



# AUTOMOTIVE

## INDUSTRY



TaeguTec

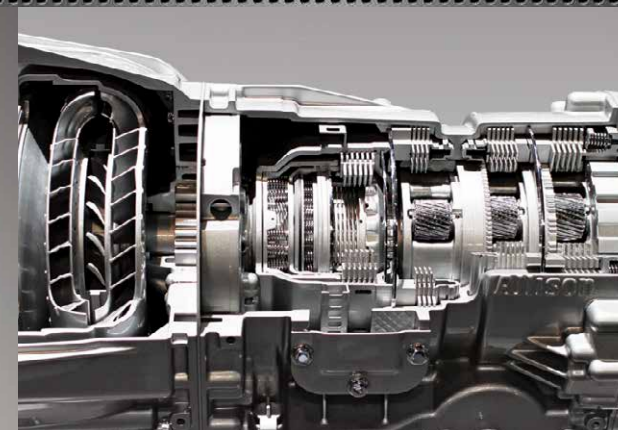


# AUTOMOTIVE

## Engine

## Transmission

## Steering & Brake



Cylinder Block — 4-7



Bearing Cap — 8



Bedplate — 9



Cylinder Head — 10-11



Crankshaft — 12-13



Camshaft — 14



Connecting Rod — 15



Piston — 16



Manifold — 17



Pulley — 17



Transmission Case — 18



Clutch Housing — 19



Clutch Gear — 20



Input & Output Shaft — 21



Flywheel — 22



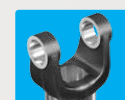
Knuckle & Carrier — 23



CV Joint — 23



Hub & Outer Ring — 24



Yoke — 25



Differential Case — 26



Brake Disc & Drum — 26



Caliper — 27



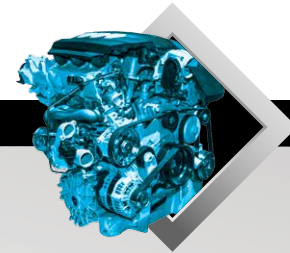
Aluminum Wheel — 27



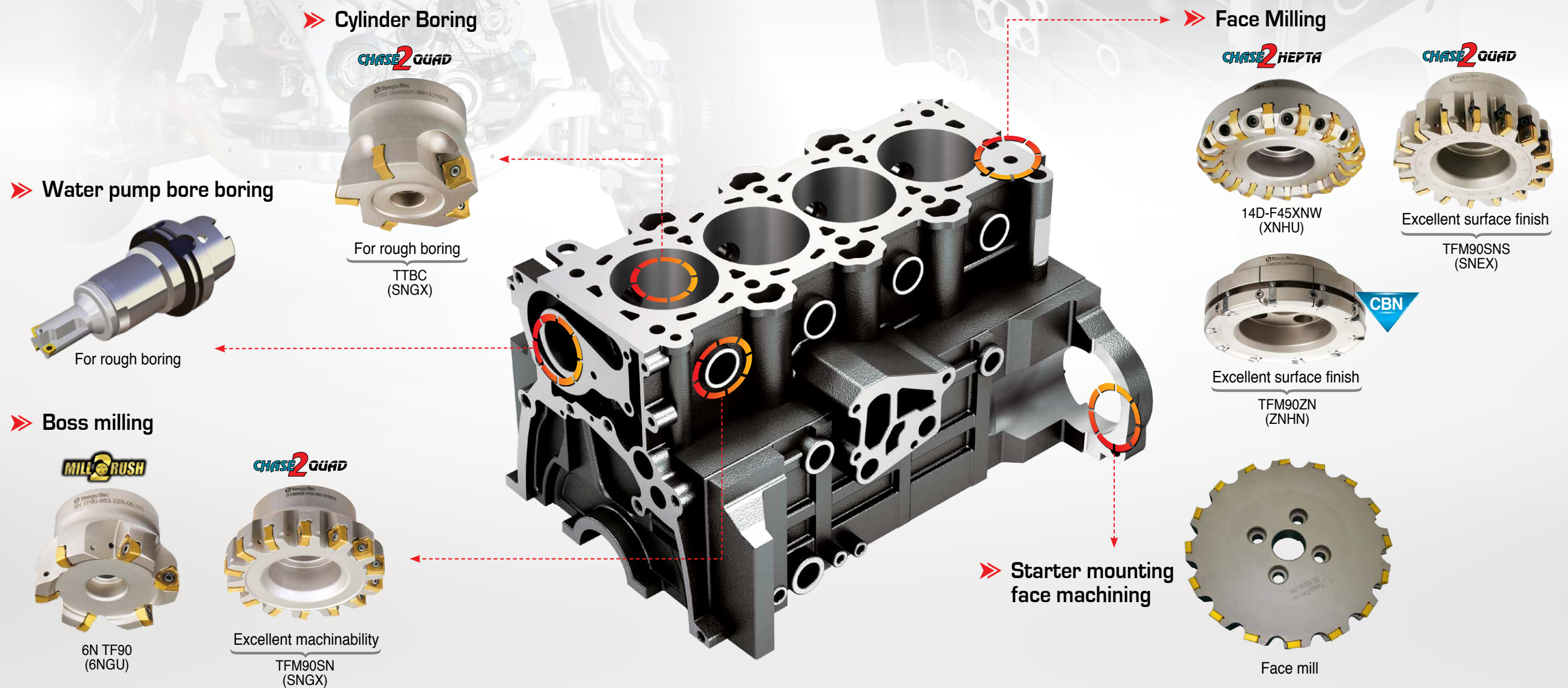
# Cylinder Block



Engine Part



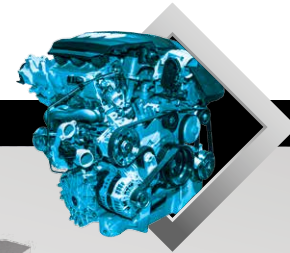
The cylinder block is designed and developed from specific materials to endure rigorous forces, friction and vibration during engine operation, as it is the most fundamental part of the engine body. Therefore the cylinder block is cast from either cast iron, CGI(Compacted Graphite Iron), or aluminum and it undergoes several precise machining operations before the final assembly.



# Cylinder Block



Engine Part

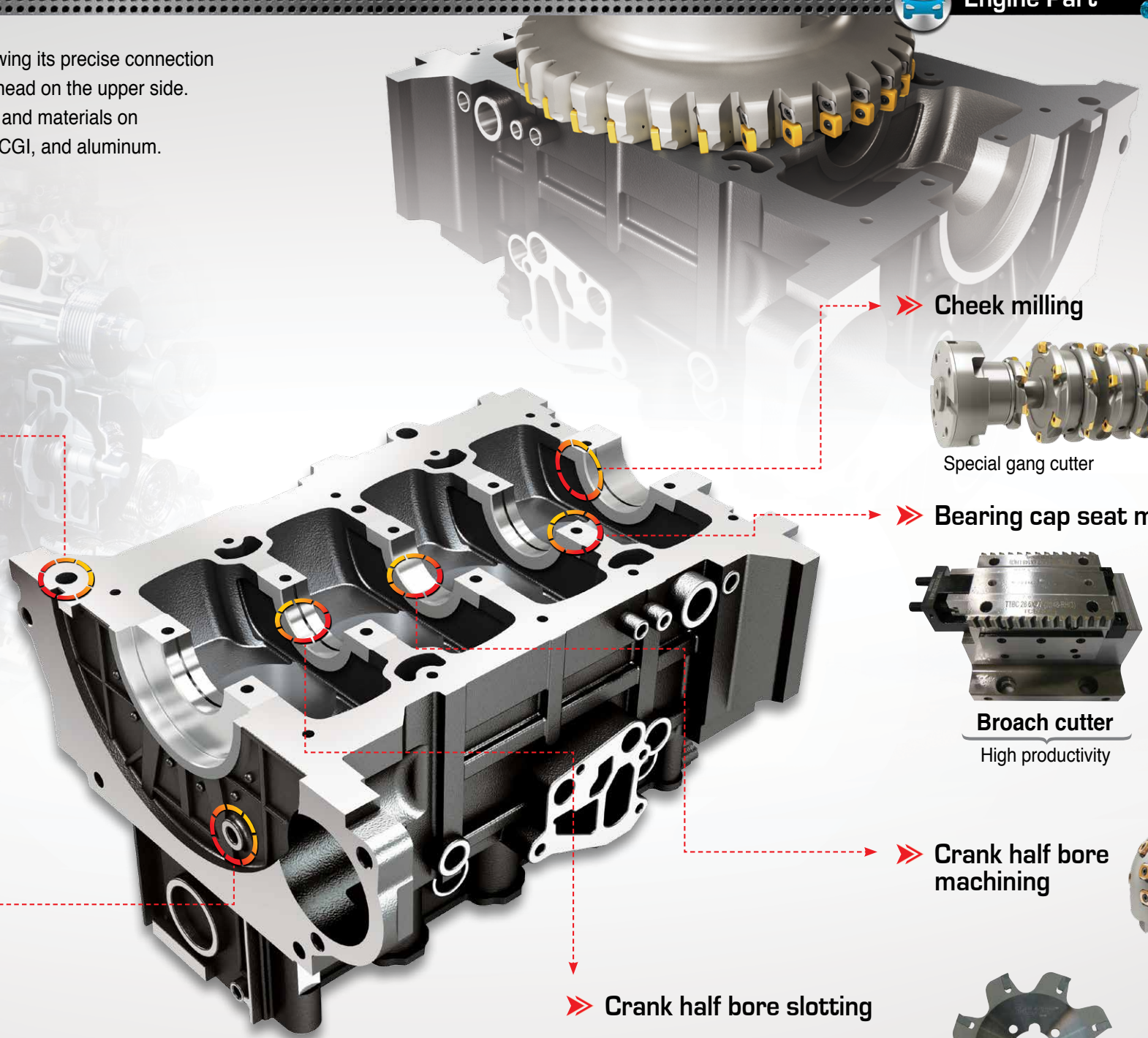


The engine block is a central element to the complete engine following its precise connection to the crank shaft, connecting rod, piston, cam shaft, and cylinder head on the upper side. The tooling and the cutting conditions are different for the capacity and materials on each individual machine with parts being produced from cast iron, CGI, and aluminum.

## Drilling solutions



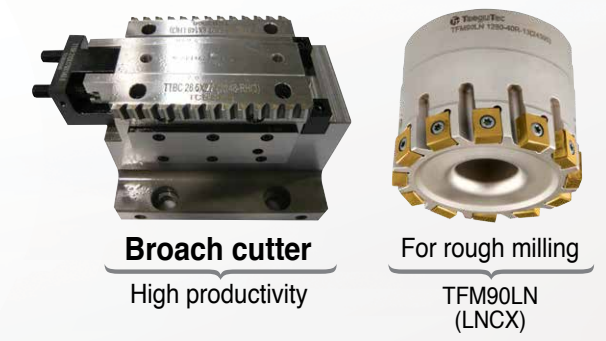
## Reaming & Tapping solutions



## Cheek milling



## Bearing cap seat machining



## Crank half bore machining



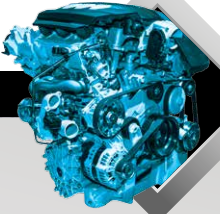
## Crank half bore slotting



# Bearing Cap & Bedplate



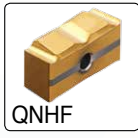
Engine Part



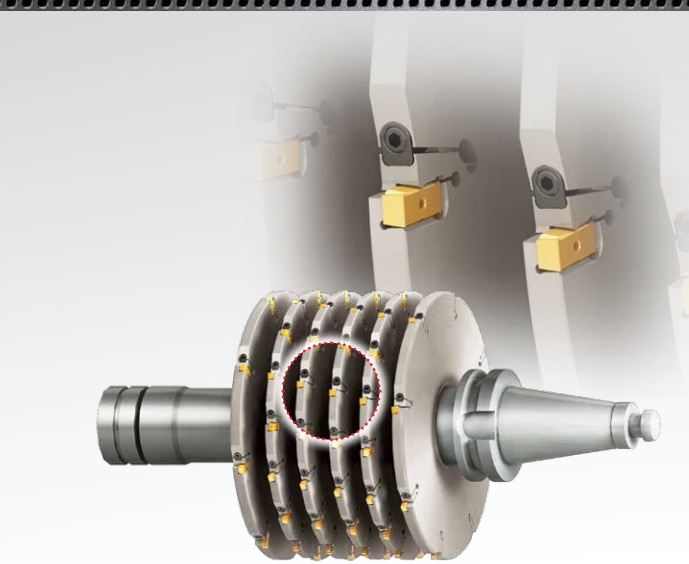
➤ Slitting & Side milling



**TOPSLOT**  
QTSM



QNHF



➤ Drilling

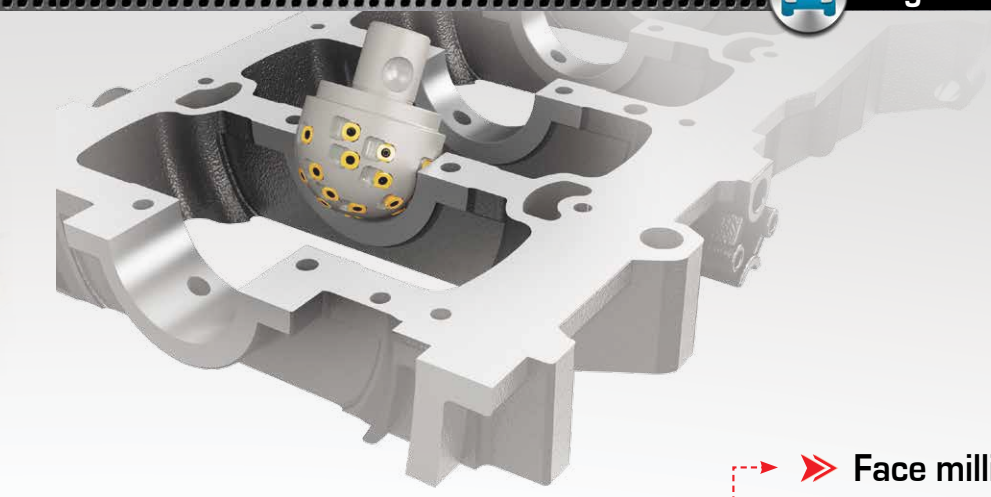
**DRILL-RUSH**



TCD



**H-DRILL**



➤ Face milling



XNHU

SNEX

**CHASE2 HEPTA**

**CHASE2 QUAD**

all adjustable type



Rough milling  
14D-F45XNW



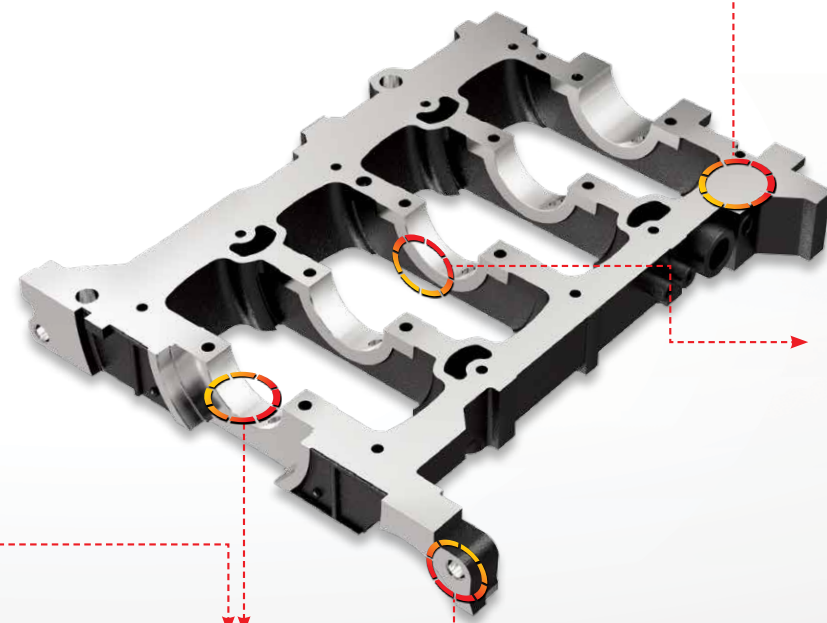
Finish milling  
TFM90SNS-QC



➤ Crank half bore milling



Ball mill  
TTBE  
(XCET)



➤ Cheek face milling



Special gang cutter

➤ Bolt hole face milling

**CHASEMILL**



TFM90AP  
(APKT)

**MILL-RUSH**



6N TF90  
(6NGU)

➤ Bottom face milling

**CHASE2 HEPTA**



14D-F45XN



XNHU

➤ Drilling & Tapping



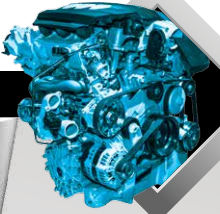
**T-TAP**

**DRILL-RUSH**

# Cylinder Head



Engine Part



The cylinder head sits above the cylinder block and consists of a platform containing part of the combustion chamber that locates the valves and spark plugs.

The cylinder head is key to the performance of the internal combustion engine as the shape of the combustion chamber, inlet passages and ports determines a major portion of the volumetric efficiency and compression ratio of the engine.

Most of the parts are made of Aluminum with the exception of most commercial vehicles, so PCD tooling with specialised geometries for high-speed machining is required.

## Face milling

**MILL-RUSH**



3P TF90 (3PHT)

**CHASECTO**

For rough milling



Most economical insert

TFM430FS (OFCT)

**OTTO MILL**



PCD

For finish milling  
AFM90B (TCT13)

## Tappet bore boring



PCD

## Cam bore boring



PCD

High accuracy

## Valve seat & guide boring

Before press in

PCD



After press in

PCD

CBN



## Oil control valve hole boring



PCD

## Reaming

**TM-REAM**



High productivity



**TB-REAM**

High accuracy

## Cam half bore milling



PCD

## Drilling & tapping



**H-DRILL**

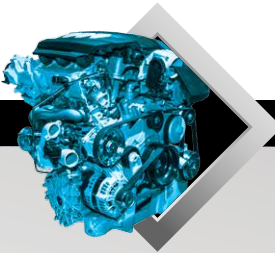
**T-TAP**



# Crankshaft

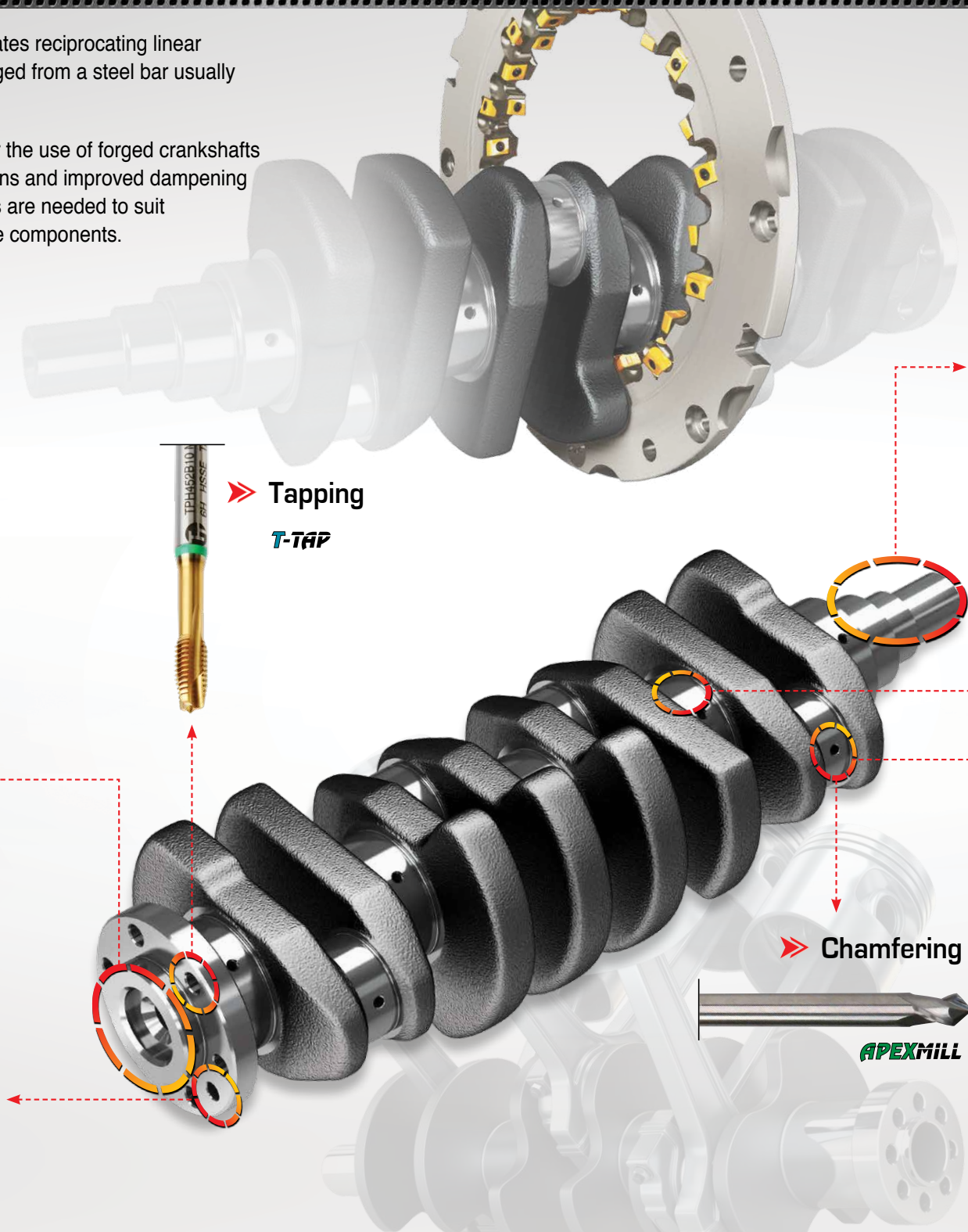


Engine Part



The crankshaft is the part of the engine that translates reciprocating linear piston motion into rotation. Crankshafts can be forged from a steel bar usually through roll forging or cast in ductile steel.

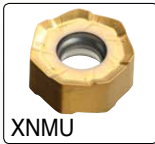
Today, more and more manufacturers tend to favor the use of forged crankshafts due to their lighter weight, more compact dimensions and improved dampening characteristics. Therefore, customized cutting tools are needed to suit the numerous dimensions and materials of intricate components.



➤ Face milling



CHASE 2 HEPTA  
14D-F45XN



XNMU

➤ Hole drilling & Reaming



➤ Tapping



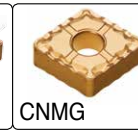
T-TAP

➤ External turning

T-TURN

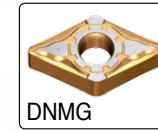


DNMG

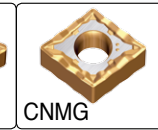


CNMG

RHINOTURN



DNMG



CNMG



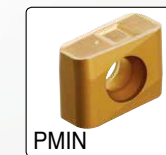
TCLNR

TDJNR

➤ Pin & Main journal milling

Internal Cutter

Internal cutter for pin journal and main journal machining



PMIN



TPINM

➤ Chamfering



APEXMILL

➤ Oil hole drilling



M.Q.LDRILL

# Camshaft

The camshaft is a component that operates the poppet valves. It consists of a cylindrical rod running the length of the cylinder bank with a number of oblong lobes or cams protruding from it, one for each valve. The cams force the valves open by pressing the valves as they rotate. TaeguTec has developed a series of cutting tools that enable automotive manufacturers to achieve productivity gains and cost reductions with various tools such as the Cam lobe mill and T-Clamp.

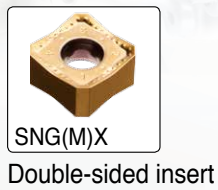


## » Cam lobe milling



External cam mill

## » Face milling



SNG(M)X  
Double-sided insert

## » Center drilling



## » External turning & grooving



RHINOTURN VNMX T-TURN VNMG T-CLAMP TDT TDXT

## » Lug end milling

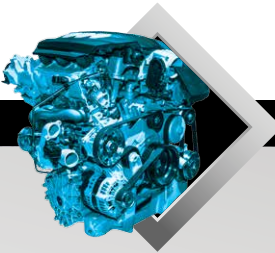


High speed machining



TVJNR TTER

# Connecting Rod

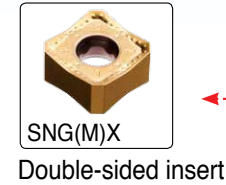


The connecting rod or con-rod connects the piston to the crankshaft. The connecting rods are generally made of steel for production engines, but can be made of aluminium (less weight and the ability to absorb high impact at the expense of durability) or titanium (for a combination of strength and weight at the expense of affordability) for high performance engines. For that reason, customized cutting tool services for the right working conditions are required.

## » Face Milling



TFM45SN



SNG(M)X  
Double-sided insert

## » Balance weight milling



Special cutter

## » Bolt hole machining



T-TAP H-DRILL DRILL-RUSH

## » Bore boring



Special boring tool

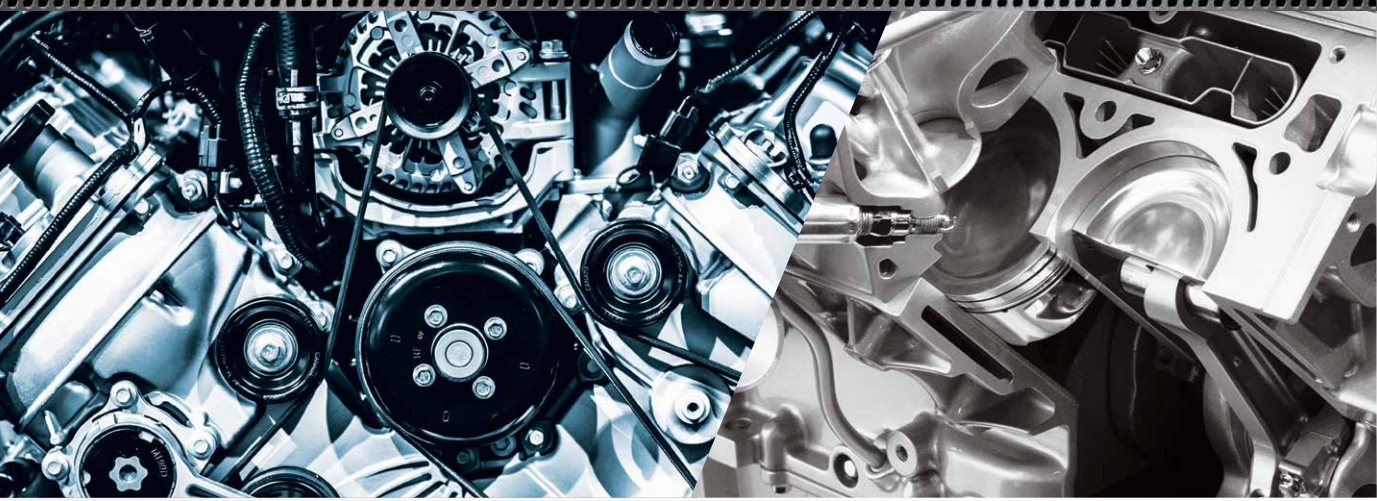
## » Pin bore drilling



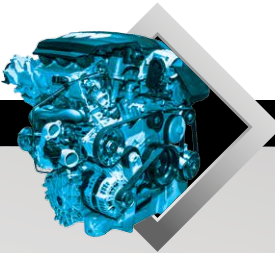
TOPDRILL



# Engine

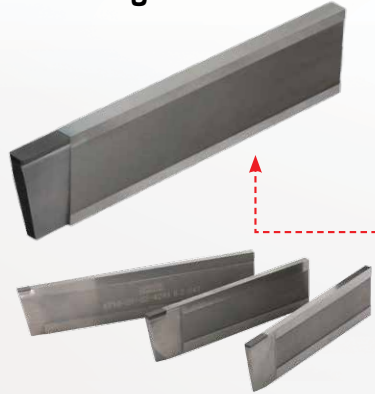


Engine Part



## Piston

➤ Grooving solution



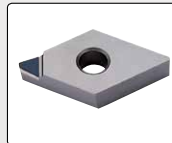
➤ Drilling solution



SOMT

TOPDRILL

➤ External turning

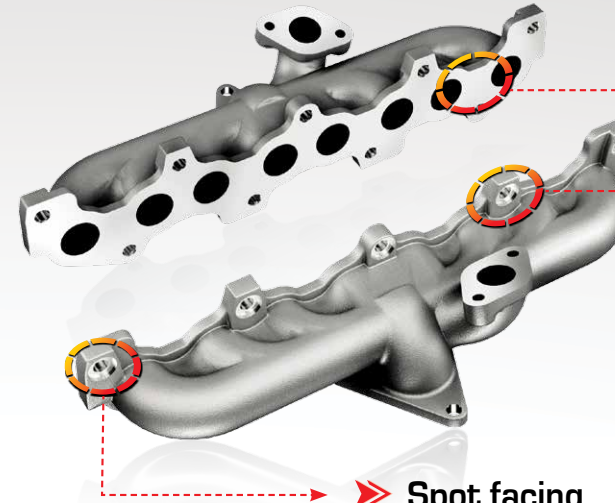


T-TURN  
TVJNR



T-BURST  
HIGH PRESSURE  
TTER-TB

## Manifold



➤ Face milling

CHASE2 HEPTA



Rough milling

14D-F45XN



XNHU

➤ Holmaking

➤ Spot facing



CHASEGUARD TSF (SPMG)

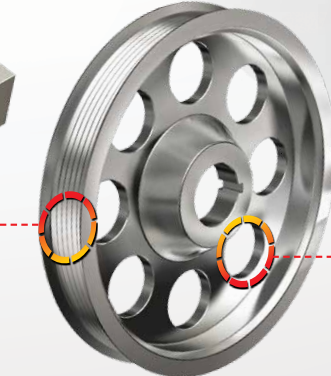
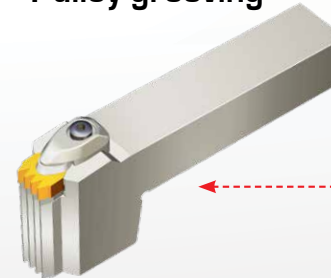


H-DRILL

DRILL-RUSH

## Pulley

➤ Pulley grooving

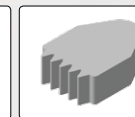
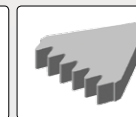


➤ Holmaking



TOPDRILL

Special inserts for pulley machining



VNMX

RHINOTURN



VNMG

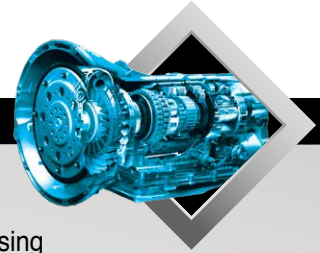
T-TURN



# Transmission



## Transmission Part



The transmission system in the automotive industry is a speed conversion system that generally has two types – the manual and the automatic gearbox. The transmission case that protects the transmission system and circulates the lubrication is mostly made of lightweight aluminum alloy parts.

The manual transmission is equipped with a connecting clutch plate and flywheel to control the power from the gearbox. The aluminum alloy clutch housing is assembled at the front of the transmission case to protect the clutch system. This transmits the power from the engine and connects it to the transmission and axles.

For the production of the transmission system, TaeguTec delivers economical and productive tailor-made tools that are suited to the relevant workpiece material and cutting condition.

## Transmission Case

### Face milling



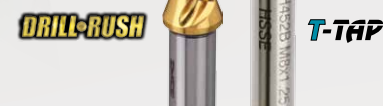
### Reaming



### Bearing bore boring



### Drilling & Tapping



## Clutch Housing

### Face milling



### Drilling & Tapping



### Special boring



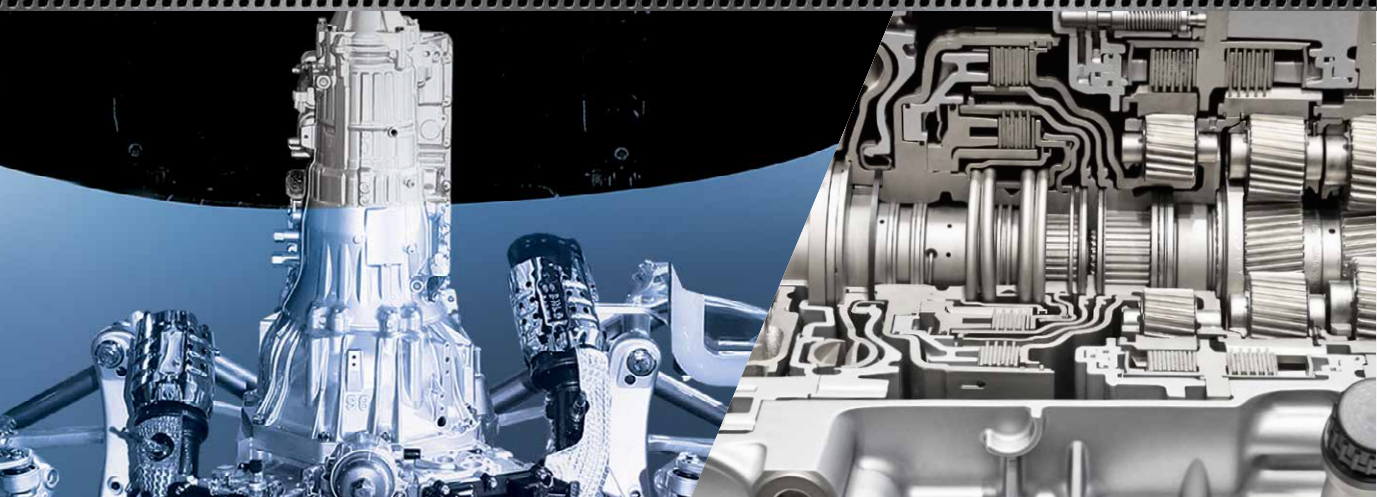
### Reaming



# Transmission



Transmission Part



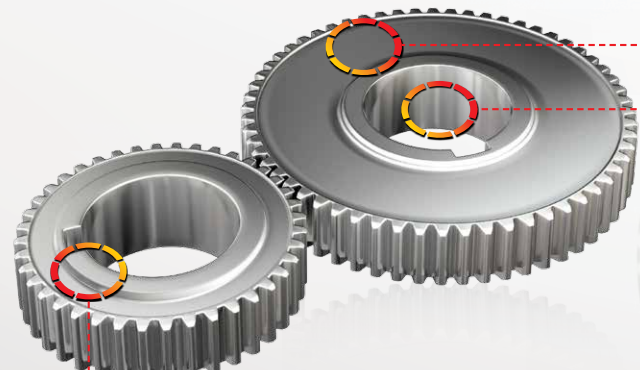
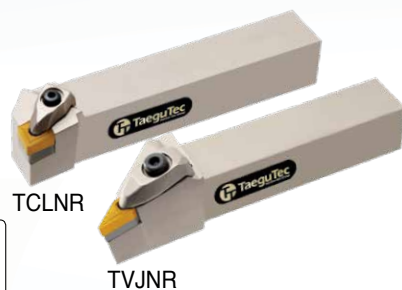
## Clutch Gear

➤ Face turning

**RHINOTURN**



**T-TURN**



➤ Face grooving



➤ Internal turning  
**T-TURN**

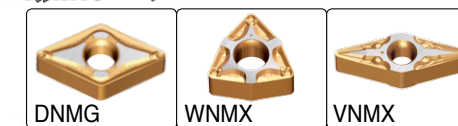


## Input & Output Shaft

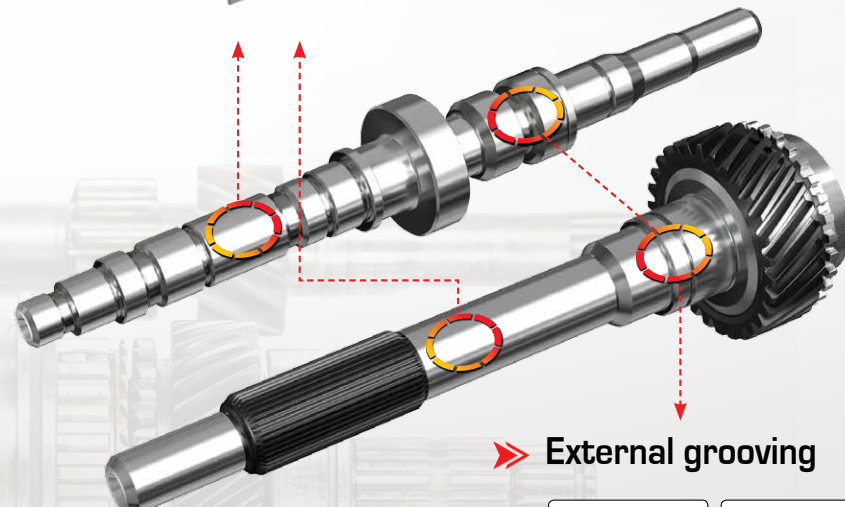
➤ External turning



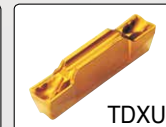
**RHINOTURN**



**T-TURN**



➤ External grooving



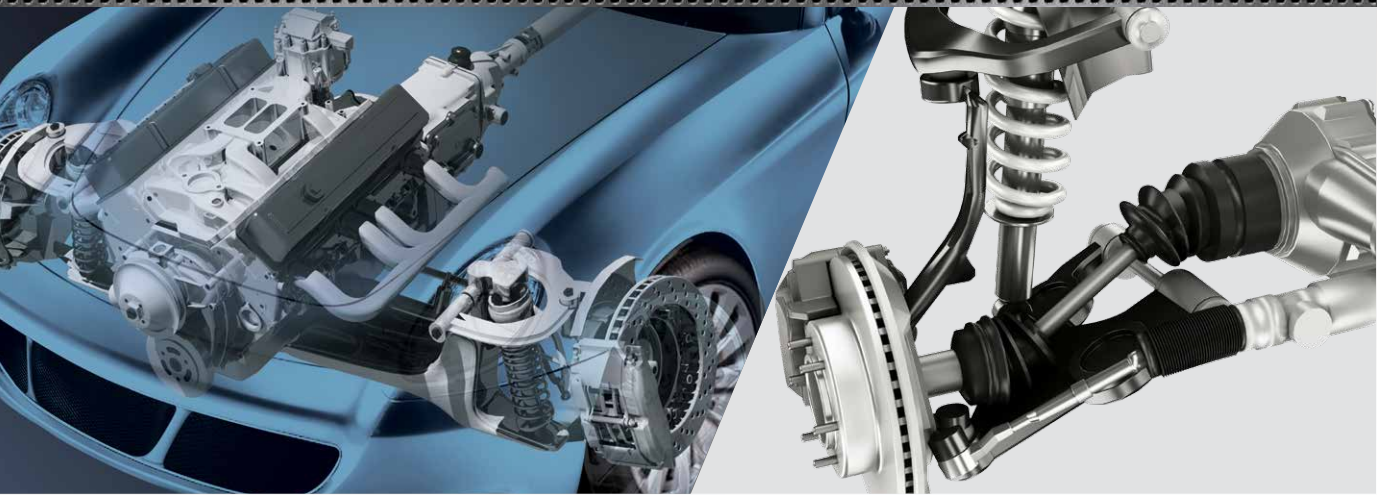
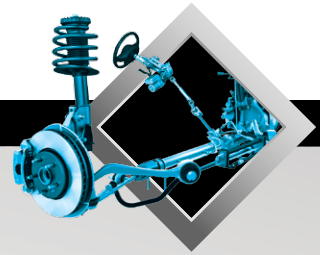
**QUAD-RUSH**  
TQHR



# Steering & Brake



Steering & Brake Part



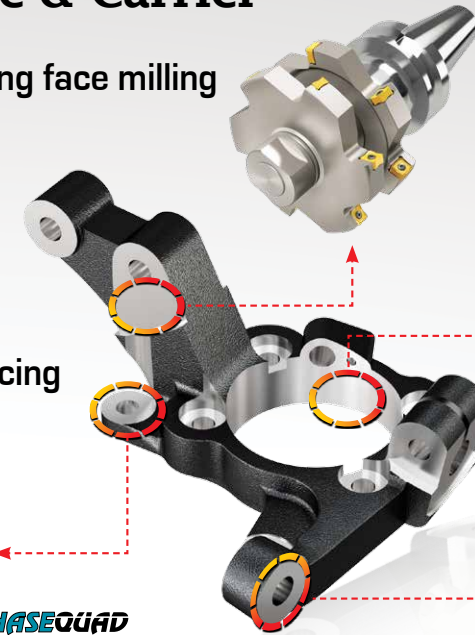
## Knuckle & Carrier

➤ Mounting face milling

➤ Center bore machining

➤ Spot facing

➤ Mounting hole drilling

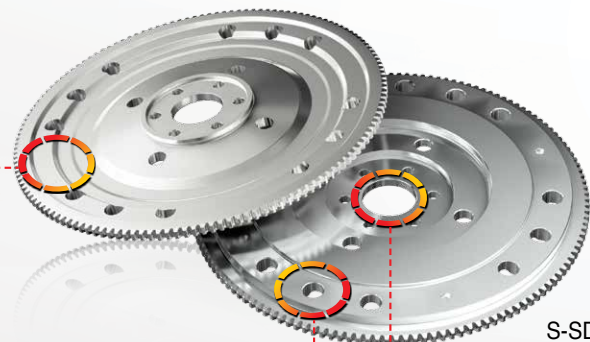
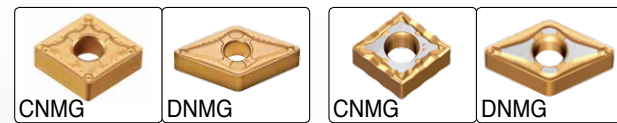
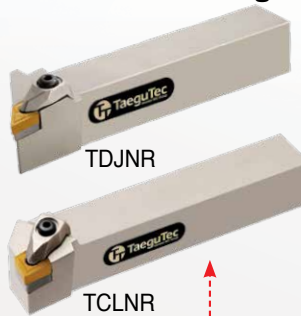


## Flywheel

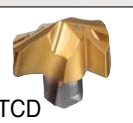
➤ External turning

**T-TURN**

**RHINOTURN**



➤ Chamfering & Drilling



➤ Internal boring **T-TURN**

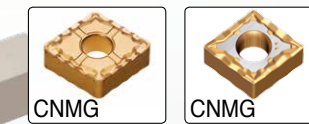
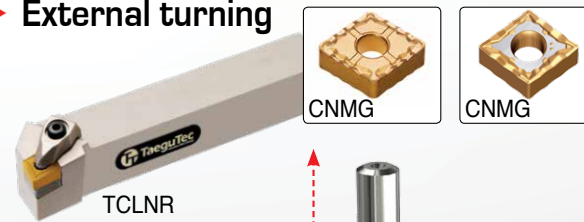


## CV Joint

➤ External turning

**T-TURN**

**RHINOTURN**



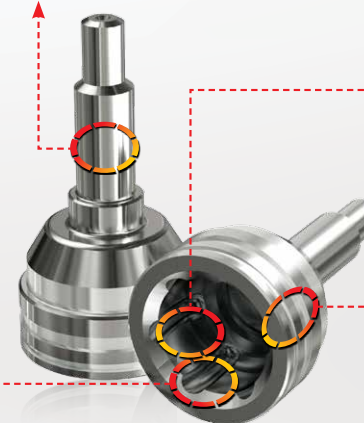
➤ Internal turning

**T-TURN**

**RHINOTURN**



➤ Profile milling



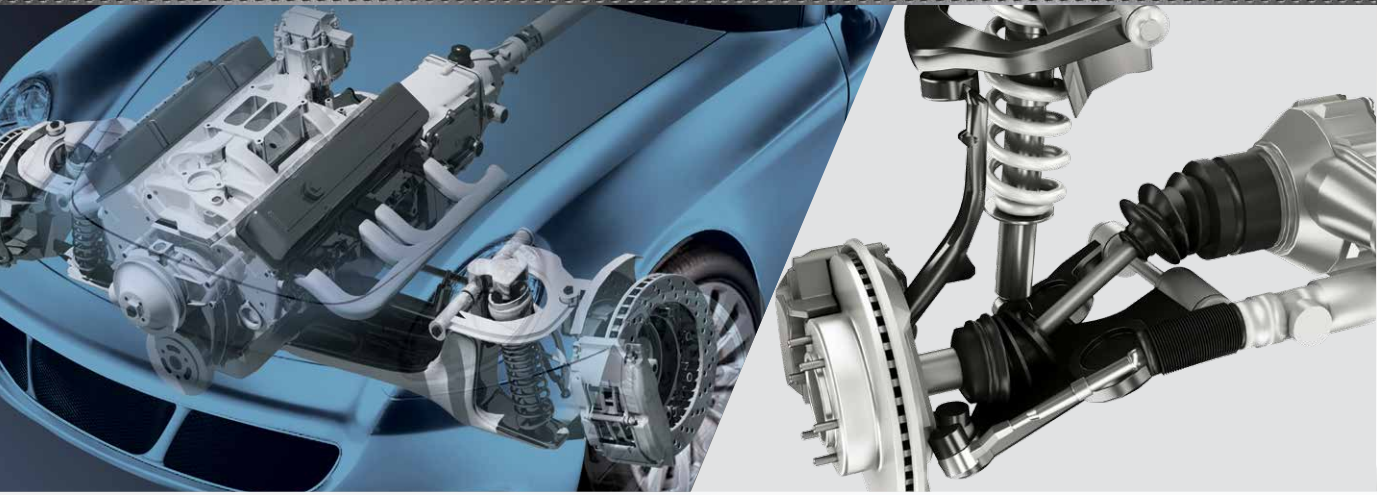
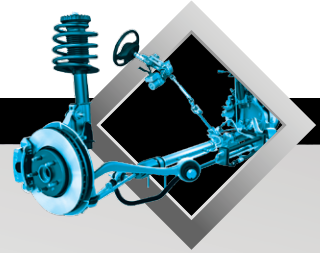
➤ External grooving



# Steering & Brake



Steering & Brake Part



## Hub & Outer Ring

## Yoke

External turning

**T-TURN** CNMG    **RHINOTURN** CNMG    WNMX

TCLNR

TWLNK

Internal turning **T-TURN** CCMT

S-SCLCR

Hole drilling

DRILL-RUSH

Hole drilling

TOPDRILL

Internal turning

**T-TURN** DCMT

S-SDUCR

Side milling

External turning

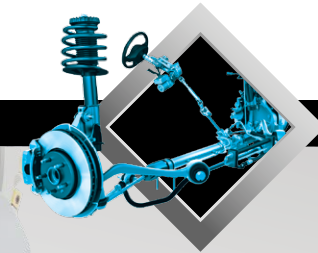
**T-TURN** VNMG    **RHINOTURN** VNMX

TVJNR

# Steering & Brake

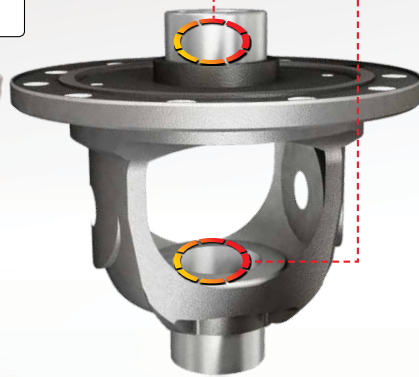


Steering & Brake Part



## Differential Case

➤ External turning



➤ Internal machining

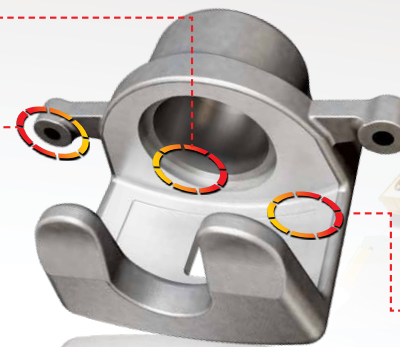


## Caliper

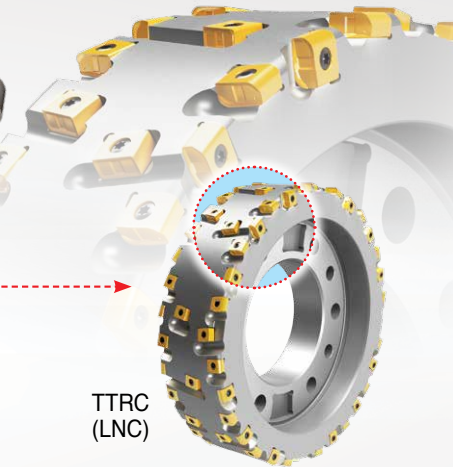
➤ Cylinder bore boring & grooving



➤ Mounting hole machining

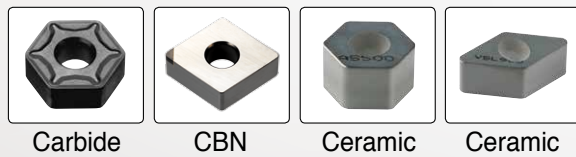


➤ Caliper body slotting



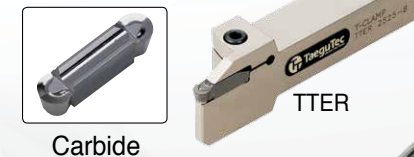
## Brake Disc & Drum

➤ Turning

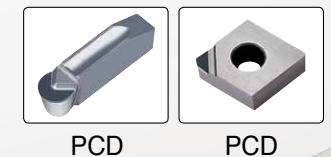


## Aluminum Wheel

➤ Rim turning



➤ Internal turning



# TaeguTec Global Network

## World Headquarters

**TaeguTec Ltd.**  
1040 Gachang-ro, Gachang-myeon,  
Dalseong-gun, Daegu 42936, KOREA  
Tel: +82-53-760-7640  
Web: <http://www.taegutec.com>

## Argentina

**TaeguTec Argentina SA**  
11 de septiembre 4237- Piso 7  
(C1429BJC) Ciudad Autónoma  
Buenos Aires, Argentina  
Tel: +54-11-4702-6222  
E-mail: [ventas@taegutec.com.ar](mailto:ventas@taegutec.com.ar)

## Australia

**TaeguTec Tools Pty Ltd.**  
Unit 36, 7 Anella Avenue,  
Castle Hill, NSW 2154, Australia  
Tel: +61-2-8850-2197  
E-mail: [sales@taegutec.com.au](mailto:sales@taegutec.com.au)

## Belarus Rep.

**Twing-M**  
3/2 Klumova Str, Minsk, 220009,  
Republic of Belarus  
Tel: +375-17-506-3238  
E-mail: [info@twing.by](mailto:info@twing.by)

## Belgium

**Ust-Tools S.P.R.L.**  
Parc Industriel Des Hauts  
Sarts1 Avenue,145  
4040 Herstal, Belgium  
Tel: +32-42-480-481  
+32-475-783-204  
E-mail: [ustools@skynet.be](mailto:ustools@skynet.be)

## Brazil

**TaeguTec Brasil Ltda.**  
Rua Tito, 104-Lapa-Cep 05051-000  
São Paulo, Brasil  
Tel: +55-11-3868-6032  
E-mail: [vendas@taegubrasil.com.br](mailto:vendas@taegubrasil.com.br)

## Bulgaria

**Tekotek BG Ltd.**  
Alexander Stamboliyski No 31,  
7700 Targovishte, Bulgaria  
Tel: +359-878-05-1818  
E-mail: [tekotekbg@gmail.com](mailto:tekotekbg@gmail.com)

## Chile

**Cutting Tools Chile E.I.R.L.**  
Alcalde Pedro Alarcón N° 765,  
San Miguel, Santiago - Chile  
Tel: +56-2-553 6944  
+56-2-552 1181  
E-mail: [ventas@cuttingtools.cl](mailto:ventas@cuttingtools.cl)

## China

**TaeguTec China**  
RM 1205, Huishang Office Building,  
No.1286 of Minsheng RD,  
Pudong New District, Shanghai, China  
PC: 200135  
Tel: +86-21-5106-1260  
E-mail: [mail@taegutec.com.cn](mailto:mail@taegutec.com.cn)

## Croatia

**Intehna Zagreb d.o.o.**  
Samoborska cesta 255, 10090  
Zagreb-Susedgrad, Croatia  
Tel: +385-1-3436-919  
E-mail: [info@intehna.hr](mailto:info@intehna.hr)

## Czech Rep.

**TaeguTec ČR s.r.o.**  
Domažlická 180a, CZ-31800 Plzeň,  
Czech Rep.  
Tel: +420 373 720 999  
E-mail: [top@taegutec.cz](mailto:top@taegutec.cz)

## Denmark

**TaeguTec Scandinavia A/S.**  
Omogade 8, DK-2100 Copenhagen,  
Denmark  
Tel: +45-7022-0103  
E-mail: [tts@taegutec.dk](mailto:tts@taegutec.dk)

## Finland

**Knorring OY AB**  
Mestarintie 4 FI-01730 Vantaa, Finland  
Tel: +358 9 560 41  
E-mail: [knorring@knorring.fi](mailto:knorring@knorring.fi)

## France

**Ingersoll France**  
22 Rue Albert Einstein  
77420 Champs Sur Marne, France  
Tel: +33 (0)1 64 68 45 36  
E-mail: [info@ingersoll-ilmc.fr](mailto:info@ingersoll-ilmc.fr)

## Germany

**Ingersoll Werkzeuge GmbH**  
Kalleiche Ring 21-25, D-35708  
Haiger, Germany  
Tel: +49-2773-742 146  
E-mail: [info@ingersoll-IMC.de](mailto:info@ingersoll-IMC.de)

## Greece

**Technotools-Fakitsas Georgios Co.**  
25th Martiou & Thrakis 15, 15235 Vrillisia,  
Athens, Greece  
Tel: +30-2-10-832-0752  
E-mail: [Giorgos@technotools.gr](mailto:Giorgos@technotools.gr)

## Hungary

**TaeguTec Hungary Kft.**  
1142 Budapest, Kassai u.151.  
Tel: +36-1-273-29-52  
E-mail: [info@taegutec.hu](mailto:info@taegutec.hu)  
Web: <http://www.taegutec.hu>

## India

**TaeguTec India Pvt. Ltd.**  
No.120, Bommasandra Industrial Area,  
Phase IV, Bangalore-560 099, India  
Tel: +91-08-49013000  
E-mail: [sales@taegutec-india.com](mailto:sales@taegutec-india.com)

## Indonesia

**PT. TaeguTec Indonesia**  
Easton Commercial Center  
Jl. Guntung Paderman Blok B no. 12  
Cikarang Selatan-Bekasi 17550, Indonesia  
Tel: +62-21-29093176/78/79  
E-mail: [sales@taegutec.co.id](mailto:sales@taegutec.co.id)

## Ireland

**Hardmetal Machine Tools Ireland Ltd.**  
Dargan House, Duncairn Terrace,  
Bray Co. Wicklow, Ireland  
Tel: +353-1-286-2466  
E-mail: [sales@hardmetal.ie](mailto:sales@hardmetal.ie)

## Italy

**Ingersoll TaeguTec Italia S.R.L.**  
Via Montegrappa 78, 20020 Arese (MI), Italy  
Tel: +39 02.99.76.67.00  
E-mail: [taegutec@taegutec.it](mailto:taegutec@taegutec.it)

## Japan

**TaeguTec Japan Ltd.**  
- Osaka / Head office  
Senri Asahi Hankyu Bldg. 15F  
1-5-3 Shinsenri-Higashimachi  
Toyonaka-shi Osaka 560-0082, Japan  
Tel: +81-6-6835-7731  
E-mail: [taegutec@taegutec.co.jp](mailto:taegutec@taegutec.co.jp)  
Website: <http://www.taegutec.co.jp>

- Nagoya / Branch office  
Tel: +81-52-745-2451

- Tokyo / Branch office  
Tel: +81-3-5753-6281

## Lithuania

**UAB TTMIT**  
R.Kalantos str. 161  
LT-52315 Kaunas, Lithuania  
Tel: +370-37-328487  
E-mail: [sigitas@ttmit.lt](mailto:sigitas@ttmit.lt)

## Malaysia

**TaeguTec Tooling Systems Malaysia Sdn. Bhd**  
No.23-1&2, Jalan Anggerik Vanilla  
BF 31/BF Kota Kemuning, Seksyen 31  
40460 Shah Alam Selangor Darul, Malaysia  
Tel: +603-5131-7514  
E-mail: [info@taegutec.com.my](mailto:info@taegutec.com.my)

## The Netherlands

**T.C.E.**  
Kennedylaan 14, 5466 AA, Veghel,  
The Netherlands  
Tel: +31 (413) 38 83 10  
E-mail: [info@taegutec.nl](mailto:info@taegutec.nl)  
Website: <http://www.taegutec.nl>

## New Zealand

**TT Pacific**  
1/501 Mt. Wellington Highway  
Sylvia Park, Auckland, New Zealand 1060  
Tel: +64-9-573-1280  
E-mail: [sales@iscar.co.nz](mailto:sales@iscar.co.nz)

## Norway

**Svea Service AS**  
Graaeterudveien 20 No-3036 Drammen,  
Norway  
Tel: +47-32-277-750  
E-mail: [per.martin.bakken@svea.no](mailto:per.martin.bakken@svea.no)

## Pakistan

**Dynamic Tooling Services**  
Office No. 304, 3rd Floor, Azeem  
Mansion, Fazal-ul-Haque Road,  
Blue Area, Islamabad-44000, Pakistan  
Tel: +92-51-2150382  
+92-51-2150383  
E-mail: [info@dts.com.pk](mailto:info@dts.com.pk)

## Philippines

**Colt Commercial Inc.**  
Suite 508 Padilla delos Reyes Bldg.  
232 Juan Luna St., Binondo, Manila  
Philippines  
Tel: +63-2-244-9756  
E-mail: [cyrus@colt.com.ph](mailto:cyrus@colt.com.ph)

## Poland

**TaeguTec Polska Sp. z o.o.**  
Ul.Nenckiego 136  
52-223 Wroclaw, Poland  
Tel: +48 71 785 40 85  
E-mail: [sales@taegutec.pl](mailto:sales@taegutec.pl)

## Portugal

**Hexatool, S.A.**  
Rua Casal Galego, No. 40.44  
2430 Marinha Grande, Portugal  
Tel: +351-244-550424/5  
E-mail: [hexatool@hexatool.com](mailto:hexatool@hexatool.com)

## Romania

**SC TaeguTec Tools SRL**  
Splaiul Unirii, nr. 4, Bl. B3, 5th Floor,  
Office 5.1, District 4., Bucharest,  
Romania, 040031  
Tel: +4021 210 3108  
E-mail: [marian.luca@taegutec.ro](mailto:marian.luca@taegutec.ro)

## Russia

**TaeguTec Russia**  
123290, Russia, Moscow,  
2nd Magistralnaya str, 8A, building 5  
Tel: +7-495-269-7917  
E-mail: [sales@taegutec.ru](mailto:sales@taegutec.ru)

## Serbia

**Intehna Beo d.o.o.**  
Autoput 22, 11080 Zemun, Serbia  
Tel: +381-11-3149-092  
E-mail: [info@intehna.rs](mailto:info@intehna.rs)

## Singapore

**TT Tooling Systems**  
BK502, #03-823, Jurong West Avenue 1,  
Singapore 640502  
Tel: +65-6-4254918  
E-mail: [kltan@sirnotool.com.sg](mailto:kltan@sirnotool.com.sg)

## Slovakia

**TaeguTec Slovakia, s.r.o.**  
Bytická 2/44 010 01 Žilina  
Slovak Republic  
Tel: +421 41 7000056  
E-mail: [matus@taegutec.sk](mailto:matus@taegutec.sk)

## Slovenia

**Intehna d.o.o.**  
Špruha 40, SI-1236, Trzin, Slovenia  
Tel: +386-1-580-9260  
E-mail: [info@intehna.si](mailto:info@intehna.si)

## South Africa

**TaeguTec South Africa (Pty) Ltd.**  
P.O. Box 3121, Springs, 1560  
43 South Main Reef Road,  
New Era Springs Gauteng, South Africa  
Tel: +2711-362-1500  
E-mail: [info@taegutec.co.za](mailto:info@taegutec.co.za)

## Spain

**TaeguTec Spain S.L**  
Miquel Servet, 35 P.I.Bufalvent  
08243 Manresa (Barcelona), Spain  
Tel: +34-93-873-7309-10  
E-mail: [info@taegutec.es](mailto:info@taegutec.es)

## Sweden

**SMV Verktyg AB**  
Parkgatan 6  
SE-333 31 Smalandsstenar, Sweden  
Tel: +46-371-343-48  
E-mail: [verktyg@smv.se](mailto:verktyg@smv.se)

## Taiwan

**TaeguTec Taiwan**  
3F, No.56, Min Tai St., Ku-Shan Dist.,  
Kaohsiung City 804, Taiwan (R.O.C.)  
Tel: +886-7-5505966  
E-mail: [info@tw.taegutec.com](mailto:info@tw.taegutec.com)

## Thailand

**TaeguTec(Thailand) Co.,Ltd.**  
6/177 M.7 Srinakarin Rd.,  
T.Bangmuang, A.Muangsamutprakarn,  
Samutprakarn 10270, Thailand  
Tel: +662-759-9300  
+662-759-9172  
E-mail: [info@taegutecthai.co.th](mailto:info@taegutecthai.co.th)

## Turkey

**TaeguTec Turkey**  
TOSB Otomotiv Yan Sanayi Ihtisas  
Organize Sanayi Bolgesi  
1.Cad. 15.Sokak No:9 41420 Şekerpınar  
Çayırova/KOCAELI, Türkiye  
Tel: +90-850-201-69-00  
E-mail: [info@taegutec.com.tr](mailto:info@taegutec.com.tr)

## Ukraine

**TaeguTec Ukraine**  
40-b, Pushkina avenue, Dnepropetrovsk  
Ukraine, 49006  
Tel: +380-56-790-84-09  
E-mail: [td@taegutec.com.ua](mailto:td@taegutec.com.ua)

## United Arab Emirates

**A.F.Husain**  
Al Ghurair W/H Shed No. 60  
Al Quoz Industrial Area  
P.O. Box: 4007 Dubai, UAE  
Tel: +971-4-3400034  
E-mail: [info@afh-tools.com](mailto:info@afh-tools.com)

## United Kingdom

**TaeguTec UK Ltd.**  
Waterside, Grange Park, Wetherby,  
Leeds, LS22 5NB, United Kingdom  
Tel: +44-1937-589-828  
E-mail: [info@taegutec.co.uk](mailto:info@taegutec.co.uk)

## U.S.A.

**Ingersoll Cutting Tools**  
845 S Lyford Road Rockford,  
IL 61108-2749, U.S.A.  
Tel: +1-815-387-6600  
E-mail: [info@ingersoll-ilmc.com](mailto:info@ingersoll-ilmc.com)

## Vietnam

**DMC Technology Co., Ltd.**  
No. 109, Cong Hoa Street, Ward 12,  
Tan Binh District, Ho Chi Minh City,  
Vietnam.  
Tel: +84-8-62925556  
E-mail: [info@dmctech.com.vn](mailto:info@dmctech.com.vn)