Selection	chart – SKF external and reversible pullers				
		Designation	No. of arms	Width of grip	
				mm	in.
		SKF Standard Jaw Pullers			
	1 4	TMMP 2x65	2	15–65	0.6–2.6
	4 1/11/11/14	TMMP 2x170	2	25–170	1.0-6.7
		TMMP 3x185	3	40–185	1.6–7.3
<b>P</b> 24	( 111 111 111 111 111 111 111 111 111 1	TMMP 3x230	3	40–230	1.6-9.0
<b>D</b>		TMMP 3x300	3	45–300	1.8–11.8
		SKF Reversible Jaw Pullers			
		TMMR 40F	2	23-48	0.9–1.9
		TMMR 60F	2	23-68	0.9–2.7
	-2-0-55-0-5-	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
26		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
		SKF Heavy Duty Jaw Pullers			
		TMMP 6	3	50–127	2.0-5.0
•	@S	TMMP 10	3	100-223	3.9–8.7
1 24	lile, a c a	TMMP 15	3	140–326	5.5–12.8
	5	Mechanical pullers SKF EasyPull			
	1 -	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
<b>A</b> 22	VF / VF /	Hydraulic pullers SKF EasyPull			
U	6.3 6.3	TMMA 75H +/SET	3	52–200	2.0-7.8
	, ,	TMMA 100H +/SET	3	75–250	3.0-9.8
		SKF Hydraulic Jaw Puller Kit			
		TMHP 10E	3 × 3	75–280	3.0–11.0
			3 × 3	/5-260	3.0-11.0
<b>A</b> 27, 2		SKF Hydraulic Puller Kit			
<b>D</b> 27,2		TMHC 110E	2 × 3	50–170	1.9–6.7
		SKF Hydraulically Assisted			
	1 1 1	Heavy Duty Jaw Pullers TMHP 15/260	3	105 204	7 7_15 2
		TMHP 15/260 TMHP 30/170	3	195–386 290–500	7.7–15.2 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 50/600 TMHP 50/140	3	310–506	12.2–19.9
	1 1 1 1 1	TMHP 50/320	3	310–506	12.2–19.9
<b>1</b> 25	. 11.	TMHP 50/570	3	310–506	12.2–19.9
		53, 57 0		210 300	

<sup>1)</sup> Other arm length options are available

 Effective arm length			thdrawal 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 <sup>1)</sup>	4.7 <sup>1)</sup>	60	6.7
207 <sup>1)</sup>	8.2 <sup>1)</sup>	100	11.2
340 <sup>1)</sup>	13.4 <sup>1)</sup>	150	17.2
340	13.4	130	-/
150	5.9	60	6.7
200	7.8	80	9.0
250	9.8	120	13.5
200	7.0	76	0 /
	7.8	75 100	8.4
250	9.8	100	11.2
115-200	4.4-7.9	100	11.2
70 120	20/7	100	11 2
70–120	2.8–4.7	100	11.2
264 <sup>1)</sup>	10.4 <sup>1)</sup>	150	17
170 <sup>1)</sup>	6.7 <sup>1)</sup>	300	34
350 <sup>1)</sup>	13.7 <sup>1)</sup>	300	34
600 <sup>1)</sup>	23.6 <sup>1)</sup>	300	34
140 <sup>1)</sup>	5.5 <sup>1)</sup>	500	56
320 <sup>1)</sup>	12.6 <sup>1)</sup>	500	56
570 <sup>1)</sup>	22.4 <sup>1)</sup>	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.



## 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.





#### 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

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. <i>0 in</i> .)	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)

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#### 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



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 <i>in</i> .)	680 × 320 × 270 mm (27 × 13 × 11 in.)
Total weight	15,0 kg (33.1 lb)	31,6 kg (70 lb)







## 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

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 <i>in</i> .)	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						
TMMP1	included	included	260 mm (10.2 in.)			
TMMP2	220 mm (8.6 in.)	350 mm (13.8 in.)	included			
TMMP3	370 mm (14.5 in.)	460 mm (18.1 in.)	435 mm (17.1 in.)			
TMMP4	470 mm (18.5 in.)	710 mm (27.9 in.)	685 mm (27.0 in.)			



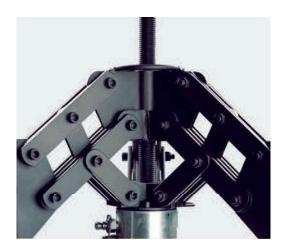
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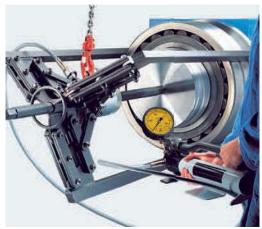


Powerful self-centring hydraulic pullers

### 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





esignation <sup>1)</sup>	TMHP 15/260	TMHP 30/170	TMHP 30/350	TMHP 30/600	TMHP 50/140	TMHP 50/320	TMHP 50/570
Vidth of grip	195–386 mm (7. <i>7–15.2 in</i> .)	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. <i>7 in</i> .)	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 oressure 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 orce	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)

 $<sup>^{1)}</sup> Also \ available \ without \ hydraulic \ pump\ TMJL\ 100. \ Please \ add\ suffix\ X'\ to\ designation\ when\ ordering\ without\ pump\ (e.g.\ TMHP\ 30/170X)$ 



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.

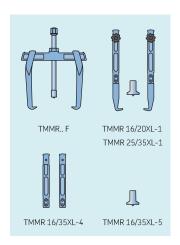
- An essential and versatile tool for every workshop allows for external and internal pulling applications
- Self-locking arms for easy adjustment of width of grip
- Hexagonal head on beam enables rotation of puller and bearing during dismounting, improving ease of use
- Wide gripping range from 23 mm (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

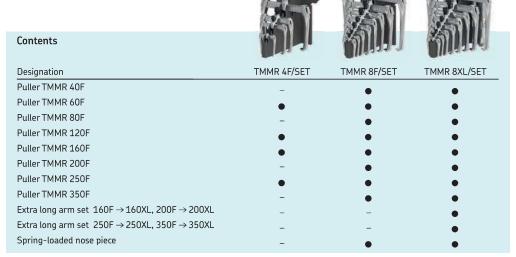
- Arms and beam are zinc passivated for enhanced corrosion resistance and easy cleaning
- The extra long arm extension pieces, designed to be easy to fit and remove, can be used to further increase the effective arm length. Using extension pieces does not compromise the overall puller strength
- The SKF Reversible Jaw Pullers can also be supplied as three different sets, complete with a workshop stand



Technical data										
		Designation	Width of grip exter pull (D)	nal	Width of grip intern pull (d)	al	Effecti arm le (L)		Maxir withd force	rawal
			mm	in.	mm	in.	mm	in.	kN	US ton
External pull	Internal pull	TMMR 40F	23-48	0.9-1.9	59–67	2.3-2.6	67	2.6	17	1.9
Ħ	Ħ	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
<u> </u>	<u> </u>	TMMR 120F	41–124	1.6-4.9	95–139	3.7-5.5	124	4.9	40	4.5
;    H	;    H	TMMR 160F	68–164	2.7-6.5	114-163	4.5-6.4	143	5.6	50	5.6
<u>-                                    </u>		TMMR 200F	65–204	2.6-8.0	114-204	4.5-8.0	169	6.7	50	5.6
m	m	TMMR 250F	74–254	2.9–10.0	132-254	5.2-9.9	183	7.2	60	6.7
Ī	Ī	TMMR 350F	74-354	2.9–13.9	135-354	5.3-13.8	238	9.4	60	6.7
T N II N	T N I N	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
	<b> </b>	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

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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			33 - WILL
Designation	TMHP 10E		
Contents	1 × arm–assembly stand	Maximum stroke	80 mm (3.1 in.)
	3 × arms, 115 mm (4. <i>5 in.</i> ) 3 × arms, 160 mm (6.3 <i>in.</i> )	Threading hydraulic cylinder	1 <sup>1</sup> /2"-16 UN
	$3 \times \text{arms}$ , 100 mm (0.3 iii.)	Nominal working force	100 kN (11.2 US ton)
	1 × hydraulic spindle TMHS 100 3 × extension pieces for hydraulic spindle;	Carrying case dimensions	578 × 410 × 70 mm (23 × 16 × 2.8 in.)
	5 x exension pieces ion vigaratic spiritie, 50, 100, 150 mm (2, 4, 6 in.) 1 × nosepiece with centre point for hydraulic spindle	Weight	14,5 kg ( <i>32 lb</i> )

#### SKF Strong Back Pullers

Designation	Shaft diame	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	

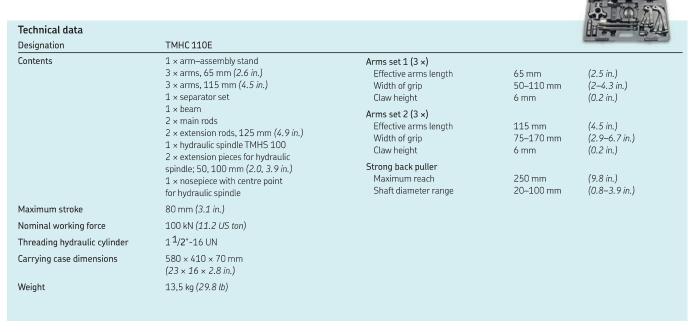


Powerful combination of a jaw and strong back puller

### 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



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### SKF Strong Back Pullers TMBS E series

The SKFTMBS 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
- SKFTMBS 100E and SKFTMBS 150E are supplied with extension rods to allow quick adaptation to pulling lengths upto 816 mm (32.1 in.)

<b>Technical data</b> 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. <i>7–32.1 in</i> .)	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 <sup>1</sup> /2"-16 UN	1 <sup>1</sup> /2"-16 UN
Carrying case dimensions	295 × 190 × 55 mm (11.6 × 7.5 × 2 in.)	$580 \times 410 \times 70 \text{ mm}$ (23 × 16 × 2.8 in.)	$580 \times 410 \times 70 \text{ mm}$ (23 × 16 × 2.8 in.)
Weight	1,8 kg (4 lb)	13,5 kg (29.8 lb)	17 kg (3 <i>7.5 lb</i> )