



PRE 2000 CATALOG

US SPARS



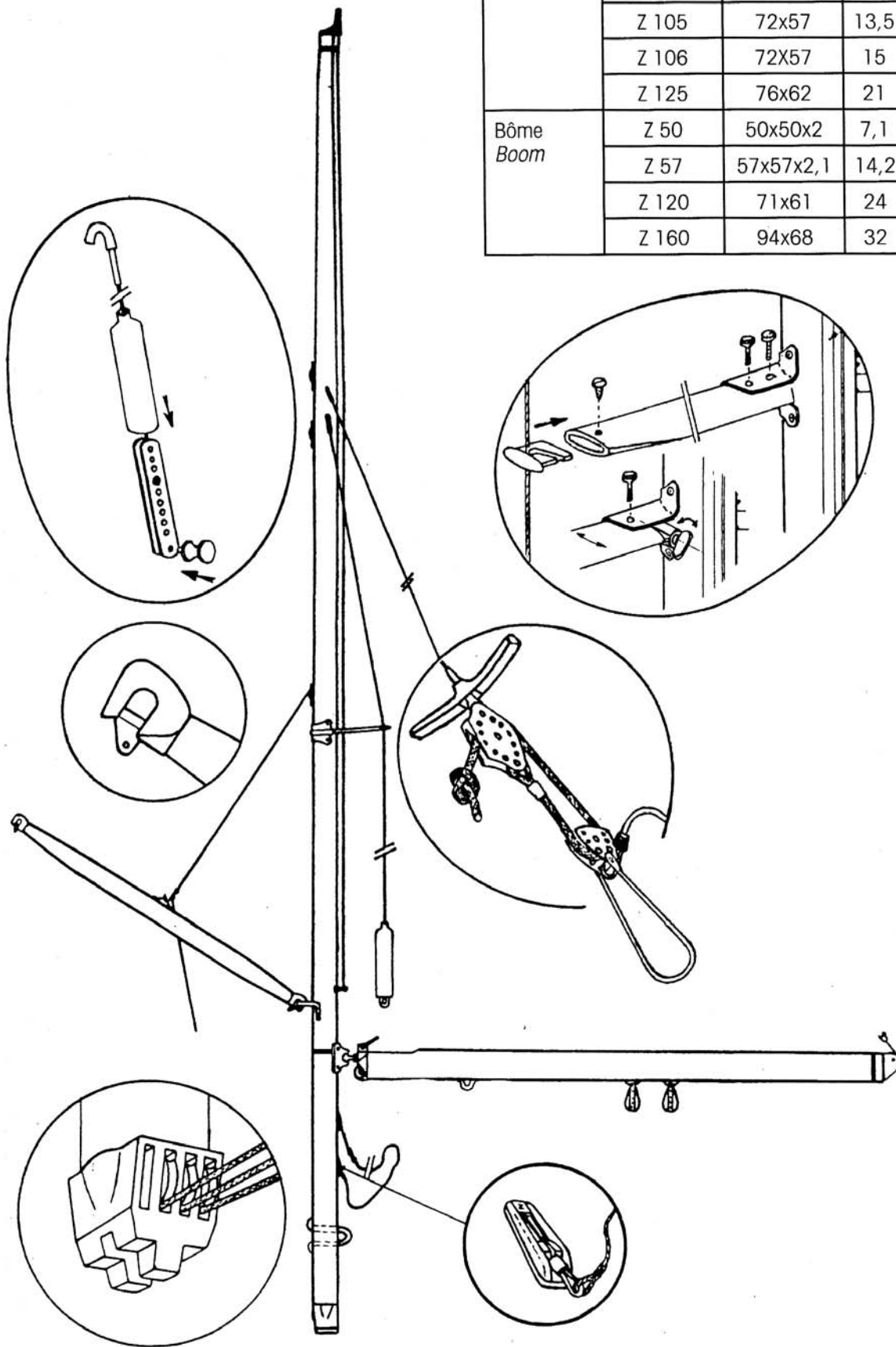
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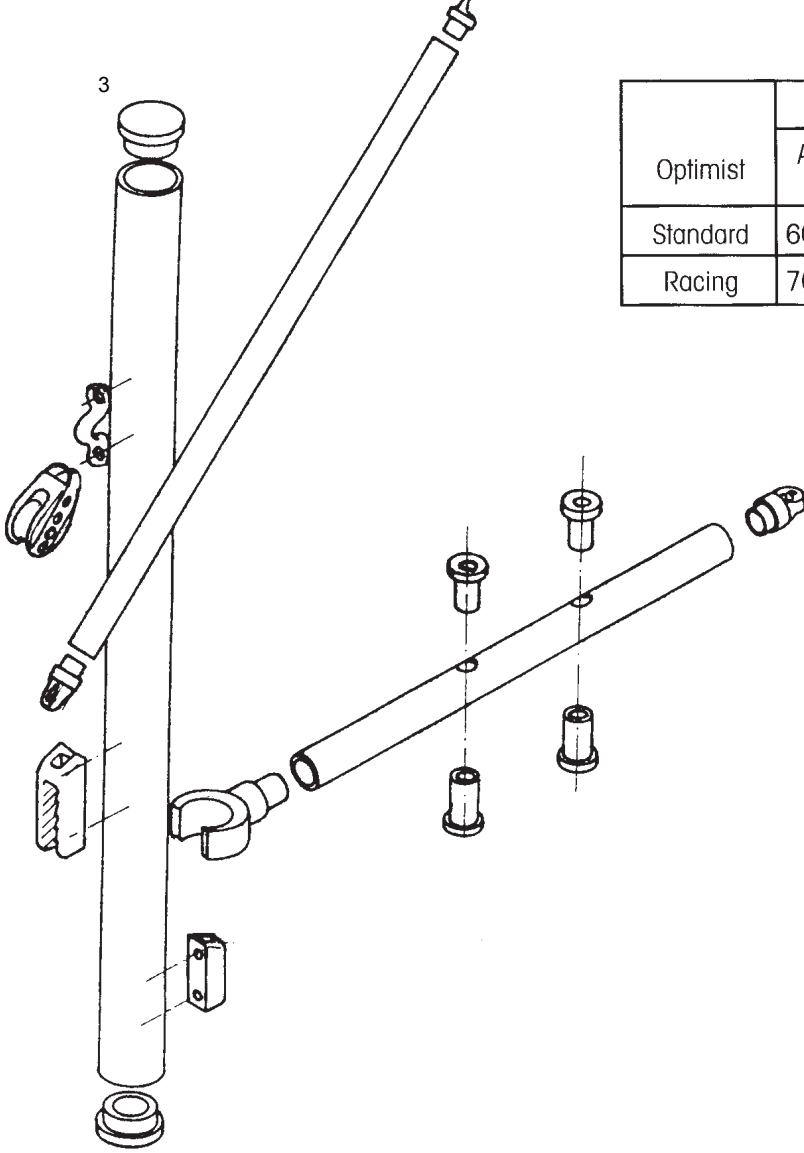
PLEASE NOTE: NOT ALL OLD PARTS AVAILABLE AND SOME HAVE CHANGED NUMBERS. -PLEASE PHONE [800-928-0786](tel:800-928-0786) OR [386-462-3760](tel:386-462-3760). FAX [386-462-3448](tel:386-462-3448) OR E-MAIL sales@usspars.com TO VERIFY PART # AND PRICE.

DÉRIVEURS / DINGHIES

2

	Références	Dimensions mm	Inerties Inertias		Poids/m Weight/m	Ralingue Track
Tangon Spi pole	Z 40	40x40x1,5			0,488	
Mât Mast	Z 50	50x50x2	7,1	7,9	0,9	8 mm
	Z 57	57x57x2,1	14,2	15,7	1,1	8 mm
	Z 105	72x57	13,5	20,5	0,9	8 mm
	Z 106	72x57	15	22	1,1	8 mm
	Z 125	76x62	21	33	1,25	8 mm
Bôme Boom	Z 50	50x50x2	7,1	7,1	0,815	
	Z 57	57x57x2,1	14,2	14,2	0,978	
	Z 120	71x61	24	45	1,2	8 mm
	Z 160	94x68	32	60	1,5	8 mm





Optimist	Mât/Mast		Bôme/Boom		Livarde/Gaff	
	Alliage Alloy	Diamètre Diameter	Alliage Alloy	Diamètre Diameter	Alliage Alloy	Diamètre Diameter
Standard	6005 T6	45	6005 T6	34	6005 T6	25
Racing	7075 T6	45	6061 T6	34	6061 T6	25

STICK / TILLER EXTENSIONS



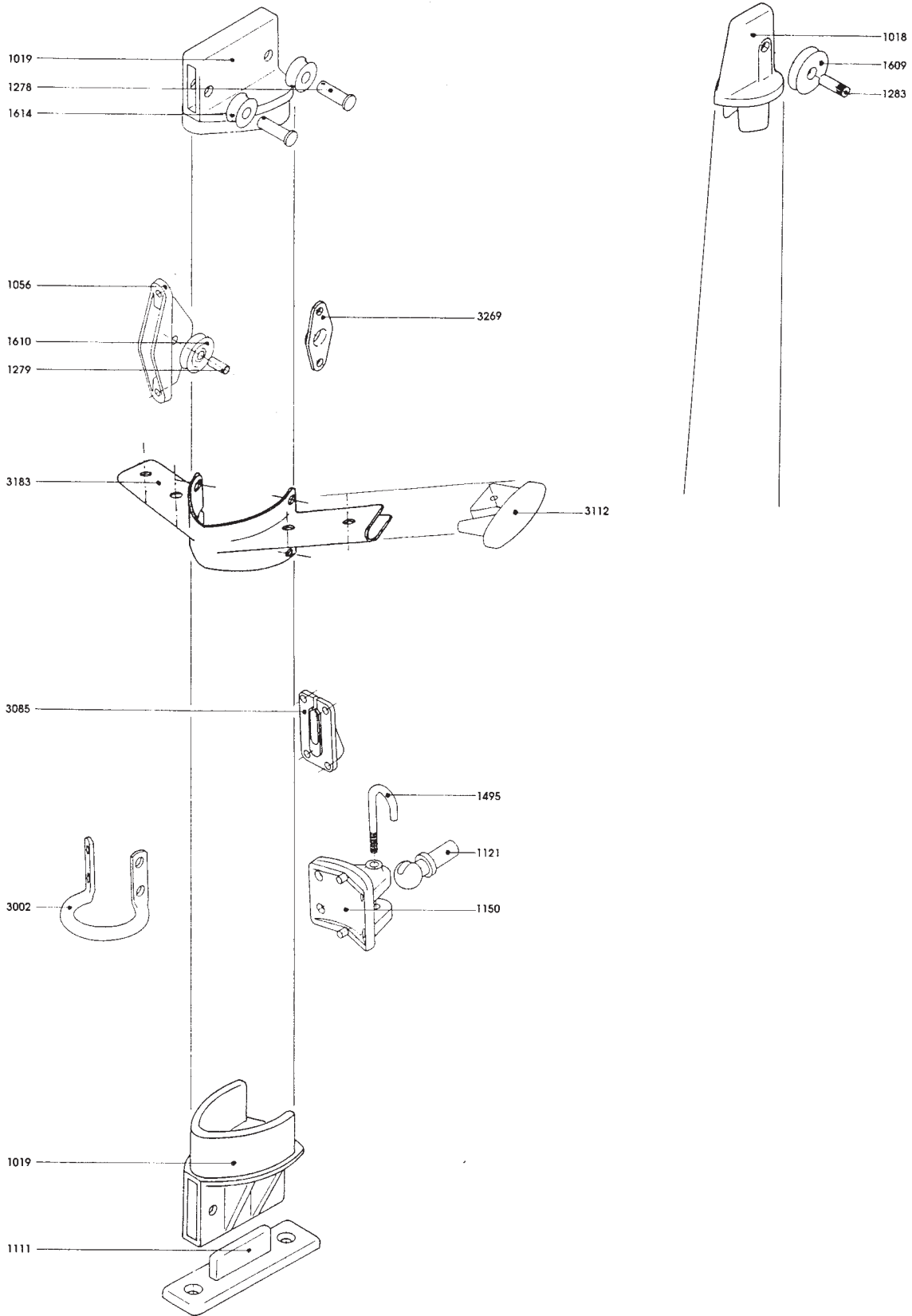
Références	Longueur mm Length mm
3406	600
3407	900

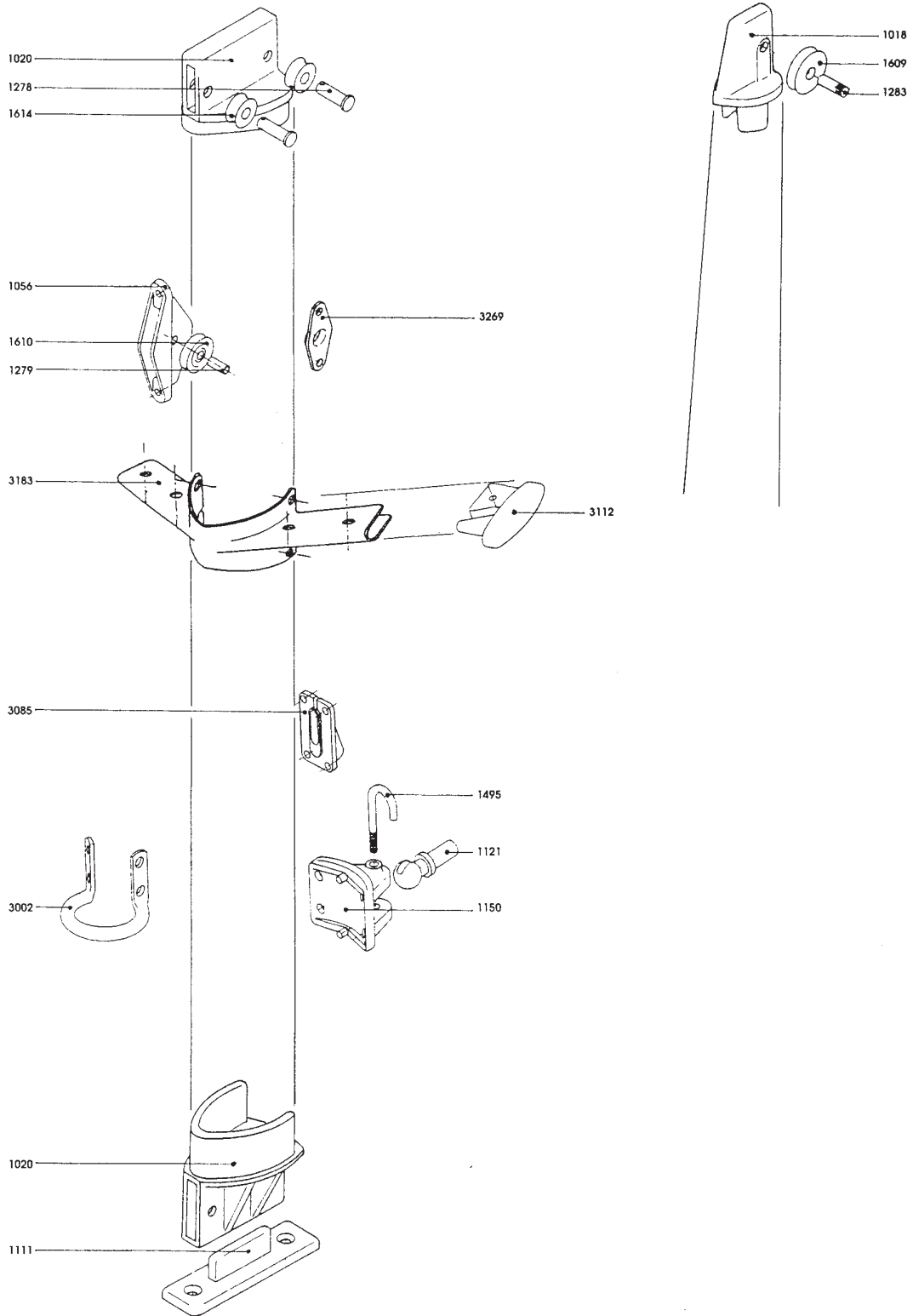
Tube anodisé incolore, possibilité de commander des longueurs spéciales.
 Silver anodised tube, available custom length.

MÂTS / MASTS

4

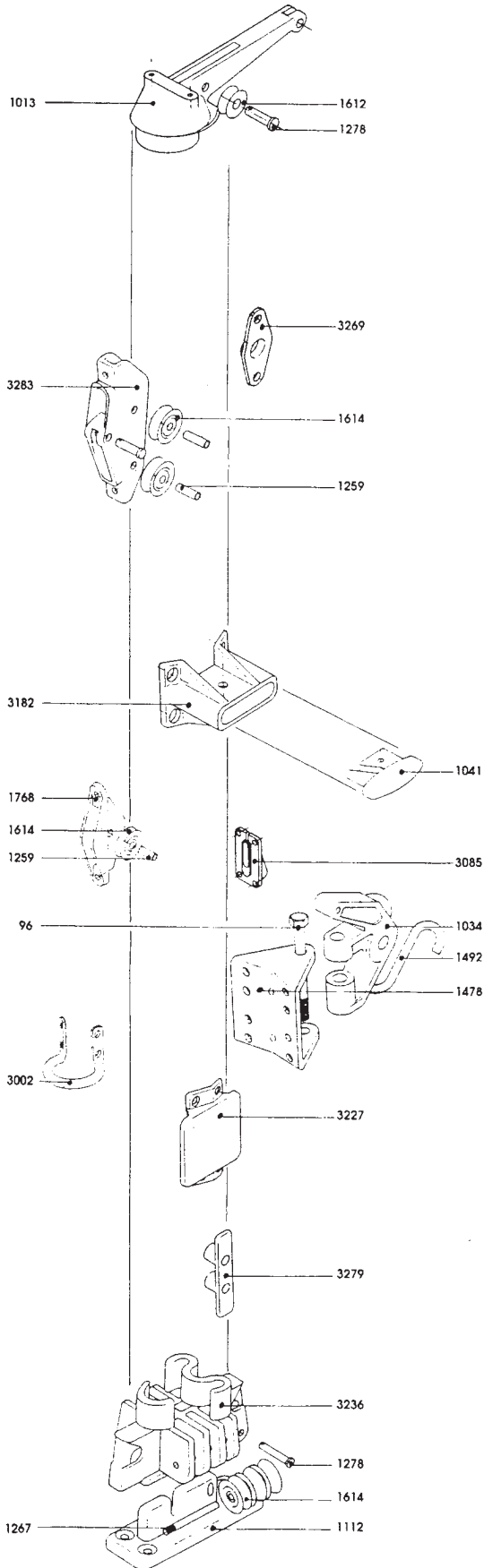
Z 105



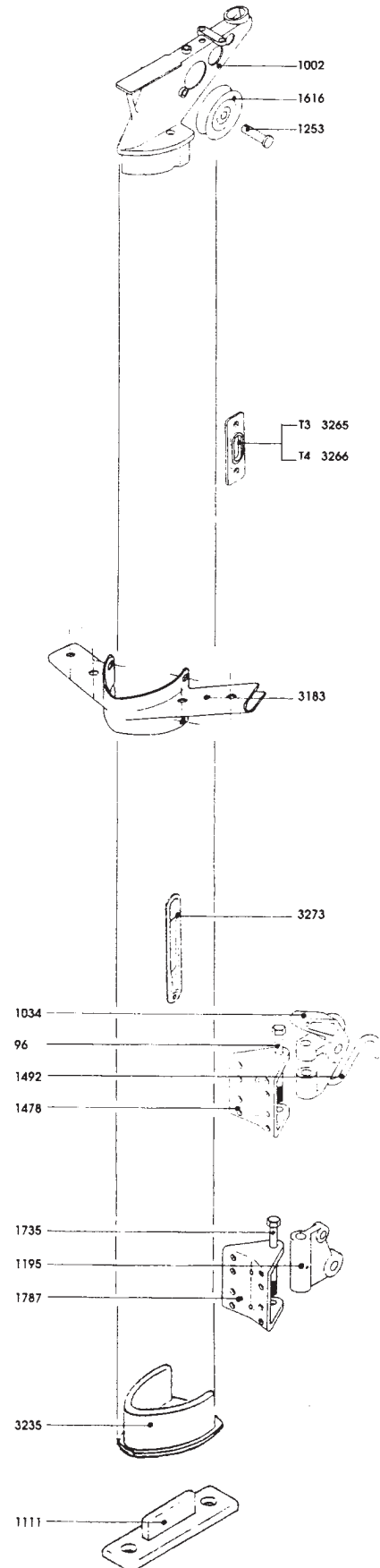


6

Z 145



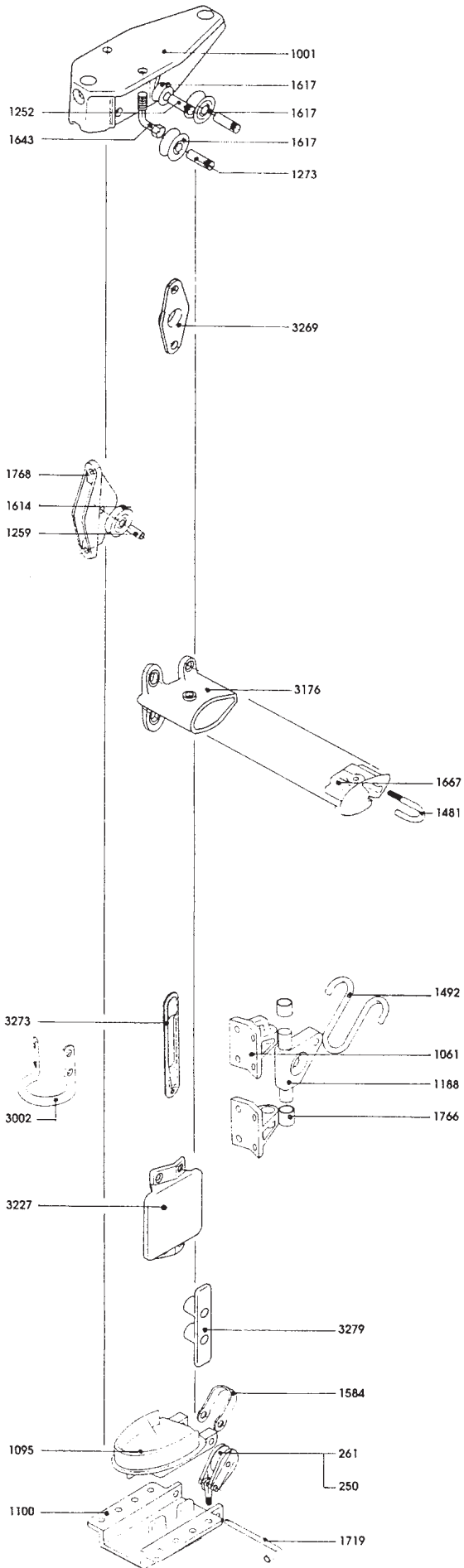
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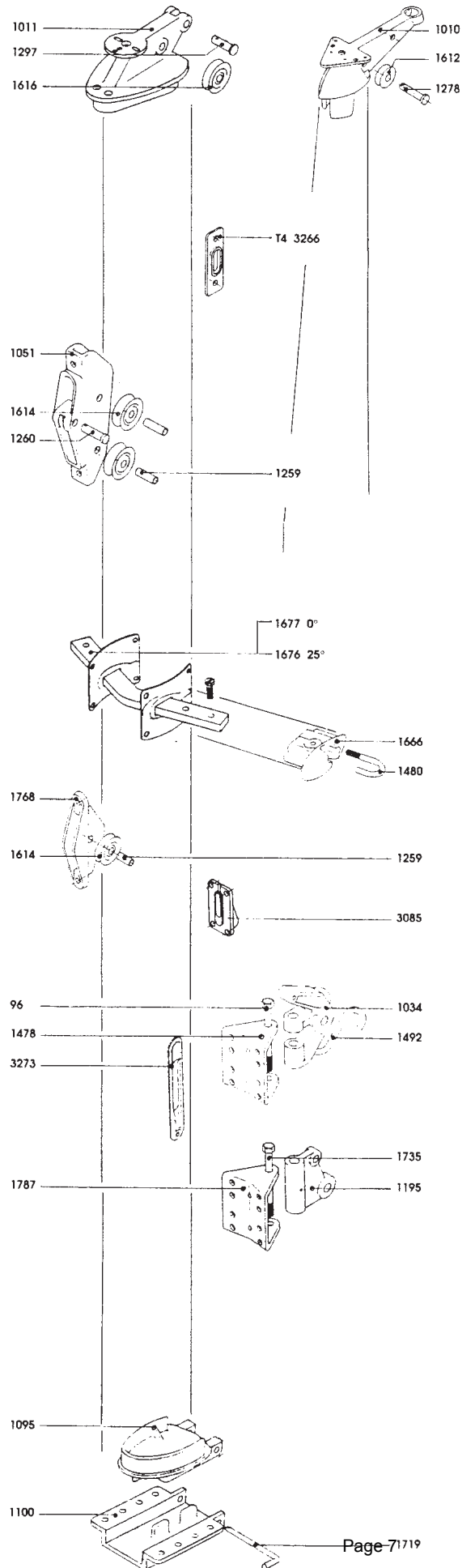
MÂTS / MASTS

7

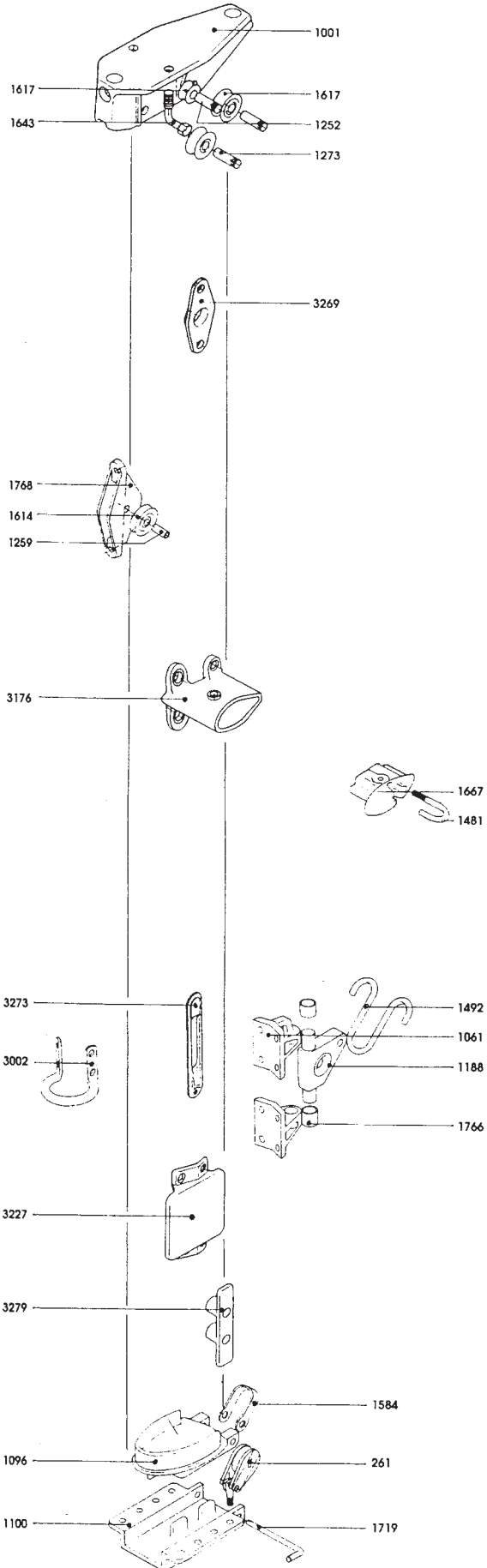
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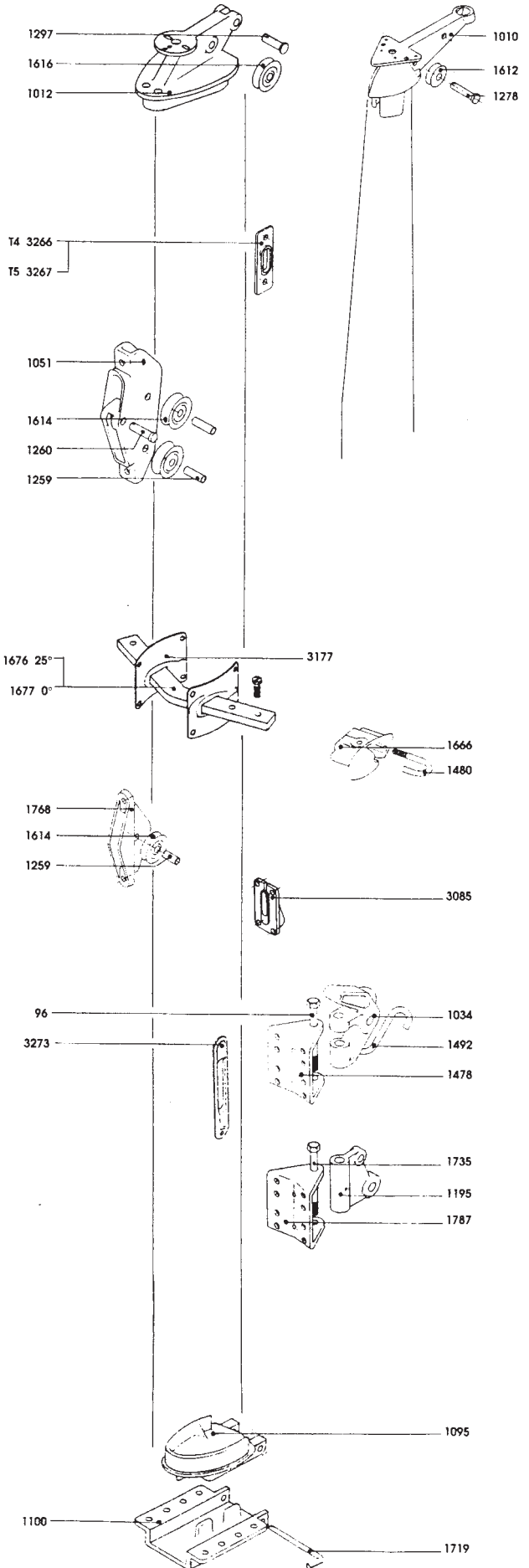
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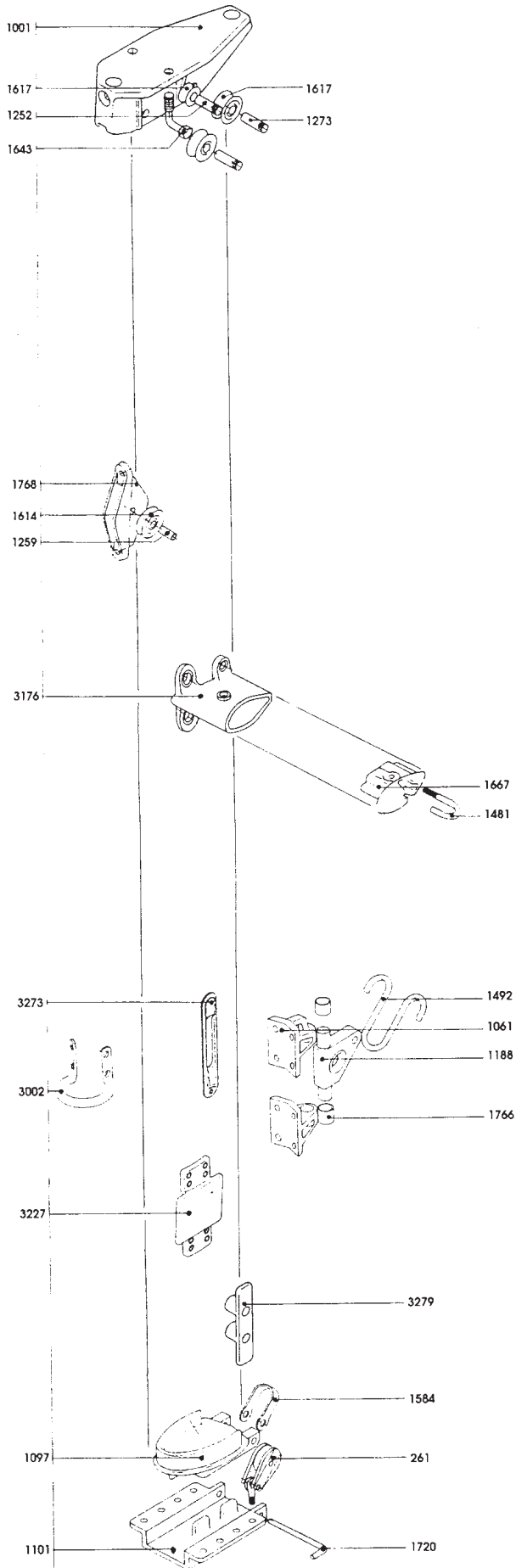
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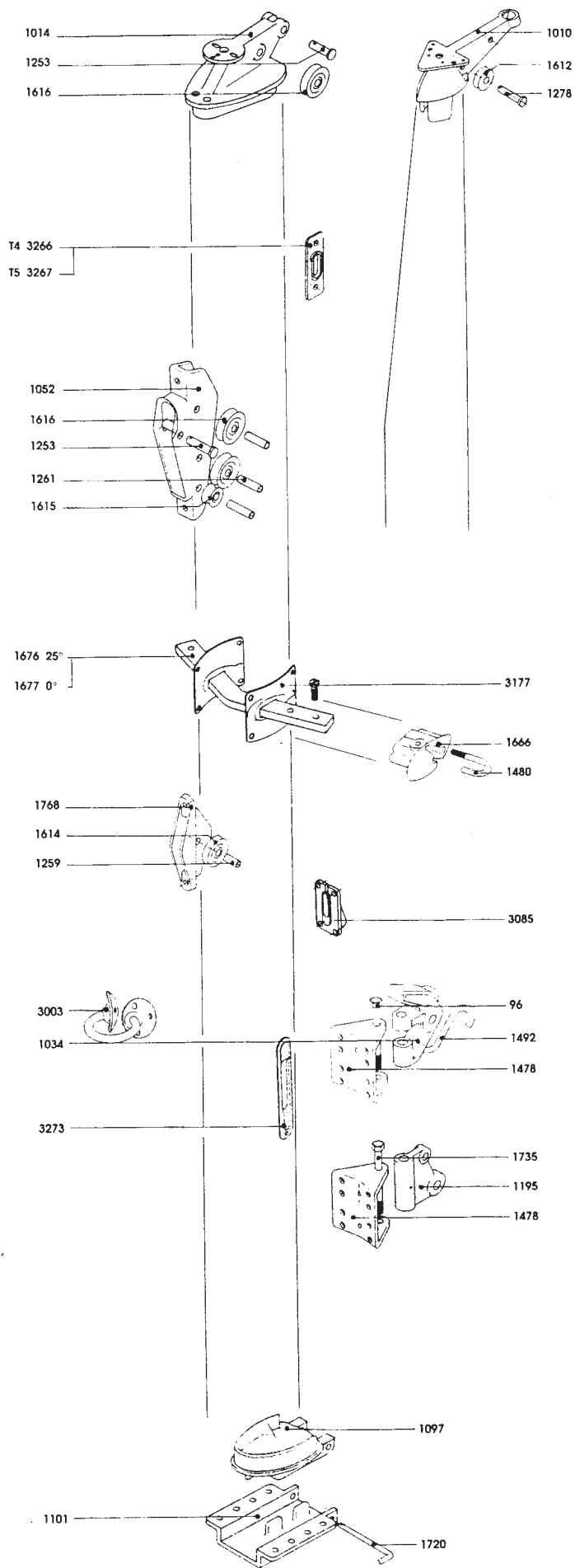
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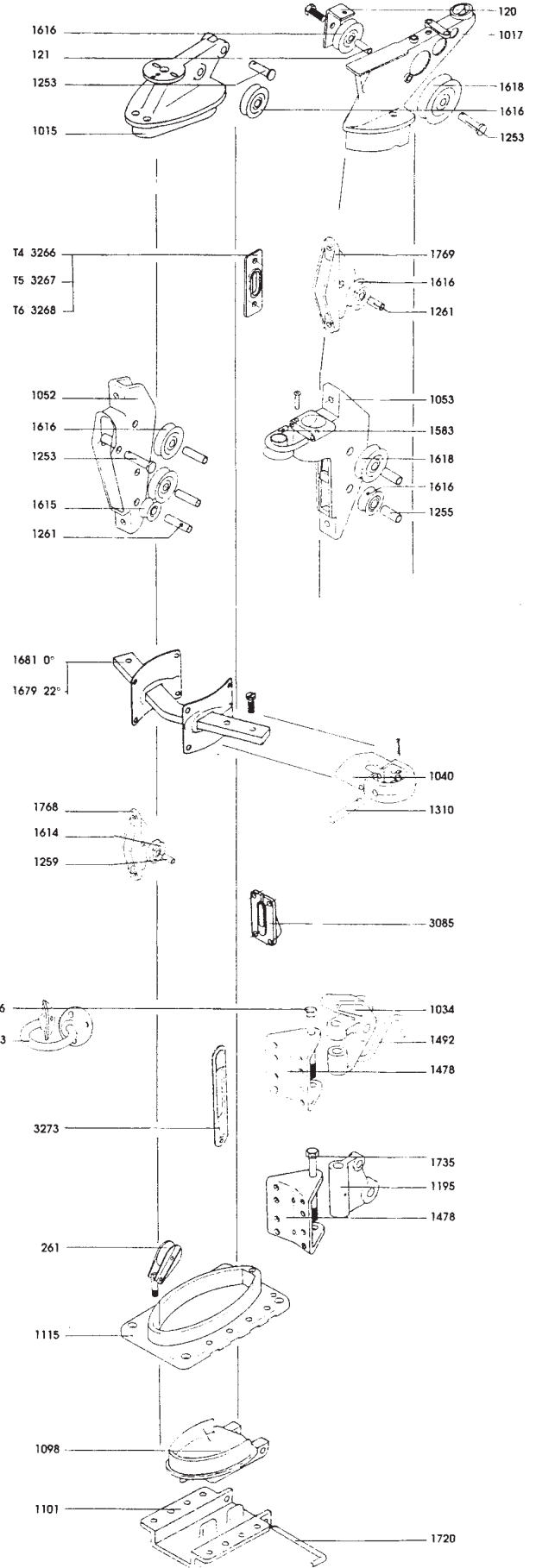
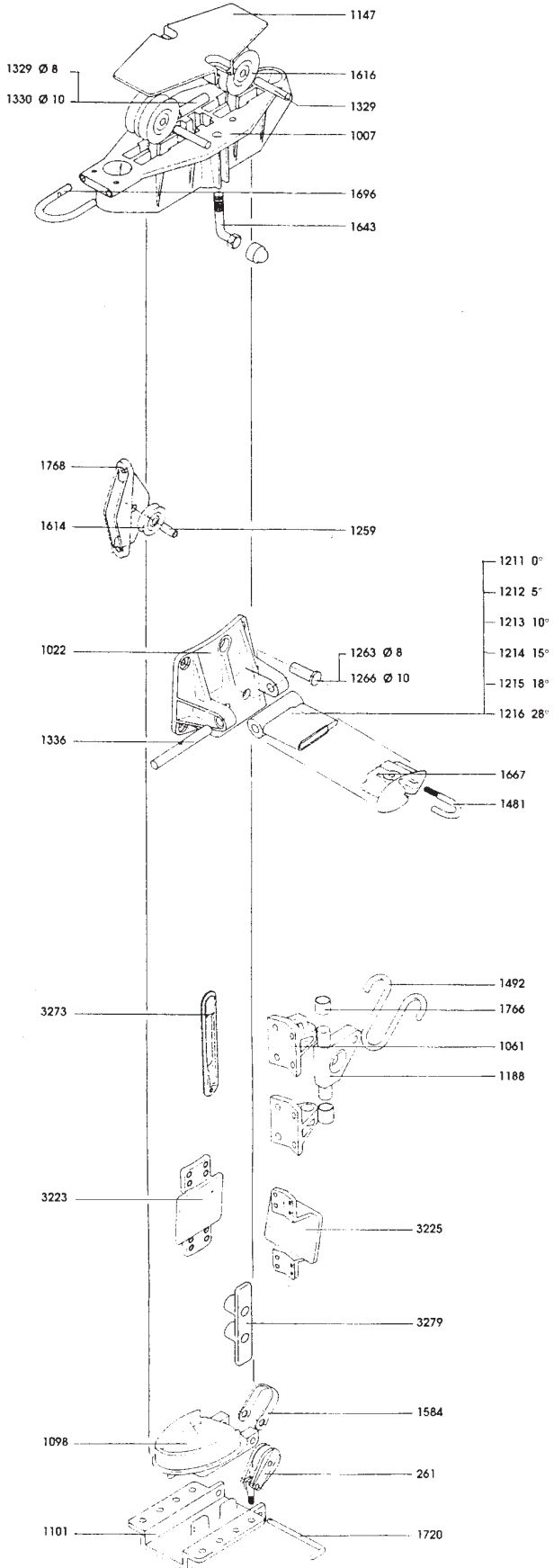


9
Z 230

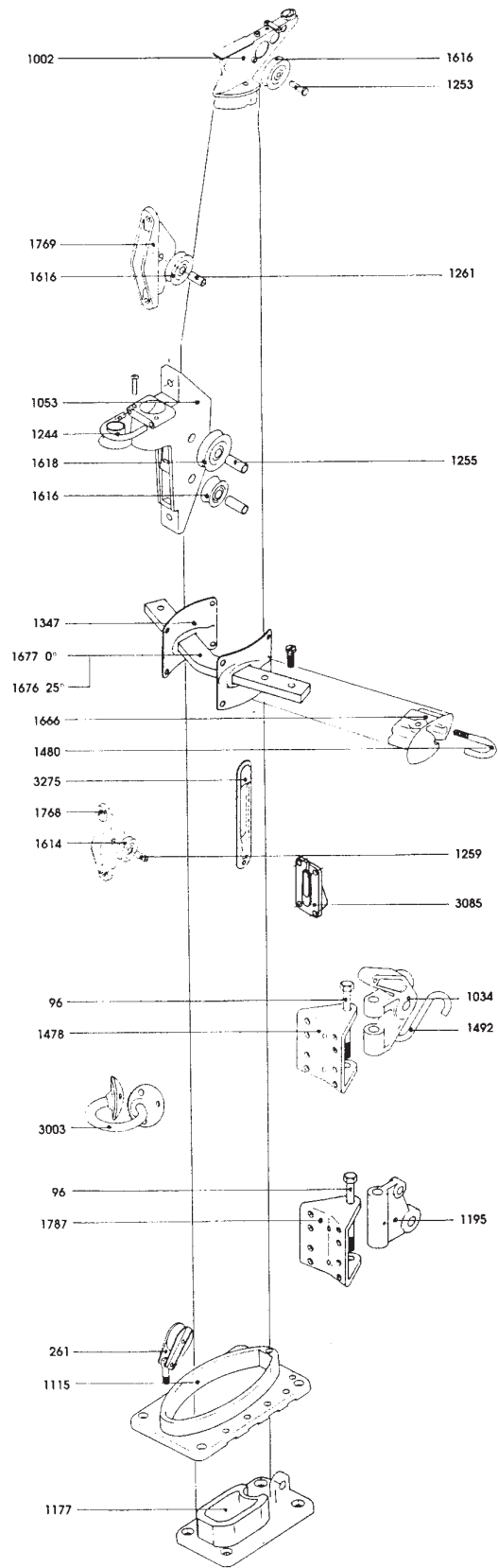


Z 230 7/8 Z 230 R

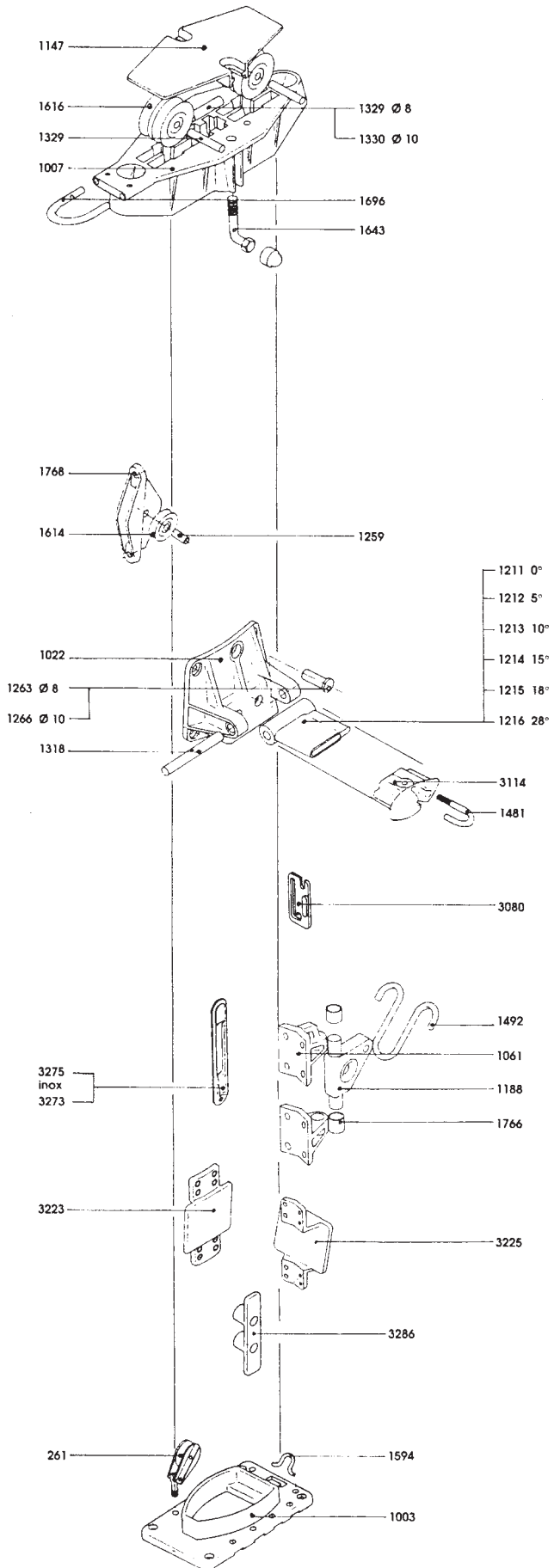




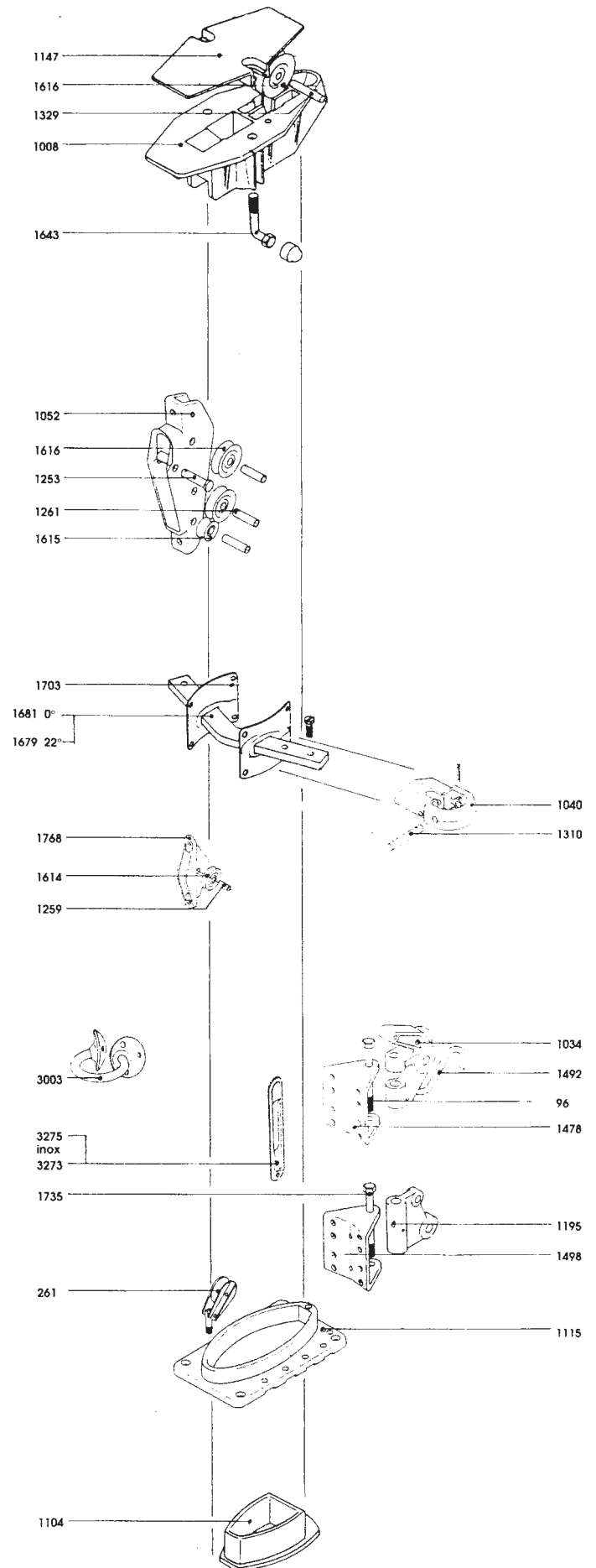
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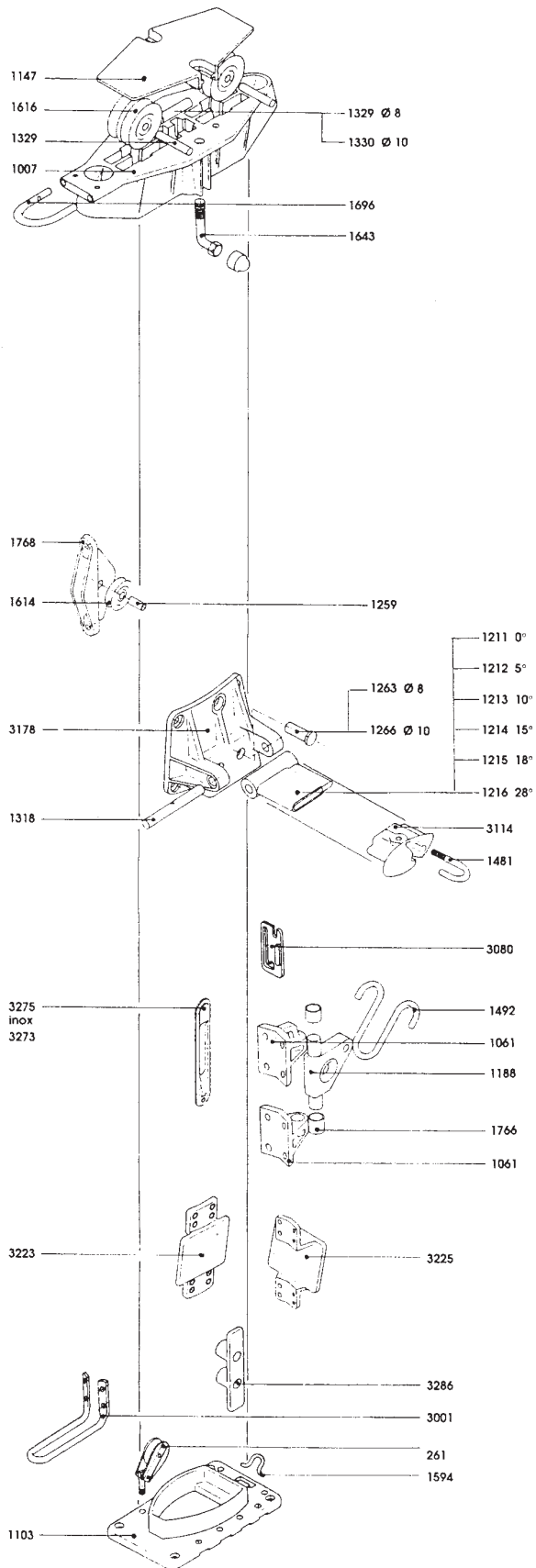
Z 300



Z 300 7/8

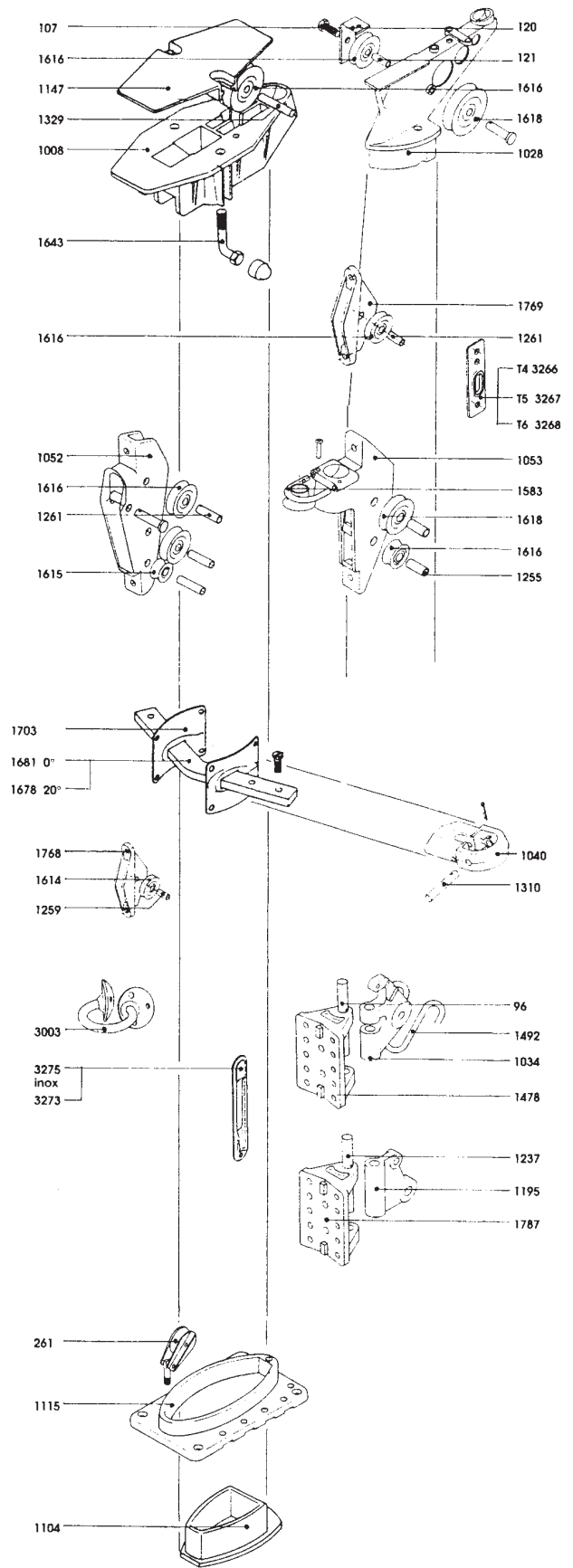


Z 301



Z 301 7/8

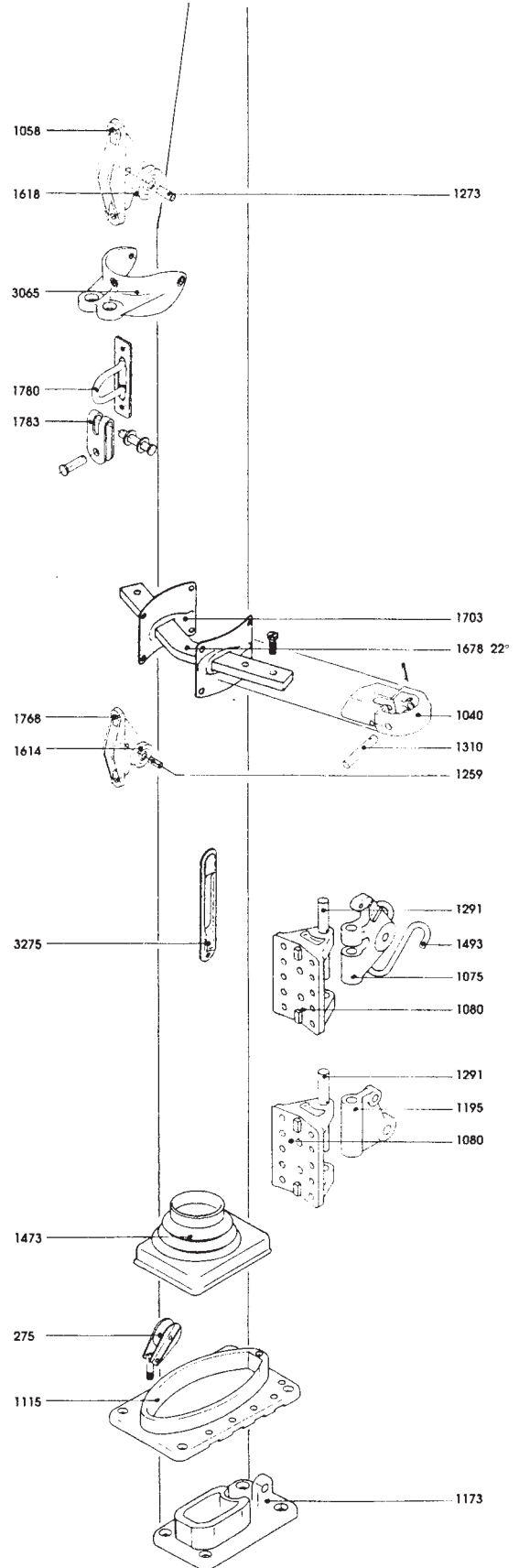
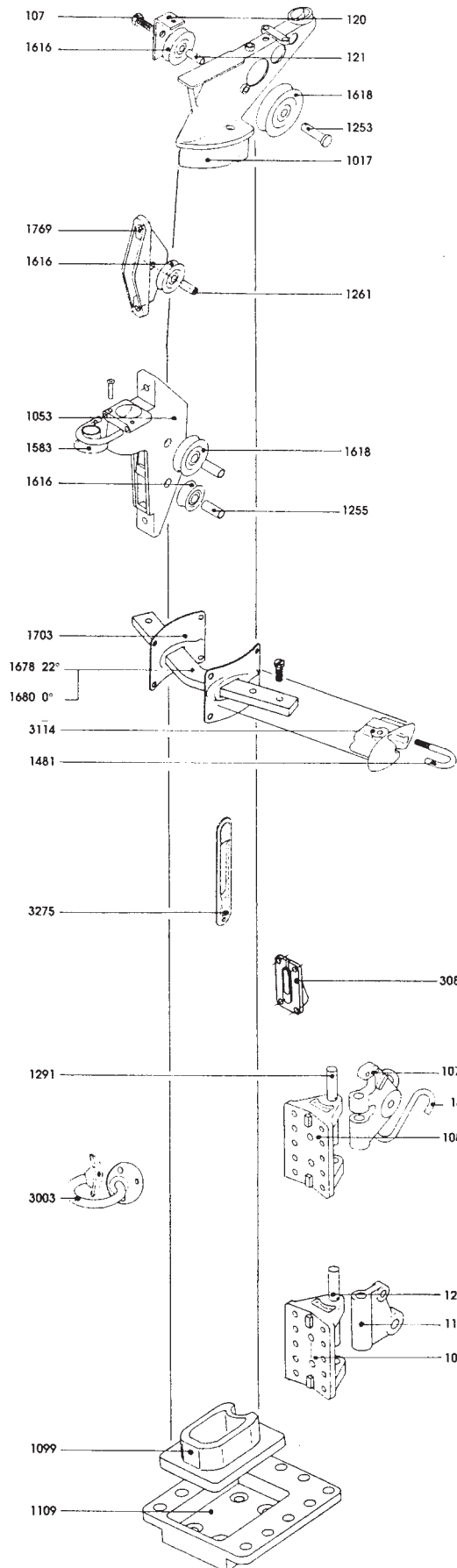
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MÂTS / MASTS

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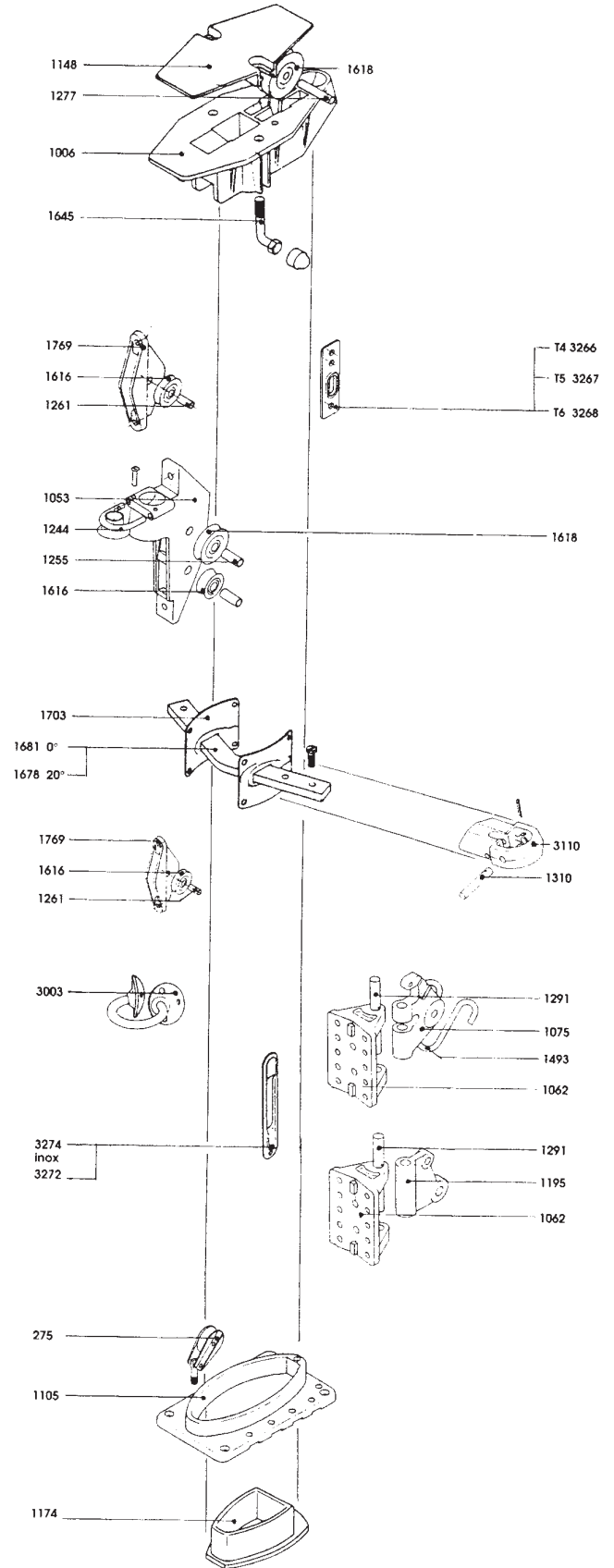
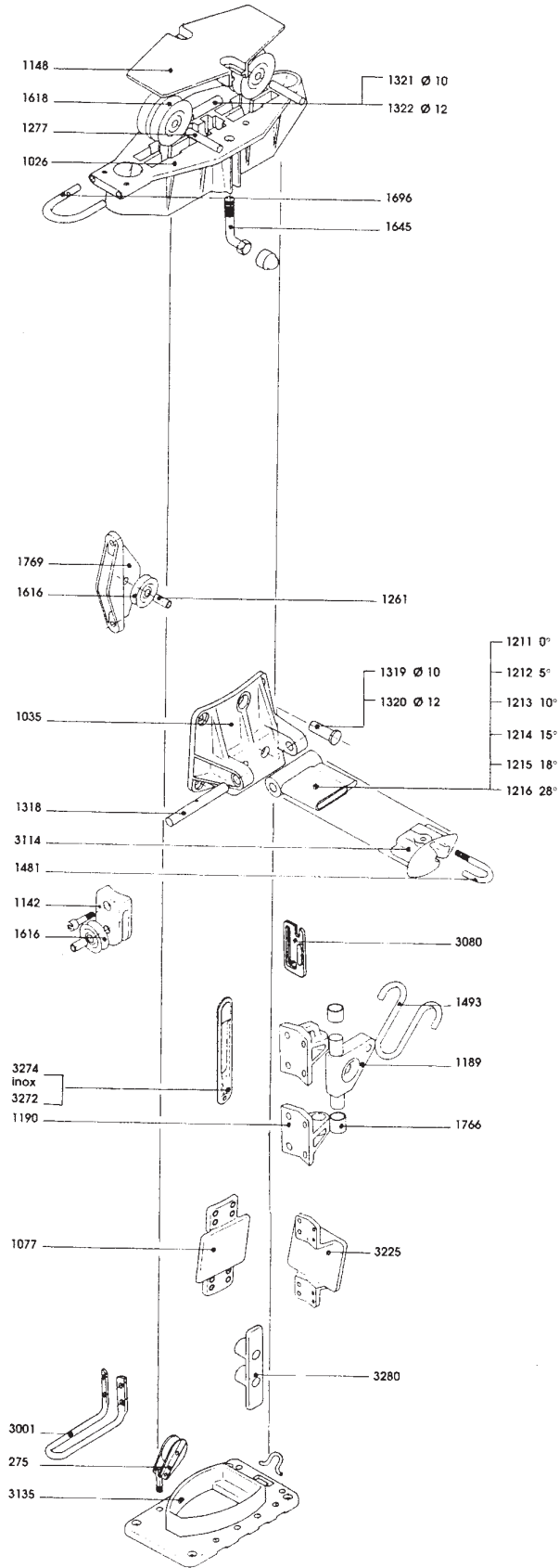
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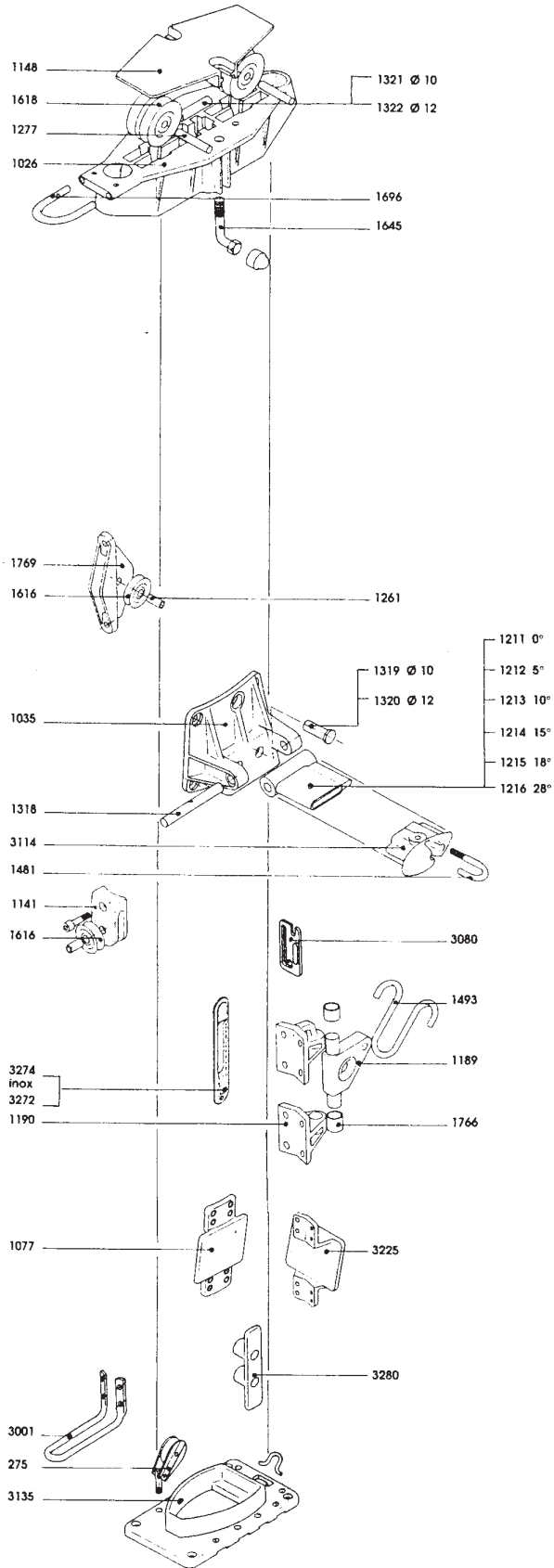
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Z 400

Z 400 7/8

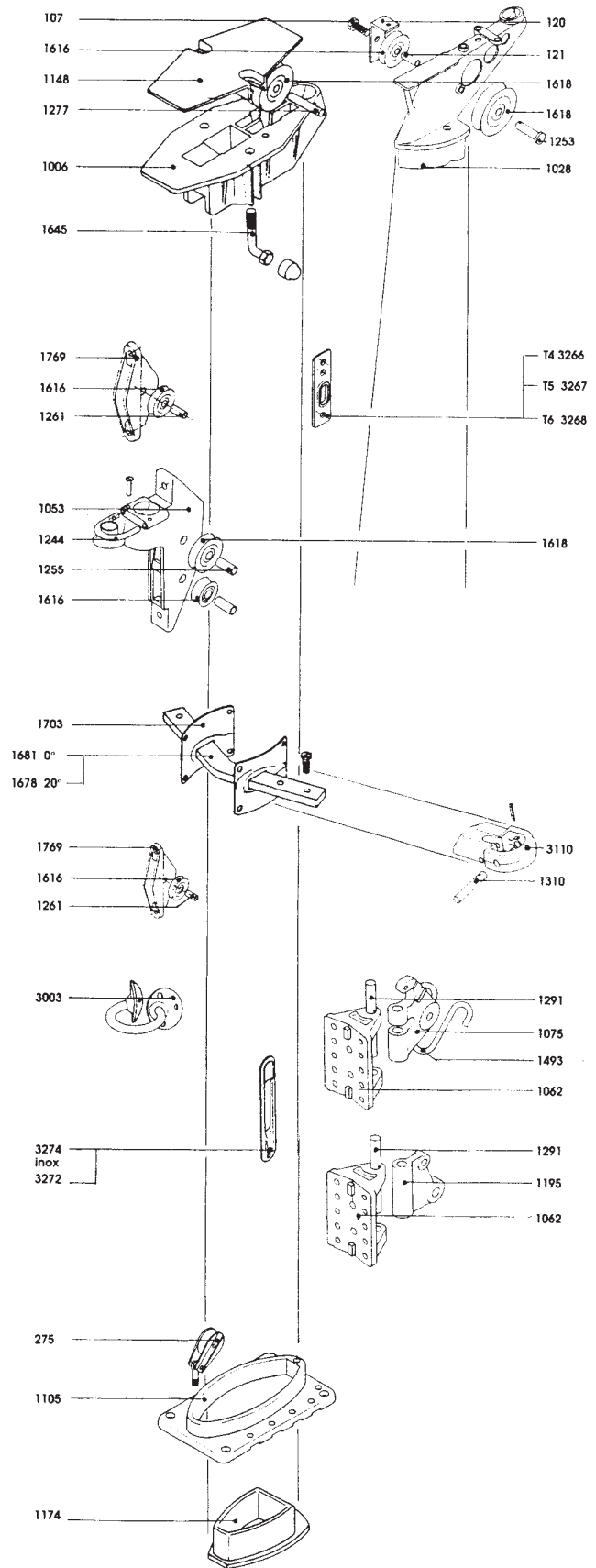


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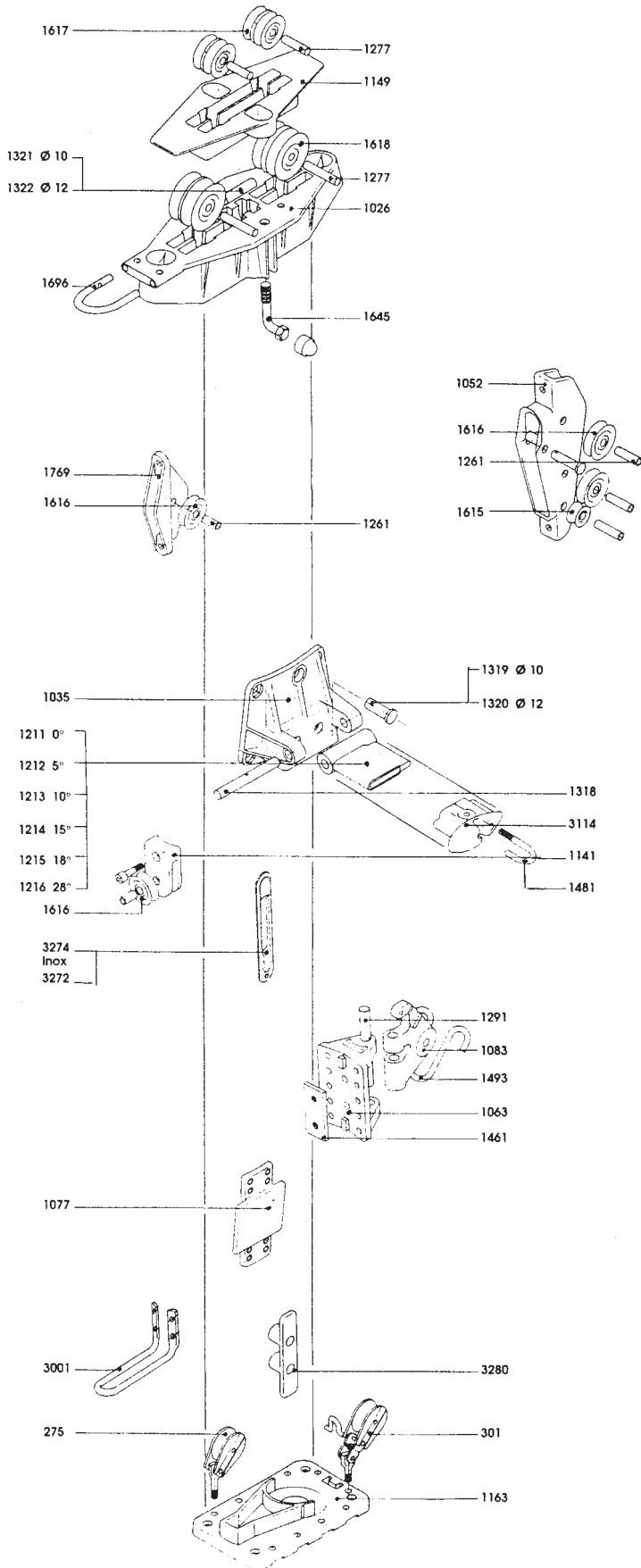


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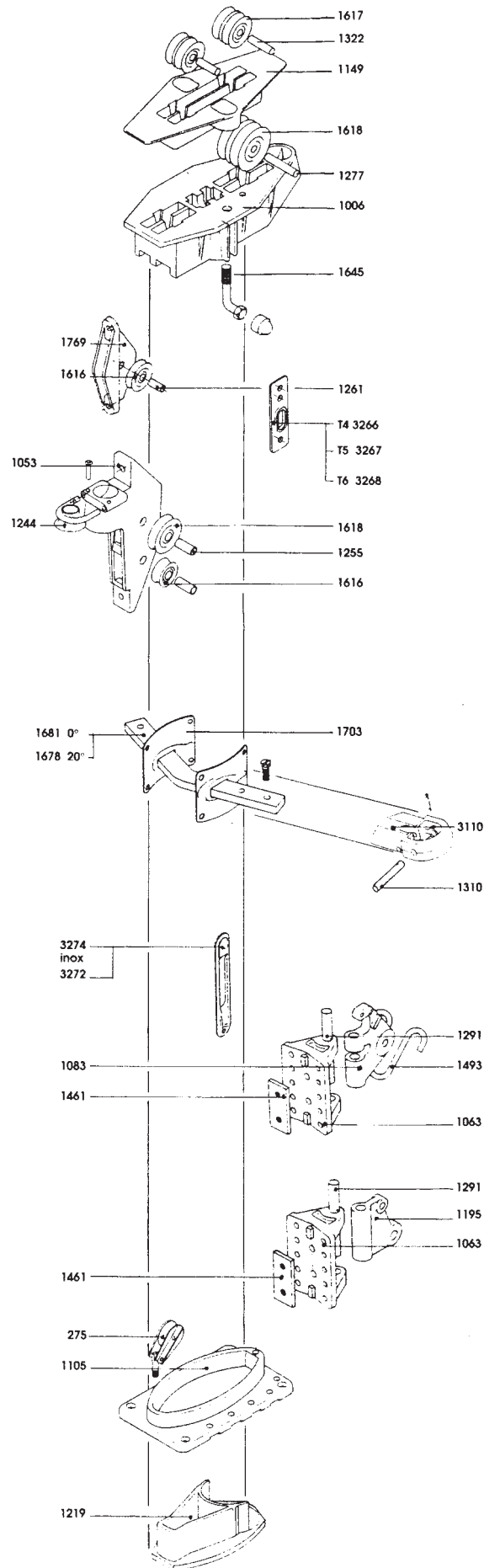
Z 401 7/8 R



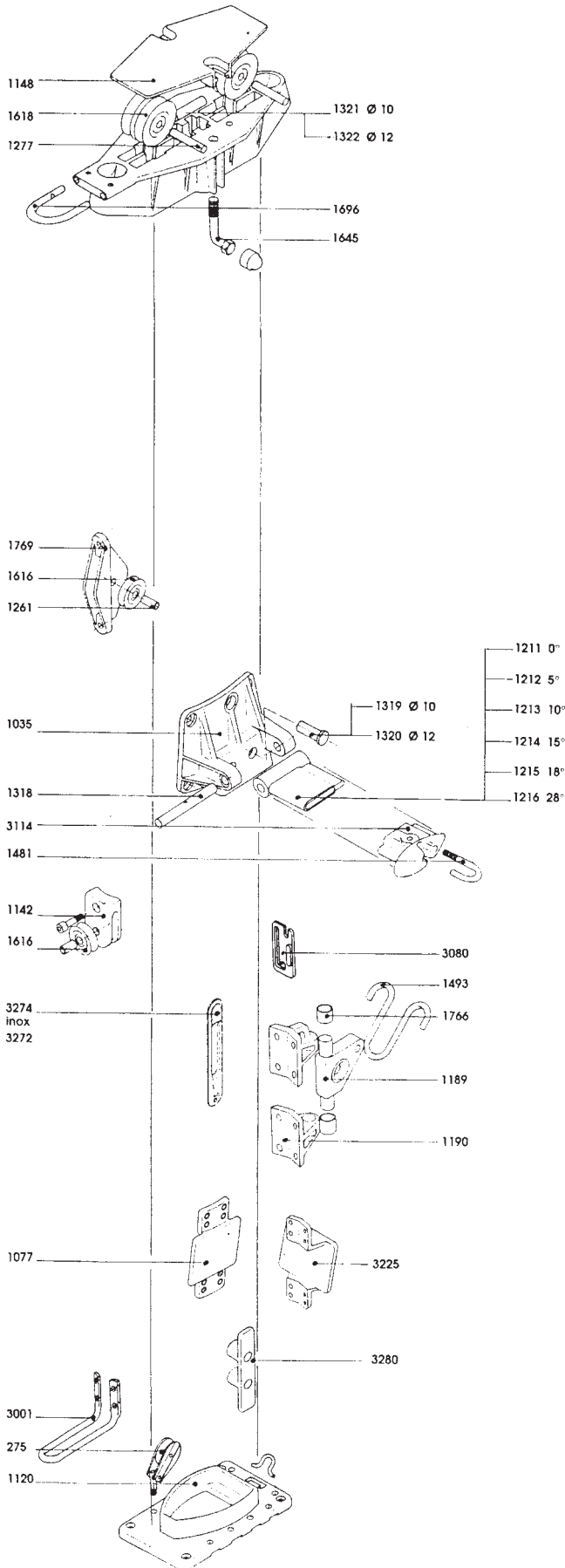
Z 400 E



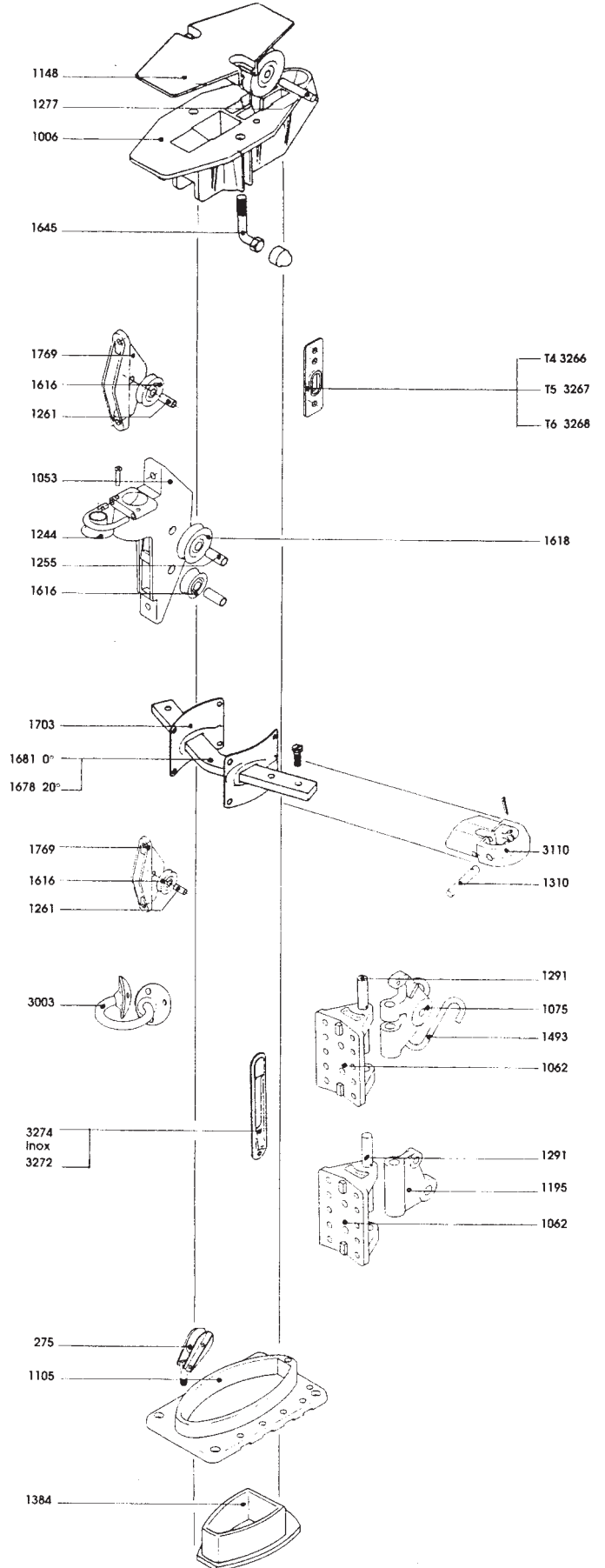
Z 400 E 7/8



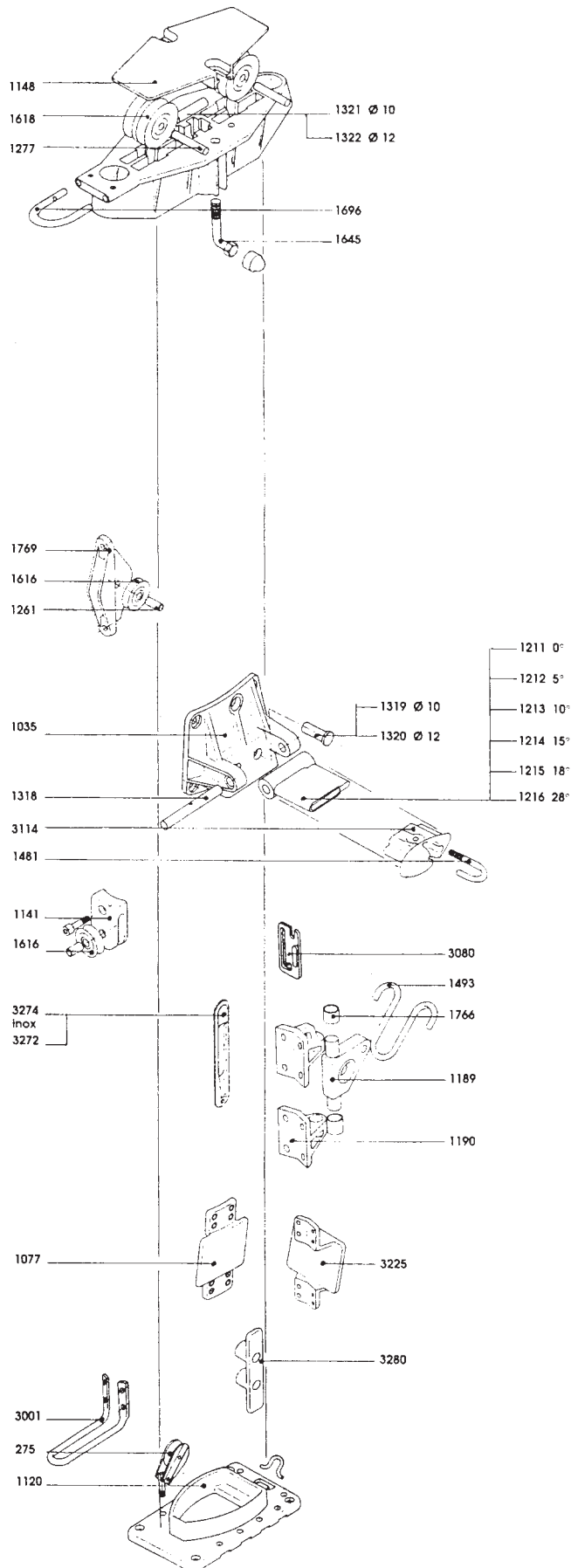
Z 500



Z 500 7/8

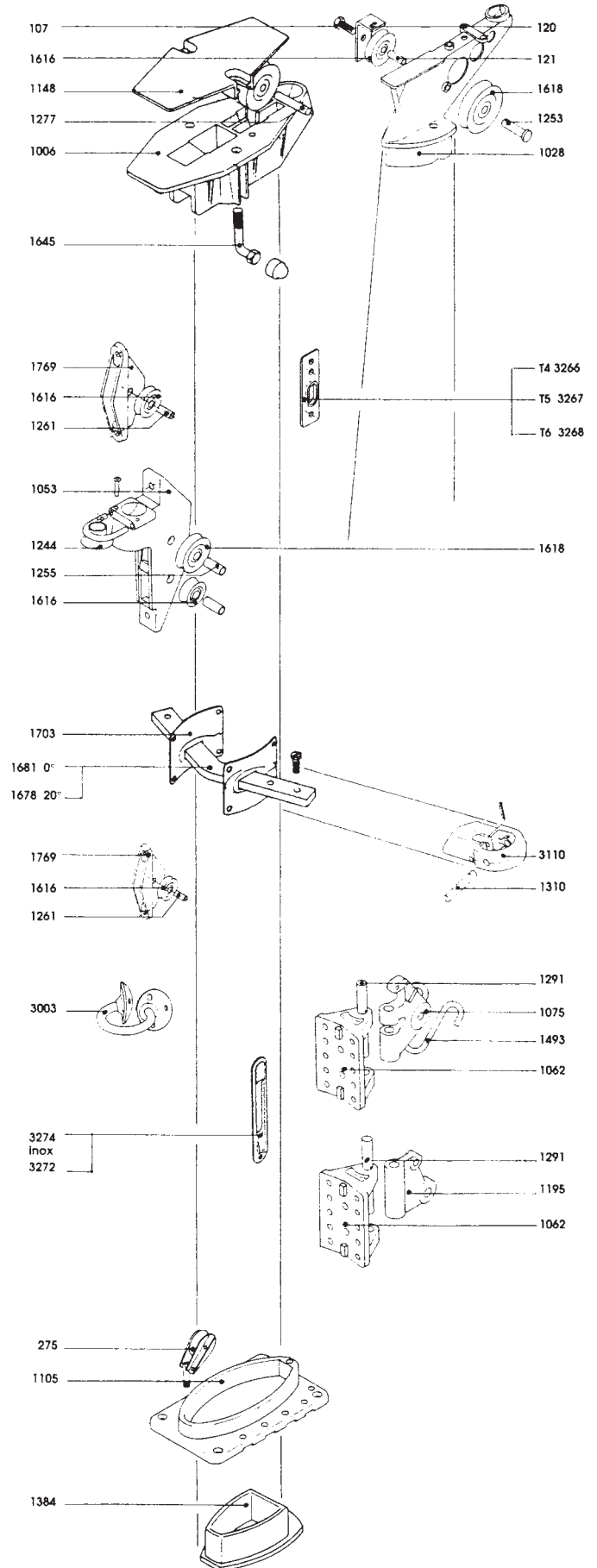


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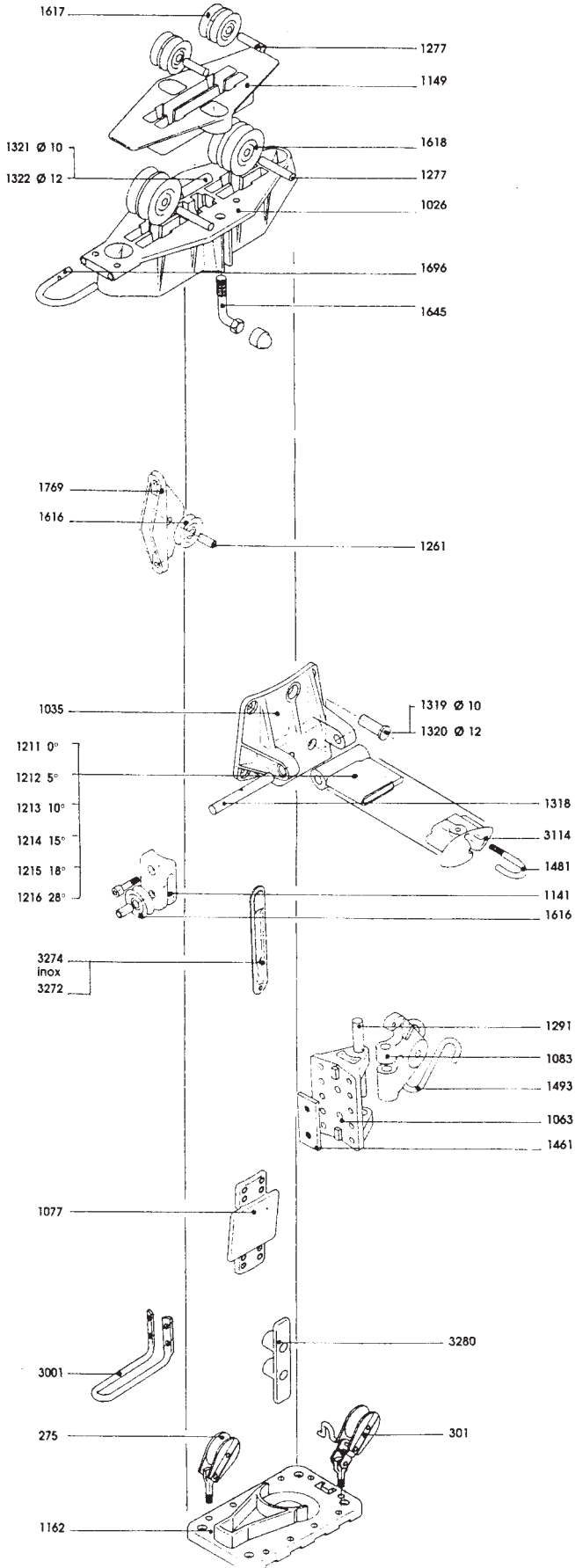


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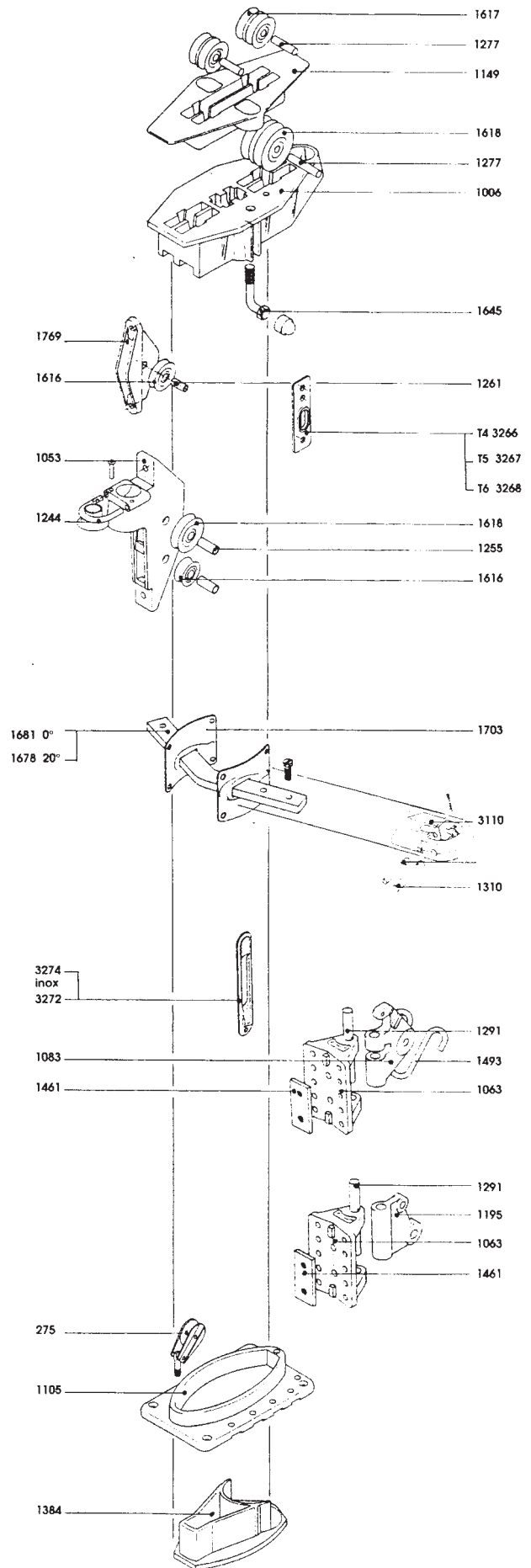
Z 501 7/8 R



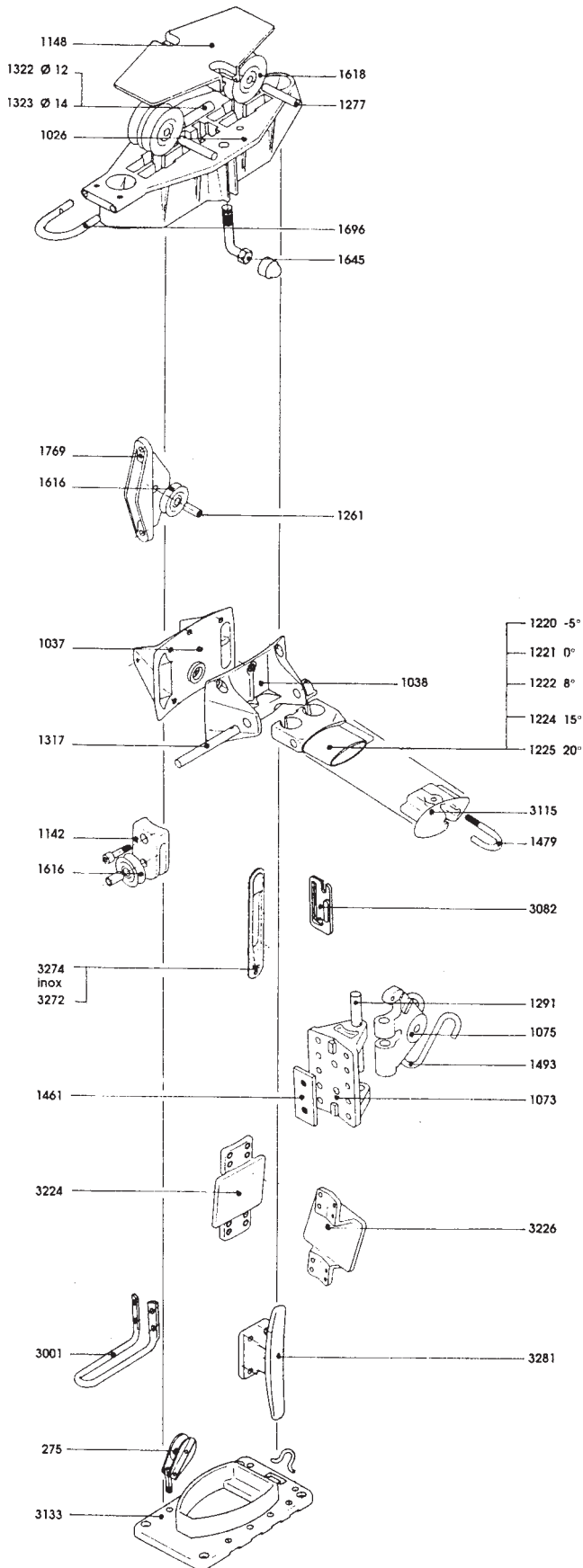
20 Z 500 E



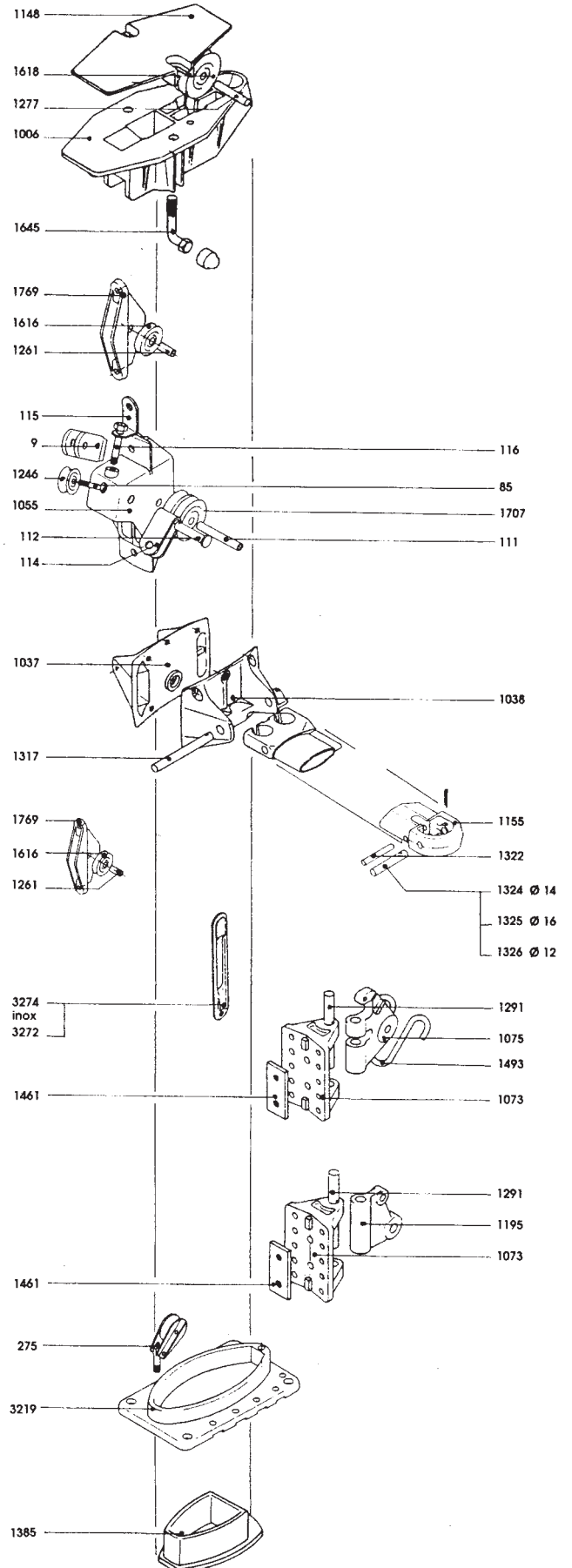
Z 500 E 7/8



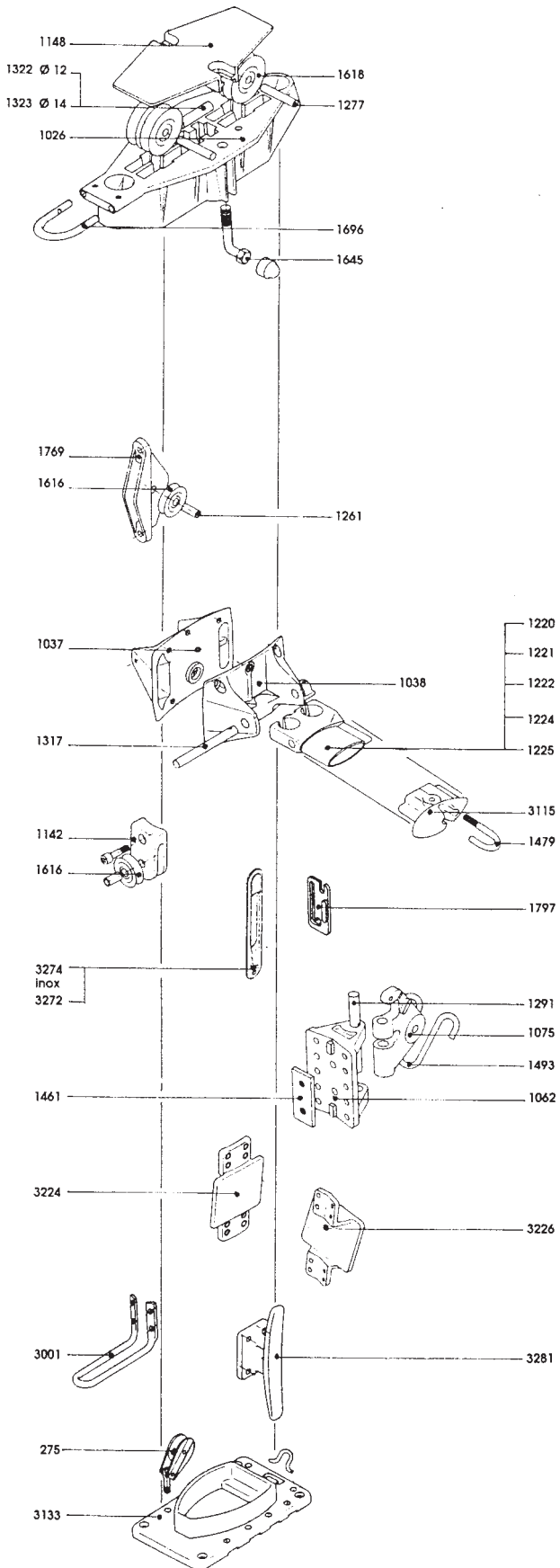
Z 600



Z 600 7/8

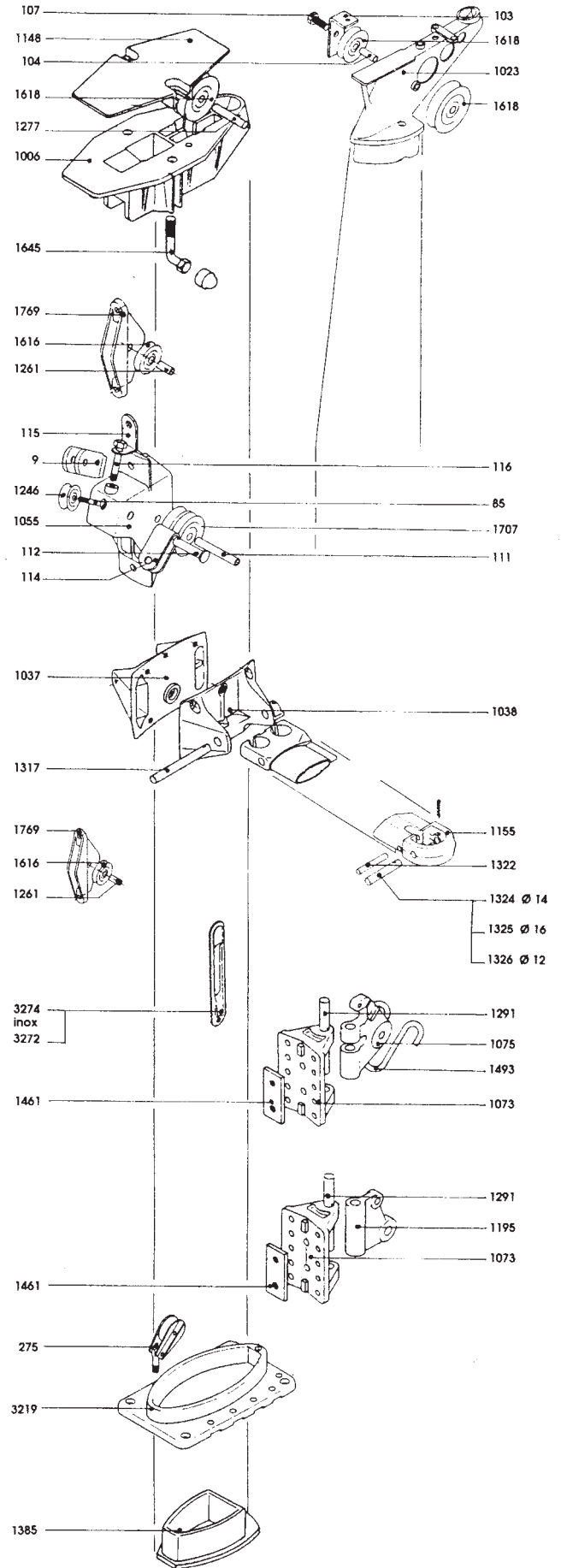


Z 601

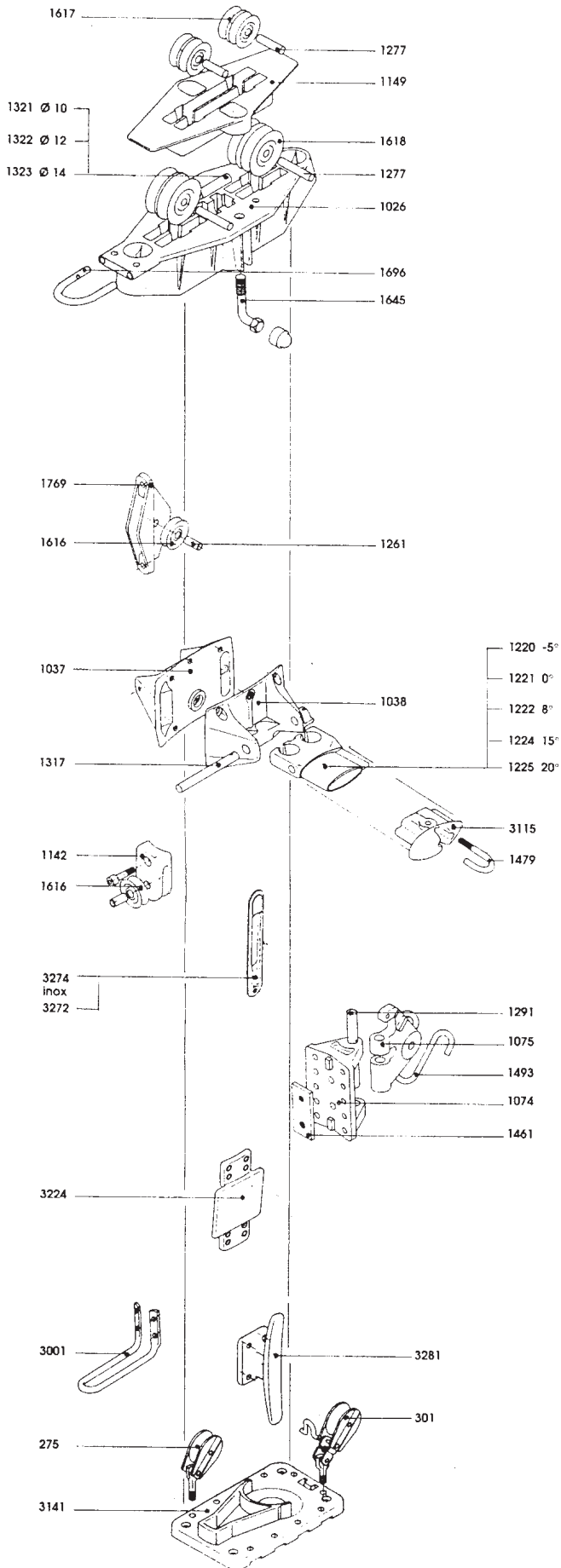


Z 601 7/8

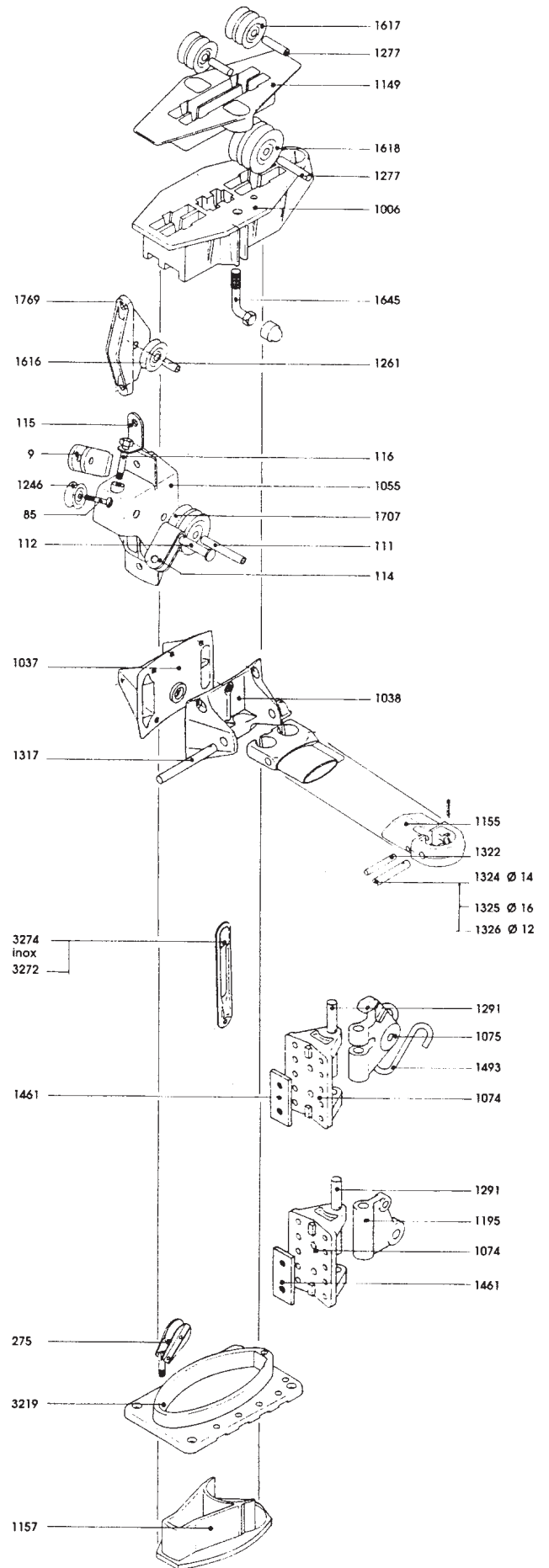
Z 601 7/8 R



Z 600 E



Z 600 E 7/8

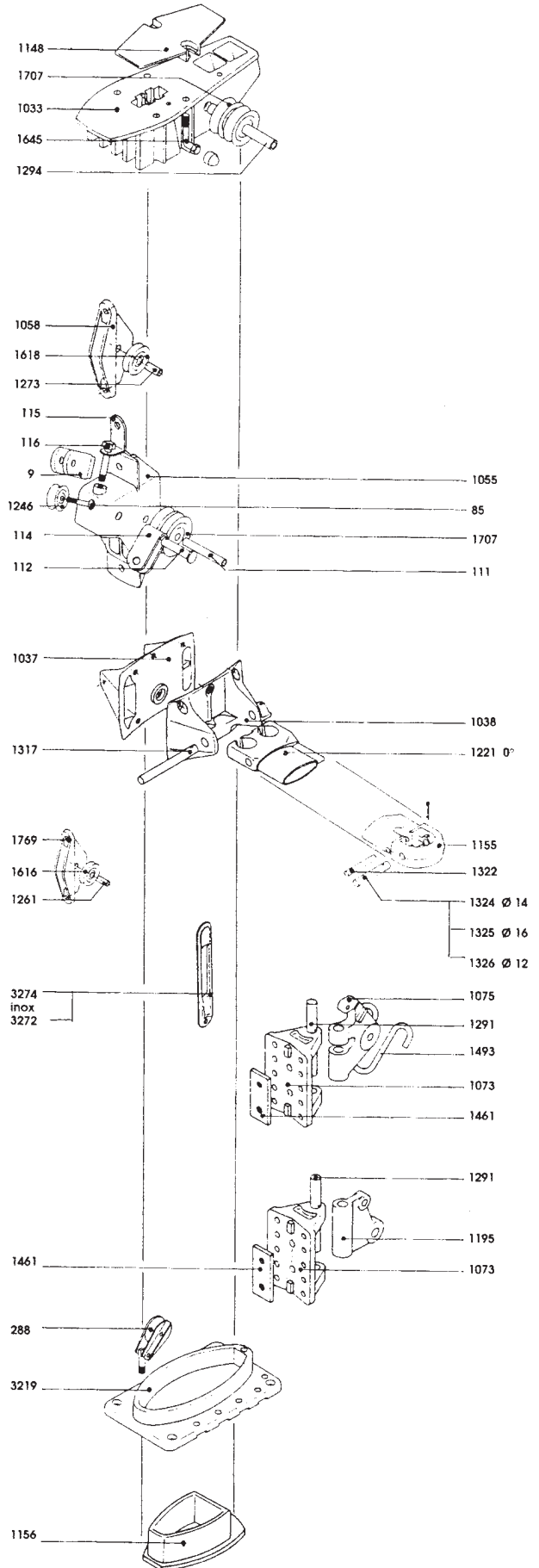
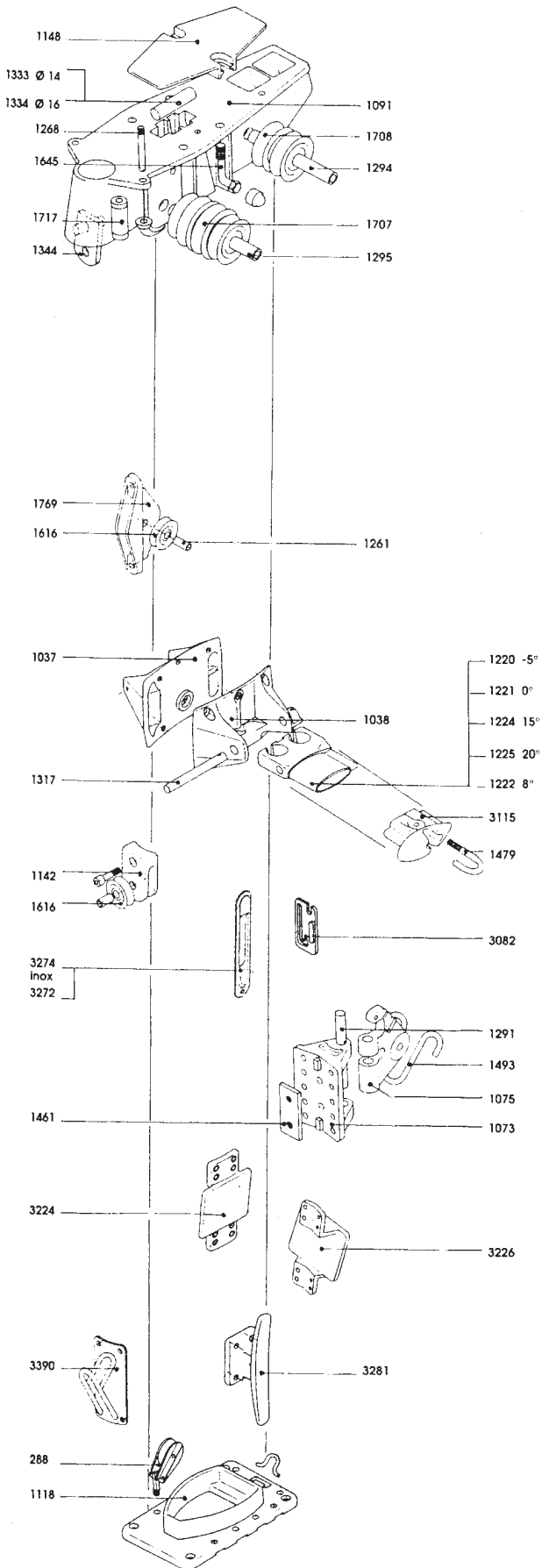


MÂTS / MASTS

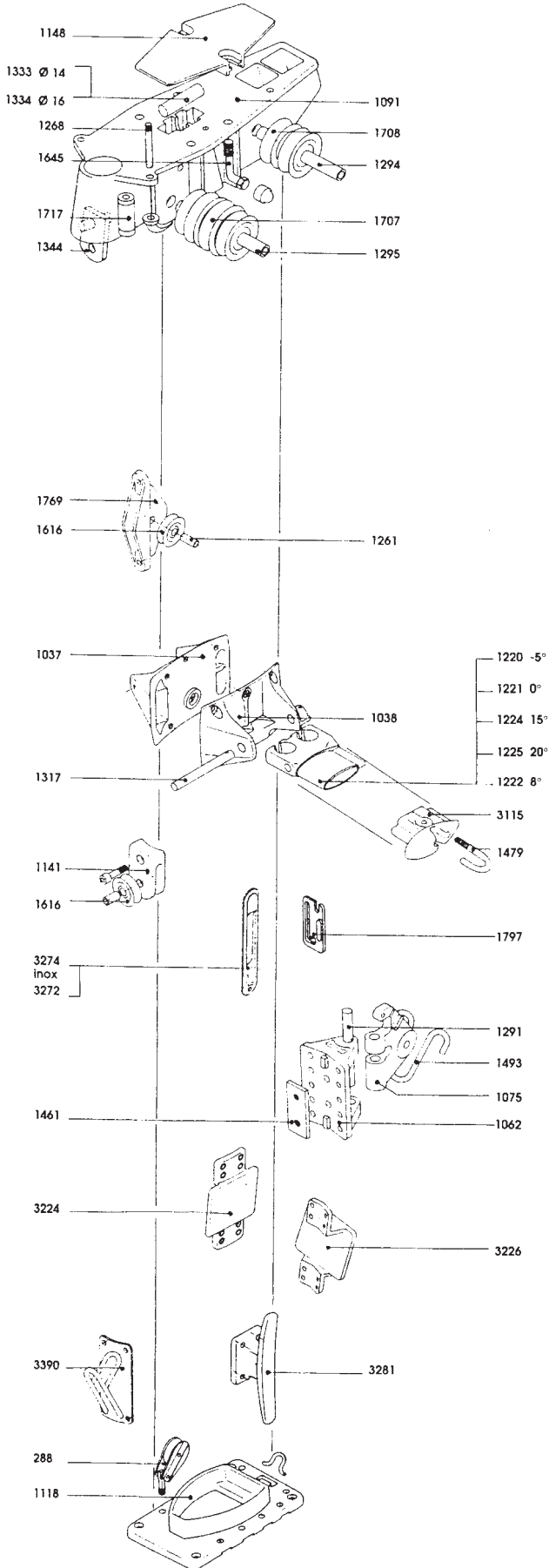
24

Z 700

Z 700 7/8

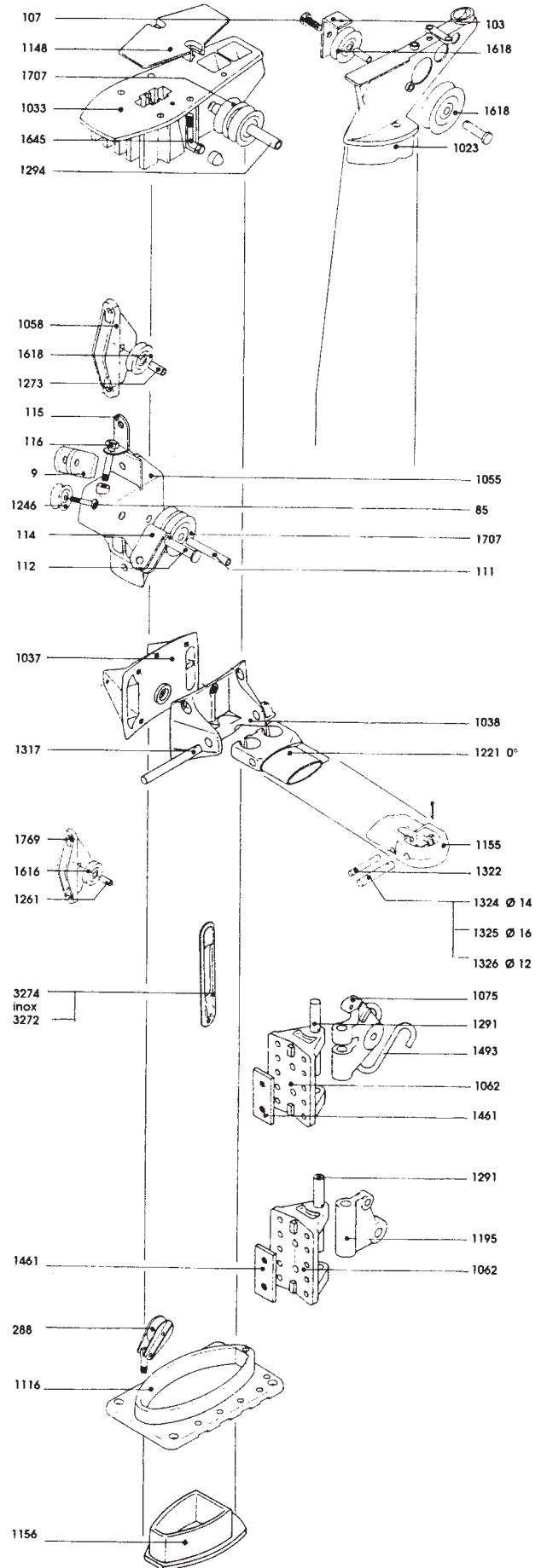


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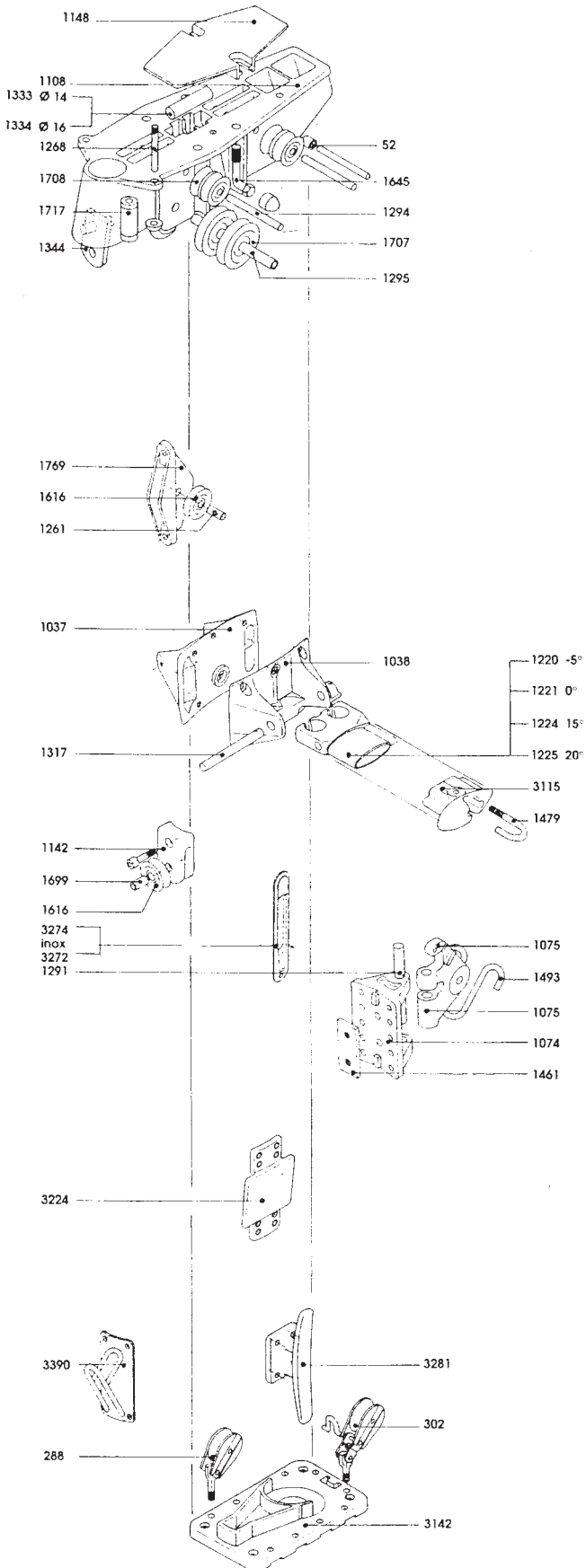


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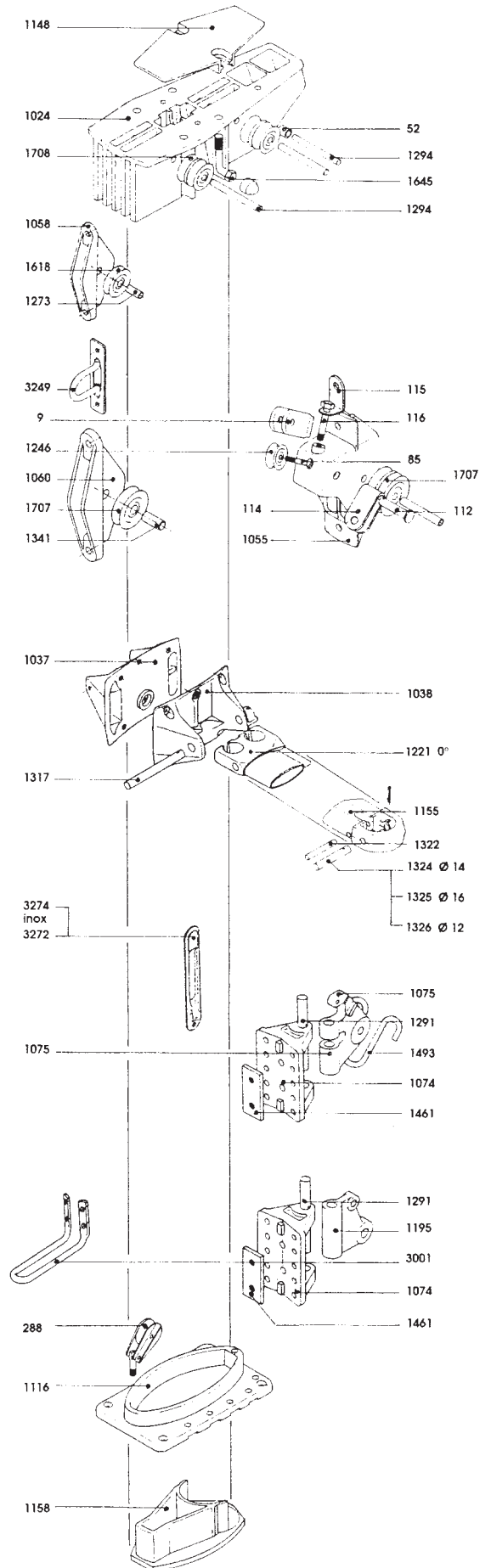
Z 701 7/8 R



Z 700 E

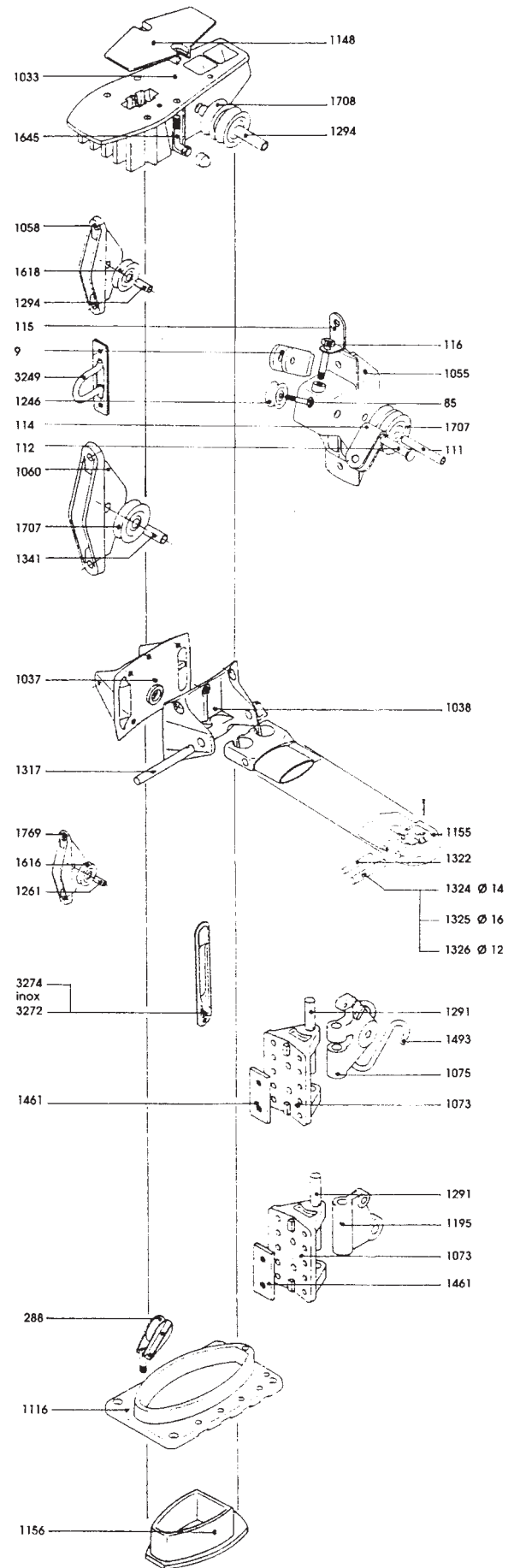
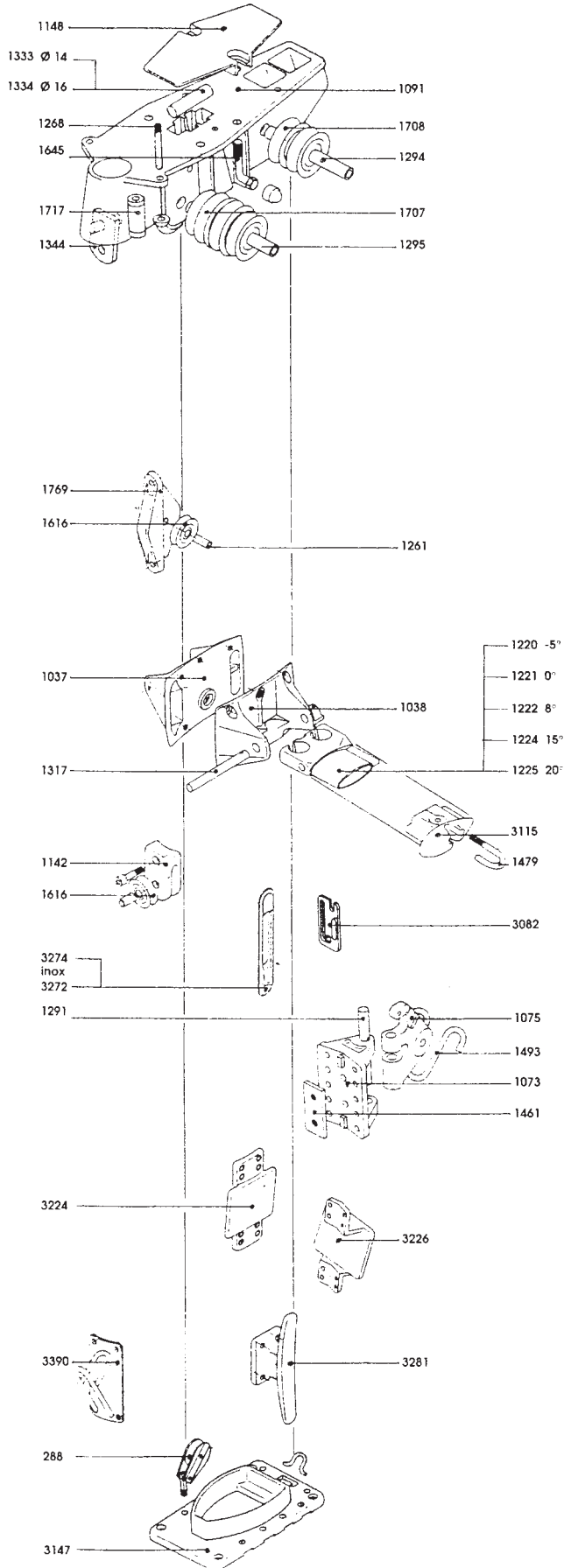


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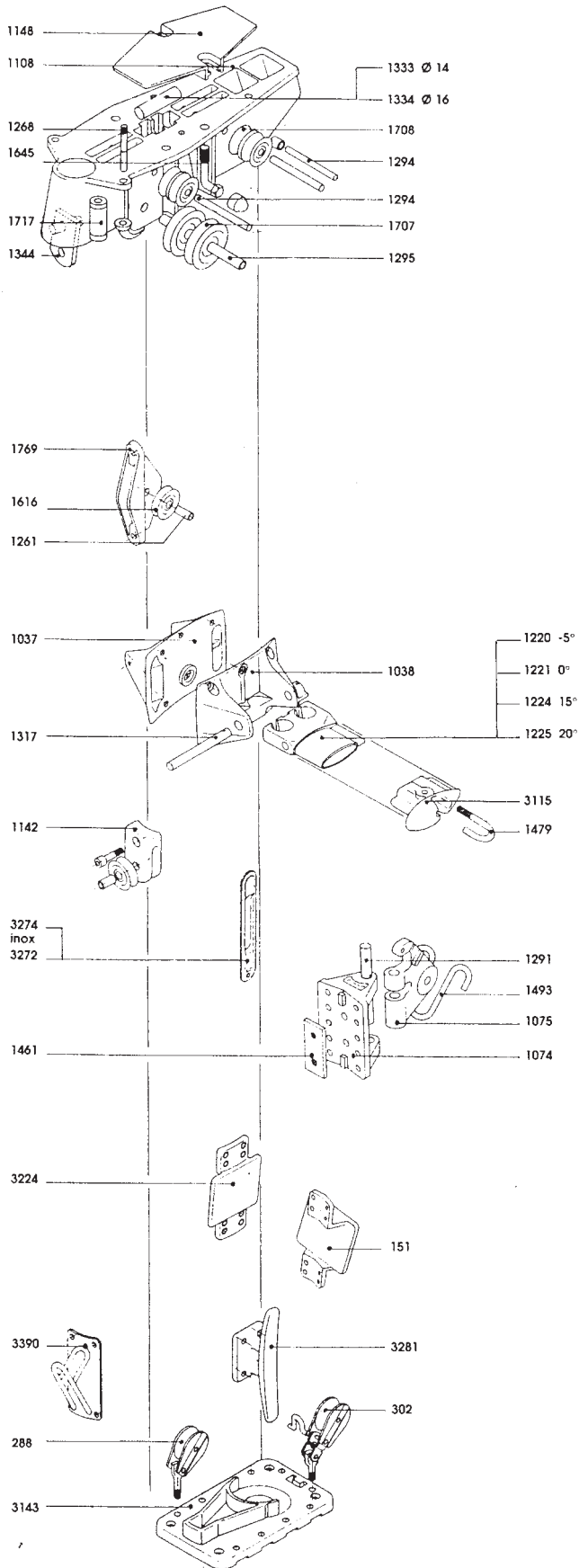


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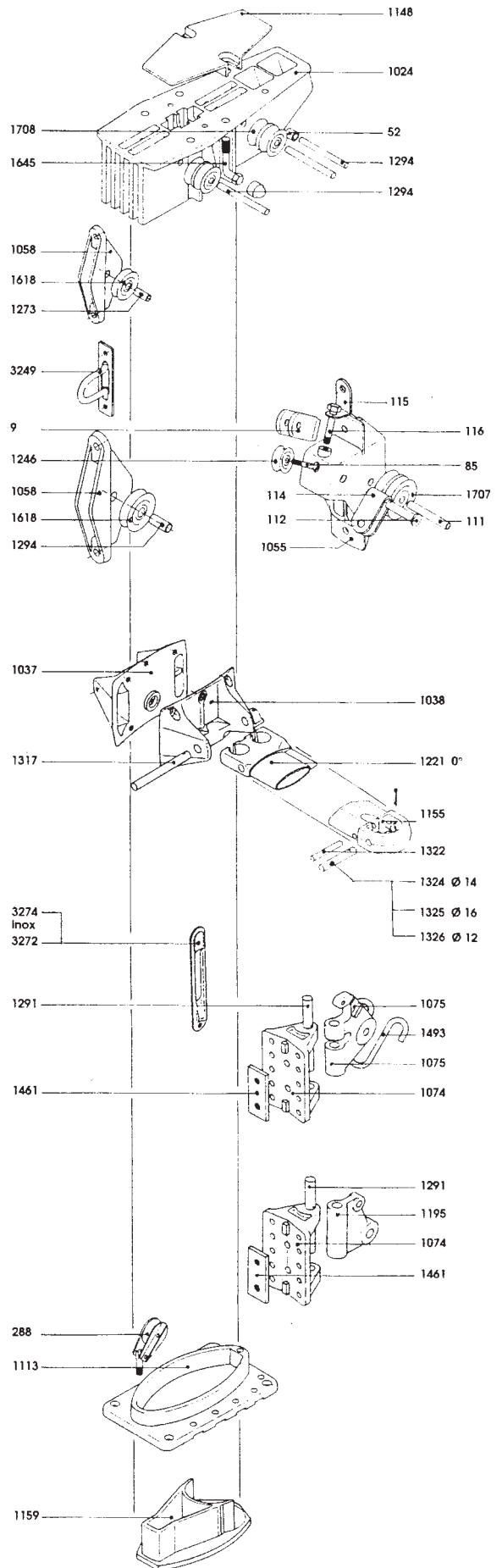
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Z 800 E

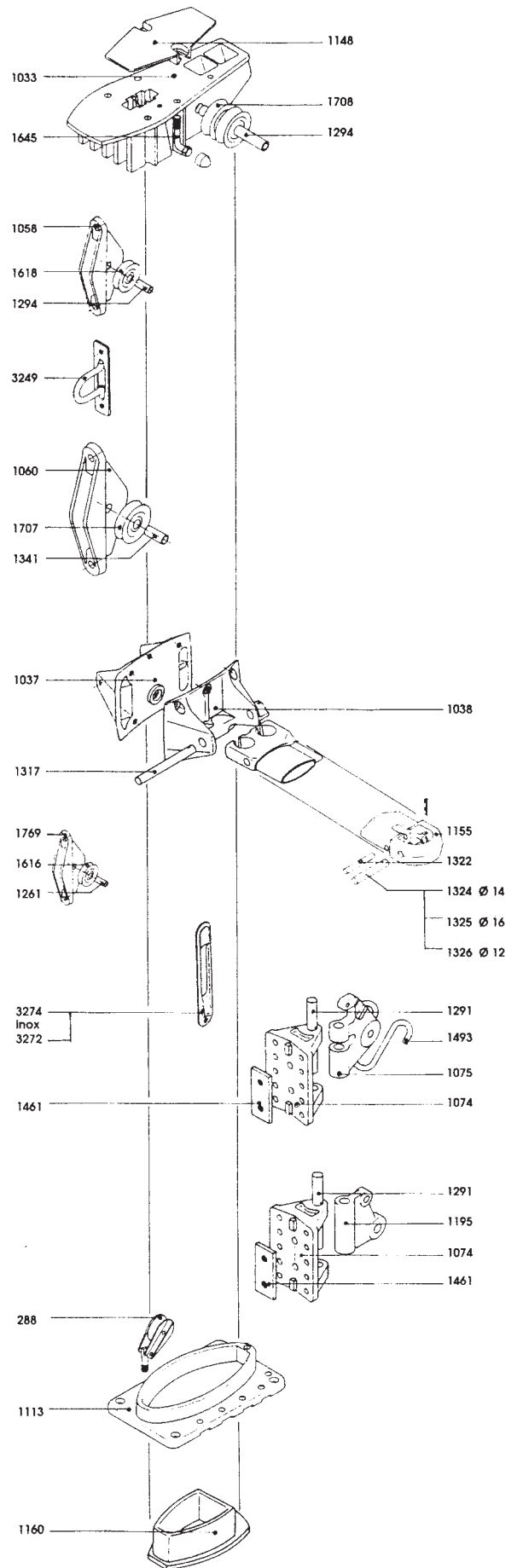
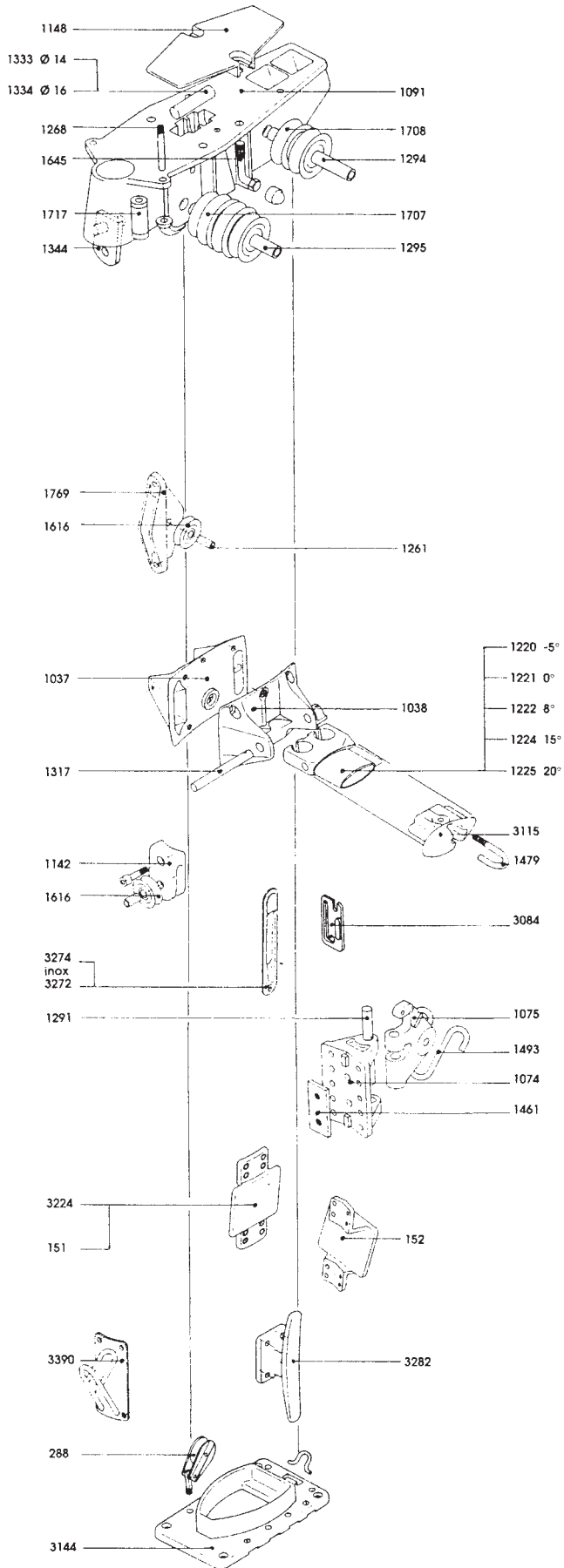


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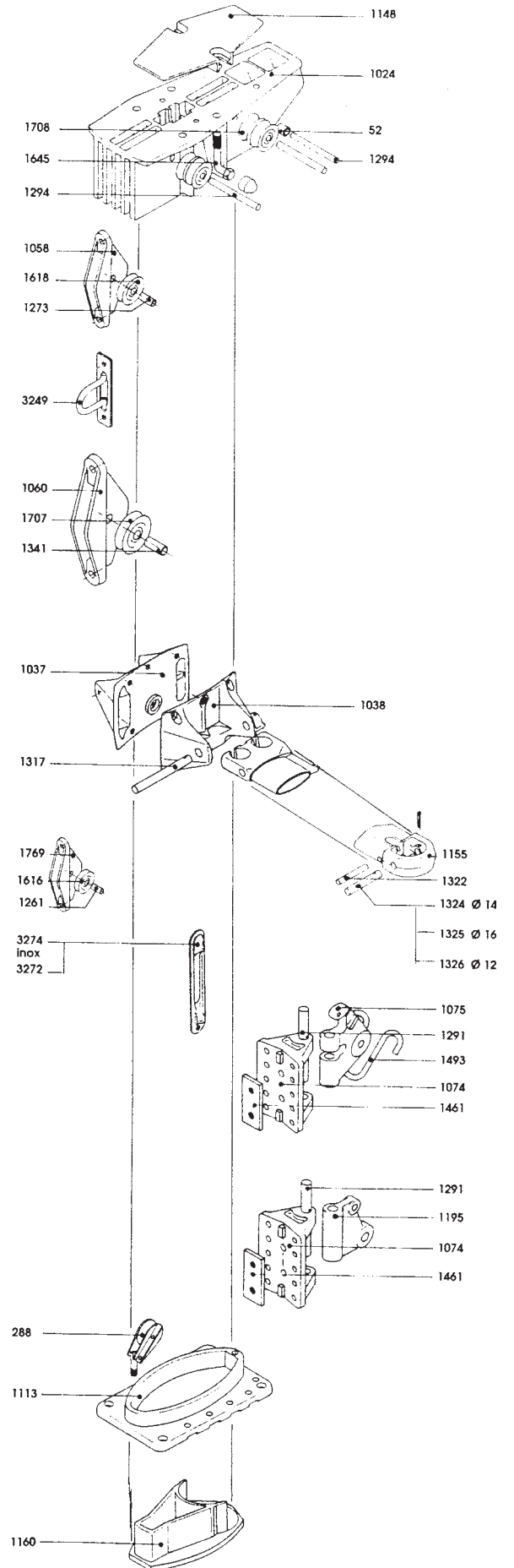
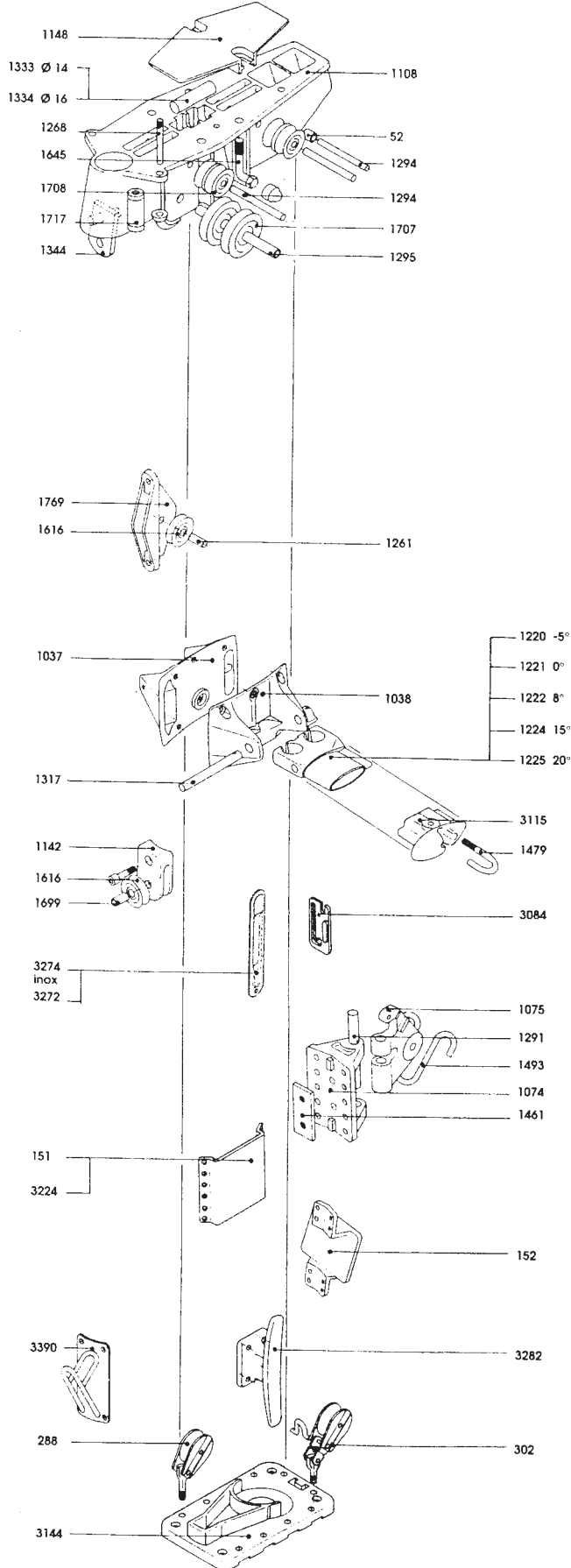
Z 900

Z 900 7/8

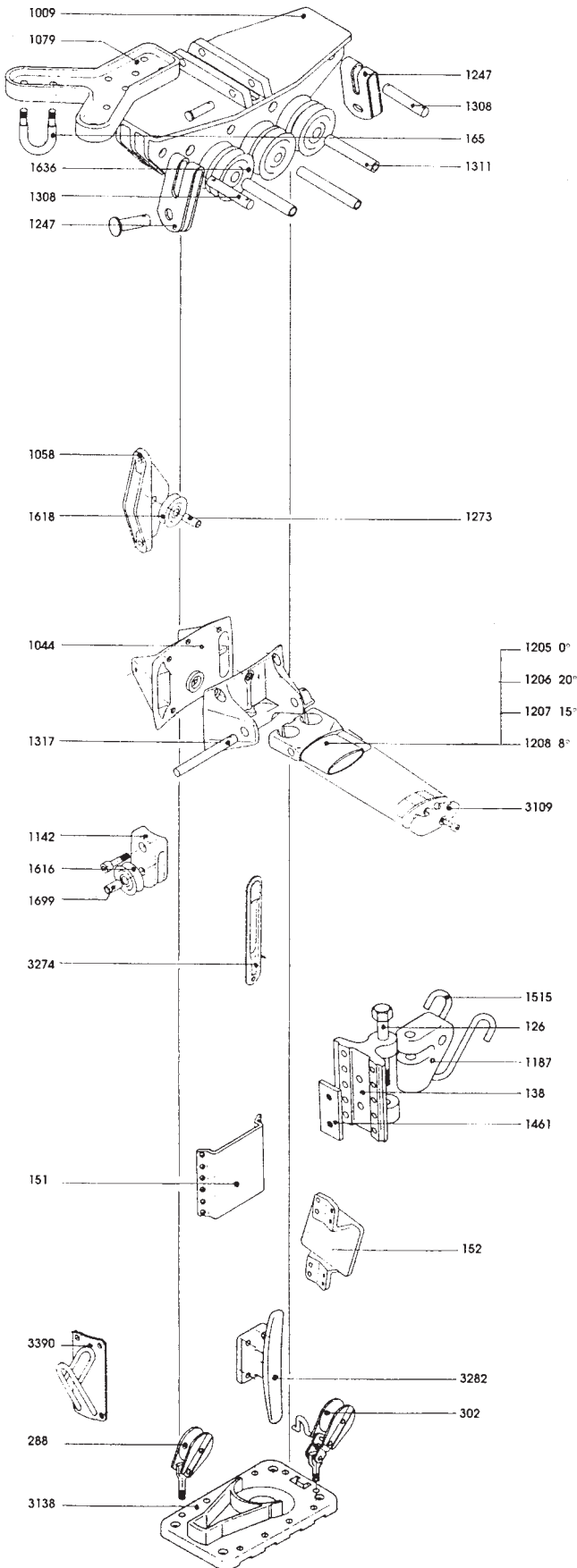


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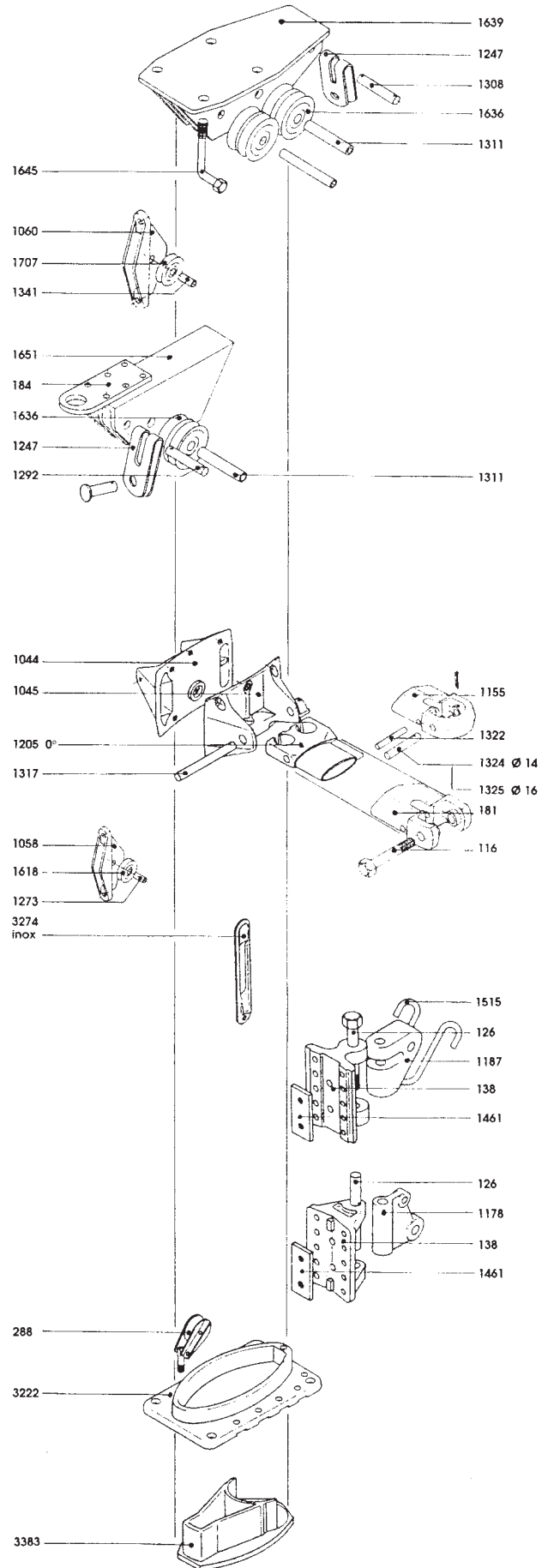
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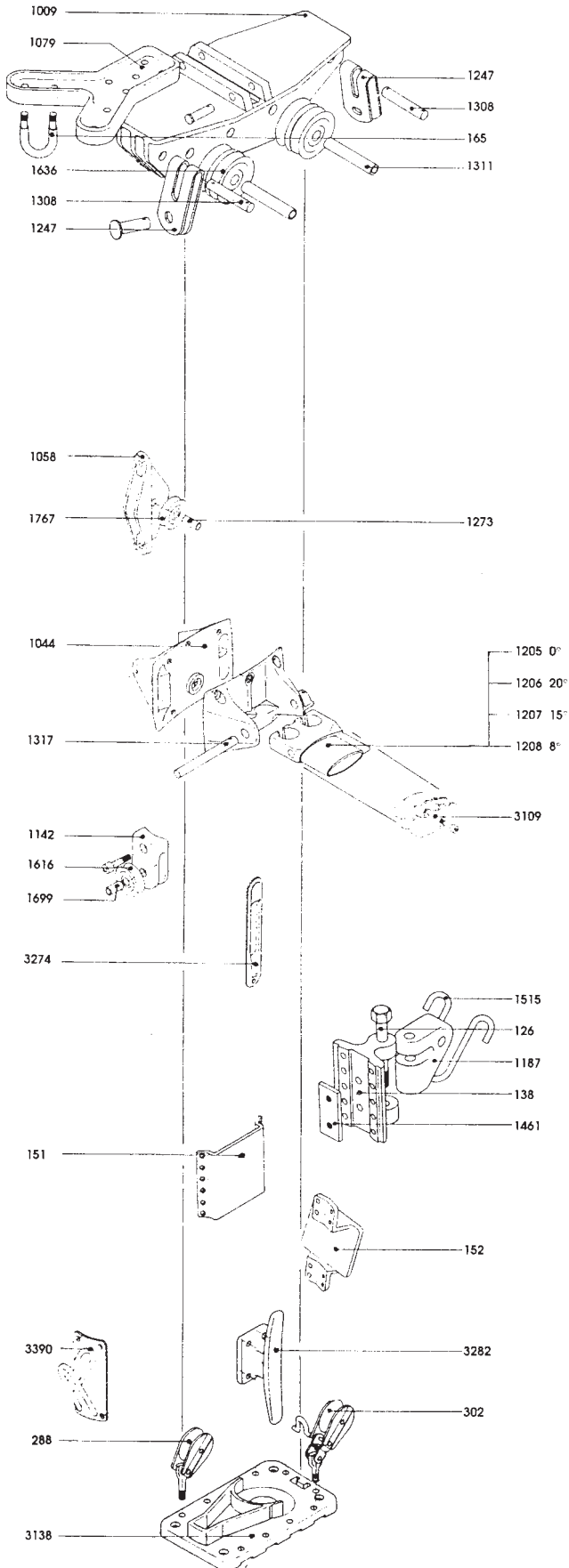
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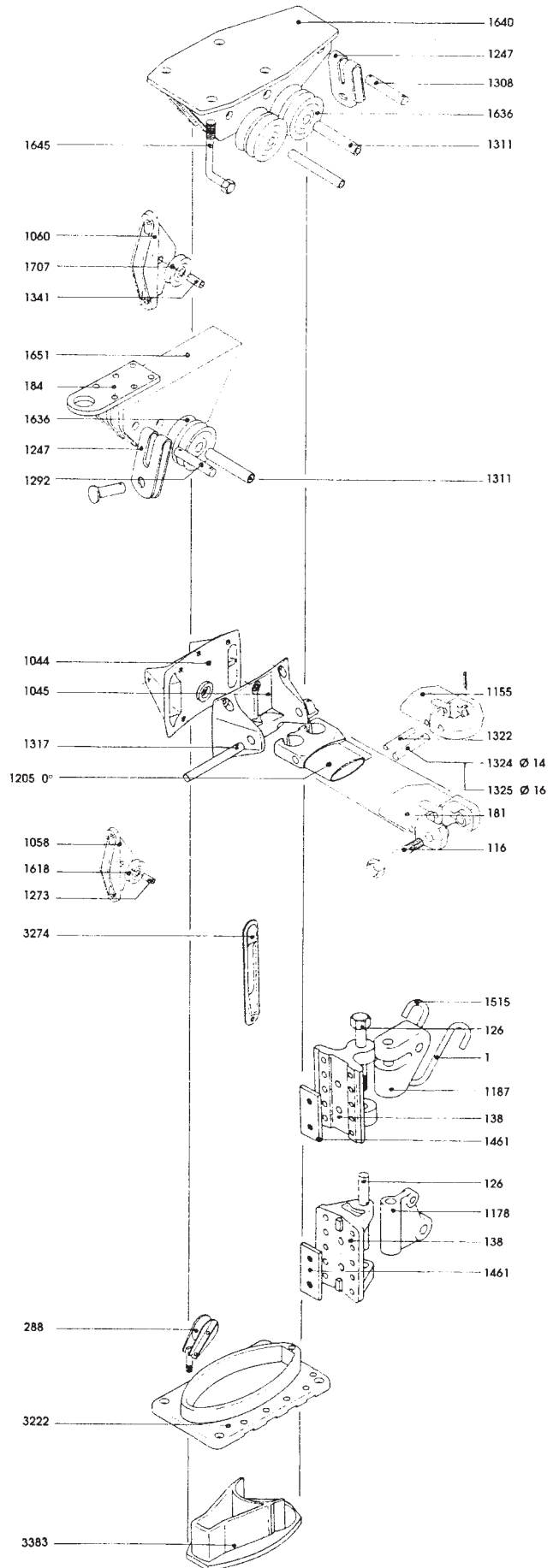
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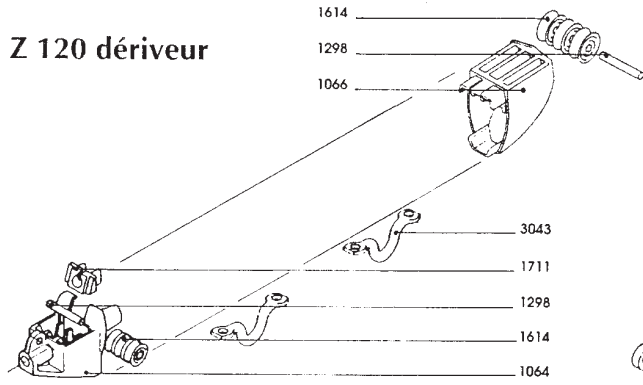
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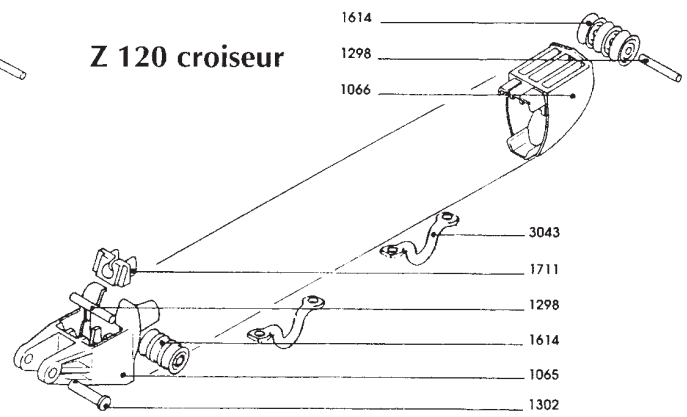
Z 1100 E 7/8



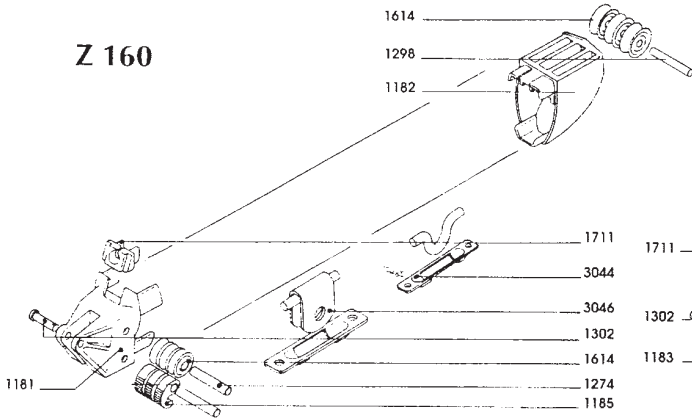
Z 120 dériveur



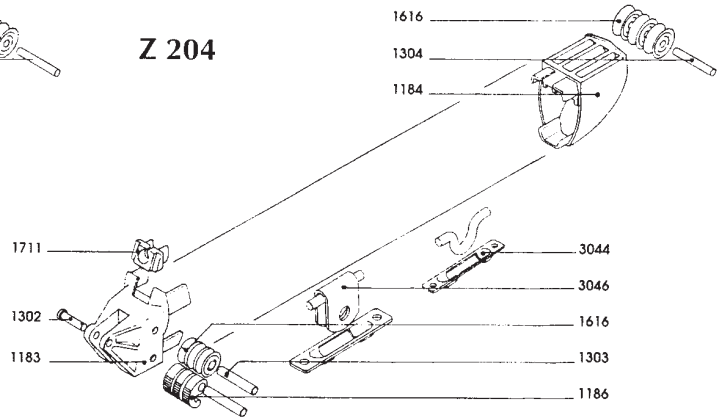
Z 120 croiseur



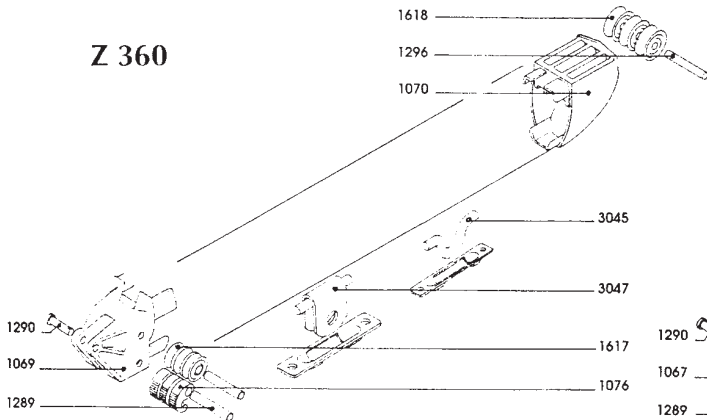
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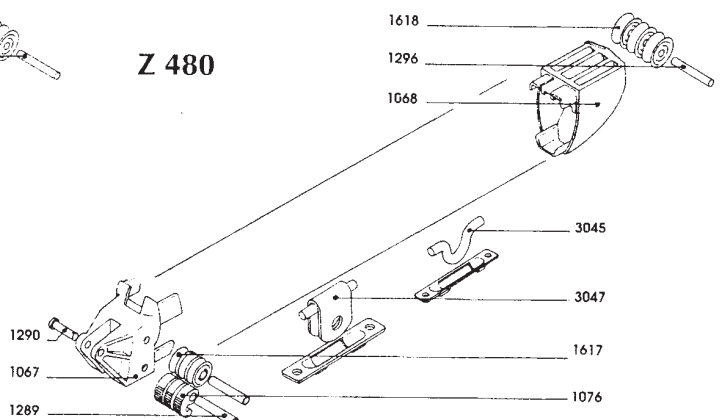
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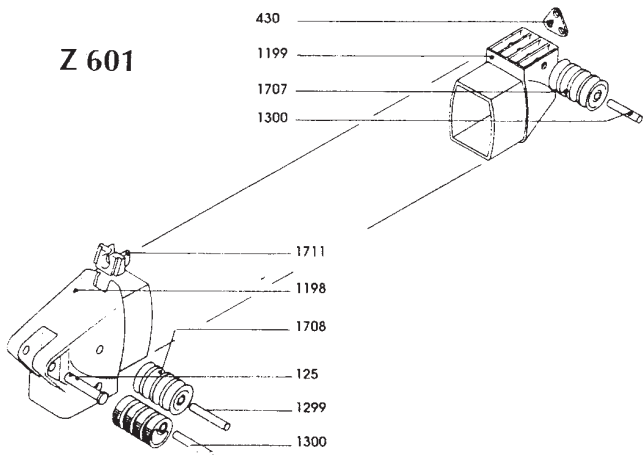
Z 360



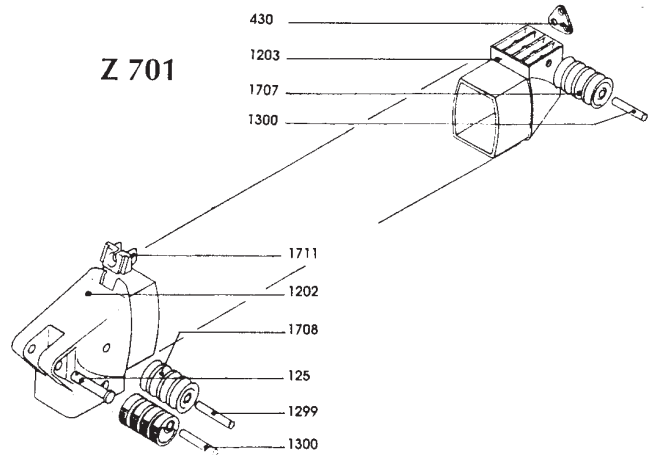
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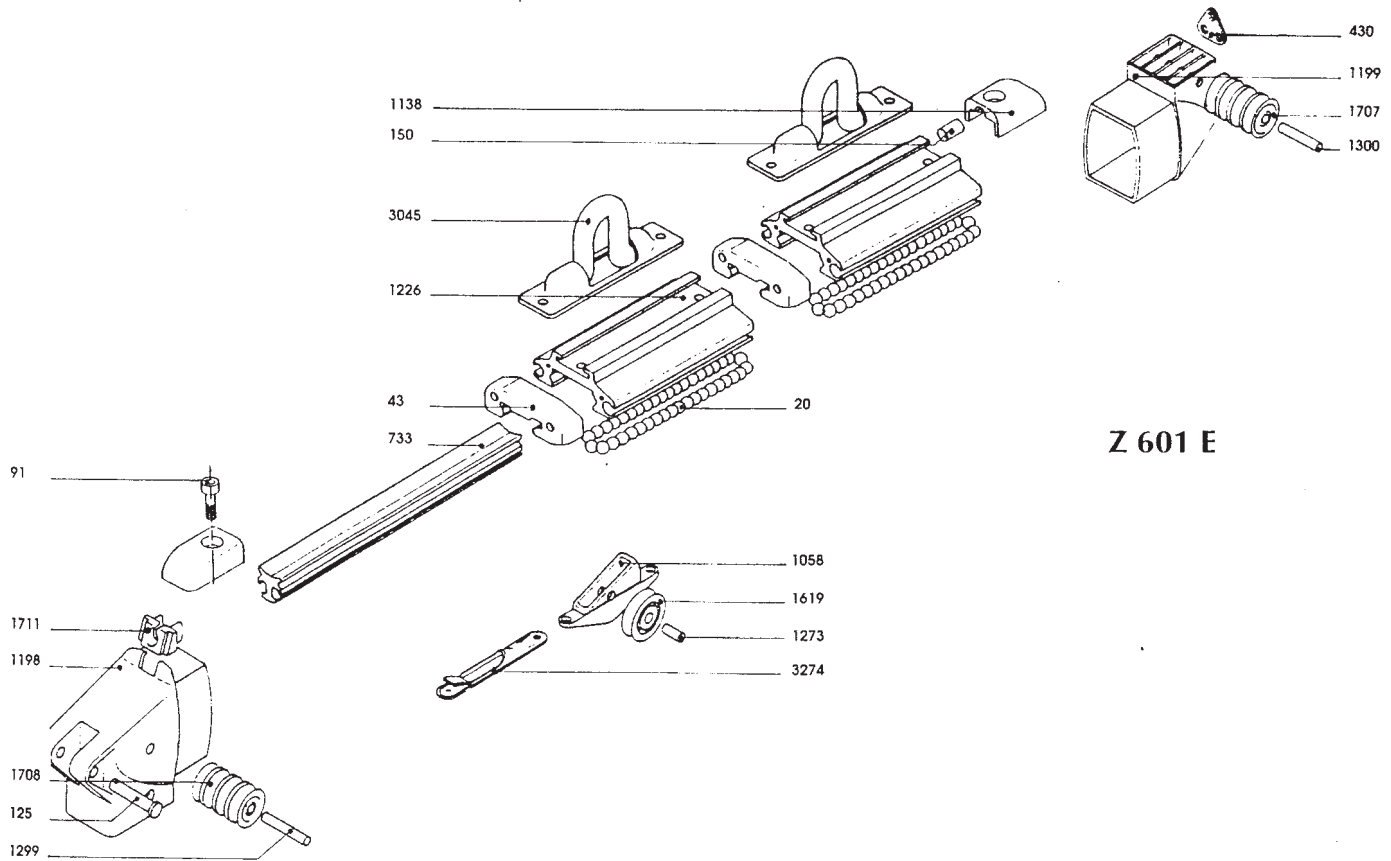
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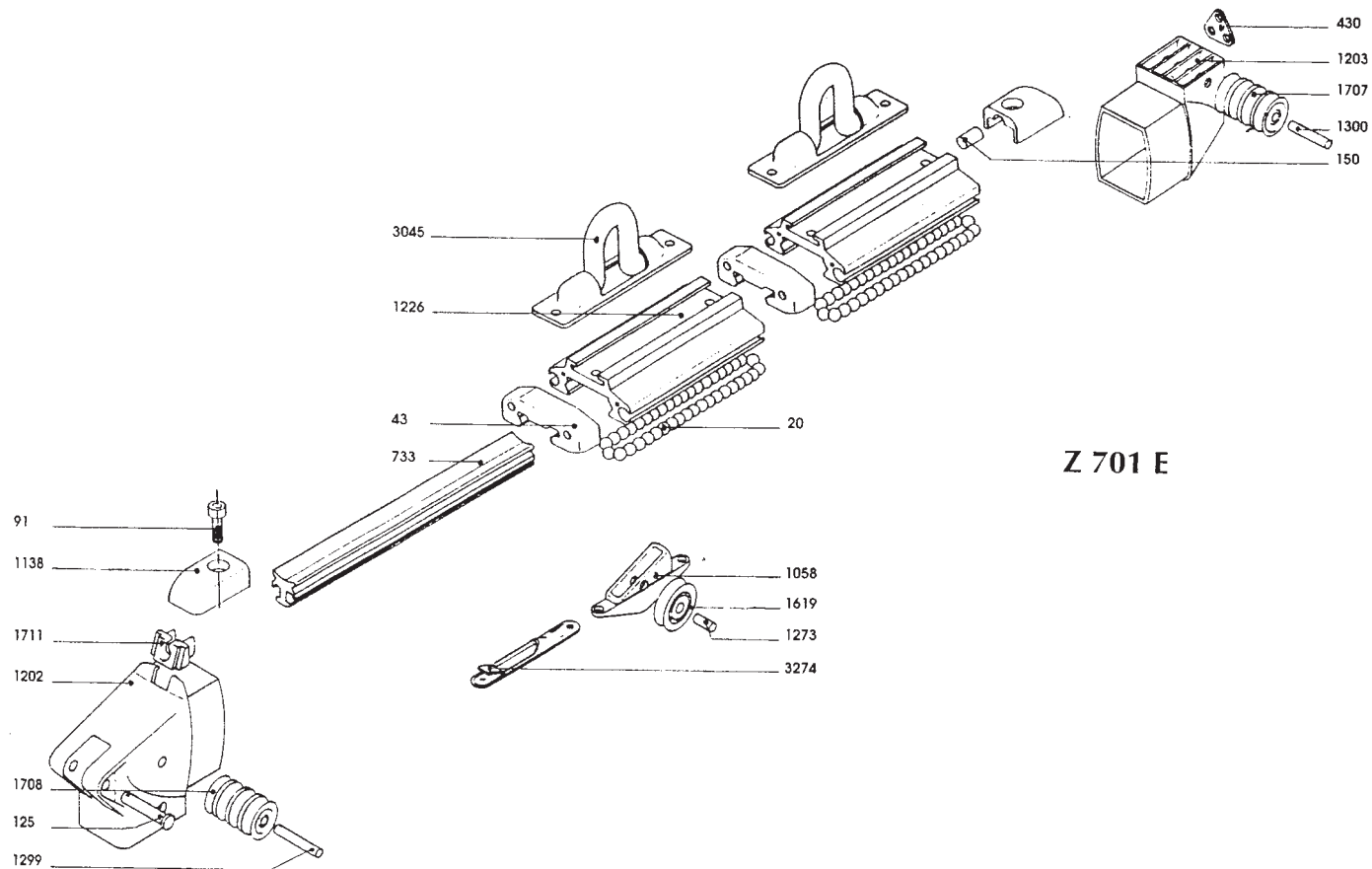
Z 701



BÔMES POUR MÂT ENROULEUR BOOMS FOR FURLING MAST

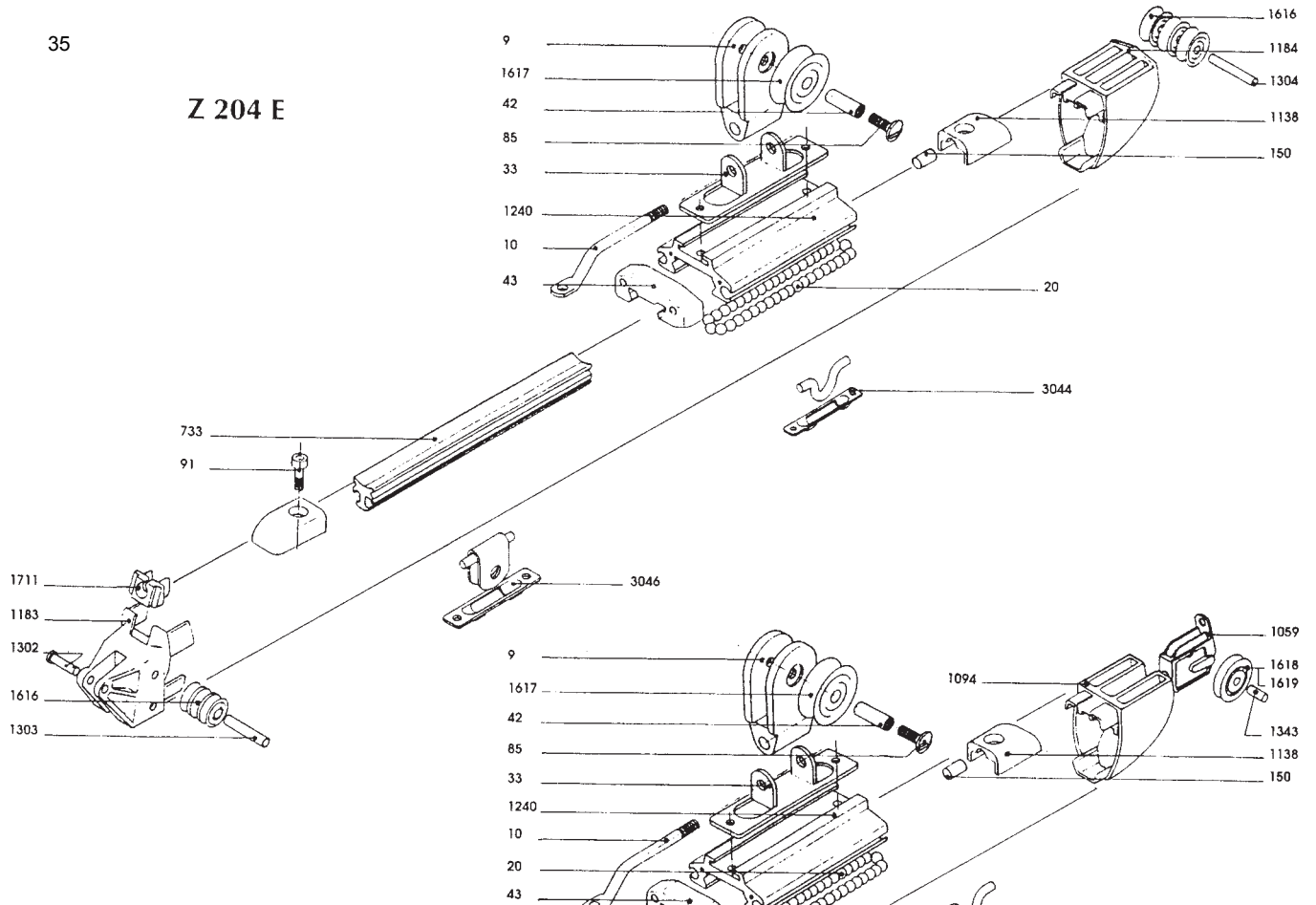


Z 601 E

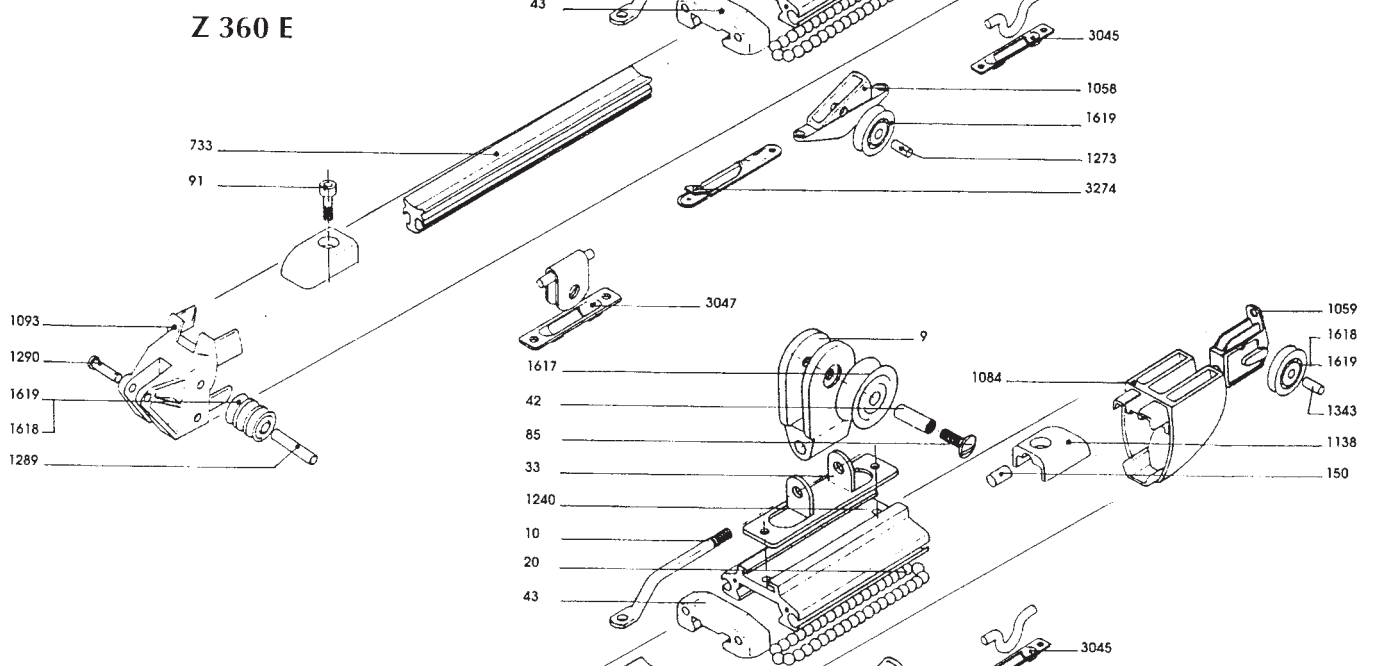


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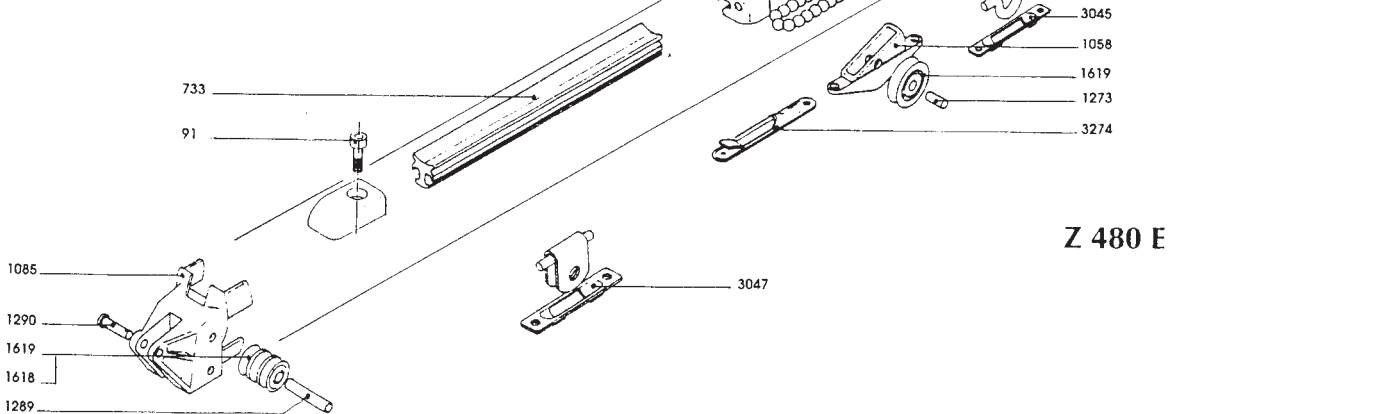
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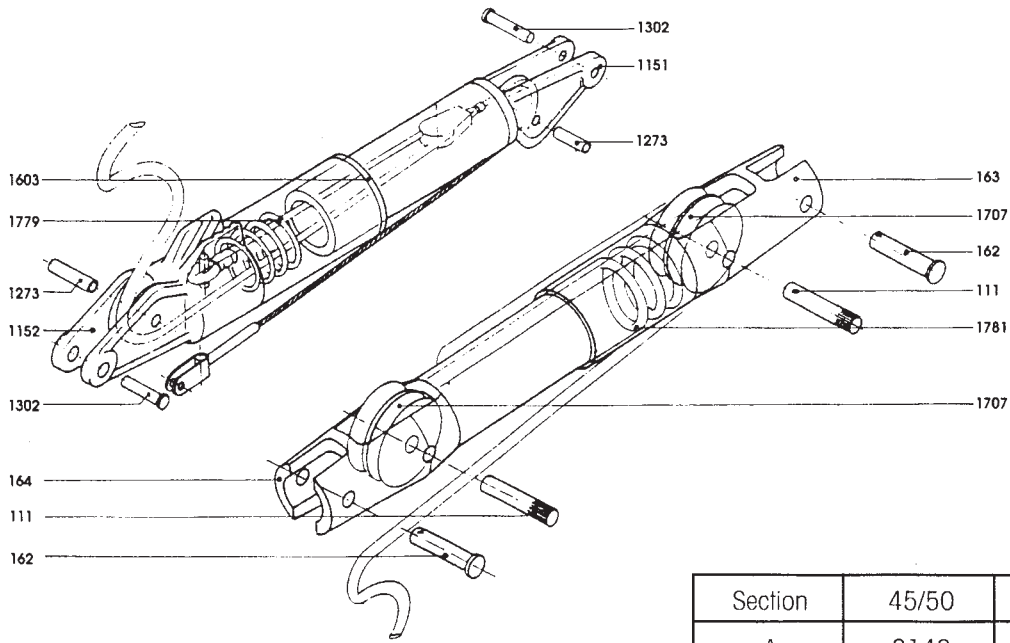
Z 360 E



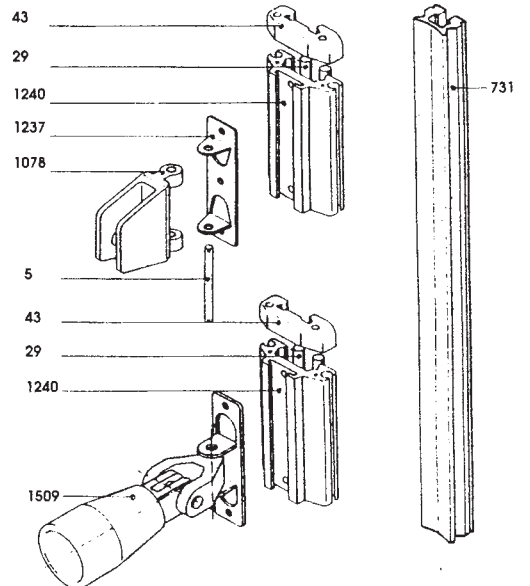
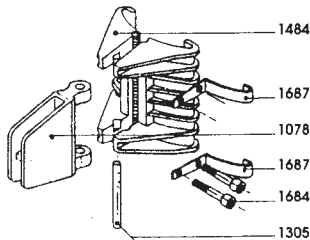
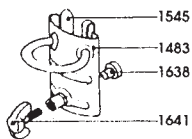
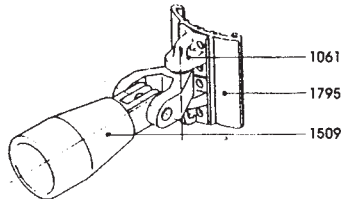
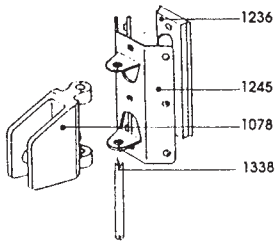
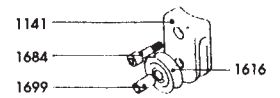
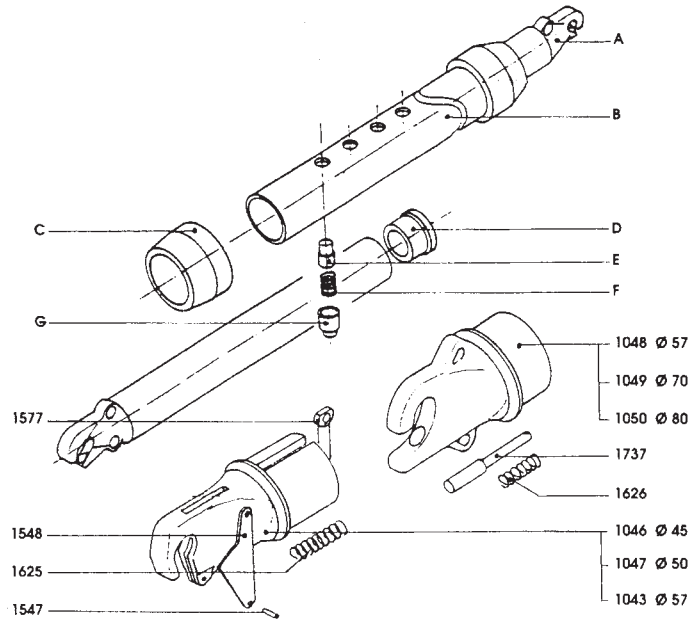
Z 480 E



TANGON, TANGON TÉLESCOPIQUE, HALEBAS RIGIDE, CHARIOT SPI POLE, TELESCOPIC POLE, RIGID VANG, SPI POLE SLIDE

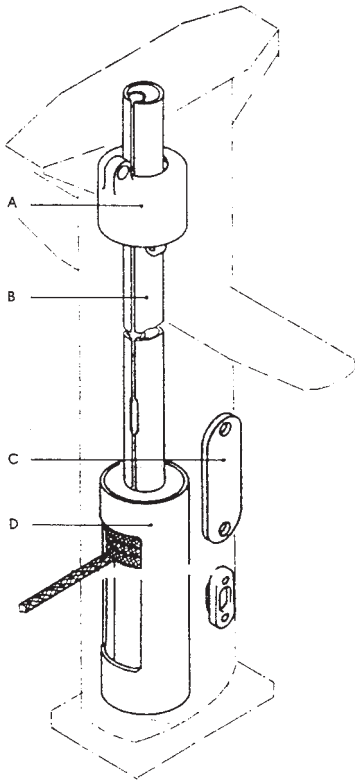


Section	45/50	50/57	57/70	70/80
A	3148	3150	3152	3153
B	968	966	956	952
C	1602	1603	1604	1607
D	1786	1658	1603	1604
E	1598	1599	1600	1601
F	1624	1626	1626	1626
G	1598	1599	1600	1601



MÉCANISME D'ENROULEMENT - MAT ENROULEUR MAST FURLING MECHANISM

37



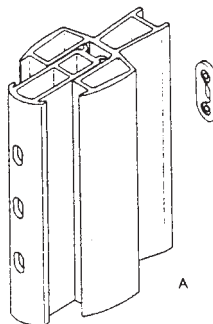
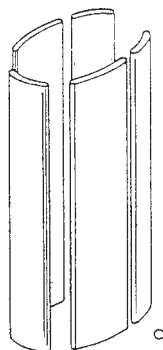
Section	Z 400 E	Z 500 E	Z 600 E	Z 700 E	Z 800 E	Z 900 E	Z 1100 E	Z 1400 E	Z 77	Z 110
Profil d'enroulement <i>Furling extrusion</i> _B	Z 55	Z 55	Z 55	Z 55	Z 55	Z 55	Z 55	Z 55	Z 55	Z 55
Émerillon <i>Halyard swivel</i> _A	3164	3164	3165	3165	3165	3166	3159		3167	3165
Mécanisme d'enroulement <i>Furling mechanism</i> _b	3213	3213	3214	3216	3216	3215	3218		3217	3216
Mécanisme à "vis" <i>Furling mechanism with screw</i> _D			3204	3204	3204	3204	3204	3204		3204
Passe main <i>Mechanism maintenance cap</i> _c	3247	3247	3247	3247	3247	3247	3245	3245		
Manille point d'amure <i>Clew shackle</i>	3208	3208	3208	3208	3208	3208	3208	3208	3208	3208
Manille d'émerillon <i>Halyard swivel shackle</i>	3168	3168	3168	3168	3168	3168	1562	1562	3168	3168

MANCHONS / SLEEVES

Section _A	Z 400	Z 401	Z 500	Z 501	Z 600	Z 601	Z 700	Z 701	Z 800
Référence	3395	3395	3396	3396	3397	3397	3398	3398	3399

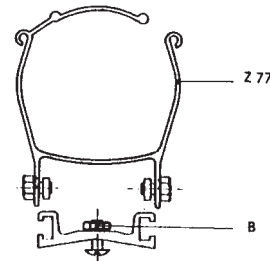
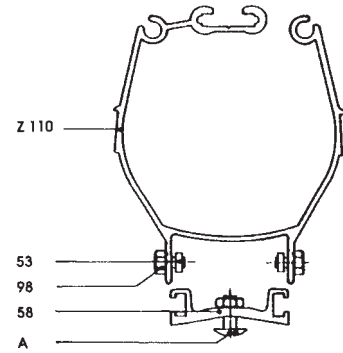
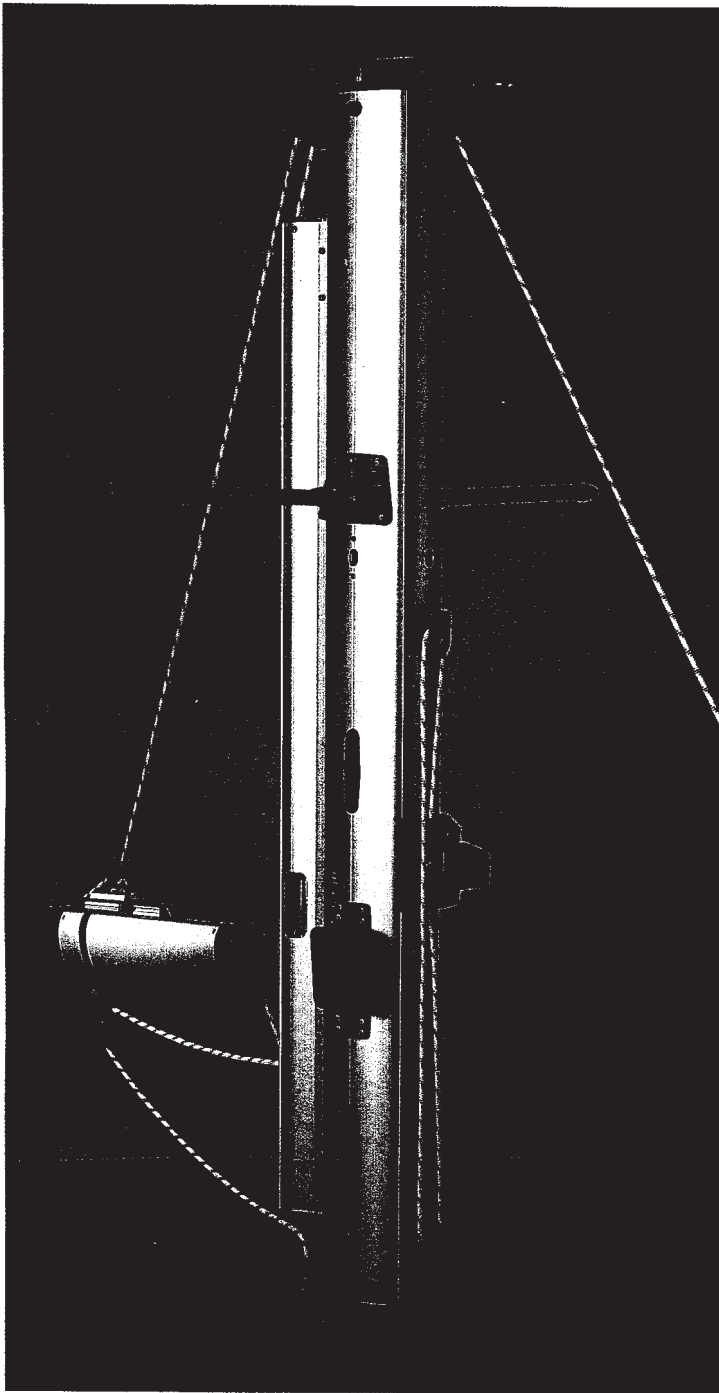
Section _c	Z 600e	Z 700e	Z 800e	Z 900e
Référence	3402	3403	3404	3405

Section _B	Z 1100e	Z 1400e
Référence	3400	3401



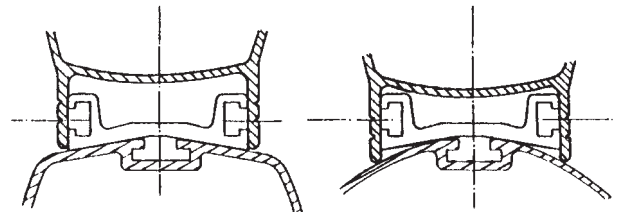
ENROULEUR RAPPORTÉ DE GRAND-VOILE ADD-ON FURLING SYSTEM

38



**MONTAGE 1
MOUNTING 1**

**MONTAGE 2
MOUNTING 2**

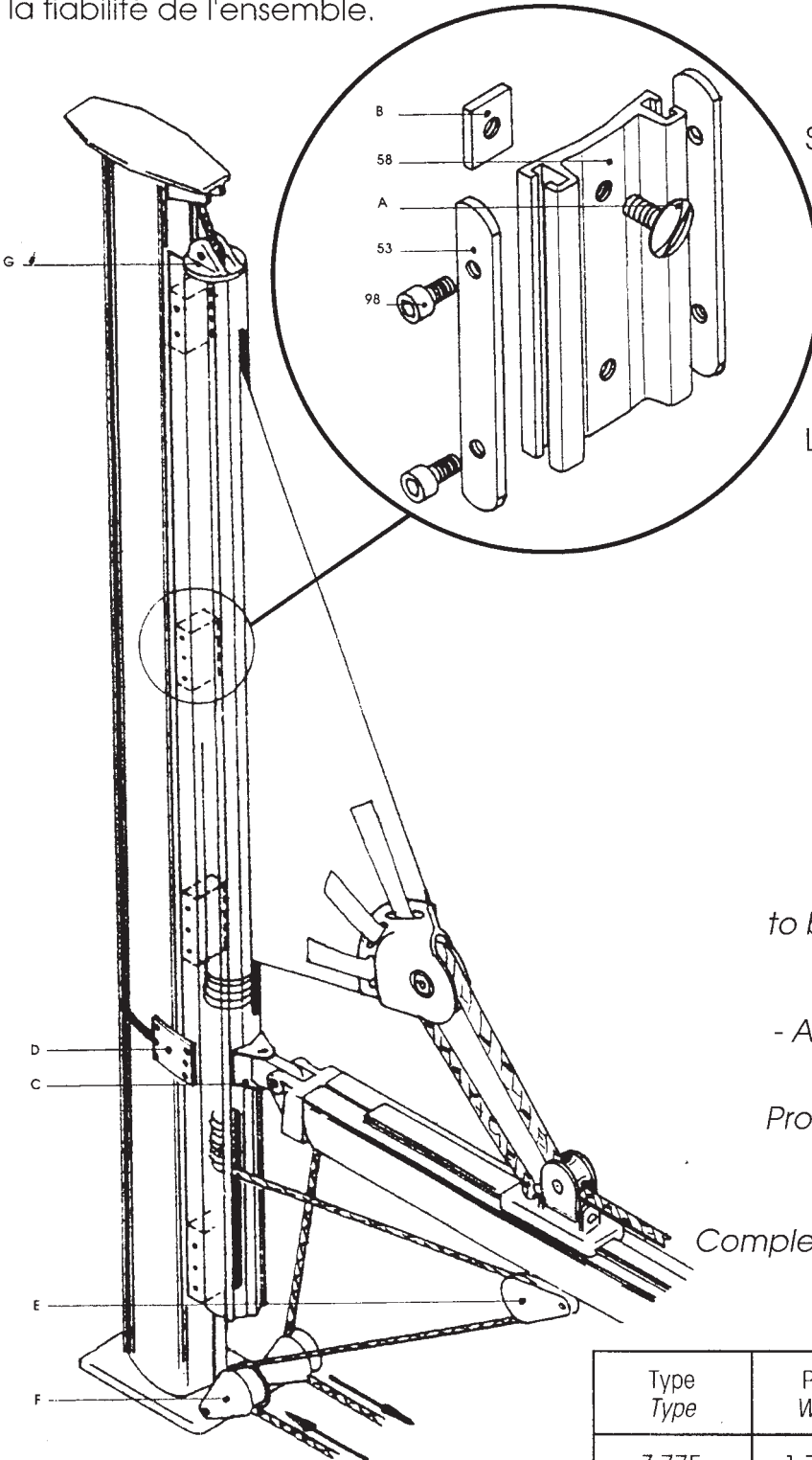


		Z 77				Z 110			
Vit de mulet / Gooseneck	c	3355				3351	3357		
Chapeau / Hat	g	68				1196			
Plaque de renfort / Gooseneck reinforcement	D	1674				1673			
Poulie de pied / Base block	F	301				301	302		
Poulie de renvoi / Furling block	E	262		277		277		288	
Visserie / Screws	A	228	85	87	1646	228	85	87	1646
		ha 90	5	6	8	ha 90	5	6	8
Écrou / Nuts	B	1653	1653	100	123	1653	1653	100	123
		hu 5	hu 5	hu 6		hu 5	hu 5	hu 6	

Ce nouveau produit Z possède tous les avantages du mât enrouleur.
This new Z SPARS product has all the advantage of a furling mast.

Comme sur ses grands frères :

- la découpe de la fente est limitée au seul passage de la voile,
- l'enroulement se fait sur un tube lisse (exclusivité "Z") **qui n'utilise pas le bout de manœuvre** et de ce fait augmente la fiabilité de l'ensemble.



Similar to the "Z" furling mast :

- the slot, cut lengthwise, is limited to the luff of the mainsail.
- the rope is coiled on a smooth tube giving less friction and better reliability (exclusivity "Z").

Les + de l'enrouleur Z

● **le montage**

Spécialement étudié (modèle déposé) pour être adapté à toutes sortes de profils de mâts.

- Il ne nécessite pas d'outils spéciaux.
- Il est réalisable par un bon bricoleur.
- Le temps de montage est réduit au minimum.

● **le conditionnement**

L'ensemble est livré mécanisme monté, vit de mulet fixé sur le profil.

● **le kit bôme**

Il est livré complet avec le pouillage de manœuvre.

Advantages of the Z SPARS furling system :

● **assembly**

Specially designed (patent pending) to be mounted on different mast sections.

- Easily assembled.
- No special tools are required.
- Assembly time is reduced to a minimum.

● **packing**

Product is delivered with the furling system and gooseneck already mounted.

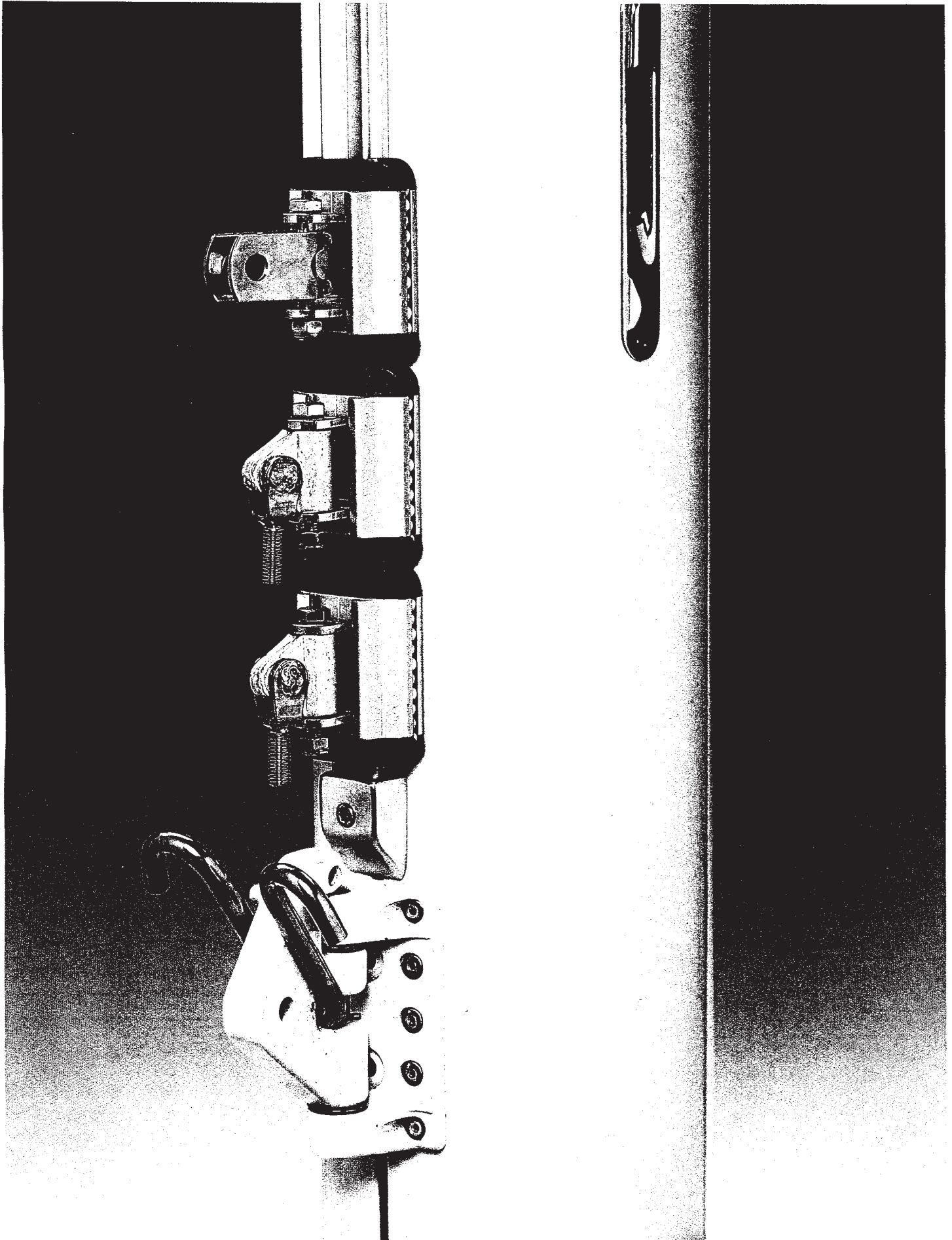
● **boom kit**

Complete kit delivered with all required blocks.

Type Type	Poids Weight	E. maximum E. maximum	Tissu maxi. Cloth maxi.	Long. maxi. Maxi. length
Z 77E	1,7 kg/m	3 500 mm	360 g	12 m
Z 110E	3,3 kg/m	5 000 mm	440 g	16 m

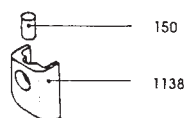
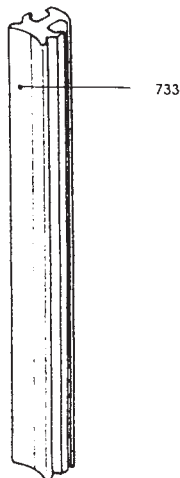
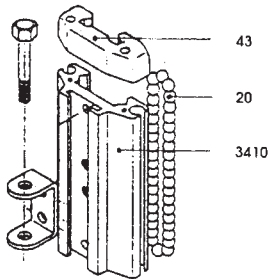
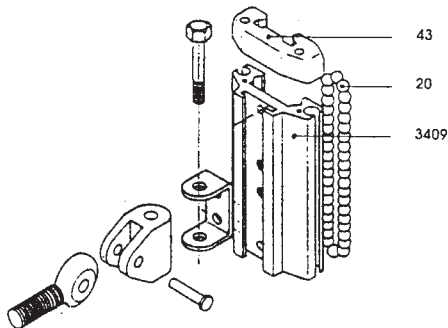
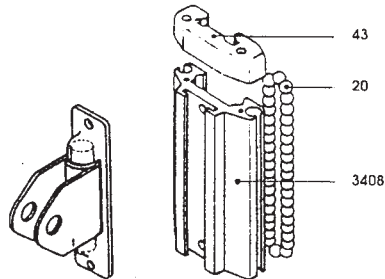
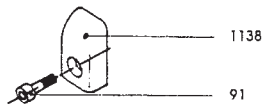
**SYSTEME POUR GRAND-VOILE "FULL-BATTEN"
FULLY-BATTENED MAINSAIL SYSTEM**

40



**Nous avons développé un nouveau système de chariot
s'adaptant aux besoins des grands-voiles "Full-Batten".**

***We have developed a new car system to cope with the special requirements
of fully-battened mainsails.***



Les chariots coulissant sur les rails spéciaux Z Spars sont dessinés pour faciliter le hissage, l'affalage de la grand-voile ainsi que les prises de ris.

Les rails sont terminés à chaque extrémité par des embouts aluminium incorporant des butées plastiques traitées U.V.

Nous avons en stock des rails s'adaptant à tous les profilés de notre gamme.

L'utilisation de nos chariots supprime tous les inconvénients dus à la friction des coulisseaux dans la gorge du mât.

Ce système est généralement associé à des "leasy jack".

Nous avons trois types de chariot :

- un chariot de tête,
- un chariot pour les lattes,
- un chariot qui fait office de coulisseau intermédiaire.

Une porte est prévue pour enfiler les chariots sur le rail.

Tous nos chariots sont à circulation de billes ; cela offre moins de friction que les systèmes à crayon.

The cars, which slide on special Z Spars track, are designed to facilitate the raising, lowering and reefing of the mainsail.

The track is terminated at each end with aluminum castings incorporating U.V treated plastic end stops.

We have track available to fit all masts in our range of sections.

The use of our cars avoids the problems of conventional slides rubbing and chafing on the mast track.

Usually the car system is combined with a lazy jack system.

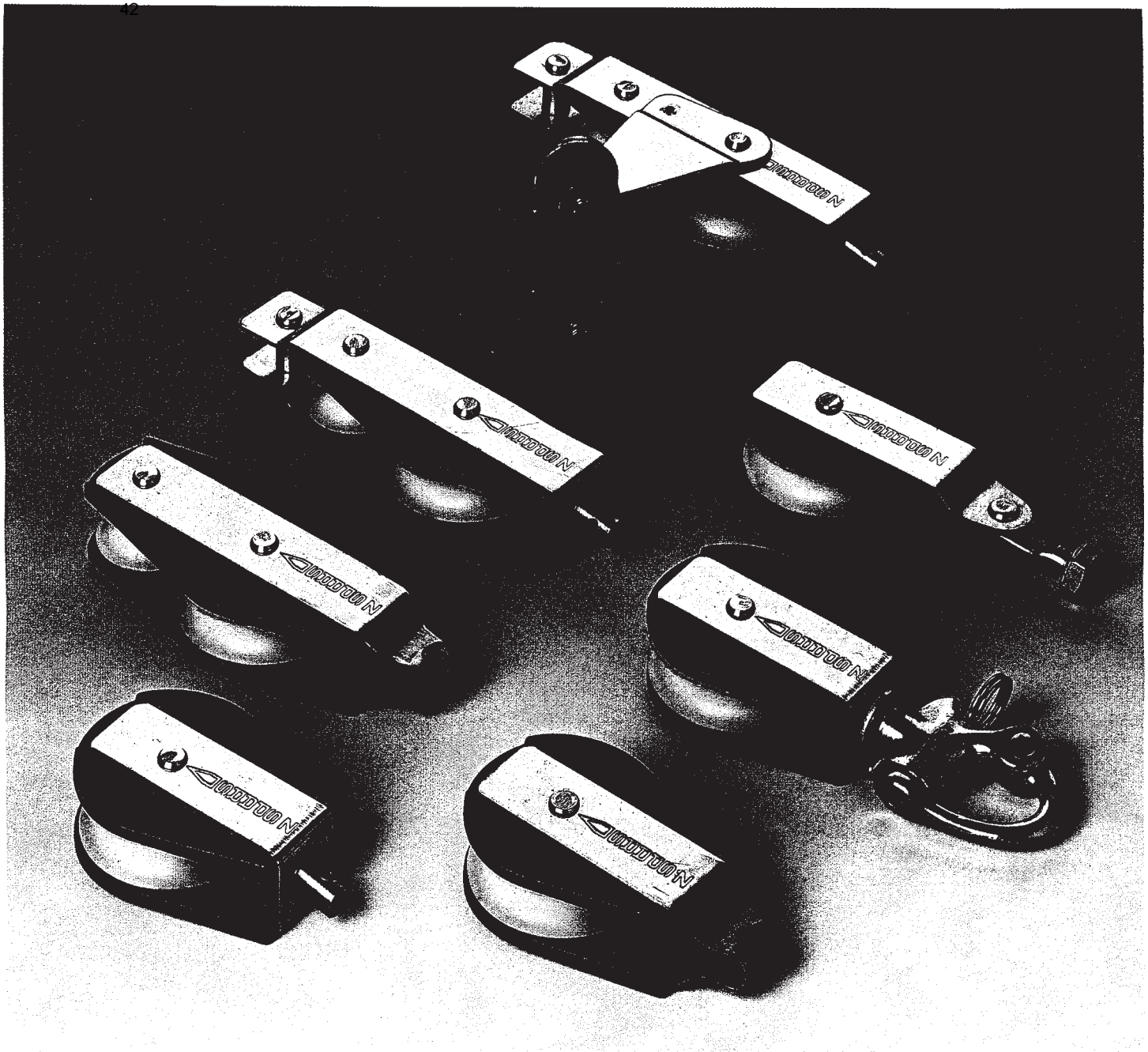
We have three types of cars :

- one for the head (which is a double),
- one for the batten,
- one which acts as an intermediate slide.

On big boats the head car is fitted with a special toggle.

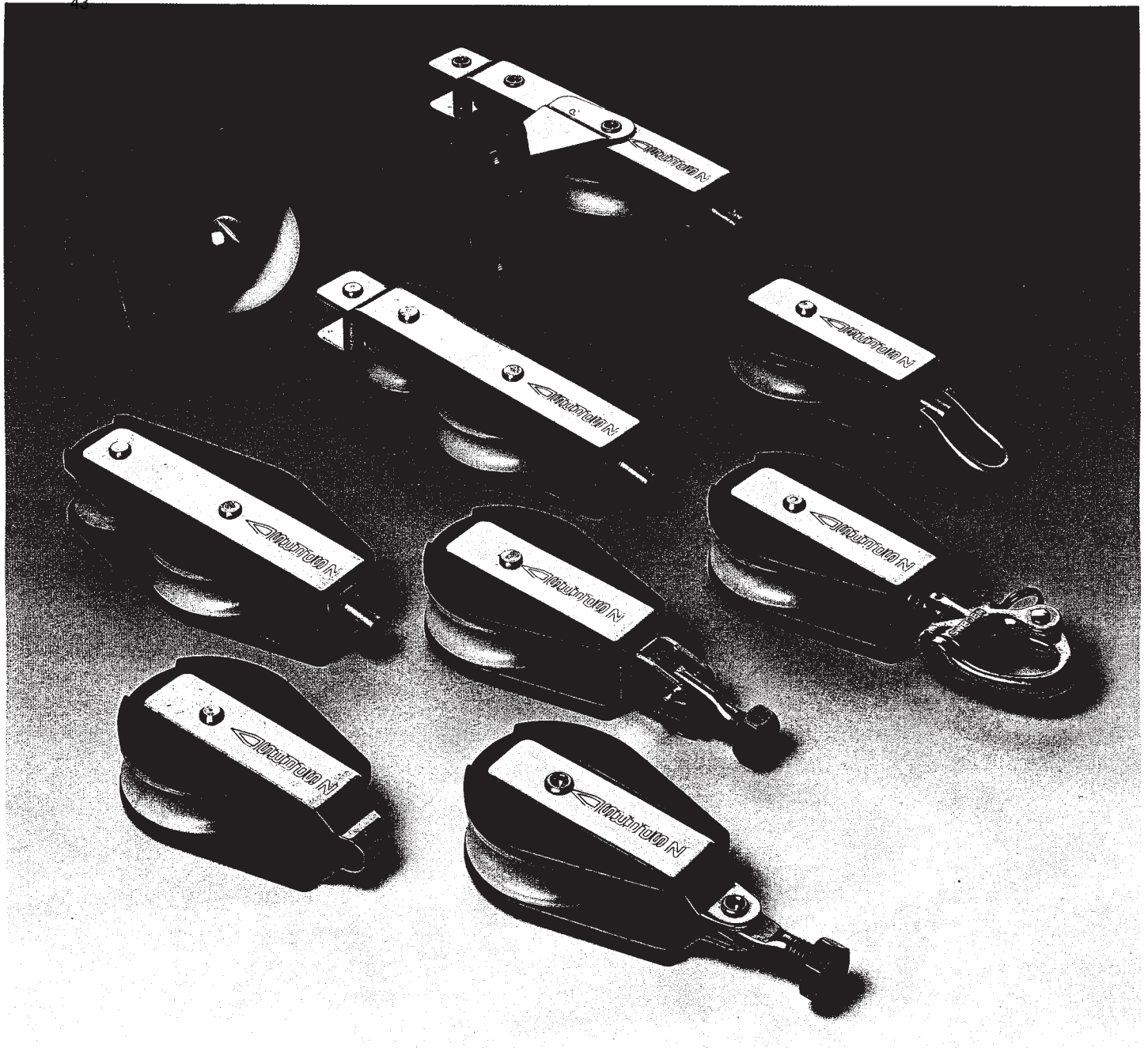
On masts equipped with this system in our factory we install a special removable gate to fit the cars on to the track.

All cars are the circulating ball type. These offer less friction than graphite rod systems available elsewhere.



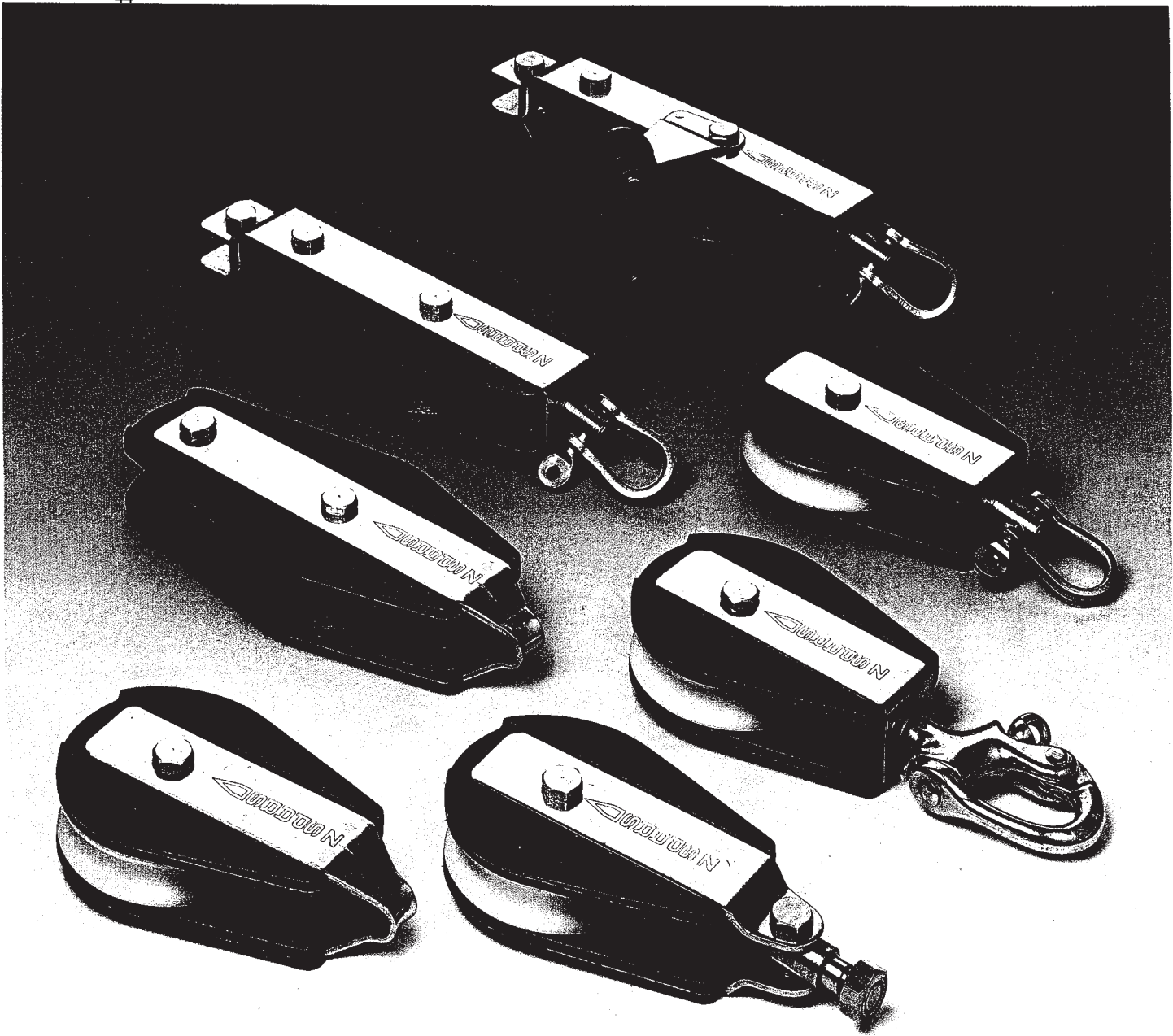
Caractéristiques <i>Specifications</i>	
Charge à la rupture du réa <i>Sheave breaking load</i>	1100 kg
Charge de travail du réa <i>Sheave working load</i>	550 kg
Diamètre du réa <i>Sheave diameter</i>	45 mm
Diamètre maxi. de cordage <i>Maximum rope diameter</i>	12 mm

Référence	Type
261	Poulie de pied / <i>Mast base block</i>
264	Poulie simple / <i>Single block</i>
262	Poulie violon / <i>Fiddle block</i>
266	Poulie simple à émerillon / <i>Swivel block</i>
267	Poulie violon à émerillon / <i>Fiddle swivel block</i>
258	Poulie simple à ringot et émerillon / <i>Single swivel block with becket</i>
268	Poulie violon à ringot et émerillon / <i>Fiddle swivel block with becket</i>
269	Poulie violon à émerillon, ringot et coinqueur <i>Fiddle swivel block with becket and jammer</i>
270	Poulie violon à émerillon et coinqueur <i>Fiddle swivel block with jammer</i>



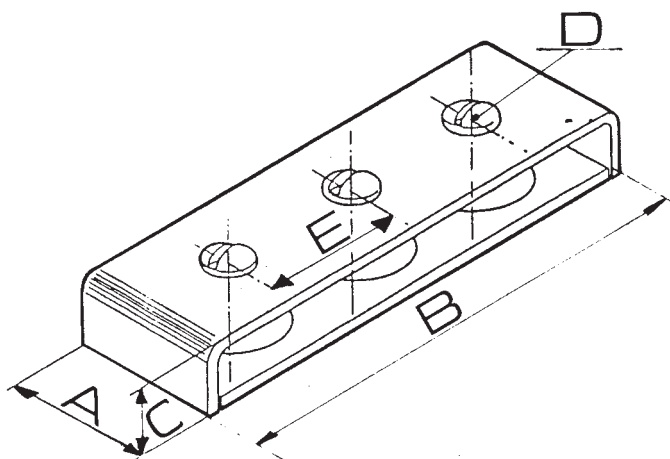
Caractéristiques <i>Specifications</i>	
Charge à la rupture du réa <i>Sheave breaking load</i>	1800 kg
Charge de travail du réa <i>Sheave working load</i>	900 kg
Diamètre du réa <i>Sheave diameter</i>	60 mm
Diamètre maxi. de cordage <i>Maximum rope diameter</i>	14 mm

Référence	Type
275	Poulie de pied / <i>Mast base block</i>
277	Poulie simple / <i>Single block</i>
278	Poulie violon / <i>Fiddle block</i>
279	Poulie simple à émerillon / <i>Swivel block</i>
280	Poulie violon à émerillon / <i>Fiddle swivel block</i>
274	Poulie simple à ringot et émerillon / <i>Single swivel block with becket</i>
281	Poulie violon à ringot et émerillon / <i>Fiddle swivel block with becket</i>
282	Poulie violon à émerillon, ringot et coinceur <i>Fiddle swivel block with becket and jammer</i>
283	Poulie violon à émerillon et coinceur <i>Fiddle swivel block with jammer</i>



Caractéristiques Specifications	
Charge à la rupture du réa Sheave breaking load	2600 kg
Charge de travail du réa Sheave working load	1300 kg
Diamètre du réa Sheave diameter	80 mm
Diamètre maxi. de cordage Maximum rope diameter	16 mm

Référence	Type
288	Poulie de pied / Mast base block
290	Poulie simple / Single block
291	Poulie violon / Fiddle block
292	Poulie simple à émerillon / Swivel block
293	Poulie violon à émerillon / Fiddle swivel block
296	Poulie violon à ringot et émerillon / Fiddle swivel block with becket
297	Poulie violon à émerillon, ringot et coinneur Fiddle swivel block with becket and jammer
298	Poulie violon à émerillon et coinneur Fiddle swivel block with jammer

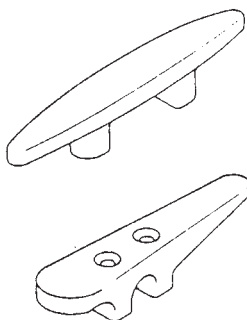


LES RENVOIS PLAT-PONT / ORGANISERS

Réf.		A	B	C	D	E	N°
230	2 réas plastiques / 2 plastic sheaves	30/3	76	18	6,5	30	1
231	3 réas plastiques / 3 plastic sheaves	30/3	106	18	6,5	30	2
232	2 réas plastiques / 2 plastic sheaves	40/3	108	21	6,5	41	3
233	3 réas plastiques / 3 plastic sheaves	40/3	149	21	6,5	41	4
234	4 réas plastiques / 4 plastic sheaves	40/3	192	21	6,5	41	5
	6 réas aluminium / 6 aluminum sheaves	50/5	256	21	6,5	38	6
237	4 réas aluminium / 4 aluminum sheaves	50/5	218	26	8,5	48	7

Sur demande nous pouvons réaliser des renvois plat-pont hors standard.
We can do also custom organisers on request.

TAQUETS A SIFFLET / DECK CLEATS



Type	Longueur Length	Entraxe Hole center	Diamètre de vis Screw diameter
TS 150	150 mm	40	M6 TH
TS 190	190 mm	50	M8 TH
TS 200	200 mm	60	M8
TS 250	250 mm	78	M10

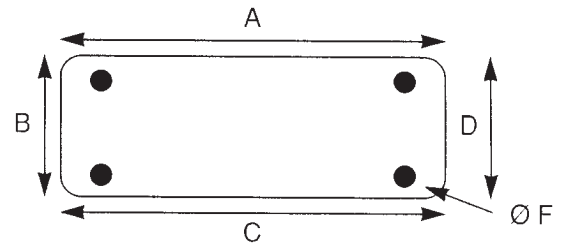
Taquets anodisés incolores, face supérieure polie.
Anodised deck cleats, the top is polished.

COTES EMPLANTURES / BASES DIMENSIONS

46

Section	Réf.	A	B	C	D	E	F
Z 105	1 111	110	0	90	40	16	5
Z 125	1 111	110	0	90	40	16	5
Z 145	1 111	110	0	90	40	19	5
Z 145 A	1 112	118	32	80	59	20	6,5
Z 170	1 100	124	32	80	108	11	6,5
Z 190	1 100	124	32	80	108	0	6,5
Z 230	1 101	152	59	87	130	9	6,5
Sabot	1 170	150	94	130	113	12	6,5
Z 265	1 101	152	59	87	130	-15	6,5
Sabot	1 102						
Z 300/301	1 103	214	85	160	160	14	6,5
Sabot	1 104	162	60	100	107		
Z 380	1 109	161	76	85	145	26	6,5
Sabot						0	
Z 400/401	1 110	235	145	200	183	14	8,5
Z 400 E	1 162	235	150	200	220	5	8,5
Z 500/501	1 120	235	150	200	188	14	8,5
Z 500 E	1 163	235	150	200	220	5	8,5
Z 600/601	1 117	280	160	215	230	7	8,5
Z 600 E	1 164	285	160	215	230	25	8,5

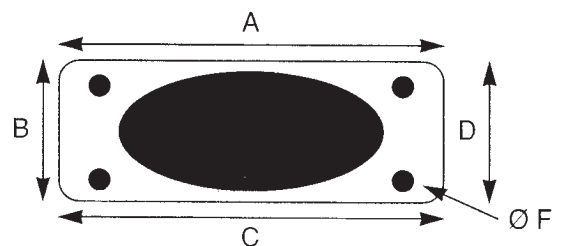
Section	Réf.	A	B	C	D	E	F
Z 700/701	1 118	280	160	215	230	7	8,5
Sabot	1 113	225	70	130	150	0	8,2
Z 700 E	1 165	285	160	215	230	15	8,5
Z 800	1 119	280	160	215	230	7	8,5
Z 800 E	1 166	285	160	215	230	5	8,5
Sabot	1 114	245	110	132	150	0	8,2
Z 900 E	1 167	285	160	215	230	5	8,5
Sabot	1 160	300	160	210	300	0	8,5
Z 1100	1 168	350	195	290	290	5	8,5
Sabot	1 161	290	98		182	0	8,5

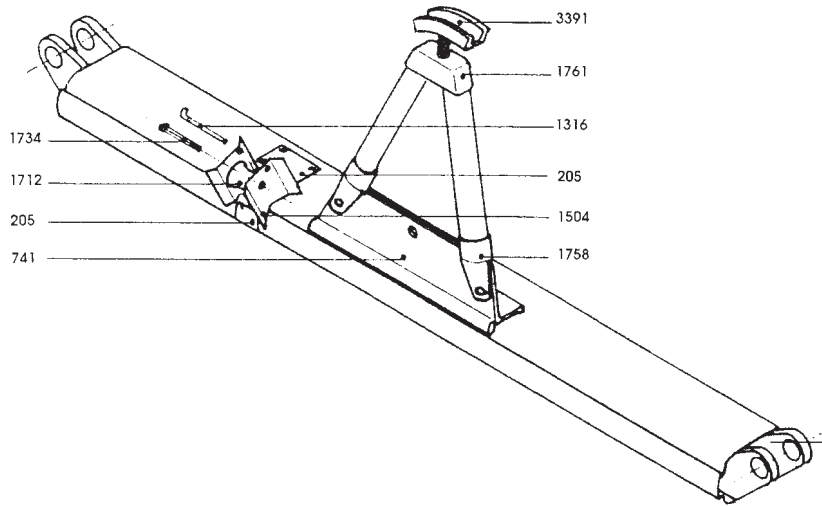


COTES PASSE-PONT / DECK COLLARS DIMENSIONS

Section	Réf.	A	B	C	D	F
Z 265	1 115	227	150	190	188	8,5
Z 300/301	1 115	227	150	190	188	8,5
Z 400/401	1 105	250	170	200	236	8,5
Z 400 E	1 105	250	170	200	236	8,5
Z 500/501	1 105	250	170	200	236	8,5
Z 500 E	1 105	250	170	200	236	8,5
Z 600/601	1 116	318	164	278	234	8,5
Z 600 E	1 116	318	164	278	234	8,5
Z 700/701	1 116	318	164	278	234	8,5
Z 700 E	1 116	318	164	278	234	8,5

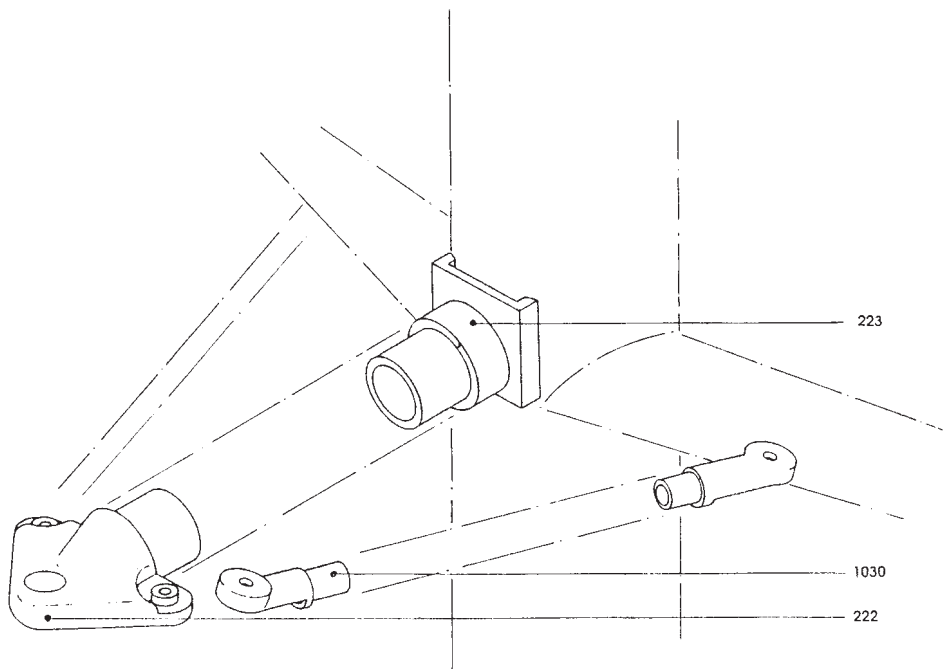
Section	Réf.	A	B	C	D	F
Z 800	1 113	335	187	260	250	8,5
Z 800 E	1 113	335	187	260	250	8,5
Z 900	1 113	335	187	260	250	8,5
Z 1001	1 174	460	260	420	310	8,5
Z 1100	1 174	460	260	420	310	8,5





Section	Embout de poutre droit <i>Beam ends starboard</i>	Embout de poutre gauche <i>Beam ends port</i>
Z 400	40	41
Z 600	216	217

TRIANGULATION MARTINGALE BARRE DE FLÈCHE
 TRIANGULATION STRUT TO SPREADER



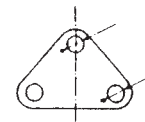
GRÉEMENT DORMANT / STANDING RIGGING

48

Embout à boule / *Ball terminal*



Diamètre	Référence	A
3	433	Ø 13
4	434	Ø 13
5	435	Ø 20
6	436	Ø 20
7	437	Ø 27
8	438	Ø 27
10	439	Ø 28
12	440	Ø 29



Plaque triangulaire / *Triangle plate*

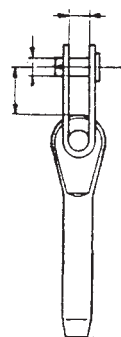
Diamètre	Référence	A	B
3/4	429	8,5	8,5
5/6	430	10,5	10,5
7/8	431	12,5	12,5
10/12	432	14,5	14,5



Embout à T / *T terminal*



Diamètre	Référence
3	471
4	472
5	473
6	474
7	521



Embout à chape articulée / *Toggle terminal*

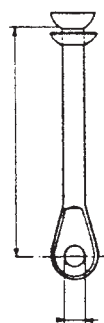
Diamètre	Référence	Largeur	A	B
3	463	9	21	8
4	464	9	21	8
5	465	11	30	10
6	466	11	29	10
7	467	14	35	12
8	468	14	35	12
10	469	20	42	16
12	470	20	54	16

Latte ridoir / *Link plate*



Diamètre	Référence	A
3	1554	6,5
4/5	459	8,5
6	460	10,5
7/8	461	12,5
10/12	462	14,5

Embout boule/œil / *Stem ball eye terminal*



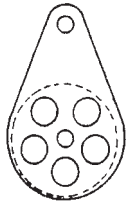
Diamètre	Référence	A	B
5	475	98	10,2
6	476	108	13
7	477	108	13
8	478	148	13
10	479	148	16

Coupelle



Diamètre	Référence	A	B
D 001	487	18	6,5
D 018	492	18	9,5
D 002	488	26,5	12,5
D 003	489	26,5	15,5
D 004	490	34,5	18,5
D 005	491	34,5	21

Poulie de pataras / Backstay blocks



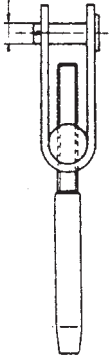
Diamètre	Référence	Réa/Sheave
3/4	248	22 mm
4/5	397	45 mm
6/7	398	60 mm
7/8	399	80 mm

Rouleaux



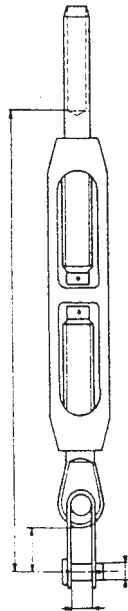
Diamètre	Référence	A
45 mm	1 950	1 160
57 mm	1 952	1 360

Ridoir pour filière / Life line adjuster



Diamètre	Référence	A
3		Ø 6
4	486	Ø 8
5		Ø 10

Ridoir à cage ouverte / Open body turnbuckle



Diamètre	Référence	A	B	C	D
3	421	270	21	9	8
4	422	260	21	9	8
5	423	320	30	11	10
6	424	320	29	11	10
7	425	360	35	14	12
8	426	360	35	14	12
10	427	440	42	20	16
12	428	455	54	20	16

Coquille / Backing shell



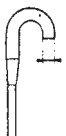
Diamètre	Référence	A	B
4		46	33
5/6	483	46	33
7/8	484	58	38
10/12	485	82	50

Embout à œil / Eye terminal

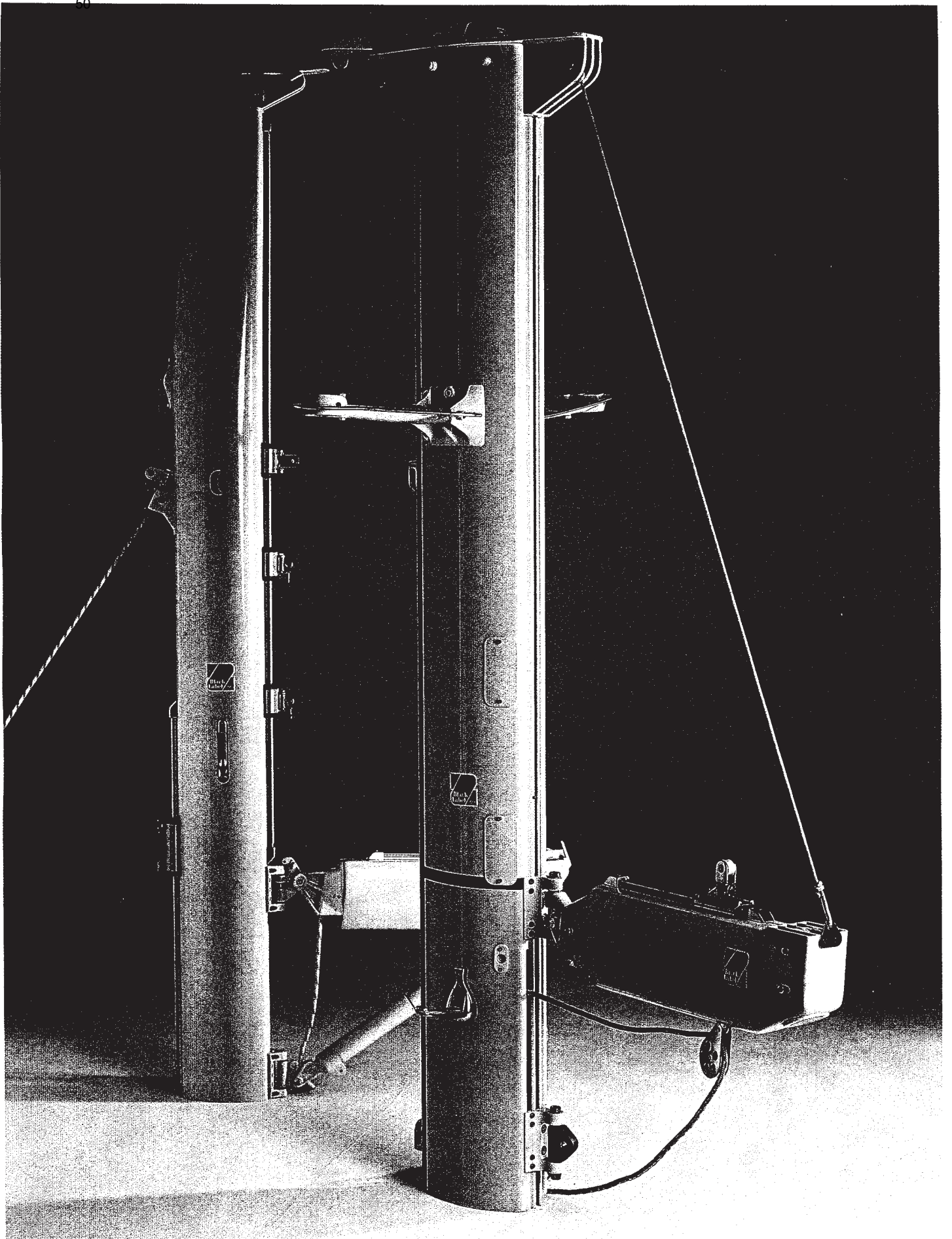


Diamètre	Référence	B	A
2	1 510	Ø 6,5	15,5
2,5	1 512	Ø 6,5	15,5
3	443	Ø 8,3	17
4	444	Ø 8,3	17
5	445	Ø 10,5	20
6	446	Ø 10,5	22
7	447	Ø 12,5	28
8	448	Ø 12,5	29
10	449	Ø 16,5	34
12	450	Ø 16,5	34

Crosse / Hook terminal



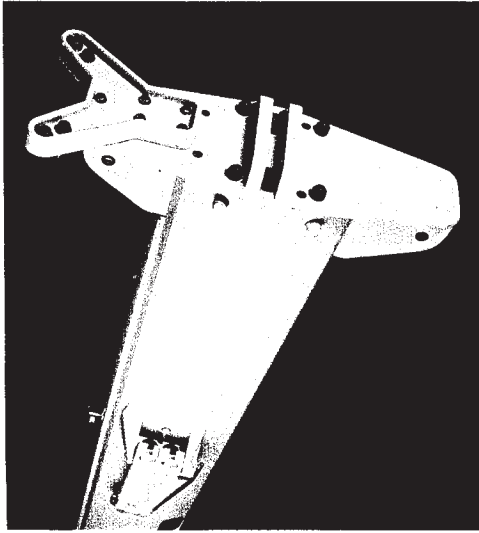
Diamètre	Référence	A
2	1 498	Ø 5
2,5	1 499	Ø 5
2,5 R	1 501	Ø 7
3	1 500	Ø 5
3 R	1 502	Ø 7



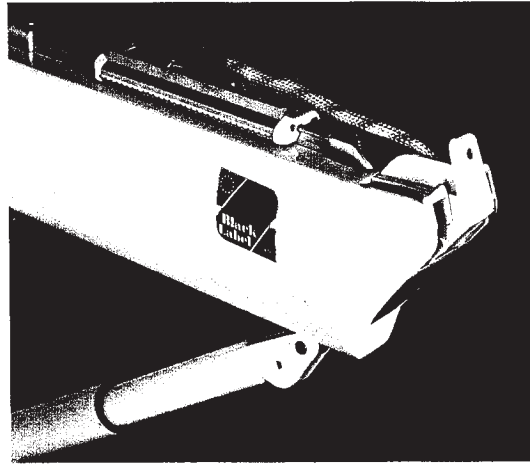
BLACK LABEL

51

Z SPARS a créé en 1991 une nouvelle génération de mâts dite "série Black Label". Elle est le résultat de 20 ans d'expérience dans la conception et la réalisation de mâtures les plus diverses allant du mât d'Optimist au 54' de croisière.



Z SPARS has created in 1991 a new series of masts called the "Black Label". It's the result of 20 years experience in mast design and production of masts ranging from Optimists to 54' cruising boats.



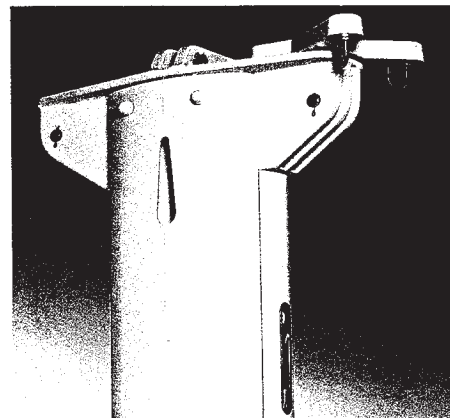
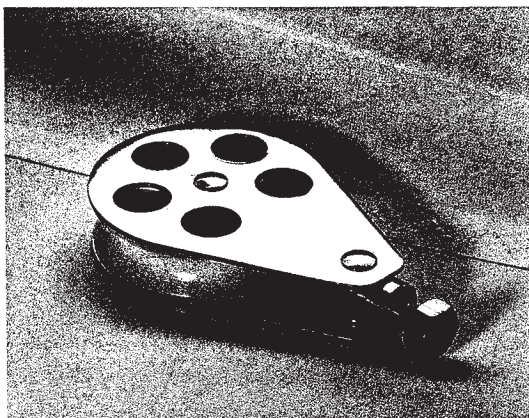
La gamme Black Label est fabriquée avec les produits les plus sophistiqués, sélectionnés pour leur qualité et leur fiabilité.

The Black Label line is built as a special product with particular emphasis on quality and reliability. Each rig is designed and customised to individual requirements.

Afin de réaliser cette production dans des conditions optima,
Z SPARS s'est donné tous les moyens nécessaires :

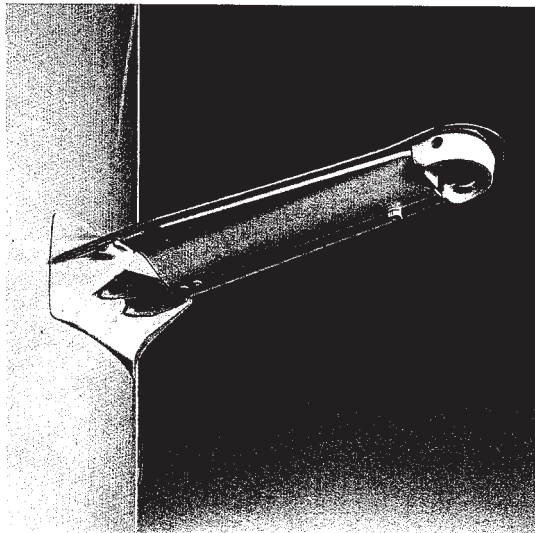
- un tunnel de peinture de 30 m spécialement adapté à la réalisation des mâts en grande longueur,
équipé d'extracteurs d'air et de parois métalliques.

Les profils peuvent y accéder par l'intermédiaire d'un pont roulant.



BLACK LABEL

- ⁵² des moyens de manutention permettent à un seul homme de manipuler les profils pendant le montage, évitant aussi tout risque de scratch.



- l'élaboration de nouveaux produits. Ainsi une gamme de poulies de pied de mât pour renvoi de drisse a été mise au point : joues inox polies miroir, réas plastiques à hautes résistances à simple ou double cardan à la demande.

Z SPARS has invested in special equipment to manufacture these spars in optimum conditions.

- a 30 meters spray booth with air flow extractor fans and metal walls to allow painting of large spars.

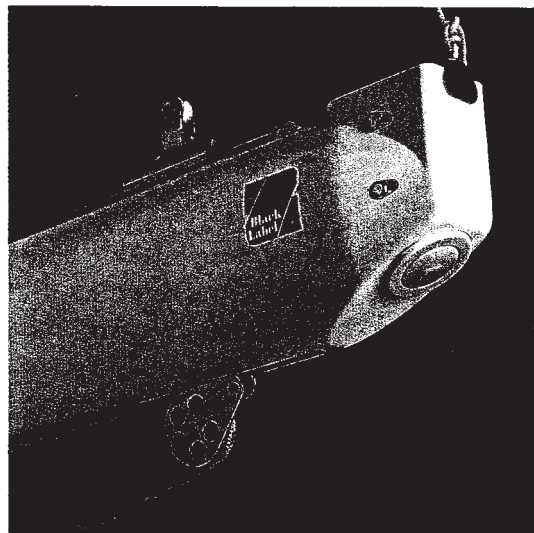
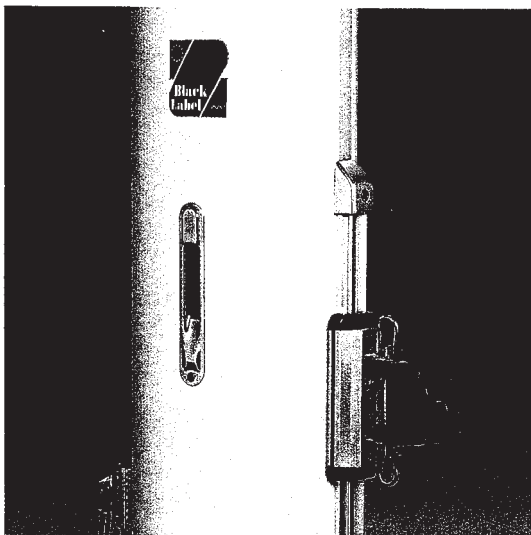
- the spars are handled using an overhead crane system which allows one man

to easily move the section during manufacture thus avoiding possible damage.

- A new range of fittings is available for this product.

Including stainless steel mast base blocks with acetal sheaves, hand-polished cleats, winch pads, cheek blocks and goosenecks.

Chaque mât bénéficie d'une étude particulière ;
il n'y a pas de limite à l'accastillage.
Celui-ci est adapté et conçu spécialement
pour satisfaire les désirs du client.



Pour ce faire Z SPARS peut faire appel à une autre société du groupe "Z SPARS" qui est équipée de machines modernes de mécanique (électro-érosion, tours, fraiseuses, centre d'usinage, rectifieuses, etc.).

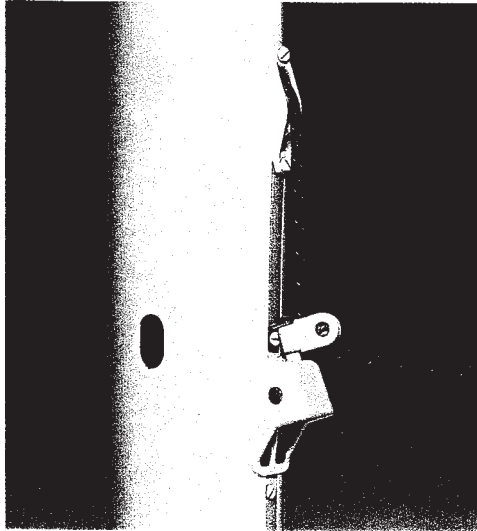
Cette unité fonctionne avec un département fonderie aluminium (4 fours de fusion, 1 four de traitement thermique), un département découpe inox (7 presses ainsi qu'une presse à injecter le plastique et 2 tours à décolleter).

Elle est spécialisée dans l'équipement nautique.

Nous possédons également une forge qui outre la production des pièces spécifiques aux produits Black Label réalise tous les sous-ensembles du gréement dormant.

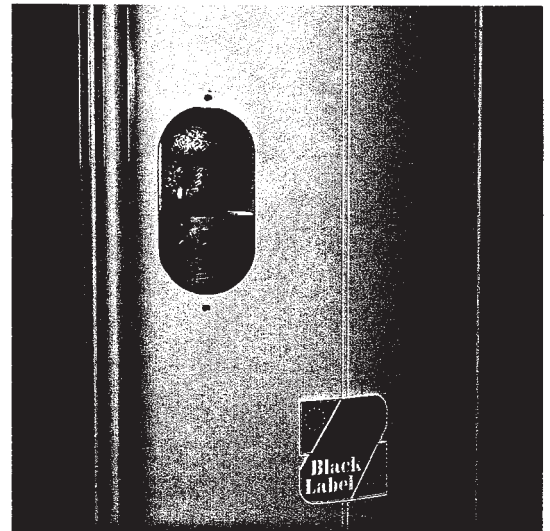
Z SPARS uses one of its subsidiaries, S.N.F.D. to manufacture custom fittings. S.N.D.F. is equipped with a modern machine shop capable of casting and working aluminum (including heat treatment), stainless steel fabrication and injection moulding of plastics.

This plant specialises in boat equipment and these facilities allow Z SPARS to offer the complete service which make the Black Label special.



Cette intégration à l'échelle du groupe nous permet de proposer dès maintenant des kits complets mâts, bômes, gréements dormants, gréements courants ainsi que divers accessoires spécifiques.

The whole package of spars, rigging and fitting can be fully tailored for each project with complete control and integration between all production areas.



SPAR GEOMETRY

n Mast

54

25 Apr 1989
Time: 00:10

INPUTS (M)

I	8.70	J	2.80	P	9.7
E	3.50	Boom to HBI	.80	Ht. Base I	.8
Total Draft	1.70	RM 45 Deg	800.00	No.Spreader	1.0
I Mizzen	0.00	P Mizzen	0.00	E Mizzen	0.0
BAD Mizzen	0.00	HBI Mizzen	0.00	No.Spr Mizz	0.0

H (8.500) is the distance from the Collar to the Hounds
Heights are percentage of H above base of H
Spreader lengths are percentage of chainplate width from C/L of spar

Mast Abv P	.15	Collar Ht.	1.00	Mast Bury	0.0		
Upr Tang %I	100.00	Chplt Wdth	1.00	Chplt Ht	.7		
S1 Height 50.00	%H	Length	96.00	%Cpw	Angle	0.00	Deg

	LENGTH		ANGLE
	mm	ft	
Diagonals			
D2	4357.1	(14.295)	12.7 from vertical
D1	4658.6	(15.284)	12.4 from vertical
Verticals			
V1	4550.2	(14.928)	.5 from vertical
Spreaders			
S1	960.0	(3.150)	0.0 from horizontal
Mast Panels			
M2	4250.0	(13.944)	0.0 from vertical
M1	4250.0	(13.944)	0.0 from vertical

SPAR LOADING

n Mast

25 Apr 1989
Time: 00:10

Loads are produced by heeling the yacht 45 degrees (SF=1)
with the following sail combinations:

	MAINSAIL ONLY		MAIN & GENOA		SPINNAKER ONLY	
	kg	lb	kg	lb	kg	lb
Diagonals						
D2 Tension	405	(893)*	397	(876)	360	(793)
D1 Tension	552	(1217)*	484	(1067)	355	(782)
Verticals						
V1 Tension	395	(871)*	388	(854)	351	(773)
Spreaders						
S1 Comprsn	86	(189)*	84	(185)	76	(168)
Mast Panels						
Includes compression due to fore and aft rigging of					550	(1213)
M2 Comprsn	946	(2084)*	938	(2067)	901	(1986)
M1 Comprsn	1485	(3273)*	1411	(3110)	1248	(2750)

* Denotes the maximum loading conditions for a particular member

Applied Transverse Loads

Hounds	89	(197)*	88	(193)	79	(175)
S1	33	(72)*	20	(44)	0	(0)
Base of I	5	(11)*	3	(7)	0	(0)

Applied Fore and Aft Loads

Headst Tensn	289	(637)	289	(637)	289	(637)
Backst Tensn	289	(637)	289	(637)	289	(637)

RIGGING SIZES AND SPAR PROPERTIES

n Mast

25 Apr 1989
Time: 00:10

RIGGING SIZES

The following rigging sizes were selected using
the Max Load with a safety factor of 1.5
Check rigging sizes for excessive stretch.

	MAX LOAD		WIRE SIZE		ROD SIZE		BREAK STRENG	
	kg	lb	mm	in	mm	in	kg	lb
DIAGONALS								
D2	405	(893)	3.18	1/8	N/A	N/A	953	(2100)
D1	552	(1217)	3.18	1/8	N/A	N/A	953	(2100)
VERTICALS								
V1	395	(871)	3.18	1/8	N/A	N/A	953	(2100)

SPREADER PROPERTIES

Calculated from compressive loading with a safety factor of 2.0

	MAX LOAD		MIN. INERTIA		MIN. AREA					
	kg	lb	cm ⁴	in ⁴	cm ²	in ²				
S1	-86	(-189)	.91	cm ⁴	.02	in ⁴	.08	cm ²	.01	in ²

Calculated from buckling analysis using
the maximum compression in each panel (see SPAR LOADING)
No moment was applied at the deck.
Safety factor longitudinal = 1 Safety factor transverse= 2

Transverse I	65.45	cm ⁴	1.57	in ⁴
Longitudinal I	128.04	cm ⁴	3.08	in ⁴