

Die Mold I n d u s t r y

ISCAR's
Solutions for the
Die and Mold
Industries



Make

Rig

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ISCAR Productivity Team
for ***Fast Metal Removal***

The Global Network



ISCAR Productivity Team for *Fast Metal Removal*

A Global Metalworking Company

In a world of different languages and different mentalities, it is important to have a fully equipped, knowledgeable local supplier to meet your needs.

ISCAR knows this. We have subsidiary offices and agents located in 52 major industrial countries. In some of the larger countries, regional offices have been opened to bring ISCAR personnel and facilities as close as possible to customer production sites.

Many of our subsidiaries have fully equipped training centers. These centers are dedicated to providing a local location where metalworking personnel can be trained in the latest techniques and products for metal removal.

Die Mold Industry



ISCAR has global manufacturing facilities in each of the following countries:

In Europe

-  France
-  Germany
-  Italy
-  Spain
-  Switzerland
-  Turkey
-  Hungary
-  Slovenia

In the Americas

-  Argentina
-  Brazil
-  United States

In Asia

-  South Korea
-  China
-  Israel

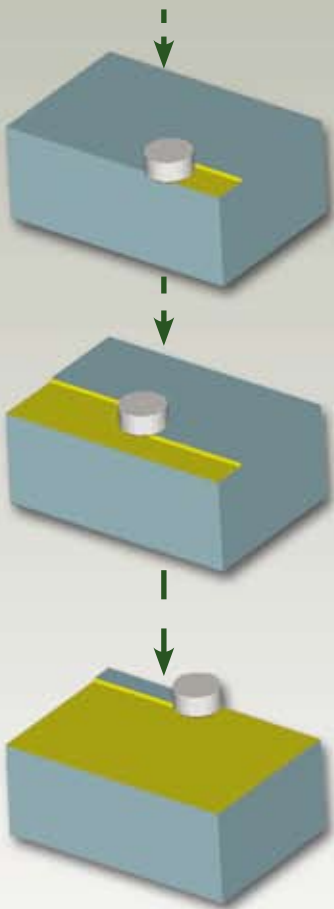
Machining Process

1



HELIDO
845 LINE

Facing

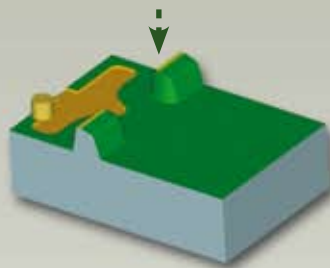


2



HELIDO
UPFEED LINE

Roughing

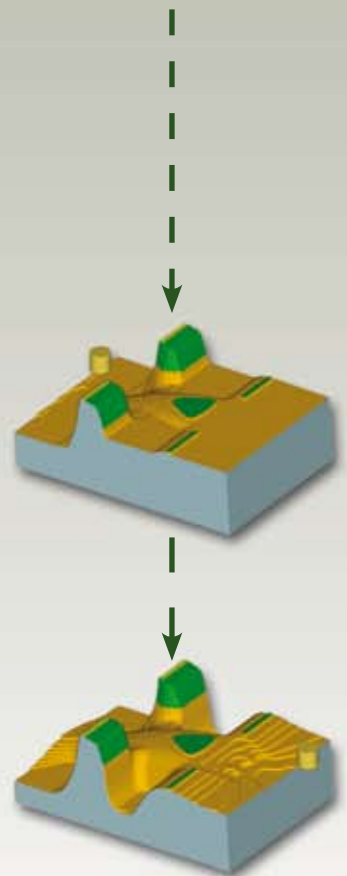


3



MILLSHRED

Roughing





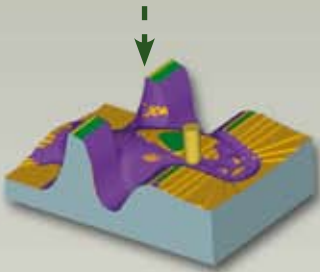
Die Industry

4



DROPMILL

Semi-Finishing

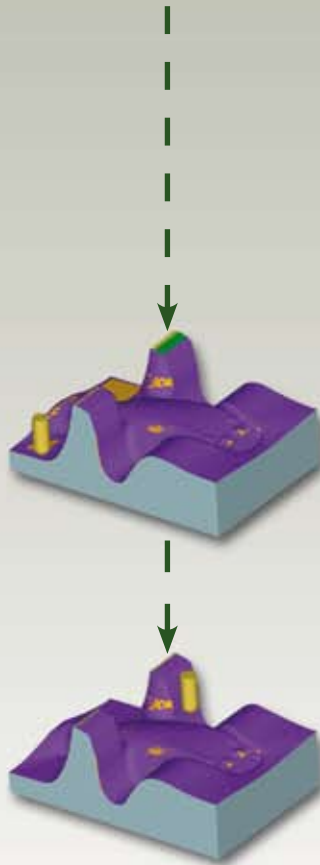


5



BALLPLUS

Semi-Finishing

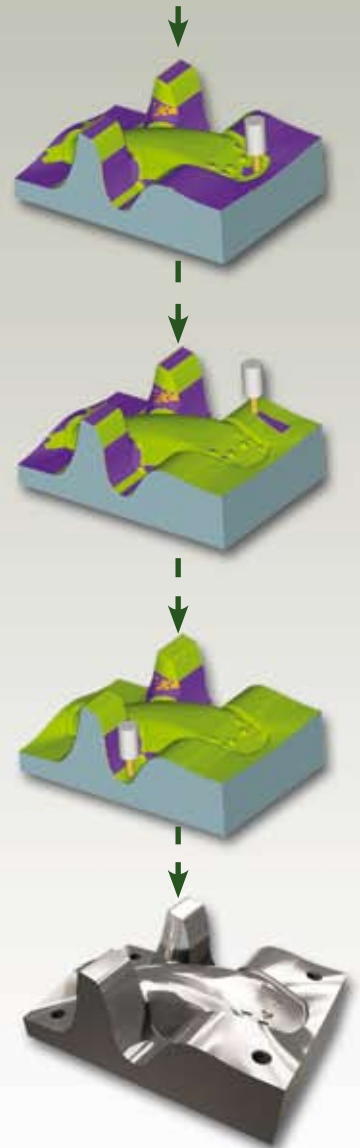


6



MULTI-MASTER

Finishing



Round Profiling Inserts



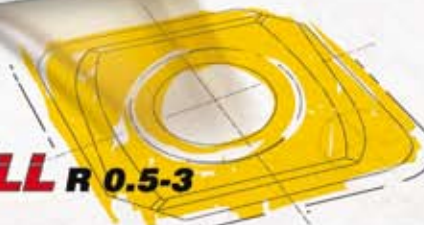
Die Mold I n d u s t r y



BALLPLUS R 6-12.5



MULTI-MASTER R 3-10



TORMILL R 0.5-3

Solid Carbide Endmills



PROFILING

The complete solution for profiling operations on hard materials up to 70 HRC for the die and mold industry. Ball nose and sphere type with a large variety of shapes, lengths and diameters in a range of 0.4-25mm.

The tools are made of a new ultra-fine substrate with AlTiN PVD coating that can be used for High Speed Machining (HSM) in dry cutting – very useful, especially in the die and mold industry.





Die Mold

I n d u s t r y



SOLIDMILL

Micrograin solid carbide and ball nose endmills are available in the range of 0.4 to 20 mm. Extended tool life can be expected due to the improved cutting edge design and the most advanced TiCN and TiAlN PVD coatings.

CHATTERFREE

SOLID MILL LINE

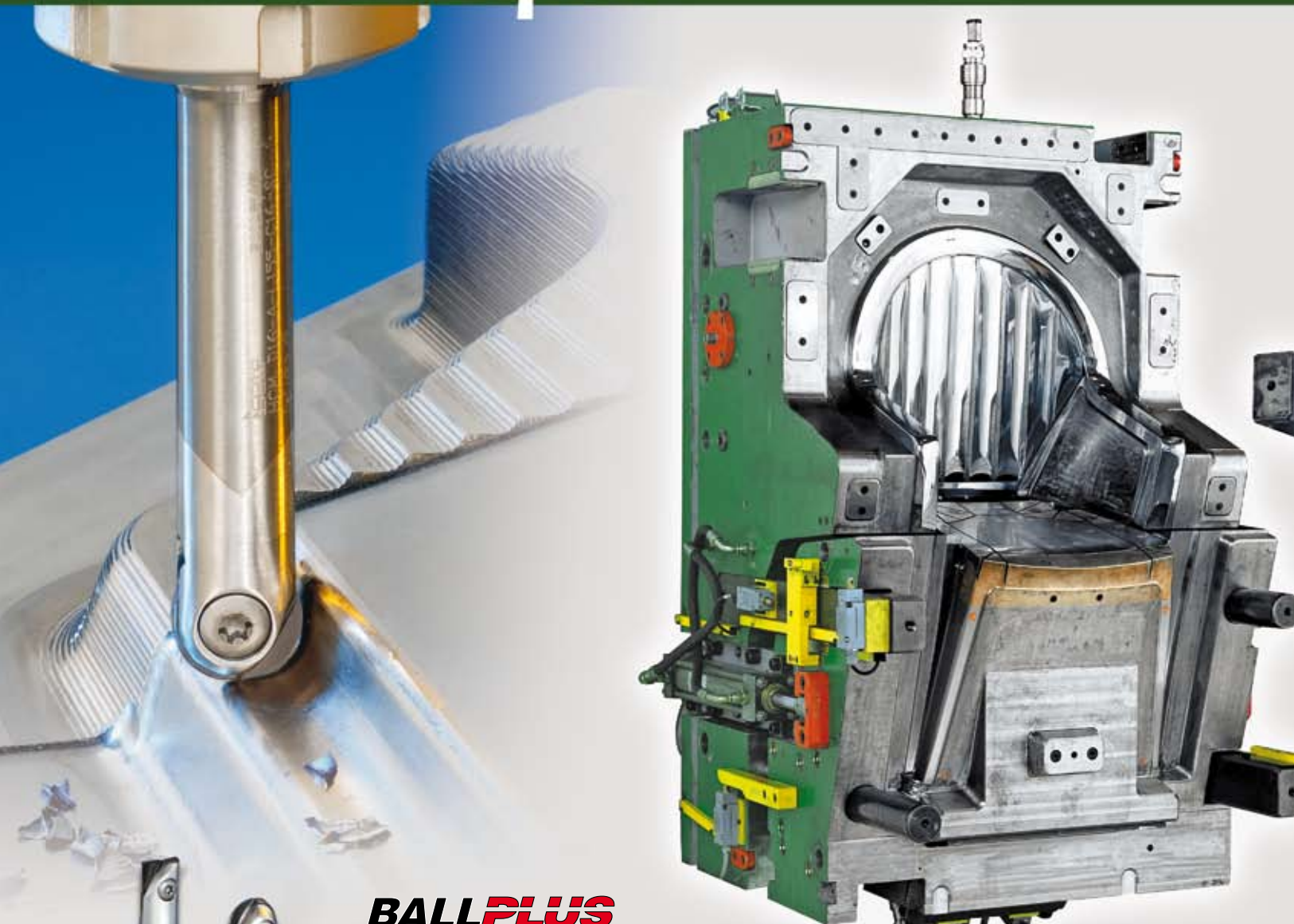
CHATTER FREE Endmills
Maximum stock removal rate and reduced cycle time in most milling operations. Their unique ground geometry provides excellent surface finish and long tool life, while machining at high material removal rates.

Solid Carbide Endmills

Can be used for up to 2xD full slot machining of alloy and stainless steel, titanium and exotic materials.



Ball Shaped Inserts



BALLPLUS

BALLPLUS is a multifunction system comprised of various shank options and 6 milling head types. Each shank has the ability to carry any one of the milling head types. Clamping and indexing of the milling heads is very simple. It can be done while the tool remains clamped on the machine - therefore no setup time is necessary after indexing. A unique pocket design enables a very firm insert clamping, edge position accuracy and no insert pullout problems. **BALLPLUS** is an ideal system for reducing tool inventory. It is an attractive option for the die and mold industry and for any industry which uses many different endmills for its production applications.



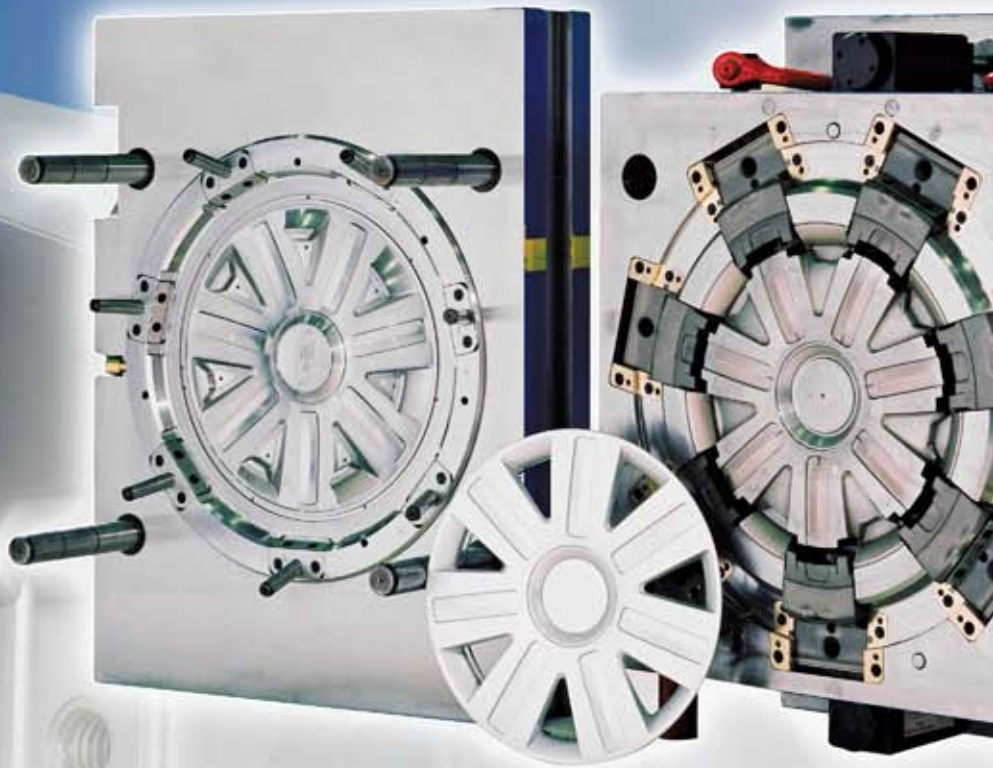
Die Mold Industry



***DROP*MILL**

This new ball nose endmill performs semi-finishing and finishing applications at high feed rates. Its unique design provides a fully-effective cutter with two cutting edges, even for small depths of cut. The new BCR D.. inserts can withstand the strong forces resulting from high feed. They are produced with a protrusion on the bottom that mounts into a matching slot in the pocket. The ability to maintain the high precision of the cutting edge location results from this very firm clamping that relieves most of the stresses normally exerted on the clamping screw.

Milling Innovations



MULTI-MASTER

A variety of milling head configurations ball nose, square shoulder, chamfering and slitting cutter – are known as **MULTI-MASTER**. This system features ISCAR's unique threaded carbide heads for superior performance, short indexing time (the tool remains clamped in the machine) and improved economy. Each cutting head has an advanced pressed shape with sharp ground cutting edges. **MULTI-MASTER** combines steel shanks with indexable carbide milling heads for long life and repeatability in high speed machining.

Die Mold Industry

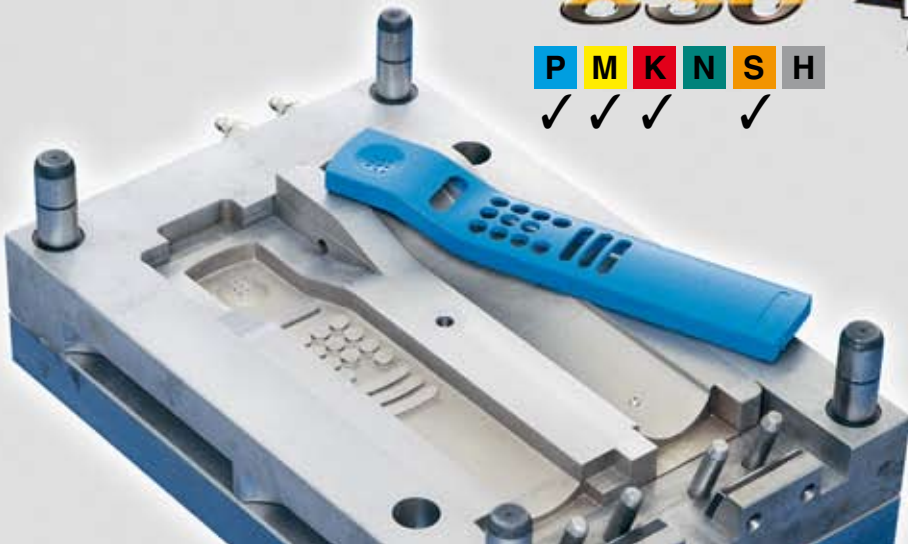


SUMOMILL 290 LINE

The **SUMOMILL** tools T290... feature high durability and outstanding tool life due to the tangential orientation of the inserts in their pockets and higher tooth density. The T290 tools can run at higher table feeds, producing excellent surface finish and no mismatch.



P M K N S H
✓ ✓ ✓ ✓



Double Sided Inserts for High Feeds

HELIDO
845 LINE

This unique family of 45° milling cutters can carry in their pockets either the S845 SNMM 1306...-square, double-sided inserts with 8 cutting edges or the ONMM 0506...-octagonal, double sided inserts with 16 cutting edges; the most economical insert regarding price per cutting edge. Both inserts have helical cutting edges and positive rake angles, featuring low power consumption and excellent surface finish.

**NEW
PRODUCT**

3P
3 CAR PREMIUM PRODUCTIVITY PRODUCTS
SUMO TEC



SUMO TEC
810

P M K N S H
✓ ✓ ✓





Die Mold Industry



HELIDO 490 LINE

The H490 is a family of tools for 90° milling. The HELI H490 ANKX rectangular inserts have **4 helical right-hand cutting edges**. They are available in 9, 12, and 17 mm cutting edge lengths. Their construction is very thick and strong. The insert is clamped into a dovetail inclined pocket which provides a very rigid clamping and has a wiper which leaves an excellent surface finish. Due to its strong construction, a unique chip deflector with positive cutting angles and excellent grade combinations, this family features high durability, low cutting forces and long tool life.



SUMO TEC 808

- | | | | | | |
|---|---|---|---|---|---|
| P | M | K | N | S | H |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

High Feed Milling



HELITANG 490 LINE

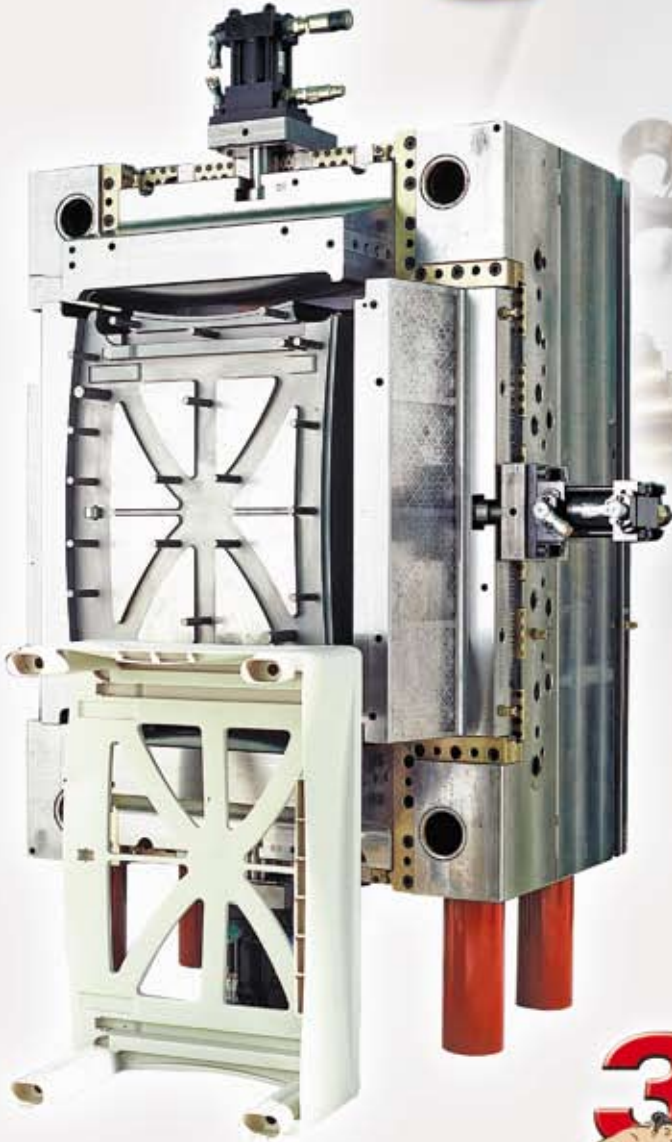
HELI T490 uses tangentially clamped inserts with **four right-hand helical** cutting edges. The T490 milling inserts are available in 8, 13 and 16 mm cutting edge lengths. The T490 LN... inserts, due to their small sizes and tangential orientation in the pocket, enable tool design with larger core diameters than tools with regular, radially oriented inserts. The most advanced insert design and production technology result in a soft and clean cut due to insert helical cutting edges and positive rake angles.



SUMO TEC
830

P	M	K	N	S	H
✓	✓	✓	✓		

Die Mold Industry



NEW PRODUCT



SUMO TEC
808

P M K N S H
✓ ✓ ✓ ✓ ✓ ✓



HELIDO
UPFEED LINE

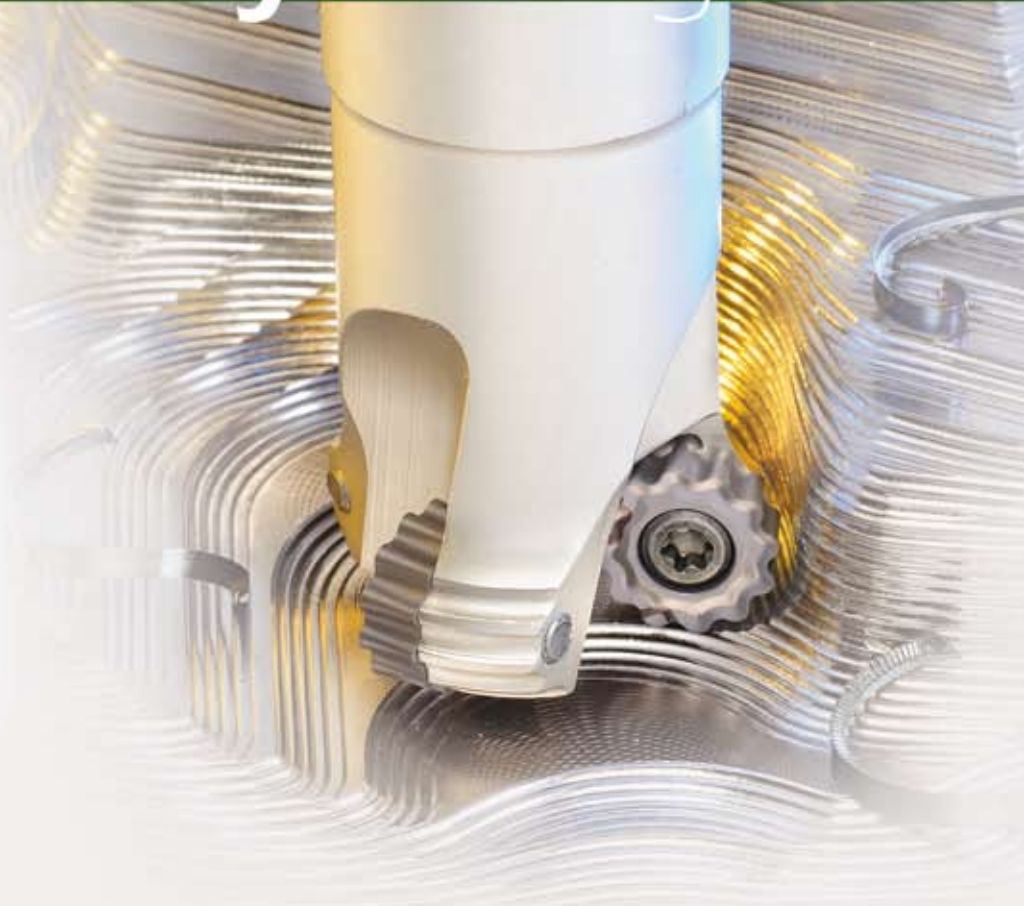
H600 WXC08... **HELIDO FEEDMILL** trigon, double-sided, 6-edged insert combines **HELIDO's** strength and **FEEDMILL's** special geometry to facilitate milling at very high feed rates of up to 3.5 mm/tooth for high volume metal removal.

Deep Cavity Milling



MILLSHRED

MILLSHRED is a family of milling cutters that can carry either round inserts with a serrated cutting edge or regular round inserts. When very deep cavities are machined, chip evacuation (even with air blow) is very problematic due to chip shape, weight and size. In deep cavities there is a tendency for long chips to become trapped and then they are prone to be re-cut. When using **MILLSHRED**, small chips are produced, which have fewer tendencies to be re-cut. The insert has four indexing orientation options. The serrations on the insert's cutting edge were designed so they overlap, providing a fully-effective cutter configuration.





Die Mold I n d u s t r y



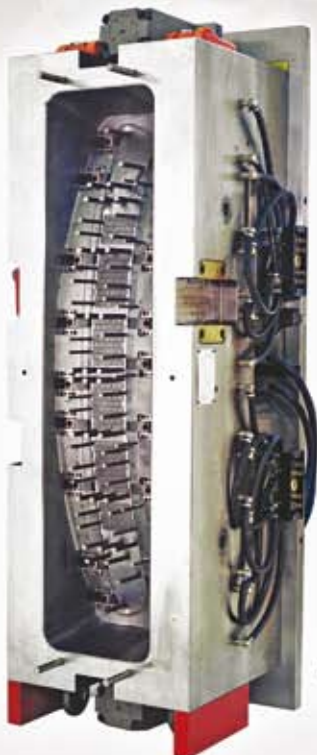
TANGPLUNGE PLUNGING LINE

The HTP...-R side plunger carries size 10, 16 tangentially clamped inserts on the frontal face of the tools. The new inserts are double-sided with 4 cutting edges. They were designed with a positive rake face for reduced cutting forces and excellent chip flow. The tools have coolant holes and they feature high durability. They are used mainly for plunging but can be used also for face milling up to 3 mm DOC, producing an outstanding surface finish.

**NEW
PRODUCT**

SUMO TEC
830

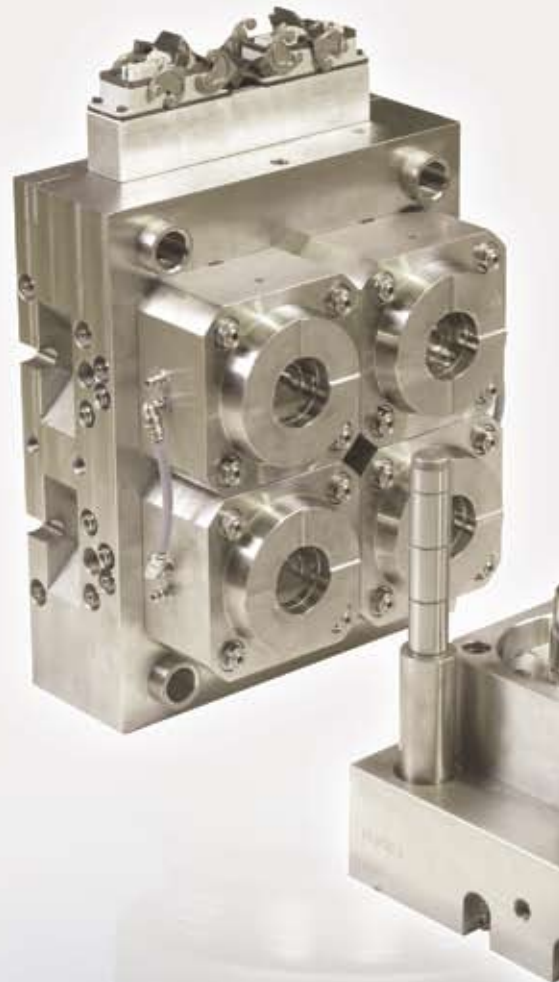
P M K N S H
✓ ✓ ✓ ✓



Sharp and Positive Aluminum Inserts

MULTI-MASTER

A variety of milling head configurations - ball nose, square shoulder, chamfering and slitting cutter - are known as **MULTI-MASTER**. This new system features ISCAR's unique threaded carbide heads for superior performance, short indexing time (the tool remains clamped in the machine) and improved economy. Each cutting head has an advanced shape with sharp ground cutting edges.



SOLIDMILL

ISCAR's **SOLIDMILL** family of solid carbide endmills is for machining aluminum. The endmills are 3 flute, 45° helix, medium length and they are able to perform shouldering, slotting and drilling applications. These **SOLIDMILL** endmills feature very sharp cutting edges and an excellent surface finish, which are essential for cutting aluminum and for avoiding built-up edge. The 45° helix with the spacious chip gullets are large for very high stock removal, leaving an excellent surface finish.



Die Mold Industry

GOLD*ALU

GOLDALU tools have an improved pocket design and are TiN coated. This coating provides high surface hardness, which improves wear resistance and durability, prevents aluminum from adhering to the cutter and gives the tool an impressive appearance.



HM90 APCR 2206... HM90 APCR 1605...

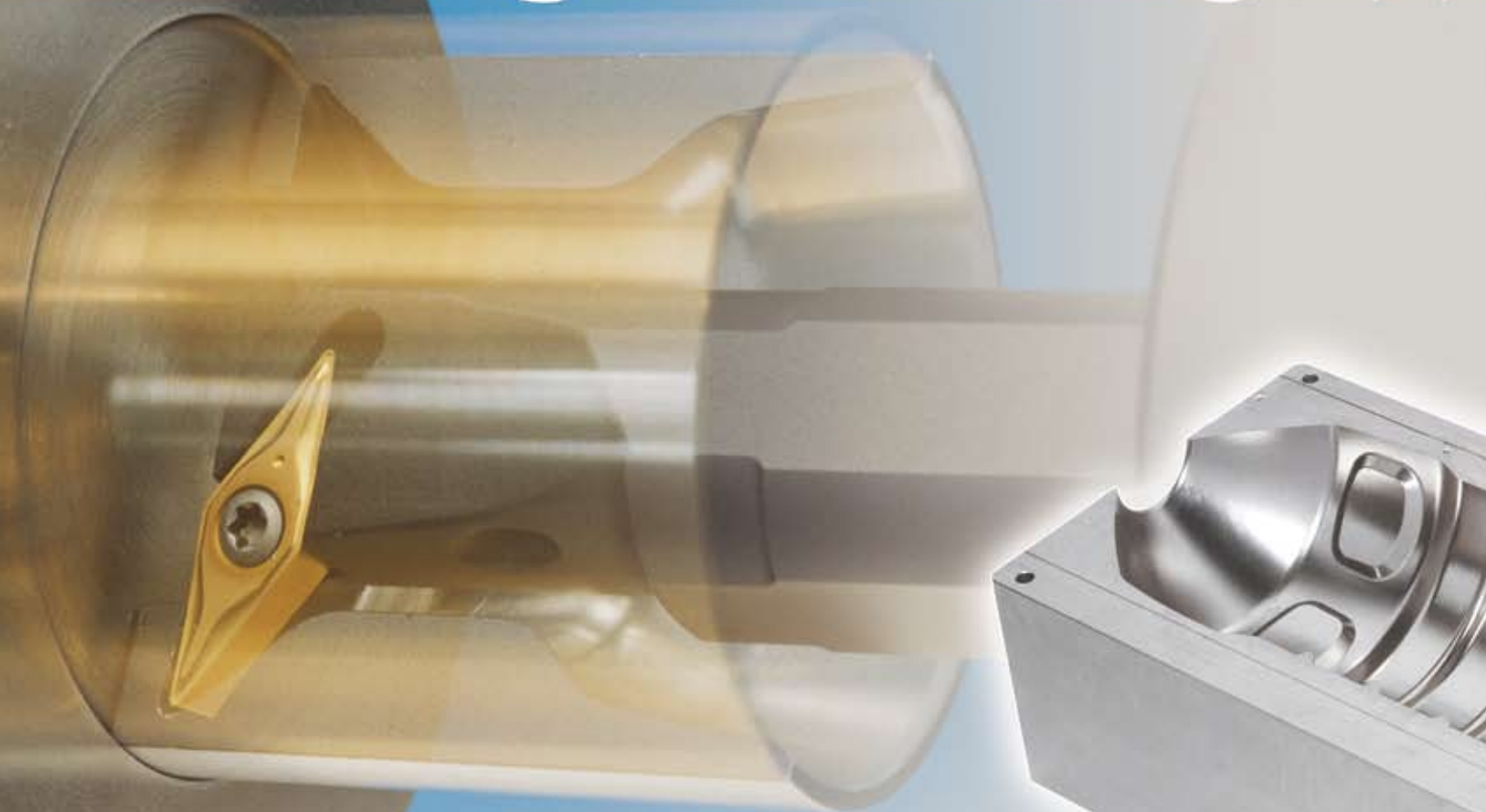


APCR R=0.2 to 6.4 mm

HELIALU

HELIALU inserts have sharp helical cutting edges, polished rakes and a wide range of different corner radii. They are mounted on **GOLDALU** tools that are balanced for very high RPM machining. Extremely high metal removal rates.

Turning and Profiling App



ISOTURN

Whether standard or specially tailored, ISCAR's tools are the best choice to produce special parts for the die and mold industry.

These include turning and boring tools, drills and reamers, and various slot and face milling cutters.

Applications

Die & Mold Industry

HELITURN TANGENTIAL LINE

The **HELITURN** holder with its tangentially clamped insert and unique helical shaped cutting edges enable the use of very large depths of cut and high feeds. The double-sided insert, with its narrow curved rake face, is clamped into the toolholder on a corresponding seat using a conical head screw. This design protects the toolholder from overload and insert damage.



1 - 6.35 mm

Rigid Holding Systems



MAXIN

With the **MAXIN** tool, only a small tightening torque compresses the frontal nose, providing an extremely high gripping force.

It is designed for roughing and finishing applications in milling where high torque transmission, maximum accuracy, compactness and easy operation are required.

The **MAXIN**'s unique clamping mechanism eliminates axial movement of the shank while clamping, simplifying the preset process.





Die Mold

I n d u s t r y



SHRINKIN

The **SHRINKIN** Thermal Shrink ER Collet Chucking System is an enhancement to the existing popular ER system. The **SHRINKIN** collets utilize the thermal shrink phenomenon for rigid clamping of solid carbide cutters. This system provides higher torque, precision runout and better repeatability. The **SHRINKIN** collets with their slim design and various projection lengths allow the user to reach into deeper cavities and to perform narrow milling applications. ISCAR offers a complete system for **SHRINKIN** ER collets, including a uniquely designed heating unit with a portable heating handle. The unit is equipped with a high-tech temperature control for easy and practical use at the machining center or in the tool room.



High Precision Hole Ma



ISCARREAMER

Solid carbide reamers for standard H7 reaming in the range of 3 to 40 mm are available in cylindrical or Morse cone shanks, with straight or helical flutes. Also available is an interchangeable, shell reaming head system with a unique quick-change mechanism, in IC08 submicron grade or IC908 PVD coating for high speed machining.

king

Die Mold Industry



CHAMDRILLJET

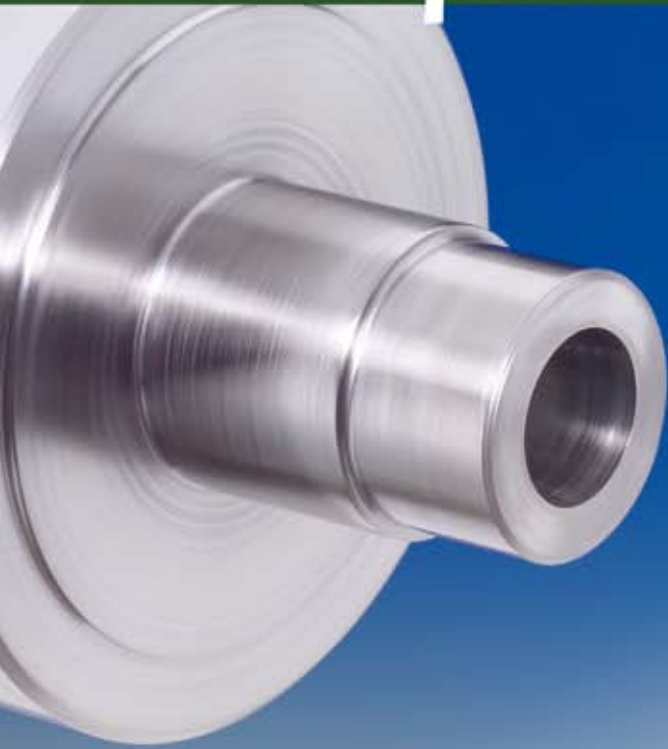
A single **CHAMDRILLJET** drill body can carry four various types of drill heads designed for use on four different material groups. Each drill body can carry 10 standard drilling head sizes in a 1 mm diameter range.

With the **CHAMDRILLJET**, the coolant is applied directly on the cutting edge. As a result, the user may expect:

- excellent performance on high temperature and aluminum alloys.
- very long drill head life of the IDP drill head for steel and the IDK drill head for cast iron.
- improved chip evacuation and surface finish.



Deep Drilling



GUNDRILLS

ISCAR's gundrill consists of a single piece carbide head, a streamlined shank and a driver through which coolant flows to the working end where it is most needed. Chips are evacuated along the V-shaped external flute.

Features:

- Drilling precision of IT7 to IT9 tolerances can be reached
- High precision hole center alignment
- Surface roughness of 0.4 to 1.6 μm is easily obtained
- Reboring operations are often unnecessary



Die Mold

Industry

ISCAR LTD.

Headquarters
Tefen 24959, Israel
Tel +972 (0)4 997 0311
Fax +972 (0)4 987 3741
www.iscar.com
headquarter@iscar.co.il

Argentina

ISCAR TOOLS ARGENTINA SA
Monteagudo 222
1437 Buenos Aires
Tel +54 114 912 2200
Fax +54 114 912 4411
admin@iscararg.com.ar

Australia

ISCAR AUSTRALIA Pty LTD.
38-42 Seville Street
East Fairfield NSW 2165
Tel +61 (0) 2 9723 1177
Fax +61 (0) 2 9723 1155
iscaraustralia@iscar.com.au
www.iscar.com.au

Austria

ISCAR AUSTRIA GmbH
Im Stadtgut C 2
A-4407 Steyr-Gleink
Tel +43 7252 71200-0
Fax +43 7252 71200-999
office@iscar.at
www.iscar.at

Belarus

ISCAR BELARUS
(Representative Office)
Nachimova str. 12, office 101
220033 Minsk
Tel/Fax: +375 17 298-13-67/57
ovsey_imc_belarus@sml.by
www.iscar.ru

Belgium

n.v. ISCAR BENELUX s.a.
Roekhout 13
B 1702 Dilbeek (Groot-Bijgaarden)
Tel +32 (0) 2 464 2020
Fax +32 (0) 2 522 5121
info@iscar.be
www.iscar.be

Bosnia

Representative Office
Kralja Tvrtka I br. 17
BIH- 72000 Zenica
Tel +387 32 201 100
Fax +387 32 201 101
info@iscar.ba

Brazil

ISCAR DO BRASIL COM.L. LTDA.
Rodovia Miguel Melhado Campos,
Km 79, Bairro Moinho
CEP: 13280-000 - Vinhedo - SP
Tel +55 19 3826-7100
Fax +55 19 3826-7171
DDG 0800 701 8877
iscar@iscarbrasil.com.br
www.iscar.com.br

Bulgaria

ISCAR BULGARIA
37 A, "N. Petkov" str.
Floor 2; Room 12
6100 Kazanlak
Tel/Fax +359 431 62557
aa_iscar@infotel.bg

Canada

ISCAR TOOLS INC.
2100 Bristol Circle
Oakville, Ontario L6H 5R3
Tel +1 905 829 9000
Fax +1 905 829 9100
admin@iscar.ca
www.iscar.ca

China

ISCAR CHINA
7B21, Hanwei Plaza,
7 Guanghua Road
Chaoyang District
Beijing 100004
Tel +86 10 6561 0261/2/3
Fax +86 10 6561 0264
iscar@iscar.com.cn
www.iscar.com.cn

Croatia

ISCAR ALATI d.o.o.
J. Jelačića 134
CRO-10430 Samobor
Tel +385 (0) 1 33 23 301
Fax +385 (0) 1 33 76 145
iscar@zg.t-com.hr
www.iscar.hr

Czech Republic

ISCAR CR s.r.o.
Mánesova 73, 301 00 Plzeň
Tel +420 377 420 625
Fax +420 377 420 630
iscar@iscar.cz
www.iscar.cz

Finland

ISCAR FINLAND OY
Ahertajantie 6
02100 Espoo
Tel +358-(0)9-439 1420
Fax +358-(0)9-466 328
info@iscar.fi

France

ISCAR FRANCE SAS
8, Rue Georges Guynemer
78286 GUYANCOURT Cedex
Tel +33 (0)1 30 12 92 92
Fax +33 (0)1 30 43 88 22
info@iscar.fr
www.iscar.fr

Germany

ISCAR GERMANY GmbH
Eisenstockstrasse 14
D 76275 Ettlingen
Tel +49 (0) 72 43 9908-0
Fax +49 (0) 72 43 9908-93
gmbh@iscar.de
www.iscar.de

Hungary

ISCAR HUNGARY kft
Kassai u 151
H 1142 Budapest
Tel +36 1 251 5688
Fax +36 1 251 4757
iscar@iscar.hu
www.iscar.hu

Italy

ISCAR ITALIA srl
Via Mattei 49 / 51
20020 Arese (MI)
Tel +39 02 93 528 1
Fax +39 02 93 528 213
marketing@iscaritalia.it
www.iscaritalia.it

Japan

ISCAR JAPAN LTD.
Head Office
15th Floor, Senri Asahi
Hankyu Building
1-5-3, Shinsenri-Higashimachi
Toyonaka-Shi,
Osaka 560-0082
Tel +81 6 6835 5471
Fax +81 6 6835 5472
iscar@iscar.co.jp
www.iscar.co.jp

Macedonia

Representative Office
Londonska 19/4
MK-1000 Skopje
Tel +389 2 309 02 52
Fax +389 2 309 02 54
info@iscar.com.mk

México

ISCAR DE MÉXICO,
S.A. de C.V.
Fray Pedro de Gante 15
Col. Cimatarío
Querétaro, Qro.
C.P. 76030
Tel +52 (442) 214 5505
Fax +52 (442) 214 5510
iscarmex@iscar.com.mx
www.iscar.com.mx

The Netherlands

ISCAR NEDERLAND B.V.
Postbus 704, 2800 AS Gouda
Tel +31 (0) 182 535523
Fax +31 (0) 182 572777
info@iscar.nl
www.iscar.nl

New Zealand

ISCAR PACIFIC LTD.
1/501 Mt. Wellington Hwy.
Mt. Wellington Auckland
Tel +64 9 5731280
Fax +64 9 5730781
iscar@iscarpac.co.nz

Poland

ISCAR POLAND Sp. z o.o.
ul. Gospodarcza 14
40-432 Katowice
Tel +48 32 735 7700
Fax +48 32 735 7701
iscar@iscar.pl
www.iscar.pl

Portugal

ISCAR PORTUGAL, SA
Avd.Dr.Domingos Caetano de Sousa
Praça B, Nº 541
4520-165 Santa Maria da Feira
Tel +351 256 579950
Fax +351 256 586764
geral@iscarportugal.pt
www.iscarportugal.pt

Romania

ISCAR TOOLS SRL
Str. Batistei nr. 5
Et. 4, Ap. 10
Bucharest
Tel +40 21 310 1108
Fax +40 21 310 1109
iscar-romania@iscar.com

Russia

Moscow
ISCAR RUSSIA LLC
Malaya Andronievskaya str., 20/8
109554 Moscow
Tel/fax +7 095 956 47 69
iscar@iscar.ru
www.iscar.ru

Chelyabinsk

ISCAR RUSSIAN FEDERATION EAST
21v, Lenin Ave., Office 601A,
Chelyabinsk 454091
Tel/fax +7 351 2672988
rfe@iscar.com
www.iscar.ru

Serbia

ISCAR TOOLS d.o.o.
Autoput 22
SRB-11080 Zemun
Tel +381 11 314 90 38
Fax +381 11 314 91 47
info@iscartools.co.yu

Slovakia

ISCAR SR, s.r.o.
K múzeu 3
010 03 Zilina
Tel +421 (0) 41 5074301
Fax +421 (0) 41 5074311
info@iscar.sk
www.iscar.sk

Slovenija

ISCAR SLOVENIJA d.o.o.
IOC, Motnica 14
SI-1236 Trzin
Tel +386 1 580 92 30
Fax +386 1 562 21 84
info@iscar.si
www.iscar.si

South Africa

ISCAR SA (Pty) LTD.
Office Node D3
Gewel St, Isando 1600
P. O. Box 2406
Kempton Park 1620
Tel +27 11 573 2800
Fax +27 11 573 2840
iscar@iscarsa.co.za
www.iscar.co.za

South Korea

ISCAR KOREA
304 Youggye-Ri,
Gachang-myeon
Dalsung-gun, Daegu 711-860
Tel +82 53 760 7590
Fax +82 53 767 7203
koss@taegutec.co.kr
www.iscarkorea.co.kr

Spain

ISCAR IBERICA SA
Parc Tecnològic del Vallès
Avda. Universitat Autònoma 19-21
08290 Cerdanyola-Barcelona
Tel +34 93 594 6484
Fax +34 93 582 4458
iscar@iscarib.es
www.iscarib.es

Sweden

ISCAR NORDEN AB
Kungsangsvagen 17B
Box 845
751 08 Uppsala
Tel +46 (0) 18 66 90 60
Fax +46 (0) 18 122 920
info@iscar.se
www.iscar.se

Switzerland

ISCAR HARTMETALL AG
Wespenstrasse 14
CH 8500 Frauenfeld
Tel +41 (0) 52 728 0850
Fax +41 (0) 52 728 0855
office@iscar.ch
www.iscar.ch

Taiwan

ISCAR TAIWAN LTD.
395, Da Duen South Road,
Taichung 408
Tel+ 886 (0)4-24731573
Fax+ 886 (0)4-24731530
iscar.taiwan@msa.hinet.net
www.iscar.org.tw

Thailand

ISCAR THAILAND LTD.
57, 59, 61, 63 Soi Samanchan-Babos
Sukhumvit Rd.
Phra Khanong, Khlong Toey
Bangkok 10110
Tel +66 (2) 7136633-8
Fax +66 (2) 7136632
iscar@iscarthailand.com

Turkey

ISCAR KESICI TAKIM
TIC. VE IML. LTD. STI.
Gebze Organize Sanayi Bölgesi (GOSB)
Ihsan Dede Cad. No: 105
Gebze / Kocaeli
Tel +90 (262) 751 04 84 (Pbx)
Fax +90 (262) 751 04 85
iscar@iscar.com.tr
www.iscar.com.tr

Ukraine

ISCAR UKRAINE LLC
160B, Frunze Str. of.1014
Kiev, 04073
Tel/fax +380-44-503-0708
gregoryt@iscar.com
www.iscar.ru

United Kingdom

ISCAR TOOLS LTD.
Woodgate Business Park
Bartley Green
Birmingham B32 3DE
Tel +44 (0) 121 422 8585
Fax +44 (0) 121 423 2789
sales@iscaruk.co.uk
www.iscaruk.co.uk

United States

ISCAR METALS INC.
300 Westway Place
Arlington, TX 76018-1021
Tel +1 817 258 3200
Tech Tel 1-877-BY-ISCAR
Fax +1 817 258 3221
info@iscarmetals.com
www.iscarmetals.com

Vietnam

ISCAR VIETNAM
(Representative Office)
Room D 2.8, Etown Building,
364 Cong Hoa, Tan Binh Dist.,
Ho Chi Minh City
Tel +84 8 8123 519/20
Fax +84 8 8123 521
iscarvn@hcm.fpt.vn

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Die Mold Industry



ISCAR's Solutions for the Die and Mold Industries

