

### 3 Troughing sets



# 3 Troughing sets

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### 3.1 - Introduction

In a belt conveyor one may identify two types of troughing sets: the upper carrying sets, that have the function to support the loaded sections of the belt and to move the material and the lower sets that support the unloaded belt on its return section.

The upper troughing sets may basically be in two arrangements: flat, with a single horizontal roller generally supported by two fixed brackets from the conveyer structure troughed, generally with 3 rollers supported within a frame which is itself fixed to the conveyer structure.

There may be then, in the loaded sections, impact troughing sets with rollers with rubber rings or suspended "garland" sets with 3 or 5 rollers.

In the majority of belt conveyors, the upper troughing sets are used in a troughing arrangement, so that the carrying belt may transport a much greater amount of material than it could if the belt was flat, assuming an equal belt width and speed. The rollers of an upper troughing set are undoubtedly the most important components to be considered during the project phase.



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### 3.2 - Choice of troughing sets

When choosing the troughing sets and their arrangements during the project phase of the construction of a belt conveyor the following factors must be considered:

- total load capacity in tons/hour of conveyed material
- belt speed
- belt, single directional or reversible
- lump size of material and its angle of repose
- temperature and environmental challenge
- characteristics of load, humidity and material abrasiveness
- type, flexibility and weight of rubber belt.

The development of detail concerning the above considerations is contained in chapter 1 - technical information.

Defining the belt width, in relation to the flow of conveyed material and establishing the speed, allows the choice to be made of the type of transom support and the correct roller series, matching the working conditions.

Above all when the rollers are subjected to a corrosive environment or materials (salt, chemical substances, etc.) very careful attention should be paid in their choice.

In the same way the transoms that carry the rollers must be protected with a suitable galvanised treatment.

The weight of the material determines the dynamic load which the troughing set has to sustain and also defines the pitch of the sets in the upper carrying sections of the belt.

In practice the type of troughing set is chosen that meets the criteria of load together with the use of the minimum rubber belt width to provide the most economic solution.

The choice of the return sets is also important, in that they take account of the belt centralising and cleaning conditions.

In fact on the return sets the rollers are in contact with the dirty side of the belt and thus face a variety of problems.



The residual material remains attached to the return section of the belt and may deposit onto the rollers in a non uniform way that promotes belt drifting and premature wear.

This material may act to abrade the roller shell in a serious way and place a critically high demand on the protection qualities of the sealing system of the roller bearings.

Therefore the solution must be to put in place the very best belt cleaning system, utilising the auto centralising system (self centering troughing sets) and in the use of rollers with rubber rings that permits residual material to fall freely to the ground without build-up on the rollers. The conveyed material deposits onto rollers and increases their diameter in an uneven way, usually less at the roller ends.

To choose the right troughing sets to suit the load see the chapter on rollers "Dynamic Load, on the carrying sets Ca1, on the return sets Cr1".



The load on the troughing set is given by the material load added to the weight of rollers; and using the transom may be chosen, that has a greater load capacity than the load thus calculated; finally adding the weight of the transom itself, taking account the roller capacity and diameter that may be utilised in the frame and the following general considerations:

- the load capacity of the transom is given by the admissible load on the tubular leaving aside the type of attachments and the characteristics of the side and central bracket supports.
- the transoms T2L, T3M, T3P, belong to the light and medium series and are fixed to the structure by means of a single hole per side. Their side supports are relatively light and are used therefore on conveyors with regular loads and small lump size of material and low speed so that damaging vibrations are avoided.

They are preferably not to be used at the loading points as impact sets especially when large lump size material exists and the loading heights are excessive.

- the transoms T3P, form the heavy series for the iron and steel industry and are fixed to the structure by plates with two holes in each plate, and have side brackets reinforced by shaping them as channels. They are therefore more adapted to be used in the transport of irregular loads, large material lump size, high speeds even if in the presence of vibrations.

They are most suitable for the positioning of the heaviest roller series up to the maximum capacities designed.

### 3 Troughing sets

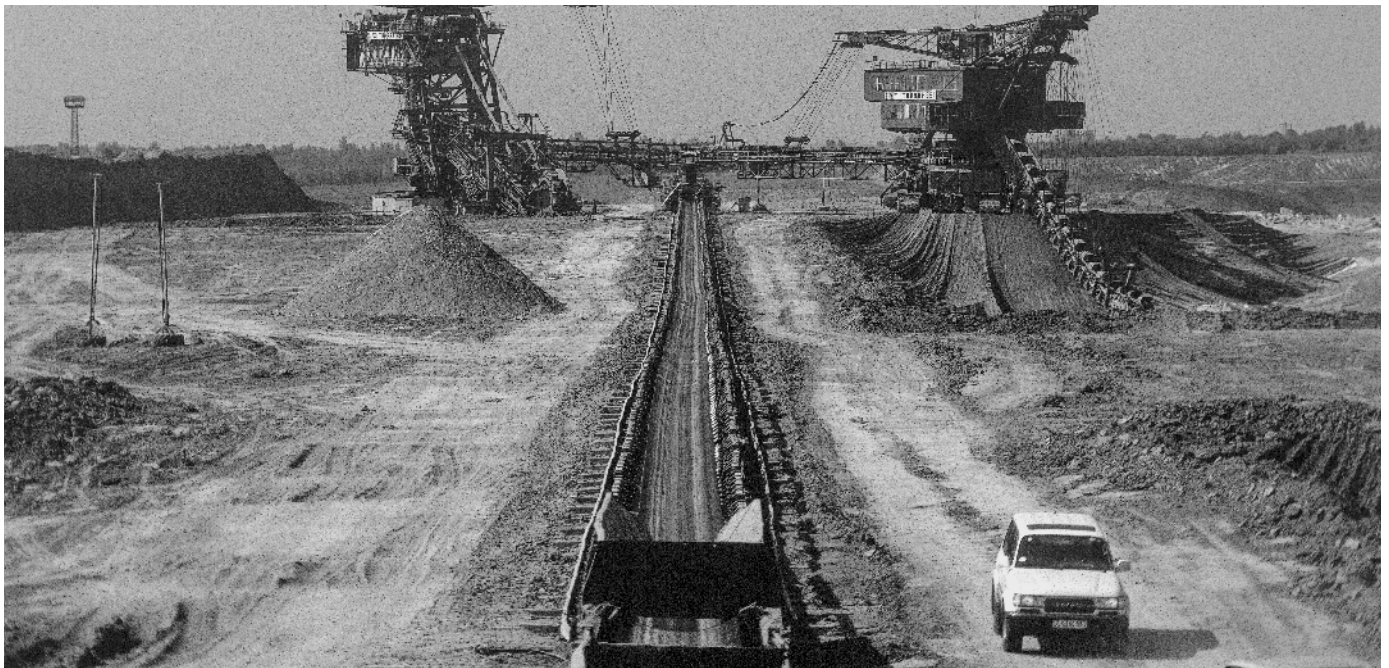
#### 3.2.1 - Choice of the transom in relation to load

Belt width mm	T2L (upper troughing set with 2 rollers) 20°		T3M (light upper troughing set with 3 rollers) 20°-30°-35°-45°	
300	338 (Ø60-Ø110)			
400	286 (Ø60-Ø110)		286 (Ø76-Ø110)	
500	205 (Ø60-Ø110)		247 (Ø76-Ø140)	
650	167 (Ø60-Ø110)		205 (Ø76-Ø140)	354 (Ø89-Ø140)
800	167 (Ø60-Ø110)		167 (Ø76-Ø110)	289 (Ø89-Ø159)
1000				
1200				
1400				
1600				
1800				
2000				
2200				



Load capacity daN

Belt width mm	T3P (medium upper troughing set with 3 rollers 800-1600 and heavy upper troughing set with 3 rollers 1800-2200) 20°-30°-35°-45°				R2T (return set "V") ((Ø89-Ø194) 10°	
300						
400						
500						
650						354
800	460 (Ø89-Ø159)					289
1000	388 (Ø89-Ø159)		581 (Ø140-Ø159)			388
1200	325 (Ø89-Ø159)	487 (Ø140-Ø159)	634 (Ø140-Ø159)			325
1400	288 (Ø140-Ø159)	431 (Ø140-Ø159)	561 (Ø140-Ø159)	710 (Ø140-Ø159)	561	431
1600	387 (Ø140-Ø159)	503 (Ø140-Ø159)	637 (Ø140-Ø159)	753 (Ø194)	503	387
1800	446 (Ø140-Ø194)		667 (Ø140-Ø194)		446	342
2000	604 (Ø159-Ø194)		909 (Ø159-Ø194)			604
2200	558 (Ø159-Ø194)		840 (Ø159-Ø194)			560



## 3 Troughing sets

### 3.3 - Arrangements

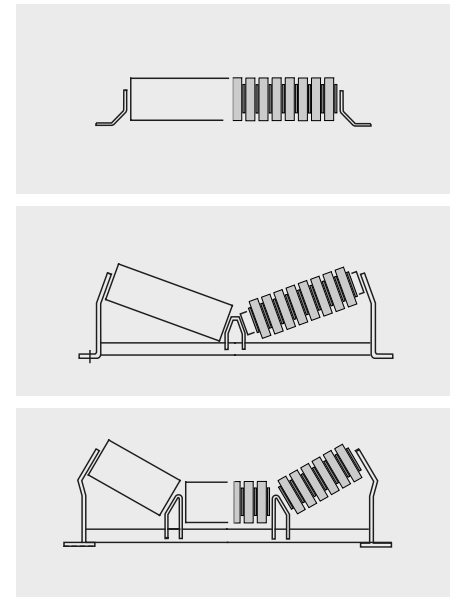
According to the requirements of the specific project, different arrangements of transoms have been designed. These may be separated into fixed and suspended transoms.

In belt conveyors there are two basic types of troughing sets: that of the carrying set, which supports the belt on the loaded section, known as the upper troughing set; and that of the return set, which supports the empty belt on its return section.

A particular category of troughing sets is that known as the impact set which is positioned to correspond to the section where the belt is loaded with material.



Fig. 1 - Fixed troughing sets



#### 3.3.1 - Upper carrying troughing sets

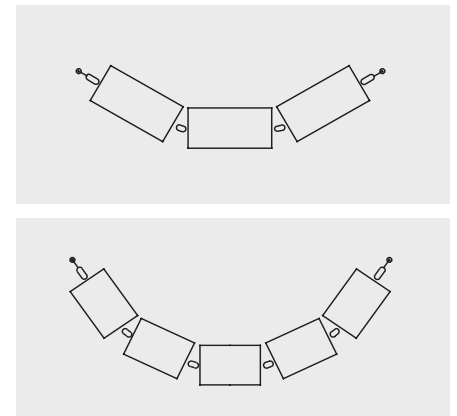
The drawings illustrate the arrangements of fixed carrying troughing sets with plain or impact rollers Fig. 1, and the suspended troughing set "garland" Fig. 2.

The carrying troughing sets of three rollers are designed as standard for single directional belts, and for this reason have a slight forward inclination of two degrees in the position of the side rollers.

This assists the belt tracking by an auto-centralising effect.

For reversible belts the version R is required, which is without the above two degrees (see "order codes" para. 3.3.3).

Fig. 2 - "Garland" sets



### 3.3.2 - Return sets

The lower or return sets may also be chosen from varying arrangements according to the requirement: fixed sets with plain steel roller or with spacer rings Fig. 3 and suspended sets “garland” with plain rollers and with rings Fig. 4.

Fig. 3 - Fixed sets

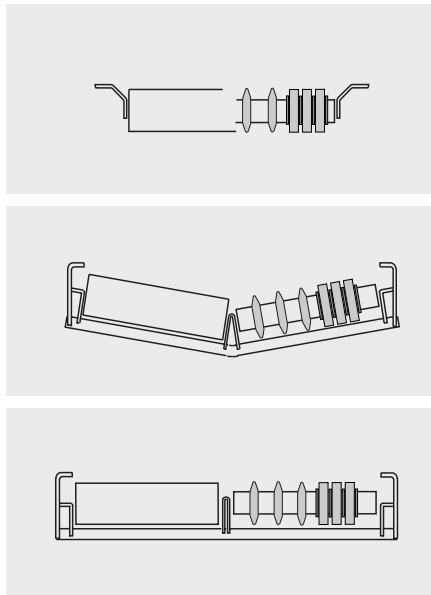
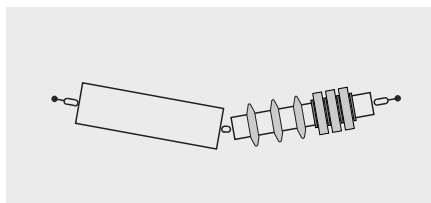


Fig. 4 - “Garland” sets

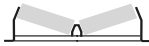


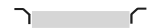

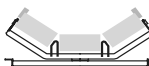

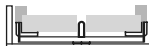




### 3.3.4 - Programme of transoms and brackets

The production programme of frames and supports indicated in the table is related to the standard production according to the Unified Standards DIN 22107.

On request they can be supplied in different shapes and dimensions according to the standards CEMA, BS, JIS, AFNOR and ISO-FEM.

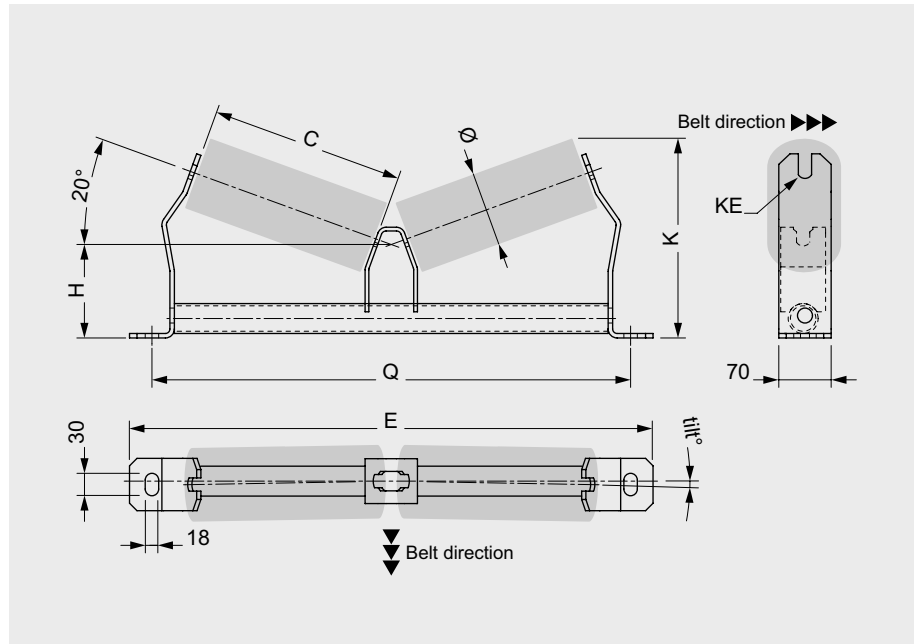
Series	Arrangements	Descriptions
T2L 20°		upper transom for two rollers
T3M BW 400-800 20° - 30° - 35° - 45° T3P BW 800-1600 20° - 30° - 35° - 45° T3P BW 1800-2200 20° - 30° - 35° - 45°		upper transom for three rollers
SPT 1657 - 1660 SPT 070 SPT 1795		upper brackets for one roller
SPT 1478 - 1490 SPT 243 SPT 1495		lower return brackets for plain roller
R2T 10°		transom for two return rollers "V"
CT3M CT3P		upper self-centering transom for three rollers
Q1 L Q1 P		lower self-centering return transom for one roller
Q2 L Q2 P		lower self-centering return transom for two rollers

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## T2L 20°

T2L 20° Standard.

For light upper troughing sets with two rollers, plain or with impact rings.



for rollers series

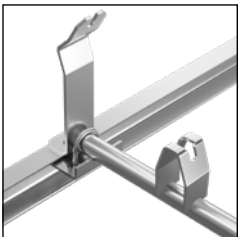
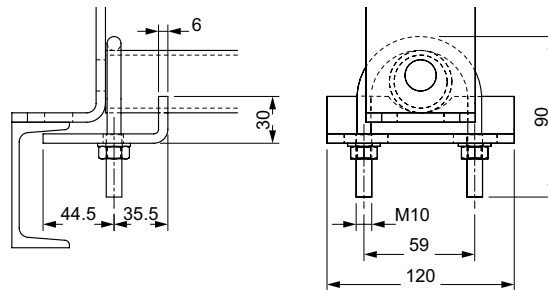
**RTL**  
 Ø 60, 76, 89  
 spindle 15  
 bearing 6202  
 KE = 17

**PL**  
 Ø 90, 110  
 spindle 20  
 bearing 6204  
 KE = 14, 30

**MPS**  
 Ø 60, 76, 89, 102  
 spindle 15  
 bearing 6202  
 KE = 17

**PSV/1-FHD**  
 Ø 63, 89, 108  
 spindle 20  
 bearing 6204  
 KE = 14

Clamping kit available (for transom fixing without holes in the frame)



**Clamps ordering codes:** ask Rulmeca, reporting the selected transom type T2L beam size SZ 1 and finishing.

# T2L 20°



## Transom ordering code

Series	Transom ordering code						With tilt - reversible R	For rollers		Transom				
	Belt width mm	Troughing angle deg.°	Beam size SZ	Across Flat key KE mm	H mm	Finishing		Ø mm	Length C mm	Load capacity kg	Q mm	E mm	K mm	Weight without rollers kg
T2L	300	20°	1	14 17 30	125	-, YA, YB, YC, YS, Z	-, R	60 - 63 -76 89 - 90 102 - 108 110	208	338	540	600	253	3,6
	400								258	286	640	700	270	4,0
	500								323	205	740	800	292	4,4
	650								388	167	890	950	315	4,9
	800								473	167	1090	1150	344	5,7

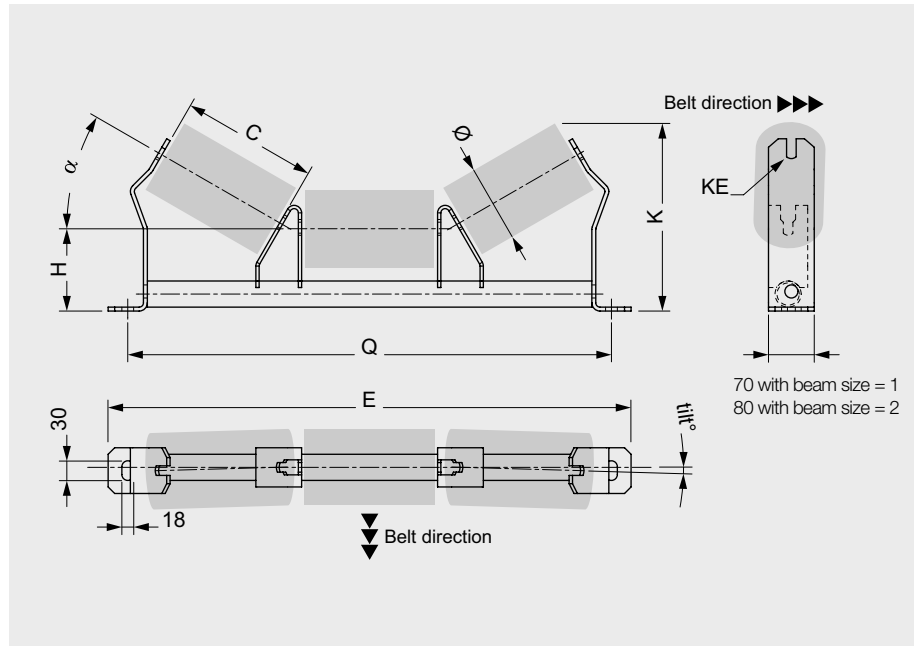
**Example of ordering:**  
T2L 500 20° SZ1 KE14  
H125 YC  
See page 198.

### 3 Troughing sets

## T3M 20°-30°-35°-45°

T3M  $\alpha = 20^\circ - 30^\circ - 35^\circ - 45^\circ$  Standard

For light upper troughing sets with three rollers, plain or with impact rings.



#### for rollers series

**RTL**  
 $\phi$  76, 89  
 spindle 15  
 bearing 6202  
 KE = 17

**PSV/1-FHD**  
 $\phi$  89, 108, 133  
 spindle 20  
 bearing 6204  
 KE = 14

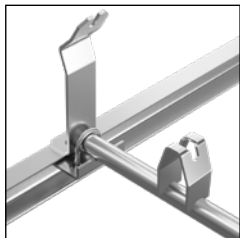
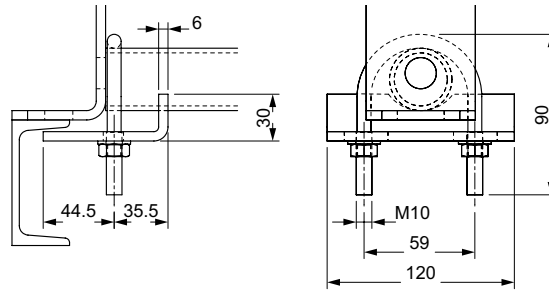
**MPS**  
 $\phi$  76, 89, 102  
 spindle 15  
 bearing 6202  
 KE = 17

**PSV/2, 3-FHD**  
 $\phi$  89, 108, 133, 159  
 spindle 25  
 bearing 6205, 6305  
 KE = 18

**PL**  
 $\phi$  90, 110, 140  
 spindle 20  
 bearing 6204  
 KE = 14, 30

**PSV/4, 5-FHD**  
 $\phi$  108, 133, 159  
 spindle 30  
 bearing 6206, 6306  
 KE = 22

Clamping kit available (for transom fixing without holes in the frame)



**Clamps ordering codes:** ask Rulmecca, reporting the selected transom type T3M beam size SZ 1 or 2 and finishing.

# T3M 20°-30°-35°-45°



Transom ordering code							For rollers		Transom		K max				Weight without rollers				
Series	Belt width mm	Troughing angle deg.°	Beam size SZ	Across Flat key KE mm	H mm	Finishing With tilt - reversible R	Ø mm	Length C mm	Load capacity kg	Q mm	E mm	20° mm	30° mm	35° mm	45° mm	20° kg	30° kg	35° kg	45° kg
T3M	400	20° - 30° 35° - 45°	1	14-17 18-22 30	121	- , YA, YB, YC, YS, Z	76	168	286	640	700	229	255	268	289	4,2	4,4	4,6	4,8
					126		89-90	168	286	640	700	229	256	268	290	4,3	4,6	4,7	5
					131		102	168	286	640	700	229	255	268	289	4,4	4,7	4,8	5,1
					136		108-110-114	168	286	640	700	250	275	287	308	4,5	4,8	4,9	5,2
					121		76	208	247	740	800	243	275	291	317	4,6	4,9	5	5,3
					126		89-90	208	247	740	800	243	275	291	318	4,7	5	5,2	5,5
					131		102	208	247	740	800	243	275	291	317	4,8	5,1	5,2	5,6
					136		108-110-114	208	247	740	800	263	295	309	337	4,9	5,2	5,3	5,7
	146		127-133-140		208		247	740	800	287	318	333	361	5,1	5,3	5,5	5,9		
	121		76		258		205	890	950	260	300	320	353	5,1	5,4	5,7	6		
	126		89-90		258		205	890	950	260	300	320	353	5,2	5,6	5,8	6,2		
	131		102		258		205	890	950	260	300	320	353	5,3	5,7	5,9	6,3		
	136		108-110-114		258		205	890	950	280	320	338	372	5,4	5,8	5,9	6,4		
	146		127-133-140		258		205	890	950	304	343	362	396	5,6	5,9	6,2	6,6		
	138		89-90		258		354	890	950	272	312	332	365	6,9	7,5	7,8	8,3		
	148		108-110-114		258		354	890	950	292	332	350	384	7,2	7,7	8	8,6		
	158		127-133-140		258		354	890	950	316	355	374	408	7,4	7,9	8,2	8,9		
	121		76		323		167	1090	1150	292	332	357	399	5,8	6,2	6,5	7		
	126		89-90		323		167	1090	1150	282	333	357	399	5,9	6,3	6,6	7,1		
	131		102		323		167	1090	1150	292	332	357	399	6	6,4	6,7	7,2		
	136		108-110-114		323		167	1090	1150	303	353	375	418	6,1	6,5	6,8	7,3		
	138		89-90		323		289	1090	1150	294	345	369	411	7,8	8,5	8,9	9,6		
	148		108-110-114		323		289	1090	1150	315	365	387	430	8,1	8,7	9,1	9,9		
	158		127-133-140		323		289	1090	1150	339	388	411	454	8,3	8,9	9,4	10,2		
178	152-159	323	289	1090	1150	370	420	442	487	8,7	9,4	9,8	10,8						

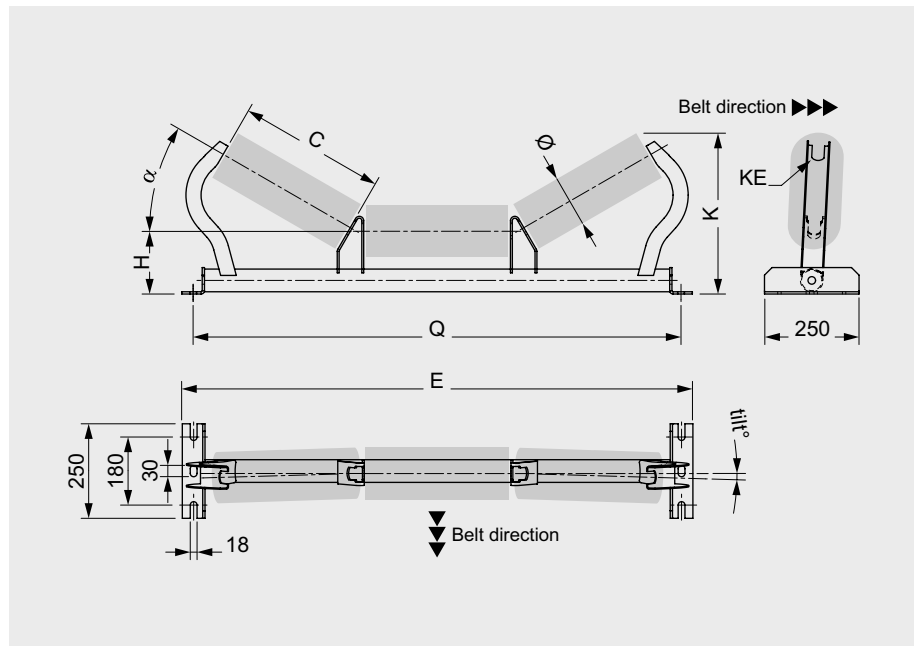
Example of ordering:  
T3M 650 35°  
SZ2 KE14 H148  
See page 198.

### 3 Troughing sets

## T3P 20°-30°-35°-45° BW 800-1600

T3P  $\alpha = 20^\circ - 30^\circ - 35^\circ - 45^\circ$  Standard

For medium upper troughing sets with three rollers, plain or with impact rings.



#### for rollers series

**PL**  
Ø 90, 110, 140  
spindle 20  
bearing 6204  
KE = 14, 30

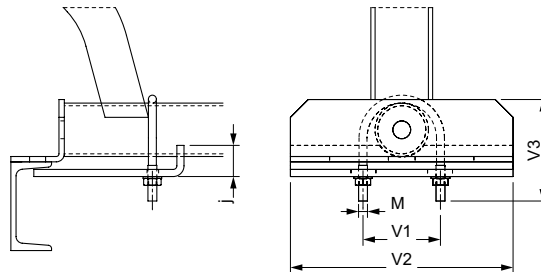
**PSV/4, 5-FHD**  
Ø 108, 133, 159  
spindle 30  
bearing 6206,  
6306  
KE = 22

**PSV/1-FHD**  
Ø 89, 108, 133  
spindle 20  
bearing 6204  
KE = 14

**PSV/7-FHD**  
Ø 108, 133, 159,  
194  
spindle 40  
bearing 6308  
KE = 32

**PSV/2, 3-FHD**  
Ø 89, 108,  
133, 159  
spindle 25  
bearing 6205,  
6305  
KE = 18

Clamping kit available (for transom fixing without holes in the frame)



Size	J	V1	V2	V3	M
3-4	35	86	250	119	M10
5-6	50	100	250	150	M12



**Clamps ordering codes:** ask Rulmeca, reporting the selected transom type T3P beam size SZ 3, 4, 5, 6 and finishing.

# T3P 20°-30°-35°-45°

## BW 800-1600



Transom ordering code							For rollers		Transom			K max				Weight without rollers			
Series	Belt width mm	Troughing angle deg.°	Beam size SZ	Across Flat key KE mm	H mm	Finishing With tilt - reversible R	Ø mm	Length C mm	Load capacity kg	Q mm	E mm	20° mm	30° mm	35° mm	45° mm	20° kg	30° kg	35° kg	45° kg
T3P	800	20° - 30° 35° - 45°	3	14 - 18 22 - 30 32	-	146	89-90	323	460	1090	1150	302	353	377	419	10,2	9,8	10,0	11,0
						156	108-110-114	323	460	1090	1150	323	373	395	438	10,3	10,0	10,2	11,2
						166	127-133-140	323	460	1090	1150	347	396	419	462	10,4	10,1	10,3	11,5
			186			152-159	323	460	1090	1150	378	428	450	495	10,6	11,0	11,2	12,5	
			146			89-90	388	388	1290	1350	324	385	414	465	10,4	10,9	11,1	11,6	
			156			108-110-114	388	388	1290	1350	345	405	433	484	10,8	11,0	11,2	11,8	
	166		127-133-140			388	388	1290	1350	369	428	456	508	11,0	11,2	11,4	12,1		
	186		152-159			388	388	1290	1350	400	460	487	541	11,6	12,0	12,3	13,6		
	166		127-133-140			388	581	1290	1350	369	428	456	508	12,6	12,8	13,0	13,7		
	186		152-159			388	581	1290	1350	369	428	456	508	13,2	13,7	13,9	15,4		
	146		89-90			473	325	1540	1600	354	428	463	525	11,7	12,2	12,4	13,1		
	156		108-110-114			473	325	1540	1600	374	448	481	544	12,1	12,4	12,6	13,3		
	166		127-133-140			473	325	1540	1600	398	471	505	568	12,2	12,5	12,8	13,5		
	186		152-159			473	325	1540	1600	429	503	536	601	12,8	13,4	13,7	14,6		
	166		127-133-140			473	487	1540	1600	398	471	505	568	15,4	14,5	14,7	14,2		
	186		152-159			473	487	1540	1600	429	503	536	601	14,8	15,3	15,6	16,5		
	184		127-133-140			473	634	1540	1600	416	489	523	586	18,2	16,2	16,4	16,9		
	204		152-159			473	634	1540	1600	447	521	554	619	17,0	16,5	17,3	18,0		
	166	127-133-140	538	288	1740	1800	420	503	542	614	13,2	13,6	13,8	14,6					
	186	152-159	538	288	1740	1800	451	535	573	647	13,8	14,4	14,7	15,7					
	166	127-133-140	538	431	1740	1800	420	503	542	614	15,4	15,8	16,0	16,8					
	186	152-159	538	431	1740	1800	451	535	573	647	16,0	16,6	16,9	17,9					
	184	127-133-140	538	561	1740	1800	438	521	560	632	16,9	17,5	17,5	18,3					
	204	152-159	538	561	1740	1800	469	553	591	665	17,7	18,3	18,6	19,4					
	184	127-133-140	538	710	1740	1800	438	521	560	632	19,8	20,3	20,6	21,1					
	204	152-159	538	710	1740	1800	469	553	591	665	20,5	21,1	21,5	22,2					
	166	127-133-140	608	387	1940	2000	444	538	582	664	16,7	17,1	17,4	18,2					
	186	152-159	608	387	1940	2000	475	570	613	696	17,3	17,9	18,3	19,3					
	184	127-133-140	608	503	1940	2000	462	556	600	682	18,2	18,8	19,1	19,7					
	204	152-159	608	503	1940	2000	493	588	631	714	18,9	19,6	20,0	20,7					
	234	165-168-178-180-194	608	503	1940	2000	540	633	678	758	19,6	20,3	20,7	21,4					
	184	127-133-140	608	637	1940	2000	462	556	600	682	21,3	21,9	22,2	22,9					
204	152-159	608	637	1940	2000	493	588	631	714	22,1	22,8	23,1	21,9						
234	165-168-178-180-194	608	753	1940	2000	540	633	678	758	22,7	23,4	23,8	24,5						

**Example of ordering:**

T3P 800 35°  
SZ3 KE18 H186 Z  
See page 198.

### 3 Troughing

#### sets

## T3P 20°-30°-35°-45° BW 1800-2200

T3P  $\alpha = 20^\circ - 30^\circ - 35^\circ - 45^\circ$  Standard

For upper troughing sets, extra heavy with three rollers, plain or with impact rings

#### for rollers series

##### PSV/2, 3-FHD

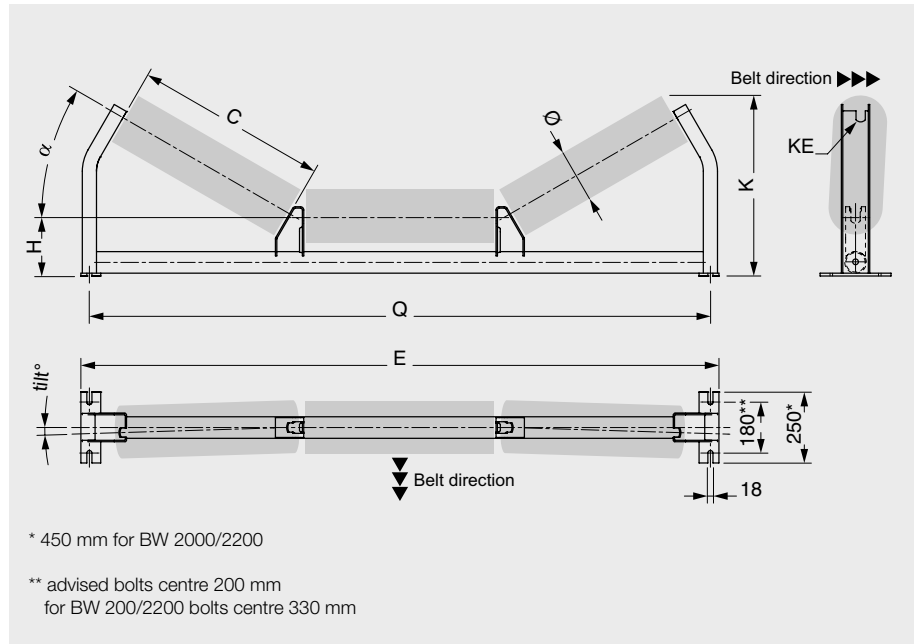
$\varnothing$  133  
spindle 25  
bearing 6205, 6305  
ch = 18

##### PSV/7-FHD

$\varnothing$  159, 194  
spindle 40  
bearing 6308  
ch = 32

##### PSV/4, 5-FHD

$\varnothing$  159  
spindle 30  
bearing 6206,  
6306  
ch = 22



**NOTE** no clamping kits are for so heavy T3P 1800-2200 idler sets

# T3P 20°-30°-35°-45°

## BW 1800-2200



### Transom ordering code

Series	Belt width mm	Troughing angle deg.°	Beam size SZ	Across Flat key KE mm	H mm	Finishing	With tilt - reversible R	For rollers		Transom			K max				Weight without rollers							
								Ø mm	Length C mm	Load capacity kg	Q mm	E mm	20° mm	30° mm	35° mm	45° mm	20° kg	30° kg	35° kg	45° kg				
T3P	1800	20° - 30° 35° - 45°	5	18 - 22 32	186	-	R	-	127-133-140	678	446	2190	2250	488	593	642	733	21,6	23,4	24,5	26,4			
					206				152-159	678	446	2190	2250	519	625	674	765	22,7	24,7	25,7	27,8			
					236				165-168-178 180-194	678	446	2190	2250	565	670	720	809	23,5	25,6	26,7	28,6			
			186		127-133-140				678	667	2190	2250	488	593	642	733	25,2	27,0	28,1	30,0				
			206		152-159				678	667	2190	2250	519	625	674	765	26,3	28,3	29,3	31,4				
			236		165-168-178 180-194				678	667	2190	2250	565	670	720	809	27,2	29,2	30,4	32,4				
	2000		6		6				206	152-159	758	604	2420	2500	546	665	719	822	32,5	34,8	35,6	38,1		
									236	165-168-178 180-194	758	604	2420	2500	593	710	766	866	33,3	35,7	35,7	39,0		
									219	152-159	758	909	2420	2500	559	678	732	835	46,3	48,7	49,3	51,7		
					249				165-168-178 180-194	758	909	2420	2500	606	723	779	879	47,2	50,2	50,4	52,7			
					2200				6	7	206	152-159	808	558	2620	2700	563	688	748	857	33,9	36,4	37,5	40,1
											236	165-168-178 180-194	808	558	2620	2700	610	735	795	901	34,7	37,3	38,6	41,1
	219	152-159	808	840		2620	2700	576			701	761	870	48,6	51,3	52,2	54,9							
	2200	7	7	249	165-168-178 180-194	808	840	2620	2700	623	748	808	914	49,5	52,2	53,4	55,9							

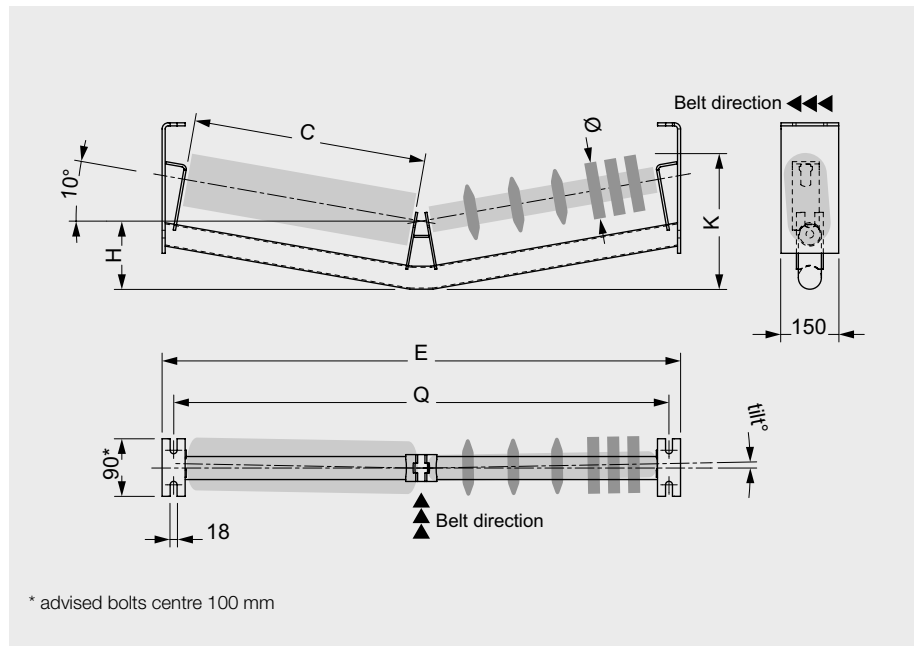
Example of ordering:  
T3P 1800 45° SZ5 KE22  
H206 YB  
See page 198.

### 3 Troughing sets

## R2T 10°

R2T 10° Standard.

For return sets "V", with two rollers, plain or with rings.



#### for rollers series

##### PSV/1-FHD

Ø 89, 108, 133 N  
Ø 108, 133, 159  
NC  
spindle 20  
bearing 6204  
KE = 14

##### PSV/4 5-FHD

Ø 108, 133, 159 N  
Ø 133, 159, 180 NC  
spindle 30  
bearing 6206,  
6306  
KE = 22

##### PSV/2, 3-FHD

Ø 89, 108, 133,  
159 N  
Ø 108, 159, 180 NC  
spindle 25  
bearing 6205, 6305  
KE = 18

##### PSV/7-FHD

Ø 108, 133, 159,  
194  
Ø 159, 180, 194 NC  
spindle 40  
bearing 6308  
KE = 32

# R2T 10°



## Transom ordering code

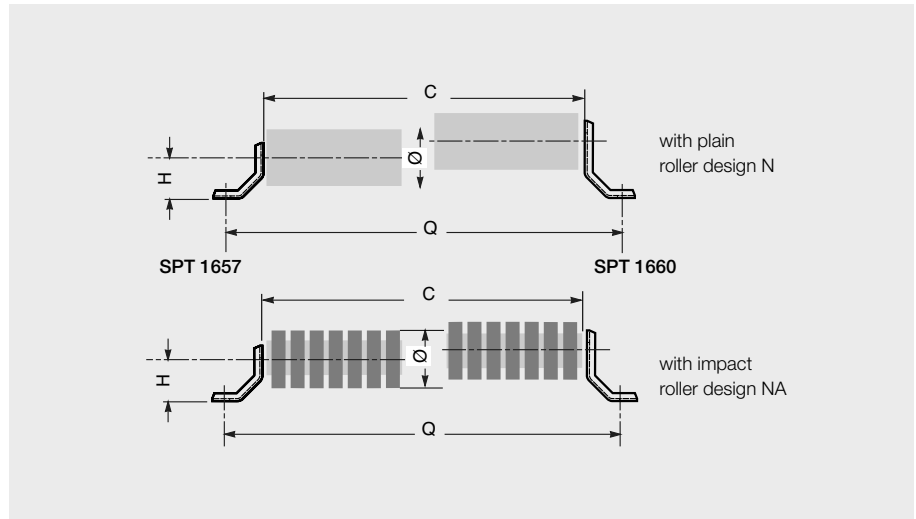
Series	Belt width mm	Troughing angle deg.°	Beam size SZ	Across Flat key KE mm	H mm	Finishing	With tilt - reversible R	For rollers		Transom				Weight without rollers kg
								Ø mm	Length C mm	Load capacity kg	Q mm	E mm	K mm	
R2T	650	10°	2	14 - 18 - 22 - 32	220	-, YA, YB, YC, YS, Z	- , R	89 - 108 133 - 159 180 - 194	388	354	890	950	387	6,2
	800		2		238				473	289	1090	1150	405	7,0
	1000		3		256				608	388	1290	1350	433	8,6
	1200		3		279				708	325	1540	1600	456	9,8
	1400		4		297				808	431	1740	1800	474	13,1
			5		297				808	561	1740	1800	491	12,9
	1600		4		314				908	387	1940	2000	491	14,3
			5		314				908	503	1940	2000	508	14,0
	1800		4		338				1008	342	2190	2250	565	16,0
			5		338				1008	446	2190	2250	582	15,7
	2000		6		358				1108	604	2420	2500	552	21,5
	2200		6		375				1258	560	2620	2700	569	22,6

Example of ordering:  
T3P 1800 45° SZ5 KE22  
H206 YB  
See page 198.

### 3 Troughing sets

## Support brackets SPT 1657-1660

For light upper set flat roller,  
plain or with impact rings.



### SPT 1657 for rollers series

**RTL**  
spindle 15  
bearing 6202  
ch = 17

**PSV/1-FHD**  
spindle 20  
bearing 6204  
ch = 14

**MPS**  
spindle 15  
bearing 6202  
ch = 17

Belt width mm	Roller			H		Q mm	Weight of two brackets without rollers	
	Ø	C mm	ch	SPT 1657 mm	SPT 1660 mm		SPT 1657 mm	SPT 1660 mm
300	SPT 1657: 60 ÷ 133 SPT 1660: 60 ÷ 180	388	SPT 1657: 14 - 17 SPT 1660: 14 - 18 - 22	70	100	520	0.7	1.5
400		508		70	100	640	0.7	1.5
500		608		70	100	740	0.7	1.5
650		758		70	100	890	0.7	1.5
800		958		70	100	1090	0.7	1.5
1000		1158		70	100	1290	0.7	1.5
1200		1408		70	100	1540	0.7	1.5
1400		1608		70	100	1740	0.7	1.5

### SPT 1660 for rollers series

**PSV/1-FHD**  
spindle 20  
bearing 6204  
ch = 14

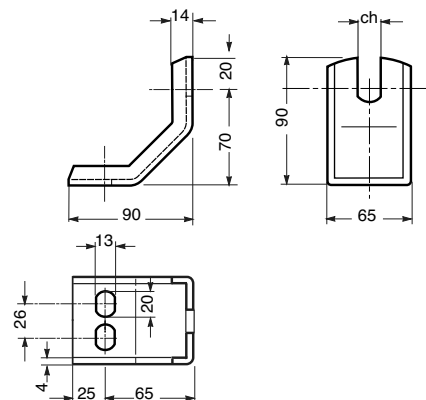
**PSV/4-FHD**  
spindle 30  
bearing 6206  
ch = 22

**PSV/2-FHD**  
spindle 25  
bearing 6205  
ch = 18

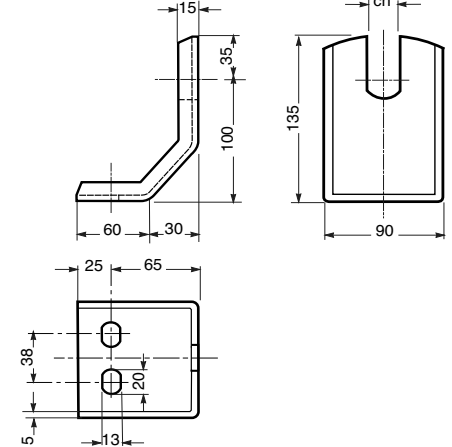
**PSV/5-FHD**  
spindle 30  
bearing 6306  
ch = 22

**PSV/3-FHD**  
spindle 25  
bearing 6305  
ch = 18

### Support bracket SPT 1657



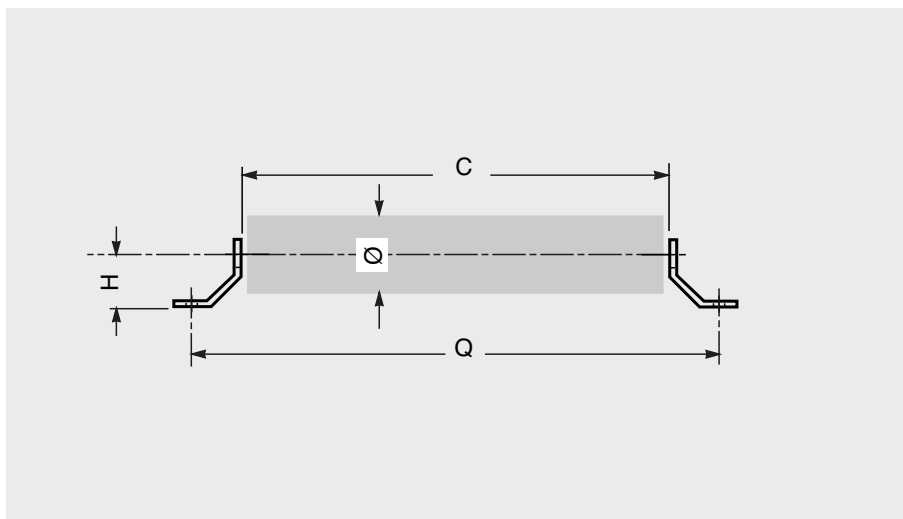
### Support bracket SPT 1660



**Example of ordering:**  
support bracket  
SPT 1657, F17, YA  
See page 198.

## Support brackets SPT 070

For upper set flat roller PL.



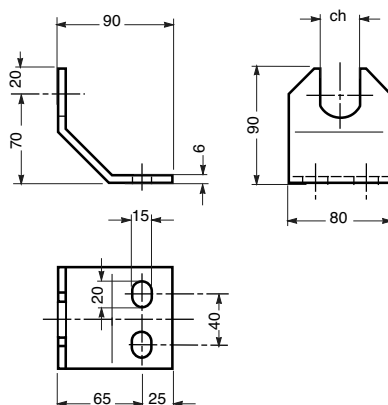
for rollers series

### PL

∅ 90,110,140  
spindle 20  
bearing 6204  
ch = 30

Belt width mm	Roller ∅	C mm	ch	H mm	Q mm	Weight of two brackets without rollers mm
300	90-110-140	388	30	70	520	1.0
400		508		70	640	1.0
500		608		70	740	1.0
650		758		70	890	1.0
800		958		70	1090	1.0
1000		1158		70	1290	1.0
1200		1408		70	1540	1.0

### Support bracket SPT 070

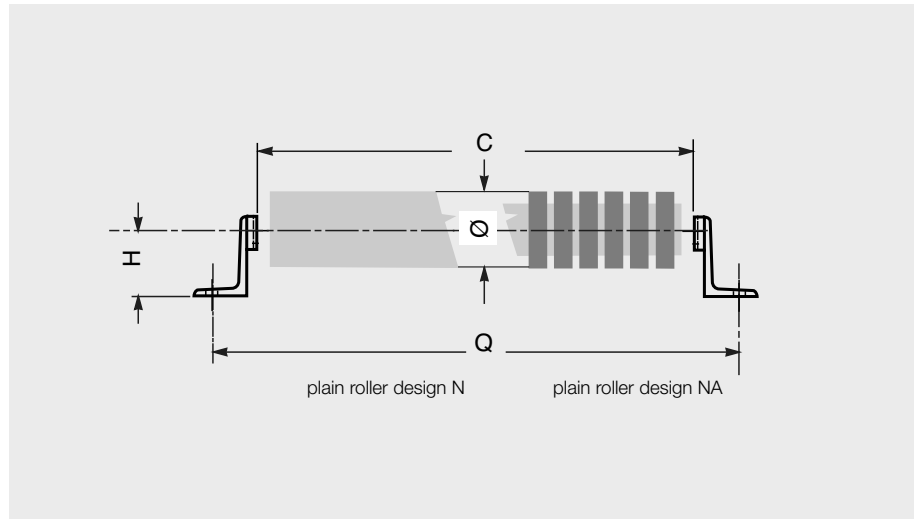


**Example  
of ordering:**  
support bracket  
SPT 070, F30, YC  
See page 198.

### 3 Troughing sets

#### Support brackets SPT 1795

For upper set heavy flat roller, plain or with impact rings.



#### for rollers series

##### PSV/1-FHD

ø 89, 108, 133  
spindle 20  
bearing 6204  
ch = 14

##### PSV/2-FHD

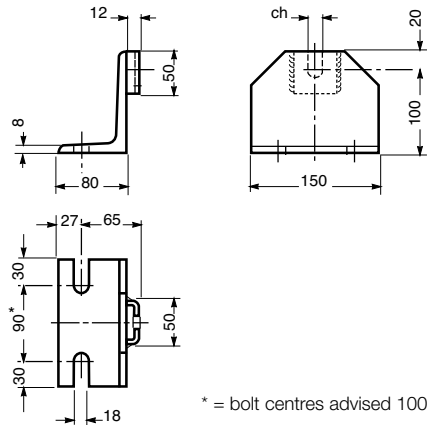
ø 108, 133, 159  
spindle 25  
bearing 6205  
ch = 18

##### PSV/4-FHD

ø 108, 133, 159  
spindle 30  
bearing 6206  
ch = 22

Belt width mm	Roller		ch	H mm	Q mm	Weight of two brackets without rollers mm
	Ø	C mm				
500	89-108-133-159	608	14-18-22	100	740	3.7
650		758		100	890	3.7
800		958		100	1090	3.7
1000		1158		100	1290	3.7
1200		1408		100	1540	3.7
1400		1608		100	1740	3.7
1600		1808		100	1940	3.7
1800		2008		100	2140	3.7
2000		2208		100	2340	3.7

#### Support bracket SPT 1795

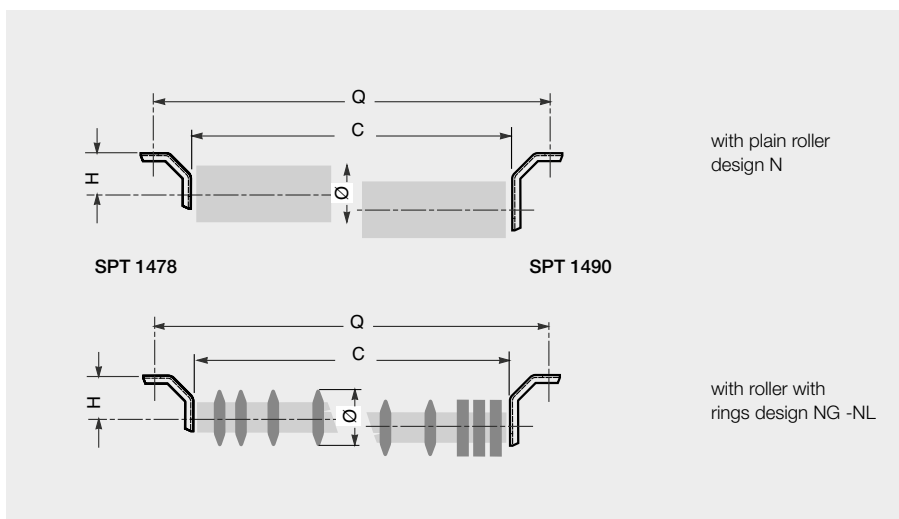


\* = bolt centres advised 100 mm

Example  
of ordering:  
support bracket  
SPT 1795, F22, Z  
See page 198.

## Support brackets SPT 1478 - 1490

For light return set flat roller,  
plain or with rings.



with plain roller  
design N

with roller with  
rings design NG -NL

### SPT 1478 for rollers series

#### RTL

spindle 15  
bearing 6202  
ch = 17

#### PSV/1-FHD

spindle 20  
bearing 6204  
ch = 14

#### MPS

spindle 15  
bearing 6202  
ch = 17

Belt width mm	Roller			H		Q mm	Weight of two brackets without rollers	
	Ø	C mm	ch	SPT 1478 mm	SPT 1490 mm		SPT 1478 mm	SPT 1490 mm
300		388		70	100	520	0.7	1.5
400	SPT 1478: 60 ÷ 133 SPT 1490: 60 ÷ 180	508	SPT 1478: 14 - 17 SPT 1490: 14 - 18 - 22	70	100	640	0.7	1.5
500		608		70	100	740	0.7	1.5
650	758	70		100	890	0.7	1.5	
800	958	70		100	1090	0.7	1.5	
1000	1158	70		100	1290	0.7	1.5	
1200	1408	70		100	1540	0.7	1.5	
1400	1608	70	100	1740	0.7	1.5		

### SPT 1490 for rollers series

#### PSV/1-FHD

spindle 20  
bearing 6204  
ch = 14

#### PSV/4-FHD

spindle 30  
bearing 6206  
ch = 22

#### PSV/2-FHD

spindle 25  
bearing 6205  
ch = 18

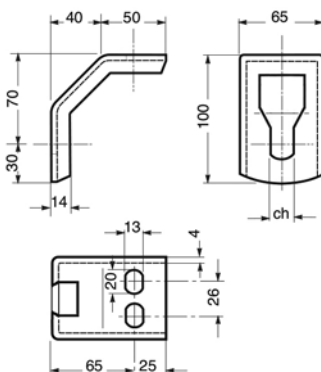
#### PSV/5-FHD

spindle 30  
bearing 6306  
ch = 22

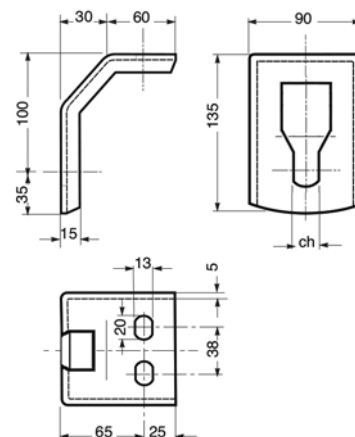
#### PSV/3-FHD

spindle 25  
bearing 6305  
ch = 18

#### Support bracket SPT 1478



#### Support bracket SPT 1490

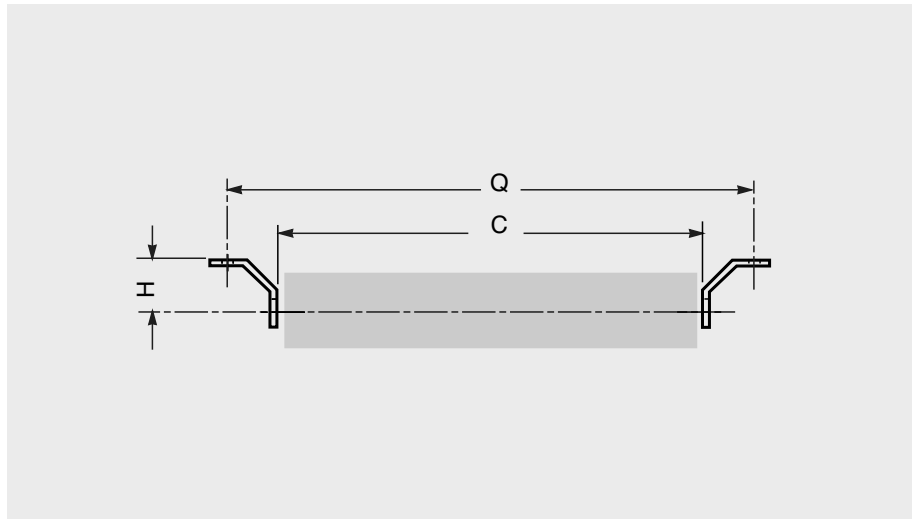


**Example  
of ordering:**  
support bracket  
SPT 1478, F14  
See page 198.

### 3 Troughing sets

## Support brackets SPT 243

For flat return roller PL.

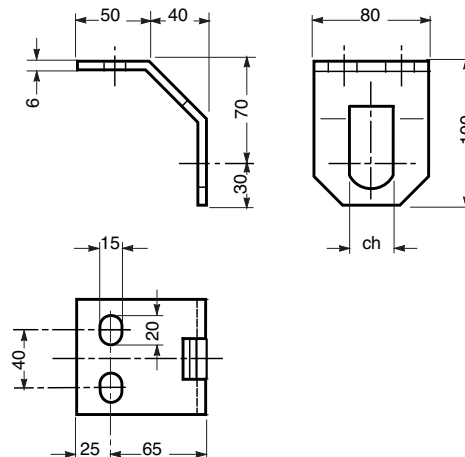


for rollers series

**PL**  
 ø 90, 110, 140  
 spindle 20  
 bearing 6204  
 ch = 30

Belt width mm	Roller		H mm	Q mm	Weight of two brackets without rollers mm
	Ø	C mm			
300	90-110-140	388	70	520	1.0
400		508	70	640	1.0
500		608	70	740	1.0
650		758	70	890	1.0
800		958	70	1090	1.0
1000		1158	70	1290	1.0
1200		1408	70	1540	1.0

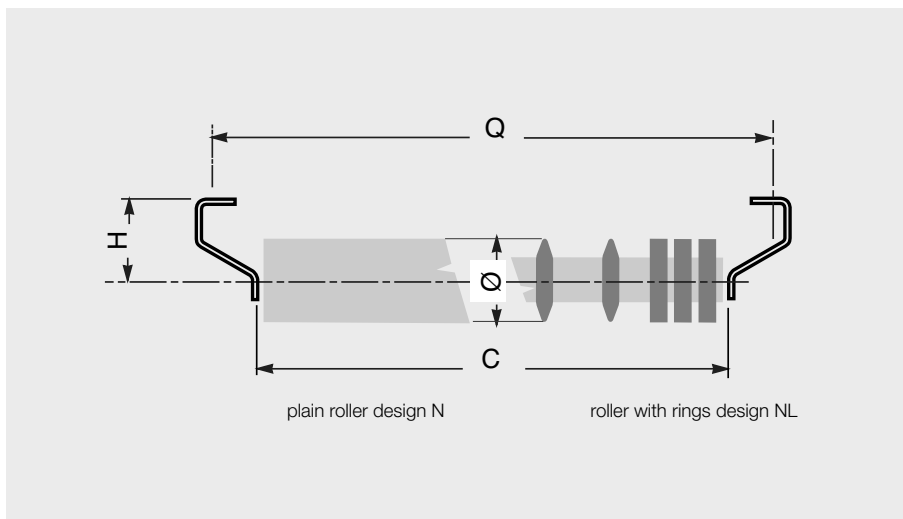
### Support bracket SPT 243



**Example  
of ordering:**  
 support bracket  
 SPT 243, F30, Z  
 See page 198.

## Support brackets SPT 1495

For heavy return set flat roller,  
plain or with rings.



for rollers series

### PSV/2-FHD

Ø 108,133,159  
spindle 25  
bearing 6205  
ch = 18

### PSV/4-FHD

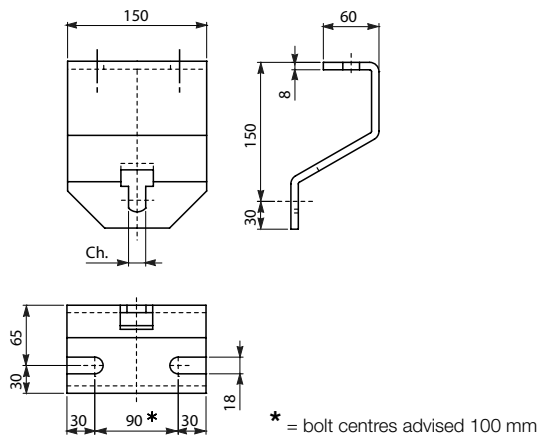
Ø 108,133,159  
spindle 30  
bearing 6206  
ch = 22

### PSV/7-FHD

Ø 133,159,194  
spindle 40  
bearing 6308  
ch = 32

Belt width mm	Roller		ch	H mm	Q mm	Weight of two brackets without rollers
	Ø	C mm				mm
500	108-133-159-180-194	608	18-22-32	150	740	4.6
650		758		150	890	4.6
800		958		150	1090	4.6
1000		1158		150	1290	4.6
1200		1408		150	1540	4.6
1400		1608		150	1740	4.6
1600		1808		150	1940	4.6
1800		2008		150	2140	4.6
2000		2208		150	2340	4.6

## Support bracket SPT 1495



\* = bolt centres advised 100 mm

**Example of ordering:**  
support bracket  
SPT 1495, F18, YB  
See page 198.

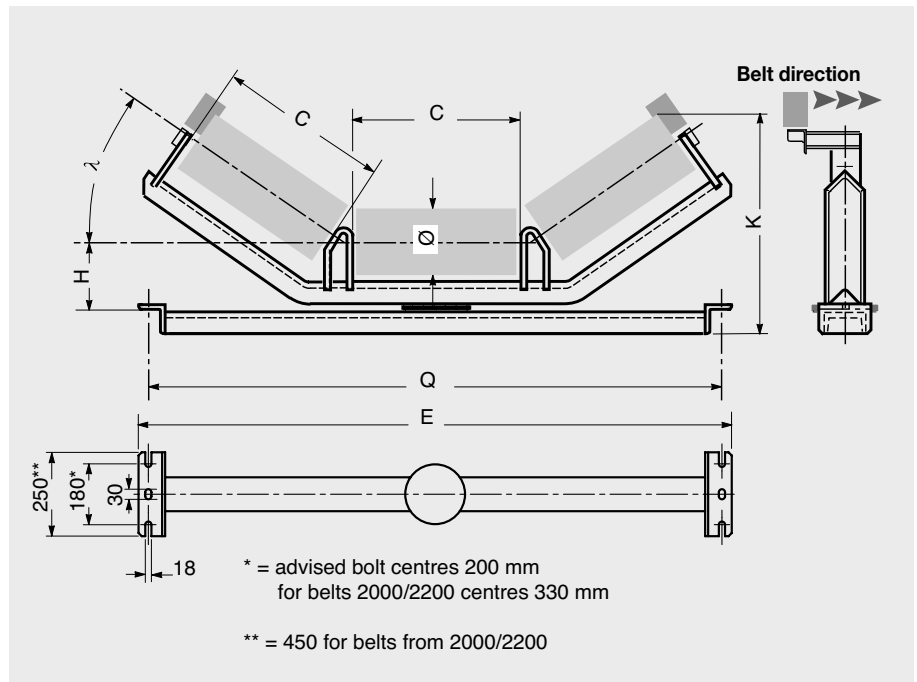


## Self-centering transom

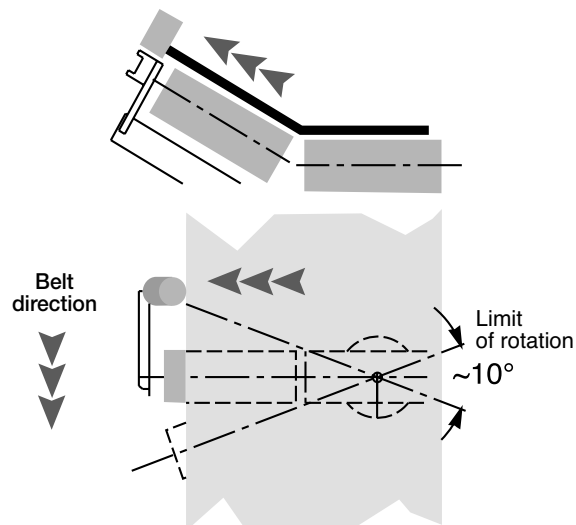
### Model S

without brake for single directional belt

Carrying rollers and guide rollers type PSV/G7-NCD 20M16 60N 100 have to be ordered separately.



Characteristics and dimensions are similar to the corresponding fixed carrying transom.



#### Method of operation Model S

The system is very simple comprising a rigid lever arm, on which is positioned a belt guide roller.

The pressure exerted by the edge of the belt when tracking off, acts against the offset guide roller which in turn rotates the

transom by an angle that encourages the belt to return centrally.

This model is used on small or medium single directional belts, where the tendency to track off is not excessive.

Example of ordering:  
CT3PS 800 30°  
SZ03 KE14 H166 WT  
See page 198.

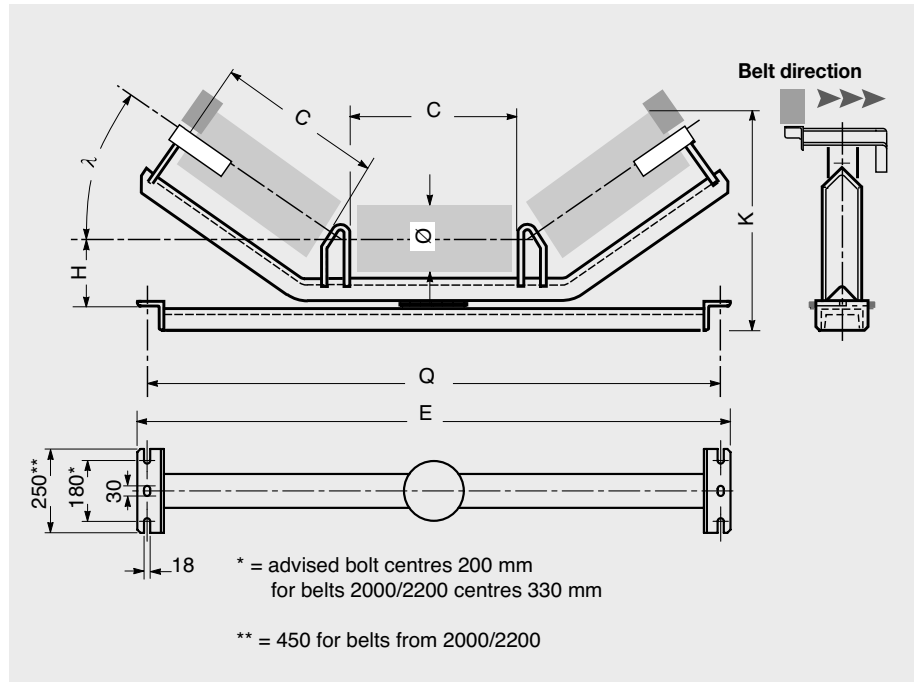
### 3 Troughing sets

#### Self-centering transom

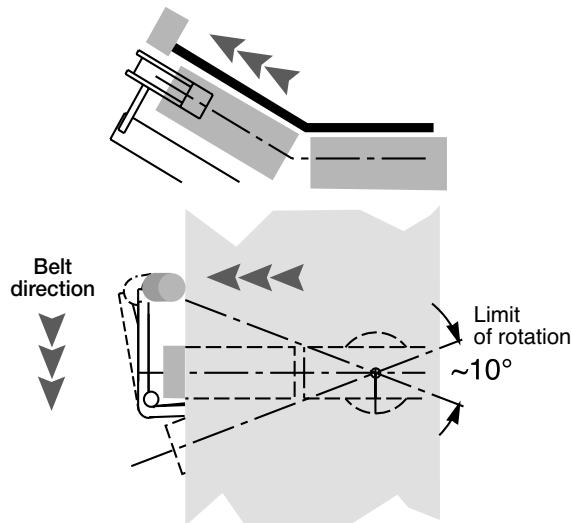
#### Model F

With brake for single directional belt

Carrying rollers and guide rollers type PSV/G7-NCD 20M16 60N 100 have to be ordered separately.



Characteristics and dimensions are similar to the corresponding fixed carrying transom.



#### Method of operation Model F

In this design the lever arm pivots, transmitting a force produced by the belt on to the offset guide roller which in turn causes a brake to be applied to the side support roller. This braking action together with the side belt force itself on the lever arm (as with model S) generates a force that rotates the

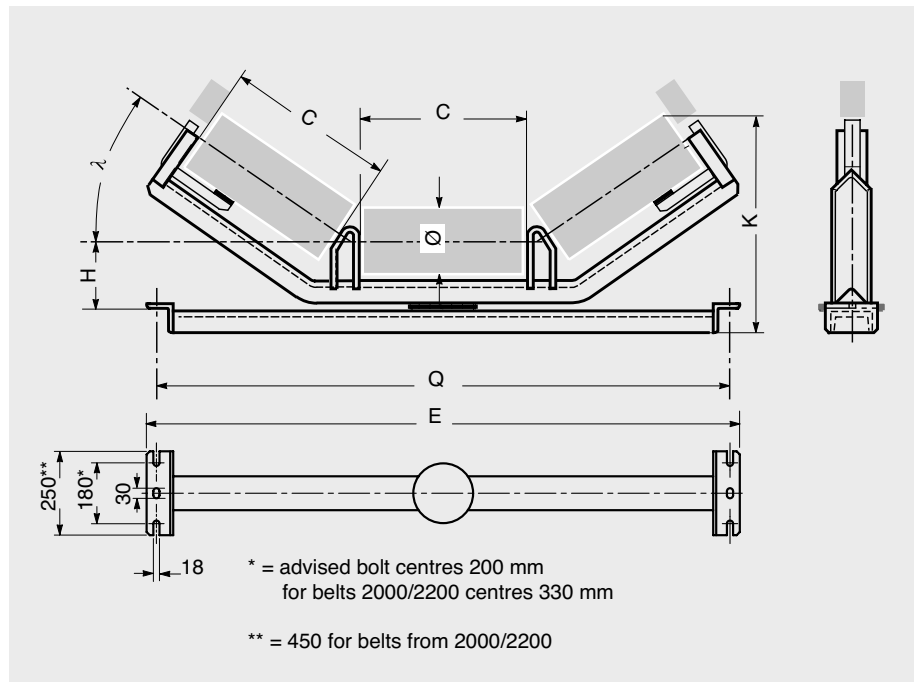
transom and encourages the belt to return centrally. Model F with brake, is normally used on very long single directional belts, where large material lumps and side or very irregular loading is experienced leading to a big centralising problem.

## Self-centering transom

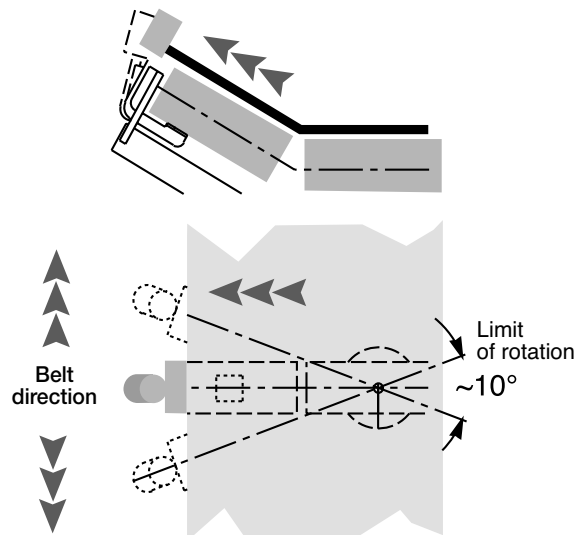
### Model R

With brake for reversible belt

Carrying rollers and guide rollers type PSV/G7-NCD 20S18 60N 100 have to be ordered separately.



Characteristics and dimensions are similar to the corresponding fixed carrying transom.



#### Method of operation Model R

In reversible conveyors a double action is needed to suit either belt direction. Model R acts on the same principle of braking as model F, but in this design the lever arm is on the same centre line as the rollers.

The action of the braking effect is to rotate the transom, encouraging the belt to the centre. Thanks to the centralised arrangement the system functions in either direction of belt movement.

### 3 Troughing sets

## CT3M series

### SELF CENTRALIZING TRANSOM - CT3M

Transom ordering code							Finishing	For rollers		Transom			K max				Weight without rollers all troughing angles												
Series	Belt width mm	Troughing angle deg.°	Beam size SZ	Across Flat key KE mm	H mm			Ø mm	Length C mm	Load capacity kg	Q mm	E mm	20° mm	30° mm	35° mm	45° mm	Type S kg	Type F kg	Type R kg										
CT3M S, R, F	400	20° - 30° 35° - 45°	1	14 - 17 18 - 22 30	121	-	76	168	286	640	700	229	255	268	289	14,2	14,7	16,9											
							126	89-90	168	286	640	700	229	256	268	290	14,2	14,7	16,9										
							131	102	168	286	640	700	229	255	268	289	14,6	14,7	17,5										
							136	108-110-114	168	286	640	700	250	275	287	308	14,9	14,7	17,5										
	500		1				121	14 - 17 18 - 22 30	121	-	76	208	247	740	800	243	275	291	317	15,6	16,1	18,3							
											126	89-90	208	247	740	800	243	275	291	318	15,6	16,1	18,3						
											131	102	208	247	740	800	243	275	291	317	16,0	16,1	18,9						
											136	108-110-114	208	247	740	800	263	295	309	337	16,3	16,1	18,9						
	650		1				14 - 17 18 - 22 30	1	121	-	76	258	205	890	950	260	300	320	353	17,6	18,1	20,3							
											126	89-90	258	205	890	950	260	300	320	353	17,6	18,1	20,3						
											131	102	258	205	890	950	260	300	320	353	18,0	18,1	20,9						
											136	108-110-114	258	205	890	950	280	320	338	372	18,3	18,1	20,9						
											146	127-133-140	258	205	890	950	304	343	362	396	18,5	18,3	21,1						
											2	1	121	14 - 17 18 - 22 30	121	-	76	258	354	890	950	272	312	332	365	19,5	20,0	22,2	
																	148	108-110-114	258	354	890	950	292	332	350	384	20,2	20,0	22,8
																	158	127-133-140	258	354	890	950	316	355	374	408	20,3	20,1	22,9
																	121	76	323	167	1090	1150	292	332	357	399	20,3	20,8	23,0
											800	1	14 - 17 18 - 22 30	1	126	-	89-90	323	167	1090	1150	282	333	357	399	20,3	20,8	23,0	
																	131	102	323	167	1090	1150	292	332	357	399	20,7	20,8	23,6
																	136	108-110-114	323	167	1090	1150	303	353	375	418	21,0	20,8	23,6
	138		89-90				323	289	1090	1150							294	345	369	411	22,5	23,0	25,2						
	2		1				121	14 - 17 18 - 22 30	121	-							76	323	167	1090	1150	292	332	357	399	20,3	20,8	23,0	
																	126	89-90	323	167	1090	1150	282	333	357	399	20,3	20,8	23,0
																	131	102	323	167	1090	1150	292	332	357	399	20,7	20,8	23,6
136		108-110-114		323	167	1090											1150	303	353	375	418	21,0	20,8	23,6					
800	2	14 - 17 18 - 22 30	2	138	-	89-90	323	289	1090	1150	294	345	369	411	22,5	23,0	25,2												
						148	108-110-114	323	289	1090	1150	315	365	387	430	23,2	23,0	25,8											
						158	127-133-140	323	289	1090	1150	339	388	411	454	23,3	23,1	25,9											
						178	152-159	323	289	1090	1150	370	420	442	487	23,7	23,7	26,3											

\* = insert the transom model: **S**=with rigid arm, **F**=with pivoting arm with brake, **R**=reversible

At order time please specify the height H, related to the corresponding upper transom selected.

Carrying rollers and guide rollers (PSV/G7-NCD 20M16 60N 100 for model F and S, PSV/G7-NCD 20S18 60N 100 for model R) have to be ordered separately.

# CT3P series

## SELF CENTRALIZING TRANSOM - CT3P BW 800-1600

Transom ordering code							For rollers		Transom			K max				Weight without rollers all troughing angles			
Series	Belt width mm	Troughing angle deg.°	Beam size SZ	Across Flat key KE mm	H mm	Finishing	Ø mm	Length C mm	Load capacity kg	Q mm	E mm	20° mm	30° mm	35° mm	45° mm	Type S kg	Type F kg	Type R kg	
CT3P	800	20° - 30° 35° - 45°	3	14 - 18 22 - 30 32	H mm	- , YA, YB, YC, YS, Z	146	89-90	323	460	1090	1150	302	353	377	419	25,1	27,8	27,8
							156	108-110-114	323	460	1090	1150	323	373	395	438	25,8	28,4	28,4
							166	127-133-140	323	460	1090	1150	347	396	419	462	25,9	28,5	28,5
							186	152-159	323	460	1090	1150	378	428	450	495	26,3	28,9	28,9
							146	89-90	388	388	1290	1350	324	385	414	465	28,5	31,2	31,2
							156	108-110-114	388	388	1290	1350	345	405	433	484	29,2	31,8	31,8
	1000		3				166	127-133-140	388	388	1290	1350	369	428	456	508	29,3	31,9	31,9
							186	152-159	388	388	1290	1350	400	460	487	541	29,7	32,3	32,3
							166	127-133-140	388	581	1290	1350	369	428	456	508	35,4	35,3	35,3
							186	152-159	388	581	1290	1350	369	428	456	508	35,8	35,8	35,8
							146	89-90	473	325	1540	1600	354	428	463	525	32,8	35,5	35,5
							156	108-110-114	473	325	1540	1600	374	448	481	544	33,5	36,1	36,1
	1200		3				166	127-133-140	473	325	1540	1600	398	471	505	568	33,6	36,2	36,2
							186	152-159	473	325	1540	1600	429	503	536	601	34,0	36,6	36,6
							166	127-133-140	473	487	1540	1600	398	471	505	568	40,8	40,3	40,3
							186	152-159	473	487	1540	1600	429	503	536	601	41,2	40,7	40,7
							184	127-133-140	473	634	1540	1600	416	489	523	586	48,9	45,5	45,5
							204	152-159	473	634	1540	1600	447	521	554	619	49,3	46,0	46,0
	1400		3				166	127-133-140	538	288	1740	1800	420	503	542	614	37,0	39,6	39,6
							186	152-159	538	288	1740	1800	451	535	573	647	37,4	40,0	40,0
							166	127-133-140	538	431	1740	1800	420	503	542	614	51,6	44,1	44,1
							186	152-159	538	431	1740	1800	451	535	573	647	52,0	44,5	44,5
							184	127-133-140	538	561	1740	1800	438	521	560	632	54,0	50,0	50,0
							204	152-159	538	561	1740	1800	469	553	591	665	54,4	50,5	50,5
	1600		4				184	127-133-140	538	710	1740	1800	438	521	560	632	61,0	59,0	59,0
							204	152-159	538	710	1740	1800	469	553	591	665	61,4	59,4	59,4
							166	127-133-140	608	387	1940	2000	444	538	582	664	56,5	48,1	48,1
							186	152-159	608	387	1940	2000	475	570	613	696	57,0	48,5	48,5
							184	127-133-140	608	503	1940	2000	462	556	600	682	59,2	54,7	54,7
							204	152-159	608	503	1940	2000	493	588	631	714	59,6	55,1	55,1
	1600		5				204	152-159	608	503	1940	2000	493	588	631	714	59,6	55,1	55,1
							234	165-168-178-180-194	608	503	1940	2000	540	633	678	758	60,2	56,2	56,2
							184	127-133-140	608	637	1940	2000	462	556	600	682	75,6	64,5	64,5
							204	152-159	608	637	1940	2000	493	588	631	714	76,1	64,9	64,9
							234	165-168-178-180-194	608	753	1940	2000	540	633	678	758	76,6	66,0	66,0
							234	165-168-178-180-194	608	753	1940	2000	540	633	678	758	76,6	66,0	66,0

\* = insert the transom model: S=with rigid arm, F=with pivoting arm with brake, R=reversible

At order time please specify the height H, related to the corresponding upper transom selected.

Carrying rollers and guide rollers (PSV/G7-NCD 20M16 60N 100 for model F and S, PSV/G7-NCD 20S18 60N 100 for model R) have to be ordered separately.

### 3 Troughing sets

## CT3P series

#### SELF CENTRALIZING TRANSOM - CT3P BW 1800-2200

Transom ordering code							For rollers		Transom			K max				Weight without rollers all troughing angles		
Series	Belt width mm	Troughing angle deg.°	Beam size SZ	Across Flat key KE mm	H mm	Finishing	Ø mm	Length C mm	Load capacity kg	Q mm	E mm	20° mm	30° mm	35° mm	45° mm	Type S kg	Type F kg	Type R kg
CT3P S, R, F	1800	20° - 30° 35° - 45°	5	18 - 22 32	184	- , YA, YB, YC, YS, Z	127-133-140	678	446	2190	2250	488	593	642	733	70,7	57,1	59,9
					204		152-159	678	446	2190	2250	519	625	674	765	71,1	57,7	60,3
					234		165-168-178 180-194	678	446	2190	2250	565	670	720	809	71,7	58,3	61,5
			184		127-133-140		678	667	2190	2250	488	593	642	733	83,3	67,9	70,7	
			204		152-159		678	667	2190	2250	519	625	674	765	83,7	68,5	71,1	
			234		165-168-178 180-194		678	667	2190	2250	565	670	720	809	84,2	69,1	72,3	
	2000		6		204	152-159	758	604	2420	2500	546	665	719	822	104,5	75,1	77,7	
	234				165-168-178 180-194	758	604	2420	2500	593	710	766	866	105,0	75,7	78,9		
	219				152-159	758	909	2420	2500	559	678	732	835	133,1	97,4	100,0		
	249				165-168-178 180-194	758	909	2420	2500	606	723	779	879	133,6	97,9	101,1		
	2200				6	204	152-159	808	558	2620	2700	563	688	748	857	111,1	79,9	82,5
	234					165-168-178 180-194	808	558	2620	2700	610	735	795	901	111,6	80,4	83,6	
	219	152-159	808	840		2620	2700	576	701	761	870	141,3	103,5	106,1				
	249	165-168-178 180-194	808	840		2620	2700	623	748	808	914	141,8	104,0	107,2				

\* = insert the transom model: **S**=with rigid arm, **F**=with pivoting arm with brake, **R**=reversible

At order time please specify the height H, related to the corresponding upper transom selected.

Carrying rollers and guide rollers (PSV/G7-NCD 20M16 60N 100 for model F and S, PSV/G7-NCD 20S18 60N 100 for model R) have to be ordered separately.

## Self-centering troughing Sets for return belt

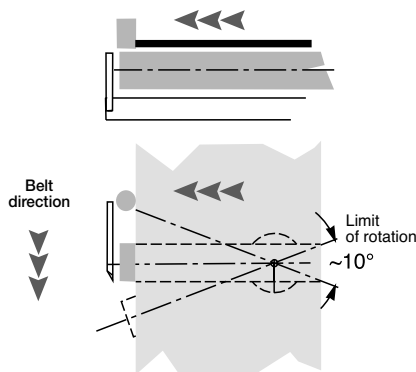


Sometimes even on the return section it is necessary to correct the tracking of the movement of the belt. As with the upper section, the return section self-centering troughing set exerts a corrective action on the belt.

The method of function is similar to that of the upper self-centering troughing set. Normally it is a good standard to install them at an approximate distance of 25 metres from the pulley and at a pitch of about 50m.

**Warning: the rollers supporting the belt in the self-centering sets, must not have any rubber ring. In case of material high abrasion, on return self-centering sets, hot vulcanized rubber lagged rollers can be used.**

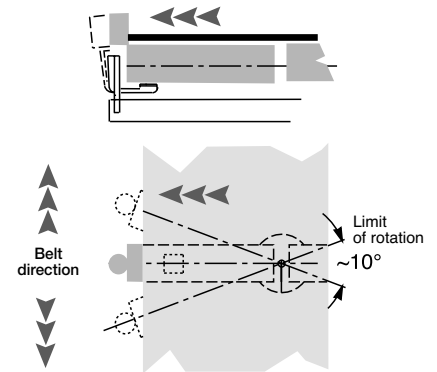
### Model S (Q1)



#### Model S

Standard version for single directional conveyor belt with single roller and fixed lever arm with offset guide roller. Guide rollers type PSV/G7-NCD 20M16 60N 100 to be ordered separately.

### Model R (Q2)



#### Model R

Special version used on reversible belt, using two rollers and pivoting lever arms with the brake and guide roller located in line. Guide rollers type PSV/G7-NCD 20S18 60N 100 to be ordered separately.

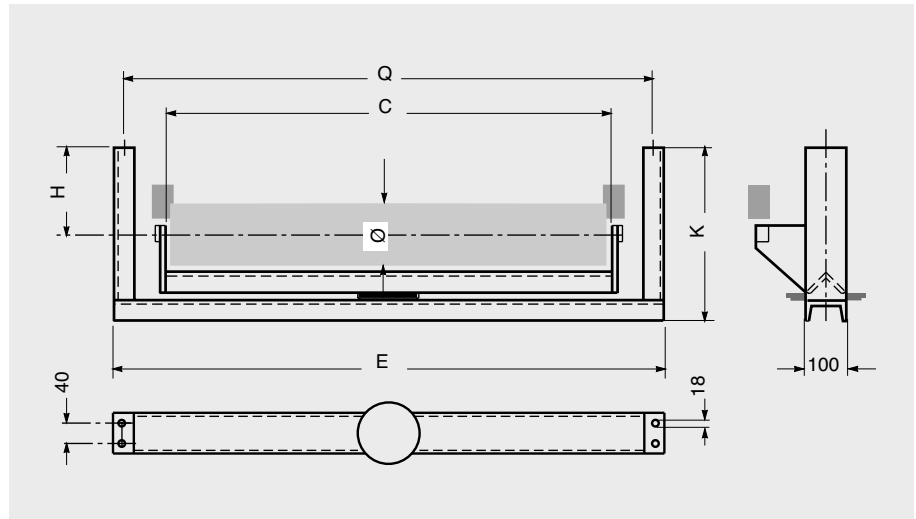
### 3 Troughing

#### sets

#### transom self-centering model S

#### Q1 L Q1 P

Return model with fixed lever-arm for single directional belts.  
Guide rollers type PSV/G7-NCD 20M16 60N 100 have to be ordered separately.



#### Q1 L for rollers series

**MPS**  
ø 76, 89, 102  
spindle 15  
bearing 6202  
ch = 17

**PSV/1-FHD**  
ø 89, 108, 133  
spindle 20  
bearing 6204  
ch = 14

Belt width mm	Roller		ch	Self-centering transom					Weight without rollers Kg
	Ø	C mm		Capacity kg	H mm	K mm	Q	E	
400	76-89-102 108-133	508	14 - 17	175	70	259	640	700	20.8
500		608		143	70	259	740	800	22.2
650		758		197	70	267	890	950	25.9
800		958		158	70	267	1090	1150	29.1
1000		1158		209	70	275	1290	1350	34.7
1200		1408		167	70	275	1540	1600	39.2

#### Q1 P for rollers series

**PSV/2-FHD**  
ø 133  
spindle 25  
bearing 6205  
ch = 18

**PSV/4-FHD**  
ø 159  
spindle 30  
bearing 6206  
ch = 22

Belt width mm	Roller		ch	Self-centering transom					Weight without rollers Kg
	Ø	C mm		Capacity kg	H mm	K mm	Q	E	
800	133	958	18 - 22	158	150	367	1090	1150	32.9
1000		1158		209	150	375	1290	1350	38.6
1200		1408		167	150	375	1540	1600	43.1
1400		1608		227	150	389	1740	1800	50.5
1600		1808		202	150	389	1940	2000	54.6
800		159		958	18 - 22	158	150	387	1090
1000	1158		209	150		395	1290	1350	39.9
1200	1408		167	150		395	1540	1600	44.4
1400	1608		227	150		409	1740	1800	52.0
1600	1808		202	150		409	1940	2000	55.9

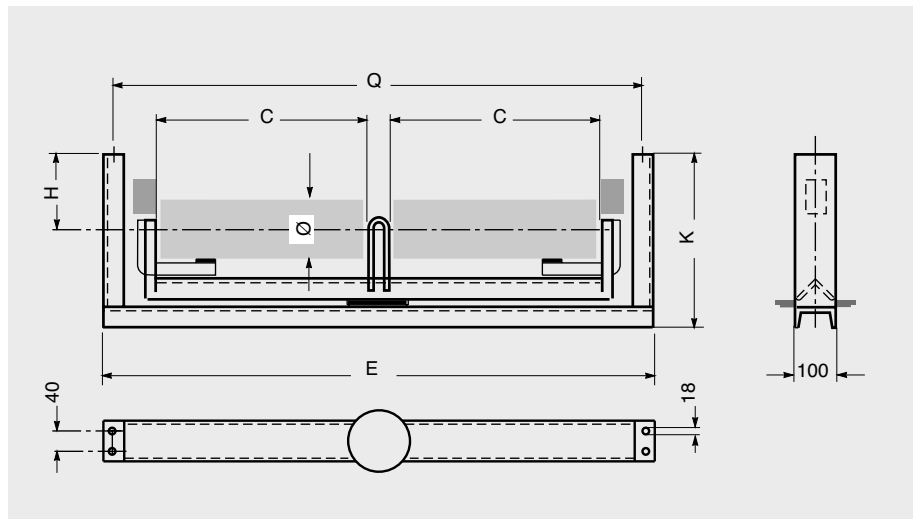
Return roller and guide rollers type PSV/G7-NCD 20M16 60N 100 have to be ordered separately

**Example of ordering**  
Q1L, 800, F 14, 108  
Q1P, 1000, F 18, 133, YA  
See page 198.

**transom**  
**self-centralising model R**

**Q2 L**  
**Q2 P**

Return model with pivoting lever-arm and brake for reversible belts.  
Guide rollers type PSV/G7-NCD 20S18 60N 100 have to be ordered separately.



**Q2 L**  
for rollers series

**MPS**  
ø 76, 89, 102  
spindle 15  
bearing 6202  
ch = 17

**PSV/1-FHD**  
ø 89, 108, 133  
spindle 20  
bearing 6204  
ch = 14

Belt width mm	Roller			Self-centering transom					Weight without rollers Kg
	Ø	C mm	ch	Capacity kg	H mm	K mm	Q	E	
400	76-89-102 108-133	198	14 - 17	175	70	259	640	700	22.7
500		248		143	70	259	740	800	24.1
650		323		197	70	267	890	950	27.1
800		408		158	70	267	1090	1150	30.8
1000		508		209	70	275	1290	1350	36.4
1200		608		167	70	275	1540	1600	40.5

**Q2 P**  
for rollers series

**PSV/2-FHD**  
ø 133  
spindle 25  
bearing 6205  
ch = 18

**PSV/4-FHD**  
ø 159  
spindle 30  
bearing 6206  
ch = 22

**PSV/7-FHD**  
ø 159, 194  
spindle 40  
bearing 6308  
ch = 32

Belt width mm	Roller			Self-centering transom					Weight without rollers Kg
	Ø	C mm	ch	Capacity kg	H mm	K mm	Q	E	
800	133	408	18 - 22	158	150	367	1090	1150	33.2
1000		508		209	150	375	1290	1350	38.8
1200		608		167	150	375	1540	1600	43.0
1400		708		296	150	389	1740	1800	52.3
1600		808		262	150	389	1940	2000	56.6
800	159	408	18 - 22 - 32	158	150	387	1090	1150	34.3
1000		508		209	150	395	1290	1350	39.9
1200		608		167	150	395	1540	1600	44.1
1400		708		296	150	409	1740	1800	53.4
1600		808		262	150	409	1940	2000	57.7
1800		908		351	175	473	2190	2290	87.5
2000		1008		318	175	473	2420	2520	94.2
2200	1108	440	175	490	2620	2720	117.1		

Return roller and guide rollers type PSV/G7-NCD 20S18 60N 100 have to be ordered separately.

**Example of ordering**  
Q2L, 1000, F 14, 133, YA  
Q2P, 1200, F 18, 159, YB  
See page 198.