

Operation & Spares manual

TU 20 N



GENERAL NOTES

Before actually using the machine it is strongly recommended that the operator reads through this book - some of the information, including photographs and diagrams, relate to operation as well as original fitment.

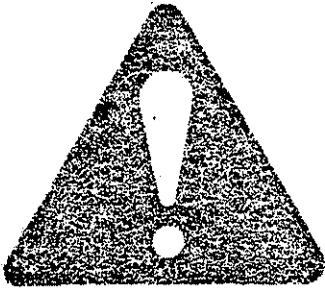
No liability will be accepted for damage to the tractor, the fork lift, or for any injury caused through the misuse or abuse of the machine.

All dimensions and capacities quoted in this leaflet are nominal figures. We reserve the right to change the specification in accordance with our policy of constant improvement.

August, 1978.

J.26.

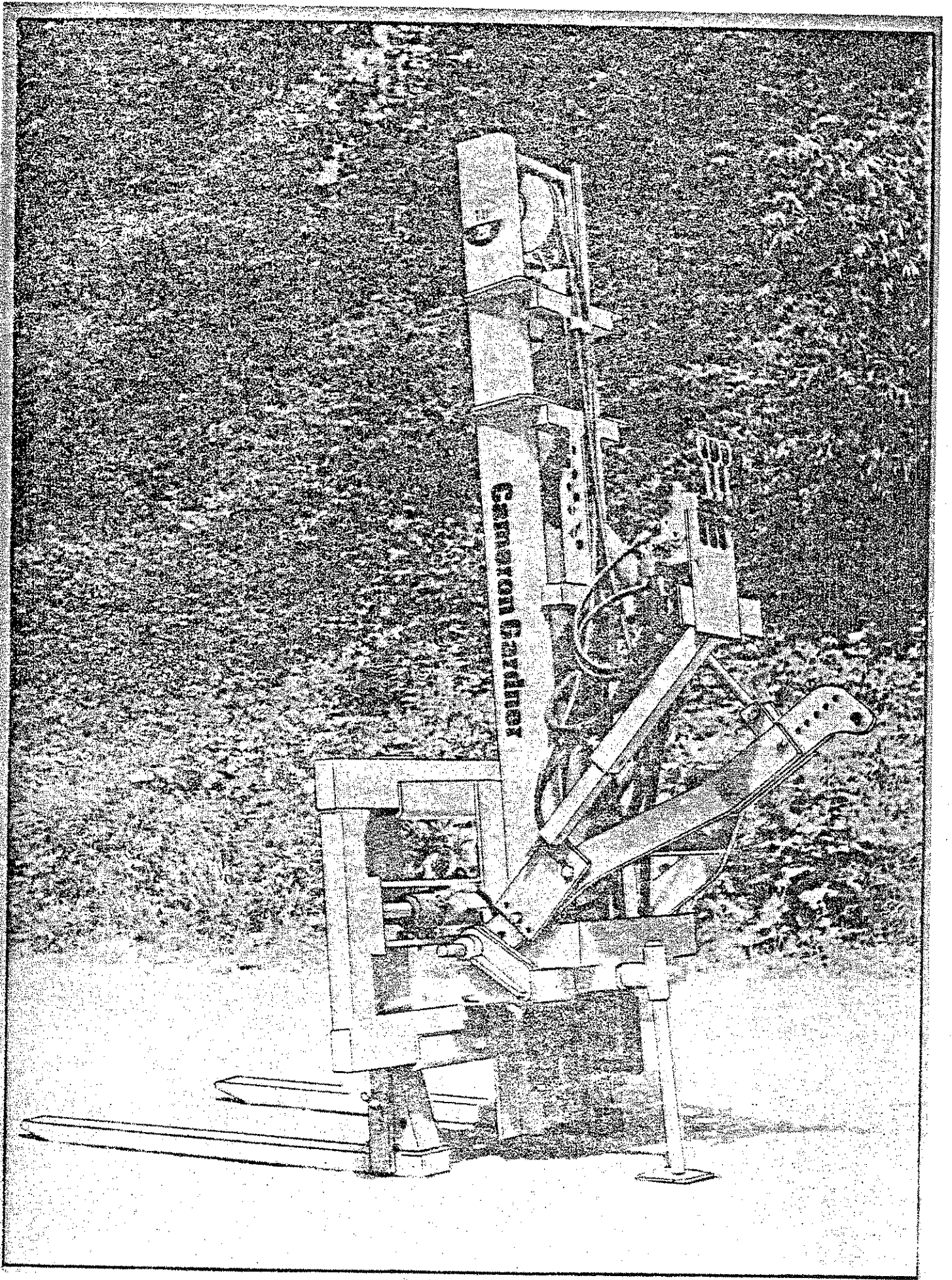
HANDBOOK AND PARTS LIST FOR TU20
TAILSLAVE TRACTOR MOUNTED FORK LIFT



A L L M O D E L S
* * * * *

WARNING

- NEVER Permit inexperienced personnel to operate the machine without supervision.
- NEVER Stand under or near loaded forks.
- NEVER Exceed the maximum recommended load.
- ALWAYS Remember it is illegal to modify the structure of a safety cab.
- ALWAYS Ensure the tractor is fitted with adequate front weight (see loading table).
- ALWAYS Travel with the load at minimum height (with allowance for uneven surfaces) and with mast tilted towards the tractor.
- ALWAYS Lower the fork arms and stop tractor engine before carrying out any adjustments or maintenance.
- ALWAYS Be certain that the fork arms are fully under the pallet. Under no circumstances carry any load on the tip of the forks, or on one fork arm only.
- ALWAYS Remove TU20 from the tractor on firm level ground and ensure that the fork locking pin is positioned to secure the forks at right angles to the mast.
- ALWAYS Regularly lubricate chains and all moving parts, and check hoses for sign of strain, chafing or pinching.



FITTING INSTRUCTIONS

TRACTOR SELECTION. The tractor selected must be capable of maintaining a minimum of 2000 p.s.i. (137.9 bars) and be equipped with linkage isolation.

TRACTOR PREPARATION. The Fork Lift feed hose terminates in a dowty female half coupling as standard. Almost all tractors have, or can have, fitted a matching male half coupling.

In those cases where this is not so, it is suggested that the Dowty female half coupling be changed to agree with what ever proprietary male half is on the tractor.

A standard hose for return of oil is supplied. The return adaptor to which this connects is supplied to suit the individual tractor concerned.

See tractor application diagram and charts.

Top up hydraulic oil level if necessary.

Fit front weights and adjust rear wheel to specifications on Loading Page.

ATTACHMENT OF FORK LIFT TO TRACTOR.

1. Check the lock link length setting and that the correct top hitch bracket is in use.
2. Check the correct category linkage pins are fitted to the mast to correspond with the tractor lower link ball ends.
3. Either suspend mast from a crane in a vertical attitude or stand upright using parking leg and with sufficient weight on the forks (locked at right angles to the mast).
4. Fit the lock link and the tilt ram to the mast and to each other, checking that the correct holes are used in all cases. (See note at end of paragraph 12).
5. Fit valve and pedestal to lock link, temporarily locking it in a position as close to vertical as possible.
6. Reverse tractor close to the mast and connect all hoses.
7. Close tilt ram.
8. Connect lower link ball ends to the mast and raise the links until they are approximately 16" (400 mm) above the ground.

continued

FITTING INSTRUCTIONS - continued

9. Connect top hitch bracket to the appropriate point on the tractor by manipulation of the tilt ram length and/or the height of the lower link ball ends. (See note at end of paragraph 12).
10. Position the valve pedestal segments to suit the tractor and secure.
11. Isolate the internal hydraulics on tractor.
12. Slowly raise forks to full height and move mast through the full range of movement, checking carefully that it does not foul the cab and that the mast tilts approximately 10° towards the tractor and 5° away from it.

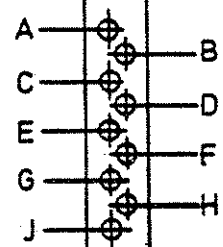
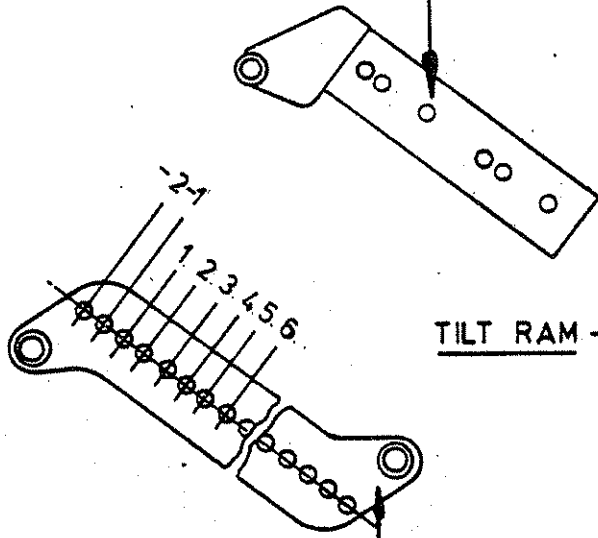
It may be necessary to vary slightly the lock link length and/or the tilt ram point of connection to achieve the best working conditions.

13. Check hoses for pinch, chafing or kinks.
14. Fit parking leg in the stowed position (i.e. horizontal).
15. If required some form of stabilizer may be fitted to prevent side sway.

NOTE:- The position of the carriage roller pin is strictly controlled by adjusting setscrews. This is to allow free travel of carriage without undue sideways movement.

APPLICATION DIAGRAM

SPECIAL 'A' TOP HITCH BRACKET
DEALER TO SELECT APPROPRIATE HOLE.



TILT RAM

LOCATION FOR HOLES 1-6

UNIVERSAL TOP HITCH BRACKET
FOR HOLE SELECTION SEE TRACTOR CHART.

TILT RAM

LOCK LINK LENGTH

LOCK LINK

16" APPROX

T.U. 20. TAIL SLAVE - TRACTOR FITTING DETAILS

APPLICATION CHART - MASSEY FERGUSON

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK-LINK LOCATION	TILT RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
FERGUSON TE 20	C291-166	-	E520-572 3/8" BSP/Barbed) Adaptor	- X	G	-	-
35, 135, 20D, 230, 240	C291-270 " "	- - -	) ) ) )	- X - X - X	G G G	- - -	- - -
65 165 165 HC 175 178 148 165 168 185 188	C291-177 " " " " " " " " " "	- - - - - - - - - -	) ) ) ) ) ) ) ) ) ) )	3 - Y 3 - Y 6 - Y 6 - Y 6 - Y 3 - Y 6 - Y 6 - Y 5 - Y 5 - Y	E E E G G E G G H H	C291-241 " " " " " " " " " "	Use lowest hole in draft rocker " " " " " " " " " "
1080 595	Special Top Hitch Bracket	- -))			- -	- -
550/20E 565 575 590 690 290	C291-177 " " " " "	- - - - - -	) ) ) ) )	- 6 - X 6 - X 6 - Y 6 - Y 6 - Y	- F G F F F	C291-241 " " " " "	Use lowest hole in draft rocker " " " " "

E520-563 Connection)
D520-73 Hose 35 1/4")
E520-574 Barbed Adaptor)
E520-573 Return Clip)
Replaces filter access plate in bottom of gear box.
FREE END OF HOSE MUST BE SECURED ABOVE OIL LEVEL IN AXLE

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK LINK LOCATION	TILT RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
M.F. 40 INDUSTRIAL	C291-177	-	E520-572 $\frac{3}{8}$ " BSP/Barbed Adaptor $\frac{3}{8}$ " BSP tapping below tractor seat - L.H. side of tractor.	2 - Y	H	C291-241	Use lowest hole in draft rocker

NOTE: On M.F. 40 Locking Link type C291-300 is required.
(This replaces standard Locking Link B291-120).

APPLICATION CHART - DAVID BROWN

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK LINK LOCATION	TILT RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
885	C291-295	-	E520-577 $\frac{7}{8}$ " UNF/ Barbed Adaptor	-1 - Y	B	-	Top Hole Location
990 Series	C291-177	-	<u>LOCATION</u>	4 - Y	B	-	"
1200 Series	"	-	$\frac{7}{8}$ " UNF Tapping on top of Back Axle (L.H. Side of Tractor)	5 - Y	C	-	"
1400 Series	"	-		7 - Y	C	-	"
1190	C291-295	-		-1 - Y	B	-	"
1490	C291-276	-		7 - Y	C	-	"

NOTE:- 990 and 1200 series pre 'Q' Cabs - Fork Lift will fit - may need to remove or modify back of extended roof to clear mast.

Post 'Q' Cab - Fits only to David Brown Tractors with V.Q. and De Luxe Cabs (Sekura 74).

*** TRACTORS WITH DUAL POWER

On Dual Power Tractors oil should be returned through the "Domed Nut" adjacent to the external filter, in which instance the following items should be used.

520-200 $\frac{1}{2}$ " BSP Taper x $\frac{1}{2}$ " BSP Str. Adaptor 1) Return Line
D20-15B $\frac{1}{2}$ " x 66" BSP Hose H.P. 1) from Valve.

Should the "Domed Nut" not be drilled, (as on some early tractors) the tractor is almost certainly a Dual Power version. In this case do not return oil to the back axle filler point, but drill and tap the nut or replace by a later one, Part No. D-5NH-H975A.

APPLICATION CHART - FORD - 10 SERIES

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK LINK LOCATION	TILT RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
Ford 2910 3910 } 4110 4610 }	C291-177	-	E520-148-1 Filler Plug Adaptor Replaces Filler Plug in Back Axle.	5 - X	F	Lock Draft Locker	-
Ford 5610 6610 7610 6710 7710	C291-177	-	E520-148-1 Filler Plug Adaptor. Replaces Filler Plug in Back Axle. OR Dealer to Supply Coupling Half as Necessary	5 - Y	G	-	Middle Hole in Draft Rocker.

APPLICATION CHART - LEYLAND/NUFFIELD

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK LINK LOCATION	TILT RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
<u>NUFFIELD</u> 3/42, 10/42 4/60, 10/60	C291-177 "		E520-590 "	1 - Y "	A "		Use bottom hole in draft rocker
<u>NUFFIELD</u> 3/45, 4/65	C291-177		E520-590	1 - X	D		Use bottom hole in draft rocker
<u>NUFFIELD</u> 3/45, 4/65	C291-177 (lug upwards)		E520-590	6 - Y	A		
<u>LEYLAND</u> 344 384 253 245 255 260 270 262 272	C291-177 " " " " " " " " "		E520-590 " " " " " " " "	2 - X " " " " " " " "	C " " " " " " " "		Use bottom hole in draft rocker " " " " " " "
<u>LEYLAND</u> 344 384 253 245 255 260 270 262 272	C291-177 (lug upwards) " " " " " " "		E520-590 " " " " " " "	6 - Y " " " " " " "	A " " " " " " "		- - - - - - -
<u>LEYLAND</u> 285 485 2100 4100	C291-177 " " "		E520-590 " " "	1 - Y " " "	C " " "		Use bottom hole in draft rocker " "

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK LINK LOCATION	TILT RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
1030	C291-177	Use Tractor Pin	E520-608 1" BSP Taper Thread x Barbed Adaptor	2 - Y	F	-	Dead Pin
1020, 1120, 1130, 1630	C291-177	"	"	4 - Y	D	-	"
1630 NARROW	C291-177	Tractor Top Link Pin	"	1 - Y	G	-	"
2020, 2120, 2030, 2130	C291-177	"	"	5 - Y	D	-	"
3120, 3130	C291-276	"	"	7 - Y	D	-	"
4010, 4020	C291-177	"	-	5 - X	F	-	"

NOTES:

1. Valveil type 568-26 (closed centre) is required with all John Deere Tractors. (This replaces standard valve B568-25).
2. On certain Tractors it may be necessary to open category 1 hole on Hitch Bracket to 20mm dia to suit tractor.
3. On 1630 Marrow A special lower valve pedestal C291-297 is required. (This replaces standard lower valve pedestal C291-230).

APPLICATION CHART - INTERNATIONAL

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK LINK LOCATION	TILT RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
B275	C291-177	-	E520-365 -	1 - X	D	Vari-Touch	-
276	"	-	Special Adaptor	"	"	machines	-
414	"	-	$\frac{1}{2}$ " BSP Male/ Long Pipe.	"	"	use	-
434	"	-	E520-620 - $\frac{1}{2}$ " BSP	"	"	D291-285	-
444	"	-	Female/Barbed	"	"		-
354	"	-	Elbow.	"	"		-
374	"	-	Fit to return Port on top of back Axle.	"	"		-
B250	C291-177	-		6 - Y	D	-	Dead Pin
454	C291-177	-	E520-588 -	1 - X	C	E291-260 and 401-24	-
474	C291-177	-	Special Filler Plug/Barbed Adaptor.	5 - Y	F	E291-260 and 401-24	-
475	"	-		"	"	"	-
574	"	-	Fit to return Port on top of back Axle.	"	"	"	-
674	"	-		5 - Y	D	"	-
2400	"	-		4 - Y	B	"	-
2500	"	-		"	"	"	-
523	C291-177	-		3 - Y	J	Lock Draft	-
624	"	-	Awaiting	"	J	Control Rocker	-
614	C291-177	-		5 - Y	C		Dead Pin
634	"	-	Development	"	C		"
946	C291-177	-					Dead Pin
1046	"	-					"

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK LINK LOCATION	TILE RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
384 - 238	C291-177	-	E520-365 - Special Adaptor $\frac{1}{2}$ " BSP/Male, Long Pipe. E520-620 - $\frac{1}{2}$ " BSP Female/Barbed Elbow. Fit to return Port on top of back axle.	1 - X	D	Vari-Touch machines use D291-285	-
484 - 248	C291-177	-	E520-588 - Special Miller Plug/Barbed Adaptor. Fit to return Port on top of back axle.	5 - Y	F	E291-260 and 401-24	-
584 - 258	"	-		"	F	"	-
684 - 268	"	-		"	F	"	-
784 - 278 884	"	-		"	D	"	-

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK LINK LOCATION	TILT RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
450	C291-177	-	E291-288 Special Banjo - M22 / Barbed.	3 - X	J	-	Use bottom Draft Hole
540	"	-	E520-635 M22/M28 Adaptor D520-73 Hose 3/4" E520-574 Barbed Adaptor E520-573 Return Clip	3 - Y	J	-	"
540	C291-276	-	Fit to rear Right Hand Side of Tractor.	7 - Y	J	-	"
790 880	C291-177	-		6 - Y	E	-	Upper fixed hole
850	"	-	E520-641 Special return - M30/Barbed.	5 - Y	D	-	Top fixed hole
1000	"	-	Replaces existing Dip-Stick.	6 - Y	C	-	Middle fixed hole

NOTE: IT MAY BE NECESSARY TO REMOVE AND REPOSITION THE ANTI-SWAY BRACKETS ON THE LOWER LINKS.

TRACTOR MODEL	TOP HITCH BRACKET	HITCH PIN	RETURN CONNECTION	LOCK LINK LOCATION	TILT RAM LOCATION	OPTIONAL LOCK FOR DRAFT	TOP HOLE LOCATION
8011	C291-177	-	Dealer to supply	6 - Y	C	-	Top fixed
8045	"	-	Metric Coupling Half	"	"	-	"
12011	"	-	- Return oil via	"	"	-	"
12045	"	-	self seal coupling	"	"	-	"

NOTES:-- 1. Return Hose E520-650 must be used.
(This replaces standard return hose E520-569).

2. VALVE STAND EXTENSION SUPPLIED AS STANDARD. See separate page for details.

L O A D I N G

* * * * *

(1) TU20/7.

This fork lift is capable of lifting 1 ton (1016 kg) to a height of 7ft. 6ins (2.3m) with the load centre at a maximum of 24" (610mm) from the fork heel.

(2) TU20/9.

This fork lift is capable of lifting 1 ton (1016 kg) to a height of 9ft. (2.8m) with the load centre at a maximum of 24" (610mm) from the fork heel.

(3) A minimum counterbalance weight of 1000 lbs. (454 kg) is recommended for the front of most tractors but some larger tractors may not need as much, and rear wheel spacing should be at least 60" (1524mm) crs.

MAINTENANCE

Regularly lubricate chains and all moving parts. Check hoses for sign of strain, chafing or pinching. Check all nuts and bolts for tightness.

REMOVAL INSTRUCTIONS

For Fork Lift removal, the following procedure must be followed:-

Lower fork arms to ground level and place sufficient weight on them. Stop tractor engine and release all hydraulic pressure from circuits. Disconnect feed and return hoses, then remove lower links from fork lift pins and release lock link from top hitch. The tractor can then be slowly driven away, while checking for any obstruction and that all hoses are free.

STORAGE

Prior to storing your TU20 lubricate all moving parts and in addition grease the exposed parts of the ram piston rods especially where they pass through the wiper seal.

August, 1978.

J.51.

TU20 - MAIN UNIT

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description.</u>	<u>Qty.</u>	<u>Remarks.</u>
1	B291-132-A	Outer Mast - For TU20/7 only	1	
1A	B291-189-A	Outer Mast - For TU20/9 only	1	
2	B291-124	Inner Mast - For TU20/7 only	1	
2A	B291-188	Inner Mast - For TU20/9 only	1	
3	B551-14	2 1/4" S/A Lift Ram - For TU20/7 only	1	
3A	C563-14	2 1/4" S/A Lift Ram - For TU20/9 only	1	
4	B523-14	7/8" D/A Tilt Ram	1	
5	B291-120	Locking Link Female End	1	
6		Top Hitch Bracket		See Tractor Application Chart.
7	62-FBH-375	5/8" UNF x 3 3/4" Bolt	2	
8	62-FNH(P)	5/8" UNF Self Locking Nut	2	
9	E291-107	Pin	2	
10	401-24	Spring Pin Clip	2	
11	D291-103	Pulley c/w Bush	1	
12	E291-102	Bush	1	
13	E291-110	Pulley Pin	1	
14	25-FSH-038	1/4" UNF x 3/8" Setscrew	1	
15	E291-100	Balance Chain - For TU20/7 only	1	
15A	E291-185	Balance Chain - For TU20/9 only	1	

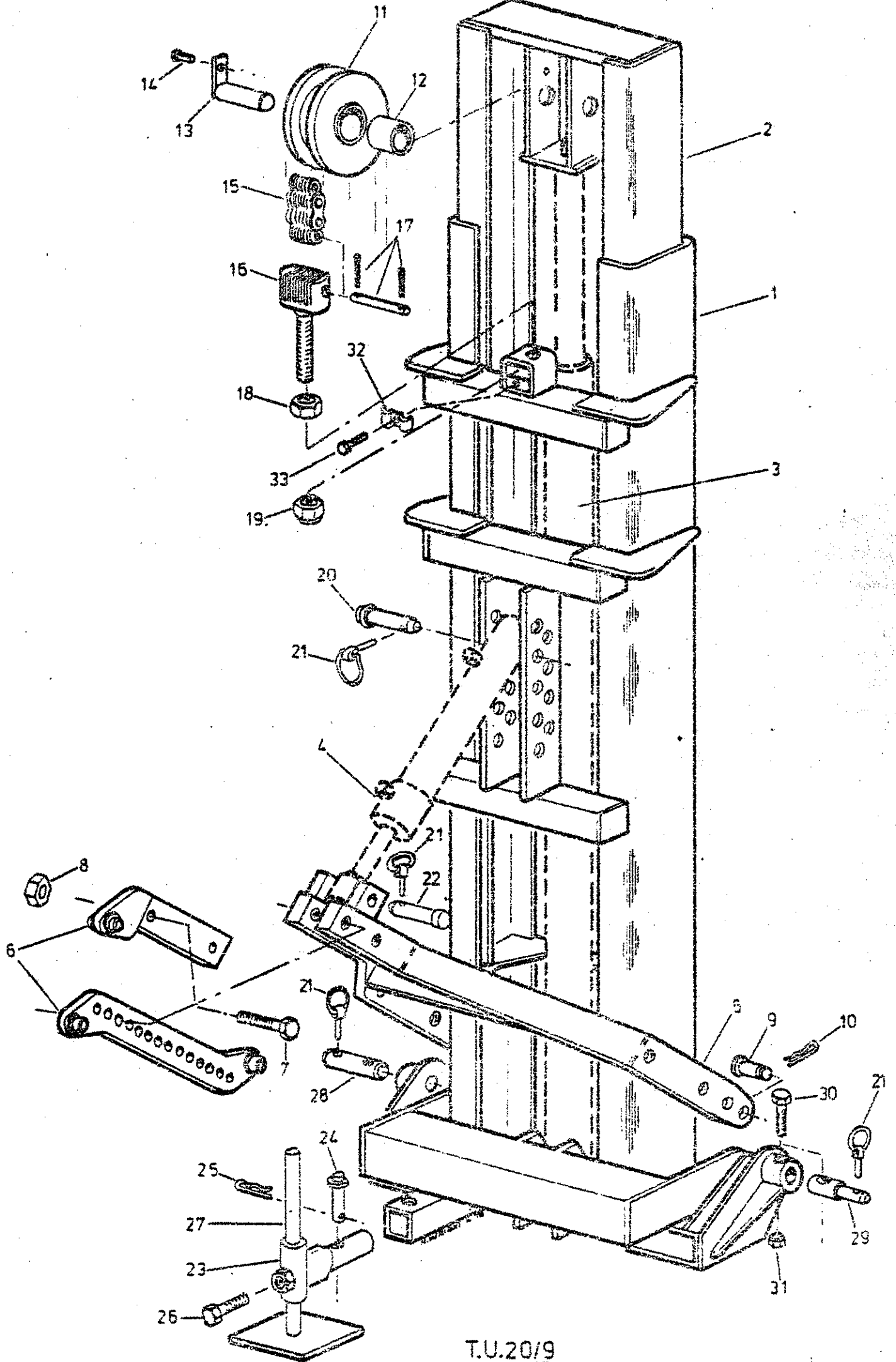
CHAIN TENSIONER ASSEMBLY

comprises:-

16	291-104	End Link	2	Per Machine
17	291-106	Connecting Link (c/w split pins)	2	Per Machine
18	62-BFNH(J)	5/8" BSF Lock Nut	2	Per Machine
19	62-BFNH(P)	5/8" BSF Self Locking Nut	2	Per Machine
20	E282-41-A	Pin	1	
21	1027-2134	Linch Pin Assembly	2	
22	E282-41	Pin	1	
23	D291-161	Parking Leg Arm	1	
24	E291-164	Pin	1	
25	20-947	Spring Pin Clip	1	
26	50-FSH-100	1/2" UNF x 1" Setscrew	1	
27	D291-148	Parking Leg	1	
28	+ E291-117	Cat. 2. Mounting Pin	2	
29	+ E291-118	Cat. 1. Mounting Pin	2	
21	1027-2134	Linch Pin Assembly	2	
30	31-FBH-250	5/16" UNF x 2 1/2" Bolt	2	
31	31-FNH(P)	5/16" UNF Self Locking Nut	2	
* 32	E520-579	Hose Clip	1)	Required for Side Shift only.
* 33	25-FSCS-100	1/4" UNF x 1" Socket Headed Capscrew	1)	
* 34	25-WF	1/4" dia Flat Washer	1)	

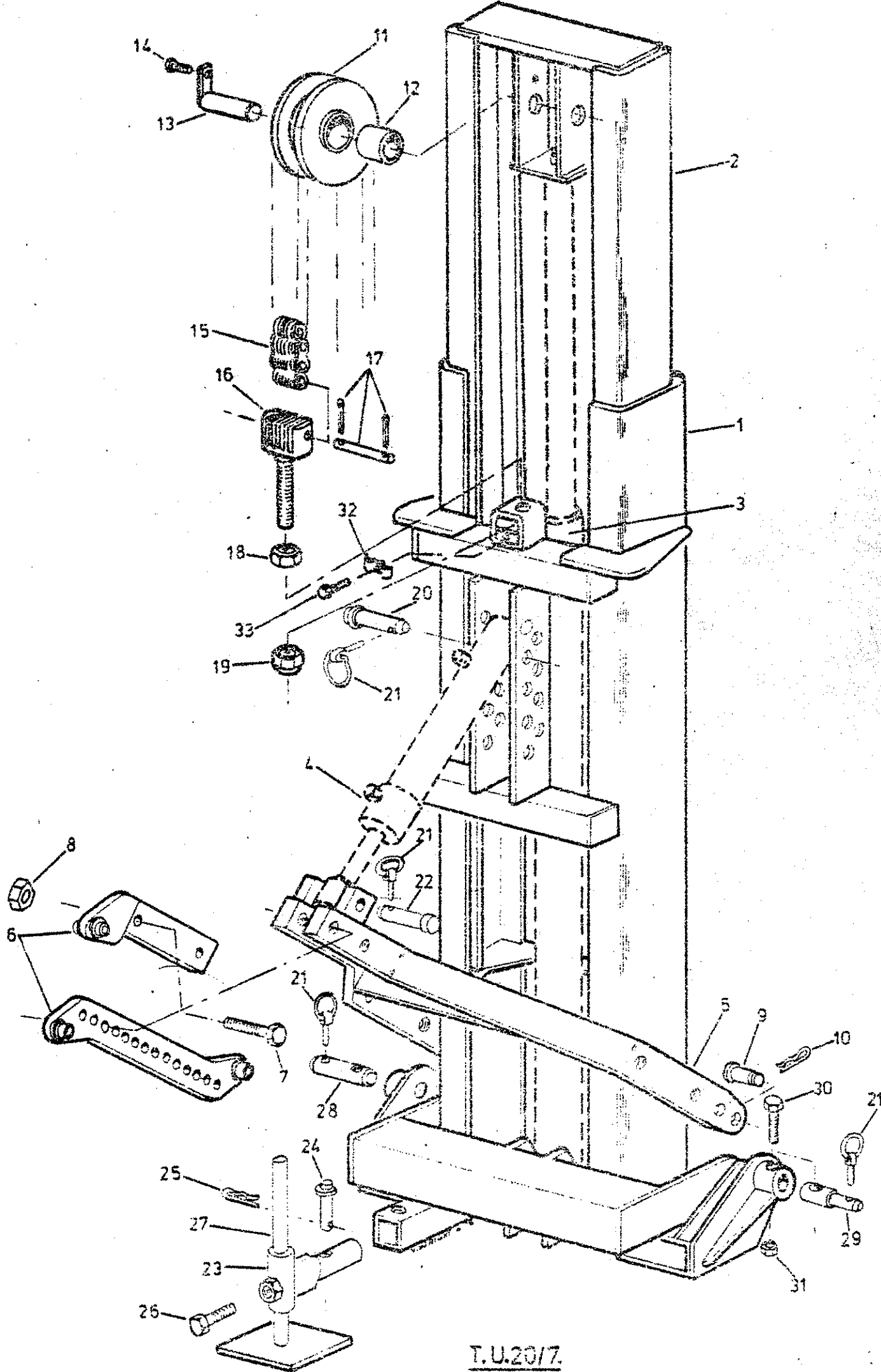
Items marked with an * are for use with side shift models only. Non side shift models can be converted to side shift models. - Please see separate section.

+ E291-284 - Pin available for use in conjunction with stabilizers. (Cat.1. only).



T.U.20/9

1.53/8/78.



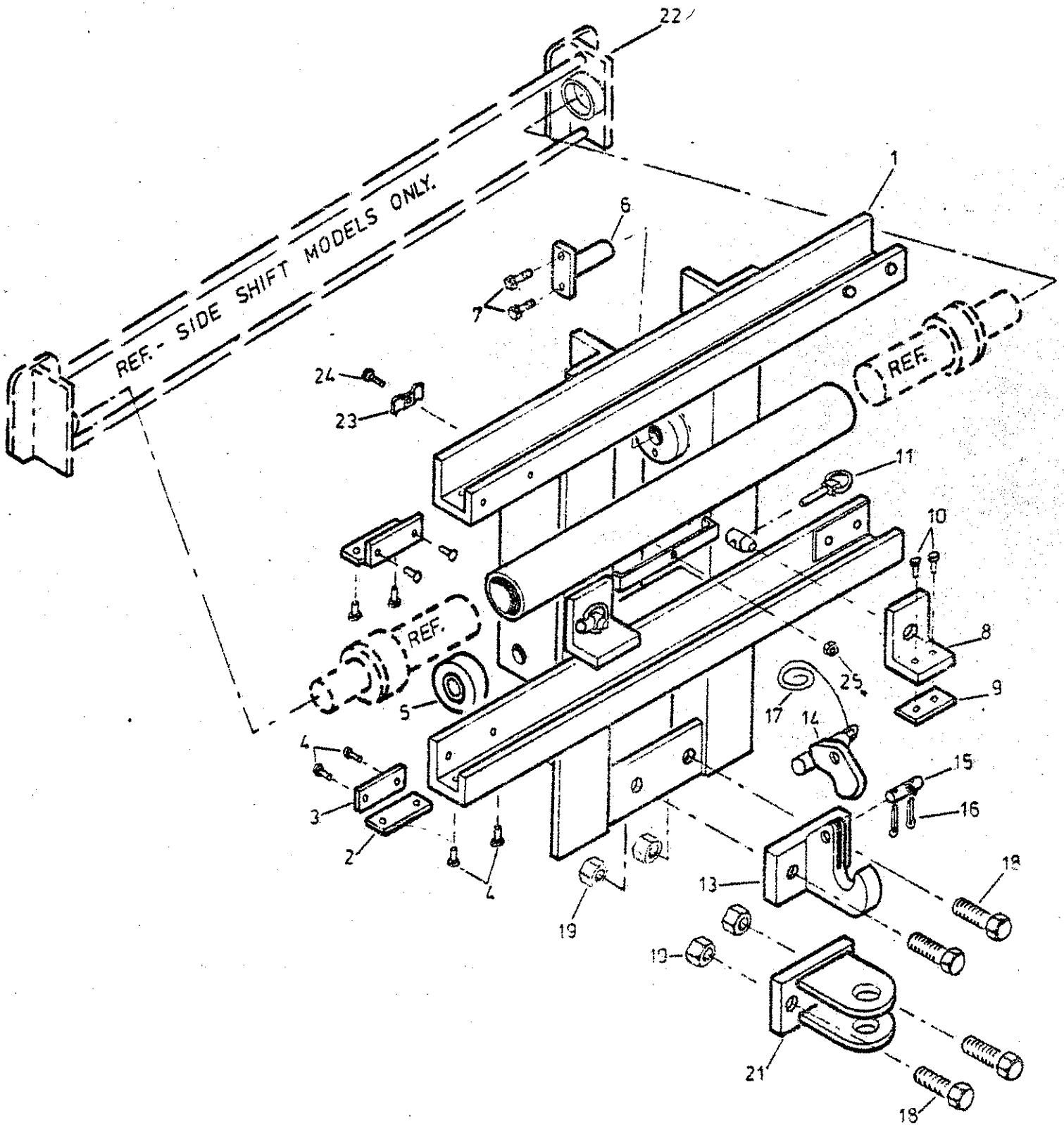
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TU20 - CARRIAGE ASSEMBLY

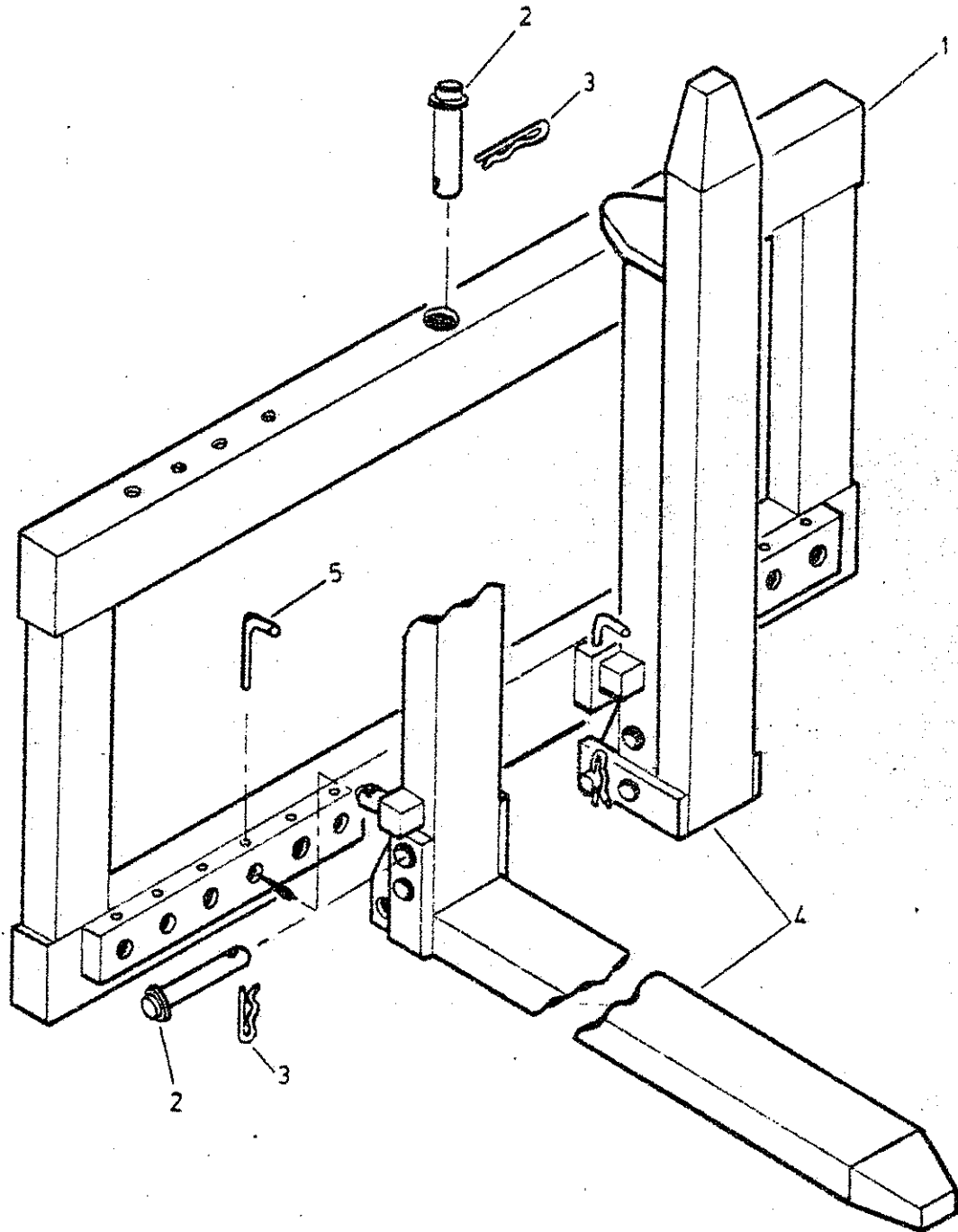
<u>Ref.No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Remarks</u>
1	B291-204	Carriage Assembly c/w wear strips	1	
2	D291-207	Bottom Wear Strip	4	
3	D291-208	Side Wear Strip	4	
4	25-RF-075	$\frac{1}{4}$ " x $\frac{3}{4}$ " Countersunk Head Rivet	16	
5	E280-506-1	Roller Assembly	4	
6	E291-113	Roller Pin	4	
7	25-FSH-100(P)	$\frac{1}{4}$ " UNF x 1" Self Locking Setscrew	8	
8	D291-210	Angle Stop c/w wear strip	2	
9	D291-209	Top Wear Strip	2	
10	25-RF-075	$\frac{1}{4}$ " x $\frac{3}{4}$ " Countersunk Head Rivet	4	
11	1027-2134	Linch Pin Assembly	2	
<u>OPTIONAL EXTRAS</u>				
	B291-212	48" (1219mm) Folding Fork Arm	2	
	C291-2	Pick-up Hitch Assembly complete	1	
		... Comprising ...		
13	E291-217	Pick-up Hitch Hook	1	
14	D291-171	Locking Plate	1	
15	E291-216	Pin	1	
16	12-PC-125	$\frac{1}{8}$ " dia. x $1\frac{1}{4}$ " Split Pin	2	
17	D291-183	Pull Rope	1	
18	75-FBH-250	$\frac{3}{4}$ " UNF x $2\frac{1}{2}$ " Bolt	2	
19	75-FNH(P)	$\frac{3}{4}$ " UNF Self Locking Nut	2	
	C291-3	Clevis Hitch Assembly	1	
		... Comprising ...		
21	D291-174	Clevis Hitch	1	
18	75-FNH-250	$\frac{3}{4}$ " UNF x $2\frac{1}{2}$ " Bolt	2	
19	75-FNH(P)	$\frac{3}{4}$ " UNF Self Locking Nut	2	
*22	B291-221	Ram Retainer Assembly	1	
*23	E520-579	Hose Clip	1)	Secures Side Shift Hoses.
*24	25-FSH-075	$\frac{1}{4}$ " UNF x $\frac{3}{4}$ " Setscrew	1)	
*25	25-FNH	$\frac{1}{4}$ " UNF Self Locking Nut	1)	

Items marked with an * are for use with side shift models only. Non side shift models can be converted to side shift models. - Please see separate section.

CARRIAGE ASSEMBLY



FORK ATTACHMENT FRAME AND FORK ARM



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Remarks</u>
1	B291-157	Fork Attachment Frame	1	
2	E291-214	Locking Pin	1	
3	20-947	Spring Pin Clip	1	
4	B291-213	42" (1067mm) Folding Fork Arm	2	
2	E291-214	Locking Pin	2	
3	20-947	Spring Pin Clip	2	
5	E291-215	Fork Locating Pin	4	

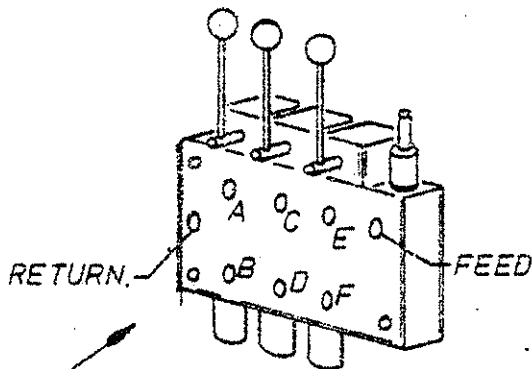
August, 1978.

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<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Remarks.</u>
<u>CONTROL VALVE</u>			
B568-25	Control Valve & Mounting	1	
comprising:-			
568-3	Control Valve c/w handles	1	
C291-237	Mounting Plate	1	
31-FBH-250	5/16" UNF x 2 1/2" Bolt	3)	Secures Valve to Mounting Plate.
31-FNH(P)	5/16" UNF Self Locking Nut	3)	
E520-339	Nameplate	1	Tilt Ram.
E520-340	Nameplate	1	Side Shift Ram.
E520-551	Nameplate	1	Main Ram.
	No. 4 x 1/4" Drivescrews	12	Secures Nameplates to Control Valve Mounting Plate.
<u>Port A.</u>	Blanking Plug	1	
<u>Port B.</u>			
220-68	3/8" BSP x 3/8" BSP Male Adaptor	1)	Main Ram.
520-130	3/8" BSP Bonded Seal	1)	
<u>Port C.</u>			
520-367	3/8" BSP x 1/4" BSP Male Adaptor	1)	Tilt Ram away from Tractor.
520-571	3/8" BSP Female/Male Extension	1)	
520-130	3/8" BSP Bonded Seal	1)	
<u>Port D.</u>			
520-367	3/8" BSP x 1/4" BSP Male Adaptor	1)	Tilt Ram towards Tractor.
520-130	3/8" BSP Bonded Seal	1)	
<u>Port E.</u>			
520-367	1/2" BSP x 1/4" BSP Male Adaptor	1)	Side Shift.
520-571	1/2" BSP Female/Male Extension	1)	
520-130	1/2" BSP Bonded Seal	1)	
<u>Port F.</u>			
520-367	1/2" BSP x 1/4" BSP Male Adaptor	1)	Side Shift.
520-130	1/2" BSP Bonded Seal	1)	
<u>Feed</u>			
520-367	3/8" BSP x 1/2" BSP Adaptor	1	
520-130	3/8" BSP Bonded Seal	1	
<u>Return</u>			
20-409	3/8" BSP x 1/2" BSP Adaptor	1	
520-130	3/8" BSP Bonded Seal	1	

520-560 Blanking Cap 2

SUPPLIED WHEN SIDE SHIFT IS NOT REQUIRED (PORT E AND PORT F)



SKETCH SHOWING POSITION OF VALVE PORTS.

HYDRAULIC CIRCUIT CONTINUED

<u>Part No.</u>	<u>Description.</u>	<u>Qty.</u>	<u>Remarks.</u>
<u>RAM AND RAM FITTINGS</u>			
B551-14	Main Ram - TU20/7 only	1	
	or		
B563-14	Main Ram - TU20/9 only	1	
19-PC-150	3/16" dia x 1 1/2" Split Pin	2	Secures Main Ram.
B523-14	Tilt Ram	1	
B569-14	Side Shift Ram	2	
<u>HOSES (90° HOSE ENDS FIT TO VALVE)</u>			
D500-17	3/8" BSP x 43" H.P. Hose	1	Main Ram.
* E520-570	1/4" BSP x 156" (3963mm) H.P. Hose	2	Side Shift 9'
* E520-567	1/4" BSP x 138" (3505mm) H.P. Hose	2	Side Shift 7'
E520-558	1/4" BSP x 30" H.P. Hose	2	Tilt Ram.
E520-566	1/4" BSP x 36" (915mm) H.P. Hose	1	Feed.
E520-569	1/2" x 50" L.P. Hose	1	Return.
<u>HYDRAULIC INSTALLATION PARTS</u>			
E520-565	3/8" BSP Female/Male Restrictor Assembly	1	Fits to Main Ram.
520-372	3/8" Female/1/4" Male Elbow	2)	
E520-377	Restrictor Assembly (Fit to Ram Rod End of Tilt Ram)	1)	Fits to Tilt Ram.
* 520-550	Male/Male/Special Adaptor	2)	Fits to Side
* 520-564	1/4" BSP Female/Male Elbow	2)	Shift Rams.
520-573	Worm Drive Hose Clip	1	
520-367	1/4" BSP x 3/8" BSP Male Adaptor	1)	Connect to Feed Hose E520-566. (Dealer to supply coupling half).

NOTE:-

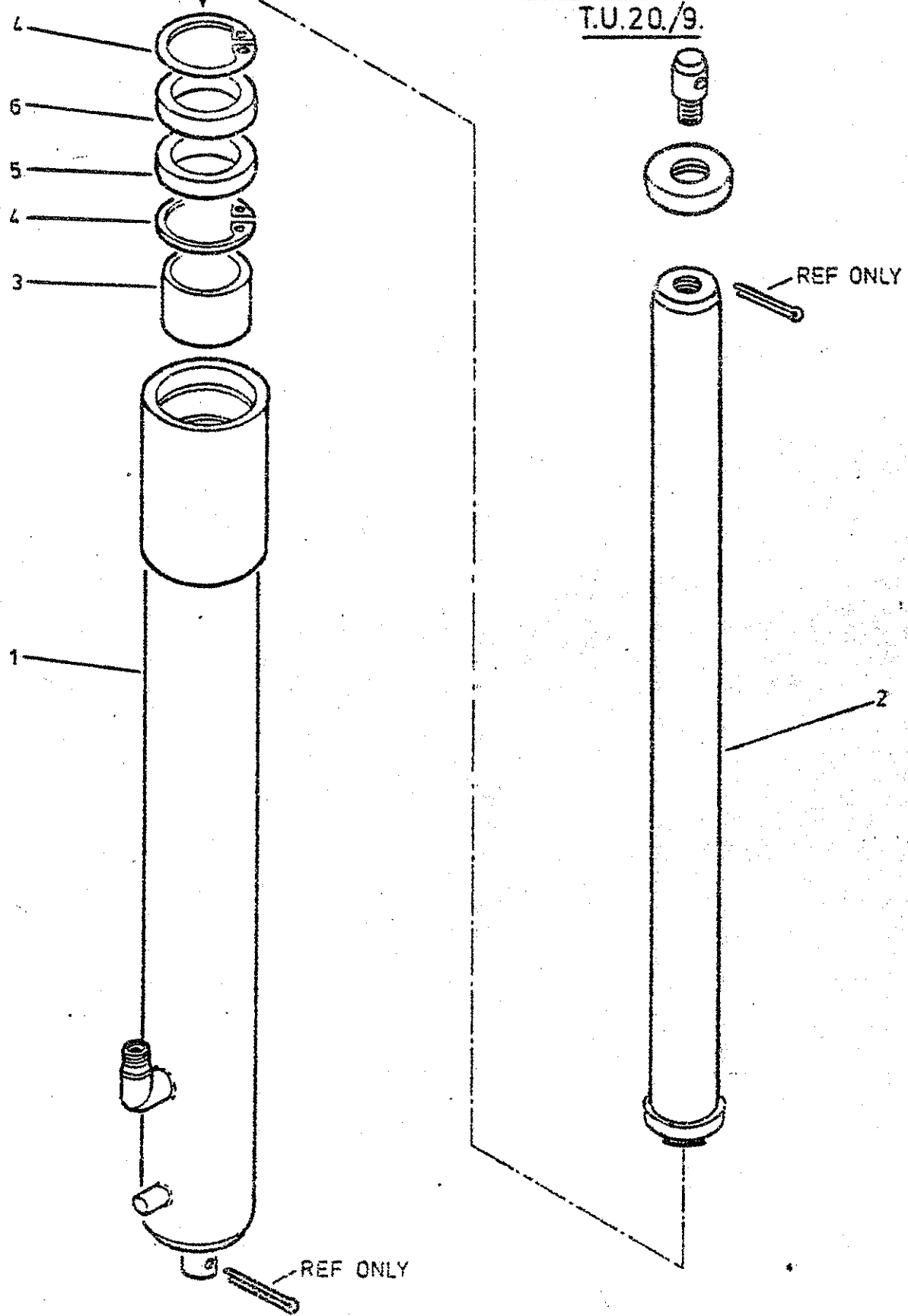
On side shift models side shift hoses pass over chain pulley and are clipped to mast and carriage with clips provided.

Items marked with an * are for use with side shift models only. Non side shift models can be converted to side shift models. - Please see separate section.

March, 1982.

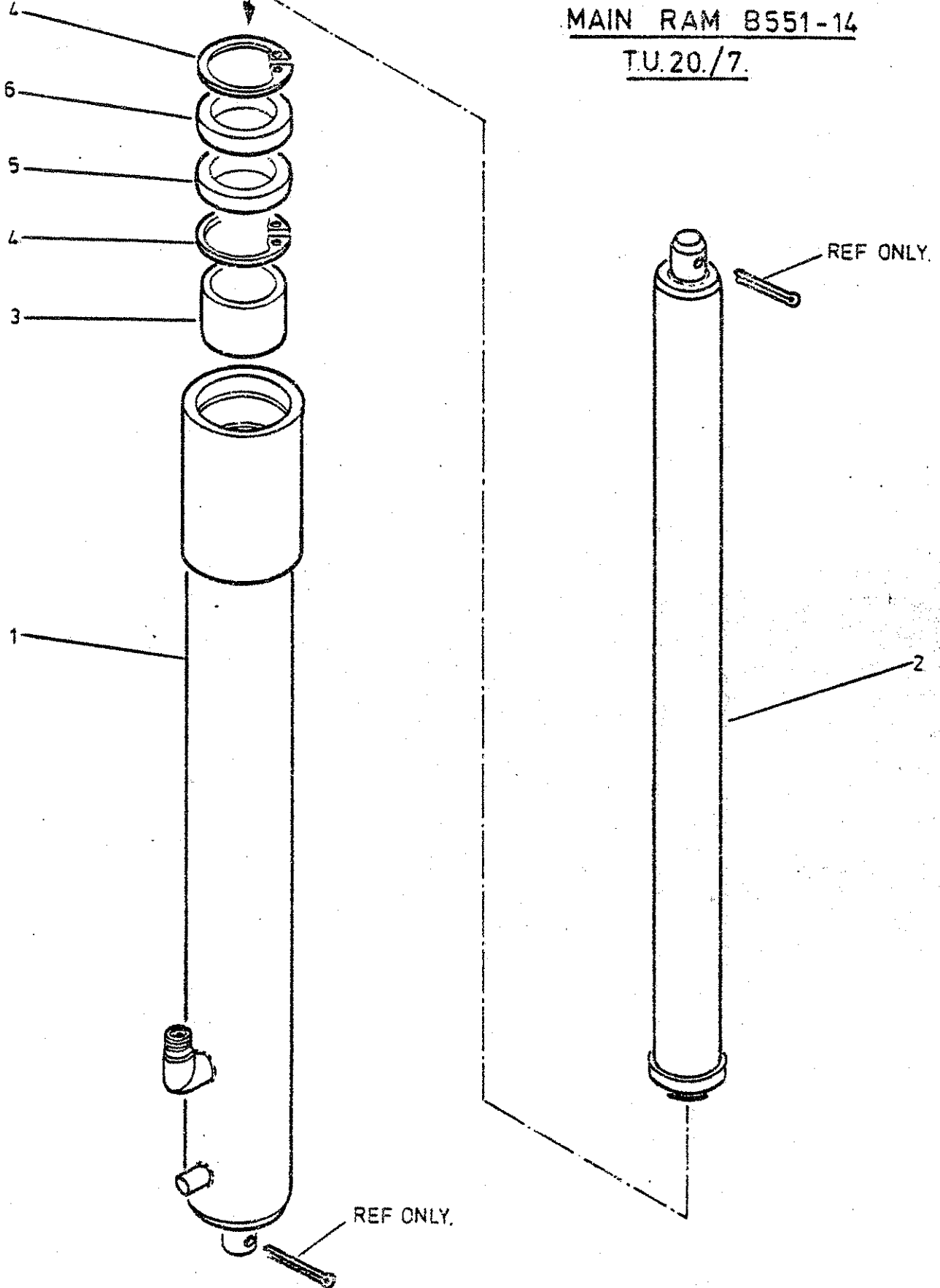
J.60.

T.U.20/9.



<u>Ref.No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Remarks</u>
1	C563-8	Ram Barrel	1	
2	D563-5	Ram Rod Assembly	1	
		... Comprising ...		
	D535-15	Ram Rod	1	
	E551-11	Ram Rod Top	1	
	E563-4	Ram Rod Spacer	1	
	E500-27	Ram End Nut	1	
3	E535-2	Ram Rod Guide	1	
4	500-6	Internal Circlip	2	
5	510-4	Seal	1	
6	E510-3	Junk Plate	1	

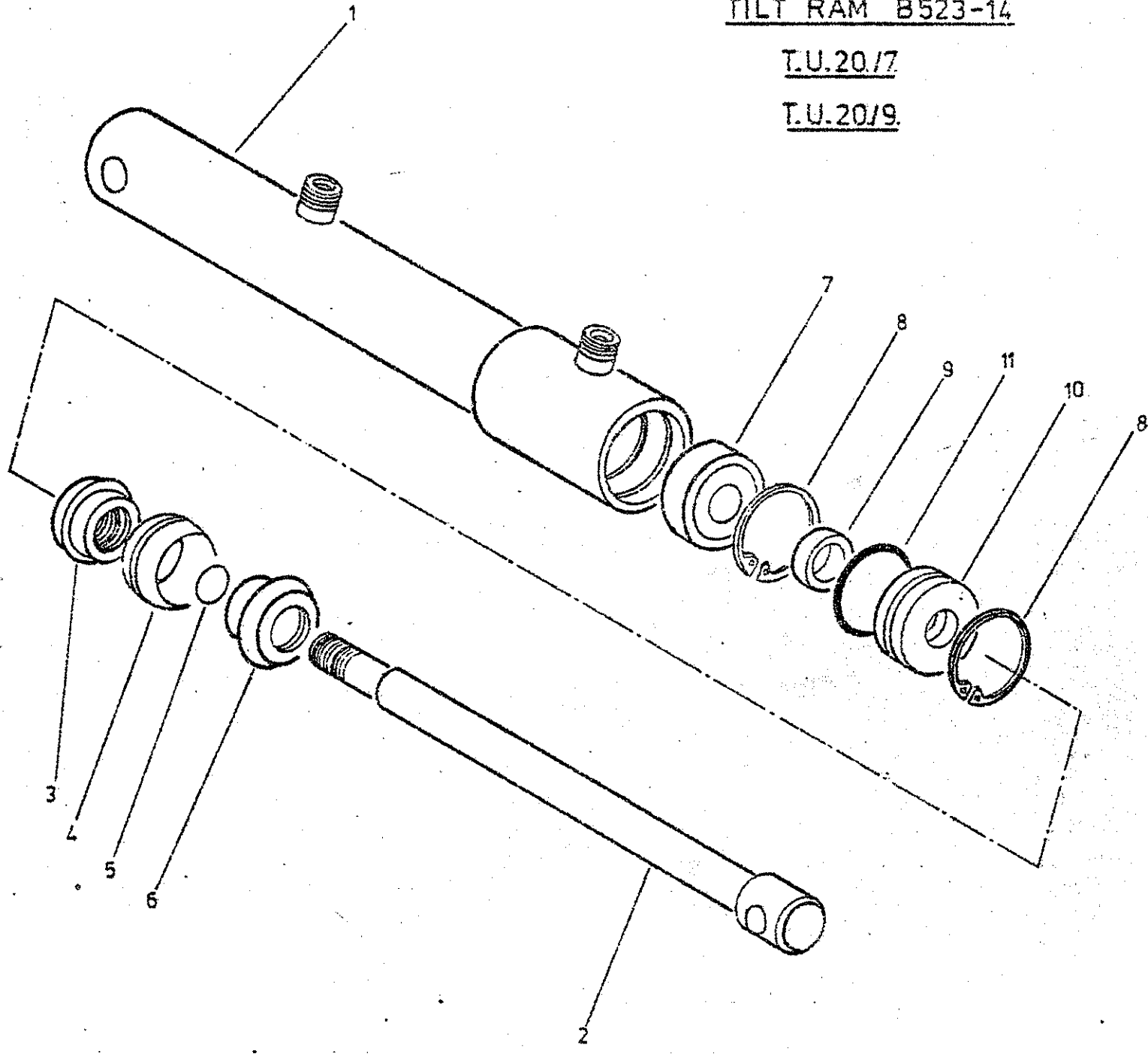
August. 1978



<u>Ref.No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Remarks</u>
1	C551-8	Ram Barrel	1	
2	D551-5	Ram Rod Assembly	1	
		... Comprising ...		
	D551-4	Ram Rod	1	
	E551-11	Ram Rod Top	1	
3	E535-2	Guide		
4	500-6	Circlip	1	
5	510-4	Seal	2	
6	E510-3	Junk Plate	1	

T.U.20/7

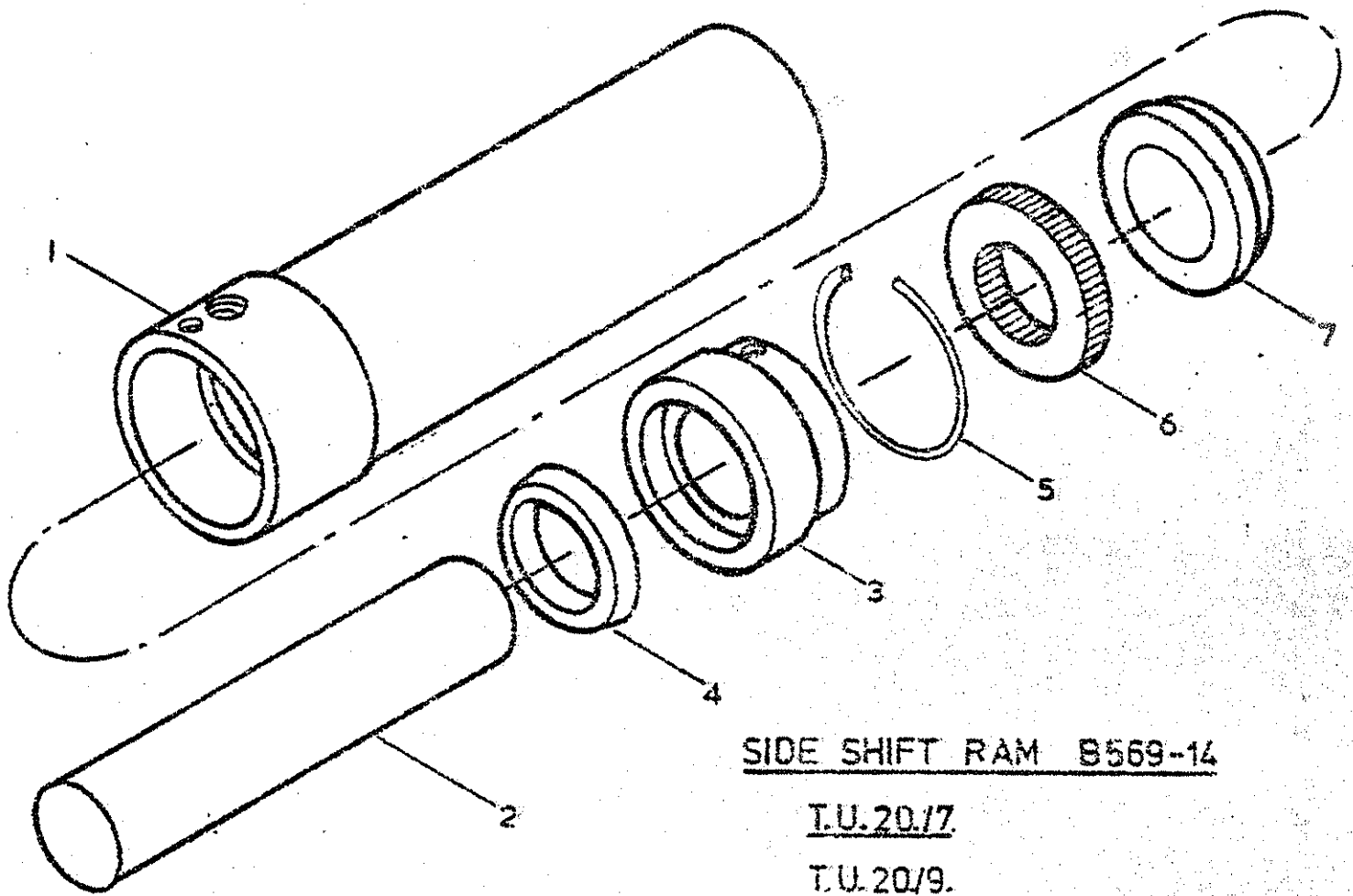
T.U.20/9



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Remarks.</u>
1	0522-10	Ram Barrel	1	
2	E517-2	Ram Rod	1	
3	E522-3	Seal Carrier Nut	1	
4	522-4	Seal	1	
5	250-115	'O' Ring	1	
6	E522-2	Seal Carrier	1	
7	E503-2B	Ram Rod Guide	1	
8	E502-6	Internal Circlip	2	
9	250-114	Seal	1	
10	E503-3	Seal Carrier	1	
11	E250-153A	'O' Ring	1	

August, 1978.

J.63.



SIDE SHIFT RAM 8569-14

T.U.20/17.

T.U.20/9.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description.</u>	<u>Qty.</u>	<u>Remarks.</u>
1	569-8	Ram Cylinder	1	
2	569-5	Ram Rod	1	
3	569-6	Head Bush	1	
4	569-10	Wiper Seal	1	
5	569-11	Locking Wire	1	
6	569-9	Gland Seal	1	
7	569-7	Insert	1	

August, 1978.

J.64.

28.9.84

SIDE SHIFT CONVERSION

To convert your standard Fork Lift to a side shift model the following kit can be supplied.

291-250	Complete Side Shift Kit		1
	comprising:-		
B291-221	Ram Retainer Assembly	1	
B569-14	Side Shift Ram	2	
E520-550	Male/Male Special Adaptor	2)	Fit to Side Shift Ram.
E520-564	$\frac{1}{4}$ " BSP Female/Male Elbow	2)	
E520-567	$\frac{1}{4}$ " BSP x 138" (3505mm) H.P. Hose	2	7' Models.
E520-570	$\frac{1}{4}$ " BSP x 156" (3963mm) H.P. Hose	2	9' Models.
E520-579	Hose Clip	1)	Secures Hoses to Mast.
25-FSH-050	$\frac{1}{4}$ " UNF x $\frac{1}{2}$ " Setscrew	1)	
25-WF	$\frac{1}{4}$ " dia Flat Washer	1)	
E520-579	Hose Clip	1)	Secures Hoses to Carriage.
25-FSH-075	$\frac{1}{4}$ " UNF x $\frac{3}{4}$ " Setscrew	1)	
25-FNH(P)	$\frac{1}{4}$ " UNF Self Locking Nut	1)	

NOTE:-

1. The Side Shift Hoses must pass over the chain pulley and be clipped to the mast and carriage with the clips provided.
2. Remove fork attachment frame locking pin and clip (item nos. E291-214 and 20-947).