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SENSÖRLER SENSORS

Ölçüm Ekipmanları
Measuring Instruments



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ÖLÇÜM TEKNOLOJİSİ MEASURING TECHNOLOGY



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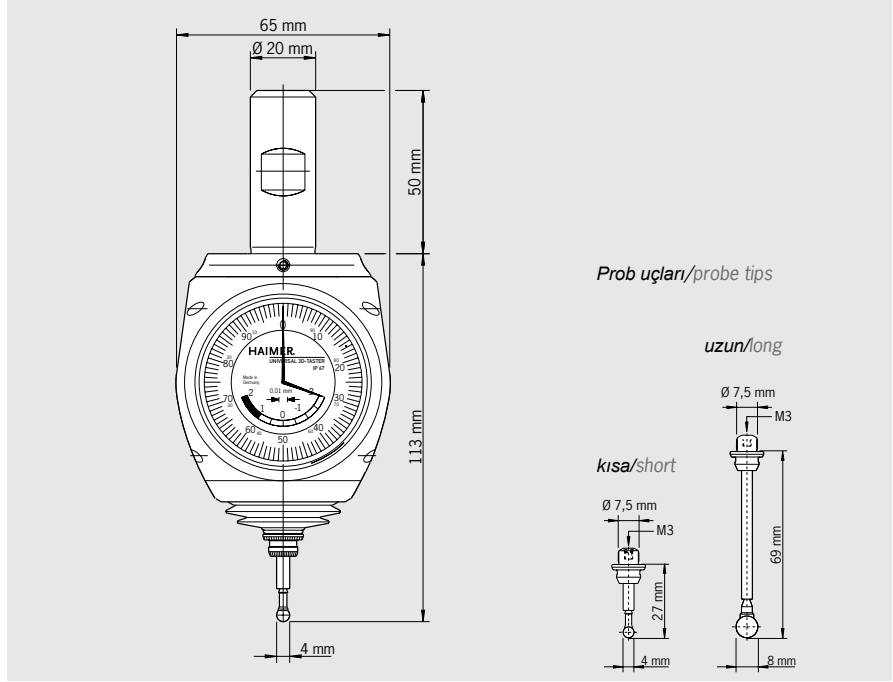
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Universal 3D-Sensör Universal 3D-Sensor



UNIVERSAL 3D-SENSÖR

UNIVERSAL 3D-SENSOR



Universal 3D-Sensör

Universal 3D-Sensör freze ve erozyon tezgahları için çok hassas ve çok yönlü bir ölçüm ekipmanıdır (yalıtılmış uç). Veldon tutucu içine bağlanarak ilk seferde salgı (T.I.R) tam olarak sifıra ayarlanır. Ardından, işmili eksen, iş parçası kenarına taşınabilir. İşmili eksen iş parçasının kenarlarına temas ettirilerek herhangi bir yönde (X, Y, Z eksen) iş parçası sıfırlarını hızlı, kolayca ayarlamak ve ölçmek için kullanılır. Saatin ibreleri tam olarak sıfır gösterdiğinde işmili eksen tam kenar üzerine gelmiş olur.

Prob uç küresi çapı hesaplanması gerekli değildir. Sadece sıfırlayın yeter! Yarıçap ilavesi yada çıkarılması gibi matematik hesaplamalar ile oluşan operatör hataları gibi sorunlar ortadan kalkar. Bu da operatörün verimliliğinin arttırılmasına yardımcı olur.

Kısa ve uzun prob uçları mevcuttur. Prob uçları herhangi bir alet gerekmesizin değiştirilebilir ve yeniden kalibrasyon gerekli değildir.

Güvenlik amaçlı olarak, ünitenin fazladan hareket mesafesi mevcuttur ve aşırı yük için oluşturulan kırılma noktası sayesinde sensörün ömrü uzatılmıştır. Tüm Universal 3D-Sensör'ler maksimum ölçüm hassasiyeti elde etmek için montaj esnasında tek tek test edilir ve ayarlanır.

– IP 67 normuna göre su geçirmezlik mevcuttur

Universal 3D-Sensor

The Universal 3D-Sensor is a very precise and versatile measuring instrument for milling and EDM machines (insulated probe). Once clamped into the machine spindle, the run-out (T.I.R) is fully adjustable to Zero. Then, it can be used to bring the spindle axis on the edges of the workpiece. This allows to set zeros and to measure quickly and easily. approachability in any direction (X-, Y-, Z-axis). When the dial gage shows zero, the spindle axis is exactly on the edge of the workpiece.

No calculating of the probe's ball diameter is necessary – just Zero it out! Problems with mathematics or calculations are eliminated. It helps increasing the productivity and accuracy of the operator.

Short and long probes are available. The sensor probes may be changed without any tool, no re-calibration of the unit is needed.

Additional safety, the unit has a large overrun distance in connection with the fully tested preset breaking points giving the sensor long life. All Universal 3D-Sensors are individually tested and adjusted when being assembled in order to achieve a maximum of measuring precision.

– IP 67 waterproof

Teknik Bilgiler/Technical details

Ø 20 mm silindirik Veldon şaftlı Universal 3D-Sensör Ø 4 mm kısa prob ucu ile
Universal 3D-Sensor with clamping shank Ø 20 mm including short probe tip Ø 4 mm

Hassasiyet/Accuracy 0,01 mm
Tutucu hariç boy ölçüsü/Length without clamping shank 113 mm
Sipariş No./Order No. **80.360.00.FHN**

Aksesuarlar/Accessories

Ø 4 mm kısa prob ucu/Short probe tip Ø 4 mm

Sipariş No./Order No. **80.362.00**



Ø 8 mm uzun prob ucu/Long probe tip Ø 8 mm

Sipariş No./Order No. **80.363.00**



Tavsiye edilen HAIMER tutucular

Recommended HAIMER tool holders

Sipariş No./Order No.

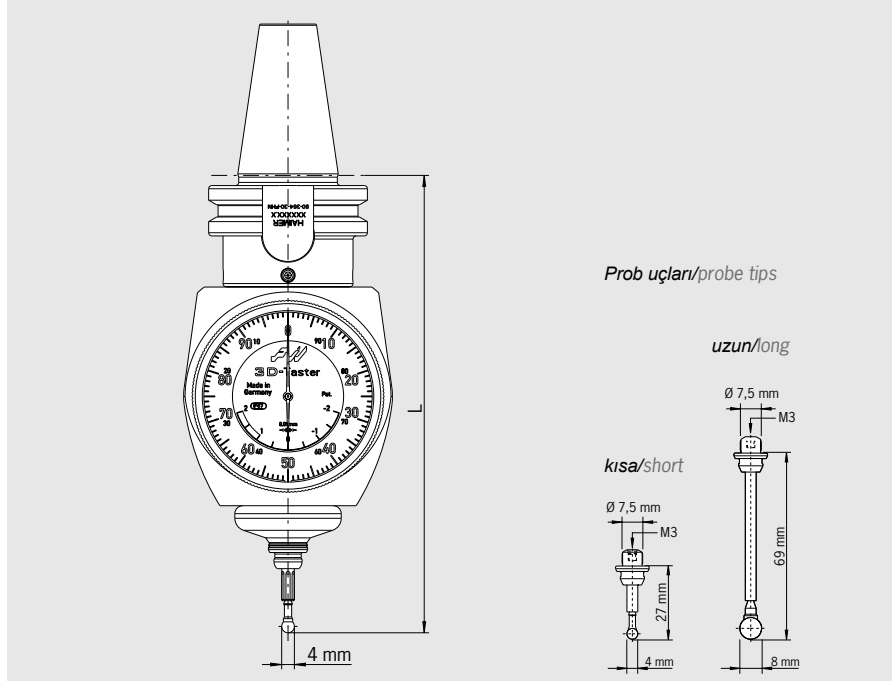
Kısa tutucu/short chuck SK 40	40.305.20
Kısa tutucu/short chuck SK 50	50.300.20
Kısa tutucu/short chuck BT 40	40.500.20
Kısa tutucu/short chuck BT 50	50.500.20
Kısa tutucu/short chuck HSK-A 50	A50.000.20
Kısa tutucu/short chuck HSK-E 50	E50.000.20
Kısa tutucu/short chuck HSK-A 63	A63.000.20
Kısa tutucu/short chuck HSK-A 80	A80.000.20
Kısa tutucu/short chuck HSK-A 100	A10.000.20

Universal 3D-Sensör entegre edilmiş tutucu ile

Universal 3D-Sensor with integrated adapter



UNIVERSAL 3D-SENSÖR ENTEGRE EDİLMİŞ TUTUCU İLE UNIVERSAL 3D-SENSOR WITH INTEGRATED ADAPTER



Koniğe entegre edilmiş Universal 3D-Sensör

Entegre konik ile (69871 DIN, SK40 veya JIS B 6339, BT40) standartlarında tutuculara entegre edilmiş kolay kullanım ve maksimum konfor sunar.

Universal 3D-Sensör freze ve erozyon tezgahları için çok hassas ve çok yönlü bir ölçüm ekipmanıdır (yalıtılmış uç). Veldon tutucu içine bağlanarak ilk seferde salığı (T.I.R) tam olarak sifıra ayarlanır. Ardından, işmili eksen, iş parçası kenarına taşınabilir. İşmili eksen iş parçasının kenarlarına temas ettirilerek herhangi bir yönde (X, Y, Z eksen) iş parçası sıfırlarını hızlı, kolayca ayarlamak ve ölçmek için kullanılır. Saatin ibreleri tam olarak sıfır gösterdiğinde işmili eksen tam kenar üzerine gelmiş olur.

Prob uç küresi çapı hesaplanması gerekli değildir. Sadece sıfırlayın yeter! Yarıçap ilavesi yada çıkarılması gibi matematik hesaplamalar ile oluşan operatör hataları gibi sorunlar ortadan kalkar. Bu da operatörün verimliliğinin ve hassasiyetinin artırılmasına yardımcı olur.

Kısa ve uzun prob uçları mevcuttur. Prob uçları herhangi bir alet gerekmesizin değiştirilebilir ve yeniden kalibrasyon gerekli değildir.

Güvenlik amaçlı olarak, ünitenin fazladan hareket mesafesi mevcuttur ve aşırı yük için oluşturulan kırılma noktası sayesinde sensörün ömrü uzatılmıştır. Tüm Universal 3D-Sensör'ler maksimum ölçüm hassasiyeti elde etmek için montaj esnasında tek tek test edilir ve ayarlanır.

– IP 67 normuna göre su geçirmezlik mevcuttur

Universal 3D-Sensor with integrated adapter

The integrated taper (DIN 69871, SK40 or JIS B6339, BT40) guarantees easiest handling and a maximum of comfort.

The Universal 3D-Sensor is a very precise and versatile measuring instrument for milling and EDM machines (insulated probe). Once clamped into the machine spindle, the run-out (T.I.R) is fully adjustable to Zero. Then, it can be used to bring the spindle axis on the edges of the workpiece. This allows to set zeros and to measure quickly and easily. approachability in any direction (X-, Y-, Z- axis). When the dial gage shows zero, the spindle axis is exactly on the edge of the workpiece.

No calculating of the probe's ball diameter is necessary – just Zero it out! Problems with mathematics or calculations are eliminated. It helps increasing the productivity and accuracy of the operator.

Short and long probes are available. The sensor probes may be changed without any tool, no re-calibration of the unit is needed.

Additional safety, the unit has a large overrun distance in connection with the fully tested preset breaking points giving the sensor long life. All Universal 3D-Sensors are individually tested and adjusted when being assembled in order to achieve a maximum of measuring precision.

– IP 67 waterproof

Teknik Bilgiler/Technical details

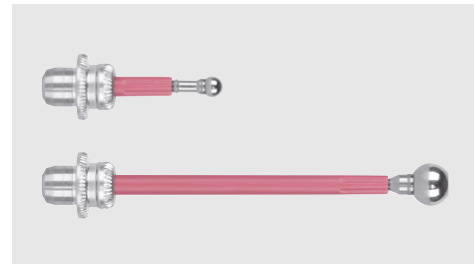
Tutucuya entegre edilmiş Universal 3D-Sensör ilave Ø 4 mm kısa prob ucu ile
Universal 3D-Sensor with integrated adapter including short probe tip Ø 4 mm

Hassasiyet/Accuracy	0,01 mm	
Tutucu hariç boy ölçüsü/Length without clamping shank	113 mm	
Tanım/Article	Sipariş No./Order No.	L [mm]
SK 30 tutucuya entegre/with integrated adapter SK 30	80.364.30.FHN	144,0
SK 40 tutucuya entegre/with integrated adapter SK 40	80.364.40.FHN	143,9
BT 30 tutucuya entegre/with integrated adapter BT 30	80.365.30.FHN	143,5
BT 40 tutucuya entegre/with integrated adapter BT 40	80.365.40.FHN	143,9

Aksesuarlar/Accessories

Ø 4 mm kısa prob ucu/Short probe tip Ø 4 mm
Sipariş No./Order No. **80.362.00**

Ø 8 mm uzun prob ucu/Long probe tip Ø 8 mm
Sipariş No./Order No. **80.363.00**

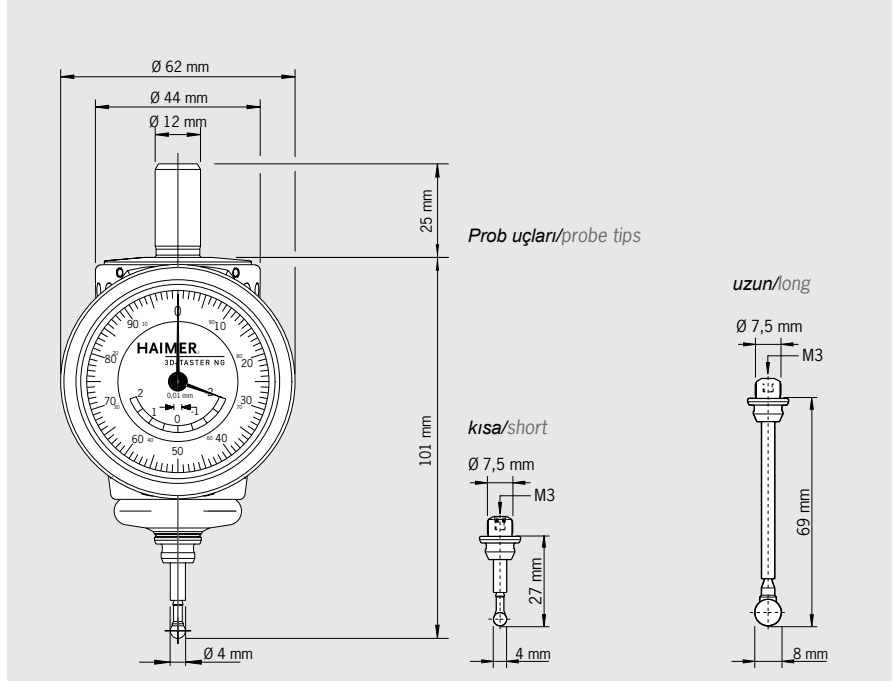


Ø 4 mm kısa prob ucu/Short Probe tip Ø 4 mm
Ø 8 mm uzun prob ucu/Long Probe tip Ø 8 mm

3D-Sensör New Generation 3D-Sensor New Generation



3D-SENSÖR NEW GENERATION 3D-SENSOR NEW GENERATION



3D-Sensör New Generation

3D-Sensör NG, dünya çapında kabul görmüş ve kendini kanıtlamış Universal 3D-Sensörün geliştirilmiş modelidir. Ayırt edici özelliği ise geliştirilmiş mekaniği ve yeni kompakt tasarımıdır.

Avantajlar:

- Kompakt ve kolay tutulabilen gövde, çalışma alanını kısıtlamaz
- Büyük 1/100 mm göstere ile hassas şekilde işmili pozisyonu gösterme (2 yönde)
- 0,01 mm azami hassasiyet (orijinal Haimer prob uçları ile)
- İşaretili aşırı doldurma mesafesi (güvenlik mesafesi)
- IP 67 normunda su geçirmez

Fonksiyonlar:

- İşmili merkezini iş parçası kenarlarına ve referans kenarlarına pozisyonlamak (X, Y, Z eksenli)
- İş parçası sıfır ayarlamak
- İç çap ve dış çaplarda sıfırlama yapabilmek
- Uzunlukları ve derinlikleri ölçmek
- Doğrusallık ve yüzey paralelliğini ölçmek
- İş parçaları ve mngeneleri hizalamak
- Cebirsel işaretlerden kaynaklı hiçbir hata olmadan hızlı ve hesaplamasız parça sıfırlama yapmak

3D-Sensor New Generation

The 3D-Sensor NG is a further development of our worldwide accepted and proven Universal 3D-Sensor. Its distinguishing features are improved mechanics and a new and compact design.

Advantages:

- Compact and easy to grip casing, no restriction to working area
- Precise display of spindle position with large 1/100 mm dial gauge (2 hands)
- Utmost precision of 0.01 mm (when using original HAIMER probe tips)
- Marked overrun distance (safety distance)
- IP 67 waterproof

Functions:

- Aligning machine spindles to work piece edges and reference edges (x-, y-, z-axis)
- Set zeros
- Centre borings and shafts
- Measuring lengths and depths
- Checking straightness and levelness of surfaces
- Aligning work pieces and vices
- Quick, without calculations, no mistakes with algebraic signs

Teknik Bilgiler/Technical details

Ø 12 mm şaftlı 3D-Sensör NG Ø 4 mm kısa prob ucu ile beraber

3D-Sensor NG with clamping shank Ø 12 mm including short probe tip Ø 4 mm

Hassasiyet/Accuracy 0,01 mm
Tutucu hariç boy ölçüsü/Length without clamping shank 101 mm

Sipariş No./Order No. **80.360.00NG**

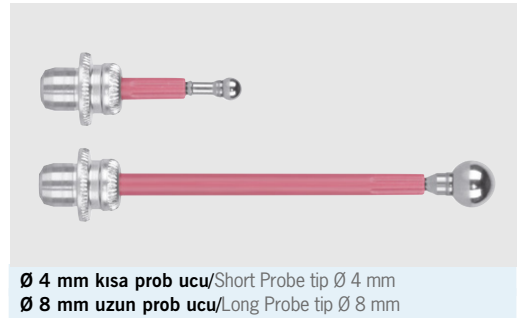
Aksesuarlar/Accessories

Ø 4 mm kısa prob ucu/Short Probe tip Ø 4 mm

Sipariş No./Order No. **80.362.00**

Ø 8 mm uzun prob ucu/Long Probe tip Ø 8 mm

Sipariş No./Order No. **80.363.00**

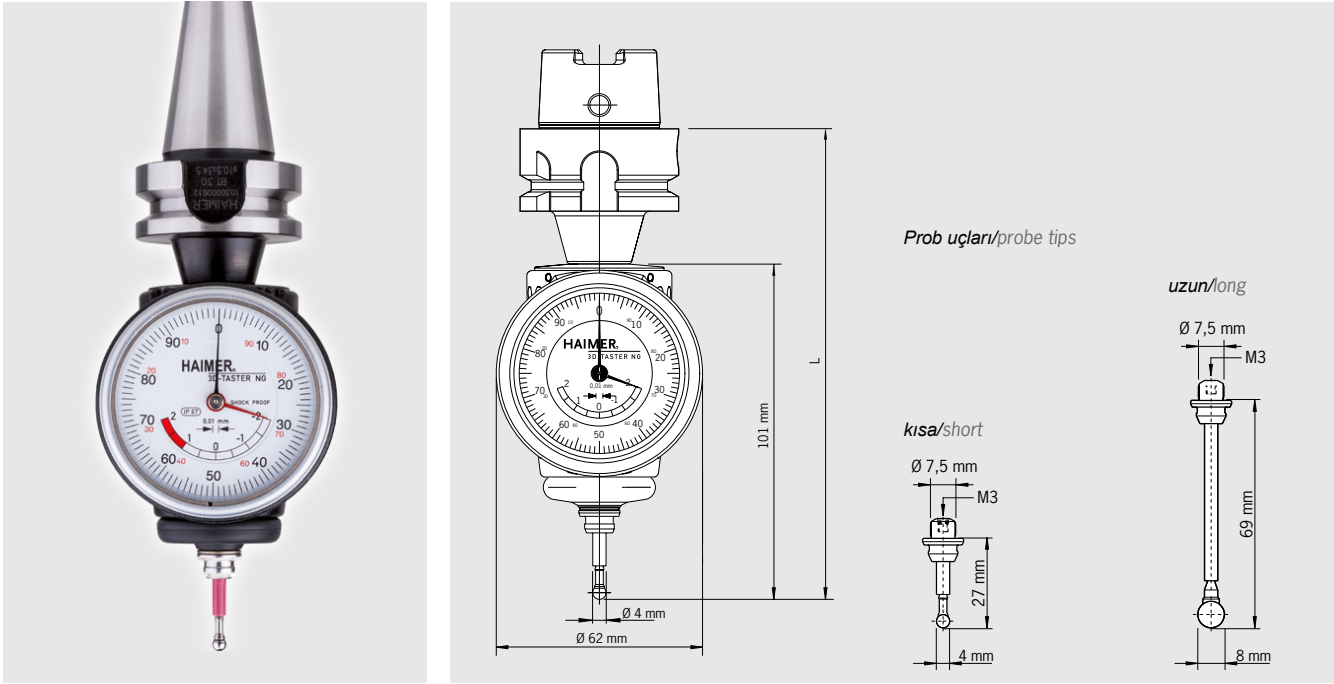


Ø 4 mm kısa prob ucu/Short Probe tip Ø 4 mm
Ø 8 mm uzun prob ucu/Long Probe tip Ø 8 mm

3D-Sensör NG entegre edilmiş kısa tutucu ile 3D-Sensor NG with integrated short adapter



3D-SENSÖR NG ENTEGRE EDİLMİŞ KISA TUTUCU İLE 3D-SENSOR NG WITH INTEGRATED SHORT ADAPTER



SK30, BT30, HSK-25/32/40/50/63 konikler için

Basit iş parçası ölçümü için daha dar alana sahip makinelerde kullanılır.

Versiyon:

- SK30, BT30, HSK-A32/40/50/63, HSK-E25/32/40/50 koniklere entegre edilmiş halde
- Önceden ayarlanmış 0.01 mm prob uç salgısı ile teslim edilmesi nedeni ile daha sonra manuel salgı ayarı gerekmez!
- Ölçüm hassasiyeti: 0.01 mm'dir
- Kısa ve uzun prob uçları mevcuttur, değiştirirken herhangi bir takım gerekli değildir
- Yeniden sensör kalibrasyonu gerekmez
- Artırılmış aşırı doldurma mesafesi
- IP 67 normuna göre su geçirmez

Uygulama:

- Küçük Freze ve Erozyon makineleri için (yalıtılmış uç)
- İş parçası sınırlama ve uzunluk ölçümü için
- Herhangi bir yönde işparçasına yaklaşılabilir (X, Y, Z eksen)

For interfaces SK30, BT30, HSK-25/32/40/50/63

Simple workpiece measuring with less space in the machine.

Version:

- With integrated short adapter in version SK30, BT30, HSK-A32/40/50/63, HSK-E25/32/40/50
- No further manual runout adjustment necessary! Delivery with preset runout accuracy at the probe tip of 0.01 mm
- Measuring accuracy: 0.01 mm
- Short and long probe tips available, no tool change necessary
- No re-calibration of the sensor is needed
- Enhanced overrun distance
- IP 67 waterproof

Application:

- For small Milling and EDM machines (isolated probe)
- For workpiece-reset and length measuring
- Any direction approach (X, Y-, Z-axis)

Teknik Bilgiler/Technical details

Kısa koniklere adapte edilmiş 3D-Sensör NG Ø 4 mm kısa prob ucu ile
3D-Sensor NG with integrated short adapter including short probe tip Ø 4 mm

Hassasiyet/Accuracy	0,01 mm	
Tanım/Article	Sipariş No./Order No.	L [mm]
3D-Sensör NG kısa adaptör ile/with short adapter HSK-E25	80.363.E25NG	126,5
3D-Sensör NG kısa adaptör ile/with short adapter HSK-E32	80.363.E32NG	136,5
3D-Sensör NG kısa adaptör ile/with short adapter HSK-E40	80.363.E40NG	136,5
3D-Sensör NG kısa adaptör ile/with short adapter HSK-E50	80.363.E50NG	143,5
3D-Sensör NG kısa adaptör ile/with short adapter HSK-A32	80.363.A32NG	136,5
3D-Sensör NG kısa adaptör ile/with short adapter HSK-A40	80.363.A40NG	136,5
3D-Sensör NG kısa adaptör ile/with short adapter HSK-A50	80.363.A50NG	143,5
3D-Sensör NG kısa adaptör ile/with short adapter HSK-A63	80.363.A63NG	147,0
3D-Sensör NG kısa adaptör ile/with short adapter SK30	80.364.30NG	136,1
3D-Sensör NG kısa adaptör ile/with short adapter BT30	80.365.30NG	135,5

Aksesuarlar/Accessories

Ø 4 mm kısa prob ucu/Short Probe tip Ø 4 mm

Sipariş No./Order No. **80.362.00**



Ø 8 mm uzun prob ucu/Long Probe tip Ø 8 mm

Sipariş No./Order No. **80.363.00**

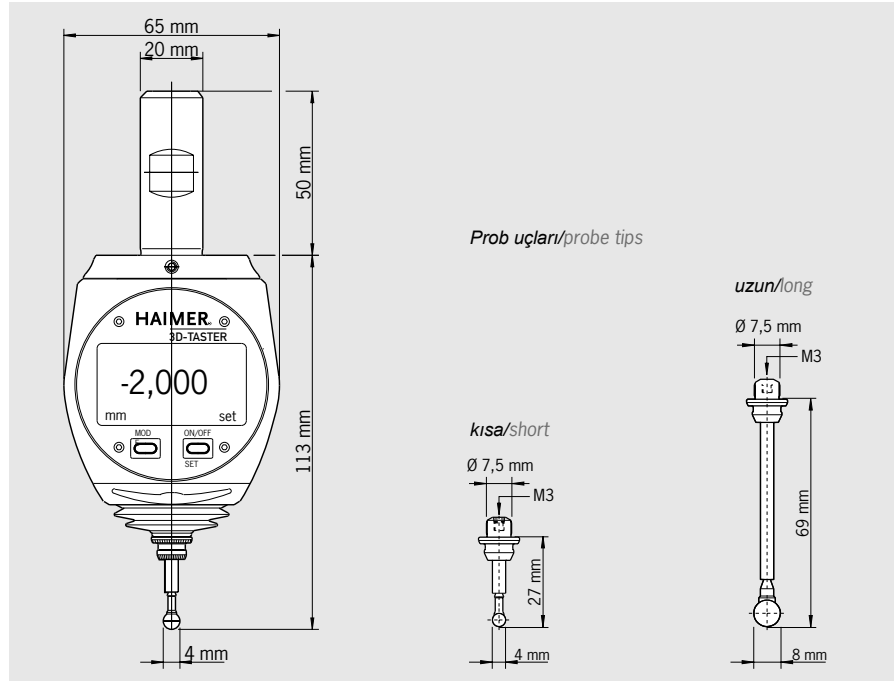


3D-Sensör Dijital

3D-Sensor Digital



3D-SENSÖR DİJİTAL 3D-SENSOR DIGITAL



3D-Sensör Dijital

Son derece hassas - güvenli kullanım

Dijital 3D-Sensör, kendini kanıtlamış mekanik 3D-Sensör'e göre daha da geliştirilmiş bir modeldir. Bu da, freze ve EDM'lerde iş parçası kenarlarının sıfırlanmasında kullanılır. İşmili, ölçülecek referans kenarına hızlı ve güvenli bir şekilde yaklaşır. İşmili eksenin tam olarak yaklaşması işlemi tam olarak dijital ekrandan izlenebilir. İşmili eksenin tam olarak yaklaşılan kenara pozisyonlandırıldığından, sıfır noktası herhangi bir hesaplama yapmadan set edilir.

Özellikle pratik

Dijital göstergenin 0,001mm artış aralığı olan büyük rakamları mevcuttur. Kolayca uzun mesafeden okunabilir (örneğin, büyük boyutlu bir işleme merkezinde kullanıldığında). Dijital ekran (IP 64) su ve toz geçirmezdir ve takım magazini-nde muhafaza edilebilir.

3D-Sensor Digital

Highly accurate – safe handling

The Digital 3D-Sensor is a further development of the time proven mechanical 3D-Sensor. It serves for approaching workpiece edges on milling and EDM machines. The spindle may be positioned quickly and safely on the references edge. The approaching operation can be exactly monitored on the digital display. The zero points can be set without any calculations because the spindle axis is positioned exactly on the approached edge.

Especially practical

The digital display has large numbers that measure in increments of 0.001 mm. It can be easily read from a long distance (i.e. when mounted on a large machining center). The digital display is water- and dust-proof (IP 64) and can be stored in the tool magazine of the machine.

Teknik Bilgiler/Technical details

Ø 20 mm Veldon şaftlı Dijital 3D-Sensör Ø 4 mm kısa uç ile
3D-Sensor Digital with clamping shank Ø 20 mm incl. short probe tip Ø 4 mm

En düşük ölçüm hassasiyeti/Smallest unit of measure	0,001 mm
Tekrarlanabilirlik/Repeatability	0,005 mm
Ölçüm hassasiyeti/Measuring accuracy	0,005 mm
Ekran/Display	
Görüntüleme modu	İnç veya metrik olarak değiştirilebilir
Display mode	May be switched to inch or metric
Ekran ölçüsü/Display size	45x23 mm
Rakam boyutu/Height of numbers	8,5 mm
Batarya ömrü (sürekli kullanımda) yaklaşık	3000 Saat
Service life of battery (continuous operation) approx.	3000 hrs

Sipariş No./Order No. 80.460.00.FHN

Aksesuarlar/Accessories

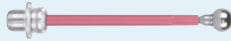
Ø 4 mm kısa prob ucu/Short probe tip Ø 4 mm

Sipariş No./Order No. 80.362.00



Ø 8 mm uzun prob ucu/Long probe tip Ø 8 mm

Sipariş No./Order No. 80.363.00



Tavsiye edilen HAIMER tutucular

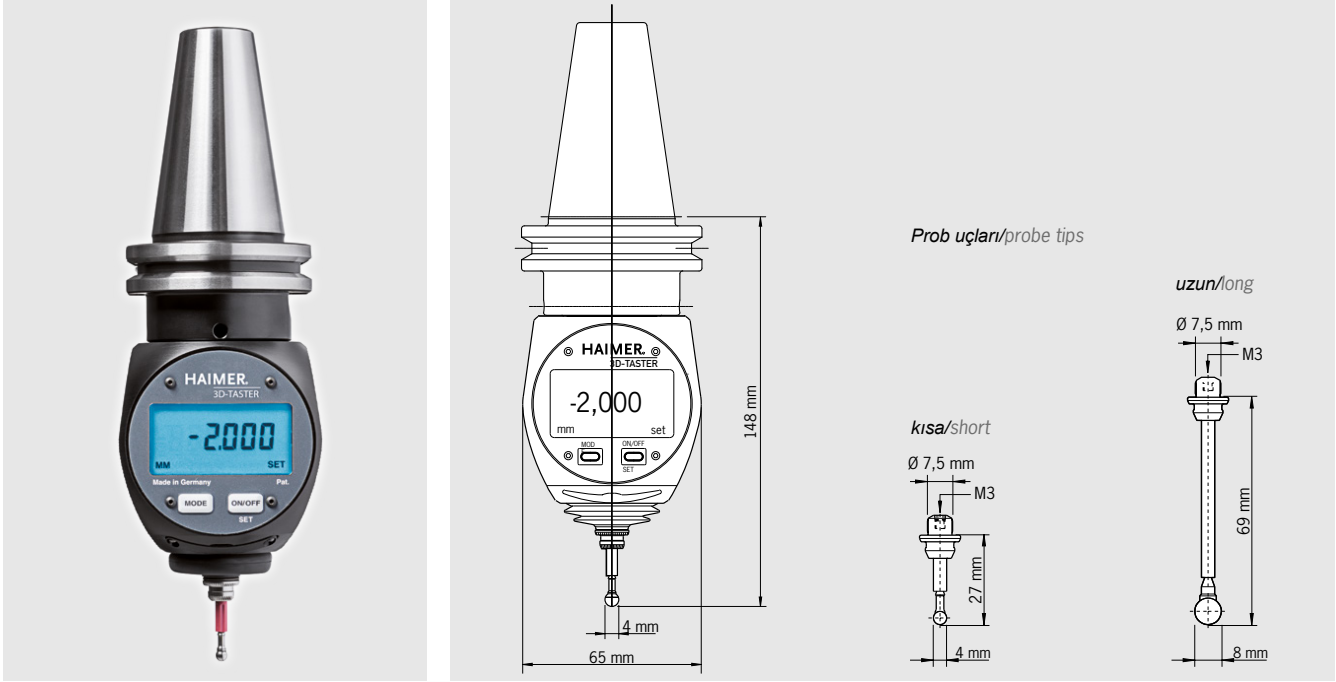
Recommended HAIMER tool holders

	Sipariş No./Order No.
Kısa tutucu/short chuck SK 40	40.305.20
Kısa tutucu/short chuck SK 50	50.300.20
Kısa tutucu/short chuck BT 40	40.500.20
Kısa tutucu/short chuck BT 50	50.500.20
Kısa tutucu/short chuck HSK-A 50	A50.000.20
Kısa tutucu/short chuck HSK-E 50	E50.000.20
Kısa tutucu/short chuck HSK-A 63	A63.000.20
Kısa tutucu/short chuck HSK-A 80	A80.000.20
Kısa tutucu/short chuck HSK-A 100	A100.000.20

3D-Sensör Dijital entegre edilmiş tutucu ile 3D-Sensor Digital with integrated adapter



3D-SENSÖR DİJİTAL ENTEGRE EDİLMİŞ TUTUCU İLE 3D-SENSOR DIGITAL WITH INTEGRATED ADAPTER



Koniğe entegre edilmiş Dijital 3D-Sensör

Entegre konik ile (DIN 69871, SK40 veya JIS B 6339, BT40) kolay kullanım ve maksimum konfor sunar.

Son derece hassas - güvenli kullanım

Dijital 3D-Sensör, kendini kanıtlamış mekanik 3D-Sensör'e göre daha da geliştirilmiş bir modeldir. Bu da, freze ve EDM'lerde iş parçası kenarlarının sıfırlanmasında kullanılır. İşmili, ölçülecek referans kenarına hızlı ve güvenli bir şekilde yanıştırılır. Prob ucunun yaklaşması işlemi tam olarak dijital ekrandan izlenebilir. İşmili ekse-ni tam olarak yaklaşılan kenara pozisyonlandığından, sıfır noktası herhangi bir hesaplama yapmadan set edilir.

Özellikle pratik

Dijital göstergenin 0,001mm artış aralığı olan büyük rakamları mevcuttur. Kolayca uzun mesafeden okunabilir (örneğin, büyük boyutlu bir işleme merkezinde kullanıldığında). Dijital ekran (IP 64) su ve toz geçirmezdir ve takım magazininde muhafaza edilebilir.

3D-Sensor Digital with integrated adapter

The integrated taper (DIN 69871, SK40 or JIS B6339, BT40) guarantees easiest handling and a maximum of comfort.

Highly accurate – safe handling

The Digital 3D-Sensor is a further development of the time proven mechanical 3D-Sensor. It serves for approaching workpiece edges on milling and EDM machines. The spindle may be positioned quickly and safely on the references edge. The approaching operation can be exactly monitored on the digital display. The zero points can be set without any calculations because the spindle axis is positioned exactly on the approached edge.

Especially practical

The digital display has large numbers that measure in increments of 0.001 mm. It can be easily read from a long distance (i.e. when mounted on a large machining center). The digital display is water- and dust-proofed (IP 64) and can be stored in the tool magazine of the machine.

Teknik Bilgiler/Technical details

Koniğe entegre edilmiş Dijital 3D-Sensör Ø 4 mm kısa prob ucu dahil 3D-Sensor Digital with integrated adapter incl. short probe tip Ø 4 mm

En düşük ölçüm hassasiyeti/Smallest unit of measure	0,001 mm
Tekrarlanabilirlik/Repeatability	0,005 mm
Ölçüm hassasiyeti/Measuring accuracy	0,005 mm
Ekrán/Display	
Görüntüleme modu	İnç veya metrik olarak değiştirilebilir
Display mode	May be switched to inch or metric
Ekrán ölçüsü/Display size	45x23 mm
Rakam boyutu/Height of numbers	8,5 mm
Batarya ömrü (sürekli kullanımda) yaklaşık	3000 Saat
Service life of battery (continuous operation) approx.	3000 hrs
SK 40 tutucuya entegre/with integrated adapter SK 40	

Sipariş No./Order No. 80.464.40.FHN

BT 40 tutucuya entegre/with integrated adapter BT 40

Sipariş No./Order No. 80.465.40.FHN

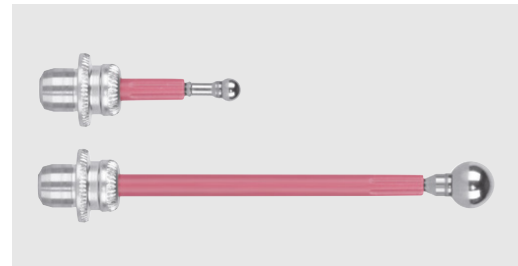
Aksesuarlar/Accessories

Ø 4 mm kısa prob ucu/Short probe tip Ø 4 mm

Sipariş No./Order No. 80.362.00

Ø 8 mm uzun prob ucu/Long probe tip Ø 8 mm

Sipariş No./Order No. 80.363.00

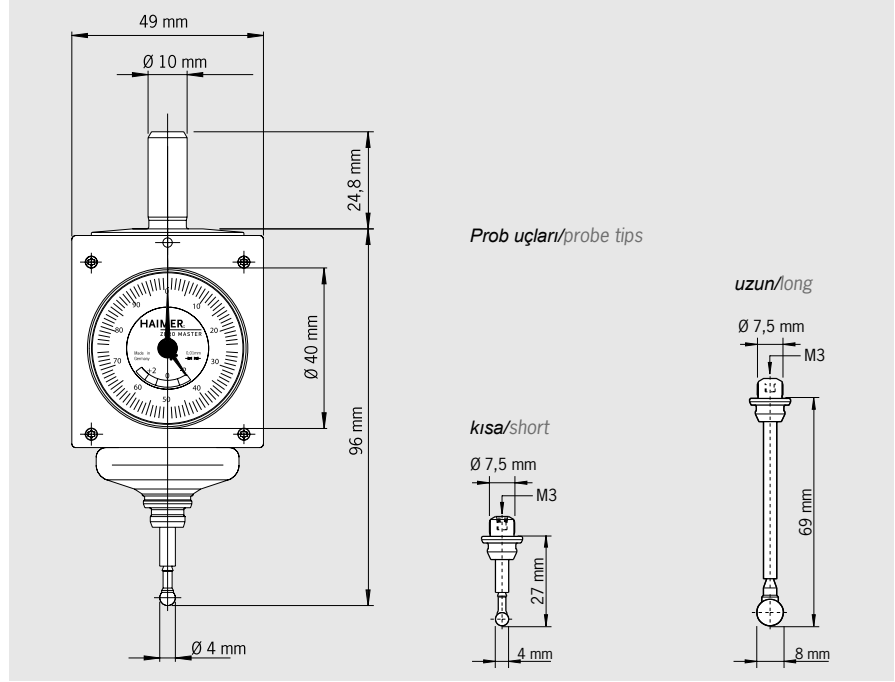


Ø 4 mm kısa prob ucu/Short Probe tip Ø 4 mm
Ø 8 mm uzun prob ucu/Long Probe tip Ø 8 mm

3D-Sensör Zero Master 3D-Sensor Zero Master



3D-SENSÖR ZERO MASTER 3D-SENSOR ZERO MASTER



3D-Sensör Zero Master

Küçük ama güzel

Zero Master, dünyanın en küçük 3D-Sensörüdür. Kullanımı, fonksiyonları ve hassasiyeti Universal 3D-Sensör ile aynıdır. Zero Master küçük makineler için uyarlanmıştır. Şaft çapı 10 mm'dir. Bu nedenle ISO 30 ya da HSK işmiline sahip makinelerde kullanılır. Dış kasa küçüktür ve bu nedenle işmilinin dışına fazla taşmadan, büyük iş parçaları ölçülebilir. Zero Master'da küçük Analog Komperatör kullanılmıştır.

Zero Master standart kısa (çap 4 mm küre uçlu) ve uzun (çap 8 mm küre uçlu) prob uçları ile kullanılabilir. Elbette bu prob uçları tüm orijinal Haimer 3D-Sensörlerle de uyumludur.

Lütfen not alınız:

Sadece orijinal Haimer prob uçları kullanılması halinde verilen 0.01 mm ölçüm hassasiyeti elde edilebilir.

- IP 67 normuna göre su geçirmez

Zero Master

Small but nice

The Zero Master is the smallest 3D-Sensor worldwide. Usage, function and accuracy are equal to the Universal 3D-Sensor. The size of the Zero Master is adapted to small machines. The diameter of the clamping shank is 10mm. Thus it can be also used on machines with ISO 30 or small HSK spindles. The housing is shortened and does not protrude far out of the spindle so even big work pieces can be measured. The Zero Master can be read with a small analog dial gauge.

The Zero Master can be equipped with a short (ball diam. 4 mm) and a long (ball diam. 8 mm) probe tip. The probe tips of course are compatible to all other HAIMER 3D-Sensors.

Please take note:

The given measuring precision of 0.01 mm only applies if the original HAIMER probe tips are used.

- IP 67 waterproof

Teknik Bilgiler/Technical details

Ø 10 mm Veldon şaftlı Zero Master Ø 4 mm kısa prob ucu ile

Zero Master with clamping shank Ø 10 mm including short probe tip Ø 4 mm

Hassasiyet/Accuracy	0,01 mm
Bağlama şaftı hariç boy/Length without clamping shank	96 mm

Sipariş No./Order No. **80.960.00**

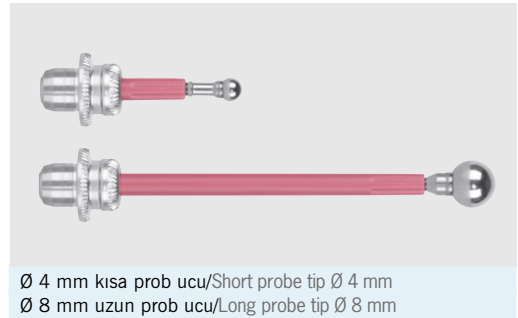
Aksesuarlar/Accessories

Ø 4 mm kısa prob ucu/Short probe tip Ø 4 mm

Sipariş No./Order No. **80.362.00**

Ø 8 mm uzun prob ucu/Long probe tip Ø 8 mm

Sipariş No./Order No. **80.363.00**

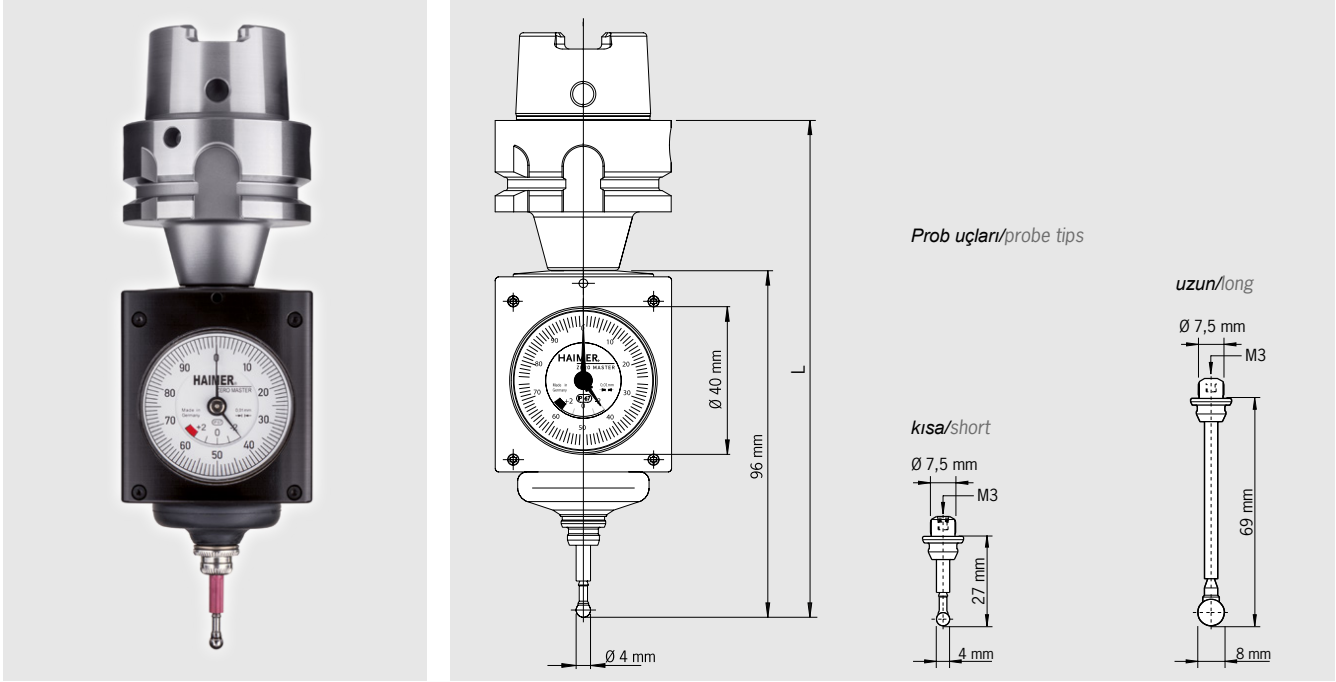


Ø 4 mm kısa prob ucu/Short probe tip Ø 4 mm
Ø 8 mm uzun prob ucu/Long probe tip Ø 8 mm

3D-Sensör Zero Master entegre edilmiş kısa tutucu ile
3D-Sensor Zero Master
with integrated short adapter



3D-SENSÖR ZERO MASTER ENTEGRE EDİLMİŞ KISA TUTUCU İLE 3D-SENSOR ZERO MASTER WITH INTEGRATED SHORT ADAPTER



SK30, BT30, HSK-25/32/40/50/63 tutucular için

Basit iş parçası ölçümleri için daha dar alana sahip makinalarda kullanılır.

Versiyon:

- SK30, BT30, HSK-25/32/40/50/63 kısa tutuculara entegre edilmiştir
- Daha sonra salgı ayarı gerektirmez! Prob uç salgısı 0.01 mm olarak ayarlanmış olarak teslim edilir
- Ölçüm hassasiyeti: 0.01 mm'dir
- Kısa ve uzun prob uçları mevcuttur, hiçbir takım gereksizdir değiştirilebilir.
- Sensör için yeniden kalibrasyon gerekli değildir
- Arttırılmış aşırı doldurma mesafesi
- IP 67 normuna göre su geçirmezdir

Uygulama:

- Küçük Freze ve Erozyon tezgahları için (izole uç)
- İş parçası sıfırlama ve uzunluk ölçümleri için
- Herhangi bir yönde yaklaşarak ölçüm mümkündür (X, Y, Z eksen)

For interfaces SK30, BT30, HSK-25/32/40/50/63

Simple workpiece measuring with less space in the machine.

Version:

- With integrated short adapter in version SK30, BT30, HSK-25/32/40/50/63
- No further manual runout adjustment necessary! Delivery with preset runout accuracy at the probe tip of 0.01 mm
- Measuring accuracy: 0.01 mm
- Short and long probe tips available, no tool change necessary
- No re-calibration of the sensor is needed
- Enhanced overrun distance
- IP 67 waterproof

Application:

- For small Milling and EDM machines (isolated probe)
- For workpiece-reset and length measuring
- Any direction approach (X-, Y-, Z-axis)

Teknik Bilgiler/Technical details

Kısa tutucuya entegre 3D-Sensör Zero Master Ø 4 mm kısa prob ucu ile
3D-Sensor Zero Master with integrated short adapter including short probe tip Ø 4 mm

Hassasiyet/Accuracy	0,01 mm	
Tanım/Article	Sipariş No./Order No.	L [mm]
3D-Sensör Zero Master kısa tutucu ile/with short adapter HSK-E25	80.963.E25	121,6
3D-Sensör Zero Master kısa tutucu ile/with short adapter HSK-E32	80.963.E32	131,6
3D-Sensör Zero Master kısa tutucu ile/with short adapter HSK-E40	80.963.E40	131,6
3D-Sensör Zero Master kısa tutucu ile/with short adapter HSK-E50	80.963.E50	138,6
3D-Sensör Zero Master kısa tutucu ile/with short adapter HSK-A32	80.963.A32	131,6
3D-Sensör Zero Master kısa tutucu ile/with short adapter HSK-A40	80.963.A40	131,6
3D-Sensör Zero Master kısa tutucu ile/with short adapter HSK-A50	80.963.A50	138,6
3D-Sensör Zero Master kısa tutucu ile/with short adapter HSK-A63	80.963.A63	142,1
3D-Sensör Zero Master kısa tutucu ile/with short adapter SK30	80.964.30	131,2
3D-Sensör Zero Master kısa tutucu ile/with short adapter BT30	80.965.30	130,7

Aksesuarlar/Accessories

Ø 4 mm kısa prob ucu/Short probe tip Ø 4 mm

Sipariş No./Order No. 80.362.00



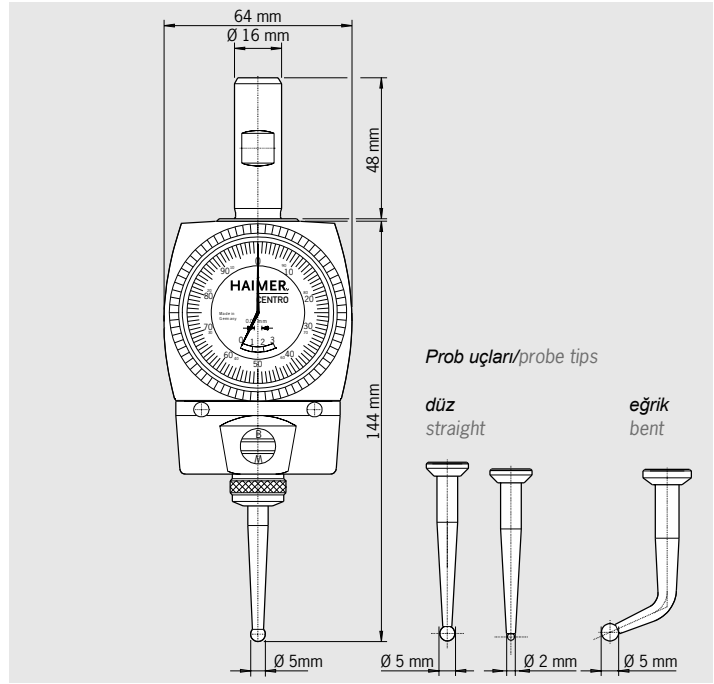
Ø 8 mm uzun prob ucu/Long probe tip Ø 8 mm

Sipariş No./Order No. 80.363.00



Merkezleme Sensörü Centro Coaxial Indicator Centro



CENTRO
CENTRO**Centro****Delik ve mil merkezleri için hızlı ve hassas**

Centro, bir takım tutucuya bağlanır ve sıfırlanacak eksen kabaca konumlandırılır. Prob ucu, döndüğünde deliğin veya milin her yönünden degecek şekilde ayarlanmalıdır.

Saat göstergesi her zaman görüş alanında

Düşük devir ile prob ucu delik veya mile temas ettirilerek döndürülür. Prob ucunun hareketi komparatöre aktarılmaktadır. Centro anteni kullanılarak bir kenara dayama yapılar, göstergenin dönmeden görüş alanında kalması sağlanır.

Centro kullanarak, deliklerin veya millerin eksenini güvenilir bir şekilde sıfırlayın

İşmilinin, delik veya mil merkezinden kaçıklığı miktarınca komparatörde hareket gözlenecektir. Makinanın x- ve y- eksenindeki değişikliklerle işmili ve işparçası eksenleri çakıştırılır.

Diğer avantajlar:

- İş mili ile iş parçasının eksenel salgısını kontrol etme
- İş mili ve takım tutucu salgı hatalarını telafi eder
- >> Herhangi bir ayarlama gerektirmez
- Büyük kaçıklıklar dahi, komparatörün olağandışı ölçüm aralığı sayesinde kolayca halledilir
- Değiştirilebilir prob uçları

Teknik Bilgiler/Technical details

Ø 16 mm silindirik Veldon şaftlı Centro Ø 5 mm standart düz uç ile
Centro with clamping shank Ø 16 mm incl. straight probe tip Ø 5 mm

Merkezeleme hassasiyeti/Centering accuracy	0,003 mm
Maks. devir/Max. rotation speed	150 1/min
Sıfırlama yapılabilecek iç çap aralığı (delik)/Measuring range interior diameter (drill hole)	3-125 mm
Sıfırlama yapılabilecek dış çap aralığı (şaft, eğik prob ucu ile) Measuring range exterior diameter (shaft, with probe tip bent)	0-125 mm

Sipariş No./Order No. **80.300.00.FHN**

Aksesuarlar/Accessories

Küre 5 mm düz prob ucu/Probe tip straight with diameter of ball 5 mm
Sipariş No./Order No. **80.301.00**



Küre 5 mm eğik prob ucu/Probe tip bent with diameter of ball 5 mm
Sipariş No./Order No. **80.302.00**



Küçük delikler için küre 2 mm düz prob ucu
Probe tip straight with diameter of ball 2 mm, for small bores
Sipariş No./Order No. **80.303.00**

**Centro****Center bores and arbors quick and precise**

The Centro is clamped in a tool holder and positioned close the sought axis. The probe tip is adjusted and touches the bore or arbor all the way around.

Dial gauge always in field of vision

With low rpm the probe slides along the bore or arbor. Its movement is transferred to the dial gauge. By using an antenna the Centro does not spin around and stays in field of vision.

By using the Centro you find the axis of bores or arbors - reliably

As long as the spindle is out of the center of the bore or arbor the hands of the dial gauge stay in movement. By changing the position of x- and y- axis at the machine you can jibe the axis of the spindle and the work piece.

Further advantages:

- Check the axial run-out of the work piece to the spindle
- Compensation of the run-out errors of the spindle and tool holder
- >> No adjustment necessary
- Even in bigger distance the unusual size of the dial gauge is helpful to finish the job
- Replaceable probes

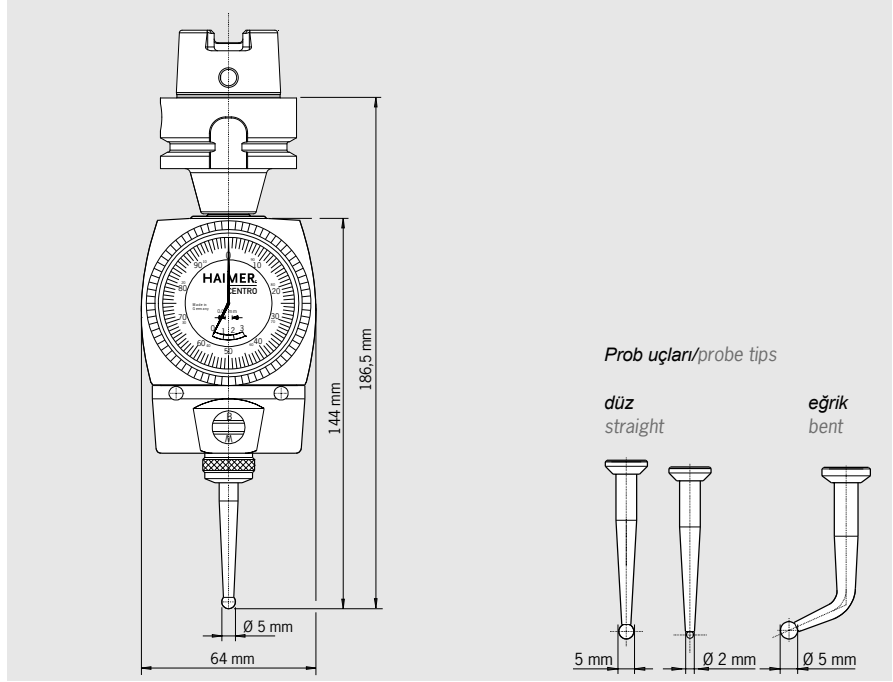
Tavsiye edilen HAIMER tutucular**Recommended HAIMER tool holders**

	Sipariş No./Order No.
Kısa tutucu/short chuck SK 40	40.300.16
Kısa tutucu/short chuck SK 50	50.300.16
Kısa tutucu/short chuck BT 40	40.500.16
Kısa tutucu/short chuck BT 50	50.500.16
Kısa tutucu/short chuck HSK-A 40	A40.000.16
Kısa tutucu/short chuck HSK-A 50	A50.000.16
Kısa tutucu/short chuck HSK-E 50	E50.000.16
Kısa tutucu/short chuck HSK-A 63	A63.000.16
Kısa tutucu/short chuck HSK-A 100	A10.000.16

Centro Entegre Edilmiş Kısa Tutucu ile Centro with integrated short adapter



CENTRO ENTEGRE EDİLMİŞ HSK-A50 TUTUCU İLE CENTRO WITH INTEGRATED ADAPTER HSK-A50



Tutucuya entegre edilmiş Centro

Tutucuya entegre olması kolay kullanım ve maksimum konfor temin eder.

Delik ve mil merkezleri için hızlı ve hassas

Centro, bir takım tutucuya bağlanır ve sıfırlanacak eksen kabaca konumlandırılır. Prob ucu, döndüğünde deliğin veya milin her yönünden degecek şekilde ayarlanmalıdır.

Saat göstergesi her zaman görüş alanında

Düşük devir ile prob ucu delik veya mile temas ettirilerek döndürülür. Prob ucunun hareketi komparatöre aktarılmaktadır. Centro anteni kullanılarak bir kenara dayama yapılır, göstergenin dönmeden görüş alanında kalması sağlanır.

Centro kullanarak, deliklerin veya millerin eksenini güvenilir bir şekilde sıfırlayın

İşmilinin, delik veya mil merkezinden kaçıklığı miktarınca komparatörde hareket gözlenecektir. Makinanın x- ve y- eksenindeki değişikliklerle işmili ve işparçası eksensleri çıkarılır.

Diğer avantajlar:

- İş mili ile iş parçasının eksenel salgısını kontrol etme
- İş mili ve takım tutucu salgı hatalarını telafi eder
- >> Herhangi bir ayarlama gerektirmez
- Büyük kaçıklıklar dahi, komparatörün olağandışı ölçüm aralığı sayesinde kolayca halledilir
- Değiştirilebilir prob uçları

Centro with integrated adapter

The integrated adapter guarantees easiest handling and a maximum of comfort.

Center bores and arbors quick and precise

The Centro is clamped in a tool holder and positioned close the sought axis. The probe tip is adjusted and touches the bore or arbor all the way around.

Dial gauge always in field of vision

With low rpm the probe slides along the bore or arbor.

Its movement is transferred to the dial gauge. By using an antenna the Centro does not spin around and stays in field of vision.

By using the Centro you find the axis of bores or arbors - reliably

As long as the spindle is out of the center of the bore or arbor the hands of the dial gauge stay in movement. By changing the position of x- and y- axis at the machine you can jibe the axis of the spindle and the work piece.

Further advantages:

- Check the axial run-out of the work piece to the spindle
- Compensation of the run-out errors of the spindle and tool holder
- >> No adjustment necessary
- Even in bigger distance the unusual size of the dial gauge is helpful to finish the job
- Replaceable probes

Teknik Bilgiler/Technical details

HSK-A50 tutucuya entegre edilmiş Centro Ø 5 mm düz prob ucu dahil Centro with integrated adapter HSK-A50 and straight probe tip Ø 5 mm

Merkezlleme hassasiyeti/Centering accuracy	0,003 mm
Maks. devir/Max. rotation speed	150 1/min
Sıfırlama yapılabilecek iç çap aralığı (delik)/Measuring range interior diameter (drill hole)	3–125 mm
Sıfırlama yapılabilecek dış çap aralığı (şaft, eğik prob ucu ile) Measuring range exterior diameter (shaft, with probe tip bent)	0–125 mm
Sipariş No./Order No. 80.303.A50	

Aksesuarlar/Accessories

Küre 5 mm düz prob ucu/Probe tip straight with diameter of ball 5 mm

Sipariş No./Order No. 80.301.00



Küre 5 mm eğik prob ucu/Probe tip bent with diameter of ball 5 mm

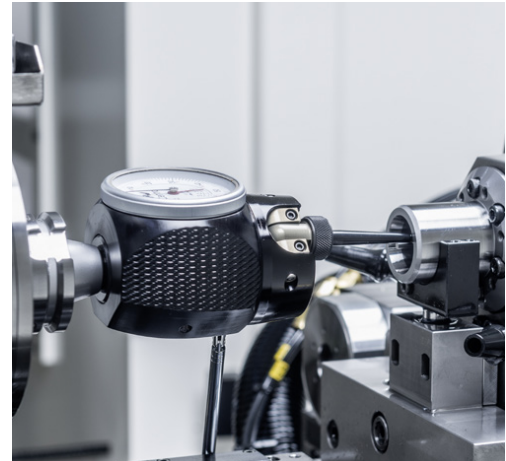
Sipariş No./Order No. 80.302.00



Küçük delikler için küre 2 mm düz prob ucu

Probe tip straight with diameter of ball 2 mm, for small bores

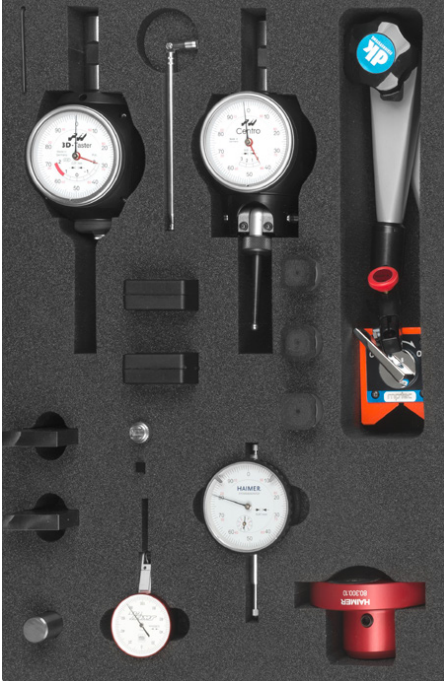
Sipariş No./Order No. 80.303.00



Takım tezgahları kalibrasyon seti Machine tool calibration set



TAKIM TEZGAHLARI KALIBRASYON SETI MACHINE TOOL CALIBRATION SET



- Dayanıklı, toz ve su geçirmez plastik çanta, ölçüm ekipmanlarına mükemmel koruma sağlar
- Stable, dust proof and water proof plastic-case provides perfect protection of your measuring equipment
- Aksesuarlarıyla birlikte iki adet yüksek kaliteli ve hassas universal HAIMER sensör
- Two high quality, precise and universal HAIMER sensors incl. accessories
- Tüm talaşlı imalat makinelerinde kullanmaya uygun, çok yönlü HAIMER sensör tutucuları
- Adapter for versatile use of the HAIMER sensors in all types of metal cutting machines
- Ölçüm ekipmanlarınız ve özel ölçümlerinizin kontrolü için masterlar
- Several gauge blocks for checking and calibrating your measuring equipment and for individual measurements
- İlgili ölçüm standları ile karşılıklı yerleştirilmiş yüksek kaliteli iki adet kadran göstergesi
- Two high quality dial indicators with corresponding gauge stand

Takım tezgahlarınız için hızlı ve kolay kurulum ve kontrol

- Kalite seviyenizi güvence altına almak için torna ve freze tezgahlarının yüksek doğrulukla hizalanması
- Tezgah doğruluğunu kontrol etmek için ekseninizin ve iş parçalarının hızlı ve çok hassas konumlandırılması
- Hurdayı azaltmak ve gereksiz yere yüksek takım maliyetlerini önlemek için takım tezgahınızın eksen ve iş milinin daha hızlı ve daha hassas kurulumu
- Tutarlı işleme sonuçları için tezgah geometrisinin basit ve güvenilir bir şekilde incelenmesi

Teslimata dahil olanlar:

- Taşıma Çantası:
IP67 normuna uygun su ve toz geçirmez plastik çanta, darbelere karşı korumalı
Dış ölçüsü 464*366*176 mm, iç ölçüsü 426*290*159 mm
- 18 boğumlu siyah köpük
- HAIMER Universal 3D-Sensör
- Ø 4 mm kısa prob ucu, Ø 8 mm uzun prob ucu
- HAIMER Centro
- Ø 5 mm Düz prob ucu
- Ø 5 mm eğri prob ucu
- Ø 2 mm düz prob ucu
- Centro fixtür ve ayarlama yardımcısı
- Test civatası Ø 16*93 mm
- KAFER komparatör M2TopS:
Ölçüm aralığı 10 mm, darbelere karşı korumalı, güçlü metal gövde, rotasyon sayaçlı
- Düzlem terazisi, TESA Swisstast
12,5 mm yakut bilyeli Uzun prob kolu
- Tripod komparatör, DK fixtür sistemleri
Çalışabildiği yarıçap 345 mm, manyetik sıkma kuvveti 900 N, sıkma shaftı Ø 8 mm h 6
- Ölçüm bloğu, 50*35*9 mm

Fast and easy installation and inspection of your machine tool

- Highly accurate alignment of lathe and milling machines to secure your quality level
- Quick and very precise positioning of your axis and workpieces to check the machine accuracy
- Faster and more precise installation of axis and spindles of your machine tool to reduce scrap and avoid unnecessarily high tool costs
- Simple and reliable inspection of the machine geometry for consistent machining results

Included in delivery:

- Suitcase:
Black plastic-case, dust- and water proof according to IP67, collision protection
external dimension: 464x366x176 mm, internal dimension: 426x290x159 mm
- Black foam inlay with 18 recesses
- HAIMER Universal 3D-Sensor
- Short probe tip Ø4 mm, Long probe tip Ø8 mm
- HAIMER Centro
- Straight probe tip, Ø5 mm
- Bent probe tip, Ø5 mm
- Straight probe tip, Ø2 mm
- Centro fixture and adjustment help
- Test bolt, Ø16x93 mm
- KÄFER dialindicator M2TopS:
Measuring range 10 mm, collision protection, robust metal housing, rotation counter
- Lever gauge, TESA Swisstast
Length probe arm 12,5 mm with ruby ball
- Dial indicator tripod, DK fixturing systems
Radius of action 345 mm, magnetic holding power 900 N, clamping shaft Ø8 h 6
- Gauge block, 50 x 35 x 9 mm

Takım tezgahları kalibrasyon seti/Machine tool calibration set

Sipariş No./Order No. 80.370.00

VERKAUFS- UND LIEFERBEDINGUNGEN (FEBRUAR 2017)

I. Allgemeines

Die nachstehenden Bedingungen gelten für alle - auch künftige - Geschäfte mit den Kunden. Unsere Verkaufs- und Lieferbedingungen gelten ausschließlich; anderslautende Geschäftsbedingungen sowie insbesondere entgegenstehende oder abweichende Bedingungen des Kunden erkennen wir nicht an, es sei denn, wir hätten ausdrücklich ihrer Geltung zugestimmt. Unsere Verkaufs- und Lieferbedingungen gelten auch dann, wenn wir in Kenntnis entgegenstehender oder abweichender Bedingungen des Kunden den Auftrag vorbehaltlos ausführen. Alle Vereinbarungen, die zwischen uns und dem Kunden getroffen sind, bedürfen zu ihrer Wirksamkeit der Schriftform. Unsere Verkaufs- und Lieferbedingungen gelten nur gegenüber Kaufleuten, wenn der Vertrag zum Betrieb des Handelsgewerbes gehört, und gegenüber juristischen Personen des öffentlichen Rechts und öffentlich-rechtlichem Sondervermögen.

II. Preise/Preisänderungen, Versand

1. Unsere Angebotspreise verstehen sich in Euro und enthalten keine Mehrwertsteuer. Zu den Preisen kommt daher jeweils die Mehrwertsteuer in der jeweiligen gesetzlichen Höhe hinzu. Die Preise gelten mangels besonderer Vereinbarung ab Werk, ausschließlich Kosten der Verpackung, Porto, Fracht. Sämtliche Angebotspreise sind freibleibend.
2. Unsere Angebotspreise gelten nur für die Auftragsdaten, die der Angebotsabgabe zugrunde liegen. Nachträgliche Änderungen oder Ergänzungen auf Wunsch oder Veranlassung des Kunden sowie dadurch entstehende Mehrkosten werden zusätzlich berechnet. Gleiches gilt für dadurch verursachte Kosten eines etwaigen Maschinenstillstandes. Bei Änderungen von Lohn- und Materialkosten, die zwischen Angebotsabgabe und Auftragserteilung entstehen oder zu einem Zeitpunkt, der länger als vier Monate nach Vertragsschluss liegt, behalten wir uns entsprechende Preisanpassung vor.
3. Der Versand der Ware erfolgt auf Kosten und Gefahr des Kunden und immer zzgl. Verpackungskosten gemäß der jeweilig gültigen Preisliste von Haimer bzw. entsprechend dem jeweils gültigen Angebot. Soweit die Ware auf Wunsch des Kunden auf dessen Gefahr und Kosten versandt wird, wird unsere Haftung, soweit gesetzlich zulässig, auf Vorsatz und grobe Fahrlässigkeit beschränkt. Auf schriftlichen Wunsch des Kunden ist auf seine Kosten die Versendung durch uns gegen Diebstahl, Bruch-, Transport-, Feuer- und Wasserschäden oder andere Risiken, soweit vom Kunden explizit gewünscht und soweit versicherbar, zu versichern.
4. Dem Kunden zumutbare Teillieferungen sind zulässig.

III. Zahlung

1. Die Ware ist innerhalb von 30 Kalendertagen ab Rechnungsdatum ohne Abzug zu bezahlen.
2. Wechsel werden nur nach besonderer Vereinbarung und erfüllungshalber ohne Skontogewährung angenommen. Diskont und Wechselspesen gehen zu Lasten des Kunden und sind sofort zur Zahlung fällig. Für die rechtzeitige Vorlegung, Protestierung und Benachrichtigung und Zurückleitung des Wechsels bei Nichteinlösung haften wir nicht, sofern uns oder unserem Erfüllungsgehilfen nicht Vorsatz oder grobe Fahrlässigkeit zur Last fallen.
3. Aufrechnungsrechte stehen dem Kunden nur zu, wenn seine Gegenansprüche rechtskräftig festgestellt, unbestritten oder von uns anerkannt sind. Wegen bestrittener Gegenansprüche stellt dem Kunden auch kein Zurückbehaltungsrecht zu.
4. Bezüglich unbestrittener Gegenansprüche kann der Kunde ein Zurückbehaltungsrecht nur wegen Ansprüchen geltend machen, die auf demselben Vertragsverhältnis beruhen.
5. Im Rahmen dieses Auftrags ist der Kunde verpflichtet im Fall von Lieferungen aus Deutschland in das EU-Ausland den Erhalt der Ware konform zu den umsatzsteuerlichen Regelungen zu bestätigen

IV. Zahlungsverzug

1. Im Falle des Zahlungsverzugs sind wir berechtigt, Verzugszinsen in gesetzlicher Höhe, d. h. in Höhe von 9 % zzgl. dem jeweiligen Basiszinssatz p. a., sowie eine Pauschale in Höhe von 40,00 € je überfälligem Betrag in Rechnung zu stellen, wobei uns die Geltendmachung eines weitergehenden Schadens ausdrücklich vorbehalten bleibt. Sollten Verzugszinsen zunächst nicht geltend gemacht werden, schließt dies eine nachträgliche Geltendmachung im Rahmen der gesetzlichen Verjährung nicht aus; eine Verjährung ist insoweit ausgeschlossen.
2. Wenn uns ein Zahlungsverzug bekannt wird, die Kreditwürdigkeit des Kunden in Frage stellen und damit die Erfüllung unseres Zahlungsanspruches gefährdet erscheint, insbesondere wenn über das Vermögen des Kunden die Eröffnung eines Insolvenzverfahrens beantragt wurde oder das Insolvenzverfahren eröffnet wurde oder wenn ein Scheck nicht eingelöst bzw. erheblich in Verzug mit Inkassodrohung gerät, wird oder der Besteller seine Zahlungen einstellt, so sind wir berechtigt, die gesamte Restschuld sofort fällig zu stellen und sofortige Zahlungen zu verlangen. Ferner sind wir dann berechtigt, Vorauszahlungen oder Sicherheitsleistungen zu verlangen und die Ware bis zur Bezahlung, Leistung der Vorauszahlung oder Leistung der Sicherheitsleistung zurückzubehalten sowie die Weiterarbeit an noch laufenden Aufträgen bis dahin einzustellen. Wenn vom Kunden veranlasste Änderungen des Auftrages die Fertigungszeit beeinflussen, haben wir einen Anspruch darauf, dass eine neue, den neuen Umständen angepasste Lieferzeit vereinbart wird. Liefer- und Leistungsverzögerungen aufgrund höherer Gewalt, aufgrund Umständen, die wir nicht zu vertreten haben und aufgrund von Ereignissen, die uns die Lieferung nicht nur vorübergehend wesentlich erschweren oder unmöglich machen - hierzu gehören insbesondere Streik, Aussperrung, hoheitliche Eingriffe, Kriegshandlungen, Unruhen, Strommangel, Zerstörung oder Beschädigung unserer Produktions- und Betriebsvorrichtungen, die wir nicht zu vertreten haben, sowie Versagen der Verkehrsmittel, Arbeitsbeschränkungen usw., auch wenn sie bei unseren Lieferanten oder deren Unterprioritäten eintreten, haben wir auch bei verbindlich vereinbarten Fristen und Terminen nicht zu vertreten. Sie berechtigen uns, die Lieferungen bzw. Leistungen um die Dauer der Behinderung zuzüglich einer angemessenen Anlaufzeit hinauszuschieben. Ferner besteht in einem solchen Fall auch ein Anspruch unsererseits auf Preisanpassung. Die vorbeschriebenen Umstände sind auch dann von uns nicht zu vertreten, wenn sie während eines bereits vorliegenden Verzuges entstehen. Beginn und Ende derartiger Hindernisse werden wir in wichtigen Fällen dem Kunden baldmöglichst mitteilen. Die Lieferfrist ist eingehalten, wenn bis zu ihrem Ablauf der Liefergegenstand das Werk verlassen hat oder dem Kunden die Versandbereitschaft mitgeteilt worden ist.

V. Eigentumsvorbehalt

1. Bis zur Erfüllung aller Forderungen aus der Geschäftsbeziehung mit dem Kunden werden vom Kunden die folgenden Sicherheiten gewährt, die wir auf Verlangen des Kunden und nach unserer Wahl freigeben werden, soweit ihr Wert die Forderung nachhaltig um mehr als 10 % übersteigt.
2. Die dem Kunden gelieferten Waren bleiben bis zur vollständigen Bezahlung aller Forderungen aus der Geschäftsbeziehung mit dem Kunden unser Eigentum.
3. Der Liefergegenstand darf vor voller Bezahlung weder verpfändet noch zur Sicherheit an Dritte übereignet werden. Bei Zugriffen Dritter auf den Liefergegenstand, insbesondere Pfändungen, wird der Kunde auf unser Eigentum hinweisen und uns unverzüglich schriftlich benachrichtigen, damit wir unsere Eigentumsrechte durchsetzen können. Soweit der Dritte nicht in der Lage ist, uns die in diesem Zusammenhang entstehenden gerichtlichen oder außergerichtlichen Kosten zu erstatten, haftet hierfür der Kunde.
4. Dem Kunden wird gestattet, die Ware im Rahmen eines ordnungsgemäßen Geschäftsverkehrs weiter zu veräußern und zu verarbeiten, solange er nicht in Verzug mit der Erfüllung der gegen ihn bestehenden Forderungen ist. Wir können die Gestattung widerrufen, wenn der Kunde in Zahlungsverzug oder Vermögensverfall gerät, insbesondere wenn über sein Vermögen ein Insolvenzverfahren eröffnet wird.
5. Die Verarbeitung oder Umwidmung der Ware durch den Kunden wird stets für uns vorgenommen. Im Falle der Verbindung, Vermischung oder Vermengung der Ware mit anderen Sachen erwerben wir im Verhältnis des Wertes der Ware (Faktura-Endbetrag einschließlich gesetzlicher Mehrwertsteuer) der übrigen miteinander verbundenen, vermischten oder vermengten Sachen zur Zeit der Verbindung, Vermischung, Vermengung Miteigentum. Sollte das Eigentum an der Ware dadurch untergehen, dass diese wesentlicher Bestandteil einer anderen Sache wird, so räumt uns der Kunde bereits jetzt ein Miteigentum an der Hauptsache zu einem Anteil ein, der dem Verhältnis des Wertes der gelieferten Ware (Faktura-Endbetrag einschließlich gesetzlicher Mehrwertsteuer) zum Wert der Hauptsache zur Zeit der Verbindung, Vermischung, Vermengung entspricht.
6. Für den Fall der Veräußerung der Ware tritt der Kunde bereits jetzt zur Sicherheit für unsere Forderungen aus der gesamten Geschäftsbeziehung alle Forderungen ab, die dem Kunden aus der Weiterveräußerung oder sonstigem Rechtsgrund (Versicherung, unerlaubter Handlung o. ä. gegen seine Abnehmer oder Dritte erwachsen, und zwar unabhängig davon, ob die Ware, an der uns (Miteigentum zusteht, ohne oder nach Verarbeitung weiterverkauft worden ist) auf unser jederzeitiges Verlangen hat der Kunde Auskunft über den Bestand der Forderung zu geben und uns oder einem von uns Bevollmächtigten Einsicht in die diesbezüglichen Geschäftsurkunden zu gewähren. Wir ermächtigen den Kunden wiederum, die von uns abgetretenen Forderungen für dessen Rechnung im eigenen Namen einzuziehen. Diese Einzugsermächtigung kann nur widerrufen werden, wenn der Kunde seinen Zahlungsverpflichtungen nicht ordnungsgemäß nachkommt. Unsere Befugnis, die Forderungen selbst einzuziehen, bleibt hiervon unberührt. Wir verpflichten uns jedoch, die Forderungen nicht einzuziehen, solange der Kunde seinen Zahlungsverpflichtungen aus den vereinnahmten Erlösen nachkommt, nicht in Zahlungsverzug ist und insbesondere kein Antrag auf Eröffnung eines Insolvenzverfahrens gestellt ist oder Zahlungseinstellung vorliegt. Ist aber dies der Fall, so können wir verlangen, dass der Kunde uns die abgetretenen Forderungen und deren Schuldner auf Verlangen sofort bekannt gibt und alle zum Einzug erforderlichen Angaben macht, die zugehörigen Unterlagen aushändigt und den Schuldner (Dritten) die Abtretung mitteilt. Auch wir haben das Recht zur Offenlegung der Abtretung gegenüber den Schuldner. Der Kunde ist jedoch nicht zur Abtretung dieser Forderung an Dritte berechtigt.
7. Der Kunde ist entgegen Ziffer 3 nicht berechtigt, die Ware auch im ordnungsgemäßen üblichen Geschäftsverkehr zu veräußern, wenn der Kunde die Abtretung der Forderung aus der Veräußerung der Ware an uns ausschließt.
8. Bei Vertragsrücktritt Verhalten des Kunden insbesondere bei Zahlungsverzug sind wir zum Rücktritt vom Vertrag berechtigt. Nach Rücktritt können wir die Ware vom Kunden herausverlangen.

VI. Lieferzeit

1. Liefertermine oder -fristen sind nur verbindlich, wenn sie von uns ausdrücklich schriftlich bestätigt worden sind.
2. Der Beginn der bestätigten Liefertermine und -fristen setzt kumulativ voraus: die Abklärung aller technischen Fragen; die Erfüllung der Vertragspflichten des Bestellers, insbesondere die Beibringung der vom Kunden zu beschaffenden Unterlagen, Genehmigungen, Freigaben. Wenn vom Kunden veranlasste Änderungen des Auftrages die Fertigungszeit beeinflussen, haben wir einen Anspruch darauf, dass eine neue, den neuen Umständen angepasste Lieferzeit vereinbart wird. Liefer- und Leistungsverzögerungen aufgrund höherer Gewalt, aufgrund Umständen, die wir nicht zu vertreten haben und aufgrund von Ereignissen, die uns die Lieferung nicht nur vorübergehend wesentlich erschweren oder unmöglich machen - hierzu gehören insbesondere Streik, Aussperrung, hoheitliche Eingriffe, Kriegshandlungen, Unruhen, Strommangel, Zerstörung oder Beschädigung unserer Produktions- und Betriebsvorrichtungen, die wir nicht zu vertreten haben, sowie Versagen der Verkehrsmittel, Arbeitsbeschränkungen oder denen unserer Unterprioritäten eintreten -, haben wir auch bei verbindlich vereinbarten Fristen und Terminen nicht zu vertreten. Sie berechtigen uns, die Lieferungen bzw. Leistungen um die Dauer der Behinderung zuzüglich einer angemessenen Anlaufzeit hinauszuschieben. Ferner besteht in einem solchen Fall auch ein Anspruch unsererseits auf Preisanpassung. Die vorbeschriebenen Umstände sind auch dann von uns nicht zu vertreten, wenn sie während eines bereits vorliegenden Verzuges entstehen. Beginn und Ende derartiger Hindernisse werden wir in wichtigen Fällen dem Kunden baldmöglichst mitteilen. Die Lieferfrist ist eingehalten, wenn bis zu ihrem Ablauf der Liefergegenstand das Werk verlassen hat oder dem Kunden die Versandbereitschaft mitgeteilt worden ist.

VII. Muster

Eine Anfertigung von Mustern, gleich welcher Art, z. B. Entwürfe, Modelle usw., werden speziell für den Kunden nach seinen Vorgaben erst nach vorheriger diesbezüglicher schriftlicher Beauftragung gefertigt. Diese Muster werden sodann in jedem Fall auch gegenüber dem Kunden gesondert abgerechnet.

VIII. Aufbewahren von Unterlagen und Gegenstände, die der Wiederverwendung dienen

Das Aufbewahren von Unterlagen und anderen der Wiederverwendung dienenden Gegenständen des Kunden erfolgt nur nach vorheriger schriftlicher Vereinbarung und gegen besondere Vergütung über den Auslieferungszeitpunkt der bestellten Ware hinaus. Die vorstehend bezeichneten Unterlagen/Gegenstände werden, soweit sie vom Kunden zur Verfügung gestellt sind, bis zum Auslieferungstermin pflichtig behandelt. Auch diesbezüglich erfolgt eine Aufbewahrung über den Auslieferungszeitpunkt hinaus nur nach vorheriger schriftlicher Vereinbarung und gegen besondere Vergütung. Sollen die vorstehend bezeichneten Unterlagen/Gegenstände gegen Wasser, Feuer, Diebstahl oder andere Gefahren versichert werden, so hat der Kunde die Versicherung selbst zu besorgen. Eine Haftung unsererseits für den Verlust/die Beschädigung/die Zerstörung dieser Unterlagen/Gegenstände ist im Übrigen im Rahmen der gesetzlich zugelassenen Grenzen ausgeschlossen.

IX. Firmentext

Wir können auf den von uns gefertigten Gegenständen mit Zustimmung des Kunden in geeigneter Weise auf unsere Firma hinweisen. Der Kunde kann seine Zustimmung nur verweigern, wenn er daran ein berechtigtes Interesse hat.

X. Rügefist

Der Kunde hat die Ware unverzüglich nach Erhalt zu untersuchen und für den Fall, dass die Ware offensichtliche Mängel hat, uns dies innerhalb einer Frist von zwei Wochen ab Erhalt der Ware, im Falle der Versendung ab Übernahme vom Spediteur oder Frachtführer anzuzeigen, andernfalls sind seine Ansprüche wegen Mängeln ausgeschlossen. Nicht offensichtliche Mängel können nur innerhalb einer Frist von einem Jahr ab Erhalt der Ware, im Falle der Versendung ab Übernahme vom Spediteur oder Frachtführer, geltend gemacht werden.

XI. Gewährleistung

Die Gewährleistungsfrist beträgt 1 Jahr ab dem Gefahrübergang. Im Falle von Mängeln sind wir nach unserer Wahl zur Nachbesserung oder Ersatzlieferung berechtigt, und zwar bis zur Höhe des Auftragswertes, es sei denn, uns oder unseren Erfüllungsgehilfen fällt Vorsatz oder grobe Fahrlässigkeit zur Last oder es ist eine Garantie für die Beschaffenheit der Ware von uns übernommen worden. Schlägt ein zweimaliger Nachbesserungsversuch oder eine einmalige Ersatzlieferung fehl, ist die Nachbesserung oder Ersatzlieferung unmöglich, für den Kunden unzumutbar oder wird sie von uns endgültig verweigert, so kann der Kunde eine angemessene Herabsetzung des Preises oder die Ansetzung eines Ersatzpreises verlangen. Für weitere Voraussetzungen des Anspruchs des Käufers auf die Abtretung der Haftungsansprüche, die uns gegen den Lieferer des Fremderzeugnisses zustehen, eine Haftung unsererseits hierzu erfolgt nur subsidiär und setzt die vorhergehende gerichtliche Inanspruchnahme des Lieferers des Fremderzeugnisses voraus. Etwas entstehende, beim Lieferer des Fremderzeugnisses nicht betreibbare Kosten, die für die Rechtsverfolgung erforderlich waren, werden durch uns ersetzt. Darüber hinausgehende Gewährleistungs- und Schadensersatzansprüche sind, soweit gesetzlich zulässig, ausgeschlossen.

XII. Schadensersatz

Für Schadensersatzforderungen gelten nachfolgende Haftungsbegrenzungen, soweit gesetzlich zulässig: Für alle Schäden infolge schuldhafter Vertragsverletzung haften wir bei eigenem Verschulden oder dem unserer Erfüllungsgehilfen nur bei Vorsatz oder grober Fahrlässigkeit. Dies gilt - soweit gesetzlich zulässig - auch für den Fall des Verzuges oder der Unmöglichkeit der Leistung. Soweit wir auch für einen Schaden wegen einer Vertragsverletzung haften sollen, die auf leichter Fahrlässigkeit oder der unserer Erfüllungsgehilfen beruht, ist die Haftung für mittelbare Schäden ausgeschlossen. Für einen eingetretenen Verzugschaden im Falle unseres Leistungsverzuges haften wir nur bis zur Höhe des Auftragswertes (Eigenleistung ausschließlich Vorleistung und Material), falls uns oder unseren Erfüllungsgehilfen nur leichte Fahrlässigkeit zur Last fällt. Diese Begrenzung der Haftung gilt auch für Schäden bei Dienstleistungen durch Haimer an Waren der Kunden (z.B. Wuchten, Cool Jet, CoolFlash oder Safe-Lock), wobei die Haftung bis maximal zur Höhe des Auftragswertes der Dienstleistung von Haimer begrenzt ist.

XIII. Abnahme; Gefahrenübergang

Der Kunde hat zum vereinbarten Fertigstellungstermin die Ware bei Abnahmereife abzunehmen. Kommt er mit dieser Verpflichtung in Verzug, ist ungeachtet Ziffer III.1. der vereinbarte Preis sofort fällig. Kommt der Kunde dieser Verpflichtung nicht nach, sind wir berechtigt, vom Vertrag zurückzutreten und die Ware anderweitig zu verwerten, wobei der diesem Fall erzielte Verkaufserlös auf den vereinbarten Preis in Anrechnung kommt. Der entgangene Gewinn ist uns zu ersetzen. Kommt der Käufer in Annahmeverzug oder verletzt er sonstige Mitwirkungspflichten, so sind wir berechtigt, den insoweit entstandenen Schaden einschließlich etwaiger Mehraufwendungen zu verlangen. Weitergehende Ansprüche des Kunden bleiben vorbehalten. Sofern die Voraussetzungen des Anspruchs des Käufers auf die Abtretung der Haftungsansprüche, die uns gegen den Lieferer des Fremderzeugnisses zustehen, im Falle des Unterganges oder einer zufälligen Verschlechterung der Ware in dem Zeitpunkt auf den Kunden über, in dem dieser in Annahme- oder Schuldnerverzug geraten ist.

XIV. Eigentum, Urheberrechte, Geheimhaltungsverpflichtung

Die von uns zur Herstellung des Vertragsgegenstandes eingesetzten Betriebsgegenstände, insbesondere Sonderbetriebsmittel (Werkzeuge, Vorrichtungen) bleiben unser Eigentum und werden nicht ausgeliefert. An Kostenvoranlagen, Zeichnungen und anderen Unterlagen behalten wir uns Eigentums- und Urheberrechte vor. Sie dürfen unberechtigten Dritten nur mit unserer vorherigen ausdrücklichen schriftlichen Zustimmung zugänglich gemacht werden. Der Kunde haftet allein, wenn durch die Ausführung seines Auftrages Rechte, insbesondere Urheberrechte, Warenzeichen oder Patente Dritter verletzt werden. Der Kunde stellt uns von allen Ansprüchen Dritter wegen einer solchen Rechtsverletzung frei. Sämtliche von uns entworfenen Ideen und Unterlagen, insbesondere Muster, Skizzen, Entwürfe, technische Informationen, Modelle, technische Zeichnungen usw., unterstehen dem Schutz unseres geistigen Eigentums, sind vertraulich zu behandeln und dürfen ohne unsere vorherige schriftliche Zustimmung in keiner Form genutzt oder verwendet werden.

XV. Export

Im Falle von Weiterveräußerungen bestätigt der Kunde (Käufer) hiermit die Einhaltung aller Vorschriften und Bedingungen des deutschen Exportkontrollrechts sowie des US-Reexportrechts und eventuell weiterer Staaten. Der Kunde (Käufer) erklärt mit der Bestellung die Konformität mit den genannten Gesetzen und Verordnungen. Zudem bestätigt der Kunde mit der Bestellung, dass die Ware im Lieferland verbleiben wird bzw. nicht nach außerhalb der Europäischen Union verbracht wird.

XVI. Geltung deutschen Rechts

Es findet ausschließlich das Recht der Bundesrepublik Deutschland Anwendung. Die Anwendung des UN-Abkommens zum internationalen Warenkauf vom 1.1.1991 wird ausgeschlossen.

XVII. Erfüllungsort, Gerichtsstand, Wirksamkeit

Erfüllungsort für alle aus dem Vertragsverhältnis entstehenden Ansprüche ist der Sitz des Verkäufers. Gerichtsstand für sämtliche Rechtsstreitigkeiten aus der Geschäftsbeziehung ist ebenfalls der Sitz des Verkäufers. Wir sind jedoch berechtigt, auch am gesetzlichen Gerichtsstand Klage zu führen, wenn eine Bestimmung in diesen Verkaufs- und Lieferbedingungen oder eine Bestimmung im Rahmen sonstiger Vereinbarungen ganz oder teilweise unwirksam sein oder werden, so wird hiervon die Wirksamkeit aller sonstigen Bestimmungen oder Vereinbarungen nicht berührt. Anstelle der unwirksamen Bestimmung tritt die der unwirksamen Bestimmung dem Sinne nach am nächsten kommende rechtlich zulässige Bestimmung.

TERMS OF DELIVERY AND PAYMENT (FEBRUARY 2017)

I. Generalities

The following conditions apply to all business transactions - also those in the future - with the customer. Our sales and shipping conditions apply exclusively; we do not recognize other conditions as well as especially contrary or otherwise differing conditions on the part of the customer, unless we explicitly approve of the validity of those conditions. Our sales and shipping conditions also apply in the event that we acknowledge contrary or differing conditions on the side of the customer and unreservedly fulfill the order. All agreements reached between ourselves and the customer must be in written form in order to be valid. Our sales and shipping conditions apply exclusively towards registered businessmen/businesswomen if the contract is integrated in operating their business and towards legal entities under public law and separate estates or assets under public law.

II. Prices/Price changes, shipping

1. Our prices offered are Euro prices, and do not include value-added tax. Therefore, value-added tax must be added to the prices at the rate determined by the law applicable at the time. If not agreed specifically otherwise, our prices are ex works, excluding costs for packaging, postage, and shipping. All offered prices are subject to change.
2. Our prices offered are applicable only for the dates of order upon which the offers are based. Subsequent changes or additions upon request or at the instigation of the customer, including additional costs incurred by the above, shall be charged additionally. The same applies for additional costs which might arise as the result of the above from machine down-time. In the event of changes in wages or material costs which arise either between making the offer and the placing of the order, or at any time exceeding four months following completion of contract, we reserve the right to adjust the price accordingly.
3. Shipping of goods occurs at expense and risk of the customer and always plus cost of packaging following to the at any one time valid price list of Haimer or the relevant valid offer. Inasmuch as goods are shipped at cost and risk of the customer at the customer's request, our liability, as far as is legally permissible, is limited to damage caused intentionally or by gross negligence. At the customer's written request, and at his own expense, goods may be shipped insured by ourselves against theft, breakage, damage to or loss of goods in transit, fire and water damage, or against such other risks as may be expressed explicitly by the customer insofar as such are insurable.
4. As far as can be reasonably expected on the part of the customer, partial shipments are permissible.

III. Payment

1. The goods are to be paid in full, no deductions, within 30 calendar days of date of invoice.
2. Bills of exchange are only accepted upon special agreement and on account of performance without allowance for discount. Discounting and bill charges shall be borne by the customer and become due for payment immediately. We are not liable for the timely presentation of a bill of exchange, its due protest, due notice, or the return of an unpaid bill, unless we or our vicarious agents are guilty of damage by intention or gross negligence.
3. The customer is only entitled to set-off claims if his counterclaims have become res judicata, are uncontested or recognized by ourselves. In the event of contested counterclaims, the customer has no right of retention.
4. In the case of uncontested counterclaims, the customer can only claim a right of retention regarding asserted claims which are based upon the same contractual relationship.
5. With respect to this order the customer is obligated to confirm the receipt of the goods in cases of the delivery from Germany to the foreign countries of Europe; the confirmation has to comply with the regulation concerning turnover tax.

IV. Delay in Payment

1. In the event of delay in payment, we are entitled to charge the legal rate of interest on overdue payments, i.e. the rate of 9 % plus the basic annual interest rate current at the time in question and a lump sum of 40,00 € per overdue amount; this notwithstanding, we explicitly reserve the right to assert claims regarding additional damages. If the rate of interest is not claimed firstly this shall not exclude a later enforcement in the frames of the legal limitation; in this regard a forfeiture is excluded.
2. Should we become aware of circumstances which call into question the customer's creditworthiness and therefore deem our claim for payment to be at risk, particularly if the initiation of insolvency proceedings are filed for - or if insolvency proceedings are opened against the customer's property, or if a cheque is not honoured, or the customer stops payments respectively is in extensive default of the payment with collection threat, then we are entitled to declare the residual debt due immediately and to demand immediate payment. Further, we are then entitled to demand advance payment or provisions of security, and to retain the goods until payment, advance payment, or provisions of security are made, and to discontinue processing running orders until the same. If a change of the order required by the customer affects the production time, we can claim for a new delivery time adjusted to the new circumstances. Delay of delivery or performance caused by force majeure, caused by circumstances that are beyond our control and caused by incidents which do make the delivery not only temporary difficult or impossible - this is especially strike, lock out, intervention of public administration, act of war, riots, lack of energy, destruction or damage of our production and operating units, which were beyond our control as well as stoppage of transportation means, restrictions of work, etc., even though this occurs at our supplier or their sub-supplier we are not responsible for even if we agreed on binding delivery deadlines. You allow us to prolong the delivery respectively performance time for the time of interference and an additional initial period. Additionally in such cases we have the right to adjust the price. The above mentioned circumstances do also fall beyond our control if they occur during a already existing delay. Begin and end of such interference will be communicated to the customer as soon as possible. The delivery time is observed in case the product left the premise or we communicated the readiness of shipment to the customer at the end of the delivery time.

V. Reservation of title

1. Until all claims arising from the business relationship with the customer are fulfilled, the customer is required to grant the following securities, which we will release at the customer's request and at our own free will if the securities value consistently exceeds that of the claims by more than 10%.
2. All goods delivered to the customer remain our property until all claims arising from the business relationship with the customer are paid in full.
3. The object delivered may be neither pledged nor transferred for security to a third party before it is paid in full. In the event of attachment by a third party to the object of delivery, particularly as a pledge, the customer shall refer to our ownership and inform us in writing immediately, so that we can enforce our rights of ownership. The customer is liable for costs which arise judicially or extra-judicially should the third party not be in a position to repay us such costs as arise in relation to the abovementioned.
4. The customer is permitted to sell and process the goods within the context of proper business transactions, as long as he is not in arrears with fulfilling the claims which he owes. We can revoke this permission if the customer is overdue in payments or comes into a state of forfeiture of assets, particularly if insolvency proceedings are opened against his property.
5. The processing or transforming of the goods by the customer shall always be done for us. In the event that the goods are joined, mixed, or blended with other items, we acquire co-ownership in proportion with the value of the goods (sum total of invoice including legal value-added tax) to the remaining items which were joined, mixed, or blended together at the time when they were joined, mixed, or blended together.
6. For the event that ownership of the goods be lost inasmuch as the goods become an integral or necessary part of another item, the customer hereby concedes to us now, in advance, co-ownership of the main item equal to the share which corresponds with the proportion of the value of the goods delivered (sum total of invoice including legal value-added tax) to the value of the main item at the time of said joining, mixing, or blending.
7. In the event that the goods are sold, the customer now and hereby, for the security of our claims arising from the whole of the business relationship, assigns all claims which arise for the customer from resale or from other legal grounds (insurance, tortious act, or the like) against the buyer or third parties, independently of whether the goods, of which we have (partial) ownership, are resold with or without processing. Upon our request, which may be made at any time, the customer must inform us regarding the state of the claim, and allow us or anyone authorized by us to inspect those business records relevant to the above. We grant the customer permission, subject to revocation, to collect the sums due for the claims we assigned, to his own account and in his own name. This direct debit authorization can only be revoked if the customer does not meet his financial obligations in a proper manner. Our authority to collect ourselves the sums due remains unaffected by the above. However, we bind ourselves not to collect the sums due as long as the customer meets his financial obligations with the collected sales revenue, is not overdue for payments, and especially if no initiation for insolvency proceedings has been filed or cessation of payments has been noted. If this is the case, however, we can require that the customer makes known to us immediately the claims assigned and their debtors, including all information required for collection purposes, providing us with all records necessary therefore, and informing the debtors (third parties) of the assignment of claims. We as well have the right of disclosure of assignments against debtors. The customer, however, is not entitled to assign this claim to third parties.
8. Contrary to position 3, the customer is not entitled to sell the goods, even within the context of proper, standard business transactions, if the customer excludes assigning claims based on the sale of the goods to us.
9. In the event of actions contrary to the terms of contract, particularly in the case of delay of payment, we are entitled to rescission of the contract. Following rescission, we can demand return of the goods from the customer.

VI. Delivery time

1. Delivery dates and delivery periods are only binding if they are confirmed by us explicitly in writing.
2. The confirmed delivery dates and delivery periods start when the following cumulative conditions are met: the clarification of all technical questions; the fulfilment of the customer's contractual obligations, particularly that of furnishing records, authorizations, and release statements. When alterations ordered by the customer have an influence upon the duration of production time, we are entitled to insist upon agreeing to a new delivery time which is adjusted to the changed circumstances. We are not liable for delays in delivery and performance, even if binding dates and times have been agreed upon, in case of acts of God, in case of circumstances which we are not responsible for, and in the event of incidents which not only temporarily substantially impede delivery or make it impossible - this includes in particular strike, lock-out, sovereign intervention, acts of war, riots, electrical shortage, destruction or damage to our production or works fixtures for which we are not liable, as well as transportation failure, work limitations etc., also when the above affect our suppliers or their sub-suppliers. Such circumstances entitle us to postpone delivery or performance for the duration of the impediment plus a reasonable starting-up time. Furthermore, such a case entitles us, for our part, to adjust the price accordingly. We are also not liable for the circumstances mentioned if they arise during an already existing delay. In important cases, we will inform the customer as soon as possible regarding the beginning and end of such hindrances. The delivery deadline is met if by date of its expiry the goods have left the works or the customer has received notice of readiness of dispatch.

VII. Sample

Samples of all kinds, whether designs, models, etc., are prepared especially for the customer according to his instructions and only by prior written commission for the same. In every case, these samples will be billed separately to the customer.

VIII. Storage of documents and items for further use

The storage of the customer's papers and other objects such as may serve some future purpose is undertaken only upon prior written agreement and in exchange for special compensation beyond the date of delivery of the goods ordered. The abovementioned goods a/o objects, if they are placed at our disposal by the customer, shall be handled with care up to the delivery date. In this case as well, storage beyond the delivery date is only granted upon prior written agreement and in return for special compensation. Should the abovementioned documents a/o objects be insured against water, fire, theft, or other dangers, the customer must provide the necessary insurance himself. Further, within legally permissible limits, we are exempt from liability for the loss of, damage to, or destruction of these documents a/o objects.

IX. Company print

On objects of our manufacture, we can, with the customer's permission, make reference to our company in an appropriate manner. The customer can only withhold his permission in the event that he has a justifiable interest in so doing.

X. Time limit for making a claim

Upon delivery, the customer must inspect the goods without delay, and in the event that the goods have obvious defects, these must be reported to us within a period of two weeks following receipt of the goods, in the case of shipping from the point of taking delivery from the shipper or carrier; otherwise, the customer's claims regarding defects are excluded. Claims for non-obvious defects can only be asserted within a period of one year upon receipt of the goods, in the case of shipping upon taking delivery from the shipper or carrier.

XI. Warranty

The warranty period is 1 year after passing of the risk. In the event of defects, we are entitled to choose between rectifying the defects or delivering a substitute, up to the amount of the contractual value, unless we or our vicarious agents are guilty of damage by intent or gross negligence, or if we have given a guarantee for the condition of the goods. If two attempts at rectifying the defects or at delivering a substitute fail, or if rectification or substitution is not possible, not to be reasonably expected for the customer, or finally refused by ourselves, then the customer can demand a reasonable reduction in price or withdrawal from the contract. For substantial third-party products, our liability is limited initially to the assignment of liability claims to which we are entitled against the supplier of the third-party products. Any liability ensuing on our part in this instance can only be secondary and requires prior recourse to the courts for the supplier of the third-party product. We will reimburse such costs as may arise if they cannot be collected from the supplier and if they were necessary for prosecution. Guarantee and damage claims which exceed the above are excluded, so far as is permissible by law.

XII. Compensation for Damages

The following liability limits apply for damage claims, within the parameters of the law:
For all damages arising from culpable breach of contract, we are liable if we ourselves or our vicarious agents are at fault, but only in case of damage by intention or gross negligence. Within the limits of the law, this also applies in cases of default or when performance becomes impossible. Insofar as we are considered liable for damages due to breach of contract which results from a slight degree of negligence on our part or on the part of our vicarious agents, liability for indirect damages is excluded. When delay damages arise due to delay in our performance, we are only liable to the extent of contractual value (our own work excluding advance performance and material) if we or our vicarious agents are only at fault for slight negligence. This limitation of liability also applies for damages in connection with services of Haimer for goods of customers (e.g. Balancing, Cool Jet, CoolFlash, Duo-Lock™ or Safe-Lock™), whereupon the liability is limited to the extent of the contractual value of the service by Haimer.

XIII. Taking Delivery; Passing of Risk

The customer must take delivery of the goods at the completion time agreed upon if the goods are ready for acceptance. If the customer is in default of acceptance, regardless of article III.1 the price agreed upon is due immediately. If the customer does not meet this obligation, we are entitled to withdraw from the contract and to make other use of the goods, whereby the sales revenues gained in this case are credited to the price agreed upon. We must be compensated for profit lost. If the seller is in default of acceptance or fails to perform other participation duties, then we are entitled to demand compensation for damages thus caused, including any additional expenditures which may arise. We reserve the right to bring claims on our behalf. In case of default or delay in acceptance by the buyer, or other failure to perform participation duties on the part of the buyer, then the risk of accidental loss of the goods or of accidental worsening of the state of the goods passes over to the buyer from the point in which he entered into the state of default in acceptance or debtor's delay.

XIV. Ownership, Copyright, Duty of Secrecy

Those articles of the trade which we use to manufacture the product of the contract, in particular special means of operation (tools, devices) remain our property and shall not be delivered. We reserve for ourselves the ownership and copyrights of estimates of cost, drawings, and other documents. They may only then be made available to unauthorized third parties if we give our prior explicit written permission. The customer is solely liable if, in the process of executing orders, any rights, particularly copyrights, trademarks, or patents of third parties are infringed upon. The customer indemnifies us against claims of third parties in the event of such violations of rights. All ideas and documents drawn up by ourselves, in particular samples, sketches, designs, technical information, models, technical drawings etc. are under the protection of our intellectual property, have to be treated confidential and may not be used or applied in any manner without our prior written consent.

XV. Export

The customer (Buyer) confirms if he resales Haimer products that he complies with all provisions and regulations of german and international export controls as well as with the US re-export regulations. The customer (Buyer) declares with his order his compliance with this kind of laws and regulations. Additionally the customer (Buyer) confirms with his order that the products will remain in the delivery country respectively will not be delivery out of the European Union.

XVI. Applicability of German Law

The law of the Federal Republic of Germany is exclusively applicable. Application of the UN Convention on Contracts for the International Sale of Goods, dated January 1, 1991, is precluded.

XVII. Place of Performance, Place of Jurisdiction, and Validity

The place of performance for all claims arising from this contractual relationship is place of business of the seller. The place of business of the seller is also the place of jurisdiction for all legal disputes arising from this business connection. We are, however, entitled to bring grievances before the legal place of jurisdiction as well. The partial or complete invalidity of any provision in these terms of sales and delivery, or of any provision within the context of other agreements, whether now or in the future, shall not affect the validity of any part of the remaining provisions or agreements. The invalid provision is then replaced by that lawfully permissible provision which is closest to the meaning of the invalid provision.

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Quality Wins.



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