- Full-service teams for all vehicle classes, worldwide
- 24h just-in-time logistics for motorsport service teams and events, IT-based and online-supported





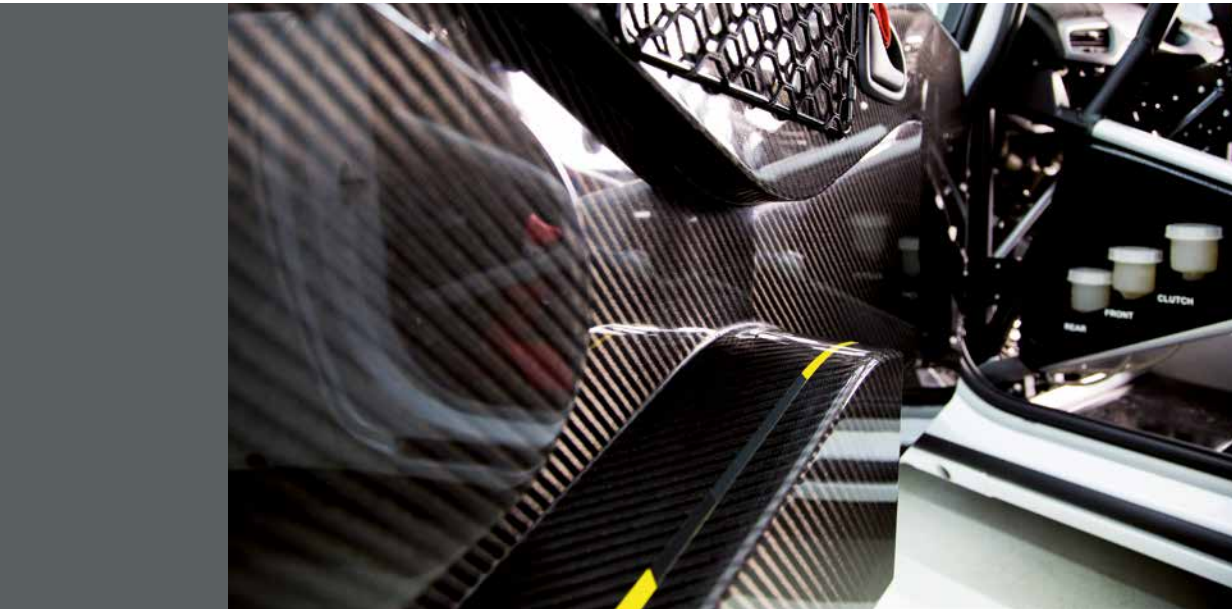
We question conventional thinking patterns and thus achieve outstanding results and successes



## HOLZER R5 Corsa Conceptcar, based on the Opel Corsa







## Overall project: HOLZER R5 Corsa

The Holzer R5 Corsa was completely and specifically developed for the FIA R5 Regulations and is currently the car with the most up-to-date state of development.

- A competitive performance
- Low centre of gravity
- Good handling
- Very broad tuning range (suspension, cockpit)
- Well-balanced weight distribution between front and rear axle
- Very rugged and stable design
- Easy to maintain and to assemble
- Total weight of the car below the minimum requirement. Thus big scope for the determination of the centre of gravity

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We proudly look back onto 35 years of  
successful experience in professional  
motorsport with international reputation.

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**2013 - 2017**

Development partner overall project Opel Adam R2 (development, assembly, logistic and technical services, customer support) on behalf of Opel Automobile GmbH;  
 Rally service team Opel Adam R2; 2014: 28 class victories 3 national championships;  
 2015: 40 class victories; 4 national championships; ERC Junior Rally Champion (E. Bergkvist)  
 2016: 54 class victories 7 national championships; ERC Junior Rally Champion (M. Griebel)  
 ERC 3 Rally Champion (C. Ingram)  
 2017: 36 class victories; 5 national championships;  
 ERC Junior Rally Champion (C. Ingram); ERC 3 Rally Champion (C. Ingram)  
 ERC Ladies Rally Champion (T. Molinaro)

**2012 - 2017**

Development partner overall project Opel Adam Cup (development, assembly, logistic and technical service, customer support) on behalf of Opel Automobile GmbH in the ADAC Opel Rally Cup

**2011 - 2017**

Component manufacture (frame, swinging fork, small components)  
 - Kalex Moto2

Driver World Champions:

2011 Stefan Bradl; 2013 Pol Espargaró;

2014 Esteve Rabat; 2015 Johann Zarco;

2016 Johann Zarco;

First place World Constructors'

Championship in

2013/2014/2015/2016/2017



© by Kalex

**2012 - 2013**

Component manufacture

- Kalex Moto3

Vice-Champion in World Drivers' Championship: 2012 Luis Salom

Second place World Constructors' Championship in 2013



© by Kalex

**2012 - 2016**

Technical services for Hankook Tire in the DTM

**2011 - 2012**

Technical, logistic and team services for AMG-Mercedes-Benz SLS-GT3 in the ADAC GT Masters, FIA GT3-EC, VLN and 24h Dubai / Nürburgring



www.holzer-gruppe.com



2010 - 2012

Development overall vehicle, design, component purchase, component manufacture, vehicle preparation, logistics as well as revisions and assembly of modules for the Hispania Racing F1 Team



2009

Project management, design, development and assembly of components as well as on-track engineering support for the BMW Alpina B6 GT3



2000 - 2005

Development partner overall project (vehicle, logistics, entry and service, sponsor programs) for Adam Opel AG in the 'Deutschen Tourenwagen Masters'



2008 - 2012

Development overall vehicle, component manufacture and vehicle preparation of the Opel Corsa OPC according to Group N/A regulations for Adam Opel AG



2002 - 2004

Logistics and technical service Alfa Romeo 147 Cup for Alfa Romeo Germany (development, assembly, event management and customer services)



2010

Design, technical services and event management of the OPC Raceteam for Adam Opel AG, 24h Nürburgring



1999 - 2001

Works team for Adam Opel AG in the German Rally Championship German Champion in the 2WD classification 1999/2000 Driver: Niki Schelle





**1998 – 2000**

Works team for Subaru Germany GmbH  
in the German Rally Championship  
German Rally Champion in 1998/1999  
Driver: Armin Kremer



**1997 – 1999**

Works team and logistic partner for Adam Opel AG  
in the German Super Touring Car Championship



**1992 – 1996**

Complete service for Fiat Germany  
within the Fiat Cinquecento Trofeo  
including VIP vehicles for the Nür-  
burgring 24h Race (development,  
assembly, event management and  
customer services)



**1990**

Preparation of 40 Lancia Delta  
Integrale Group N rally cars  
German Rally Champion  
Driver: Ronald Holzer



**1982 – 1989**

Preparation, entry and service of  
Porsche vehicles (Porsche Turbo  
Cup), Opel rally cars (Opel Kadett  
Cup) and Lancia rally cars  
(Int. German Rally Championship)



**1983 – 1984**

Works driver for Adam Opel AG  
in Opel Manta 2,0 I  
Drivers: Ronald Holzer  
Günther Holzer



**1982**

Winner of the Opel Kadett Cup  
Drivers: Ronald Holzer  
Günther Holzer







# HOLZER Human Services

## Teams of experts in action

Since many years, our experts support you in procuring specialised and senior management staff in many areas. Our extensive portfolio of offering highly-motivated personnel for your enterprise covers a wide range of services.

We live personnel work! **HOLZER Human Resources** is not only characterized by years of experience as temporary-employment agency but moreover plans the complete internal manpower requirement of the HOLZER Firmengruppe. The direct relation and the closeness to people distinguish ourselves clearly from other temporary-employment agencies. We will capture your requirements effectively and implement them with competence, passion and a lot of experience.

We understand what is important and are looking forward to support you!

### Our service sectors:

- Automotive area
- Industry
- Aviation
- Distribution
- Medical technology
- Finances
- Human Resources
- Commercial jobs





## Our performance profile

### Personnel leasing

Within the framework of the personnel leasing, you will be able to get a first impression on a potential new employee. You may then decide about a permanent employment as and when required at a later time.

**We organise – you benefit!**

### Direct personnel recruitment

With our direct personnel recruitment, we support you in your search for experienced as well as qualified personnel. To find suitable candidates for the selection, we access our job candidate and staff pool, we put out corresponding tenders and approach candidates directly.

**We will find the personnel that suits your requirements!**

### On-site service

As on-site partner, we support you on the ground in all respects around the subject personnel. We will gladly assume for you all issues around personnel leasing. We support your human resources manager and thus relieve your resources.

**We strengthen your personnel management on-site!**





### Master Vendor

As Master Vendor we act as general contractor and coordinate the personnel recruitment for all your service companies. You may thus centrally manage your specialists and your existing external staff in a completely flexible and comfortable way. All under one roof, flexibly and independently.

**We coordinate your personnel requirements!**

### Contract to produce a work

Contracts to produce a work are an attractive solution to implement complete projects for you with a direct responsibility for results. Flexibility, low-risk and predictability – specifically in the technical field. We apply also complex projects under our own responsibility and with competence.

**We create results!**

### Outplacement

There are multiple reasons for the necessity of outplacement. Whether it is a site relocation, a reduction of jobs or in case the “chemistry” between employees and staff simply went bad. A good outplacement guidance represents a direct practical help.

We approach any such new placement in an active way. We provide a varied and intensive job-application coaching and give support in the preparation of professional application documents. We investigate thoroughly for suitable jobs, both in the open job market and in particular also in the concealed job market. Our support and assistance accelerates and facilitates the necessary process.

**We support you thoroughly and professionally!**



## Extract from our list of references:

Opel Automobile GmbH, Airbus Defence & Space GmbH, Airbus Helicopters Deutschland GmbH, ALPINA Burkard Bovensiepen GmbH + Co. KG, AUDI AG, AVL SCHRICK GmbH, BMW AG, Broetje-Automation GmbH, DEUTZ AG, Erhardt + Leimer GmbH, Fiat Group Automobiles Germany AG (Alfa Romeo, Fiat, Lancia), HWA GmbH, KIA MOTORS Deutschland GmbH, KUKA Roboter GmbH, MAN Diesel & Turbo SE, manroland web systems GmbH, MT Aerospace AG, Dr. Ing. h.c. F. Porsche AG, Premium AEROTEC GmbH, Scuderia Toro Rosso, Siemens AG, SUBARU Deutschland GmbH, VOLKSWAGEN AG, ZF Race Engineering GmbH, . . .



**Performance**  
GmbH



**HHR** GmbH  
Holzer Human Resources GmbH

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