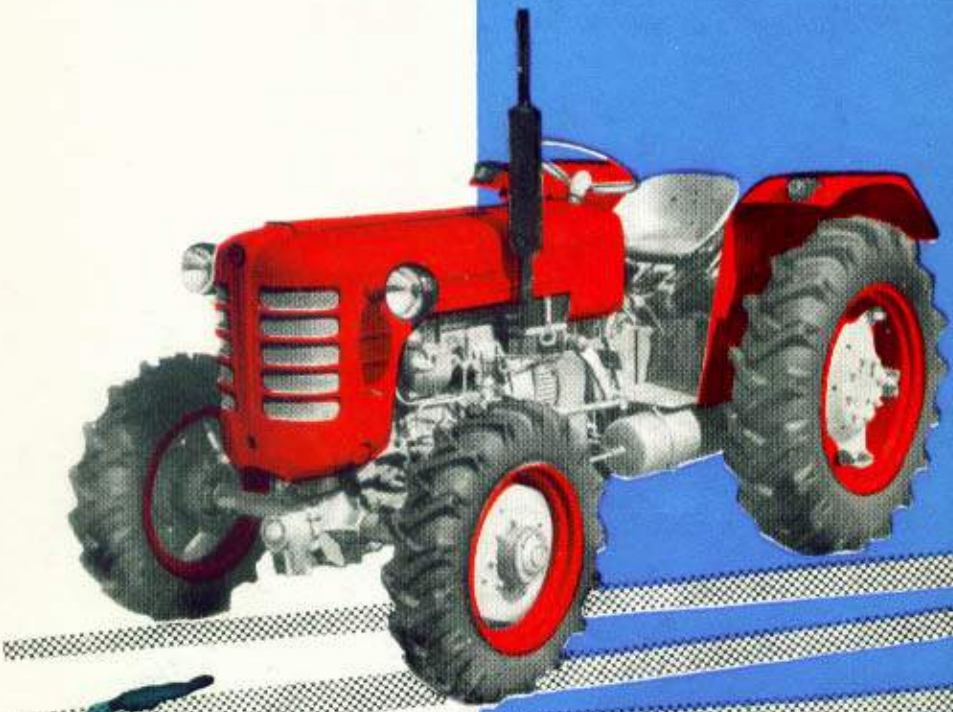
Fetor 3045



OPERATOR'S MANUAL

APPLICATION OF FOUR-WHEEL DRIVE TRACTOR

The tractor **Zetor 3045** is a modification of the basic type of unified range tractor Zetor 3011. Instead of the standard front axle with extensions, the tractors **Zetor 3045** are provided with front wheel drive. The front wheels are steered and have a smaller diameter than the rear ones.

The tractors **Zetor 3045** have been designed especially for service in heavy soils with decreased passability and with a lower coefficient of adhesion and for operations on maximum slope of 16°.

They suit especially for agricultural duties in hilly, humid, marshy and sandy terrain. In such difficult conditions the tractor **Zetor 3045** can cope with all the work as the standard Zetor 3011 except cultivating operations and such ones which are carried out by implements driven by front P. T. O. shaft as this tractor 3045 is not provided with it. This tractor can be used for

a) forest operations — for work with the winch, for bringing near stems and their transport to stock yard

b) agricultural operations — in hilly terrain for traction or drive

CONTROL OF FRONT WHEEL DRIVE

The front wheel drive is controlled from the driver's seat by means of a lever (Fig. 1/1) mounted at the left-hand side of the gearbox. By moving the lever forward, the front wheel drive is engaged, by a reverse moving it is disengaged.

The front wheel drive can be used only in application of **the road speed gears** (the right-hand side shifting lever on the gearbox cover is in its uppermost position - - Fig. 2/2). If reduced speed gears are applied the front wheel drive has to be disengaged. Shifting-in of front wheel drive can be carried out exclusively when the tractor stops.

As a constant use of road speeds it is not necessary to disengaged the front wheel drive neither in the case if the tractor does not work directly in a heavy terrain.

At the driven front axle with differential the drive is divided on both front wheels by means of the differential and two half axles but the diferential is not provided with a lock.

When the traction load increases in such a way that the rear wheels begin to slip the front wheels start to be engaged, too.

If the tractor Zetor 3045 with the differential is in service it is possible to exploit the increased traction force for reverse speed, too. At braking a good use is made of the front axle weight. If it is not possible to disengage the front wheel drive (the control lever of front wheel drive cannot be shifted forward or the right-hand shifting lever on the gearbox cover cannot be moved in its neutral position downwards), any force should be never applied. In this case it is recommended at the run ahead (back) to pass sligh-

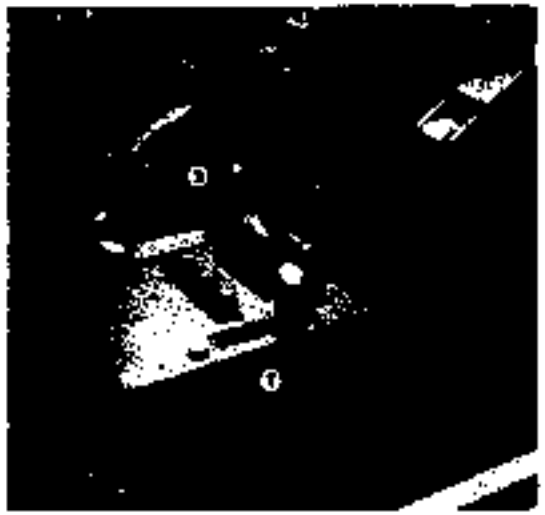


Fig. 1

ly back (ahead). Thus the pressure in drive mechanism of front wheel drive is going to be eliminated and then it is possible to shift the control lever easily.

If the function of the front wheel drive should be correct it is important to observe the prescribed dimensions of front and rear tyres as well.

GENERAL INFORMATION

The following new elements are mounted on the tractor Zetor 3045 in place of the front axle: right-hand and left-hand extensions with wheels or sprung extension;

- drive box and cardan joint shaft (Fig. 2)
- front driven axle (Fig. 3)
- double joint and driven wheel (Fig. 4)

Besides of these new elements, modifications have been done to the steering mechanism, which is laid out at one side of the tractor only and both front wheels are connected by means

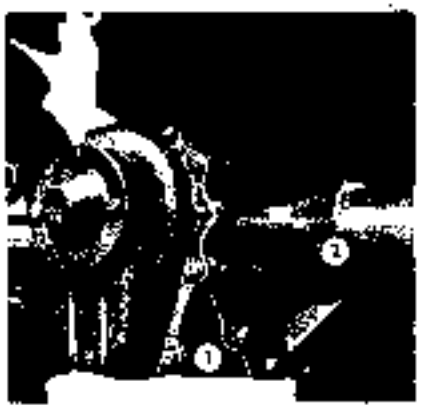


Fig. 3

Fig. 2

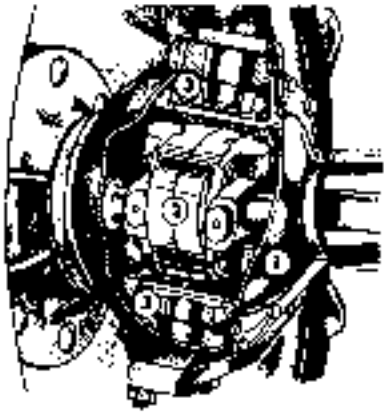


Fig. 4

of a connecting link (Fig. 3/1) behind the front axle.

All the remaining parts of the tractor are absolutely identical with those of the tractor Zetor 3011.

Front Wheel Drive

The front driven axle is of the bridge- & car-type, non sprung, swivel-mounted. To the axle housing (Fig. 3/1) two covers of the axle are bolted with tubes of the half-axles (Fig. 3/2). The half-axle tubes end in semi-spheres (Fig. 3/2) in which the double joint is located (Fig. 4/2).

The front wheel track is determined by the design and can be enlarged only when reversing the disc. The front wheels are not adjustable vertically; it is consequently not possible to enlarge the ground clearance under the front axle and thus it is also not possible to change the tractor Zetor 3045 for cultivating operations.

Inflating of Tyres

Front tyres:
for ploughing and road service 1.5 at. g.
Rear tyres:
for ploughing 0.8 at. g.
for road service 1.5 at. g.

If tyres are replaced it is necessary to mount ever on the tractor Zetor 3045 only tyres of prescribed dimensions. The correct tyre dimensions of front wheels and rear ones ensure the correct function of front wheel drive, too.

Running-in of the tractor:

The running-in of the tractor Zetor 3045 is to be carried out in the same way to that of the tractor Zetor 3011 but with engaged front wheel drive.

SPECIAL ACCESSORIES

In consequence of the fact that the front axle is driven, the following special accessories are not mounted on the tractor Zetor 3045:

- front power take-off shaft
- front mudguards
- sprung shifting-out extensions of front wheels
- front trailer coupling
- weights of the front axle

The remaining special accessories can be ordered in accordance with the catalogs indicated in the List of Spare Parts of the tractor Zetor 3011.

How to fill tyres with water

In order to increase the adhesion weight, it is possible to fill the front tyres of the tractor Zetor 3045 as well. The proportion of respective solution for filling front tyres is to be carried out in strict accordance with the specification indicated in the Operator's Manual for tractors Zetor 2011 – 3011 – 4011.

The quantity of water in front tyres equals to 2×35 kgs. i.e. totally 70 kgs.

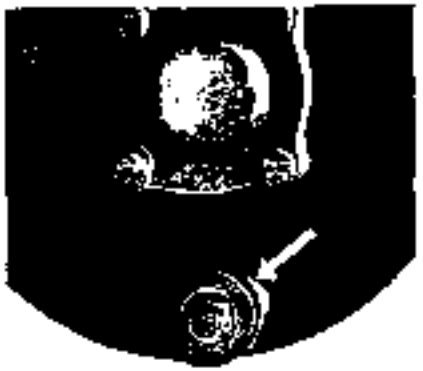


Fig. 5

Fig. 6

All necessary attention to the maintenance of the tractor **Zetor 3045** is to be paid and instructions given in the Operator's Manual for tractors Zetor 2011 – 3011 – 4011 have to be followed. Control and exchange of oil of individual groups of the front wheel drive are to be carried out in the following way:

Drive Box has a common oil space with the gearbox. Checking and topping of the oil level is carried out simultaneously with the inspection of the gearbox level.
When changing oil screw out the drain bolt on the drive box body (Fig. 5) and remove sediments from the plug.

Fig. 7

Fig. 8

Axle housing is provided with its own oil filling. Checking, topping as well as change of oil is to be carried out at the same time as it is done with the gearbox. Inspection orifice being used as filling one, too, is located at the rear wall of the axle housing (Fig. 6).
Drain orifice is located on the bottom part of the front cover (Fig. 7).

Double joint and bearings of the pivot are lubricated with oil which is poured in through the filling orifice in the top part of the pivot (Fig. 8). Each joint has its own oil filling. Checking and change of oil is also carried out in the same time intervals as it is done with the gearbox — see the lubrication chart of the front wheel drive.
Oil is drained when the draining plug, which is in the bottom of the pivot, was unscrewed (Fig. 9). This pivot is

Fig. 9

sealed against oil leakage by means of a special sealing ring.
The remaining maintenance is to be carried out according to the results of technical inspections as mentioned in the Operator's Manual for tractors Zetor 2011 – 3011 – 4011.

Lubrication Chart for Front Wheel Drive

Fig.	Lubricated spot	Operation	Kind Summer	Kind Winter	Quantity
		Maintenance after 70 hours of service			
	Drive box gearbox	Inspection			24.5 lit. + 4 lit. of operations with hydraulic control system in hilly terrain
6	Front axle housing	Inspection			2 lit.
4	Double joint	Inspection			2 × 0.75 lit.
		Maintenance after 680 hours of service			
5	Drive box gearbox	Oil change rinsing	OL-S1 or OL-B2		12 lit.
6, 7	Front axle housing	Oil change, rinsing	OL-B1 or OL-B2		1.5 lit.
8, 9	Double joint	Oil change, rinsing	OL-B1 or OL-B2		2 × 0.5 lit.

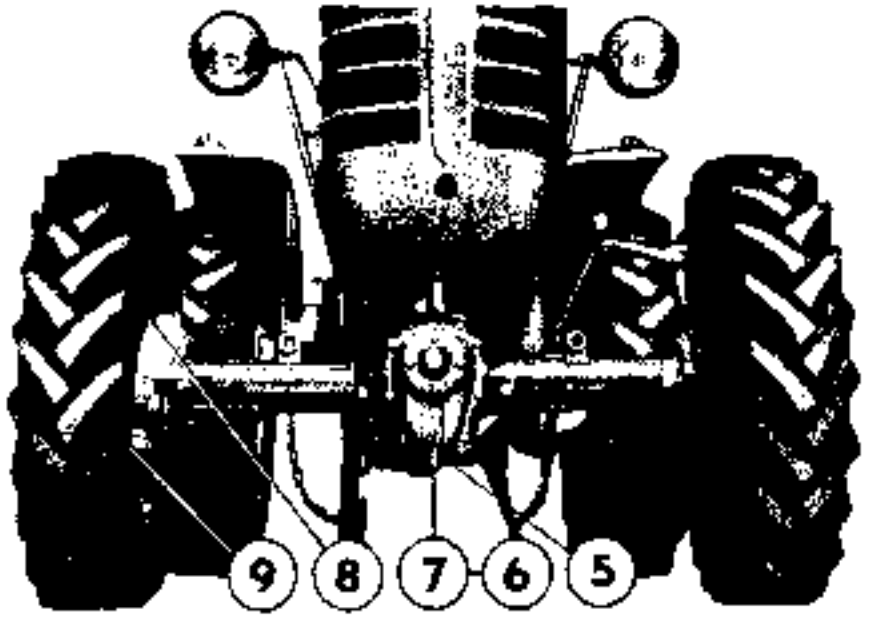


Fig. 10

Front wheel toe-in

is adjusted by shortening or prolonging the connecting link, located behind the front axle under the tractor.
The toe-in of the front wheels of the tractor **Zetor 3045** is set to 3 - 5 mm and it is measured on rims in the horizontal wheel axis.

Checking of play of taper roller bearings of the front wheels

Front wheel hoods are filled at the assembly in the Works with lubricating grease. This grease serves for lubrication of roller bearings only to the moment when the plain bearing of the half-axle begins to push oil from the inner space.

Inspection or the eventual adjustment of play of the taper roller bearings of front wheels and those ones of the pivot is carried out in the course of Technical Inspection No. 3 (P3). The play of taper roller bearings of front wheels is set up in the same way as that of the tractor Zetor 3011. The manner is mentioned in Operator's Manual for tractors Zetor 2011 - 3011 - 4011.

If you find out at the circumference of the wheel any play in the top part of the wheel against the inside hemisphere by pressure of hand, it is necessary to eliminate this play in the taper roller bearings of the pivot (Fig. 4-3) when taking out spacing shims between the steering shaft (left-hand side) and the pivot (Fig. 8-2).

Defects and their elimination

Defect:	Cause:	Elimination:
The drive control lever (Fig. 1-1) jumps out of engagement	broken spring of drive control lever locking	spring is to be replaced
	worn part in drive housing	defective part is to be replaced by a new one
Front wheels flutter	free axle on pivot	replace slide bushings with new ones
	play in bearings of pivots (Fig. 4-2)	set up the play by spacing shims
	play in front wheel hub bearings	set up the play by the nut KM 15
	incorrect toe-in	set it up by connecting link (Fig. 6-1)
Oil flows on the side cover spherical surface	special sealing ring is worn	replace the ring in a special repair shop

MAIN DIMENSIONS AND WEIGHTS

Main dimensions

Length (with Hydraulic lift controls)	3170 mm
Width (rear wheels track of 1350 mm)	1552 mm
Height to the top edge of steering wheel (without cab)	1525 mm
Minimum ground clearance	270 mm
Wheelbase	1937 mm
Front wheel track	1340 mm
Front wheel track after reversing wheel rim	1506 mm
Minimum turning circle (with one braked wheel)	7.85 m
Travel capacity when turning (with one braked)	8.25 m
Water quantity in front tyres 2 x 35 kgs	70 kgs
Water quantity in rear tyres 2 x 100 kgs	200 kgs
Weight of the tractor in standard execution and with special accessories	2640 kgs
Out of which: front axle load	920 kgs
rear axle load	1720 kgs

Dimensions of tyres

Front wheel tyre	8 20"
Rear wheel tyre	11 28"

Output

Tractive force in drawbar with ballast weights and water in tyres, on dry concrete road:	
without front wheel drive	1500 kps
with front wheel drive	1630 kps

Fuel consumption

Fuel consumption at ploughing to the depth of 25 cm in medium-heavy soil with a doubleshare attached plough per 1 ha, with front wheel drive in operation	15.7 l/ha
Fuel consumption per hour with running front wheel drive	5.5 l/h

List of Spare Parts for the Four - Wheel Drive

- **DRIVE BOX AND CARDAN SHAFT**
- **FRONT WHEEL DRIVE**
- **DOUBLE JOINT AND DRIVEN WHEEL**

Illustration Fig.	Ref. No	Name of the part	Part No.	Pcs	Weight g piece	Note
30	1	Drive wheel	3045 3002	1	530	
	2	Connecting shaft	3045 3003	1	420	
	3	Drive box	3045 3005	1	2046	
	4	Gear shift lever	3045 3006	1	290	
	5	The 4th on 5th speed coupling sleeve	3011 1912	1	210	
	6	Seal	3011 6008	1	15	
	7	Spring	95 2033	1	12	
	8	Fork	95 2522	1	148	
	9	Fork sliding block	95 3001	2	32	
	10	Drive shaft	95 3004	1	910	
	11	Sealing dust cover	95 3006	1	72	
	12	Gear shifting lock	95 3008	1	10	
	13	Safety shim	95 3009	1	10	
	14	Front wheel hub with flange	95 3010	1	290	
	15	Shifting shaft	95 3012	1	930	
	16	Seal	95 6002	2	12	
	17	Lock cap	95 6003	1	181	
	18	Shim	95 6006	1	13	
	19	Bolt M 8×18	99 2535	2	20	
	20	Bolt M 8×20	99 3035	8	21	
	21	Nut M 8	99 3610	2	6.4	
	22	Nut M 16×1.5	99 3878	1	15	
	23	Washer 15	99 4312	1	8	
	24	Washer 8.2	99 4806	10	0.1	
	25	Washer 10.2	99 4807	8	7	
	26	Cotter pin 4×3.5	99 5076	1	9	
	27	Pin 5×32	99 6460	1	9	
	28	Pin 8×16	99 6481	2	9	
	29	Key 5×5×47	99 8011	1	16	
	30	Bolt M 8×14	99 9002	4	17	
	31	Bolt M 6×18	99 9006	4	20	
	32	Bolt M 10×25	99 9029	8	24	

30 Group No. Drive Box and Cardan Shaft

Illustration Fig.	Ref. No.	Name of the part	Part No.	Pcs	Weight g piece	Note
30	33	Safety ring 15 × 1	97 0274	1	14	
	34	Bolt IV 5 16"	97 0934	8	10	
	35	Bearing 4206	97 1037	2	98	
	36	Spacing shim 50 × 62 × 0.2	97 1802	1	12	
		Spacing shim 50 × 62 × 0.3	97 1803	1	14	
		Spacing shim 50 × 62 × 0.5	97 1805	1	18	
	37	Sealing ring 30 × 38	97 2157	1	4.1	
	38	Ring 40 × 52 × 7	97 4205	1	2.3	
	39	Ring 15 × 11	97 4246	1	1.1	
	40	Ring 20 × 16	97 4250	1	1.3	
	41	Ball 25	97 5305	1	17	
		Cross joint 56 (consists of ref. No. 43 - 48)	97 5603	1		
	42	Drain bolt M 30 × 1.5	97 8416	1	24	
	43	Cross pin	93 1010	1	147	
	44	Pin sealing	93 1011	4	10	
	45	Outer sealing pin	93 1012	4	12	
	46	Inner sealing pin	93 1013	4	13	
	47	Needle roller 3 × 13	93 1014	76	1.2	
	48	Pin bearing	93 1015	4	19	

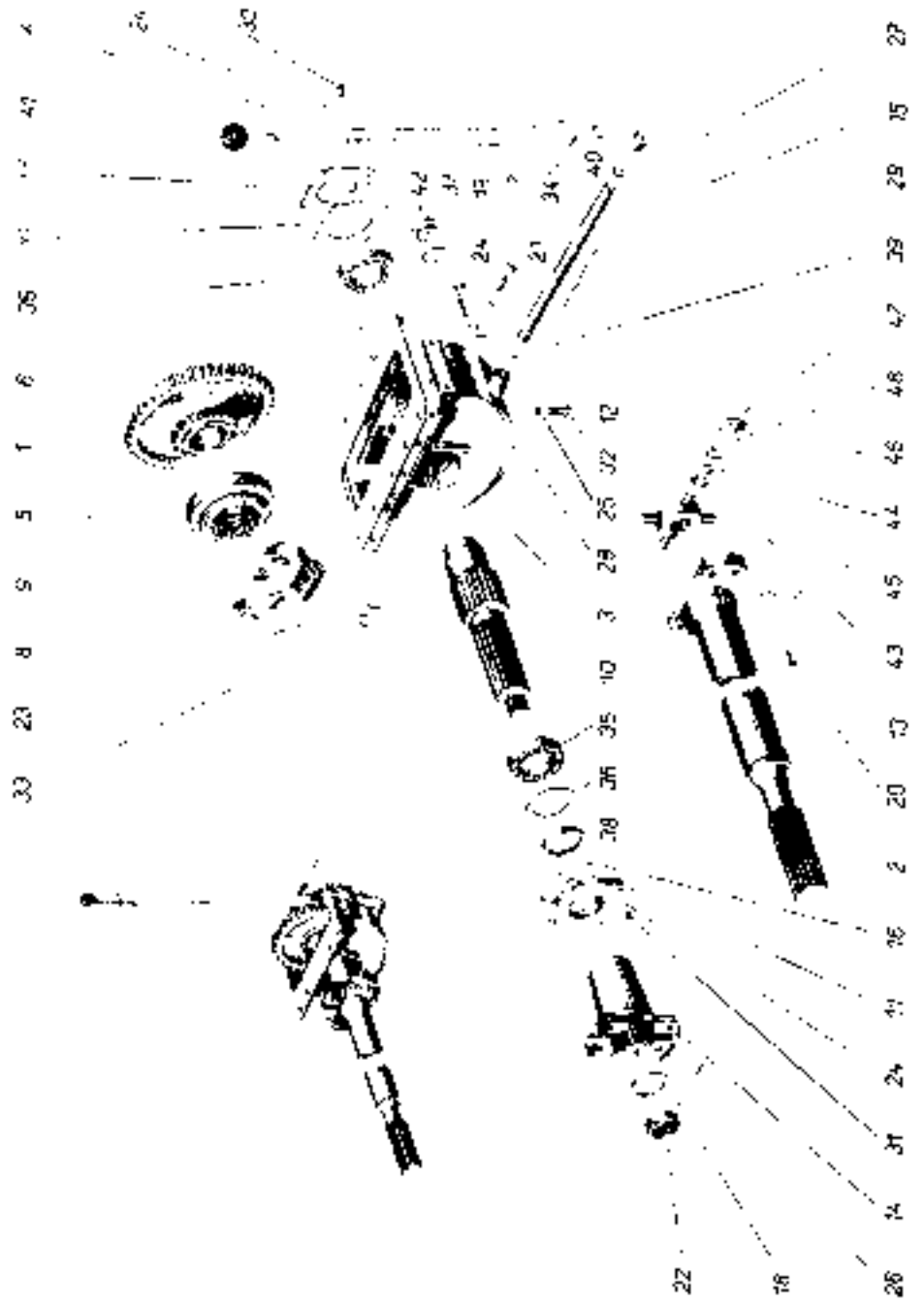


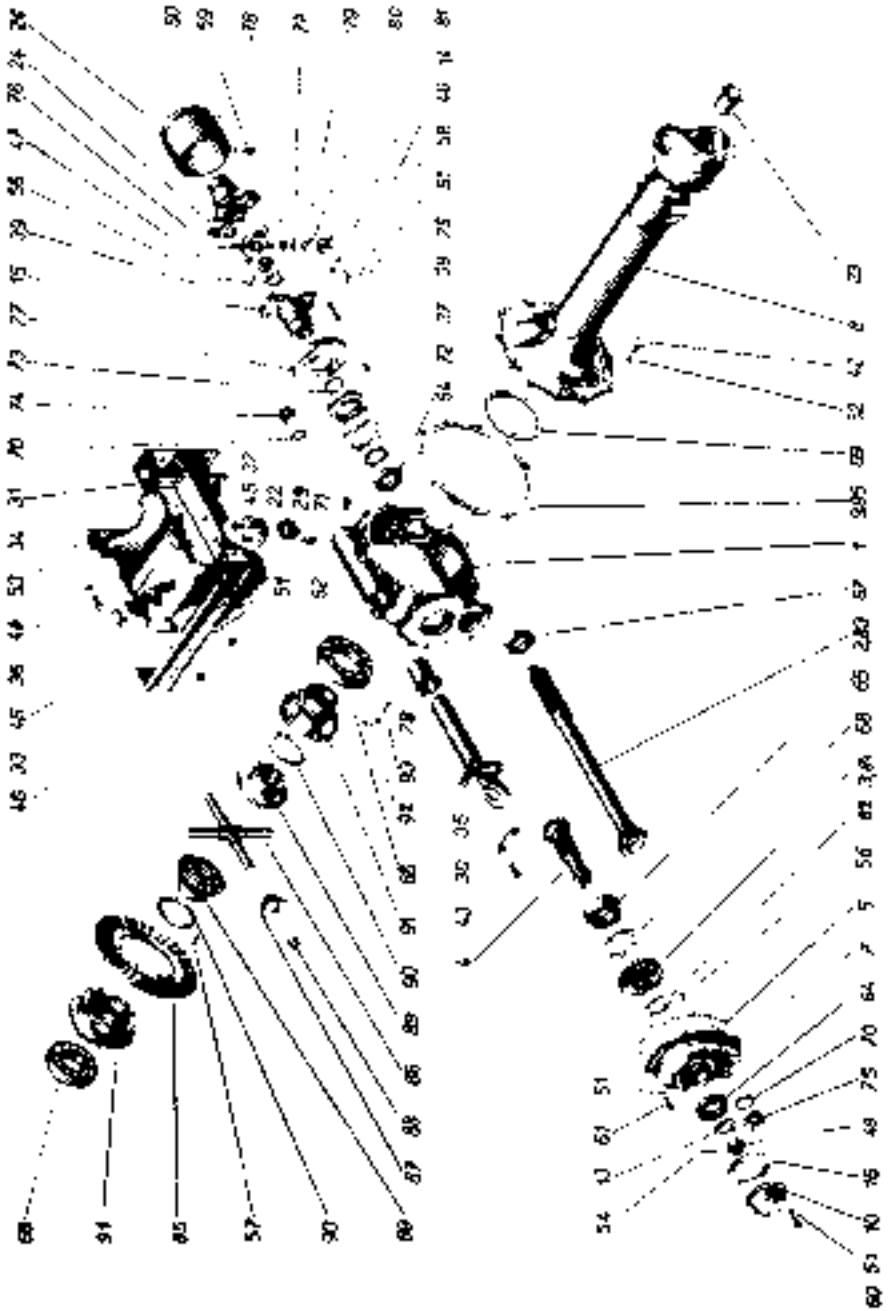
Illustration Fig	Ref No	Name of the part	Part No	Pcs	Weight g piece	Note
31	1	Axle housing	3045 3101	1	4045	
	2	Drive shaft	3045 3102*	1	1420	
	3	Driven wheel	3045 3103*	1	480	
31	4	Pinion	3045 3104	1	101	no spare part
	5	Front cover gasket	3045 3105	1	16	
	6	Free wheel drive housing	3045 3106*	1	1410	
31	7	Front cover	3045 3107	1	216	
	8	Axle side cover	3045 3108	2	610	
	9	Side cover gasket	3045 3109	2	21	
	10	Guard cover	3045 3113	1	160	
	11	Supporting cover No. II	3045 3114*	1	610	
		Free wheel drive body with crownwheel and pinion (consists of ref. No. 4, 6, 12, 57)	3045 3199*	1		
	12	Crown wheel	3011 2577*	1	3800	
31	13	Shim (pad)	95 2501	1	16	
	14	Lock strip	95 3009	4	10	
	15	Front wheel hub with flange	95 3010	1	430	
	16	Seal	95 3104	1	10	
	17	Free wheel drive hub	95 3107*	2	480	
	18	Engaging ring	95 3109*	2	196	
	19	Supporting cover	95 3110*	1	605	
	20	Spring catch	95 3111*	6	16	
	21	Spring	95 2112*	6	20	
31	22	Stop adapter	95 3115	2	26	
	23	Half axle bearing	95 3116	2	135	
	24	Pushing hub	95 3117	1	19	
	25	Tube	95 3122	4	28	
	26	Cardan shaft guard	95 3123	1	660	
	27	Guard cover	95 3124	1	160	
	28	Bushing	95 3303	2	31	
	29	Square stop	95 3308	2	115	
	30	Lock tab washer	95 3311	2	15	

Illustration Fig	Ref No	Name of the part	Part No	Pcs	Weight g piece	Note
31	31	Adapter No. II	95 3312	2	40	
	32	Adapter No. I	95 3313	2	27	
	33	Holder	95 3314	1	567	
	34	Front axle bracket	95 3315	1	13650	
	35	Front hook	95 3316	1	3650	
	36	Bolt	95 3317	2	36	
	37	Packing	95 6002	1	59	
	38	Sealing cap	95 6004	1	39	
	39	Shim	95 6006	1	10	
	40	Bolt M 8 X 20	99 3005	8	20	
	41	Bolt M 6 X 18	99 1460*	16	18	
31	42	Bolt M 10 X 25	99 1468	24	33	
	44	Bolt M 12 X 25	99 1477	4	34.3	
	43	Bolt M 12 X 35	99 1478	6	40.1	
	45	Nut M 8	99 3610	8	6.4	
	46	Nut M 12	99 3772	4	9.1	
	47	Nut 16 X 1.5	99 3878	1	15	
	48	Nut M 20 X 1.5	99 3980	1	13	
	49	Washer 8.2	99 4605*	18	4.1	
31	50	Washer 6.1	99 4805	4	3.2	
	51	Washer 8.2	99 4806	24	4.1	
	52	Washer 10.2	99 4807	24	7.6	
	53	Washer 12.2	99 4808	8	3.8	
	54	Cotter pin 4 X 40	99 4977	1	19	
	55	Cotter pin 4 X 35	99 5076	1	17	
	56	Pin 8 X 20	99 6483	2	15	
	57	Rivet 8 X 30	99 7093	10	12	no spare part
	58	Bolt M 8 X 45	99 8655	4	29	
	59	Bolt M 6 X 12	99 8986	4	10	
	60	Bolt M 8 X 14	99 9002	4	11.9	
	61	Bolt M 8 X 20	99 9007	8	20	
	62	Bolt M 8 X 25	99 9009	4	21.6	

Illustration Fig.	Ref. No.	Name of the part	Part No.	Pcs	Weight g piece	Note
	63	Roller 10-15 × 22	97 09654	18	10	
31	64	Bearing 30206	97 1373	1	76	
	65	Bearing 30207	97 1374	2	79	
	66	Bearing 30214	97 1381	2	86	
	67	Bearing 30309	99 1427	1	68	
	68	Spacing shim 85 × 100 × 0.3	97 1862	1	10	
		Spacing shim 85 × 100 × 0.3	97 1863	1	11	
		Spacing shim 85 × 100 × 0.5	97 1864	1	12.3	
	69	Spacing shim 105 × 125 × 0.1	97 1881	2	14.1	
		Spacing shim 105 × 125 × 0.2	97 1882	2	14.9	
		Spacing shim 105 × 125 × 0.3	97 1883	2	15.8	
	70	Sealing ring 20 × 36	97 2137	2	16	
	71	Lock M 10 × 1	97 2829	1	19	
	72	Ring 40 × 52 × 2	97 1205	1	17	
	73	Ring 28 × 2	97 4508	1	12	
		Cross joint 36 (consists of ref. No. 76–81)	97 5603	1	560	
	74	Drain bolt M 30 × 1.5	97 8406	1	24	
	75	Drain bolt M 30 × 1.5	97 8416	1	26	
	76	Cross pin	93 1010	1	142	
	77	End sealing	93 1011	4	10	
	78	Outer sealing pin	93 1012	4	12	
	79	Inner sealing pin	93 1013	4	13	
	80	Needle roller 3 × 13	93 1014	76	1.2	
	81	Pin bushing	93 1015	4	19	
	82	Safety ring 45	97 0214	1	26	
		Driven front axle and differential consists of ref. No. 83–95)	3045 5072	1		
	83	Drive shaft	3045 3150	1	1420	
	84	Driven wheel	3045 3151	1	1480	
		Crown wheel assembly (consists of ref. No. 85–94)	3045 3152	1		
	85	Crown wheel	3045 3153	1	3180	[illegible]
	86	Satellite wheel pin	2011 2509	2	96	

Illustration Fig.	Ref. No.	Name of the part	Part No.	Pcs	Weight g piece	Note
31	87	Satellite wheel	2011 2510	4	106	
	88	Ball pin	2011 2523	4	26	
	89	Planet wheel	2011 2511	2	99	
	90	Gasket	2011 2522	2	16	
	91	Left-hand bolt of universal joint	2011 2512	1		no spare part
	92	Tab washer	2011 2514	4	19	
	93	Bolt M 10 × 40	99 0561	8	26	
	94	Rivet 8 × 30	99 7093	10	12	no spare part
	95	Spacing shim 105 × 125 × 0.5	97 1884	8	16	
		Differential body with crown wheel and level pin 31 (consists of ref. No. 4, 85, 92–94, 96)	3045 3196	1		
	96	Differential body (consists of ref. No. 92, 93, 95)	3045 3197	1		
		Crown wheel with bevel pinion (consists of ref. No. 4, 85, 94)	3045 3198	1		

Parts marked by * belong to free wheel drive which is not supplied.



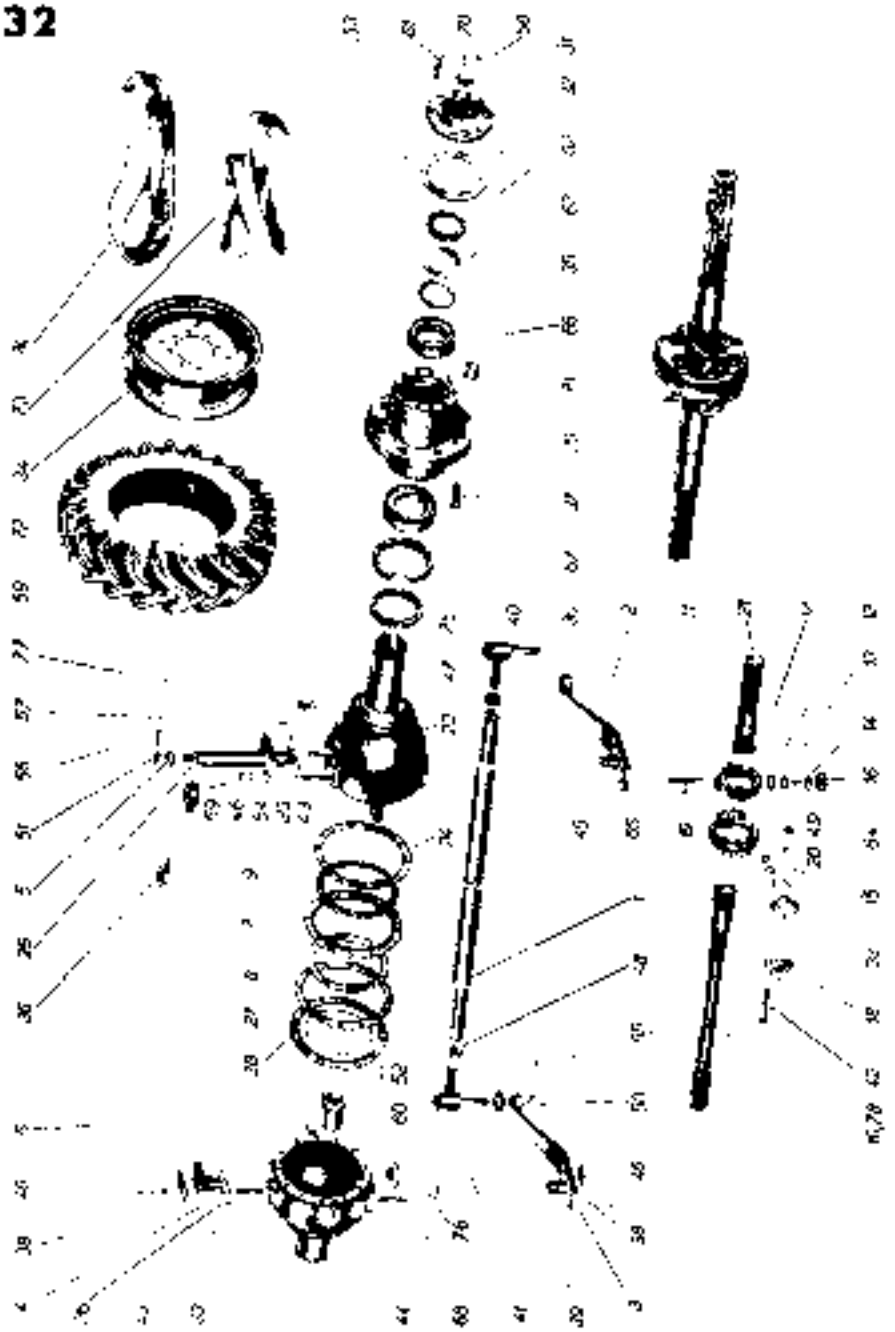
Double Joint and Driven Wheel

Group No **32**

Illustration Fig.	Ref. No	Name of the part	Part No	Pcs	Weight g piece	Note
32	1	Connecting link	3045 3201	1	1914	
	2	Left-hand connecting pin	3045 3202	1	198	
	3	Right-hand connecting pin	3045 3203	1	196	
	4	Bearing pin	3045 3204	1	71	
	5	Washer	95 2501	1	16	
	6	Hard rate bearing	95 3116	2	336	
	7	Scraper ring	95 3118	2	41	
	8	Sealing ring	95 3119	2	21	
	9	Spring for sealing	95 3120	2	21	
	10	Half axle	95 3201*	2	2810	not delivered see page No. 19
	11	Joint pin	95 3202	4	41	
	12	Sealing No. I	95 3203	8	12	
	13	Washer No. I	95 3204	8	16	
	14	Washer No. II	95 3205	8	18	
	15	Washer No. III	95 3206	8	19	
	16	Protecting plate	95 3207	8	12	
	17	Cross pin	95 3208	4	196	
	18	Bearing	95 3209	8	72	
	19	Driving ring	95 3210	2	91	
	20	Lock washer	95 2018	16	21	
	21	Joint shaft	95 3212	2	1210	
	22	Left-hand pivot	95 3213	1	908	
		Drive shaft (consists of ref. No. 10 – 21, 23, 42, 45, 49, 64, 65)	95 3214*	2		not delivered see page No. 19
	23	Sealing No. II	95 3215	8	14	
	24	Sealing	95 3216	2	16	
	25	Left-hand steering pin	95 3217	1	92	
	26	Spacing shim	95 3219	4	10	
		Spacing shim	95 3220	4	10	
		Spacing shim	95 3221	4	10	
	27	Thrust ring	95 3222	2	16	
	28	Protecting ring	95 3223	2	28	

Illustration Fig.	Ref. No.	Name of the part	Part No	Pcs	Weight g piece	Note
32	29	Front wheel hub	95 3226	2	1406	
	30	Shaft sealing ring	95 3227	2	96	
	31	Half axle cover	95 3228	2	396	
	32	Sealing	95 3229	2	18	
	33	Right-hand pivot	95 3230	1	96	
	34	Front disc wheel 7-20 W8	95 3234	2	8690	
	35	Friction packing piece	95 3235	2	19	
	36	Steering arm	95 3236	1	1916	
	37	Front wheel hub bolt	95 3237	16	92	
	38	Lock tab washer	95 3311	3	41	
	39	Guard	95 3515	2	93	
	40	Left-hand head	95 3519	1	79	
	41	Right-hand head	95 3548	1	78	
	42	Bolt M 8 x 60	99 0556	3	38	
	43	Bolt M 12 x 25	99 2602	4	16	
	44	Bolt M 12 x 30	99 2609	4	23	
	45	Bolt M 6 X 8	99 2841	4	9.7	
	46	Nut M 12	99 3612	6	11.3	
	47	Nut M 16 X 1.5 left-hand	99 3662	1	16	
	48	Nut M 16 x 1.5	99 3691	1	16	
	49	Nut M 8	99 3710	8	9	
	50	Nut M 14 x 1.5	99 3877	2	14	
	51	Nut M 20 x 1.5	99 3983	1	22	
	52	Washer 6.1	99 4805	24	4.2	
	53	Washer 8.2	99 4806	12	6.4	
	54	Washer 12.2	99 4808	2	10	
	55	Cotter pin 3 X 26	99 4906	2	1.4	
	56	Cotter pin 4 X 40	99 4977	1	2.6	
	57	Pin 12 x 28	99 6511	6	12.4	
	58	Pin 10 x 26 x 28	99 6574	4	9	
	59	Key 8 x 7 X 34	99 6019	1	19	
	60	Bolt M 6 x 14	99 8784	24	9	
	61	Bolt M 8 x 70	99 9007	12	12	

Illustration Fig.	Ref. No.	Name of the part	Part No	Pcs	Weight g piece	Note
32	62	Nut KM 13	97 0712	2	19	
	63	Safety pad MB 13	97 0743	2	11	
	64	Needles 2.5 X 14 II-0-3	97 0974	180	1	
	65	Needles 3 x 14 II-0-3	97 0977	160	1.3	
	66	Bearing 30213	97 1380	2	60	
	67	Bearing 30214	97 1381	2	69	
	68	Bearing 31.905	97 1441	4	65	
	69	Sealing ring 14 X 18	97 2133	4	12	
	70	Shear plug 40	97 2313	2	16	
	71	Nut M 14 X 1.5	97 3632	16	14	
	72	Tyre 8 - 20 W9	97 3852	2	10580	
	73	Tube strip 8 - 20 W8	97 3862	2	377	
	74	Inner tube 8.00 - 20 with valve	97 3872	2	2266	
	75	Ring with dust cap 60 X 110 X 10	97 4171	2	21	
	76	Ring 28 X 2	97 4508	2	26	
	77	Drain bolt M 14 x 1.5	97 8401	4	16	
	78	Hall axle	3045 3135	2	6816	
		Drive shaft assembly (consists of ref. No. 11, 21, 23, 42, 43, 49, 64, 65, 78)	3045 3154	2		



PARTS WHICH DIFFER FROM THE STANDARD TRACTOR

Name of the part	Part No	Pcs	Note
Group No. 35			
LH shaft	95 3571	1	instead of 95 3520
Main steering arm	95 3572	1	instead of 95 3516
Bushing plug	95 3560	1	
Group No. 52			
Identity plate	97 5734	1	instead of 97 5731
Group No. 53			
Identity plate	3045 5301	2	instead of 3011 5302
Bonnet	3045 5302	1	instead of 3011 5304
Group No. 57			
Connecting cable	95 5792	1	
RH headlamp cable	95 5793	1	instead of 95 5702
LH headlamp cable	95 5794	1	instead of 95 5703
Nut M 18x1.5	99 3702	4	

Parts No 95 5701, 99 4806, 99 9004 are not mounted.

Disassembly and Assembly of Front Wheel Drive of Tractor Zetor 3045

- (I) DISMOUNTING OF FRONT AXLE FROM THE TRACTOR
- (II) DISMOUNTING OF DRIVE BOX
- (III) DISMOUNT OF FRONT WHEEL HUBS
- (IV) REPLACEMENT OF PIVOT SCRAPER RING
- (V) REPLACEMENT OF PIVOT BEARINGS
- (VI) DISMOUNT OF DRIVE SHAFT ASSEMBLY
- (VII) DISMOUNT OF FRONT COVER OF FRONT AXLE HOUSING
- (VIII) TAKING-OUT OF DIFFERENTIAL
- (IX) DISASSEMBLY OF DIFFERENTIAL

(I) DISMOUNTING OF FRONT AXLE FROM THE TRACTOR

The front axle is located on the front break of front axle bracket. If the front axle should be disconnected from the tractor, following operations are to be carried out:

(1) Brace the tractor.

(2) Disconnect steering arm (on the tractor left-hand side) unlocking and unscrewing the nut M 14 from the left-hand pin head. Press out the head from the steering arm.

(3) Lift the front axle and put jacks under the gearbox.

(4) Unlock and unscrew four bolts M 12 and pull the front hose out of the front axle bracket thus the front axle housing being released, too.

(5) Lift up the tractor front part as so the upper part of front axle housing can be separated from the front axle bracket. Remove the front axle when rolling tyres forward and so the hub is shifted out from grooves of connecting shaft.

Assembly is to be carried out in reverse way.

When assembling the front axle with the tractor it is necessary to mount the connecting shaft on grooves in such a position in order to be both flanges of cardan joints parallel.

(II) DISMOUNTING OF DRIVE BOX

(a) **Dismouting from the tractor**

(1) Drain out oil from drive box and from the whole gearbox when unscrewing drain bolt M 30 on the drive box. Unscrew the handle from control lever.

(2) Unscrew 8 bolts M 10 hanging the drive box to the gearbox and take down the whole box with centring pins. Thus the connecting shaft is shifted out in the same time from the shifting hub of cross joint on the axle housing.

(b) **Removing of drive shaft**

(1) Disconnect cross joint when unlocking and unscrewing 8 bolts M 8 from bearings of pins. Take down the cross joint with flange from the hub. Bind bearings together by means of a wire that joint should remain complete.

(2) Unlock and unscrew the castle nut M 16 pull down the washer and the hub with flange from grooves.

(3) Unscrew four bolts M 8 from sealing cap and four bolts M 8 from closing cap and take off both caps.

(4) Press out drive shaft with front bearing No. 6205 forward. Rear bearing No. 6206 remained in the rear wall of drive housing.

(5) Take out drive gear and the clutch for the 4th and 5th speeds through upper hole of drive housing.

(c) **Dismounting of shifting shaft**

(1) Carry out operations 1–5 mentioned in the instruction chapter (ii-b).

(2) Take off safety ring 15 from shifting shaft and pull down washer 15.

(3) Knock out the shaft in the seat to the shifting lever as in this way fork with blocks will be released and take out from drive housing. (If it is the question of an older execution it is necessary to take off a key from the shaft at first)

(4) Take off blocks from the fork arm.

Assembly and mounting of drive housing is to be carried out in reverse way.

(III) DISMOUNT OF FRONT WHEEL HUBS

(a) **Replacement of front wheel hub bearings**

(1) Brake the tractor and release nuts of front wheel disks.

(2) Lift the front axle and take off the wheel.

(3) Unscrew six bolts M 8 from half-axle housing and pull down the housing from two centring pins and shaft joint grooves.

(4) Unlock and screw out nut KM 13 from the pivot. Take off safety washer MB 13.

(5) Pull down the wheel hub from the pivot.

(6) Press out outer rings of bearings No. 30214 and No. 30213 from wheel hub.

(b) **Replacement of sealing ring with dust cap**

(1) Carry out operations 1–5 mentioned in the instruction chapter (ii-a).

(2) Press out inner ring No. 30214 which remained on the pivot and pull down the ring of shaft sealing together with the sealing.

(3) Press out sealing ring with dust cap from the ring and press in a new one by means of uniform pressure.

Note: When assembly is carried out it is necessary to set up the right play of taper roller bearings of 0.05–0.12 mm. This play can be set up by means of the nut KM 13.

If sealing of half-axle housing is damaged, replace it. Both bearings should be lubricated by grease before the half-axle housing is mounted on; oil, which flew out during dismount should be replenished by the orifice placed in the pivot. Assembly is to be carried out in reverse way.

(IV) REPLACEMENT OF PIVOT SCRAPER RING

If you find out that oil flows on the front axle side cover spherical surface replace pivot scraper ring.

(1) Drain oil from pivot housing at unscrewing the drain bolt M 14 for the pivot bottom part.

(2) Unscrew 12 bolts M 6 from pivot flange as in this way protecting ring, thrust ring, sealing ring and scraper ring with a spring are released.

(3) Cut the scraper ring and pull it down from half-axle (without the spring).

(4) Cut the new scraper ring in the middle between two holes for bolts and pull it on the half-axle.

(5) Slide the spring on scraper ring and carry out the assembly in reverse way.

Note: New scraper ring should be fixed in such a position that its cutting points upwards.

(V) REPLACEMENT OF PIVOT BEARINGS

(1) Carry out operations 1 & 2 mentioned in the instruction chapter No. (III a)

(2) Carry out operations 1 & 2 mentioned under (iv).

(3) Screw out the nut M 12 from stud bolts M 12. Take off steering arm when unlocking and unscrewing castle nut and pulling down washer on the left-hand axle side of steering pivot.

(4) Pull out steering pivot and connecting pin by means of an extractor from taper roller bearings inner races and from holes of the pivot. Left-hand steering pin and both connecting pins are locked by means of two centring pins.

Disconnect steering when separating the connecting link from right-hand connection pin.

(5) Pull out pins and take down whole pivot and wheel hub as well.

(6) Pull out drive shaft assembly with double joint from half-axle side cover.

(7) Press out worn taper roller bearings from their holes in spherical fork of the half-axle and replace them by new ones.

(8) Pull out worn half-axle sliding bearing by means of a special extractor. The radial play of the shaft in this bushing has to be maximum 0.2 mm.

Note: At assembly of taper roller bearing carried out in reverse way it is necessary to find out the thickness of spacing shims in order to eliminate undesirable thrust play.

Shims are put under upper pins.

(VI) DISMOUNT OF DRIVE SHAFT ASSEMBLY

Double joint is dismounted only in the case if it is either damaged or if its parts are worn-out.

(1) Carry out operations 1 - 6 mentioned under (V).

(2) Unlock and unscrew nut M 8 and bolts M 8 fixing joint bearings to the driving ring.

(3) Take off cross pin bearings with needles. Take needles from each bearing place them separately and mark them duly.

(4) Unscrew bolt M 6 fixing the joint pin in the shaft and take off protecting sheets of cross pin.

(5) Pull out the pin by means of a conform drift. Take out needles from cross pin location thin shims and rubber sealing.

Note: When carrying out the assembly lubricate bearings with grease and lock bolt M 6 safeguarding joint pin by means of a centre mark.

(VII) DISMOUNT OF FRONT COVER OF FRONT AXLE HOUSING

(a) **Replacement of bearing in front cover.**

(1) Drain oil when unscrewing the drain bolt M 20 from axle housing.

(2) Unscrew 4 bolts M 8 from guard cover and take it down.

(3) Unlock and unscrew the castle nut M 20 and take down the washer.

(4) Unscrew 8 bolts M 8 from the front cover.

(5) Press down the taper roller bearing from the bevel pinion.

(6) Press out the outer race which remained in the hole of front cover.

Note: When assembling the correct play in the bearing is to be set up, i.e. to 0.06 – 0.12 mm.

(b) **Replacement of bearings and drive shaft sealing ring**

(1) Carry out operations 1 - 5 mentioned under (vii-a).

(2) Unscrew 4 bolts M 8 from cross joint guard and take the guard aside.

(3) Unscrew 8 bolts M 8 of cross joint and take down the released cross pin.

(4) Unlock and unscrew the castle nut M 16 and take down washer and hub with flange.

(5) Unscrew 4 bolts M 8 and release the cover. Take out the shaft sealing from the cover.

(6) Pull out drive shaft forward and press out bearings.

Assembly is to be carried in reverse way.

(VIII) TAKING-OUT OF DIFFERENTIAL

(1) Prop front axle in order to facilitate to take off the right-hand front wheel (in the sense of tractor run) and right hand lateral axle cover.

(2) Take off the right-hand front wheel and drain oil from front axle unscrewing drain bolt M 30 from the front cover.

(3) Disconnect the connecting link from right-hand connecting pin.

(4) Unscrew 12 bolts M 10 from right-hand lateral axle cover and take off cover with the pivot, from wheel hub and complete drive shaft from satellite wheel grooves.

(5) Shift out the differential body with crown wheel from front axle housing and slide out taper roller bearings from differential body.

(IX) DISASSEMBLY OF DIFFERENTIAL

(1) Carry out operations 1 - 5 of instruction chapter No. (viii).

(2) Unlock and unscrew 8 bolts M 10 from the differential body.

(3) Tap by a mallet the crown wheel periphery and disconnect both parts of differential body.

(4) Shift-out both satellite wheels and two pairs of satellites as well. Assembly is to be carried out in reverse way.

Note: Satellites, planet wheels and planet wheel pins should be oiled at the assembly befor being shifted into the differential body. Do not forget to put on thrust bronze shims on planet wheel and satellite pins.

ZETOR 3045

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