

[illegible]

Technical drawing of a circular part showing a 60° chamfer and a Pitch Circle Diameter (PCD) of 120±0.2. The drawing includes a top view and a side view. The top view shows a circular part with a 60° chamfer and a PCD of 120±0.2. The side view shows a cross-section of the part with a 60° chamfer and a PCD of 120±0.2.

Technical drawing of a mechanical part with dimensions and surface finish specifications:

- Top surface:  $Ra\ 3.2$
- Top surface:  $12$
- Top surface:  $Ra\ 3.2$
- Top surface:  $28 \pm 0.5$  FROM Z
- Top surface:  $0.05$  O
- Top surface:  $0.2$
- Top surface:  $0$
- Top surface:  $25 \pm 0.2$
- Top surface:  $R3$
- Top surface:  $16 \times \phi 17 \pm 0.2$

Technical drawing of a mechanical part (Fig. 10.10) showing a cross-section with dimensions and tolerances. The part has a central circular hole and four corner holes. Dimensions include overall width  $90 \pm 0.2$ , overall height  $90 \pm 0.2$ , corner hole diameter  $20^{+0.2}_0$ , and various radii and distances.

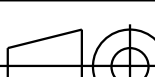
Technical drawing of a circular part. The drawing shows a cross-section of a circular component with a central hole. The outer diameter is dimensioned as  $104 \pm 0.5$ . The inner diameter is dimensioned as  $48 \pm 0.2$ . The distance from the center to the edge of the inner hole is dimensioned as  $618 \pm 0.5$  FROM X. The drawing includes a coordinate system with X and Y axes. The X-axis is horizontal, and the Y-axis is vertical. The origin is at the center of the part. The X-axis is labeled with 'X' and the Y-axis is labeled with 'Y'. The drawing also includes a section line 'E' and a section symbol 'N'.

Technical drawing of a mechanical part (Fig. 1) showing a cross-section. The part has a central hole with a diameter of 12 mm and a total length of 15 mm. The outer diameter is 18 mm. The drawing includes a detail view of a hole with a diameter of 8 mm and a depth of 0.1 mm, and a surface finish requirement of Ra 3.2. The part is labeled with 'F' and 'Y'.

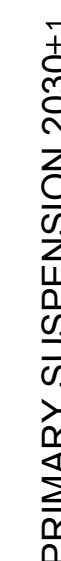
Technical drawing of a mechanical part showing a cross-section. The drawing includes the following dimensions and tolerances:

- Overall length:  $174 \pm 0.2$
- Distance from the left end to the center of the part:  $87 \pm 0.1$
- Radius of the fillet:  $R3.0$
- Surface texture symbol:  $Ra 3.2$
- Dimension  $12$  indicates the height of the part.
- Dimension  $8x \varnothing 11^{+0.0}_{-0}$  indicates the hole size and quantity.
- Dimension  $532 \pm 0.5$  FROM X indicates the distance from the reference point X to the left end of the part.
- Surface texture symbol:  $0.05 L$
- Dimension  $Y$  indicates the distance from the center of the part to the left end of the part.
- Dimension  $L$  indicates the distance from the center of the part to the right end of the part.

Sharp edges shall be removed  
Not dimensioned radii R0.5  
Not dimensioned chamfers 0.5x45°

1	WLD COMPL. FRAME ASSY	1	EM200403230000				1818.
No	Parti Assy Designation Name of Item	Adet Qty	Resin No / Norm Drawing No / Norm	Matzeme Material	Øçu Dimension	Ağırlık Weight (Kg)	1710.
	ISO 1302 ISO 8015 EN 22553		General Tol.	ISO 2768 1 A0 000 H D			
	ISO 15685-2 Certification Level	CL100 CL120 CL140	Weld Pro. Cast Steel	ISO 13920 A0 8 C0 ISO 12708 LmC0 Lr2 C0 SncC0 S2C2			
	Approved P. Farina	30/08/2018	Scale				
	Checked M. Borlo	30/08/2018	1:5				
	Prepared G. Candelo	30/08/2018					
	 MCD COMP. FRAME ASSY			<b>TUVASAS</b> Turkish Waqon Industry EM20.04.03.10000			
TPP	Date:14/07/2025			Sheet:1/4	Size:A0	Rev:03	

Technical Specifications				Technical Document		Fixture/Mould Asset ID		Coating/Heat Tre./Roughness		Paint/Color	
-	-	3	Added axlebox support reference data	14/07/2025	D.Carino	-	-	2	Updated dimension	19/03/2025	D.Carino
-	-	1	UPDATED DRAWING	24/09/18	S.Ponzo	-	-	-	Modification Description	Date	Sign



PRIMARY SUSPENSION 2500±1

0.5 Y

// 0.5 Y

//	0.5	V
----	-----	---

V

Technical drawing of a mechanical part, likely a bearing housing, showing a cross-section with various dimensions and surface finish requirements. The drawing includes a top view and a side view. Key dimensions include a total width of 118 ± 0.5 mm, a height of 12 ± 0.5 mm, and a fillet radius of R0.5. Surface finish requirements are specified as Ra 3.2 and Ra 1.6. Holes are dimensioned as 8x Ø8 H7 and 16x M12. A central hole is dimensioned as Ø44.5 ± 0.2. The drawing also shows a 2x45° chamfer and a 25 H8 hole.

$$\left( \begin{array}{c} \text{Ra } 3.2 \\ \text{Ra } 1.6 \end{array} \right)$$

**TÜVASAS**

M20.04.03.10000


Sheet 2/4	Size: A0	Rev: 03
-----------	----------	---------

Painting in accordance with TD-EM00.10.0028:

- Protect from painting all threaded holes and machined surfaces marked with ○
- Protect only with primer all surfaces marked with ◎

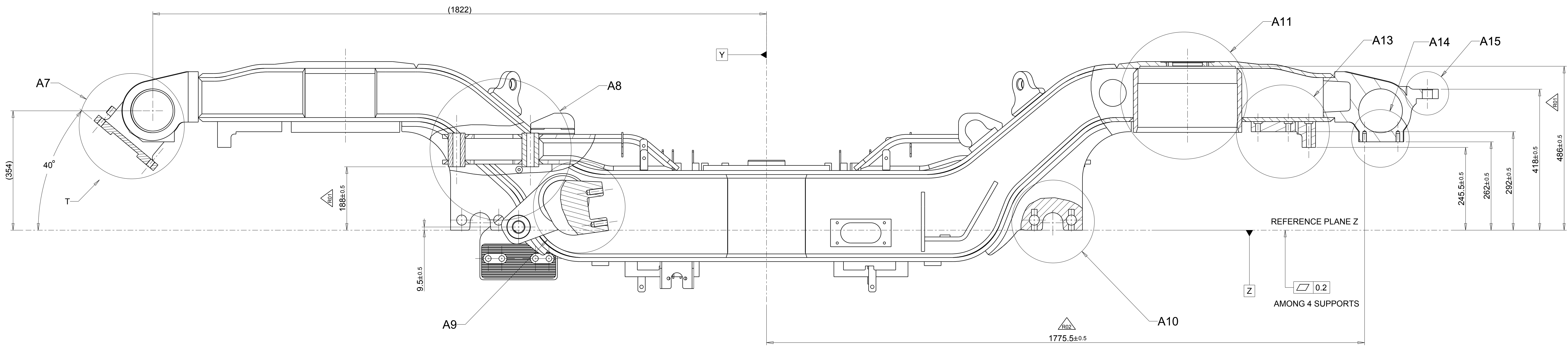
Sharp edges shall be removed  
Not dimensioned radii R0.5  
Not dimensioned chamfers 0.5x45°

Technical Specifications	-				
Technical Document	-	3	Added axlebox support reference data	14/07/2025	D. Carline
Fixture/Mould Asset ID	-	2	Updated dimension	19/03/2025	D. Carline
Coating/Heat Tre./Roughness	-	1	UPDATE DRAWING	24/09/18	S. Ponzo
Paint/Color	-	Modif.No	Modification Description	Date	Sign

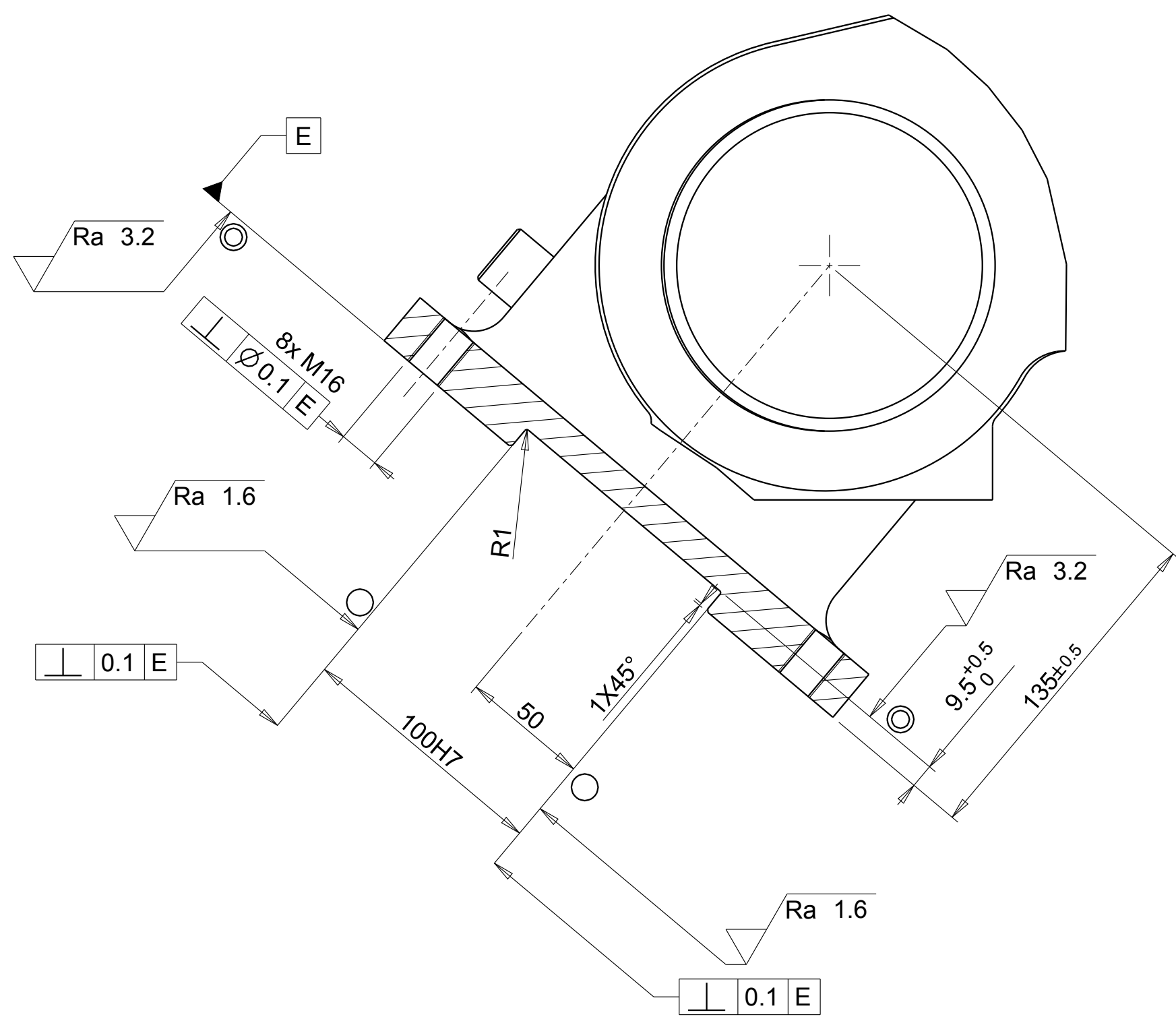
	MCD COMP. FRAME ASSY	Turkish Wagon Industry		
		EM20.04.03.10000		
Date:14/07/2025		Sheet:2/4	Size:A0	Rev:03

ISO 13820 Welded Construction	ISO 7668 General Tolerances		ISO 12708 Sheet Casting	
	Norm Size	Class	L in mm	H in Ypsi
<1000	2.0	0.8	<1000	6.0 0.8
<630	4.0	0.7	<630	4.0 0.7
<450	5.0	0.6	<450	3.0 0.6
<250	6.0	0.5	<250	3.0 0.4
100	2.0	0.3	100	2.0 0.3
40	1.5	0.2	40	1.5 0.2
L in mm			L in mm	H in Ypsi
<1000	2.0	0.4	<1000	2.0 0.4
<2000	1.2	0.4	<2000	1.2 0.4
<1000	0.8	0.3	<1000	0.8 0.3
<400	0.5	0.3	<400	0.5 0.3
30-120	0.3	0.2	30-120	0.3 0.2
2-30	0.2	0.1	2-30	0.2 0.1
L in mm	m	K ±	L in mm	m ± K ±
<1000	2.0	0.5	<1000	2.0 0.5
>2000	9.0	8.0	>2000	9.0 8.0
>1000	8.0	7.0	>1000	8.0 7.0
>630	7.0	6.0	>630	7.0 6.0
>400	6.0	5.0	>400	6.0 5.0
>250	5.0	4.0	>250	5.0 4.0
>100	4.0	3.0	>100	4.0 3.0
>60	3.0	2.0	>60	3.0 2.0
>20	2.0	1.5	>20	2.0 1.5
>10	1.0	0.5	>10	1.0 0.5
30-120	1.0	1.0	30-120	1.0 1.0
2-30	1.0	0.5	2-30	1.0 0.5
L in mm	A ± E ±		L in mm	A ± E ±
Norm Size	Class		Norm Size	Class

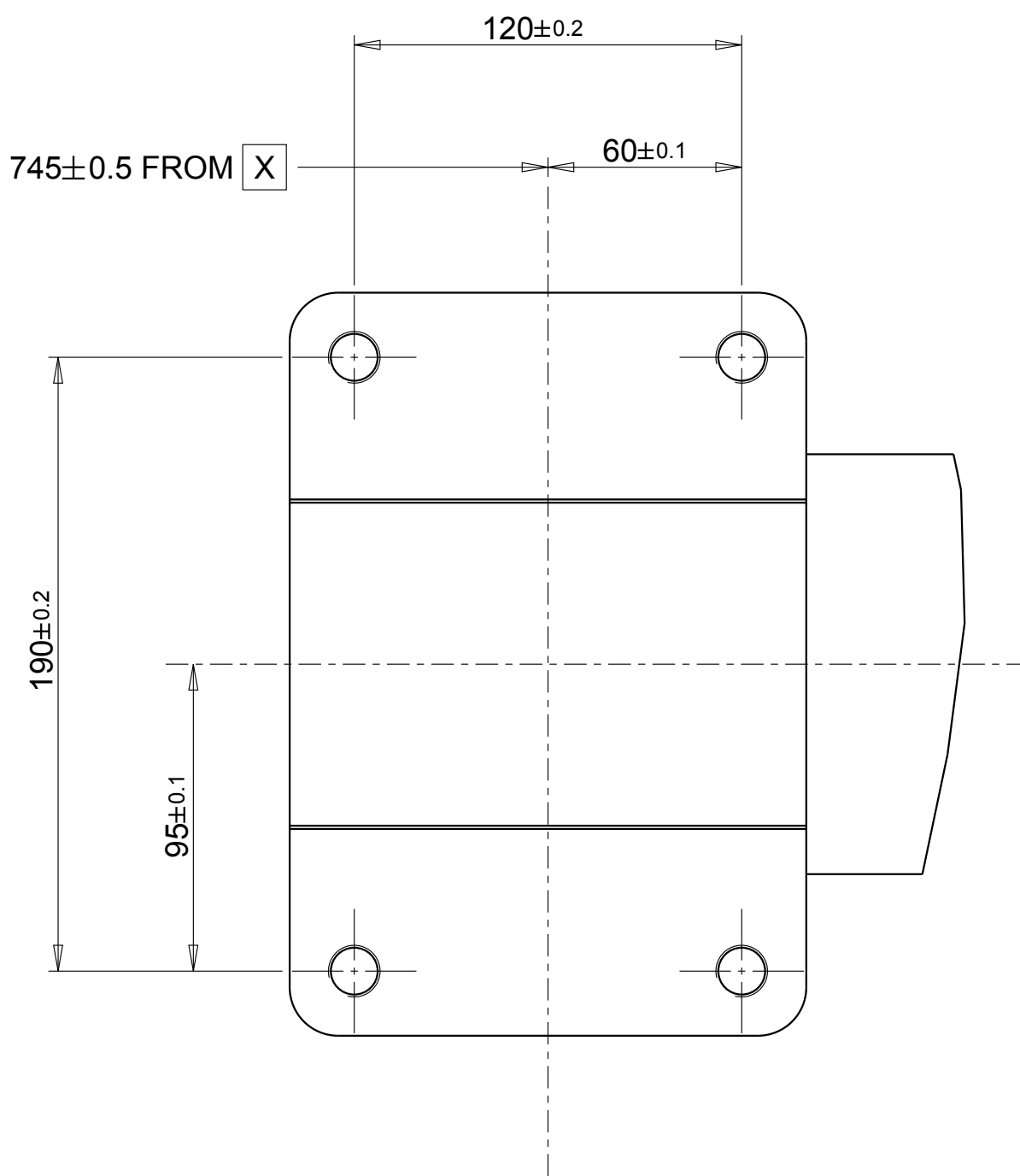
FRONT VIEW



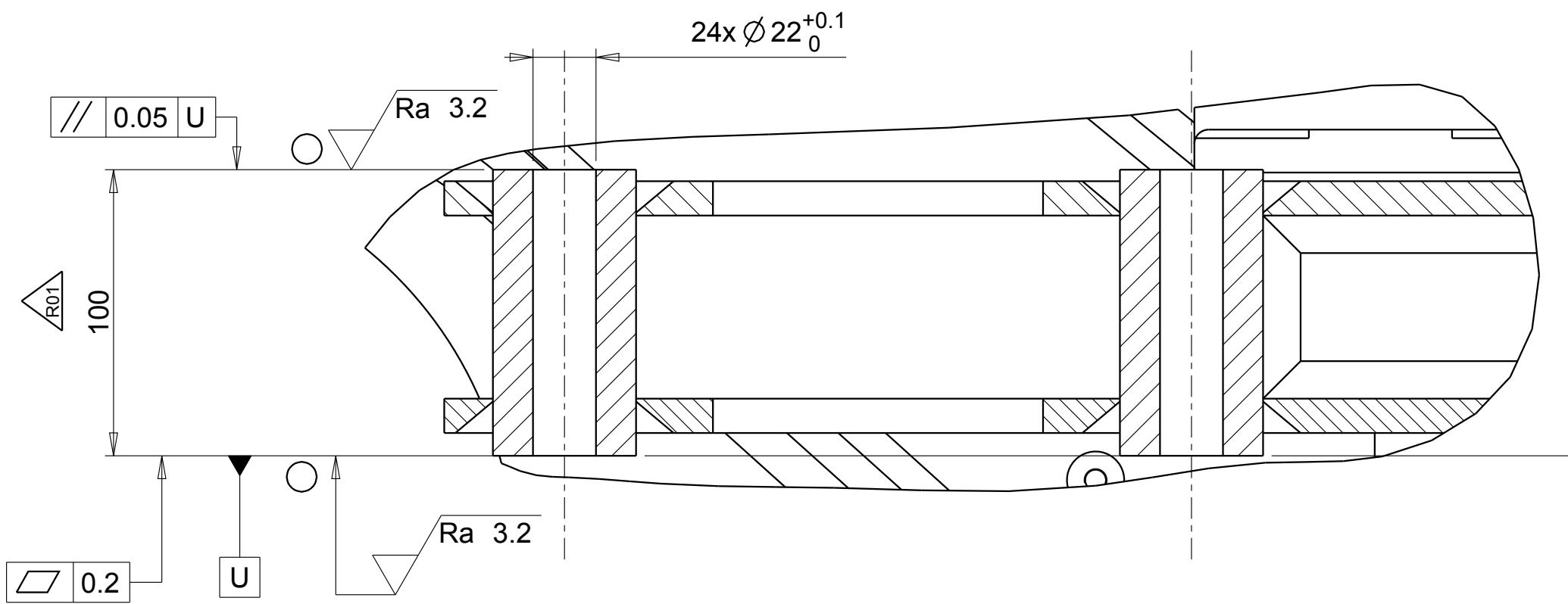
DETAIL A7  
SCALE(1:2)



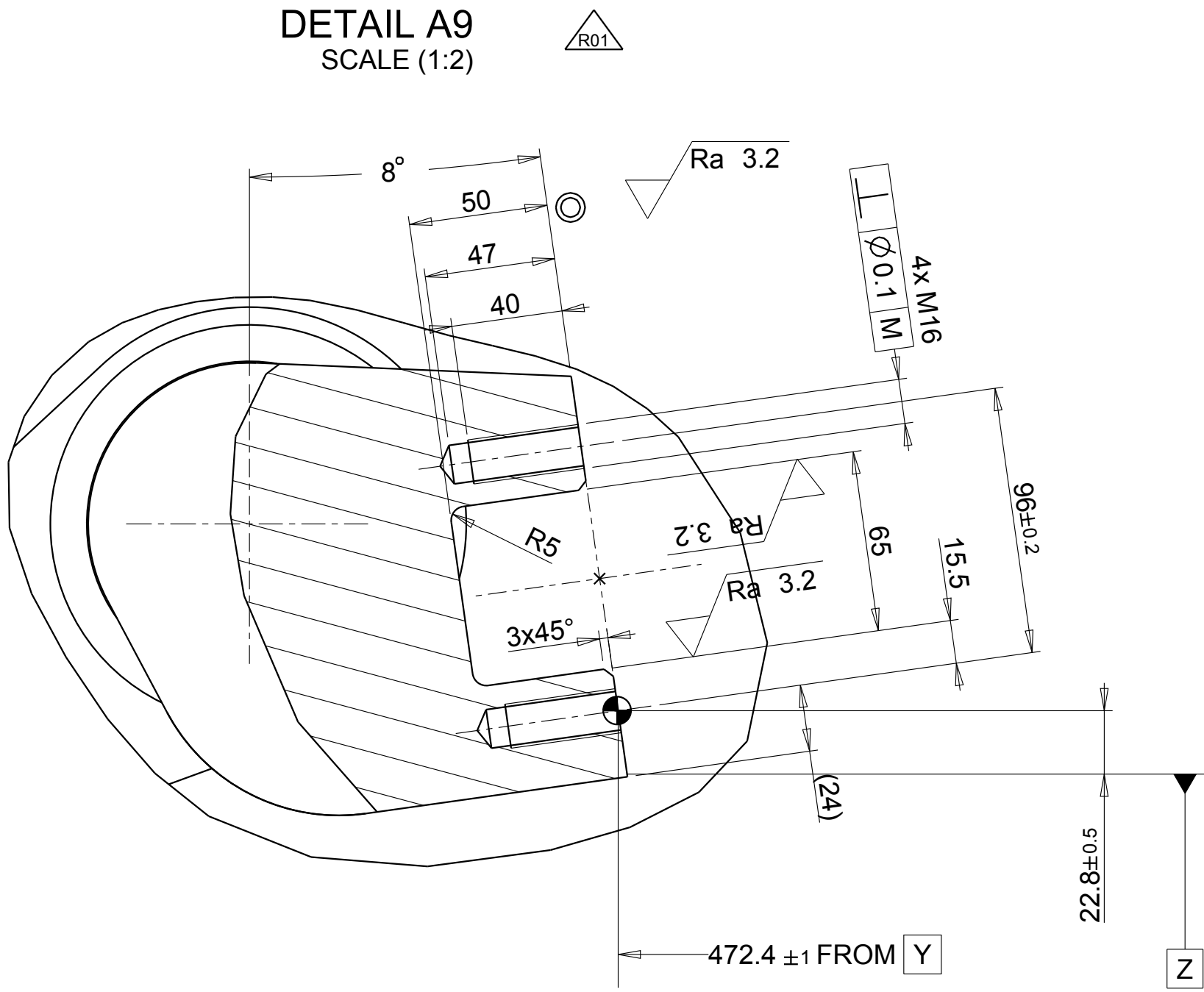
VIEW FROM T  
SCALE 1:2



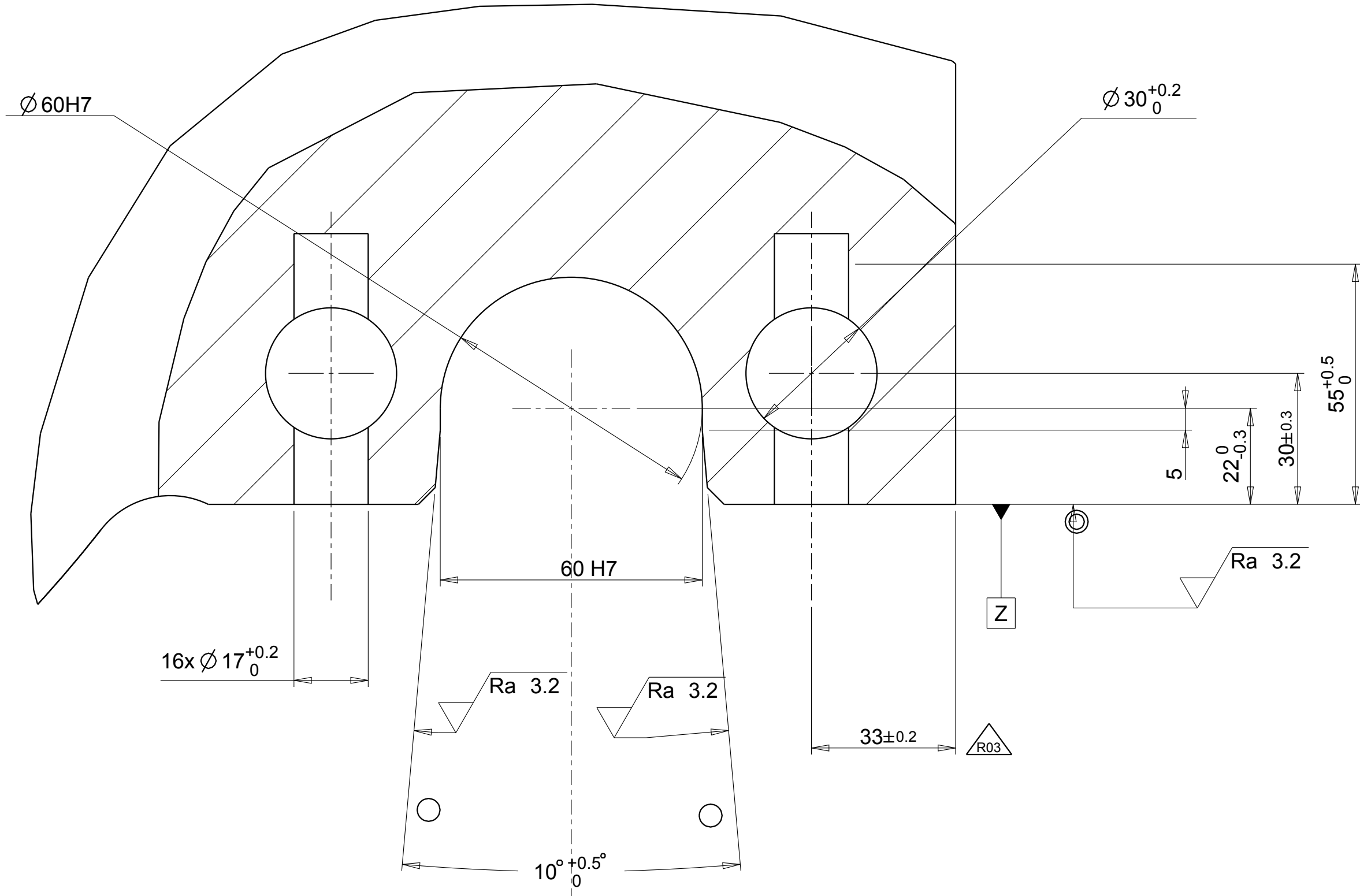
DETAIL A8  
SCALE(1:2)



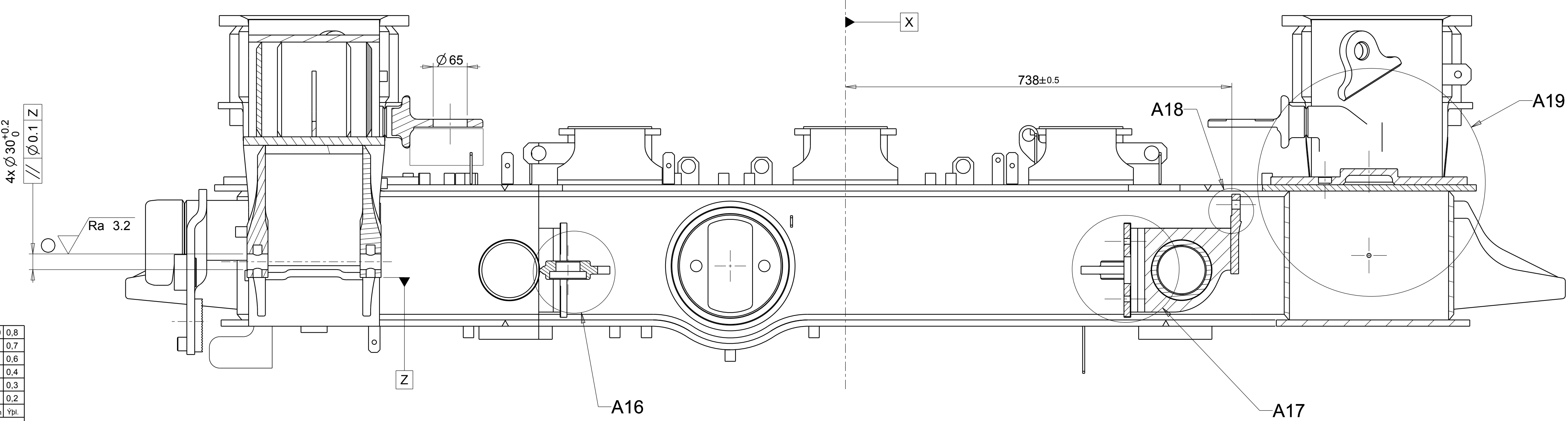
DETAIL A9  
SCALE (1:2)



DETAIL A10  
SCALE(1:1)



SECTION B-B




Ra12.5 (Ra 3.2 Ra 1.6)

Painting in accordance with TD-EM00.10.0028:  
- Protect from painting all threaded holes and  
mached surfaces marked with ○  
- Protect only with primer all surfaces marked with ◎

Sharp edges shall be removed  
Not dimensioned radii R0.5  
Not dimensioned chamfers 0.5x45°

Technical Specifications					
Technical Document	-	3	Added axlebox support reference data	14/07/2025	D. Carino
Fixture/Mould Asset ID	-	2	Updated dimension	19/03/2025	D. Carino
Coating/Heat Tre./Roughness	-	1	UPDATE DRAWING	24/09/18	S. Pozzo
Paint/Color	-		Modif No/ Modification Description	Date	Sign

1	WILD COMPL. FRAME ASSY	1	EM20040320000		1818.1
					1710.
No	Parça Ady Designation Name of Item	Adet Qty.	Resim No / Norm Drawing No / Norm	Malzeme Material	Ölçü Dimension
	ISO 1302 ISO 8015 EN 22553		General Tol.	ISO 2768	1 f 2 c 3 m 4 H 5 K 6 N 7 P 8 Y 9
	EN 15085-2 Certification Level	CL 100 CL 101 CL 102 CL 103 CL 104 CL 105 CL 106 CL 107 CL 108 CL 109 CL 110 CL 111 CL 112 CL 113 CL 114 CL 115 CL 116 CL 117 CL 118 CL 119 CL 120 CL 121 CL 122 CL 123 CL 124 CL 125 CL 126 CL 127 CL 128 CL 129 CL 130 CL 131 CL 132 CL 133 CL 134 CL 135 CL 136 CL 137 CL 138 CL 139 CL 140 CL 141 CL 142 CL 143 CL 144 CL 145 CL 146 CL 147 CL 148 CL 149 CL 150 CL 151 CL 152 CL 153 CL 154 CL 155 CL 156 CL 157 CL 158 CL 159 CL 160 CL 161 CL 162 CL 163 CL 164 CL 165 CL 166 CL 167 CL 168 CL 169 CL 170 CL 171 CL 172 CL 173 CL 174 CL 175 CL 176 CL 177 CL 178 CL 179 CL 180 CL 181 CL 182 CL 183 CL 184 CL 185 CL 186 CL 187 CL 188 CL 189 CL 190 CL 191 CL 192 CL 193 CL 194 CL 195 CL 196 CL 197 CL 198 CL 199 CL 200 CL 201 CL 202 CL 203 CL 204 CL 205 CL 206 CL 207 CL 208 CL 209 CL 210 CL 211 CL 212 CL 213 CL 214 CL 215 CL 216 CL 217 CL 218 CL 219 CL 220 CL 221 CL 222 CL 223 CL 224 CL 225 CL 226 CL 227 CL 228 CL 229 CL 230 CL 231 CL 232 CL 233 CL 234 CL 235 CL 236 CL 237 CL 238 CL 239 CL 240 CL 241 CL 242 CL 243 CL 244 CL 245 CL 246 CL 247 CL 248 CL 249 CL 250 CL 251 CL 252 CL 253 CL 254 CL 255 CL 256 CL 257 CL 258 CL 259 CL 260 CL 261 CL 262 CL 263 CL 264 CL 265 CL 266 CL 267 CL 268 CL 269 CL 270 CL 271 CL 272 CL 273 CL 274 CL 275 CL 276 CL 277 CL 278 CL 279 CL 280 CL 281 CL 282 CL 283 CL 284 CL 285 CL 286 CL 287 CL 288 CL 289 CL 290 CL 291 CL 292 CL 293 CL 294 CL 295 CL 296 CL 297 CL 298 CL 299 CL 300 CL 301 CL 302 CL 303 CL 304 CL 305 CL 306 CL 307 CL 308 CL 309 CL 310 CL 311 CL 312 CL 313 CL 314 CL 315 CL 316 CL 317 CL 318 CL 319 CL 320 CL 321 CL 322 CL 323 CL 324 CL 325 CL 326 CL 327 CL 328 CL 329 CL 330 CL 331 CL 332 CL 333 CL 334 CL 335 CL 336 CL 337 CL 338 CL 339 CL 340 CL 341 CL 342 CL 343 CL 344 CL 345 CL 346 CL 347 CL 348 CL 349 CL 350 CL 351 CL 352 CL 353 CL 354 CL 355 CL 356 CL 357 CL 358 CL 359 CL 360 CL 361 CL 362 CL 363 CL 364 CL 365 CL 366 CL 367 CL 368 CL 369 CL 370 CL 371 CL 372 CL 373 CL 374 CL 375 CL 376 CL 377 CL 378 CL 379 CL 380 CL 381 CL 382 CL 383 CL 384 CL 385 CL 386 CL 387 CL 388 CL 389 CL 390 CL 391 CL 392 CL 393 CL 394 CL 395 CL 396 CL 397 CL 398 CL 399 CL 400 CL 401 CL 402 CL 403 CL 404 CL 405 CL 406 CL 407 CL 408 CL 409 CL 410 CL 411 CL 412 CL 413 CL 414 CL 415 CL 416 CL 417 CL 418 CL 419 CL 420 CL 421 CL 422 CL 423 CL 424 CL 425 CL 426 CL 427 CL 428 CL 429 CL 430 CL 431 CL 432 CL 433 CL 434 CL 435 CL 436 CL 437 CL 438 CL 439 CL 440 CL 441 CL 442 CL 443 CL 444 CL 445 CL 446 CL 447 CL 448 CL 449 CL 450 CL 451 CL 452 CL 453 CL 454 CL 455 CL 456 CL 457 CL 458 CL 459 CL 460 CL 461 CL 462 CL 463 CL 464 CL 465 CL 466 CL 467 CL 468 CL 469 CL 470 CL 471 CL 472 CL 473 CL 474 CL 475 CL 476 CL 477 CL 478 CL 479 CL 480 CL 481 CL 482 CL 483 CL 484 CL 485 CL 486 CL 487 CL 488 CL 489 CL 490 CL 491 CL 492 CL 493 CL 494 CL 495 CL 496 CL 497 CL 498 CL 499 CL 500 CL 501 CL 502 CL 503 CL 504 CL 505 CL 506 CL 507 CL 508 CL 509 CL 510 CL 511 CL 512 CL 513 CL 514 CL 515 CL 516 CL 517 CL 518 CL 519 CL 520 CL 521 CL 522 CL 523 CL 524 CL 525 CL 526 CL 527 CL 528 CL 529 CL 530 CL 531 CL 532 CL 533 CL 534 CL 535 CL 536 CL 537 CL 538 CL 539 CL 540 CL 541 CL 542 CL 543 CL 544 CL 545 CL 546 CL 547 CL 548 CL 549 CL 550 CL 551 CL 552 CL 553 CL 554 CL 555 CL 556 CL 557 CL 558 CL 559 CL 560 CL 561 CL 562 CL 563 CL 564 CL 565 CL 566 CL 567 CL 568 CL 569 CL 570 CL 571 CL 572 CL 573 CL 574 CL 575 CL 576 CL 577 CL 578 CL 579 CL 580 CL 581 CL 582 CL 583 CL 584 CL 585 CL 586 CL 587 CL 588 CL 589 CL 590 CL 591 CL 592 CL 593 CL 594 CL 595 CL 596 CL 597 CL 598 CL 599 CL 600 CL 601 CL 602 CL 603 CL 604 CL 605 CL 606 CL 607 CL 608 CL 609 CL 610 CL 611 CL 612 CL 613 CL 614 CL 615 CL 616 CL 617 CL 618 CL 619 CL 620 CL 621 CL 622 CL 623 CL 624 CL 625 CL 626 CL 627 CL 628 CL 629 CL 630 CL 631 CL 632 CL 633 CL 634 CL 635 CL 636 CL 637 CL 638 CL 639 CL 640 CL 641 CL 642 CL 643 CL 644 CL 645 CL 646 CL 647 CL 648 CL 649 CL 650 CL 651 CL 652 CL 653 CL 654 CL 655 CL 656 CL 657 CL 658 CL 659 CL 660 CL 661 CL 662 CL 663 CL 664 CL 665 CL 666 CL 667 CL 668 CL 669 CL 670 CL 671 CL 672 CL 673 CL 674 CL 675 CL 676 CL 677 CL 678 CL 679 CL 680 CL 681 CL 682 CL 683 CL 684 CL 685 CL 686 CL 687 CL 688 CL 689 CL 690 CL 691 CL 692 CL 693 CL 694 CL 695 CL 696 CL 697 CL 698 CL 699 CL 700 CL 701 CL 702 CL 703 CL 704 CL 705 CL 706 CL 707 CL 708 CL 709 CL 710 CL 711 CL 712 CL 713 CL 714 CL 715 CL 716 CL 717 CL 718 CL 719 CL 720 CL 721 CL 722 CL 723 CL 724 CL 725 CL 726 CL 727 CL 728 CL 729 CL 730 CL 731 CL 732 CL 733 CL 734 CL 735 CL 736 CL 737 CL 738 CL 739 CL 740 CL 741 CL 742 CL 743 CL 744 CL 745 CL 746 CL 747 CL 748 CL 749 CL 750 CL 751 CL 752 CL 753 CL 754 CL 755 CL 756 CL 757 CL 758 CL 759 CL 760 CL 761 CL 762 CL 763 CL 764 CL 765 CL 766 CL 767 CL 768 CL 769 CL 770 CL 771 CL 772 CL 773 CL 774 CL 775 CL 776 CL 777 CL 778 CL 779 CL 780 CL 781 CL 782 CL 783 CL 784 CL 785 CL 786 CL 787 CL 788 CL 789 CL 790 CL 791 CL 792 CL 793 CL 794 CL 795 CL 796 CL 797 CL 798 CL 799 CL 800 CL 801 CL 802 CL 803 CL 804 CL 805 CL 806 CL 807 CL 808 CL 809 CL 810 CL 811 CL 812 CL 813 CL 814 CL 815 CL 816 CL 817 CL 818 CL 819 CL 820 CL 821 CL 822 CL 823 CL 824 CL 825 CL 826 CL 827 CL 828 CL 829 CL 830 CL 831 CL 832 CL 833 CL 834 CL 835 CL 836 CL 837 CL 838 CL 839 CL 840 CL 841 CL 842 CL 843 CL 844 CL 845 CL 846 CL 847 CL 848 CL 849 CL 850 CL 851 CL 852 CL 853 CL 854 CL 855 CL 856 CL 857 CL 858 CL 859 CL 860 CL 861 CL 862 CL 863 CL 864 CL 865 CL 866 CL 867 CL 868 CL 869 CL 870 CL 871 CL 872 CL 873 CL 874 CL 875 CL 876 CL 877 CL 878 CL 879 CL 880 CL 881 CL 882 CL 883 CL 884 CL 885 CL 886 CL 887 CL 888 CL 889 CL 890 CL 891 CL 892 CL 893 CL 894 CL 895 CL 896 CL 897 CL 898 CL 899 CL 900 CL 901 CL 902 CL 903 CL 904 CL 905 CL 906 CL 907 CL 908 CL 909 CL 910 CL 911 CL 912 CL 913 CL 914 CL 915 CL 916 CL 917 CL 918 CL 919 CL 920 CL 921 CL 922 CL 923 CL 924 CL 925 CL 926 CL 927 CL 928 CL 929 CL 930 CL 931 CL 932 CL 933 CL 934 CL 935 CL 936 CL 937 CL 938 CL 939 CL 940 CL 941 CL 942 CL 943 CL 944 CL 945 CL 946 CL 947 CL 948 CL 949 CL 950 CL 951 CL 952 CL 953 CL 954 CL 955 CL 956 CL 957 CL 958 CL 959 CL 960 CL 961 CL 962 CL 963 CL 964 CL 965 CL 966 CL 967 CL 968 CL 969 CL 970 CL 971 CL 972 CL 973 CL 974 CL 975 CL 976 CL 977 CL 978 CL 979 CL 980 CL 981 CL 982 CL 983 CL 984 CL 985 CL 986 CL 987 CL 988 CL 989 CL 990 CL 991 CL 992 CL 993 CL 994 CL 995 CL 996 CL 997 CL 998 CL 999 CL 1000			
	Approved	P. Fatma	30/08/2018	Scale	
	Checked	M. Bordo	30/08/2018	1:5	
	Prepared	G. Candelo	30/08/2018		
		MCD COMP. FRAME ASSY			
TYP	Date: 14/07/2025				
				Sheet: 3/4	Size: A0 Rev: 03

TUVASAS  
Turkish Wagon Industry

EM20.04.03.10000



