



Designed for  
**EXTREME**  
CONDITIONS

*sign*

Cable  
System





*sign*  
power tools



## IN WHICH **EXTREME** CONDITIONS HAVE WE TESTED OUR DEVICES?

- ▶ Handpieces are **autoclaved all night long** after subjecting them to sterilization for 40 minutes and drying for 30 minutes.
- ▶ After the autoclave process, we performed cutting, drilling and reaming operations **with a handpiece outer surface 50°C**.
- ▶ Just after these tests, we washed the handpieces for **3 times successively at 70°C** in the automated machine.
- ▶ We used the handpieces **for hammering**, out of purpose.



ACF Sign Handpieces  
have passed from  
all **extreme** conditions  
tests

**API**

**Acf Product Insurance**  
First year free technical service

*First time in the world, user errors  
are covered  
by the guarantee*



We repair your products in  
**48 hours**

*We care the patients.  
We care you.  
Do not lose your time.*



## SINGLE SENSITIVE TRIGGER

The sensitive trigger system is a technology obtained by dividing the sensor distance of 4 mm into 1500 steps. The system accelerates from 0 rpm, increasing by 10 revolutions every 2.6 micrometers.

The sensitive trigger ensures that **the doctor has control throughout the operation, even the minimum oscillation created by the blade is noticed, and the entire movement of the blade can be seen accurately.** This feature allows the physician to operate in areas close to soft tissue and small bones as easily as in large bones during the procedure.

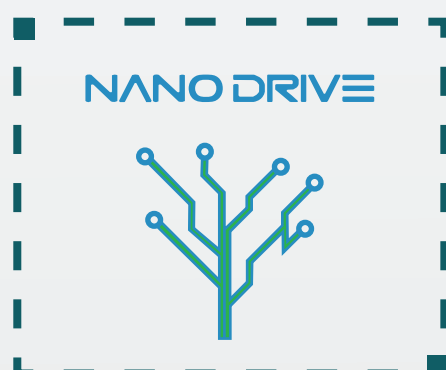


## IPX 6 WATER PROTECTION

When the devices are subjected to intensive cleaning after the operation, the sealing feature protects the devices from damage.

IPX 6 water protection feature in our Sign system is provided by using quality sealing elements. Thanks to this feature, **the power tool handpieces can be safely washed in the automatic machine.**

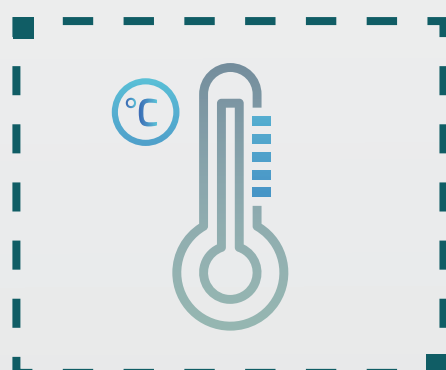
Another benefit of this feature is that the personnel cleaning the devices can protect themselves with less contact opportunity from the risk of contagious diseases.



## HIGH-TECH INTERNAL MOTOR AND DRIVER

*Less energy, Less heating up*

Internal motor and driver technology used in the handpiece directly affects the energy and heating consumed by the product. In our products, world-proven brushless motors and drivers who design is 100% owned by our company are used. Smart soft start and soft stop features in our drivers are factors that directly affects performance, efficiency and device life. In this way, our **Sign systems provide less consuming energy and less heating up thanks to less current requirement.**



## READY TO USE IN EMERGENCY

We have electronic drivers that manage the power tool system in our handpieces that are subject to sterilization. High technology components are selected for the production of our electronic drivers. All components have high operating temperatures.

With this technology, **after sterilization, the operation team can use the devices without waiting for the device to cool.**



**MEET ACF'S**  
Sign  
Power Tool System



## API (ACF PRODUCT INSURANCE)

When purchasing a surgical power tool system which has long life cycle, technical service availability and costs are frequently considered issue. As soon as you invest in ACF Surgical Power Tool Systems, **you are sure that there will be no additional cost in the first year.**

Our API system is a system implemented for the first time in the world.

**It also covers errors that occur outside the scope of warranty.** It is a support system created by our company that gives a sigh of relief to the investor in the first year.



## ONE HAND CONTROLLING

The surgeon needs to change the direction of the device in cases such as screwing, drilling, jamming of the reamer in the bone, and the screw direction is different from the targeted area. Thanks to the left-right safety key designed on the trigger, **the required operation is easily performed with one hand.**



## TECHNICAL SERVICE IN 48 HOURS

All system equipment that received by our company are repaired and shipped to you **within 48 hours** at the latest after your approval.

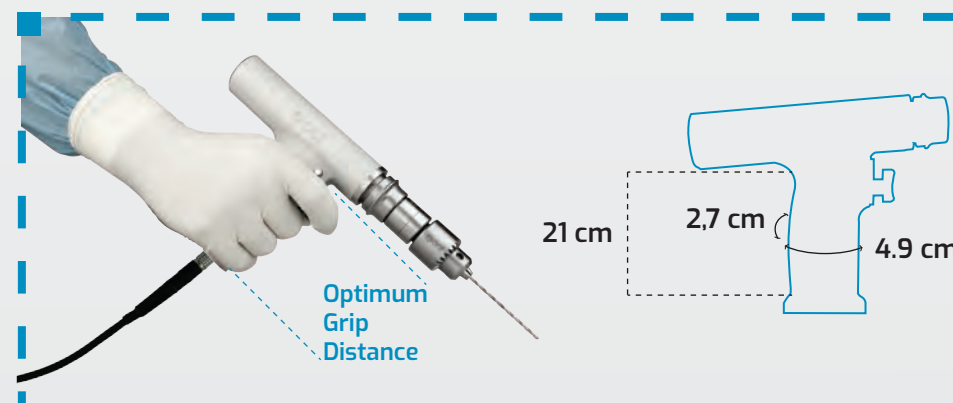


## PLUG & PLAY FEATURE - TAKES LESS SPACE

The simpler the design of the power units, that is, the fewer elements the desired power transfer can be achieved, the harder it is to be affected by external factors. With the simplest possible design of our Sign power console, it is not affected by the 'electronic noise' problem from the devices around it. It also takes up less space with its smaller design.

**The possibility of damage when dropped is also minimized.**

Data cable is also more resistant to improper pulling.



## BALANCED AND ERGONOMIC

A device is considered ergonomic if it can be operated reliably with one hand. How the motor and gearbox will be positioned is very important. The fact that the gearbox is in the handpiece makes it possible to hold the device with one hand. For devices with a grip, the ideal diameter at the grip is 50 mm. The handle should extend across the full width of the palm, as a handle that is too short will cause unnecessary compression in the middle of the palm. Our handpieces are designed based on these features.

**Handpieces can stand upright; and this enables attachments to be inserted more easily, to reduce contact with other hand tools and to be grasped quickly.**



Handpieces



Ref	Description			
A01 130	Handpiece / Modular / Cable / Type / 01			
				* 4,2 mm cannulated
	Drilling Speed	Drilling Torque	Reaming Speed	Reaming Torque
	0-750 rpm	3.9 Nm	0-250 rpm	17,8 Nm
		Operation Voltage	Sterile Conditions	
		14.4 V	134°C (+ 4°C / - 0°C)	

Ref	Description			
A01 220	Saw / Cable / Type / 02			
	Oscillation Speed	Oscillation Arc	Operation Voltage	Sterile Conditions
	15.000 cpm	4°	14.4 V	134°C (+ 4°C / - 0°C)

Attachments (Compatible with battery and cable systems)

	Ref	Description
	A01 700	Adapter for Drill (Keyed )
	A01 702	Adapter for Drill / A.O. Synthes / Small
	A01 720	Adapter for Reamer / Zimmer
	A01 721	Adapter for Reamer / A.O. Synthes
	A01 722	Adapter for Reamer / Harris / Aesculap
	A01 723	Adapter for Reamer / Hudson - Stryker
	A04 101	Key for Chuck / Type / 01
	A01 741	Adapter for Wire Driver (0.5 - 1.5 mm)
	A01 740	Adapter for Wire Driver (1.6 - 2.5 mm)
	A01 750	Adapter for Pin Driver (2.6 - 3.2 mm)
	A01 751	Adapter for Pin Driver (3.3 - 4.0 mm)

Accessoires



Ref	Description	
A02 200	Power Console / Type / 02	
	Plug & Play Feature :	Yes
	Dimensions:	23x20x9 cm

Ref	Description	
A03 300	Data Cable / Type / 03	
	Cable Lenght :	3 mt.
	Sterilizable :	Yes

Sterilization Containers

	Ref	Description
	A05 100	Sterilization Container / Cable / Saw / Modular / 400x302x77
	A05 180	Sterilization Container / Cable / Saw / 302x302x77
	A05 181	Sterilization Container / Cable / Modular / 302x302x77

## Required torque for reaming

Min. 15 Nm

Max. 20 Nm

## Handpiece Operational Weight with attachments

Approx.

1200 - 2100 gr

## Sterilization Conditions

Sterilizability in steam autoclave.

## Data Cable

Min 2,5 mt. - Max 4 mt.

It should be sterilizable.

## Cannulation and Left-Right Safety Key

Must be cannulated  
Cannula Diameter must meet the max Wire and Pin sizes.

The handpiece should be controllable with one hand and therefore the left right key should be close to the trigger.



## Required speed for drilling

Min. 500 rpm

Max. 1500 rpm

### Article

What should be the speed (rpm) of the drill handpiece in trauma operation?



## Required speed for wire and pin driving

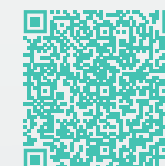
Min. 500 rpm

Max. 1500 rpm

Size range for Wire and Pin Driving  
0,5 mm - 4,0 mm

### Article

Comparison of Power Tool Modes Used for Kirschner Wire Driving: Forward & Reverse (F&R) Mode – Oscillation Mode



## Required speed for sawing

Min. 11.000 cpm

Max. 15.000 cpm

Oscillation Arc between  
3° - 5°

### Article

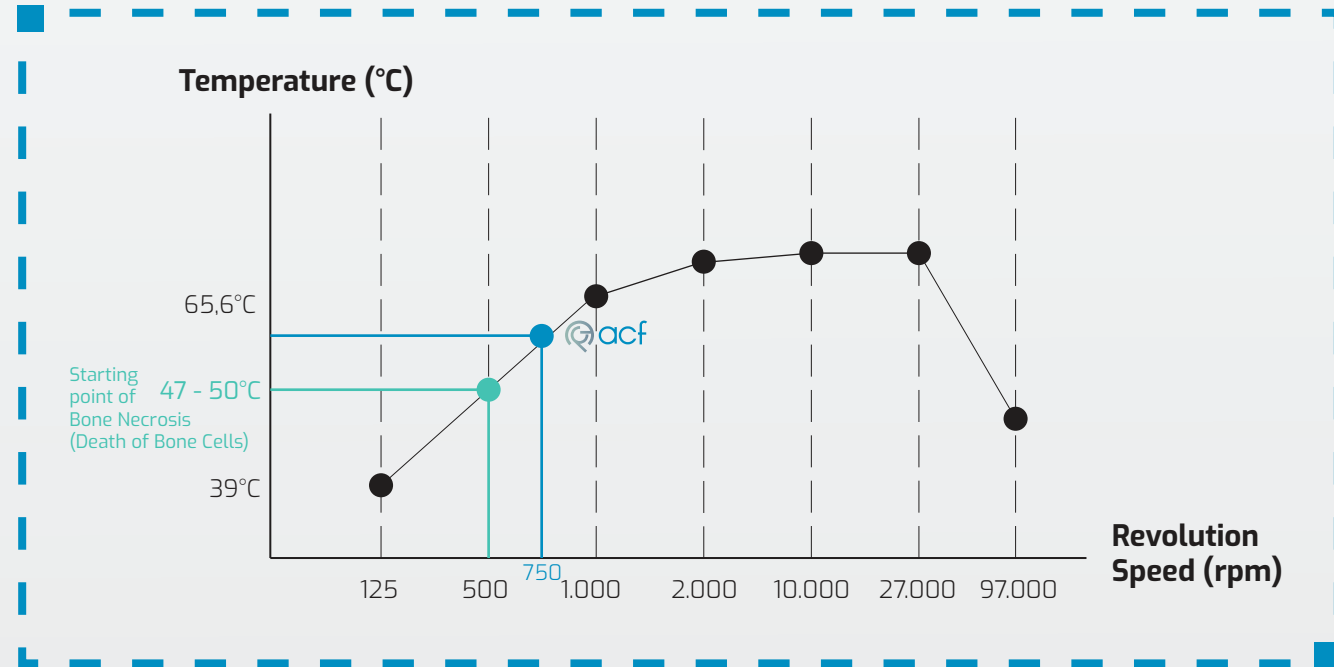
The Importance of Heat in Bone Cutting and Drilling Procedures in Orthopedic Operations



*We focused on fast patient recovery and success surgery.  
Not for fast surgery.*

Thompson (1958) examined low drilling speeds, temperature increase according to the speed and tissue damage in the drilling operations. He tried different drilling speeds on the dog jaw bone and examined bone reactions. While the temperature at 125 rpm was 39 ° C, it exceeded 65.5 ° C at 1000 and 2000 rpm speeds. Therefore, in accordance with Pallan (1960), he proposed **a drilling speed of 500 rpm to minimize the thermal damage and histological response of the bone**. Abouzgia and James (1997) found that the maximum temperature rise is rapidly decreasing in free running speeds from 27,000 rpm to 97,000 rpm. Apart from Matthews and Hirsch's studies (1972), there seems to be a general agreement that the temperature rise increases with the drilling speed until about 10,000 rpm. (Parsa, 2006)

Considering the global usage conditions of the drill bits, **ACF determined a sufficient speed that minimizes the heating in the bone and the torque value** that will support the doctor in this drilling process.



Please scan the QR code for more detail and references.

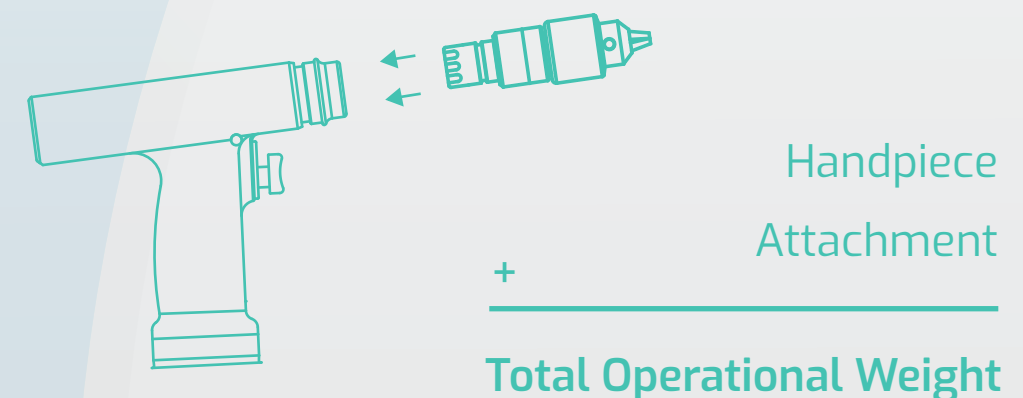
<https://www.acf.com.tr/what-should-be-the-speed-rpm-of-the-drill-handpiece-in-trauma-operation/>



## HOW YOU SHOULD EVALUATE THE WEIGHT OF HANDPIECE?

Surgical power tool systems have different production methods. **Manufacturers can add weight-creating elements inside the handpiece to accessories.** For example, the gearbox can be included in the attachments. This can cause the weight of the handpiece to be perceived as light.

For this reason, when evaluating the weight of a surgical power tool handpiece, **all accessories used in the operation should be considered.**





ACF MEDİKAL URUNLER MAK. SAN. VE TIC. LTD. STI.

Guzelyurt Mah. 5754 Sok. No: 3 / A  
Yunusemre, Manisa / Turkey 45030

Phone : +90 543 766 65 90

[marketing@acf.com.tr](mailto:marketing@acf.com.tr)

[www.acf.com.tr](http://www.acf.com.tr)