# **ENRAF-NONIUS**

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### **ENRAF-NONIUS**

### A story of success

### The company history

More than 80 years ago, in 1925, the First Dutch Röntgen Device Factory (ENRAF) in Rijswijk started developing equipment for röntgen applications and diathermy.

The production facility was later moved to the city of Delft, known not only for its world-famous Delft Blue porcelain, but also for its university, which for centuries has produced the country's top engineers and where research has always been a core activity. In 1948 the instrument maker firm Nonius was set up by the founder of Enraf. The company specialised in precision measuring instruments. Enraf, meanwhile, had not stood still, and had started making a name for itself in electro surgery, with, for example, the Curatis.

With participation in Enraf by the English company Evershed & Vignoles (it is by now 1955), the rights to the manufacturing and sale of a very advanced range of electronic measuring and control equipment were acquired. 1965 was an important year, which saw the merger of Enraf and Nonius into Enraf-Nonius and the coming into force of the Dutch Physiotherapists Decree. Physiotherapists, masseurs and specialists were awarded the official status of paramedics, a development that also took place in surrounding countries.

The wide product range of Enraf-Nonius was at that time geared to precision and came to include industrial measuring and control equipment and medical applications. A conspicuous product at that time was the Curamed 401, the first safe and reliable diathermy device for treatment of the locomotor apparatus. During the active seventies, various acquisitions took place and our production site in Brunssum was opened.

Enraf-Nonius was a leading specialist in its field, active in three high technology areas: industrial measuring equipment, röntgen diffraction and medical equipment. The Sonopuls 407 and 417, the Endomed 415 and 422, the Dynapuls 417, 421 and 424 and the Curapuls 418 were developed during this time and became known worldwide.

The Manulekt treatment couches completed the practical product range. The couches were a welcome addition for therapists and eagerly snapped up. After a period of internationalisation and expansion during the nineties, Enraf-Nonius has since 2000 concentrated on the market for physiotherapy and rehabilitation equipment. Enraf-Nonius kept in step with a world in motion and developed into the leading specialist in the field of kinesitherapy. An international network of highly trained, reliable product experts make our products available to motion specialists around the globe.

Functionality, reliability and durability are concepts that were associated with Enraf-Nonius products then as they are now. The latest production techniques, workmanship and the company's continuing interest to optimise its products through customer feedback, confirm the company's image of "passion for motion", in which the human being has a central position and is a true *partner for life*.

EN-Projects, a subsidiary of Enraf-Nonius, contributes to the international success and reputation of the company. EN-Projects specialises in Turn Key Medical Equipment and realises large-scale global projects in hospitals and rehabilitation centres. With many years' experience and proven reliability, EN-Projects is a valued partner for international ministries, health and other government bodies. EN-Projects have been realised in Europe, Latin America, Asia and the Middle East, and with its current large-scale schemes EN-Projects is providing an ongoing contribution to the development of physiotherapy in less developed countries.

### Our product catalogues are divided into three sections:

### Technical physiotherapy equipment

This is characterised by a selection of unsurpassed, contemporary, high technology physiotherapy equipment. A wide assortment of electro and ultrasound therapy, electro stimulation, vacuum therapy, biofeedback, shortwave and microwave therapy, thermotherapy and traction. Special attention has been paid to our new products in the Technical Physiotherapy section. Equipment for top performance and quality!

newcomer in our range, the result of advanced technology combined with user feedback and the expertise of our developers to meet this need. An extremely attractive, safe and stable standard couch that will appeal to everyone. It projects strength, safety and functionality, and comes at an attractive price. The couch that completes the famous Enraf-Nonius treatment couch collection.

### Active rehabilitation and medical fitness

This section provides a complete overview of our products for active and functional rehabilitation and medical fitness products.

the functionality, quality and reliability of this equipment. We also have something new for you in this section: the EN-Motion, a physio treadmill fitted with the latest techno gadgets and unique options.

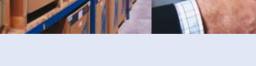
With our extensive knowledge, customerorientation and continuous urge to adapt our products to today's customers, using the latest technological developments, Enraf-Nonius also professionally advises on the setup of your exercise area. Our experts will be pleased to offer advice and guidance in creating a contemporary, functional, stylishly designed with you, to help improve the quality of life of all people. In Rotterdam we do this within R&D, national and international sales and marketing, technical service, the administrative department and EN-Projects. Our logistics team does this every day in Brunssum.











#### The treatment couches

The Manumed treatment couches form a comprehensive range of specialist couches with ultimate stability, easy adjustability and total comfort. Couches that can be adapted for every personal requirement. The Manumed treatment couch is used in practices, hospitals and healthcare centres worldwide. We also have a

Products that show that we have blended quality, functionality and design into a whole. Equipment designed with the utmost care, meeting the most stringent requirements of the MDD (Medical Devices Directory). Motion specialists, Olympic athletes, impaired patients, the young, the pregnant, top football clubs and many other users have been convinced of

exercise area using our quality equipment.

Enraf-Nonius has always been characterised as a market leader in the world of physiotherapy, with its unprecedented quality equipment. The basis for our unparalleled success formula was established in the past: the coming together of expertise, the delivery of quality and customerorientation. Enraf-Nonius will continue to work

Enraf-Nonius:

"Partner for Life" with a "Passion for Motion"











# EN-Track EN-Strength EN-Dynamic EN-Cardio EN-Free EN-Vibe EN-Tree

EN-TreeM Bike Reha EN-Mill EN-Motion







### The Exercise Room - unrivalled quality equipment

Enraf-Nonius, inspired by its Passion for Motion, has developed an extensive range of products to evaluate and actively treat the human locomotor apparatus. Our products are designed for specific and responsible exercise routines and are based on continuous development. They respond to the needs of the patient and therapist. The ingenious software EN-Track allows the operator to fully supervise a high-quality rehabilitation process.

Exercise is the most effective treatment for cardiovascular, degenerative, post-traumatic and metabolic conditions. EN-Dynamic provides the ideal start for exercising correctly. Young or old, beginner or highly trained athlete, patient or client, everyone can exercise in a safe and optimal way, using the precision of air pressure. EN-Free, controlled by EN-Track, gives free exercises a whole new meaning. Our guiding principles are not only superior quality and functionality, but also optimum safety. Whether it is Enraf-Nonius power or cardio equipment, every piece meets the most stringent requirements of the Medical Devices Directives, a guarantee for medically sound treatment.

We are proud to introduce the unique new treadmill EN-Motion, a perfect example of the latest technological developments, of our passion for motion, our striving to deliver the highest quality products, and not forgetting our passion for design concepts.

Enraf-Nonius has shown yet again that it leads the way for medical fitness with its quality equipment. Overweight, diabetes, high blood pressure, high cholesterol and back pain are just a few of the health problems that cost society and commerce millions of euros in healthcare, absence from work and missed turnover every year. Research has shown that sport is the most effective and cheapest method in resolving these problems. The advanced Enraf-Nonius medical fitness equipment is contributing to tackling these problems, and helping, together with your professional guidance, to move healthier and more motivated clients to a healthier future.

Contemporary exercise rooms with

Enraf-Nonius state-of-the-art,
medically sound equipment.

The choice of professionals.



The EN-Track concept gives you full control over the active rehabilitation process, ensuring optimum treatment at all times. Training schemes (including MTT, Strength Training, Cardiovascular Training and Freestyle Training Models) can easily be compiled using the training recommendations already preprogrammed in the EN-Track.

Data is collected by the patients themselves and is added to their patient status entirely automatically. The basic concept can be adapted to suit individual needs, thus guaranteeing a personalised but fully automatic monitoring of every patient. Needless to say, the ultimate training goal and the steps selected to achieve it are all fully user-definable. During the training phase, feedback of results is guaranteed.

In EN-Track, there are tests to determine initial values and training protocols linked to these aimed at power, condition, duration, interval or fat burning. On the basis of these tests and objectives, you can plan out a full exercise programme for both patients (medical fitness) and clients (general fitness and well-being). EN-Track makes it possible to have exercise programmes adapted progressively and automatically to the loadability of the user. This adaptation is checked so that overload is avoided. This also makes EN-Track exceptionally well suited to both fitness and medical fitness objectives.

- Quality management of the exercise programme
- Clear insight into patient's progress at all times
- All training principles can be freely interpolated
- Possibility of standardising exercise protocols
- Sensible and logistical training build-up
- Safe training build-up
- No manual record-keeping
- No loose workout forms
- Feedback on all exercises
- Excellent reporting facilities
- Easy-to-use software program

### ORDERING DATA

1411801 En-Track installation kit

### STANDARD ACCESSORIES

1411751 Operating manual EN-Track installation

### OPTIONAL ACCESSORIES

**1411801** En-Track

3444333 Chipcard drive for EN-Track

3444103 EN-Track chipcards, 10 pieces

#### SYSTEM REQUIREMENTS

- minimal: Pentium IV processor
- minimal: 256 Mb Ram
- minimal: Windows 2000 / XP / Windows 2003 Server
- cd-rom drive
- monitor resolution minimal 800 x 600, recommended 1024 x 786

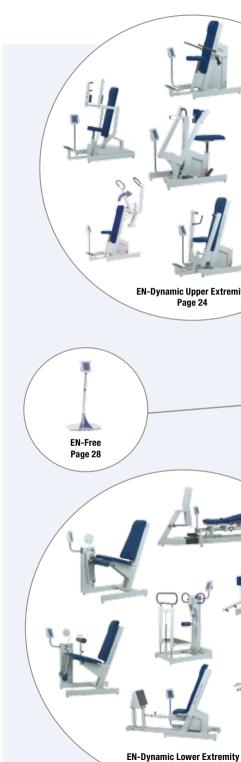






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EN-Track





**EN-Cardio** 



# **EN-TRACK**

# EN-Track exercise concept



### **EN-Cardio**

A complete series of automatically adjustable cardio respiratory exercise equipment, ranging from ergometer bikes to rehabilitation belts.

All EN-Cardio equipment works with the EN-Track concept and is perfect for use in both rehabilitation and post-rehabilitation.



### **EN-Strength**

A multi-functional pneumatic pulley and a complete series of automatically settable pneumatic exercise units with equipment for the upper and lower extremities and for the trunk.

EN-Strength was specially developed for use both by patients (in rehabilitation) and clients (in fitness and well-being).





### EN-Tree

A complete series of multi-functional pulley systems with which you exercise by means of both isolated mono-articular and complex multi-articular movements.

The EN-Tree series comprises various forms of implementation that allow perfect training with explosive movements as well as traditional power exercises.



### EN-Free

With EN-Free, it is possible to integrate every form of exercise within the EN-Track concept. This means you can, for example, seamlessly incorporate ball exercises, trampoline exercises or training, for example, in the fully automated exercise concept.

You are completely free in choosing the form of exercise.



# **EN-MOTION**

### EN-Motion treadmill



The EN-Motion treadmill is a medical training device suitable for therapy for conditions such as COPD and obesity. The EN-Motion is a universal treadmill for medical exercise therapy. The EN-Motion can also be used as a preventive exercise machine. Regular movement helps prevent cardiovascular disease, diabetes and osteoporosis.

The EN-Motion is also suitable for weight-loss programmes, or to keep the weight steady. The EN-Motion is a formidable treadmill, characterised by outstanding Enraf-Nonius design and workmanship and advanced technology, which perfectly meet today's needs. The treadmill has unique adjustable ergonomic sidebars. The innovative control panel pivots round for easy viewing by the patient or the therapist. The EN-Motion is further unique in its Dual Slope Technology (DST), which allows the easy setting of positive and negative slopes.

Therapy options are increased considerably with the adjustable direction of movement. The machine comes with functional, adjustable exercise programmes and a variety of test protocols. The EN-Motion treadmill can be controlled with EN-Track software. Its special shock absorption means that even the most sensitive patients can exercise on the EN-Motion. The extremely low step allows any patient to use it. What distinguishes the EN-Motion further from other treadmills is that this exercise machine meets the strict guidelines of the Medical Devices Directives for medically sound therapy. The EN-Motion is a professional treadmill with a powerful, quiet motor and a robust, contemporary look. It is stable and extremely safe to use.

- Dual Slope Technology (DST)
- Pivoting Panel

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#### ORDERING DATA

1665901 EN-Motion Standard 230V 1665911 EN-Motion Standard 115V

#### STANDARD ACCESSORIES

1665751 User manual EN-Motion

**1665802** Hip belt with magnetic emergency stop

### OPTIONAL ACCESSORIES

3496839 Chest-belt for heartbeat registration

1665800 Emergency stop

1665801 Ramp-up platform

### TECHNICAL SPECIFICATIONS

Supply voltage: 230 V ± 10%, 50/60 Hz

max. 18 km/h (adjustable in

steps of 0,1 km/h) Speed in reverse mode: max. 5 km/h

Inclination (pos. and neg.): +15% (pos.) tot -10% (neg.) adjustable in steps of 0,5

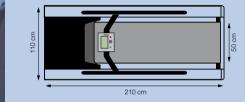
± 90 kg

150x50 cm Belt area:

70-90 cm Sidebar heights: 195x85,5 cm Step-up height: ± 11 cm

Max. permissible client

max. 235 kg Color LCD













### **EN-Cardio**

# **EN-MILL**

### Cardio-respiratory exercise equipment, treadmill

The Mill is extremely suitable for a wide range of rehab and training purposes, such as active rehabilitation, mobilization, cardio-respiratory rehabilitation and/or general training and fitness. There is a choice of two basic models: one fitted with the EN-Track interface and one without this interface (thus suitable for stand-alone use).



In their standard implementations, both models meet the following specifications:

- speeds adjustable from 0.5 to 18 km/h
- approved and authorised for medical use
- easy to operate and an extremely well laidout operating panel
- programmable operating unit
- possibility for heartbeat controlled training (with a Polar® transmitter and receiver included)
- emergency stop via emergency button (standard model)
- hip belt with safety switch (for automatic stop if the client cannot maintain the running speed of the belt)

The basic models can be extended or modified with the following options:

- 1. speed range extra fast or extra slow
- 2. various front and side supports
- 3. various types of height adjustments
- 4. an access platform
- 5. and extra de luxe emergency stop

The Mill features:

- straightforward operation
- easily readable display
- low mounting height
- sprung running surface
- powerful AC motor, 2.1 HP
- programmable
- heart rate control and monitoring with a Polar® chest band
- modular construction



3446692 EN-Mill Standard, basic model of the Mill as described 3446678 EN-Mill Track, basic model of the Mill as described and

fitted with EN-Track interface

The Mill can be extended with one or more extras. Consult your Enraf-Nonius representative for these extras.

OPTIONAL ACCESSORIES

3496884 Emergency stop of luxury

3446683 Fixed negative gradient of -/- 10% (rear-side) 3446555 Coated sidebars with a fixed height of 85 cm

3446677 Extra PVC-coated sidebars with a fixed height of 85 cm

3446674 Extra PVC-coated sidebars, adjustable

3446685 U-shaped front-bar

3446686 Extra PVC-coating for the standard front-bar

3446533 Coated sidebars, adjustable

**3446681** Electric height-adjustment from 0 to 25% (front-side)

**3446556** Ramp-up platform 50 cm

3446687 Extra low velocity range for rehabilitation (0,1-12 km/h)

3446688 Extra high velocity range for sports-applications (0,5-20 km/h)

TECHNICAL SPECIFICATIONS

Supply voltage: 230 V ± 10%, 50/60 Hz

Driving force: Frequency-controlled rotary-field

electromotor 1500 W Motor capacity:

Max power consumption: 10 A

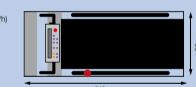
Min./max. speed: 50x150 cm (eff.)

Max permissible

client weight: 135 kg 0-25%

212x80x138 cm

EN-Track compatible as of EN-Track version 6



























### **EN-Cardio**

# **BIKE REHA**

### Cardio-respiratory exercise equipment

The Bike Reha is the bicycle for cardio respiratory training, rehabilitation and sports training in general. This ergometer cycle is exceptionally well suited to a wide group of patients and clients due to its exceptional adjustability, the low mounting level and the easy test modules.



On the Bike Reha, patients with limited movement can also exercise optimally. The low mounting level, the horizontal and vertical adjustability of the saddle and the handlebars and the adjustable cranks contribute to this. In addition, this cycle is exceptionally well suited to heart-lung patients for example, since it is possible to set an exceedingly low resistance of just 20 watts.

On the Bike Reha, overloading of the rehabilitating patient is avoided since the "coupling" can be kept constant. For ergometer cycles without coupling control, a reduction in the number of rotations per minute leads to an increase in the pedal resistance. With these ergometers the risk of overloading may occur, since the resistance will rise as the patient pedals more slowly. In addition, it is extremely frustrating for the rehabilitating patient, since when they become tired the exercise becomes even harder. With the Bike Reha and the coupling position, this is avoided and your patients will be able to rehabilitate in a safe and pleasant way.

The Bike Reha is also interesting for (professional) sportspeople. The resistance can be varied from 20 to some 400 watts and the cycle offers options to perform various tests such as the VO2-Max, and the 3- and 12minute tests. This means it is possible to easily

gain insight in an easy way into various aspects of the condition of the patient and the client.

The Bike Reha can also be controlled from the the settings of the cycle are automatically performed with the aid of a chip card and the

Even without the EN-Track concept with the automatic settings, the Bike Reha is with this exercise equipment.

In short: The Bike Reha is indispensable to any practice!

- Low instep
- Clear display
- Wear-resistant eddy-current brake
- Pulse monitoring by means of Polar® cheststrap and built-in receiver, hand/pulse measurement (optional)
- Low-noise belt-drive
- Handlebar horizontal and vertical adjustable
- Saddle horizontal and vertical adjustable

EN-Track concept so that the entire training can be put together beforehand in a simple manner, results can be clearly displayed in the software.

exceptionally easy to operate. A sophisticated and extensively tested interface ensures that everyone, young or old, can easily get going

- Uniformity in operation
- Ergonomic design



- Smart-card technology



### ORDERING DATA

3446665 Bike Reha

3446670 Bike Reha incl. hand/pulse measurement

3446675 Bike Reha Track, incl. hand/pulse measurement and

adjustable cranks

3446676 Bike Reha Track, incl. adjustable cranks

### OPTIONAL ACCESSORIES

3496160 Adjustable cranks 3496161 Document holder

3496839 Chest-belt for heartbeat registration

**3496840** Elastic strap for chest belt for heartbeat registration

### TECHNICAL SPECIFICATIONS

Mains voltage: 230 V

Power supply: via power cord (230 V EUR)

50 Hz Frequency:

Power consumption: approx. 40 VA

Braking principle: process-controlled eddy-current brake

20-400 W (resolution: 5 W increments) rpm-independent from 35-110

> rpm 6-60 Nm (resolution: 0.5 Nm increments) rpm-independent from

35-110 rpm

Min. adjustable power:

by means of Polar® chest strap and

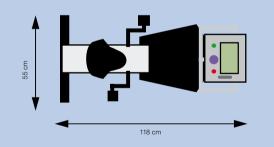
receiver, hand/pulse measurement (optional). Ear sensor prepared

118x55x115 cm

approx. 55 kg Saddle height (adjustable): 50-110 cm (EN975-1 and -5)

75-115 cm

33.5 ± 1.5 cm 150 kg / 330 lbs

















The **Step** is a step ergometer with interdependent pedals, so the left and right leg must be used in combination for optimum performance. If one leg is performing less, this can be compensated for by the other leg.

The **Stair** is a step ergo-meter with independent pedals, so the left and right leg work independently. Even if the user has asymmetric mobility (i.e. limitations in one of the joints of the lower extremity) this ergo-meter can still be used to excellent effect.

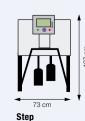
The Step and the Stair can be equipped with normal handlebars, with horn-shaped handlebars or with horn-shaped handlebars with hand pulse measurement.

- Uniformity in operation
- Clear display
- Ergonomic design
- Pulse monitoring by means of Polar® cheststrap and built-in receiver, hand/pulse measurement (optionals)
- Smart-card technology









ORDERING DATA

**3446666** Step

3446667 Stair

Mains voltage:

Power supply:

Power consumption:

Max. patient weight:

Heart rate monitoring:

Parameters displayed

Exercise modes:

during training:

Braking principle:

Frequency:

OPTIONAL ACCESSORIES

3496161 Document holder

TECHNICAL SPECIFICATIONS

3446638 Step with horn-shaped handlebars

3446639 Stair with horn-shaped handlebars

3496839 Chest-belt for heartbeat registration

3496840 Elastic strap for chest-belt for heartbeat registration

3446671 Step with horn-shaped handlebars, incl. hand/pulse measurement

3446672 Stair with horn-shaped handlebars, incl. hand/pulse measurement

230 V

50 Hz

approx. 70VA

via power cord (230 V EUR)

12 speed dependent levels

Step: from 0-53 m/min or

Stair: from 0-53 m/min or

Step (lxwxh): 107x73x150 cm

Stair (lxwxh): 107x73x150 cm

0-160 Steps/min

0-160 Stairs/min

Step: approx. 50 kg

Stair: approx. 55 kg

150 kg / 330 lbs

Step: process-controlled hydraulic brake

Stair: process-controlled eddy current brake

Polar® chest-strap and receiver and hand/pulse

measurement (options). Ear sensor prepared

constant level, constant heart rate

time, heart rate, speed, distance, level

Cardio-respiratory exercise equipment



in which both the upper and lower extremities are fully involved in the power generation. By combining these two ballistic movements, extrahigh demands are made on the user's cardiorespiratory capacity. The **Cruiser** is a total workout ergometer in

The **Crosswalker** is a total workout ergometer

which both the upper and lower extremities are fully involved in the power generation. By combining these two ballistic movements, extra-high demands are made on the user's cardio-respiratory capacity. Thanks to the other movement module, the Cruiser will form a welcome change from the Crosswalker.

- Uniformity in operation
- Clear display
- Ergonomic design
- Wear-resistant eddy-current brake
- Pulse monitoring by means of Polar® cheststrap and built-in receiver, hand/pulse measurement (optionals)
- Low-noise belt-drive
- Smart-card technology

ORDERING DATA

3446668 Crosswalker

**3446669** Cruiser

3446673 Crosswalker incl. hand/pulse measurement

### OPTIONAL ACCESSORIES

3496161 Document holder

3496839 Chest-belt for heartbeat registration

3496840 Elastic strap for chest-belt for heartbeat registration

#### TECHNICAL SPECIFICATIONS

Mains voltage: Power supply: via power cord (230 V EUR)

50 Hz

Permitted voltage variation: Cruiser: + 10%

Power consumption: approx. 40 VA

Braking principle: process-controlled eddy-current brake

Crosswalker: 20-400 W (resolution: 5 W increments)

rpm-independent from 35-100 rpm, 6-60 Nm (resolution: 0.5 Nm increments) rpm-

independent from 35-100 rpm

Cruiser: 20-400 W (resolution: 5 W increments)

rpm-independent from 35-60 rpm,

6-60 Nm (resolution: 0.5 Nm increments) rpm-

independent from 35-60 rpm

Min. adjustable power: Crosswalker: 190x55x177 cm Dimensions (lxwxh):

Cruiser: 220x55x125 cm

Crosswalker: approx. 80 kg

Cruiser: approx. 100 kg

150 kg / 330 lbs Max. patient weight:

Polar® chest-strap and receiver and hand/pulse Heart rate monitoring:

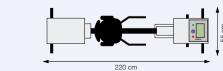
measurement (options). Ear sensor prepared

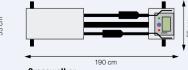
constant torque, constant power, constant heart rate

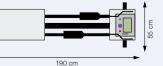
Exercise modes:

Parameters displayed during training:

time, heart rate, speed, distance, work, power, resistance and RPM













ENRAF NONIUS



### **EN-Strength / EN-Dynamic**

# **EN-DYNAMIC**

### EN-Dynamic Lower Extremity

EN-Dynamic training means optimum exercising for everyone: men-women, elderly youngsters, beginners-advanced.

After the automatic set-up with the EN-Track chip-card, the ideal body position can be set. In this correct posture the body is supported on essential points. Hereby the exercises are executed in an appropriate way: with correct posture and accurate load. Compensation is limited to a minimum. The units are easily accessible, easy adjustable and because of the EN-Track guiding unambiguous to use. Even individuals without training experience will feel very at ease in your centre.

- Adjustable from a seated position: the load is set by a simple push on a button
- Provides clear feedback to the user: the force is displayed digitally and the number of repetitions are counted automatically
- The large green letters are also visible for persons with visual limitations
- Manual adjustable
- With the chip-cards, the resistance and number of repetitions are set automatically

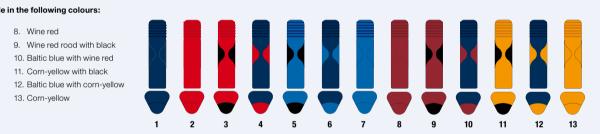
- Simple to operate and accurately adjustable
- No unnecessary high peak forces
- Silent during exercising
- Minimal increments are possible, thus accurate setting and smooth progression
- Wide range of load setting: from extremely light to very heavy
- Compact

Technical Specifications						
		Range	Size	Weight		
EN-Dynamic Total Hip	1455931	0-36x10 N (kgf)	110x115x170 cm	120 kg		
EN-Dynamic Leg Extension	1455925	0-100x10 N (kgf)	140x90x140 cm	105 kg		
EN-Dynamic Seated Leg Curl	1455932	0-70x10 N (kgf)	140x90x140 cm	105 kg		
EN-Dynamic Abduction	1455929	0-60x10 N (kgf)	140x140x140 cm	85 kg		
EN-Dynamic Adduction	1455928	0-60x10 N (kgf)	140x140x140 cm	85 kg		
EN-Dynamic Seated Leg Press	1455933	0-200x10 N (kgf)	220x90x140 cm	105 kg		
EN-Dynamic Squat	1455935	0-200x10 N (kgf)	250x80x150 cm	265 kg		

### The EN-Dynamic is available in the following colours:

8. Wine red

- 1. Baltic blue 2. Signal red
- 3. Signal red with black
- 4. Baltic blue with signal red 11. Corn-yellow with black
- Atoll blue with black
- 6. Baltic blue with atoll blue 13. Corn-yellow 7. Atoll blue



#### ORDERING DATA

1455925 EN-Dynamic Leg Extension

1455928 EN-Dynamic Adduction

1455929 EN-Dynamic Abduction

1455931 EN-Dynamic Total Hip 1455932 EN-Dynamic Seated Leg Curl

1455933 EN-Dynamic Seated Leg Press

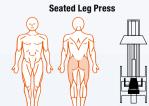
1455935 EN-Dynamic Squat

### OPTIONAL ACCESSORIES

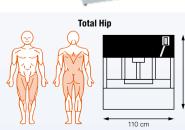
1411800 EN-Dynamics installation kit 3444668 Compressor for EN-Dynamic

1455940 Range of Motion limiter EN-Dynamic Squat

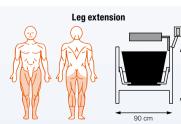




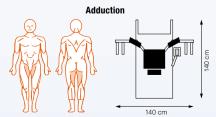




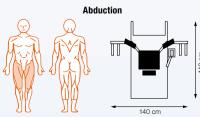




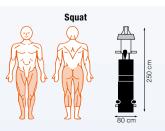




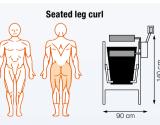




















### **EN-Strength / EN-Dynamic**



Technical Specifications						
		Range	Size	Weight		
EN-Dynamic Chest Press	1455921	0-120x10 N (kgf)	135x105x140 cm	100 kg		
EN-Dynamic Pull Down	1455923	0-80x10 N (kgf)	140x120x180 cm	105 kg		
EN-Dynamic Shoulder Press	1455927	0-60x10 N (kgf)	140x120x180 cm	135 kg		
EN-Dynamic Rowing	1455926	0-100x10 N (kgf)	120x90x115 cm	100 kg		
EN-Dynamic Triceps Dips	1455934	0-100x10 N (kgf)	130x72x140 cm	96 kg		
EN-Dynamic Fly	1455930	0-65x10 N (kgf)	130x120x140 cm	100 kg		

### The EN-Dynamic is available in the following colours:

- 1. Baltic blue
- 2. Signal red

7. Atoll blue

- 8. Wine red
- 9. Wine red rood with black 3. Signal red with black 10. Baltic blue with wine red
- 4. Baltic blue with signal red 11. Corn-yellow with black
- 6. Baltic blue with atoll blue 13. Corn-yellow





### ORDERING DATA

1455921 EN-Dynamic Chest Press 1455923 EN-Dynamic Pull Down

1455926 EN-Dynamic Rowing

1455927 EN-Dynamic Shoulder Press

1455930 EN-Dynamic Fly

1455934 EN-Dynamic Triceps Dips

OPTIONAL ACCESSORIES

1411800 EN-Dynamics installation kit 3444668 Compressor for EN-Dynamic











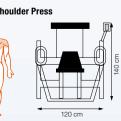




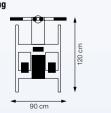


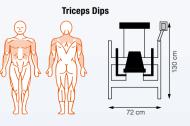


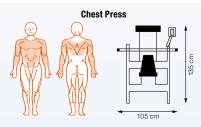




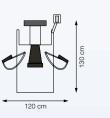
















### **EN-Strength / EN-Dynamic**



Technical Specifications						
		Range	Size	Weight		
EN-Dynamic Low Back	1455922	0-80x10 N (kgf)	160x190x130 cm	120 kg		
EN-Dynamic Abdominal	1455924	0-80x10 N (kgf)	160x90x140 cm	120 kg		
EN-Dynamic Rotator	1455936	0-80x10 N (kgf)	160x90x140 cm	120 kg		

### The EN-Dynamic is available in the following colours:

1. Baltic blue

7. Atoll blue

- 2. Signal red
- 3. Signal red with black 10. Baltic blue with wine red
- 4. Baltic blue with signal red 11. Corn-yellow with black
- 6. Baltic blue with atoll blue 13. Corn-yellow

8. Wine red

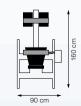
9. Wine red rood with black





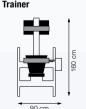














### ORDERING DATA

1455922 EN-Dynamic Low Back Trainer 1455924 EN-Dynamic Abdominal Trainer 1455936 EN-Dynamic Rotator

#### OPTIONAL ACCESSORIES

1411800 EN-Dynamics installation kit 3444668 Compressor for EN-Dynamic





# Accompaniment for free exercises by EN-Track



In the normal load/loadability scheme, exercises are also included that very closely approach the varied ADL situation. These exercises cannot always be performed on standard equipment. EN-Free ensures that these exercises can also be included in the programme. Two units have been specially developed for this, with which each free exercise can be controlled via EN-Track and with feedback on them also available.

With EN-Free, you can include each form of exercise you deem desirable within your centre in EN-Track: whether it be forms of exercise with a trampoline, an exercise bar, bar-bells or simply free mat exercises. Everything can be included in EN-Track. With EN-Free, you are completely free in the compilation of your exercise programme.

- Training guided by chip-card
- Routing through your facility
- Compose your own exercises
- Safe and supervised training

ORDERING DATA 1446901 FN-Free

STANDARD ACCESSORIES

3444488 Adapter 230V EUR

OPTIONAL ACCESSORIES 1446902 Pillar for EN-Free

1446903 Wall-fixing for EN-Free **3444132** Adapter ENA 1810 100-240V (Sonopuls 490/491,

EN-Free) 3444111 Mains connecting cable, EUR numbers:

**1446901** Control box with user manual (1446750) 1446902 EN-Free pillar including mounting instructions

EN-Free with a pillar consists of the following article

**3444132** Adaptor

**3444111** Cable

In order to put up a complete EN-Free with pillar, the above four article numbers are required.

The EN-Free wall mounted unit consists of the following article numbers:

**1446901** Control box with user manual (1446750)

**1446903** Bracket to be mounted to the wall including material for attachment and mounting instructions

**3444132** Adaptor

**3444111** Cable

In order to mount the complete EN-Free to the wall, the above four article numbers are required.

TECHNICAL SPECIFICATIONS

230 V / 12 V Dimensions (hxwxd): 21x18,5x6 cm Weight: 1,2 kg

**EN-TREE P** 

# Pneumatic Pulley



- Compact, functional exercise unit on a surface area of 2 m<sup>2</sup>
- Multi-functional exercise unit for dynamical as well as non-dynamical functional movements
- Double cords for varied stabilization, coordination, rotation and mobilization exercises
- Provides clear feedback to the user: the force is displayed digitally and the number of repetitions are counted automatically
- The large green letters are also visible for persons with visual limitations

- Manually adjustable
- Automatic adjustment with the FN-Track chipcard

**EN-Track** 

- No unnecessary high peak forces
- Silent during exercising
- Minimal increments are possible, thus accurate setting and smooth progression
- Wide range of load setting: from extremely light to very heavy

ORDERING DATA 1412996 EN-TreeP

STANDARD ACCESSORIES **3443305** Set of 2 handgrips

**OPTIONAL ACCESSORIES 3443355** EN-Tree Train 3443356 EN-Tree Bench

3446189 Exercise stool, height 65 cm 3443306 Set accessories for EN-Tree Pulley 3443307 Pull Down accessory

3443308 Lat Pully handgrip 3443309 Triceps handgrip **3443310** Ankle strap, 37 cm

**3447695** Foot sling 3443313 Leather strap, 73 cm 3445552 Padded ankle band

3445553 Padded hip belt 3443383 Wrist trainer 3443381 Bent triceps bar 3496253 Row handle

**TECHNICAL SPECIFICATIONS** Dimensions (hxwxd): 218x39x35 cm

Weight (w. covers): 60 kg

**Load increments:** 40 to 720 N, in steps of 10 N For 1 cord end: display value divided in 6 For 2 cord ends: display value divided in 3

























































# **EN-TREE**

### EN-Tree Pulley Explosive 54 kg



With EN-Tree products, active exercise is possible for almost anyone. Healthy individuals, patients with specific exercise requirements and wheelchair users can enter into their own training programs. This is possible because of the wide variety of load application and the ease of adaptation of the EN-Tree to every individual's need. The EN-Tree Pulley allows an increase of the weight in very small steps.

The EN-Tree Pulley allows the exercise of almost every human movement. This includes mono-articular movements as well as complex displacements. The EN-Tree Explosive Pulley is constructed for high speed, explosive movements, which occur for example during sports activities like tennis and soccer. This allows for high velocity movement without high inertia. The EN-Tree Explosive provides the optimal balance between acceleration and resistance for high speed training. The EN-Tree Explosive is provided with 54 kg of weight, which effectively means a maximum of 18 kg to spare. The EN-Tree Pulley Explosive 3443370 is encased fine, so that the unit meets the essential requirements of the CE-MDD.

### Installation requirements:

EN-Tree should be mounted to the wall with 4 screws and plugs. The wall should be firm enough to resist forces up to 950 N (thus do not attach



it to carton-board or thin wooden walls). Leave about 2m<sup>2</sup> free around every pulley for optimal exercise.

- Multi-functional
- Accurate dosage of the exercise resistance
- Possibility to exercise on a surface area of 2m<sup>2</sup>
- Extremely smooth dual-bearing rollers
- Height adjustable with indicator

- Adjustable cord extension
- Very thin but extremely solid cord (less resistance from the rollers)
- Reduces force and displacement by a factor 6 and thus allowing high velocity movement without high inertial forces
- Pulley 3443370 meets the essential requirements of the CE-MDD

### **EN-Tree Pulley**

### ORDERING DATA

3443354 EN-Tree Pulley Explosive 54 kg

3443370 EN-Tree Pulley Explosive MDD 54 kg, with cover

### STANDARD ACCESSORIES

1410750 Operating manual EN-Tree and EN-TreeM

**3443305** Set of 2 handgrips

#### OPTIONAL ACCESSORIES

**3443355** FN-Tree Train **3443356** EN-Tree Bench

3446189 Exercise stool, height 65 cm 3443306 Set accessories for EN-Tree Pulley 3443307 Pull Down accessory

3443308 Lat Pulley handgrip 3443309 Triceps handgrip

**3443310** Ankle strap, 37 cm

**3447695** Foot sling

**3443313** Leather strap, 73 cm 3445552 Padded ankle band

3445553 Padded hip belt

**3443383** Wrist trainer

3443381 Bent triceps bar

3496253 Row handle

**3443385** Set of free weights (100 and 200 g)

**3443386** Set of free weights (300 and 600 g)

**TECHNICAL SPECIFICATIONS 3443354** 

Dimensions (hxwxd):

82 kg (3443354)

97 kg (3443370) Height adjustment for rope: 0-200 cm

2 kg until 54 kg

0.33-1-1.6-2.3-4.3-5-5.6-6.3-For 1 cord end:

For 2 cord ends combined: 0.66-23.33-4.66-6-7.3-8.6-10-

11.3-12.6-14-15.33-16.66-18 kg

7-7.6-8.3-9 kg

#### **TECHNICAL SPECIFICATIONS 3443370**

218x39x35 cm Dimensions (hxwxd): Weight (wo. covers):

Height adjustment for rope: 0-200 cm 2 kg until 54 kg

0.33-1-1.6-2.3-4.3-5-5.6-6.3-For 1 cord end:

7-7.6-8.3-9 kg

For 2 cord ends combined: 0.66-23.33-4.66-6-7.3-8.6-10-

11.3-12.6-14-15.33-16.66-18 kg









3443306











3443307

3443308 3443309

3443310













Two-section MTT training bench The stable basis for MTT-suitable for both therapeutic support and personal use.

- Practical and easily adjustable
- Inclinable, length-adjustable backrest
- Equipped with inclinometer
- Adjustable seat cushions
- Seat cushions gently inclinable

Two-section MTT angle/mobilization bench. Both sections are easily adjustable. The EN-Tree Train is suitable for all the most frequently used exercises.

MTT angle/mobilization bench

wide choice of starting-positions • The two sections are independently adiustable

• Resistance adjustable in small steps

(both pro- and degressively) thanks to

- Both sections have an inclinometer
- Section with face-hole is adjustable from -80° to +75°
- Leg-part upwardly adjustable from -25° to +15°
- Fitted with height-adjustable bolsters

### ORDERING DATA

displacements.

**3443353** EN-Tree Pulley 24 kg 3443369 EN-Tree Pulley MDD 24 kg, with cover 3443356 EN-Tree Bench

**3443305** Set of 2 handgrips

STANDARD ACCESSORIES

1410750 Operating manual EN-Tree and EN-TreeM

With EN-Tree products, active exercise is

wheelchair users can enter into their own

possible for almost anyone. Healthy individuals,

training programs. This is possible because of

the wide variety of load application and the ease

of adaptation of the EN-Tree to every individual's

need. The EN-Tree Pulley allows an increase of

the weight from 0,25 to 24 kg in 30 small steps.

almost every human movement. This includes

mono-articular movements as well as complex

The EN-Tree Pulley, allows the exercise of

patients with specific exercise requirements and

#### **OPTIONAL ACCESSORIES**

**3443355** EN-Tree Train

3446189 Exercise stool, height 65 cm 3443306 Set accessories for EN-Tree Pullev

3443307 Pull Down accessory

3443308 Lat Pulley handgrip 3443309 Triceps handgrip

The EN-Tree Pulley 3443369 is encased fine, so

that the unit meets the essential requirements of

EN-Tree should be mounted to the wall with 4

enough to resist forces up to 950 N (thus do not

attach it to carton-board or thin wooden walls).

Leave about 2 M2 free around every pulley for

screws and plugs. The wall should be firm

the CE-MDD.

optimal exercise.

Installation requirements

3443383 Wrist trainer

**3443385** Set of free weights (100 and 200 g) **3443386** Set of free weights (300 and 600 g)

### 3443310 Ankle strap, 37 cm

**3443313** Leather strap, 73 cm

3443381 Bent triceps bar

**3496253** Row handle

### **3447695** Foot sling

Dimensions (hxwxd): 218x33x30 cm Weight (w.o. covers): 47 kg (3443353)

3443383

Multi-functional

area of 2m<sup>2</sup>

Adjustable ROM

Accurate dosage of the exercise resistance

• Extremely smooth dual-bearing rollers

Height adjustable with indicator

Very thin but extremely solid cord

(less resistance from the rollers)

• Pulley 3443369 meets the essential

requirements of the CE-MDD

Adjustable cord extension

• Complete possibility to exercise on a surface

Height adjustment for

0-200 cm 1 kg until 24 kg

TECHNICAL SPECIFICATIONS





97 kg (3443369)





ORDERING DATA 3443356 EN-Tree Bench

STANDARD ACCESSORIES

3443358 Operating manual EN-Tree bench

TECHNICAL SPECIFICATIONS

Dimensions (hxwxl): 48x47x134 cm 25 kg

> back-section: 0° to 75° leg-section: 0° and 7°

Maximum load per section in its lowest position:

Angle adjustment:

ORDERING DATA **3443356** EN-Tree Bench

STANDARD ACCESSORIES 3443359 Operating manual EN-Tree train **TECHNICAL SPECIFICATIONS** 82x56x143 cm

trunk-section: -80° to +75° leg-section: -25° to +15°

Maximum load per section: 135 kg

Position of the rolls in relation

to the end of the leg section: parallel to the top:

at a right angle to the top: -45 to +24 cm

37 kg























3443313









ENRAF NONIUS



## **EN-TREE M**

### EN-TreeM Measurement Pulley

In physical therapy and rehabilitation it is very important to quantify the functional capacity of the human muscular-skeletal system. This is in order to determine the appropriate individual load during exercise therapy or to evaluate the progress during rehabilitation. Custom systems for the measurement of functional capacity require many square meters of floor space and high investments. To make measurement techniques available for every therapist Enraf-Nonius offers the EN-TreeM, the unique unit for extremely accurate physical therapy and rehabilitation.



The EN-TreeM is the measurement edition of the well-known EN-Tree Pulley, the ideal aid for functional training and rehabilitation. The EN-TreeM accurately determines position, velocity, force, power and work. With these parameters you can quantify the functional capacity of your patients with a PC.

In the powerful software you can compose various test- and training protocols. To analyse the test and training results a professional and complete package is provided which allows you to assess optimum individual treatment.

The goals of treatment can be determined by:

- left-right comparison;
- assessment of normal or abnormal movement patterns from the graphs;
- comparison of test results between individuals.

Progress during rehabilitation can be monitored by comparing the results of different tests recorded in time.

For a reliable reproduction of a training session or a test you initiate the pulley set-up as well as the positioning of the patient.

### Installation requirements

The EN-TreeM needs a computer for full operation. The computer can be obtained locally.

EN-Tree should be mounted to the wall with 4 screws and plugs. The wall should be firm enough to resist forces up to 950 N (thus do not attach it to carton-board or thin wooden walls). Leave about 2 M2 free around every pulley for optimal exercise.

- Multi-functional
- Extensive data-acquisition and software for analysis
- Accurate dosage of the exercise resistance
- Complete possibility to exercise on a surface area of 2m<sup>2</sup>
- Extremely smooth dual-bearing rollers
- Height adjustable with indicator
- Adjustable cord extension
- Very thin but extremely solid cord (less resistance from the rollers)
- Reduces force and displacement by a factor 6 and thus allowing high velocity movement without high inertia



### ORDERING DATA

3443361 EN-TreeM Pulley 24 kg 3443363 EN-TreeM Explosive 54 kg

3443365 EN-TreeM MDD 24 kg, with cover

3443367 EN-TreeM Explosive MDD 54 kg, with cover

### STANDARD ACCESSORIES

1410750 Operating manual EN-Tree and EN-TreeM

1410702 Operating manual EN-TreeM software

**3443305** Set of 2 handgrips 1410807 Software EN-TreeM

1410804 Stickers for EN-TreeM

### OPTIONAL ACCESSORIES

3443355 EN-Tree Train 3443356 EN-Tree Bench

3446189 Exercise stool, height 65 cm

3443306 Set accessories for EN-Tree Pulley

3443307 Pull Down accessory 3443308 Lat Pulley handgrip

3443309 Triceps handgrip

3443310 Ankle strap, 37 cm **3447695** Foot sling

**3443313** Leather strap, 73 cm

**3443383** Wrist trainer 3443381 Bent triceps bar

**3496253** Row handle

**3443385** Set of free weights (100 and 200 g) 3444008 Mains adaptor 230V/9V - EUR

3444032 Mains adaptor 240V/9V - UK

3444019 Mains adaptor 115V/9V - US

#### TECHNICAL SPECIFICATIONS

Dimensions (lxwxd): 218x33x30 cm

Weight (w.o. covers): 47 kg (3443361)

82 kg (3443363) 60 kg (3443365)

97 kg (3443367)

For 2 cord end:

0-200 cm 1 kg until 24 kg

0.25-0.5-0.75-1-2-3-4-5-6-7

8-9-10-11-12 kg

0.5-1-1.5-2-4-6-8-10-12-14-16

18-20-22-24 kg

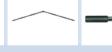
0.25-24 kg











3443309



3443383





















### **EN-Vibe**

# **EN-VIBE**

### Whole Body Vibration

Vibration training (Whole Body Vibration or WBV) is a highly effective and flexible training concept within physiotherapy, well-being and sport. Vibration training influences the muscles, blood vessels, cartilage, bones and hormones. This major effect on the various physiological systems makes the vibration plate a unique piece of exercise equipment.



The action of the vibration plate is based on the 'strain reflex'. The mechanical vibration of the vibration plate is transferred to the body so that the muscles involuntarily contract and expand intensively and continuously. 'Involuntarily' means automatically and this reaction of the body to the vibration plate cannot therefore be stopped. Due to the high frequency of the vibration, the effect of this reaction is also very strong and is of course much more rapid than the normal voluntary movements so that the "movement dose" per unit of time is much greater.

Just compare it for a moment with an exercise of the leg muscles. If you have 30 seconds of time and perform, for example, simple step exercises with a speed of about 2 steps a second, your leg muscles will have performed 120 contractions (60 concentric and 60 exocentric contractions). A frequency of 30 Hz means 30 muscle contractions per second, so when you perform an exercise for 30 seconds, you have 900 muscles contractions (reactive contractions).

In addition to this direct mechanical action on the muscles, training on the vibration plate also results in a number of physiological effects that

- Reduced breakdown of muscle proteins
- Increased excretion of hormones
- Improved regenerative processes
- Improvement of blood flow and lymph drainage

Last, but not least; vibration training is also fun! Due to the intense sensation that people experience during the training, people feel good doing it!

### The EN-Vibe features include:

- Excellent durability
- Powerful frequency-controlled motor

are extremely desirable, such as:

- Reduced bone decalcification

- Extensive set up capabilities
- Exceptionally easy operation



### ORDERING DATA

3444844 EN-Vibe 220-240V ±10%

### STANDARD ACCESSORIES

EN-Vibe therapy poster

3445080 Operating manual EN-Vibe

EN-Vibe belts (2 pieces)

EN-Vibe absorbing mat











### The Enraf-Nonius websites

Enraf-Nonius's customers are always the first to be informed about its extensive product range, updates, services and events.

Not only in this catalogue you can find information about our products. On our different websites we bring you the latest developments, updates, useful tips and information about our services.

Our international website, **www.enraf-nonius.** com is full of product news, handy links and all the latest news in the field of physiotherapy.

www.en-track.com is a valuable source of information for customers using EN-Track, the renowned, high quality software for our exercise equipment. Licence holders can download updates from this site.

www.enprojects.com gives a glimpse into the world of our project organisation EN-Projects, a leading, global specialist in Turn Key Medical Equipment that focuses on large-scale projects in hospitals and rehabilitation centres.

Our websites are designed for you, keeping you constantly up-to-date with the latest developments at Enraf-Nonius.