

FAG



Equipment for Mounting Training DEMO-MOUNTING

SCHAEFFLER

Foreword

Professional training

The equipment in the DEMO-MOUNTING concept was developed in order to carry out professional training on the mounting and dismounting of bearings. This can be used to demonstrate and teach the correct handling of a large number of different bearing types and tools under realistic working conditions.

Development by mounting experts

The individual training units were developed by mounting experts and communicate the use of mechanical, thermal and hydraulic methods for the mounting and dismounting of bearings. Each mounting exercise addresses different learning objectives. The exercises can be ordered separately and are thus ideally matched to the modular approach of the concept.

Each mounting exercise includes all the necessary items, such as tools, bearings, adjacent structure and the associated teaching materials, *Figure 1*.



Figure 1
Mounting exercise in carry case

Suitable for every user

The complete DEMO-MOUNTING training system is based on a modular concept. The user can combine the individual products to match his budget. The products and materials are of high quality and selected on a logical basis.

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DEMO-MOUNTING concept

Overview The DEMO-MOUNTING concept comprises different tools and exercises and can be used with either a mounting cross or a mounting profile.

Mounting cross
DEMO-MOUNTING-CROSS

The mounting cross DEMO-MOUNTING-CROSS is the heart of the new training concept. The design of the original mounting star has been expanded by high flexibility and mobility. An important aspect during development was that it should also be possible to use existing mounting exercises in the new training concept.

Up to 4 different shafts can be fixed very quickly and easily to the flanges.

Depending on the requirements of the mounting exercise, the flanges can be adjusted in height and equipped with an oil drip tray, *Figure 1*.



Figure 1
Mounting cross
DEMO-MOUNTING-CROSS

Equipment
Mounting cross

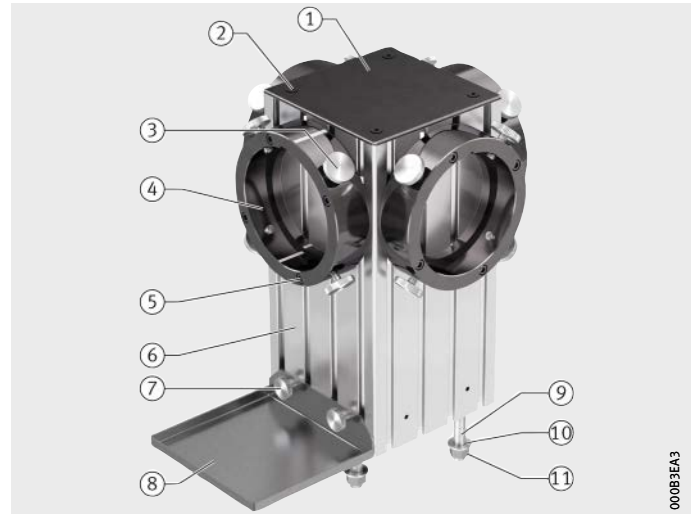
Designation	Ordering designation	Material number
Mounting cross to which up to 4 different shafts can be fixed	DEMO-MOUNTING-CROSS	087082268-0000-10
Carry case for mounting cross	DEMO-MOUNTING-CROSS.CASE	087283980-0000-10
Base plate for mobile demonstrations using mounting cross	DEMO-MOUNTING-CROSS.PLATE	087284022-0000-10
Roller table for mounting cross	DEMO-MOUNTING-CROSS.TABLE	087284049-0000-10
Tool cabinet with drawer for mounting cross	DEMO-MOUNTING.TOOLCABINET	087263220-0000-10

Scope of delivery

Scope of delivery of mounting cross, *Figure 2*.

- ① 1×cover plate
- ② 4×countersunk head screw
- ③ 16×knurled screw M8×25
- ④ 4×flange
- ⑤ 16×head cap screw M6×45
- ⑥ 1×aluminium profile
- ⑦ 2×knurled screw M6×10
- ⑧ 1×oil drip tray
- ⑨ 4×threaded rod
- ⑩ 4×support washer
- ⑪ 4×hexagon nut

Figure 2
Scope of delivery
Mounting cross



Mounting

The mounting cross can be securely screw mounted either on the tool cabinet, the roller table or on a different workshop table with the aid of threaded rods, *Figure 3* and *Figure 4*, page 6. If secure screw mounting is not possible or if the mounting cross is to be used at varying locations, it can be mounted on the baseplate for mobile demonstrations, *Figure 5*, page 6. This is equipped with suckers and can thus be firmly secured on any flat subsurface. The necessary fixing materials and user manuals are included.

Figure 3
Mounting cross
on tool cabinet



DEMO-MOUNTING concept



Figure 4
Mounting cross
on roller table



Figure 5
Base plate for
mobile demonstrations using
mounting cross

Mounting profile
DEMO-MOUNTING-PROFILE

The mounting profile DEMO-MOUNTING-PROFILE is the most mobile version of the new training concept. It was developed in order that training courses can be carried out on a mobile basis, for example at the customer. One shaft can be fixed to it. In a similar way to the design of the mounting cross, the shaft can be changed within a few seconds in order to carry out a new mounting exercise, see page 13.

In combination with the case additionally available, the mounting profile can be transported without difficulty.

Equipment
Mounting profile

Designation	Ordering designation	Material number
Mounting profile to which one shaft can be fixed. Versatile in application	DEMO-MOUNTING-PROFILE	087082020-0000-10
Carry case for mounting profile	DEMO-MOUNTING-PROFILE.CASE	087284588-0000-10
Adapter for connecting the mounting profile to the training frame	DEMO-MOUNTING-PROFILE.ADAPTER	087284391-0000-10

Scope of delivery

Scope of delivery of mounting profile, *Figure 6*.

- ① 1×cover plate
- ② 4×knurled screw M8×25
- ③ 1×flange
- ④ 4×head cap screw M6×45
- ⑤ 1×aluminium profile
- ⑥ 2×knurled screw M6×10
- ⑦ 1×oil drip tray
- ⑧ 2×bracket
- ⑨ 4×countersunk head screw

Figure 6
Scope of delivery
Mounting profile



DEMO-MOUNTING concept

Mounting The mounting profile can be mounted either in a standard vice, *Figure 7*, or together with the adapter for the mounting profile on a separately available training frame from Schaeffler Automotive Aftermarket, *Figure 8*. For storage and ease of transport of the profile, a separate case is available, *Figure 9*. Depending on the requirements of the mounting exercise, the flange can be adjusted in height and an oil drip tray included in the scope of delivery can be mounted.



Figure 7
Mounting profile
in vice

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Figure 8
Mounting profile
on training frame
(available from Schaeffler
Automotive Aftermarket)



Figure 9
Mounting profile
in carry case



DEMO-MOUNTING concept

Basic tool The basic tools are the basis for carrying out all training tasks. They can be stored either in the tool cabinet, *Figure 10* and *Figure 11*, or in three separately available carry cases, *Figure 12*.

Designation	Ordering designation	Material number
Basic tool for all mounting exercises	DEMO-MOUNTING-BASIC-TOOLS	087252740-0000-10
Tool cabinet with drawer for mounting cross	DEMO-MOUNTING-TOOLCABINET	087263220-0000-10
Carry case for basic tool	DEMO-MOUNTING-BASIC-TOOLS.CASE	087284219-0000-10



Figure 10
Tool cabinet with
mounting cross

Figure 11
A portion of the tools in
the drawer of the tool cabinet



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Figure 12
A portion of the tools in
carry cases



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DEMO-MOUNTING concept

The basic tools comprise:

- standard tools such as wrench and hammer
- measuring instrument such as dial gauge and micrometer
- special tools for the mechanical, thermal and hydraulic mounting and dismantling of rolling bearings.

Basic tools

Designation	Ordering designation	Material number
Anti-corrosion oil	ARCANOLANTICORROSIONOIL-400G	019143540-0000-10
Mounting paste	ARCANOL-MOUNTINGPASTE-250G	019145365-0000-10
Special sleeve connectors for adapter and withdrawal sleeves	DEMO-PUMP-SLEEVE-CONNECTOR-M5	058512438-0000-10
Sleeve connectors for adapter and withdrawal sleeves	PUMP.SLEEVE-CONNECTOR-M8	038808790-0000-10
Feeler gauge	FEELER-GAUGE-100	039056899-0000-10
	FEELER-GAUGE-300	039056872-0000-10
Recoilless hammer	FITTING-TOOL-ALU.HAMMER	039697711-0000-10
Induction heating device up to 50 kg	HEATER50	089223586-0000-10
Hydraulic nut	HYDNUT100-E	089705297-0000-10
Hook wrench	LOCKNUT-HOOK-KM12-14	039056740-0000-10
	LOCKNUT-HOOK-KM17	039056767-0000-10
	LOCKNUT-HOOK-KM18-20	039056775-0000-10
	LOCKNUT-HOOK-KM21-23	039056791-0000-10
2 arm extractor	PULLER-2ARM160	073661465-0000-10
3 arm extractor	PULLER-3ARM230	073829145-0000-10
Three-section extraction plate	PULLER-TRISECTION-100	019258666-0000-10
Plug-in coupling for hand pump set	PUMP1000.VALVE-NIPPLE	088956415-0000-10
Hand pump set up to 1 000 bar	PUMP1000-0,7L	038808960-0000-10
Other tools and small parts		

Mounting exercises

Overview

The mounting exercises can be carried out with either the mounting cross or the mounting profile. Each mounting exercise includes all the necessary parts such as bearings, tools and the adjacent structure for carrying out the training in combination with the basic tools.

Each mounting exercise is supplied in an individual carry case and contains the corresponding training documents.

The training documents contain:

- introduction and objective of the task
- mounting drawings and parts list
- safety guidelines and basic information
- training preparation
- mounting and dismounting sequence (step by step)
- summary.

Overview of mounting exercises

Designation	Ordering designation	Material number
Mounting exercise 1: Thermal mounting and mechanical dismounting	DEMO-MOUNTING. TASK-1	087284634-0000-10
Mounting exercise 2: Mounting on a tapered shaft seat	DEMO-MOUNTING. TASK-2	087288508-0000-10
Mounting exercise 3: Mounting of a toroidal roller bearing	DEMO-MOUNTING. TASK-3	087288966-0000-10
Mounting exercise 4: Mounting on adapter and withdrawal sleeves	DEMO-MOUNTING. TASK-4	087289008-0000-10
Mounting exercise 5: Mounting of a split spherical roller bearing in an SNS housing	DEMO-MOUNTING. TASK-5	087289059-0000-10
Mounting exercise 6.1: Hydraulic and mechanical mounting methods	DEMO-MOUNTING. TASK-6.1	087289199-0000-10
Mounting exercise 7: Mounting of single row tapered roller bearings in O and X arrangements	DEMO-MOUNTING. TASK-7	087252759-0000-10

Mounting exercises

Mounting exercise 1

In mounting exercise DEMO-MOUNTING.TASK-1, thermal mounting is used to mount a spherical roller bearing 22217-E1 on a cylindrical shaft seat by means of the induction heating device HEATER50, *Figure 1*.

Dismounting is carried out by mechanical means using a hydraulically assisted 3 arm extractor and the three-section extraction plate PULLER-TRISECTION-100 (included in the basic tool).



Figure 1
Shaft journal
DEMO-MOUNTING.SHAFT-1.1
with spherical roller bearing
22217-E1

000B643A

The carry case contains the parts required for the mounting exercise, see table and *Figure 2*.

Content
Mounting exercise TASK-1

Designation	Ordering designation	Material number	Quantity
Shaft journal for TASK-1	DEMO-MOUNTING. SHAFT-1.1	087081245-0000-10	1
Adapter for shaft location	DEMO-MOUNTING. ADAPTER	087079410-0000-10	1
Spherical roller bearing	22217-E1-XL	038107961-0000-02	1
3 arm extractor with hydraulic assistance	PULLER-HYD60	021939918-0000-10	1
Other tools and small parts			



Figure 2
Carry case
Mounting exercise TASK-1

Mounting exercises

Mounting exercise 2

In mounting exercise DEMO-MOUNTING.TASK-2, a spherical roller bearing 23120-E1A-XL-K-M-C3 is mounted on a conical shaft by mechanical means using a shaft nut with pressure screws or by hydraulic means using the hydraulic nut HYDNUT100-E, *Figure 3*. Dismounting is carried out by hydraulic means using a hand pump. A further important part of the training exercise is the specific measurements before, during and after the mounting operation.



Figure 3
Shaft journal
DEMO-MOUNTING.SHAFT-2
with spherical roller bearing
23120-E1A-XL-K-M-C3,
spacer ring and locknut
with pressure screws

The carry case contains the parts required for the mounting exercise, see table and *Figure 4*.

Content
Mounting exercise TASK-2

Designation	Ordering designation	Material number	Quantity
Shaft journal for TASK-2	DEMO-MOUNTING. SHAFT-2	087081792-0000-10	1
Adapter for shaft location	DEMO-MOUNTING. ADAPTER	087079410-0000-10	1
Spherical roller bearing	23120-E1A-XL-K-M-C3	019030339-0030-02	1
Locknut	KM20	016731972-0000-02	1
Tab washer	MB20-A	038383861-0000-10	1
Special locknut	DEMO-MOUNTING-LOCKNUT-Z-577654A	087803879-0000-10	1
Special mounting washer	DEMO-MOUNTING-WASHER-100,5	087803445-0000-10	1
Other tools and small parts			



Figure 4
Carry case
Mounting exercise TASK-2

Mounting exercises

Mounting exercise 3

The mounting exercise DEMO-MOUNTING.TASK-3 can be used to teach the correct mounting of a conical toroidal roller bearing C2222-XL-K on an adapter sleeve. A locknut is used in this case, *Figure 5*.

Correct mounting is checked by measurement of the displacement. Dismounting is carried out by hydraulic means using a hand pump.



Figure 5
Shaft journal
DEMO-MOUNTING.SHAFT-3.1
with toroidal roller bearing
C2222-XL-K, adapter sleeve,
locknut and tab washer

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The carry case contains the parts required for the mounting exercise, see table and *Figure 6*.

Content
Mounting exercise TASK-3

Designation	Ordering designation	Material number	Quantity
Shaft journal for TASK-3	DEMO-MOUNTING. SHAFT-3.1	087081814-0000-10	1
Adapter for shaft location	DEMO-MOUNTING. ADAPTER	087079410-0000-10	1
Special adapter sleeve	DEMO-ADAPTER-SLEEVE-Z-577655	058467661-0000-10	1
Locknut	KM22	016731999-0000-02	1
Tab washer	MB22	016733380-0000-10	1
Toroidal roller bearing	C2222-XL-K	086225774-0000-10	1
Other tools and small parts			



Figure 6
Carry case
Mounting exercise TASK-3

Mounting exercises

Mounting exercise 4

In mounting exercise DEMO-MOUNTING.TASK-4, both mechanical and hydraulic mounting is used on a spherical roller bearing 23120-E1A-XL-K-M-C3. The bearing is mounted on an adapter sleeve or a withdrawal sleeve and the relevant difference in the application is explained, *Figure 7*.

Mechanical mounting is carried out by means of a shaft nut with pressure screws. Hydraulic mounting is carried out by means of hydraulic nut.

Dismounting is also carried out with hydraulic assistance.

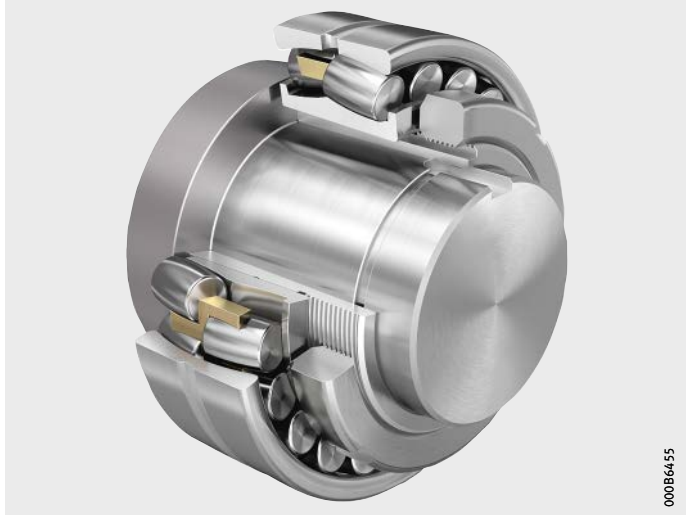


Figure 7
Shaft journal
DEMO-MOUNTING.SHAFT-4
with spherical roller bearing
23120-E1A-XL-K-M-C3,
adapter sleeve and locknut

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The carry case contains the parts required for the mounting exercise, see table and *Figure 8*.

Content
Mounting exercise TASK-4

Designation	Ordering designation	Material number	Quantity
Shaft journal for TASK-4	DEMO-MOUNTING. SHAFT-4	087081830-0000-10	1
Adapter for shaft location	DEMO-MOUNTING. ADAPTER	087079410-0000-10	1
Spherical roller bearing	23120-E1A-XL-K-M-C3	019030339-0030-02	1
Special withdrawal sleeve	DEMO-WITHDRAWAL-SLEEVE-Z-577656	058512403-0000-10	1
Locknut	KM17	016731930-0000-02	1
	KM20	016731972-0000-02	1
Special mounting washer	DEMO-MOUNTING. WASHER-85,5	087803186-0000-10	1
	DEMO-MOUNTING. WASHER-100,5	087803445-0000-10	1
Special locknut	DEMO-MOUNTING-LOCKNUT-Z-577654	087803623-0000-10	1
	DEMO-MOUNTING-LOCKNUT-Z-577654A	087803879-0000-10	1
Special adapter sleeve	DEMO-ADAPTER-SLEEVE-Z-577655	058467661-0000-10	1
Hydraulic nut	HYDNUT85-E	092186416-0000-10	1
	HYDNUT110-E	092192343-0000-10	1
Tab washer	MB17-A	038378388-0000-02	1
	MB20-A	038383861-0000-10	1
Other tools and small parts			



Figure 8
Carry case
Mounting exercise TASK-4

Mounting exercises

Mounting exercise 5

In mounting exercise DEMO-MOUNTING.TASK-5, a split spherical roller bearing 222SM60-TVPA is mounted in a 3D printed model of a scaled-down SNS housing, *Figure 9*. In the exercise, the special features in the mounting of a split bearing as well as the characteristics of the split housing are clearly communicated.

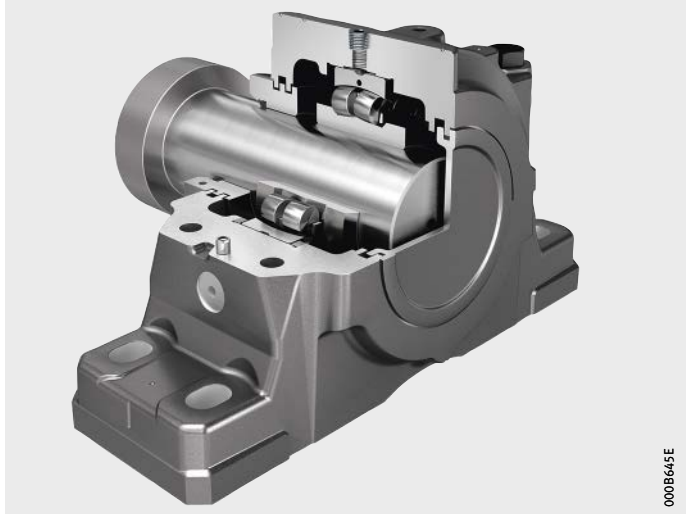


Figure 9
Shaft journal
DEMO-MOUNTING.SHAFT-5.1 with
spherical roller bearing
222SM60-TVPA in SNS housing

000B645E

The carry case contains the parts required for the mounting exercise, see table and *Figure 10*.

Content
Mounting exercise TASK-5

Designation	Ordering designation	Material number	Quantity
Shaft journal for TASK-5	DEMO-MOUNTING. SHAFT-5.1	087081857-0000-10	1
Adapter for shaft location	DEMO-MOUNTING. ADAPTER	087079410-0000-10	1
Split spherical roller bearing	222SM60-TVPA	038538229-0000-10	1
Other tools and small parts			



Figure 10
Carry case
Mounting exercise TASK-5

Mounting exercises

Mounting exercise 6.1

In mounting exercise DEMO-MOUNTING.TASK-6.1, various bearing types are mounted by mechanical as well as by thermal means. A deep groove ball bearing 6312, a cylindrical roller bearing with cage NU412-M1 and a self-aligning ball bearing 1213-K-TV-C3 are used with a cylindrical shaft seat, *Figure 11*.

Mechanical mounting is carried out with an impact cap and hammer or with a support ring and adapter sleeve. Thermal mounting is carried out with the aid of the induction heating device HEATER50. Dismounting is carried out by both mechanical and hydraulic methods.



Figure 11
Shaft journal
DEMO-MOUNTING.SHAFT-6 with
self-aligning ball bearing
1213-K-TV-C3,
L-section ring, adapter sleeve,
locknut and tab washer

The carry case contains the parts required for the mounting exercise, see table and *Figure 12*.

Content

Mounting exercise TASK-6.1

Designation	Ordering designation	Material number	Quantity
Shaft journal for TASK-6.1	DEMO-MOUNTING. SHAFT-6	087081989-0000-10	1
	DEMO-MOUNTING. SHAFT-60	092799582-0000-10	1
Adapter for shaft location	DEMO-MOUNTING. ADAPTER	087079410-0000-10	1
Deep groove ball bearing	6312	016723821-0000-02	1
Self-aligning ball bearing	1213-K-TV-C3	038903016-0030-02	1
Adapter sleeve	H213	016730623-0000-02	1
Adapter for torque wrench	LOCKNUT-DOUBLEHOOK. ADAPTER22-16	082565651-0000-10	1
Special adapter for hand pump set	DEMO-MOUNTING. ADAPTER-A-G1/4	092799930-0000-10	1
Plug-in coupling for hand pump set	PUMP1000.VALVE-NIPPLE	088956415-0000-10	1
Mounting lever for LOCKNUT-DOUBLEHOOK	LOCKNUT-DOUBLEHOOK. LEVER400	081207026-0000-10	1
Torque wrench	LOCKNUT-DOUBELHOOK. WRENCH20-100NM	081172591-0000-10	1
Double hook wrench	LOCKNUT-DOUBLEHOOK-KM13-D22	081184506-0000-10	1
Cylindrical roller bearing	NU412-M1	038264862-0000-02	1
Other tools and small parts			



Figure 12

Carry case

Mounting exercise TASK-6.1

Mounting exercises

Mounting exercise 7

In mounting exercise DEMO-MOUNTING.TASK-7, single row tapered roller bearings 32210 are mounted with adjustment against each other. The bearings can be adjusted against each other in either an O arrangement, *Figure 13*, or in an X arrangement, *Figure 14*. The relevant differences in relation to kinematics and for example the influence of external temperature can be clearly demonstrated. Dismounting is carried out by mechanical means in reverse sequence.



Figure 13
Shaft journal
DEMO-MOUNTING.SHAFT-7.1 with
tapered roller bearing 32210-A
in O arrangement



Figure 14
Shaft journal
DEMO-MOUNTING.SHAFT-7.1 with
tapered roller bearing 32210-A
in X arrangement

The carry case contains the parts required for the mounting exercise, see table and *Figure 15*.

Content
Mounting exercise TASK-7

Designation	Ordering designation	Material number	Quantity
Shaft journal for TASK-7	DEMO-MOUNTING. SHAFT-7.1	092731821-0000-10	1
Adapter for shaft location	DEMO-MOUNTING. ADAPTER	087079410-0000-10	1
Tapered roller bearing	32210-A	016712633-0000-02	2
Precision locknut AM	AM50	007706308-0000-10	1
Adapter for precision locknut AM	AMS50	009281983-0000-10	1
Other tools and small parts			



Figure 15
Carry case
Mounting exercise TASK-7

Possible starter packages and rolling bearing tool cabinet

Overview

The starter packages are intended as an aid for selection at the earliest stage.

The rolling bearing tool cabinet is an alternative, which has been proven successful many times in practice, to the DEMO-MOUNTING concept.

Possible starter packages

The starter packages described below are not packages that can be independently ordered or of a fixed composition, but simply a suggestion.

Recommended starter package Mounting cross

Designation	Ordering designation	Material number
Mounting cross	DEMO-MOUNTING-CROSS	087082268-0000-10
Tool cabinet with drawer for mounting cross	DEMO-MOUNTING-TOOLCABINET	087263220-0000-10
Basic tool for all mounting exercises	DEMO-MOUNTING-BASIC-TOOLS	087252740-0000-10
Mounting exercise 1	DEMO-MOUNTING.TASK-1	087284634-0000-10
Mounting exercise 4	DEMO-MOUNTING.TASK-4	087289008-0000-10
Mounting exercise 6.1	DEMO-MOUNTING.TASK-6.1	087289199-0000-10

Recommended starter package Mounting profile

designation	Ordering designation	Material number
Mounting profile	DEMO-MOUNTING-PROFILE	087082020-0000-10
Carry case for mounting profile	DEMO-MOUNTING-PROFILE.CASE	087284588-0000-10
Basic tool for all mounting exercises	DEMO-MOUNTING-BASIC-TOOLS	087252740-0000-10
Carry case for basic tool	DEMO-MOUNTING-BASIC-TOOLS.CASE	087284219-0000-10
Mounting exercise 6.1	DEMO-MOUNTING.TASK-6.1	087289199-0000-10



Figure 1
Variants of carry case

Possible starter packages and rolling bearing tool cabinet

Rolling bearing tool cabinet

The rolling bearing tool cabinet, *Figure 2*, was developed specially for the training of new starters and continuously developed further over time. It can be used to communicate knowledge on the selection of the correct bearing, correct mounting and dismounting and the maintenance of bearing positions. The independent range can be expanded by means of three separately available mounting sets. The tool cabinet can currently be ordered with documents in German, English and Spanish.

The theoretical part communicates basic knowledge on rolling bearing technology, where the different subject areas are combined in one learning unit. In the practical part, the basic skills in the mounting and dismounting of common types of bearings are practised with the aid of exemplary simplified mating parts (shafts, housings). Mechanical and hydraulic devices are used in this case.

The learning content comprises smaller learning stages and correspond to the full extent to the degree of difficulty that is required in occupational training.



Figure 2
Rolling bearing tool cabinet

Overview

Designation	Ordering designation	Material number
Tool cabinet with documents in German	TRAINING-CABINET-MOD-1A-D	019215231-0000-10
Tool cabinet with documents in English	TRAINING-CABINET-MOD-1A-E	019215240-0000-10
Tool cabinet with documents in Spanish	TRAINING-CABINET-MOD-1A-ES	085031208-0000-10
Additional mounting set 1B	TRAINING-CABINET-MOD-1B	038695871-0000-10
Additional mounting set 2	TRAINING-CABINET-MOD-2	038695855-0000-10
Additional mounting set 3	TRAINING-CABINET-MOD-3	038695863-0000-10

**Content
Tool cabinet**

Designation	Ordering designation	Material number	Quantity
Rolling bearing grease	ARCANOL-MULTITOP-250G	019143990-0000-10	1
Hydraulic nut	HYDNUT55-E	038857243-0000-02	1
Shaft nut	KM6	016732162-0000-02	1
	KM11	016731875-0000-02	2
Tab washer	MB6	016733592-0000-02	1
Feeler gauge	FELLER-GAUGE100	039056899-0000-10	1
Mounting sleeve	FITTING-TOOL-ALU.SLEEVE-A	054411017-0000-10	1
	FITTING-TOOL-ALU.SLEEVE-B	054411076-0000-10	1
	FITTING-TOOL-ALU.SLEEVE-C	057192740-0000-10	1
Mounting ring	FITTING-TOOL-ALU.RING15/42	039697789-0000-10	1
	FITTING-TOOL-ALU.RING30/55	039697878-0000-10	1
	FITTING-TOOL-ALU.RING30/62	039697886-0000-10	1
	FITTING-TOOL-ALU.RING40/80	039085414-0000-10	1
Plastic hammer	FITTING-TOOL-ALU.HAMMER	039697711-0000-10	1
Hook wrench	LOCKNUT-HOOK-KM6	039056708-0000-10	1
	LOCKNUT-HOOK-KM10-11	039056732-0000-10	2
Withdrawal device	PULLER-2ARM90	073661287-0000-10	1
Deep groove ball bearing	6206	016720016-0000-02	1
	6208	016720377-0000-02	1
	6302	016722698-0000-02	1
Axial deep groove ball bearing	51206	016715039-0000-02	1
Self-aligning ball bearing	2210-TVH	016702972-0000-02	1
Spherical roller bearing	22311-E1-K	019000626-0000-02	1
Tapered roller bearing	30206-A	016710487-0000-02	1
Angular contact ball bearing	7206-B-TVP-UO	019003153-0000-02	1
Needle roller bearing	NA4901	050659430-0000-02	1
Cylindrical roller bearing	NU1006M1	019234724-0000-02	1
	NU206-E-TVP2	016737601-0000-02	1
	NUP206-E-TVP2	016740742-0000-02	1
Other tools and small parts			

Possible starter packages and rolling bearing tool cabinet

Mounting sets

The mounting sets additionally available, *Figure 5 to Figure 4*, page 33, can be used to demonstrate or carry out the mounting and dismounting of other rolling bearing types or the fitting of a self-aligning ball bearing in a housing. The shaft and housing parts can be clamped in a vice for mounting, *Figure 3*.



Figure 3
Carrying out a mounting exercise

Mounting set 1B

Mounting set 1B can be used to mount a self-aligning ball bearing with an adapter sleeve on a shaft and then a plumber block housing is professionally installed.



Figure 4
Carry case

Content
Mounting set 1B

Designation	Ordering designation	Material number	Quantity
Self-aligning ball bearing	1207-K-TVH-C3	038902940-0030-02	1
Adapter sleeve	H207	016730550-0000-02	1
Hook wrenches	LOCKNUT-HOOK-KM7	039056716-0000-10	1
Plummer block housing	SNV072-F-L	062537709-0000-02	1
Locating rings	FRM72/8	016730062-0000-02	2
Cover	DKV072	038041430-0000-10	1
Seal set	DH507	038390094-0000-10	1
Other tools and small parts			

Possible starter packages and rolling bearing tool cabinet

Mounting set 2 Mounting set 2 is used for training in the mechanical mounting and dismounting of a deep groove ball bearing on a shaft and in a housing.



Figure 5
Carry case

**Content
Mounting set 2**

Designation	Ordering designation	Material number	Quantity
Withdrawal device	PULLER-2ARM90	073661287-0000-10	1
Deep groove ball bearing	6206	016720016-0000-02	1
Multi-purpose grease	ARCANOL-MULTI2-20G	019143877-0000-02	1
Other tools and small parts			

Mounting set 3 Mounting set 3 covers the subject of setting the radial internal clearance of a spherical roller bearing on a tapered shaft. Setting can be illustrated using different tools and aids.



Figure 6
Carry case

**Content
Mounting set 3**

Designation	Ordering designation	Material number	Quantity
Tab washer	MB11	016733150-0000-02	1
Hydraulic nut	HYDNUT55-E	089705254-0000-10	2
Hook wrenches	LOCKNUT-HOOK-KM10-11	039056732-0000-10	1
Spherical roller bearing	22311-E1-K	019000626-0000-02	1
Other tools and small parts			

Services

Overview

Schaeffler offers, irrespective of manufacturer, a wide range of services relevant to the lifecycle of a rolling bearing: starting with mounting and progressing through maintenance to the reconditioning of rolling bearings.

During the operational phase, the Schaeffler experts provide support through services in the fields of condition monitoring and corrective maintenance. Companies that wish to build up their knowledge in the areas of rolling bearings and condition monitoring also have access to the Schaeffler training and consultancy portfolio on site, centrally or online. Our e-learning portfolio on the Internet provides an introduction to this field. In this way, customers benefit from the expertise of a leading supplier of rolling and plain bearings.

The experts in the Industrial Service function are trained and skilled personnel who can provide reliable, rapid and competent assistance. The services are provided either at the customer's location or in the Schaeffler workshop facilities.

Mounting and dismounting services

The mounting and dismounting services include:

- training courses on products and mounting
- mounting and dismounting of rolling bearings and bearing systems of all types
- measurement and condition analyses
- problem solving and preparation of concept solutions
- design and manufacture of special tools
- rental of tools.

Training courses

The operating life of rolling bearings is determined to a substantial degree by their correct mounting and dismounting. Appreciating the use of rolling bearings, linear guidance systems and plain bearings as indispensable elements in thousands of applications requires the necessary understanding of these machine elements. Schaeffler has its own training centres worldwide certified to ISO 9001, *Figure 1*.



Figure 1
Training course
at the Eltmann site

Training courses on mounting and dismounting generally comprise a theoretical part and a practical part. Thorough knowledge is communicated, for example, on the mounting and dismounting of rolling bearings using the optimum tools and on the condition monitoring of bearing arrangements.

In general, the initial steps are provided by basic training covering the different characteristics, features and types of rolling bearings, plain bearings and linear guidance systems as well as their combination to form systems, extending all the way to mechatronic units. Application examples reflect the selection criteria and the customer benefits achieved. These product-oriented training courses are followed by modules covering rolling bearing theory as well as selected applications. Rolling bearing theory conveys the necessary knowledge on subjects such as bearing clearance, load distribution in the bearing, rating life and lubrication. In workshops, the participants concentrate on applications, for example the bearing arrangements in a machine tool or a shaft bearing arrangement. All process steps are covered, from bearing selection and bearing calculation through to mounting, *Figure 2*, page 38.

Services



Figure 2
Training course
on mounting of rolling bearings

Several training modules cover the mounting and dismounting of rolling bearings and linear guidance systems. Based on perception and exercises, the participant gains the mounting knowledge and skills that he will require in practice.

Our training courses on mounting cover a large number of applications. Mounting exercises on individual products are followed by work on more complex systems such as gearboxes, rail wheelsets or machine tool spindles.

The possibilities for plannable and economical design of maintenance work on machines, plant and rolling bearings are communicated to the training participant in appropriate courses.

Further information

If you have any further questions about our training courses, please visit our website or contact us direct:

- www.schaeffler.de
➡ Products & Services ➡ Industrial ➡ Training courses
- Enquiries:
schulungszentrum@schaeffler.com

Mounting and dismounting

The Schaeffler industrial service experts offer mounting and dismounting services for rolling and plain bearings that are applicable across industrial sectors. They have detailed knowledge and extensive experience in all industrial sectors, *Figure 3*.



Figure 3
Mounting service provided by
Schaeffler experts

Advantages

The mounting and dismounting services give the following advantages:

- rapid availability worldwide of experts in bearing arrangement technology with extensive experience in almost every application
- rapid mounting or dismounting by means of professional preparation and implementation
- increased plant availability and productivity as a result of reduced unplanned downtime
- optimisation of mounting and dismounting processes
- professional mounting and dismounting using special high-quality tools
- training and awareness measures for employees relating to the correct handling of bearings of all types.

Services

Rental of tools

Customers who require special mounting and dismounting tools or measuring equipment only infrequently can rent these from Schaeffler for a fee.

Our service includes:

- prompt rental in Europe
- free-of-charge, rapid delivery to the installation site
- checked quality products in keeping with the latest technological developments
- delivery of the tools, including all add-on parts
- user manuals available in several languages.

If one of our qualified experts in the Industrial Service function is commissioned to carry out the particular activity, rental costs are not generally incurred.

Further information

For further information in relation to mounting and dismounting as well as the rental of tools, please contact us direct:

Enquiries:

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