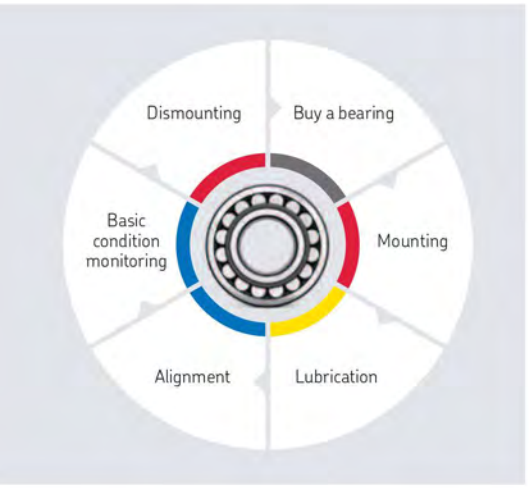
SKF Maintenance and Lubrication Products

Mechanical tools



Mechanical tools

Helps prevent premature bearing failures

SKF Bearing Fitting Tool Kit TMFT series

Poor fitting, usually using brute force, accounts for 16% of premature bearing failures. SKF Bearing Fitting Tool Kits are designed for quick and precise mounting of bearings, while minimising the risk of bearing damage. The right combination of impact ring and sleeve allows effective transmission of mounting force to the bearing ring with the interference fit, minimising the risk of damaging the bearing's raceways or rolling elements. In addition to mounting bearings, the TMFT series are also suitable for mounting other components such as bushings, seals and pulleys. The TMFT 36 kit contains 36 impact rings and the TMFT 24 contains 24 rings. Both kits have 3 impact sleeves and a dead-blow hammer packed in a lightweight carrying case.

- The TMFT 36 facilitates the mounting of a wide range of bearings with bore diameters from 10–55 mm
- The TMFT 24 facilitates the mounting of a wide range of bearings with bore diameters from 15–45 mm
- Facilitates correct mounting on shaft, housing and blind applications
- The diameter of the impact ring precisely fits the inner and outer diameter of the bearing
- Small diameter of the impact area on top of the sleeve allows effective transmission and distribution of mounting force
- Impact rings and sleeves are made of high impact resistant material for longevity
- Click connection between impact ring and sleeve provides stability and durability
- The impact rings are suitable for use under a press
- Impact rings are marked for clear visual identification of the ring's size and easy selection
- Even surface of the impact sleeve's body provides excellent grip
- The nylon double-side head of the dead-blow hammer helps to prevent damaging the components
- The ergonomic handgrip of the dead-blow hammer provides excellent grip

Technical data

Designation	TMFT 24	TMFT 36
Impact rings		
Bore diameter	15–45 mm *(0.59–1.77 in.)*	10–55 mm *(0.39–2.17 in.)*
Outer diameter	32–100 mm *(1.26–3.94 in.)*	26–120 mm *(1.02–4.72 in.)*
Sleeves		
Maximum shaft length	Sleeve A: 220 mm *(8.7 in.)* Sleeve B: 220 mm *(8.7 in.)* Sleeve C: 225 mm *(8.9 in.)*	Sleeve A: 220 mm *(8.7 in.)* Sleeve B: 220 mm *(8.7 in.)* Sleeve C: 225 mm *(8.9 in.)*
Hammer	TMFT 36-H, weight 0,9 kg *(2.0 lb)*	TMFT 36-H, weight 0,9 kg *(2.0 lb)*
Carrying case dimensions	530 × 110 × 360 mm *(20.9 × 4.3 × 14.2 in.)*	530 × 110 × 360 mm *(20.9 × 4.3 × 14.2 in.)*
Number of rings	24	36
Number of sleeves	3	3
Weight (including carrying case)	4,0 kg *(8.9 lb)*	4,4 kg *(9.7 lb)*

TMFT 24 is suitable for SKF bearing series

DGBB	DGBB (sealed)	SABB	SRACBB	DRACBB	SRB	CRB	TRB	CARB
6002–6009 6202–6209 6302–6309 6403–6407 62/22 62/28 63/22 63/28 16002–16009 98203–98206	62202–62209 62302–62309 63002–63009	1202–1209 1302–1309 2202–2209 2302–2309 11207–11209	7002–7009 7202–7209 7302–7309	3202–3209 3302–3309	21305–21309 22205/20 22205–22209 22308–22309	N 1005–N 1009 N 202–N 209 N 2203–N 2209 N 2304–N 2309 N 3004–N 3009 N 303–N 309	30203–30209 30302–30309 31305–31309 32004–32009 32205–32209 32303–32309 33205–33209	C 2205–C 2209 C 6006

TMFT 36 is suitable for SKF bearing series

DGBB	DGBB (sealed)	SABB	SRACBB	DRACBB	SRB	CRB	TRB	CARB
6000–6011 6200–6211 6300–6311 6403–6409 629 62/22 62/28 63/22 63/28 16002–16011 16100–16101 98203–98206	62200–62211 62300–62311 63000–63010	1200–1211 129 1301–1311 2200–2211 2301–2311 11207–11210	7000–7011 7200–7211 7301–7311	3200–3211 3302–3311	21305–21311 22205/20 22205–22211 22308–22311	N 1005–N 1011 N 202–N 211 N 2203–N 2211 N 2304–N 2311 N 3004–N 3011 N 303–N 311	30203–30211 30302–30311 31305–31311 32004–32011 32205–32211 32303–32311 33010–33011 33205–33211	C 2205–C 2211 C 4010 C 6006

Interference fits on cylindrical shafts

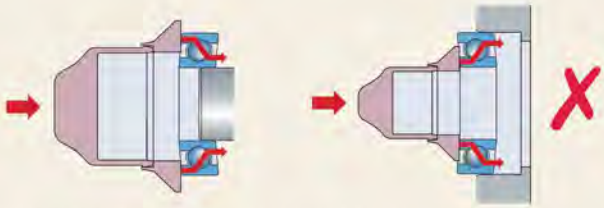
Most bearings are fitted to their shaft or housing with one component having an interference fit. For determining the correct fit, refer to the SKF General Catalogue, the SKF Maintenance Handbook or consult an SKF application engineer.

Shaft interference fit

Housing interference fit

Incorrect mounting

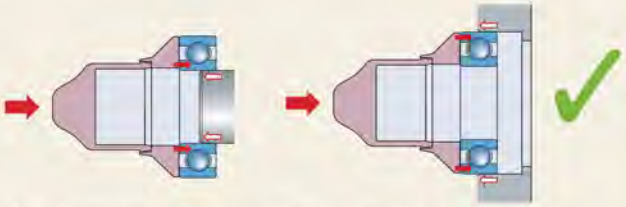
When bearings are mounted cold, care must be taken to ensure the drive-up forces are applied to the ring with the interference fit. Damage to the bearing resulting in a failure can occur if the mounting force is transmitted through the rolling elements causing damage to the raceways.



Uneven distribution of forces can result in raceway damage

Correct mounting

The correct way to minimise raceway damage is to use specifically designed tools from SKF, such as the Bearing fitting tool kits and Combi kits. These tools allow drive-up forces to be applied effectively and evenly to the component with the interference fit, avoiding raceway damage.



With the correct tools, raceway damage is avoided

Mechanical tools

Interference fits on tapered seatings

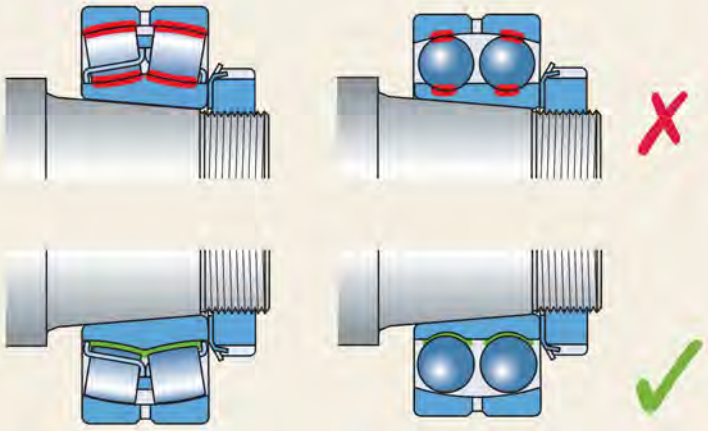
Bearings mounted on tapered seatings achieve their interference fit by being driven up the tapered seating. Care should be taken to ensure the bearing is not driven up too far, as all the internal clearance may be removed and damage to the bearing is possible.

Incorrect mounting

Bearing driven up too far and all clearance removed; damage possible.

Correct mounting

Bearing driven up the correct distance and the right clearance is achieved.



Spanners and sockets

The comprehensive range of SKF spanner and sockets are used to tighten and loosen many types and sizes of bearing lock nuts, for bearings mounted directly on a shaft or on sleeves. Depending on application and bearing size, SKF spanners and sockets can be used to drive a bearing up a tapered seating.

Exact spanner radius reduces the risk of nut damage

SKF Hook Spanners HN series

- Minimises the risk of shaft and nut damage
- Plastic handle is oil, grease and dirt resistant to provide a better grip
- The plastic handle minimises direct metal to skin contact, reducing the risk of corrosion in the handle area
- Spanner designation is laser-engraved allowing for easy identification and selection
- Available as a set: SKF HN 4-16/SET containing 9 spanners for lock nut sizes 4 up to 16
- Supplied in a sturdy carrying case

Contents SKF HN 4-16/SET

HN 4	HN 8-9	HN 14
HN 5-6	HN 10-11	HN 15
HN 7	HN 12-13	HN 16

Selection chart – HN series

Designation	Suitable for the following series of SKF lock nuts						
	KM	N	AN	KMK	KMFE	KMT	DIN 1804 (M)
HN 0	0	0		0			M6×0,75, M8×1
HN 1	1	1		1			
HN 2-3	2, 3	2, 3		2, 3		0	M10×1, M12×1,5
HN 4	4	4		4	4	1, 2	M14×1,5, M16×1,5
HN 5-6	5, 6	5, 6		5, 6	5, 6	3, 4, 5	M22×1,5, M24×1,5, M26×1,5
HN 7	7	7		7	7	6, 7	M28×1,5, M30×1,5, M32×1,5, M35×1,5
HN 8-9	8, 9	8, 9		8, 9	8, 9	8	M38×1,5, M40×1,5, M42×1,5
HN 10-11	10, 11	10, 11		10, 11	10, 11	9, 10	M45×1,5, M48×1,5, M50×1,5
HN 12-13	12, 13	12, 13		12, 13	12, 13	11, 12	M52×1,5, M55×1,5, M58×1,5, M60×1,5
HN 14	14	14		14	14		
HN 15	15		15	15	15	13, 14	M62×1,5, M65×1,5, M68×1,5, M70×1,5
HN 16	16		16	16	16	15	
HN 17	17		17	17	17	16	M72×1,5, M75×1,5, M80×2
HN 18-20	18, 19, 20		18, 19, 20	18, 19, 20	18, 19, 20	17, 18, 19	M85×2, M90×2
HN 21-22	21, 22	22	21, 22		21, 22	20, 22	M95×2, M100×2

Technical data – HN series

Designation	Spanner design DIN 1810	Outer diameter lock nut	
	mm	mm	*in.*
HN 0		16–20	*0.6–0.8*
HN 1	Ø20–Ø22	20–22	*0.8–0.9*
HN 2-3	Ø25–Ø28	25–28	*1.0–1.1*
HN 4	Ø30–Ø32	30–32	*1.2–1.3*
HN 5-6		38–45	*1.5–1.8*
HN 7	Ø52–Ø55	52–55	*2.0–2.2*
HN 8-9		58–65	*2.3–2.6*
HN 10-11	Ø68–Ø75	68–75	*2.7–3.0*

Designation	Spanner design DIN 1810	Outer diameter lock nut	
	mm	mm	*in.*
HN 12-13	Ø80–Ø90	80–90	*3.1–3.5*
HN 14		92	*3.6*
HN 15	Ø95–Ø100	95–100	*3.7–3.9*
HN 16		105	*4.1*
HN 17	Ø110–Ø115	110–115	*4.3–4.5*
HN 18-20	Ø120–Ø130	120–130	*4.7–5.1*
HN 21-22	Ø135–Ø145	135–145	*5.3–5.7*

Four sizes for tightening or loosening up to 24 nut sizes

SKF Adjustable Hook Spanners HNA series

- One hook spanner covers several nut sizes, making it suitable for use with many applications
- Economic solution: 4 hook spanners cover a wide range of nut sizes
- Laser engraved designation, which represents the range of nut sizes covered by each spanner, allows easy selection of the correct spanner
- Versatile: suitable for a wide selection of lock nuts
- Minimises the risk of shaft and nut damage

Selection chart and technical data – HNA series

Designation	Outer diameter lock nut		Suitable for the following series of SKF lock nuts						
	mm	*in.*	KM	KML	N	AN	KMK	KMFE	KMT
HNA 1-4	20–35	*0.8–1.4*	1–4		1–4		0–4	4	0–2
HNA 5-8	35–60	*1.4–2.4*	5–8		4–8		5–8	5–8	3–7
HNA 9-13	60–90	*2.4–3.5*	9–13		9–13		9–13	9–13	8–12
HNA 14-24	90–150	*3.5–6.1*	14–24	24–26	14	15–24	14–20	14–24	13–24

Mechanical tools

Easy and quick bearing mounting and dismounting in SNL housings

SKF Hook Spanners HN ../SNL series

- Unique design allows the SKF HN ../SNL series to be used inside SKF SNL, FSNL, SNH and SE bearing housings
- Suitable for tightening and loosening a wide selection of lock nuts, facilitating their use in a wide range of housing and shaft applications
- The large contact area of the spanner around the nut provides excellent grip and force transmission
- Exact fit reduces the risk of shaft, nut and housing damage

Selection chart and technical data

Designation	Outer diameter lock nut		Suitable for SKF housings	Suitable for the following series of SKF lock nuts						
	mm	*in.*	SNL / FSNL / SNH / SE	KM	KML	N[1]	AN[1]	KMK[1]	KMFE	KMT[1]
HN 5/SNL	38	*1.50*	505, 506–605	5		5		5	5	5
HN 6/SNL	45	*1.77*	506–605, 507–606	6		6		6	6	6
HN 7/SNL	52	*2.05*	507–606, 508–607	7		7		7	7	7
HN 8/SNL	58	*2.28*	508–607, 510–608	8		8		8	8	8
HN 9/SNL	65	*2.56*	509, 511–609	9		9		9	9	9
HN 10/SNL	70	*2.76*	510–608, 512–610	10		10		10	10	10
HN 11/SNL	75	*2.95*	511–609, 513–611	11		11		11	11	11
HN 12/SNL	80	*3.15*	512–610, 515–612	12		12		12	12	12
HN 13/SNL	85	*3.35*	513–611, 516–613	13		13		13	13	13
HN 15/SNL	98	*3.86*	515–612, 518–615	15			15	15	15	15
HN 16/SNL	105	*4.13*	516–613, 519–616	16			16	16	16	16
HN 17/SNL	110	*4.33*	517, 520–617	17			17	17	17	17
HN 18/SNL	120	*4.72*	518–615	18			18	18	18	18
HN 19/SNL	125	*4.92*	519–616, 522–619	19			19	19	19	19
HN 20/SNL	130	*5.12*	520–617, 524–620	20		22	20, 21	20	20	20
HN 22/SNL	145	*5.71*	522–619	22	24	24	22		22	22
HN 24/SNL	155	*6.10*	524–620	24	26	26	24		24	24
HN 26/SNL	165	*6.50*	526	26	28	28	26		26	26
HN 28/SNL	180	*7.09*	528	28	30	30				
HN 30/SNL	195	*7.68*	530	30	32	34	30			32
HN 32/SNL	210	*8.27*	532	32		36				

[1] Not recommended for use in combination with SNL/SNH housing

Easy mounting and dismounting without nut damage

SKF Axial Lock Nut Sockets TMFS series

- Requires less space around the bearing arrangement than hook spanners
- Inch connections for power tools or torque wrenches
- SKF TMFS fits nuts of series KM, KMK (metric) and KMF
- Special longer length versions are available upon request

Selection chart and technical data

Designation	Suitable for the following series of SKF lock nuts			Dimensions						
	KM, KMK	KMFE	DIN 1804 (M)	Outer diameter lock nut		Outer diameter socket		Effective height		Drive connection
				mm	*in.*	mm	*in.*	mm	*in.*	*in.*
TMFS 0	0 [1]			18	*0.7*	22,0	*0.9*	45	*1.8*	3/8
TMFS 1	1			22	*0.9*	28,0	*1.1*	45	*1.8*	3/8
TMFS 2	2		M10×1	25	*1.0*	33,0	*1.3*	61	*2.4*	1/2
TMFS 3	3		M12×1,5	28	*1.1*	36,0	*1.4*	61	*2.4*	1/2
TMFS 4	4	4	M16×1,5	32	*1.3*	38,0	*1.5*	58	*2.3*	1/2
TMFS 5	5	5		38	*1.5*	46,0	*1.8*	58	*2.3*	1/2
TMFS 6	6	6	M26×1,5	45	*1.8*	53,0	*2.1*	58	*2.3*	1/2
TMFS 7	7	7		52	*2.0*	60,0	*2.4*	58	*2.3*	1/2
TMFS 8	8	8	M38×1,5	58	*2.3*	68,0	*2.7*	58	*2.3*	1/2
TMFS 9	9	9		65	*2.6*	73,5	*2.9*	63	*2.5*	3/4
TMFS 10	10	10		70	*2.8*	78,5	*3.1*	63	*2.5*	3/4
TMFS 11	11	11		75	*3.0*	83,5	*3.3*	63	*2.5*	3/4
TMFS 12	12	12		80	*3.1*	88,5	*3.5*	63	*2.5*	3/4
TMFS 13	13	13		85	*3.3*	94,0	*3.7*	63	*2.5*	3/4
TMFS 14	14	14		92	*3.6*	103,0	*4.1*	80	*3.2*	*1*
TMFS 15	15	15		98	*3.9*	109,0	*4.3*	80	*3.2*	*1*
TMFS 16	16	16		105	*4.1*	116,0	*4.6*	80	*3.2*	*1*
TMFS 17	17	17		110	*4.3*	121,0	*4.8*	80	*3.2*	*1*
TMFS 18	18	18		120	*4.7*	131,0	*5.2*	80	*3.2*	*1*
TMFS 19	19	19		125	*4.9*	137,0	*5.5*	80	*3.2*	*1*
TMFS 20	20	20		130	*5.1*	143,0	*5.7*	80	*3.2*	*1*

[1] KM 0 only

Mechanical tools

High impact forces without nut damage

SKF Impact Spanners TMFN series

- Designed for safely tightening and loosening a wide selection of larger lock nuts
- Not intended to be used to drive bearings up a tapered seating
- Helps avoid shaft and nut damage
- Safe and user friendly
- Impact applied effectively to the nut
- Special wide impact face
- To be used in combination with a hammer

Suitable for the following series of SKF lock nuts

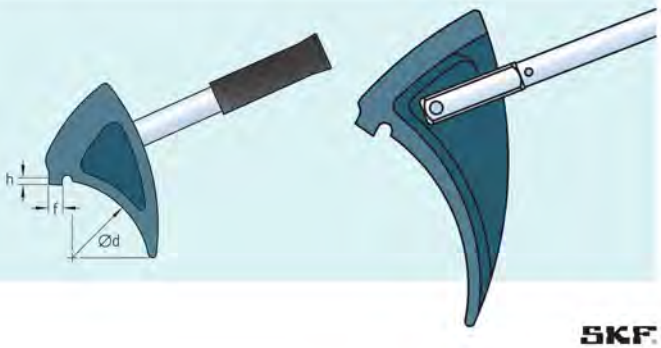
Designation	KMT ..	KM ..	KML ..	KMFE ..	HM .. (HM .. E)		HM .. T	AN ..	N ..		DIN 1804 (M)
TMFN 23-30	26–30	23–31	26–32	24–28				AN22–AN28	N022–N032		M105x2–M130x3
TMFN 30-40	32–40	32–40	34–40	30–38				AN30–AN38	N034–N040		M140x3–M180x3
TMFN 40-52				40	3044–3052		42–48	AN40	N044–N052	N44	M190x3, M200x3
TMFN 52-64					3056–3064	3160	50, 52, 56		N056–N064		
TMFN 64-80					3068–3084	3164–3176			N068–N084		
TMFN 80-500					3088–3096	3180–3196 30/500			N088–N096	N500	
TMFN 500-600					30/530–30/630	31/500–31/560			N530–N630		
TMFN 600-750					30/670–30/800	31/600–31/750			N670–N800		

Suitable for the following series of SKF adapter sleeves

Designation	H 23..	H 30..	H 31..	H32	H39
TMFN 23-30	H2324–H2332L	H3024E–H3032	H3124–H3130L		H3926–H3932
TMFN 30-40	H2332–H2340	H3030E, H3034–H3040	H3132–H3140L		H3934–H3940
TMFN 40-52	OH2344H, OH2348H	OH3044H–OH3052H	H3144H(HTL)–H3152HTL		H3944H–H3952H
TMFN 52-64	OH2352H, OH2356H	OH3056H–OH3064H	OH3152H–OH3160H	OH3260H	OH3956H–OH3964H
TMFN 64-80		OH3068 H–OH3084H	OH3164H–OH3176H(E)	OH3264H–OH3276 H	OH3968H–OH3984H(E)
TMFN 80-500		OH30/500H, OH3080H – OH3096H	OH3180H(E)–OH3196H(E)	OH3280H–OH3296 H	OH39/500H(E), OH3988H–OH3996H(E)
TMFN 500-600		OH30/530H–OH30/630H	OH31/530H–OH31/560H(E)	OH32/500H–OH32/560H	OH39/530H(E)–OH39/630H(E)
TMFN 600-750		OH30/670H–OH30/800H(E)	OH31/600H–OH31/750H(E)	OH32/600H–OH32/750H	OH39/670H(E)–OH39/800H(E)

Technical data

Designation	d		f		h	
	mm	*in.*	mm	*in.*	mm	*in.*
TMFN 23-30	148	*5.83*	11,5	*0.45*	4,4	*0.17*
TMFN 30-40	193	*7.60*	13,5	*0.53*	5,3	*0.21*
TMFN 40-52	248	*9.76*	16	*0.63*	6,5	*0.26*
TMFN 52-64	316	*12.44*	19	*0.75*	8,5	*0.33*
TMFN 64-80	396	*15.59*	23	*0.91*	11	*0.43*
TMFN 80-500	516	*20.31*	28	*1.10*	13	*0.51*
TMFN 500-600	626	*24.65*	36	*1.42*	16	*0.63*
TMFN 600-750	746	*29.37*	40	*1.57*	19	*0.75*



For achieving the correct radial clearance

SKF Bearing Lock Nut Spanner TMHN 7 series

The SKF TMHN 7 set of lock nut spanners is especially designed for mounting self-aligning ball bearings as well as small spherical roller and CARB toroidal roller bearings on tapered seatings. Using the SKF TMHN 7, minimises the risk of over-tightening of the lock nut, which can remove the bearing's radial clearance resulting in bearing damage.

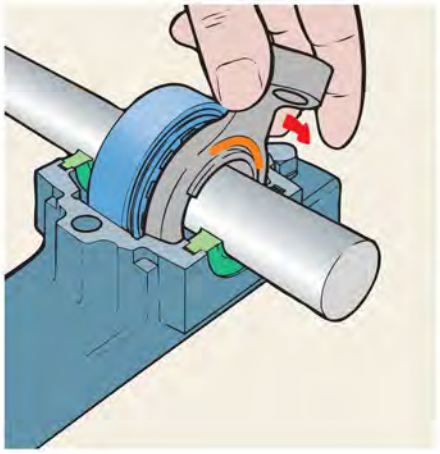
- 7 different-sized spanners to fit nut sizes 5 to 11
- Each spanner is equipped with a protractor and is clearly marked with the correct tightening angle for mounting SKF Self aligning ball bearings
- 4 grip points on each spanner provide a better and safer grip on the nut
- Reduced risk of damaging bearing by over-tightening
- Suitable for use with lock nuts of the KM series either on shaft or in SNL housings
- Supplied in a carrying case

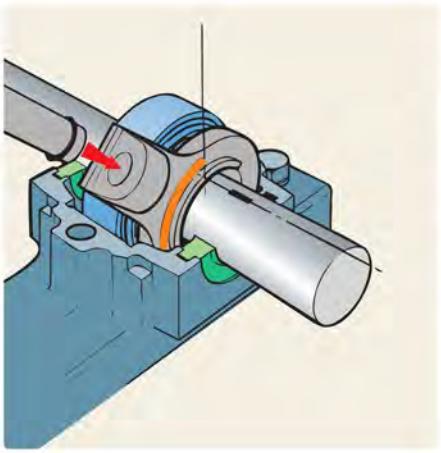
TMHN 7 is suitable for use with:

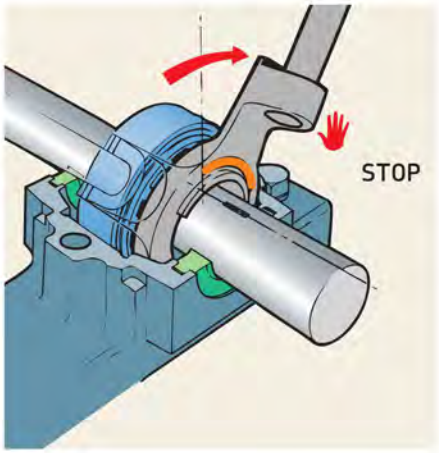
Bearing designation
1205 EK–1211 EK
1306 EK–1311 EK
2205 EK–2211 EK
2306 K
2307 EK–2309 EK
2310 K–2311 K

Technical data

Designation	TMHN 7
Carrying case dimensions	345 × 255 × 85 mm *(13.6 × 10.0 × 3.3 in.)*
Weight	2,2 kg *(4.7 lb)*







Mechanical tools

TMMK 10-35

TMMK 20-50

Multi-purpose kits for quick and easy mounting and dismounting

SKF Combi Kit TMMK series

The SKF TMMK series designed for the quick and precise mounting and dismounting of deep groove ball bearings from shafts, housings and blind housings. The TMMK 10-35 suits bearings with bore diameters from 10 to 35 mm, whereas the TMMK 20-50 suits bearings with bore diameters from 20 to 50 mm.

Multi-purpose fitting tools enable the mounting of a wide range of bearings and associated items. SKF deep groove ball bearings can be easily removed from blind housings and shafts, using a unique three-armed puller with a sliding hammer.

- The correct combination of impact ring and sleeve helps ensure that mounting forces are not transmitted via the rolling elements of the bearing, minimizing damage to bearing due to incorrect mounting
- The impact rings are made of high-impact modified polyamide. The impact sleeves are made of glass fibre-reinforced, high-impact modified polyamide, which is super-tough, strong and lightweight
- The dead-blow hammer has nylon faces and is steel-shot loaded for maximum impact. The handle, with comfortable rubber-grip for good handling, absorbs shock and vibration
- The claws are especially designed to facilitate a precise fit in the bearing's raceways, providing good grip and allowing the application of higher dismounting forces
- The designation is laser-engraved on the arms allowing easy identification and selection
- The springs are colour-coded allowing easy selection and matching
- Elastic locking ring results in easy connection of puller arms to spindle
- Heavy sliding weight of the sliding hammer generates a high dismounting force
- Heavy sliding weight of the sliding hammer generates a high dismounting force

Mounting

Dismounting

Dismounting

Technical data

Designation	TMMK 10-35	TMMK 20-50
Number of impact rings	24	21
Number of sleeves	2	2
Impact rings bore diameter	10–35 mm *(0.39–1.38 in.)*	20–50 mm *(0.79–1.97 in.)*
Impact rings outer diameter	26–80 mm *(1.02–3.15 in.)*	42–110 mm *(1.65–4.33 in.)*
Dead-blow hammer	TMFT 36-H	TMFT 36-H
Dimensions of case	530 × 110 × 360 mm *(20.9 × 4.3 × 14.2 in.)*	530 × 110 × 360 mm *(20.9 × 4.3 × 14.2 in.)*
Weight	7,6 kg *(16.8 lb)*	8,5 kg *(18.6 lb)*

Mounting

TMMK 10-35 is suitable for SKF bearing series









DGBB	DGBB (sealed)	SABB	SRACBB	DRACBB	SRB	CRB	TRB	CARB
6000–6007 6200–6207 6300–6307 6403–6407 629 62/22 62/28 63/22 63/28 16002–16007 16100–16101 98203–98206	62200–62207 62300–62307 63000–63007	1200–1207 129 1301–1307 2200–2207 2301–2307 11207	7000–7007 7200–7207 7301–7307	3200–3207 3302–3307	21305–21307 22205/20 22205–22207	N 1005–N 1007 N 202–N 207 N 2203–N 2207 N 2304–N 2307 N 3004–N 3007 N 303–N 307	30203–30207 30302–30307 31305–31307 32004–32007 32205–32207 32303–32307 33205–33207	C 2205–C 2207 C 6006

TMMK 20-50 is suitable for SKF bearing series









DGBB	DGBB (sealed)	SABB	SRACBB	DRACBB	SRB	CRB	TRB	CARB
6004–6010 6204–6210 6304–6310 6404–6409 62/22 62/28 63/22 63/28 16004–16011 98204–98206	62204–62210 62304–62310 63004–63010	1204–12010 1304–1310 2204–2210 2304–2310 11207–11210	7004–7010 7204–7210 7304–7310	3204–3210 3304–3210	21305–21310 22205/20 22205–22210 22308–22310	N 1005–N 1010 N 204–N 210 N 2204–N 2210 N 2304–N 2310 N 304–N 310	30204–30210 30304–30310 31305–31310 32004–32010 32205–32210 32304–32310 33010 33205–33210	C 2205–C 2210 C 4010 C 6006

Dismounting

TMMK 10-35 is suitable for SKF bearing series

DGBB		
6000–6017 6200–6211 62/22 62/28	6300–6307 63/22 63/28 6403	16002–16003 16011

TMMK 20-50 is suitable for SKF bearing series

DGBB		
6004–6020 6201–6218 62/22 62/28	6300–6313 63/22 63/28 6403–6310	16011

All parts are clearly arranged in the case for easy selection and identification.

Mechanical tools

Selection chart – SKF external and reversible pullers

	Designation	No. of arms	Width of grip	
			mm	*in.*
 24	**SKF Standard Jaw Pullers**			
	TMMP 2x65	2	15–65	*0.6–2.6*
	TMMP 2x170	2	25–170	*1.0–6.7*
	TMMP 3x185	3	40–185	*1.6–7.3*
	TMMP 3x230	3	40–230	*1.6–9.0*
	TMMP 3x300	3	45–300	*1.8–11.8*
 26	**SKF Reversible Jaw Pullers**			
	TMMR 40F	2	23–48	*0.9–1.9*
	TMMR 60F	2	23–68	*0.9–2.7*
	TMMR 80F	2	41–83	*1.6–3.3*
	TMMR 120F	2	41–124	*1.6–4.9*
	TMMR 160F	2	68–164	*2.7–6.5*
	TMMR 200F	2	65–204	*2.6–8.0*
	TMMR 250F	2	74–254	*2.9–10.0*
	TMMR 350F	2	74–354	*2.9–13.9*
	TMMR 160XL	2	42–140	*1.7–5.5*
	TMMR 200XL	2	42–180	*1.7–7.1*
	TMMR 250XL	2	44–236	*1.7–9.3*
	TMMR 350XL	2	44–336	*1.7–13.2*
 24	**SKF Heavy Duty Jaw Pullers**			
	TMMP 6	3	50–127	*2.0–5.0*
	TMMP 10	3	100–223	*3.9–8.7*
	TMMP 15	3	140–326	*5.5–12.8*
 22	**Mechanical pullers SKF EasyPull**			
	TMMA 60	3	36–150	*1.4–5.9*
	TMMA 80	3	52–200	*2.0–7.8*
	TMMA 120	3	75–250	*3.0–9.8*
	Hydraulic pullers SKF EasyPull			
	TMMA 75H + .../SET	3	52–200	*2.0–7.8*
	TMMA 100H + .../SET	3	75–250	*3.0–9.8*
 27, 28	**SKF Hydraulic Jaw Puller Kit**			
	TMHP 10E	3 × 3	75–280	*3.0–11.0*
	SKF Hydraulic Puller Kit			
	TMHC 110E	2 × 3	50–170	*1.9–6.7*
 25	**SKF Hydraulically Assisted Heavy Duty Jaw Pullers**			
	TMHP 15/260	3	195–386	*7.7–15.2*
	TMHP 30/170	3	290–500	*11.4–19.7*
	TMHP 30/350	3	290–500	*11.4–19.7*
	TMHP 30/600	3	290–500	*11.4–19.7*
	TMHP 50/140	3	310–506	*12.2–19.9*
	TMHP 50/320	3	310–506	*12.2–19.9*
	TMHP 50/570	3	310–506	*12.2–19.9*

[1] Other arm length options are available

SKF

Effective arm length		Maximum withdrawal force	
mm	*in.*	kN	*US ton*
60	*2.4*	6	*0.7*
135	*5.3*	18	*2.0*
135	*5.3*	24	*2.7*
210	*8.3*	34	*3.8*
240	*9.4*	50	*5.6*
67	*2.6*	17	*1.91*
82	*3.2*	17	*1.91*
98	*3.9*	40	*4.5*
124	*4.9*	40	*4.5*
143	*5.6*	50	*5.6*
169	*6.7*	50	*5.6*
183	*7.2*	60	*6.7*
238	*9.4*	60	*6.7*
221	*8.7*	50	*5.6*
221	*8.7*	50	*5.6*
221	*8.7*	60	*6.7*
221	*8.7*	60	*6.7*
120 [1]	*4.7* [1]	60	*6.7*
207 [1]	*8.2* [1]	100	*11.2*
340 [1]	*13.4* [1]	150	*17*
150	*5.9*	60	*6.7*
200	*7.8*	80	*9.0*
250	*9.8*	120	*13.5*
200	*7.8*	75	*8.4*
250	*9.8*	100	*11.2*
115–200	*4.4–7.9*	100	*11.2*
70–120	*2.8–4.7*	100	*11.2*
264 [1]	*10.4* [1]	150	*17*
170 [1]	*6.7* [1]	300	*34*
350 [1]	*13.7* [1]	300	*34*
600 [1]	*23.6* [1]	300	*34*
140 [1]	*5.5* [1]	500	*56*
320 [1]	*12.6* [1]	500	*56*
570 [1]	*22.4* [1]	500	*56*

SKF supplies a wide range of pullers for the dismounting of bearings. Depending on the arrangement they can also be used to pull couplings, gear wheels, and other machinery components from a shaft.

There are three main types of pullers:

External pullers

This is the most commonly used type of puller for removing bearings from shafts. The puller arms reach behind the bearing outer ring and by rotating the spindle the bearing can be removed. Depending on type, external pullers are typically supplied with two or three arms. External pullers can also be supplied with a separator that locates behind component to be removed, typically for applications where there is insufficient space for the puller arms. For very heavy loads, or for ease of use, some external pullers are supplied with hydraulic power options that greatly reduce the manual effort in removing the component.

Internal pullers

Internal pullers reach through the bore of a component and grip it from the inside. The dismounting force is often generated by a slide hammer. In general, this type of puller cannot be used on large components. Reversible jaw pullers are a versatile solution for the internal and external pulling of bearings and other components. Typically, they consist of a beam, spindle and two arms. These pullers are very popular for use in mobile service trucks, as they generally lighter and more compact than three arm external pullers.

Blind housing pullers

Blind housing pullers are attached to the bearing between the two bearing rings. SKF blind housing pullers are only to be used on SKF Deep Groove Ball bearings. Other bearing brands have bearings with different raceway geometries and therefore the fixing of the arms cannot be guaranteed.

When selecting a puller ensure that the puller opens sufficiently to grip the component and that there is enough space around the component to attach the puller.

It is strongly advised to select a puller that can generate a higher maximum force than is required by the application. The required pulling force depends on the mating surface area, the interference fit, the way of attaching the puller and other influences such as fretting corrosion.

Mechanical tools

SKF EasyPull

Equipped with spring-operated arms and a solid design, the SKF EasyPull is one of the most user-friendly and safe tools on the market. Ergonomically designed, the spring-operated arms enable the user to position the puller behind the component with just one movement. The SKF EasyPull is available in mechanical and hydraulically assisted versions, as well as complete kits with a tri-section pulling plate and a puller protection blanket.

Safe and simple bearing dismounting

Mechanical pullers TMMA series

- Sturdy design allows dismounting of components even in the tightest application in a safe manner
- The unique red rings spring-operated opening mechanism allows the SKF EasyPull to be placed behind the component with one movement of the hands
- Self-locking arms help prevent the risk of puller slipping under load
- Double hexagonal heads allow easier application of withdrawal force
- Self-centring capability and nosepiece help avoid damage to shaft
- Efficient use of time due to quick dismounting
- Available in three sizes with a withdrawal force of 60, 80 or 120 kN *(6.7, 9.0 or 13.5 US ton)*, enabling easy selection
- TMHS series hydraulic force generators are available as an accessory for the 80 and 120 kN versions
- Supplied with a tube of puller spindle grease (LGEV 2)

Quick and virtually effortless bearing dismounting

Hydraulic pullers TMMA ..H series

- Ready-to-use, integrated hydraulic cylinder, pump and puller – thus it is assembly-free and it is not necessary to purchase separate parts
- Safety valve prevents spindles and pullers from being overloaded if excessive force is applied
- The spring-loaded centre point on the hydraulic spindle allows easy centring of the puller on the shaft without damaging the shaft
- The TMMA 100H has a maximum withdrawal force of 100 kN *(11.2 US ton)* and a long stroke of 80 mm *(3.1 in.)*, which facilitates most dismounting jobs in just one operation
- For dismounting jobs requiring less force, SKF offers a 75 kN *(8.4 US ton)* version, the hydraulic EasyPull TMMA 75H with a maximum stroke of 75 mm *(3 in.)*
- Supplied with extension pieces and one nosepiece

Technical data

Designation	TMMA 60	TMMA 80	TMMA 120	TMMA 75H	TMMA 100H
Width of grip external, minimum	36 mm *(1.4 in.)*	52 mm *(2.0 in.)*	75 mm *(3.0 in.)*	52 mm *(2 in.)*	75 mm *(3 in.)*
Width of grip external, maximum	150 mm *(5.9 in.)*	200 mm *(7.8 in.)*	250 mm *(9.8 in.)*	200 mm *(7.8 in.)*	250 mm *(9.8 in.)*
Effective arm length	150 mm *(5.9 in.)*	200 mm *(7.8 in.)*	250 mm *(9.8 in.)*	200 mm *(7.8 in.)*	250 mm *(9.8 in.)*
Maximum withdrawal force	60 kN *(6.7 US ton)*	80 kN *(9.0 US ton)*	120 kN *(13.5 US ton)*	75 kN *(8.4 US ton)*	100 kN *(11.2 US ton)*
Claw height	7,5 mm *(0.30 in.)*	9,8 mm *(0.39 in.)*	13,8 mm *(0.54 in.)*	9,8 mm *(0.39 in.)*	13,8 mm *(0.54 in.)*
Hydraulic spindle	–	–	–	TMHS 75	TMHS 100
Adapter: possible to upgrade to hydraulic version	–	TMHS 75	TMHS 100	–	–
Total weight	4,0 kg *(8.8 lb)*	5,7 kg *(12.6 lb)*	10,6 kg *(23.4 lb)*	7,0 kg *(15.4 lb)*	13,2 kg *(29 lb)*

A complete bearing dismounting solution

Hydraulic puller sets TMMA ..H /SET series

- A set consisting of a hydraulically assisted SKF EasyPull together with a tri-section pulling plate, TMMS series, and a puller protection blanket facilitate an easy, safe and virtually damage-free dismounting
- Especially suitable for dismounting spherical roller and CARB toroidal roller bearings, and other components such as pulleys and flywheels
- A puller protection blanket, TMMX series, made of a strong transparent material allows the user to visually follow the dismounting procedure. While dismounting, the blanket helps to protect from flying fragments of bearings or other components, thereby enhancing user safety
- A sturdy custom-made storage case with room for all parts minimises the risk of loosing or damaging the set's components

Technical data

Designation	TMMA 75H/SET	TMMA 100H/SET
Puller	TMMA 75H	TMMA 100H
Tri-section pulling plate	TMMS 100	TMMS 160
Puller protection blanket	TMMX 280	TMMX 350
Dimensions of case	600 × 235 × 225 mm *(23.6 × 9.3 × 8.6 in.)*	680 × 320 × 270 mm *(27 × 13 × 11 in.)*
Total weight	15,0 kg *(33.1 lb)*	31,6 kg *(70 lb)*

Mechanical tools

SKF Jaw pullers

One of the most common ways to dismount small to medium size bearings is to use a basic mechanical puller. Using an SKF puller helps to safeguard against damage to the bearing or to the bearing seating during dismounting. SKF Jaw pullers allow for easy and safe puller operation.

Versatile two and three arm mechanical pullers

SKF Standard Jaw Pullers TMMP series

- Range of five different jaw pullers with two or three arms
- Maximum nominal span from 65 to 300 mm *(2.6 to 11.8 in.)*
- Cone system for automatic centring and secure positioning of arms
- Strong springs keep arms apart for easy operation
- Hardened, high quality carbon steel

Powerful self-centring mechanical pullers

SKF Heavy Duty Jaw Pullers TMMP series

- Fast, efficient and smooth handling
- Unique pantograph system gives exceptional grip and helps counteract misalignment during operation
- Three arm jaw pullers with a maximum withdrawal force of 60 to 150 kN *(6.7 to 17.0 US ton)* suitable for medium to large size bearings
- Blackened, high quality steel for corrosion resistance
- Other arm length options are available

Technical data – SKF Standard Jaw Pullers

Designation	TMMP 2x65	TMMP 2x170	TMMP 3x185	TMMP 3x230	TMMP 3x300
No. of arms	2	2	3	3	3
Width of grip	15–65 mm *(0.6–2.6 in.)*	25–170 mm *(1.0–6.7 in.)*	40–185 mm *(1.6–7.3 in.)*	40–230 mm *(1.6–9.1 in.)*	45–300 mm *(1.8–11.8 in.)*
Effective arm length	60 mm *(2.4 in.)*	135 mm *(5.3 in.)*	135 mm *(5.3 in.)*	210 mm *(8.3 in.)*	240 mm *(9.4 in.)*
Claw height	8 mm *(0.31 in.)*	9 mm *(0.35 in.)*	9 mm *(0.35 in.)*	9 mm *(0.35 in.)*	11 mm *(0.43 in.)*
Maximum withdrawal force	6,0 kN *(0.7 US ton)*	18,0 kN *(2 US ton)*	24,0 kN *(2.7 US ton)*	34,0 kN *(3.8 US ton)*	50,0 kN *(5.6 US ton)*
Weight	0,5 kg *(1.2 lb)*	2,1 kg *(4.7 lb)*	2,9 kg *(6.4 lb)*	5,8 kg *(13 lb)*	8,6 kg *(19 lb)*

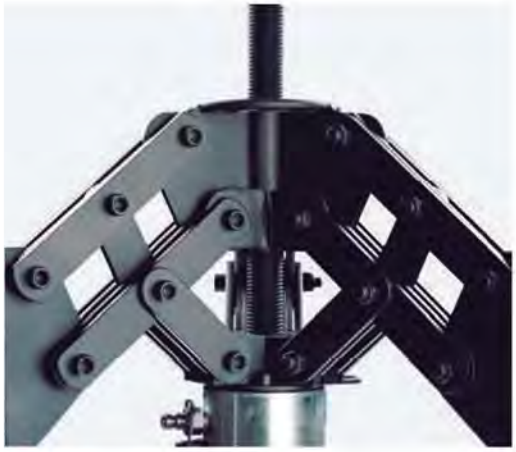
Technical data – SKF Heavy Duty Jaw Pullers

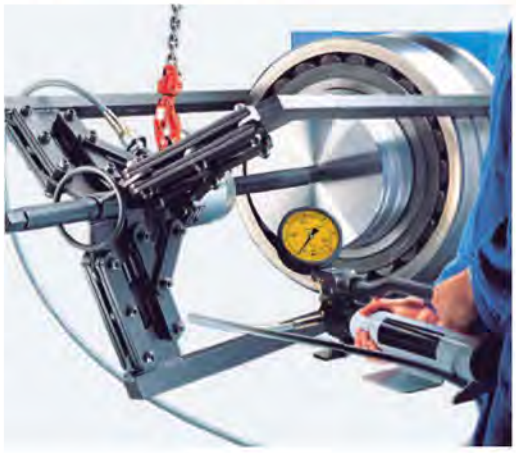
Designation	TMMP 6	TMMP 10	TMMP 15
Width of grip	50–127 mm *(2.0–5.0 in.)*	100–223 mm *(3.9–8.7 in.)*	140–326 mm *(5.5–12.8 in.)*
Effective arm length	120 mm *(4.7 in.)*	207 mm *(8.2 in.)*	340 mm *(13.4 in.)*
Claw height	15 mm *(0.59 in.)*	20 mm *(0.78 in.)*	30 mm *(1.18 in.)*
Maximum withdrawal force	60 kN *(6.7 US ton)*	100 kN *(11.2 US ton)*	150 kN *(17 US ton)*
Weight	4,0 kg *(8.8 lb)*	8,5 kg *(19 lb)*	21,5 kg *(47.4 lb)*
Effective length optional arms			
TMMP ..-1	included	included	260 mm *(10.2 in.)*
TMMP ..-2	220 mm *(8.6 in.)*	350 mm *(13.8 in.)*	included
TMMP ..-3	370 mm *(14.5 in.)*	460 mm *(18.1 in.)*	435 mm *(17.1 in.)*
TMMP ..-4	470 mm *(18.5 in.)*	710 mm *(27.9 in.)*	685 mm *(27.0 in.)*

Powerful self-centring hydraulic pullers

SKF Hydraulically Assisted Heavy Duty Jaw Pullers TMHP series

- High forces can be easily applied as the puller is self-centring
- The combination of a spindle and hydraulic cylinder allows the working length to be easily adjusted
- Unique pantograph system gives exceptional grip and helps counteract misalignment during operation
- Equipped with a lifting handle and eye bolt, facilitates easy handling
- Maximum withdrawal force of 150, 300 or 500 kN *(17, 34 or 56 US ton)*
- Supplied with SKF Hydraulic Pump TMJL 100





Technical data

Designation [1]	TMHP 15/260	TMHP 30/170	TMHP 30/350	TMHP 30/600	TMHP 50/140	TMHP 50/320	TMHP 50/570
Width of grip	195–386 mm *(7.7–15.2 in.)*	290–500 mm *(11.4–19.7 in.)*	290–500 mm *(11.4–19.7 in.)*	290–500 mm *(11.4–19.7 in.)*	310–506 mm *(12.2–19.9 in.)*	310–506 mm *(12.2–19.9 in.)*	310–506 mm *(12.2–19.9 in.)*
Effective arm length	264 mm *(10.4 in.)*	170 mm *(6.7 in.)*	350 mm *(13.7 in.)*	600 mm *(23.6 in.)*	140 mm *(5.5 in.)*	320 mm *(12.6 in.)*	570 mm *(22.4 in.)*
Claw height	30 mm *(1.2 in.)*	35 mm *(1.4 in.)*	35 mm *(1.4 in.)*	35 mm *(1.4 in.)*	40 mm *(1.6 in.)*	40 mm *(1.6 in.)*	40 mm *(1.6 in.)*
Stroke	100 mm *(3.9 in.)*	50 mm *(2 in.)*	50 mm *(2 in.)*	50 mm *(2 in.)*	40 mm *(1.6 in.)*	40 mm *(1.6 in.)*	40 mm *(1.6 in.)*
Maximum working pressure hydraulic cylinder	80 MPa *(11 600 psi)*	80 MPa *(11 600 psi)*	80 MPa *(11 600 psi)*	80 MPa *(11 600 psi)*	80 MPa *(11 600 psi)*	80 MPa *(11 600 psi)*	80 MPa *(11 600 psi)*
Maximum withdrawal force	150 kN *(17 US ton)*	300 kN *(34 US ton)*	300 kN *(34 US ton)*	300 kN *(34 US ton)*	500 kN *(56 US ton)*	500 kN *(56 US ton)*	500 kN *(56 US ton)*
Weight	34 kg *(75 lb)*	45 kg *(99 lb)*	47 kg *(104 lb)*	56 kg *(123 lb)*	47 kg *(104 lb)*	54 kg *(119 lb)*	56 kg *(132 lb)*

[1] Also available without hydraulic pump TMJL 100. Please add suffix 'X' to designation when ordering without pump (e.g. TMHP 30/170X)

Mechanical tools

TMMR.. XL
with 2 optional
extension pieces

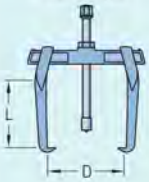
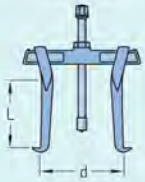
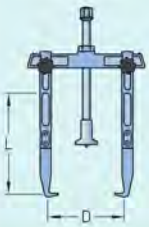
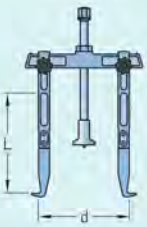
Versatile and robust pullers for internal and external pulling jobs

SKF Reversible Jaw Puller TMMR F series

The multi-purpose SKF Reversible jaw pullers are suitable for internal and external pulling of bearings and other components. The standard range of eight pullers can accommodate a wide range of bearing and component sizes. The four largest TMMR..F pullers are also available with extra long arms as a standard option (TMMR ....XL). The extra long arms help to dismount bearings and components placed far from the shaft end and can be further extended by adding extension pieces.

- An essential and versatile tool for every workshop allows for external and internal pulling applications
- Self-locking arms for easy adjustment of width of grip
- Hexagonal head on beam enables rotation of puller and bearing during dismounting, improving ease of use
- Wide gripping range from 23 mm *(0.9 in.)* internal to 350 mm *(13.8 in.)* external, enables many bearings and components to be dismounted
- Unlike many similar pullers, the pullers can be used up to their full rated load capacity without permanently deforming the puller arms
- Arms and beam are zinc passivated for enhanced corrosion resistance and easy cleaning
- The extra long arm extension pieces, designed to be easy to fit and remove, can be used to further increase the effective arm length. Using extension pieces does not compromise the overall puller strength
- The SKF Reversible Jaw Pullers can also be supplied as three different sets, complete with a workshop stand

Technical data

External pull	Internal pull	Designation	Width of grip external pull (D)		Width of grip internal pull (d)		Effective arm length (L)		Maximum withdrawal force	
			mm	*in.*	mm	*in.*	mm	*in.*	kN	*US ton*
		TMMR 40F	23–48	*0.9–1.9*	59–67	*2.3–2.6*	67	*2.6*	17	*1.9*
		TMMR 60F	23–68	*0.9–2.7*	62–87	*2.4–3.4*	82	*3.2*	17	*1.9*
		TMMR 80F	41–83	*1.6–3.3*	95–97	*3.7–3.8*	98	*3.9*	40	*4.5*
		TMMR 120F	41–124	*1.6–4.9*	95–139	*3.7–5.5*	124	*4.9*	40	*4.5*
		TMMR 160F	68–164	*2.7–6.5*	114–163	*4.5–6.4*	143	*5.6*	50	*5.6*
		TMMR 200F	65–204	*2.6–8.0*	114–204	*4.5–8.0*	169	*6.7*	50	*5.6*
		TMMR 250F	74–254	*2.9–10.0*	132–254	*5.2–9.9*	183	*7.2*	60	*6.7*
		TMMR 350F	74–354	*2.9–13.9*	135–354	*5.3–13.8*	238	*9.4*	60	*6.7*
		TMMR 160XL	42–140	*1.7–5.5*	121–188	*4.8–7.4*	221	*8.7*	50	*5.6*
		TMMR 200XL	42–180	*1.7–7.1*	121–228	*4.8–9.0*	221	*8.7*	50	*5.6*
		TMMR 250XL	44–236	*1.7–9.3*	123–284	*4.8–11.2*	221	*8.7*	60	*6.7*
		TMMR 350XL	44–336	*1.7–13.2*	123–384	*4.8–15.1*	221	*8.7*	60	*6.7*



TMMR.. F

TMMR 16/20XL-1
TMMR 25/35XL-1

TMMR 16/35XL-4

TMMR 16/35XL-5

Contents

Designation	TMMR 4F/SET	TMMR 8F/SET	TMMR 8XL/SET
Puller TMMR 40F	–	●	●
Puller TMMR 60F	●	●	●
Puller TMMR 80F	–	●	●
Puller TMMR 120F	●	●	●
Puller TMMR 160F	●	●	●
Puller TMMR 200F	–	●	●
Puller TMMR 250F	●	●	●
Puller TMMR 350F	–	●	●
Extra long arm set 160F → 160XL, 200F → 200XL	–	–	●
Extra long arm set 250F → 250XL, 350F → 350XL	–	–	●
Spring-loaded nose piece	–	●	●

Accessories	
TMMR 16/20XL-1	Extra long arm set (2 pcs) to convert TMMR 160F and TMMR 200F to XL version + spring-loaded nose piece
TMMR 25/35XL-1	Extra long arm set (2 pcs) to convert TMMR 250F and TMMR 350F to XL version + spring-loaded nose piece
TMMR 16/35XL-4	Extension arms set (2 pcs) for the TMMR.. XL (length 125 mm / *4.9 in.*)
TMMR 16/35XL-5	Spring-loaded nose piece

Effortless bearing dismounting up to 100 kN

SKF Hydraulic Jaw Puller Kit TMHP 10E

- A versatile kit with three different arm lengths is suitable for a wide range of applications
- Hydraulic spindle facilitates effortless dismounting
- Self-locking arms minimise the risk of the puller slipping from the application when under load
- The spring-loaded centre point of the hydraulic spindle allows easy puller centring
- The hydraulic spindle is equipped with a safety valve, which minimises the risk of puller overload
- High load rating of 100 kN *(11.2 US ton)* makes the puller suitable for a variety of dismounting jobs
- A hydraulic spindle stroke of 80 mm *(3.1 in.)* helps facilitate dismounting in one operation
- Supplied with hydraulic spindle extension pieces to allow quick adaptation to pulling length

Technical data

Designation	TMHP 10E		
Contents	1 × arm–assembly stand 3 × arms, 115 mm *(4.5 in.)* 3 × arms, 160 mm *(6.3 in.)* 3 × arms, 200 mm *(7.9 in.)* 1 × hydraulic spindle TMHS 100 3 × extension pieces for hydraulic spindle; 50, 100, 150 mm *(2, 4, 6 in.)* 1 × nosepiece with centre point for hydraulic spindle	Maximum stroke	80 mm *(3.1 in.)*
		Threading hydraulic cylinder	1 1/2"-16 UN
		Nominal working force	100 kN *(11.2 US ton)*
		Carrying case dimensions	578 × 410 × 70 mm *(23 × 16 × 2.8 in.)*
		Weight	14,5 kg *(32 lb)*

Mechanical tools

SKF Strong Back Pullers

Selection chart

Designation	Shaft diameter		Maximum bearing outer diameter		Maximum reach	
	mm	*in.*	mm	*in.*	mm	*in.*
TMBS 50E	7–50	*0.3–1.9*	85	*3.3*	110	*4.3*
TMBS 100E	20–100	*0.8–3.9*	160	*6.3*	120–816	*4.7–32.1*
TMBS 150E	35–150	*1.4–5.9*	215	*8.5*	120–816	*4.7–32.1*
TMHC 110E	20–100	*0.8–3.9*	160	*6.3*	120–245	*4.7–9.6*

Powerful combination of a jaw and strong back puller

SKF Hydraulic Puller Kit TMHC 110E

- SKF TMHC 110E hydraulic puller kit combines a jaw puller and a strong back puller
- A versatile puller kit facilitates safe and easy dismounting in a variety of applications
- Hydraulic spindle facilitates easy and quick dismounting
- High load rating of 100 kN *(11.2 US ton)*
- The strong back puller includes two different arm lengths for maximum reach of 120 mm *(4.7 in.)*
- The jaw puller can be assembled as a three-arm or two-arm puller depending on the space and demands of the application
- The firm grip of the strong back puller behind the bearing's inner ring reduces the force required to dismount the bearing
- Supplied with extension rods to allow quick adaptation to pulling lengths upto 245 mm *(9.6 in.)*
- The spring-loaded centre point of the hydraulic spindle allows easy puller centring minimizing the risk of shaft damage

Technical data

Designation	TMHC 110E		
Contents	1 × arm–assembly stand 3 × arms, 65 mm *(2.6 in.)* 3 × arms, 115 mm *(4.5 in.)* 1 × separator set 1 × beam 2 × main rods 2 × extension rods, 125 mm *(4.9 in.)* 1 × hydraulic spindle TMHS 100 2 × extension pieces for hydraulic spindle; 50, 100 mm *(2.0, 3.9 in.)* 1 × nosepiece with centre point for hydraulic spindle		
Maximum stroke	80 mm *(3.1 in.)*		
Nominal working force	100 kN *(11.2 US ton)*		
Threading hydraulic cylinder	1 1/2"-16 UN		
Carrying case dimensions	580 × 410 × 70 mm *(23 × 16 × 2.8 in.)*		
Weight	13,5 kg *(29.8 lb)*		
Arms set 1 (3 ×)			
Effective arms length	65 mm	*(2.5 in.)*	
Width of grip	50–110 mm	*(2–4.3 in.)*	
Claw height	6 mm	*(0.2 in.)*	
Arms set 2 (3 ×)			
Effective arms length	115 mm	*(4.5 in.)*	
Width of grip	75–170 mm	*(2.9–6.7 in.)*	
Claw height	6 mm	*(0.2 in.)*	
Strong back puller			
Maximum reach	250 mm	*(9.8 in.)*	
Shaft diameter range	20–100 mm	*(0.8–3.9 in.)*	

Easy bearing dismounting even in the tightest spaces

SKF Strong Back Pullers TMBS E series

The SKF TMBS E strong back pullers facilitate dismounting of bearings in applications where the use of traditional jaw pullers is restricted due to lack of space or where the application demands a long reach.

- Special separator design allows the puller to be easily inserted between the bearing and the shoulder on the shaft
- The spring-loaded centre point of the hydraulic spindle allows easy puller centring minimizing the risk of shaft damage
- The firm grip behind the bearing's inner ring reduces the force required to dismount the bearing
- The hydraulic spindle is equipped with a safety valve, which minimises the risk of puller overload
- A hydraulic spindle stroke of 80 mm *(3.1 in.)* helps facilitate dismounting in one operation
- SKF TMBS 50E is equipped with a mechanical spindle for force generation
- SKF TMBS 100E and the SKF TMBS 150E are equipped with a hydraulic spindle, which allows for easy application of force up to 100 kN *(11.2 US ton)*
- Supplied with hydraulic spindle extension pieces to allow quick adaptation to pulling length
- SKF TMBS 100E and SKF TMBS 150E are supplied with extension rods to allow quick adaptation to pulling lengths upto 816 mm *(32.1 in.)*

Technical data

Designation	TMBS 50E	TMBS 100E	TMBS 150E
Contents	1 × separator set 1 × mechanical spindle 1 × beam 2 × main rods	1 × separator set 2 × main rods 2 × extension rods, 125 mm *(4.9 in.)* 4 × extension rods, 285 mm *(11.2 in.)* 1 × beam 1 × hydraulic spindle TMHS 100 2 × extension pieces for hydraulic spindle; 50, 100 mm *(2.0, 3.9 in.)* 1 × nosepiece with centre point for hydraulic spindle	1 × separator set 2 × main rods 2 × extension rods, 125 mm *(4.9 in.)* 4 × extension rods, 285 mm *(11.2 in.)* 1 × beam 1 × hydraulic spindle TMHS 100 2 × extension pieces for hydraulic spindle; 50, 100 mm *(2.0, 3.9 in.)* 1 × nosepiece with centre point for hydraulic spindle
Maximum stroke	–	80 mm *(3.1 in.)*	80 mm *(3.1 in.)*
Nominal working force	30 kN *(3.4 US ton)*	100 kN *(11.2 US ton)*	100 kN *(11.2 US ton)*
Maximum reach	110 mm *(4.3 in.)*	120–816 mm *(4.7–32.1 in.)*	120–816 mm *(4.7–32.1 in.)*
Shaft diameter range	7–50 mm *(0.3–2 in.)*	20–100 mm *(0.8–3.9 in.)*	35–150 mm *(1.4–5.9 in.)*
Threading hydraulic cylinder	–	1 1/2"-16 UN	1 1/2"-16 UN
Carrying case dimensions	295 × 190 × 55 mm *(11.6 × 7.5 × 2 in.)*	580 × 410 × 70 mm *(23 × 16 × 2.8 in.)*	580 × 410 × 70 mm *(23 × 16 × 2.8 in.)*
Weight	1,8 kg *(4 lb)*	13,5 kg *(29.8 lb)*	17 kg *(37.5 lb)*

Mechanical tools

SKF Blind housing pullers

The SKF Deep Groove Ball Bearing Puller Kit TMMD 100 allows quick and easy dismounting of SKF Deep Groove Ball Bearings with an interference fit on both rings.

The SKF Blind Housing Puller Kit TMBP 20E is an adapter type puller for dismounting deep groove ball bearings in blind housings with shaft dimensions between 30 mm and 160 mm *(1.18–6.3 in.)*. The use of extension rods allows a long reach of up to 547 mm *(21.5 in.)*.

Selection chart

Designation	Bearing bore diameter (d)	Effective arm length
TMBP 20E	30–160 mm *(1.2–6.3 in.)*	547 mm *(21.5 in.)*
TMMD 100	10–100 mm *(0.4–3.9 in.)*	135–170 mm *(5.3–6.7 in.)*

Removes bearing without dismantling machinery

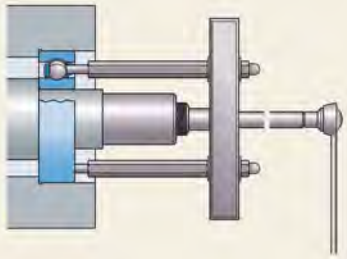
SKF Blind Housing Puller Kit TMBP 20E

- Allows a wide of range of deep groove ball bearings to be dismounted
- Ball adapters designed for a long service life
- Extension rods allow a reach of up to 583 mm *(23 in.)*
- Spanner stop function on spindle for easy and safe handling
- Self-locking nose piece helps minimise damage to shaft, and improves puller stability
- Supplied in a sturdy carrying case

Suitability chart

SKF TMBP 20E is suitable for dismounting the following deep groove ball bearings

60.. series	62.. series	63.. series	64.. series	16... series
6021–6032	6213–6230	6309–6320	6406–6418	16026–16032



Technical data

Designation	TMBP 20E
Kit contents	6 adapters sizes (2 pcs each), 2 main rods (with nut support rings and nuts) 4 extension rods, Spindle, Spindle nose piece, Beam
Effective arm length	147–547 mm *(5.8–21.5 in.)*
Maximum pulling force	55 kN *(6.2 US ton)*
Carrying case dimensions	530 × 85 × 180 mm *(20.9 × 3.4 × 7.0 in.)*
Weight	6,5 kg *(14.3 lb)*

Optimised puller claw design firmly grips the outer raceway of SKF bearings, without the need of removing the bearing cage.

Easy dismounting of bearings in blind housings

SKF Deep Groove Ball Bearing Puller Kit TMMD 100

The puller is suitable for use in both blind housings and shaft applications. The SKF TMMD 100 is suitable for dismounting up to 71 different SKF deep groove ball bearings, with shaft diameters ranging between 10 and 100 mm *(0.4–3.9 in.)*.

- The claws are designed to precisely fit in the bearing's raceway, providing a good grip, thereby allowing high dismounting forces
- Each puller arm is fitted with a spring for easy installation
- The claw has been designed to allow easy insertion
- The hexagon head of the spindle is designed to prevent the spanner sliding down the spindle during dismounting
- The puller can also be used to remove sealed bearings from blind housings, after the seal has been removed
- Supplied in a sturdy carrying case

Suitability chart

The SKF TMMD 100 suits the following bearing series and sizes:

Bearing designation	Shaft diameter	
6000–6020	10–100 mm	*(0.4–3.9 in.)*
6200–6218	10–90 mm	*(0.4–3.5 in.)*
6300–6313	10–65 mm	*(0.4–2.6 in.)*
6403–6410	17–50 mm	*(0.7–2.0 in.)*
62/22, 62/28, 63/22, 63/28	22, 28, 22, 28 mm	*(0.9, 1.1, 0.9, 1.1 in.)*
16002, 16003, 16011	15, 17, 55 mm	*(0.6, 0.7, 2.2 in.)*
16100, 16101	10, 12 mm	*(0.4, 0.5 in.)*

The rubber cap allows easy and quick attachment of the arms to the spindle. It also prevents the puller arms from detaching from the spindle during operation

Technical data

Designation	TMMD 100
Kit contents	3 × puller arm A1 3 × puller arm A2 3 × puller arm A3 3 × puller arm A4 3 × puller arm A5 3 × puller arm A6 2 × spindle and nut, 1 × handle
Effective arm length	135–170 mm *(5.3–5.7 in.)*
Carrying case dimensions	530 × 85 × 180 mm *(20.9 × 3.4 × 7.0 in.)*
Weight	3,6 kg *(7.9 lb)*

Mechanical tools

Internal pullers

The SKF Internal Bearing Puller Kits are designed for dismounting bearings from housings, where the fit is on the outer ring. The pullers are constructed for optimum strength and durability and suit a wide range of bearing bore diameters. A sliding hammer allows high impact forces to be applied and is ergonomically designed to enhance user safety.

Fast and easy bearing dismounting from housings

SKF Internal Bearing Puller Kits TMIP and TMIC series

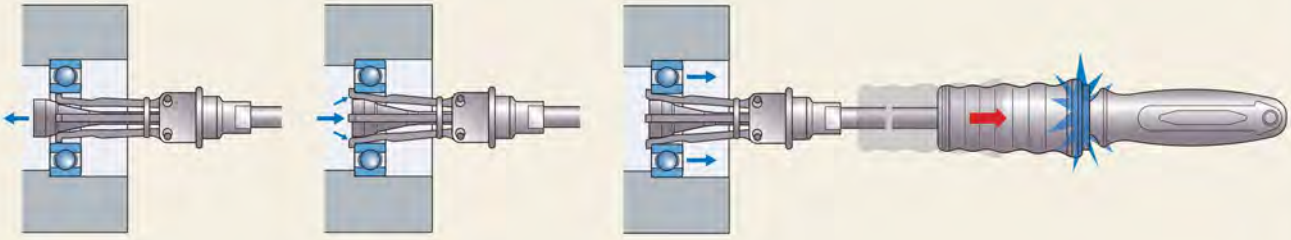
TMIP series

- Unique SKF design can reduce dismounting time
- Unlike most internal bearing pullers, the spring loaded extractors can be quickly and easily fitted to the inner ring in just one quick action
- Claw design provides a strong and secure grip behind the inner ring allowing a high puller force to be applied
- Two different kits to suit bearing bores between 7 – 28 mm and 30 – 60 mm

TMIC series

- Expandable collet design made of high strength materials
- Designed for applications with only a limited space to grip behind the bearing
- Suit bearing bores between 7 – 28 mm

Supplied in a sturdy carrying case



Step 1 Step 2 Step 3

Selection chart

Extractor	Bearing bore diameter	Bearing DGBB	SABB	ACBB	SRB
TMIC C7-8	7–8 mm	607–638, 618/7–638/8	127–108	–	–
TMIC C10-12	10–12 mm	6000–6301, 16000–16101, 61800–61801	1200–2301	3200–5201	–
TMIC C12-15	12–15 mm	6001–6302, 16101–16902, 61801–61902	1201–2301	3201–3202	–
TMIC C17-20	17–20 mm	6003–6404, 16003–16004, 61803–61904	1203–2304	3203–3204	22205/20
TMIC C22-28	22–28 mm	6005–6405, 16005, 61805–62205, 62/22–63/28	1205–2305	3205–3305	22205–21305
TMIP E7-9	7–9 mm	607–629, 618/7–619/9, 627–628/8	127–129	–	–
TMIP E10-12	10–12 mm	6000–6301, 16000–16101, 61800–61801	1200–2301	3200–5201	–
TMIP E15-17	15–17 mm	6002–6403, 16002–16003, 61802–61903	1202–2303	3202–3303	–
TMIP E20-28	20–28 mm	6004–6405, 16004–16005, 62/22–63/28	1204–2305	3204–3305	22205/20–21305
TMIP E30-40	30–40 mm	6006–6408, 16006–16008, 61806–61908	1206–2308	3206–5408	22206–22308
TMIP E45-60	45–60 mm	6009–6412, 16009–16012, 61809–61912	1209–1412	3209–5412	22209–22312

The above tables only show a selection of popular bearings that can be dismounted using SKF Internal Pullers.
There may be other bearings that can also be removed using the SKF TMIP or TMIC pullers.

Technical data – extractors

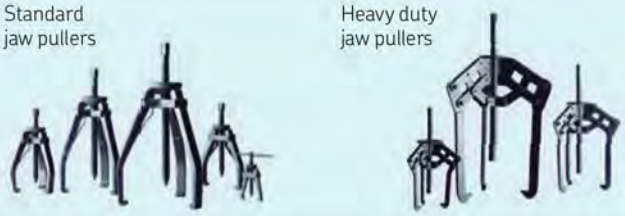
size	Maximum bearing width		Space behind bearing		Housing depth	
	mm	*in.*	mm	*in.*	mm	*in.*
TMIC 7-28						
TMIC C7-8	13,3	*0.5*	3	*0.12*	54	*2.1*
TMIC C10-12	46,5	*1.8*	3	*0.12*	56	*2.2*
TMIC C12-15	54	*2.1*	4	*0.16*	62	*2.4*
TMIC C17-20	59	*2.3*	5,3	*0.21*	70	*2.8*
TMIC C22-28	90	*3.5*	6,7	*0.26*	90	*3.5*
TMIP 7–28						
TMIP E7–9	10	*0.4*	6	*0.24*	39	*1.5*
TMIP E10–12	11	*0.4*	6	*0.24*	45	*1.8*
TMIP E15–17	18	*0.7*	7,5	*0.29*	55	*2.2*
TMIP E20–28	24	*0.9*	10	*0.4*	60	*2.4*
TMIP 30–60						
TMIP E30–40	>35	*>1.4*	11,5	*0.45*	97	*3.8*
TMIP E45–60	>64	*>2.5*	15	*0.6*	102	*4.0*

Technical data

Designation	TMIC 7–28	TMIP 7–28	TMIP 30–60
Bearing bore diameter	7–28 mm *(0.28–1.1 in.)*	7–28 mm *(0.28–1.1 in.)*	30–60 mm *(1.2–2.4 in.)*
Total sliding hammer length	417 mm *(16.4 in.)*	417 mm *(16.4 in.)*	557 mm *(21.9 in.)*
Carrying case dimensions	530 × 85 × 180 mm *(20.9 × 3.4 × 7.0 in.)*	530 × 85 × 180 mm *(20.9 × 3.4 × 7.0 in.)*	530 × 85 × 180 mm *(20.9 × 3.4 × 7.0 in.)*
Weight	3,0 kg *(6.6 lb)*	3,1 kg *(6.8 lb)*	5,4 kg *(11.9 lb)*

Mechanical tools

A range of accessories has been developed to further facilitate the ease of use of the SKF puller range.

		Puller series
24	 Standard jaw pullers Heavy duty jaw pullers	**TMMP series** Standard jaw pullers **TMMP series** Heavy duty jaw pullers
26		**TMMR F series** Reversible jaw pullers
22		**TMMA series** SKF EasyPull **TMHC 110E** Hydraulic Puller kit
27, 28		**TMHP 10E** Hydraulic Puller kit **TMBS E series** Strong back pullers
25		**TMHP series** Hydraulically - assisted heavy duty jaw pullers
30, 31		**TMMD 100/TMBP 20E** Blind housing puller kits

Designation	 38 Puller Protection Blankets TMMX series	 36 Force Generators Advanced Hydraulic Spindle TMHS series	 37 Tri-section Pulling Plates TMMS series
TMMP 2x65	TMMX 210 [1]	–	–
TMMP 2x170	TMMX 210, TMMX 280	–	–
TMMP 3x185	TMMX 210 [1]	–	TMMS 50 [1], TMMS 100
TMMP 3x230	TMMX 210, TMMX 280 [1]	–	TMMS 50 [1], TMMS 100
TMMP 3x300	TMMX 280, TMMX 350 [1]	–	TMMS 50, TMMS 100 [1], TMMS 160
TMMP 6	TMMX 210	–	TMMS 50 [1]
TMMP 10	TMMX 280, TMMX 350	–	TMMS 100 [1]
TMMP 15	–, TMMX 350	–	TMMS 100 [1], TMMS 160 [1]
TMMR 40F	–	–	–
TMMR 60F	–	–	–
TMMR 80F	–	–	–
TMMR 120F	TMMX 210	–	–
TMMR 160F (XL)	TMMX 210, TMMX 280	–	–
TMMR 200F (XL)	TMMX 280 [1]	–	–
TMMR 250F (XL)	TMMX 350 [1]	–	–
TMMR 350F (XL)	–	–	–
TMMA 60	TMMX 210 [1], TMMX 280	–	TMMS 50 [1]
TMMA 80	TMMX 210, TMMX 280 [1], TMMX 350	TMHS 75	TMMS 50 [1], TMMS 100 [1]
TMMA 120	TMMX 280, TMMX 350 [1]	TMHS 100	TMMS 50, TMMS 100 [1], TMMS 160 [1]
TMMA 75H	TMMX 210, TMMX 380 [1], TMMX 350	TMHS 75 [2]	TMMS 50 [1], TMMS 100 [1]
TMMA 100H	TMMX 280, TMMX 350 [1]	TMHS 100 [2]	TMMS 50, TMMS 100 [1], TMMS 160 [1]
TMMA 75H/SET	TMMX 280 [2]	TMHS 75 [2]	TMMS 50 [1], TMMS 100 [2]
TMMA 100H/SET	TMMX 350 [2]	TMHS 100 [2]	TMMS160 [2]
TMHC 110E	TMMX 210, TMMX 280 [1], TMMX 350	TMHS 100 [2]	
TMHP 10E	TMMX 210, TMMX 280 [1], TMMX 350	TMHS 100 [2]	TMMS 50 [1], TMMS 100 [1], TMMS 160
TMBS 50E	TMMX 210	–	–
TMBS 100E	TMMX 210 [1], TMMX 280	TMHS 100 [2]	–
TMBS 150E	TMMX 280 [1], TMMX 350	TMHS 100 [2]	–
TMHP 15/260	–	–	TMMS 160, TMMS 260
TMHP 30/170	–	–	TMMS 260 [1], TMMS 380
TMHP 30/350	–	–	TMMS 260 [1], TMMS 380
TMHP 30/600	–	–	TMMS 260 [1], TMMS 380
TMHP 50/140	–	–	TMMS 260, TMMS 380 [1]
TMHP 50/320	–	–	TMMS 260, TMMS 380 [1]
TMHP 50/570	–	–	TMMS 260, TMMS 380 [1]
TMHP 15/260X	–	–	TMMS 160, TMMS 260
TMHP 30/170X	–	–	TMMS 260 [1], TMMS 380
TMHP 30/350X	–	–	TMMS 260 [1], TMMS 380
TMHP 30/600X	–	–	TMMS 260 [1], TMMS 380
TMHP 50/140X	–	–	TMMS 260, TMMS 380 [1]
TMHP 50/320X	–	–	TMMS 260, TMMS 380 [1]
TMHP 50/570X	–	–	TMMS 260, TMMS 380 [1]
TMMD 100	TMMX 210 [1]	–	–
TMBP 20E	TMMX 210, TMMX 280 [1]	–	–

[1] recommended / [2] accessory included with puller

Mechanical tools

TMHS 75

TMHS 100

TMHS 100 shown as part of hydraulic puller TMMA 100H

Effortless withdrawal force generation

Advanced Hydraulic Spindles TMHS 75 and TMHS 100

The SKF TMHS 75 and TMHS 100 generate a high pulling force with very little effort compared to the standard mechanical spindles. They significantly reduce the time needed to dismount a bearing or other component.

- Integrated hydraulic cylinder, pump and spindle – no separate pump is required
- Safety valve helps prevent overloading the spindle and the puller in case excessive force is applied
- Long stroke helps enable dismounting in one operation
- Spring-loaded nosepiece centre point allows easy puller centring minimising shaft centre point damage
- Hand lever with ergonomic grip can be rotated 360°
- Extension pieces included

TMHS 75:

- Maximum withdrawal force of 75 kN *(8.4 US ton)*
- Stroke length of 75 mm *(3.0 in.)*
- Suitable for use with pullers with a 1 1/4"-12 UNF thread

TMHS 100:

- Maximum withdrawal force of 100 kN *(11.2 US ton)*
- Stroke length of 80 mm *(3.1 in.)*
- Suitable for use with pullers with a 1 1/2"-16 UN thread

Technical data

Designation	TMHS 75	TMHS 100
Contents	1 × hydraulic spindle 2 × extension pieces; 50 and 100 mm *(2.0 and 3.9 in.)* 1 × nosepiece	1 × hydraulic spindle 3 × extension pieces; 50, 100 and 150 mm *(2.0, 3.9 and 5.9 in.)* 1 × nosepiece
Maximum withdrawal force	75 kN *(8.4 US ton)*	100 kN *(11.2 US ton)*
Piston stroke	75 mm *(3.0 in.)*	80 mm *(3.1 in.)*
Body thread	1 1/4"-12 UNF	1 1/2"-16 UN
Nose piece diameter	35 mm *(1.4 in.)*	30 mm *(1.2 in.)*
Maximum reach	229 mm *(9.0 in.)*	390 mm *(15.4 in.)*
Weight	2,7 kg *(6.0 lb)*	4,5 kg *(10.0 lb)*

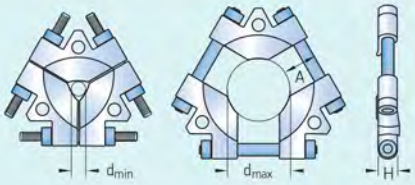
Efficient and correct dismounting

SKF Tri-section Pulling Plates TMMS series

- The SKF TMMS series consists of five different sizes of tri-section pulling plates suitable for shafts with diameters ranging from 50 to 380 mm *(2 to 15 in.)*
- Suitable for use in combination with three-armed pullers
- The plates grip behind the bearing inner ring, helping to ensure that the pulling forces are only transmitted through the inner ring and not through the outer ring or the rolling elements; thereby minimising the risk of bearing damage
- The tri-section construction allows an even dismounting force distribution, preventing bearing locking and/or tilting on the shaft, especially in the case of spherical roller and CARB toroidal roller bearings
- Special wedge shape design allows the plates to be easily inserted between the bearing and the shoulder on the shaft

Dimensions

Designation	d_{min}		d_{max}		A		H	
	mm	*in.*	mm	*in.*	mm	*in.*	mm	*in.*
TMMS 50	12	*0.5*	50	*2.0*	20–30	*0.8–1.2*	15	*0.6*
TMMS 100	26	*1.0*	100	*3.9*	36–55	*1.4–2.1*	25	*1.0*
TMMS 160	50	*2.0*	160	*6.3*	45–73	*1.8–2.9*	30	*1.2*
TMMS 260	90	*3.6*	260	*10.2*	70–114	*2.8–4.5*	42	*1.7*
TMMS 380	140	*5.5*	380	*15.0*	81–142	*3.2–5.6*	58	*2.3*



TMMS 160 shown as part of hydraulic puller set TMMA 100H/SET

Mechanical tools

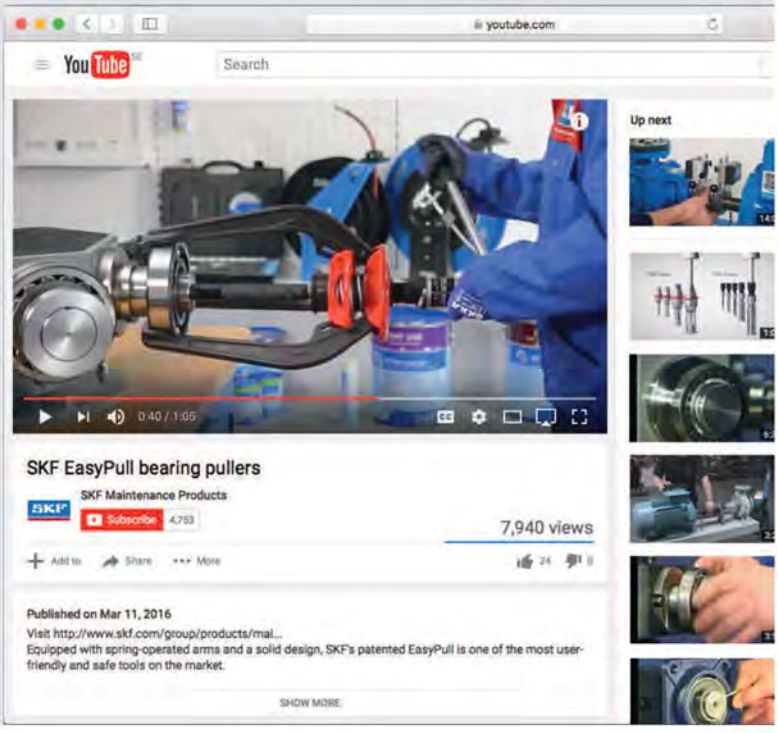
For additional user safety during dismounting

SKF Puller Protection Blankets TMMX series

- The SKF TMMX series are designed to offer additional user safety, while dismounting bearings or other components
- After the puller has been positioned, the blanket is simply wrapped around the puller and application
- The tough, transparent plastic allows the user to monitor the component and the puller during operation
- Especially designed to fit SKF TMMA series pullers, they are also suitable for use in combination with many other pullers

Dimensions

Designation	Recommended maximum diameter		Length		Width	
	mm	*in.*	mm	*in.*	mm	*in.*
TMMX 210	210	*8.3*	750	*29.5*	420	*16.5*
TMMX 280	280	*11.0*	970	*38.2*	480	*18.9*
TMMX 350	350	*13.8*	1 200	*47.2*	580	*22.8*



YouTube channel

SKF has a large number of informative videos available on YouTube. There you can find videos that introduce you to new products and give you instruction on how to use the products. In addition, a comprehensive series of videos explains the right techniques for mounting and dismounting bearings of various types. The videos are available with narration or subtitles in various languages. The YouTube channel is an easy way to learn more about SKF maintenance and lubrication products. Just visit and subscribe to be automatically informed when new videos are added.

http://mapro.skf.com/youtube

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