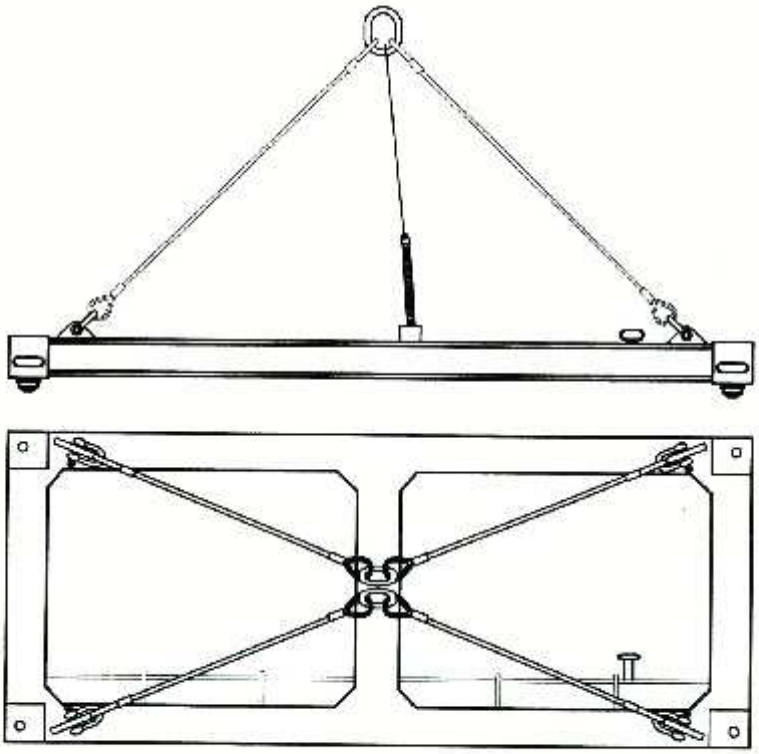
20 ft & 40 ft
HEAVY DUTY
CONTAINER SPREADERS

INSTRUCTION MANUAL

SERVICE & SPAREPARTS



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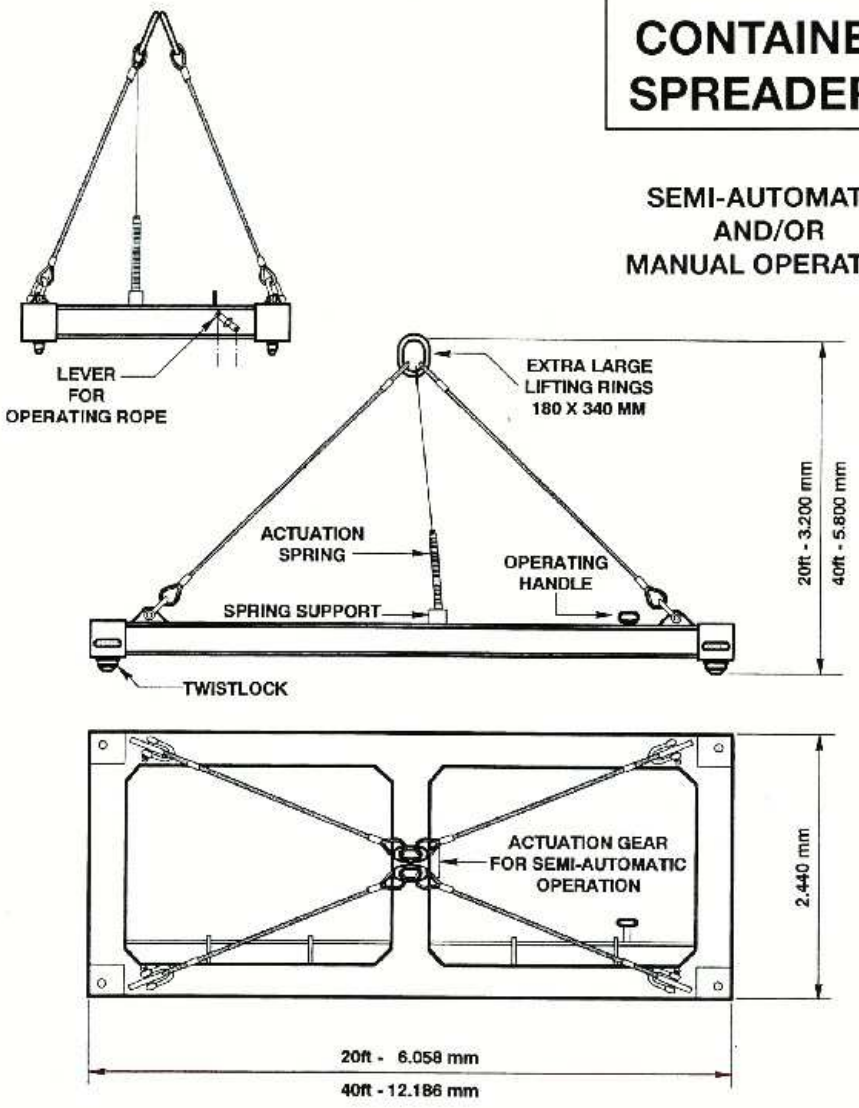
BRUNO DABELSTEIN
Stahl- und Maschinenbau GmbH

20 ft & 40 ft
HEAVY DUTY
CONTAINER SPREADERS

SEMI-AUTOMATIC AND/OR MANUAL OPERATION



TYPE	SIZE	SWL	WEIGHT
AH 20-33 *	20ft	33 TONS	1.6 TONS
AH 40-36 *	40ft	36 TONS	2.4 TONS

*) M = MANUAL OPERATION, A = SEMI-AUTOMATIC OPERATION.

EACH SPREADERS IS SUPPLIED WITH A SERVICE- AND SPAREPARTS BOOKLET.

THE SPREADERS ARE AS STANDARD SUPPLIED PAINTED IN ORANGE RED COLOUR, BUT HOT DIP GALVANIZATION CAN BE SUPPLIED UPON REQUEST.

THE SPREADERS ARE AS STANDARD SUPPLIED WITH GERMANISCHER LLOYD CERTIFICATES, BUT CERTIFICATION BY ANY OTHER CLASSIFICATION SOCIETY CAN BE ARRANGED.

THE SPREADERS ILLUSTRATED ARE IN STANDARD EXECUTION, BUT VARIOUS OPTIONS ARE AVAILABLE, INCLUDING HIGHER SWL RATINGS.

SEE SEPERATE OPTIONAL EXTRAS PAGE.

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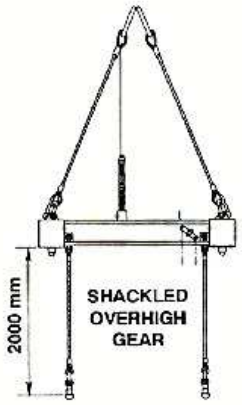
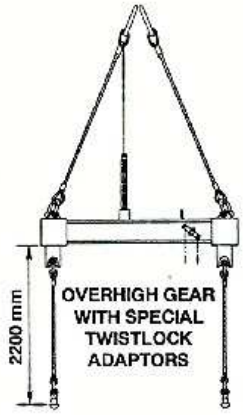
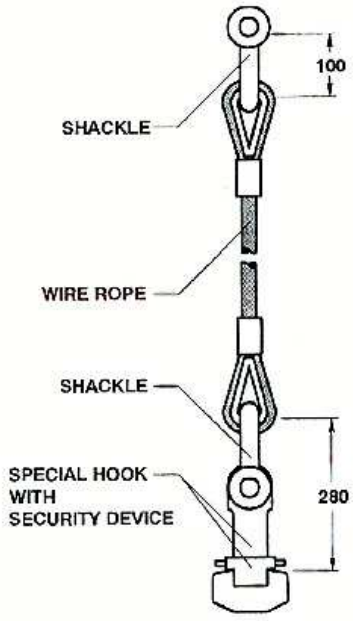
OVERHIGH LIFTING GEARS

SWL 48 TONS



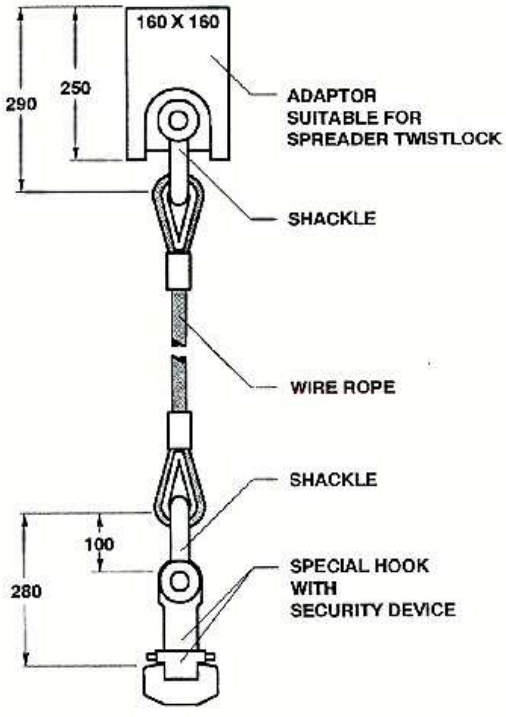


A1



SWL 12 TONS

B1



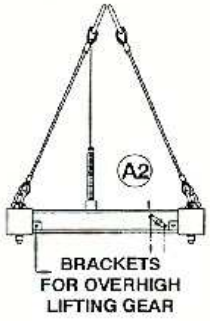
SWL 12 TONS

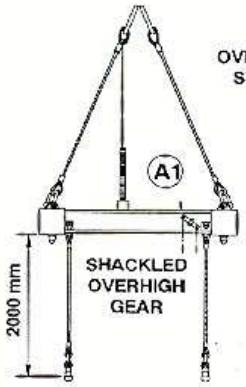
1 COMPLETE SET = 4 UNITS

BRUNO DABELSTEIN
Stahl- und Maschinenbau GmbH

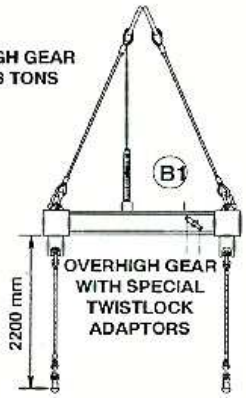
OPTIONAL EXTRAS

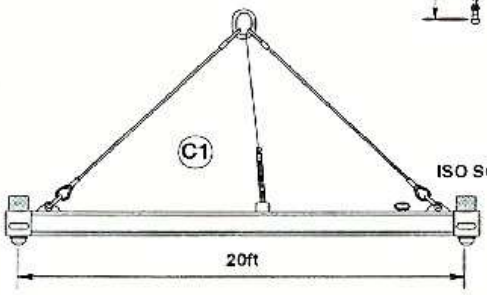
HEAVY DUTY CONTAINER SPREADERS

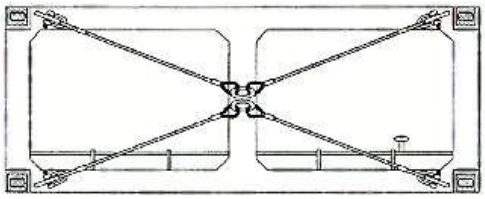




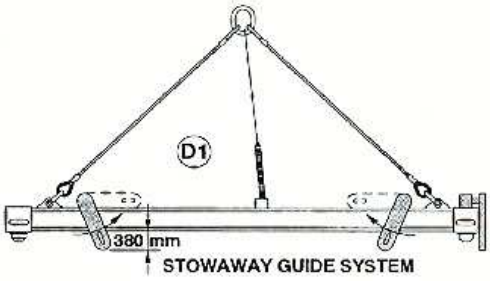
OVERHIGH GEAR
SWL 48 TONS

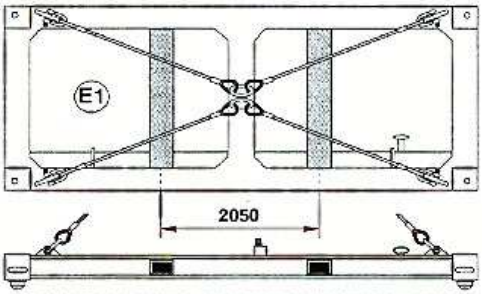




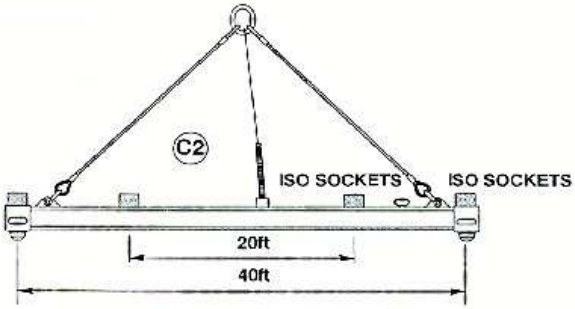


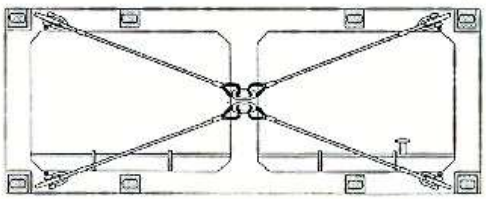
SPREADERS CONNECTED BY ISO SOCKETS, MUST BE DISENGAGED FROM ANY CONTAINER BEFORE HANDLING.





FORKLIFT POCKETS FOR EMPTY HANDLING ONLY.
POCKETS: 350 X 125 mm.





OPTIONAL EXTRAS	REFERENCE
BRACKETS FOR OVERHIGH GEAR	A 2
OVERHIGH GEAR, SHACKLED	A 1
OVERHIGH GEAR, WITH ADAPTORS	B 1
ISO SOCKETS, 20ft	C 1
ISO SOCKETS, 40ft only	C 2
GUIDE SYSTEM	D 1
FORKLIFT POCKETS	E 1

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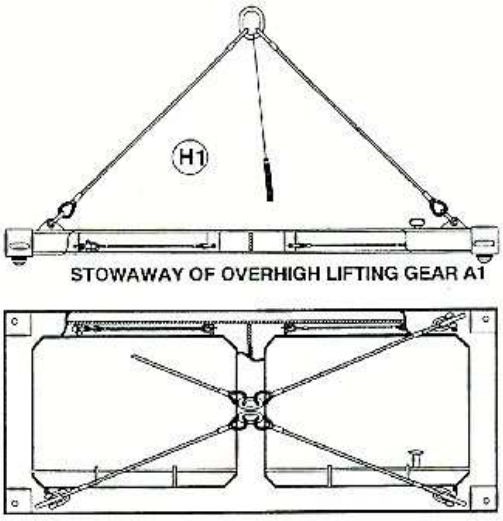
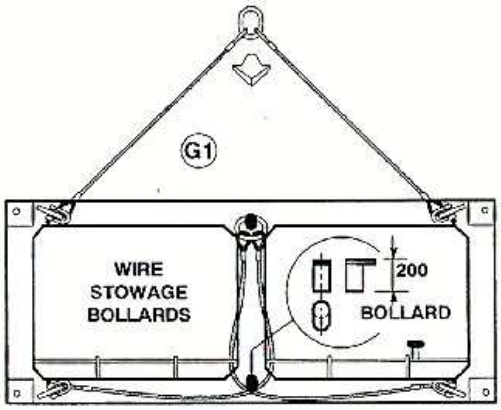
Stahl- und Maschinenbau GmbH

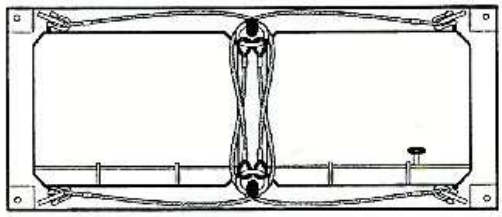
OPTIONAL EXTRAS

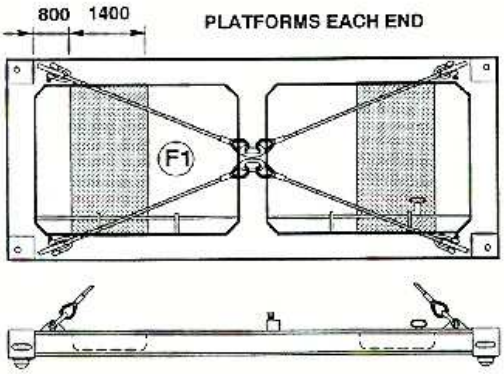
HEAVY DUTY CONTAINER SPREADERS



STOWAWAY OF OVERHIGH LIFTING GEAR A1







OPTIONAL EXTRAS	REFERENCE
PLATFORMS	F 1
WIRE STOWAGE BOLLARDS	G1
STOWAGE OF OVERHEIGH GEAR	H1

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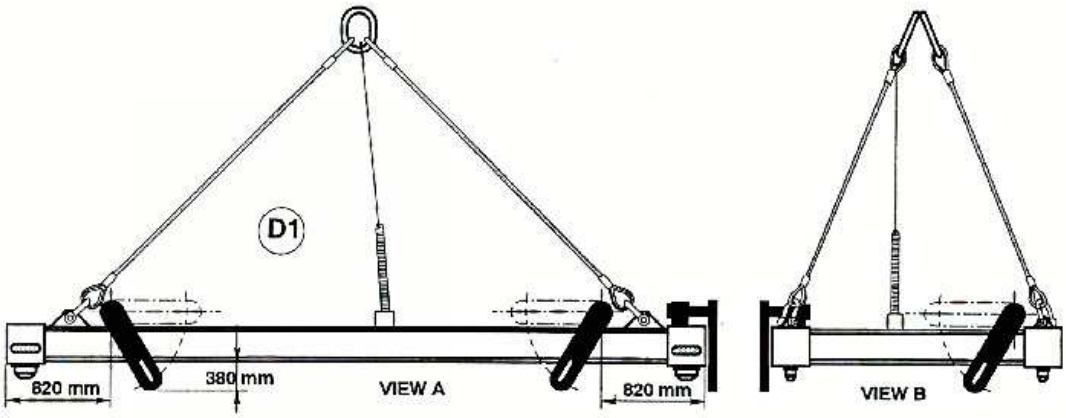
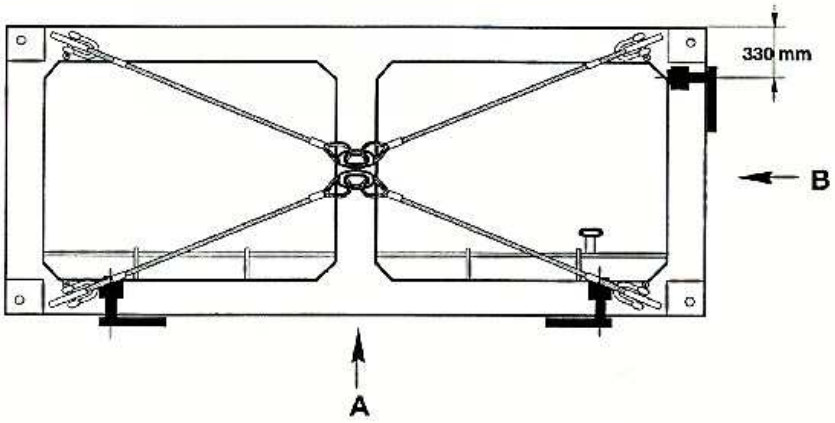
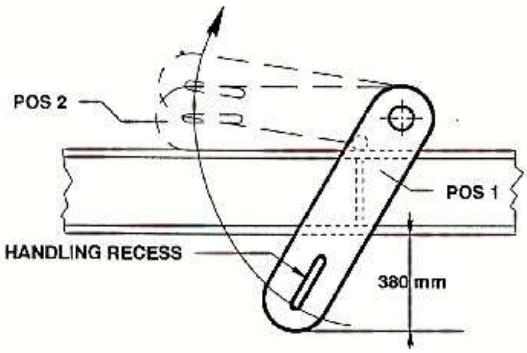
STOWAWAY
GUIDE SYSTEM

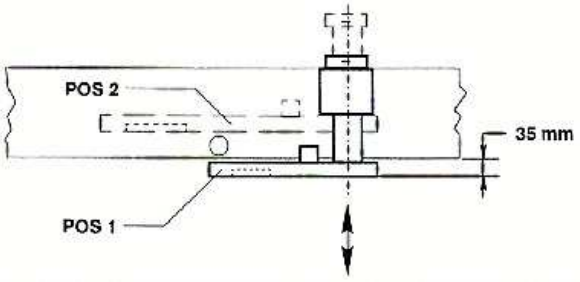






POS 1 : GUIDE SYSTEM IN USE

POS 2 : GUIDES STOWED AWAY
PROTECTED BY FRAME



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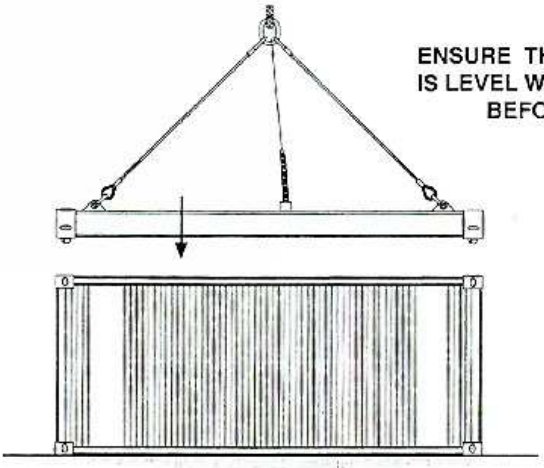
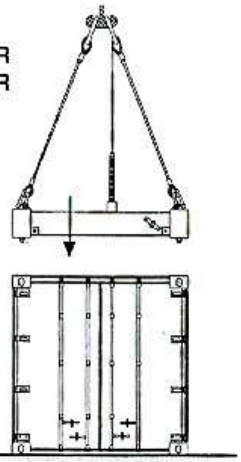
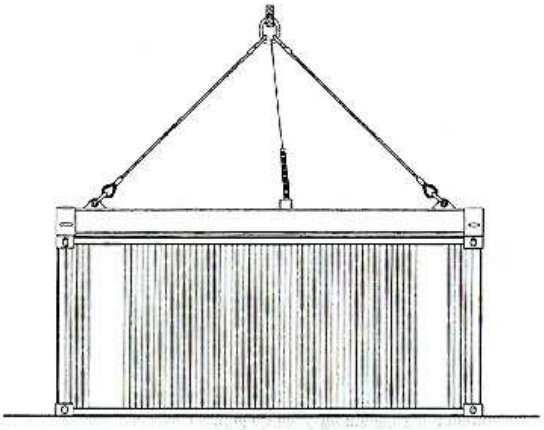
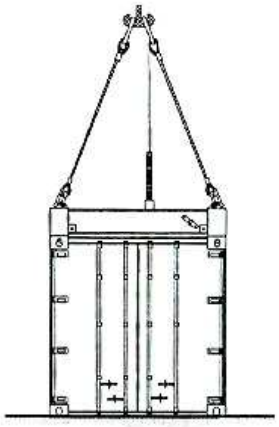
SPREADER HANDLING



ENSURE THAT THE SPREADER IS LEVEL WITH THE CONTAINER BEFORE LOWERING.



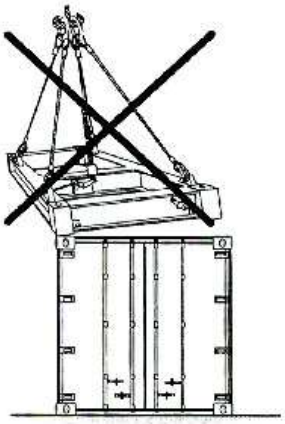




IF THE SPREADER IS NOT LEVELLING WITH THE CONTAINER, ONLY ONE TWISTLOCK MAY ENGAGE THE CORNER CASTING AS ILLUSTRATED.

THIS MAY CAUSE DAMAGE TO THE TWIST-LOCK GUIDE, AND IN WORST CASE ALSO DAMAGE THE TWISTLOCK.

THE GUIDE SYSTEM (D1) WILL GREATLY REDUCE THE RISK OF DAMAGE TO TWIST-LOCKS AND TWISTLOCK GUIDES.



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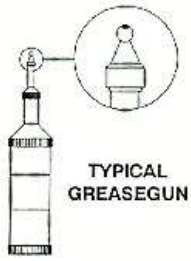
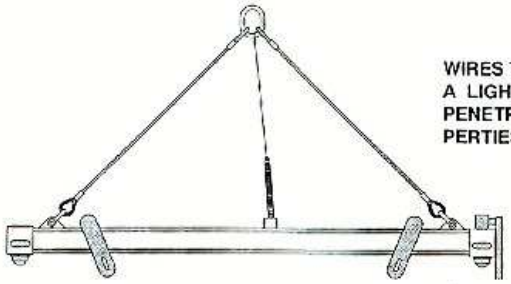
LUBRICATION CHART

MAINTENANCE

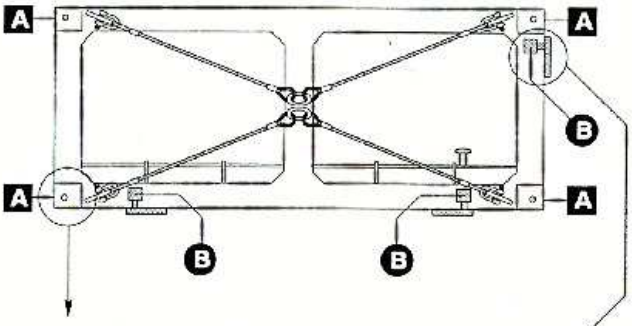


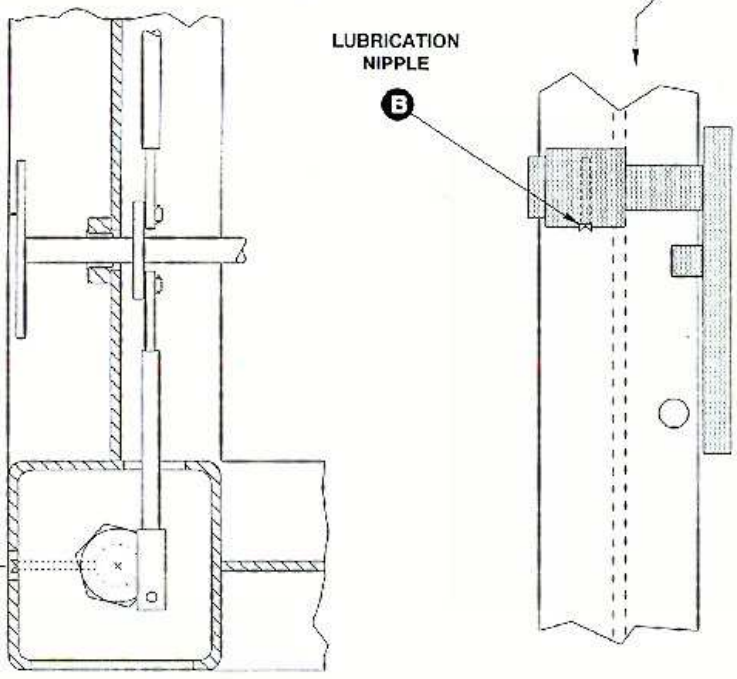
TYPICAL
GREASEGUN



WIRES TO BE LUBRICATED USING A LIGHT LUBRICANT WITH GOOD PENETRATION AND ADHESIVE PROPERTIES.

NEVER USE WASTE OIL





RECOMMENDED LUBRICATION : ONCE EVERY MONTH.

WHEN LUBRICATING (B), MOVE GUIDES UP AND DOWN A FEW TIMES.

THE GEARBOX IS MAINTENANCE FREE.

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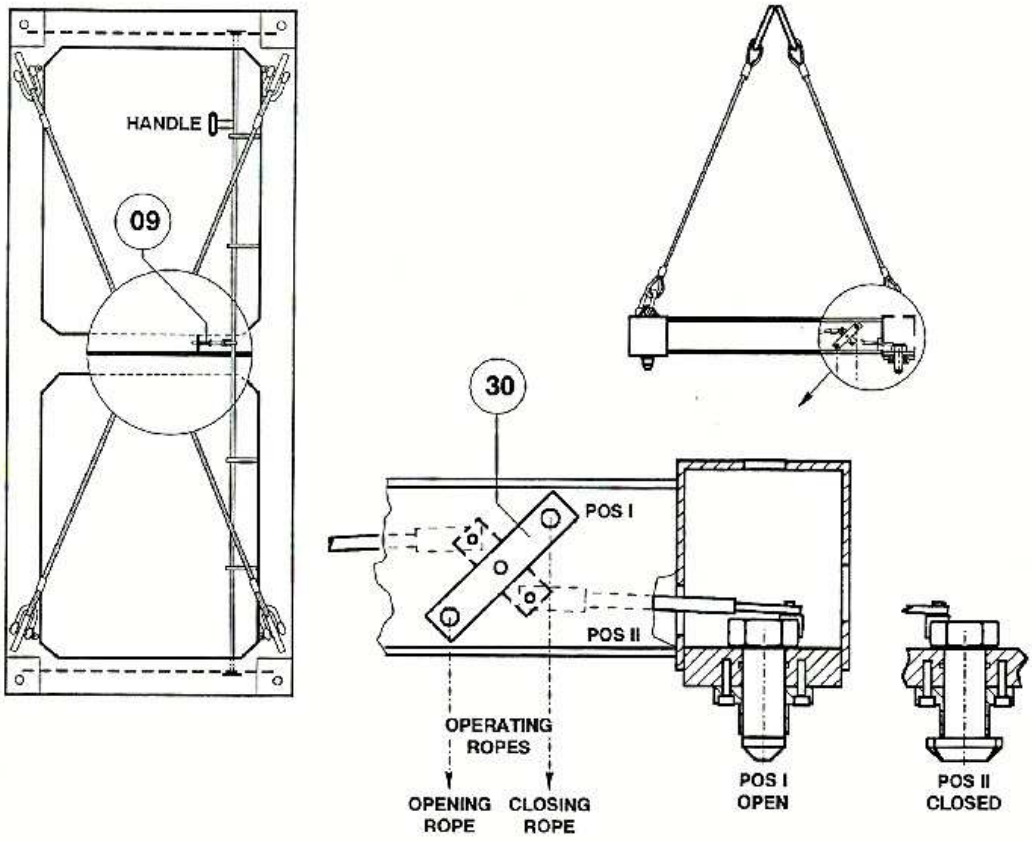
MANUAL OPERATION



SEQUENCE OF MANUAL OPERATION.

THE OPEN AND CLOSED POSITIONS OF THE TWISTLOCKS ARE MARKED WITH POS I AND POS II RESPECTIVELY.

SAFE LIFTING OF A CONTAINER REQUIRES THE FOLLOWING PROCEDURE:

A) PLACE THE SPREADER OVER THE CONTAINER TO BE LIFTED, SO THAT ALL 4 TWISTLOCKS ARE IN MATCHING POSITION WITH THE CORNER CASTINGS OF THE CONTAINER. ENSURE THAT THE TWISTLOCKS ARE IN THEIR OPEN POSITION, i.e. POS I.

B) THEN LOWER THE SPREADER TO ENGAGE ALL 4 TWISTLOCKS INTO THE CONTAINER CORNER CASTINGS.

C) PULL THE OPERATING ROPE PROVIDED, ACTUATING CONTROL LEVER PART 30, THEREBY TURNING THE TWISTLOCKS INTO THEIR LOCKED POSITION, i.e. POS II.

D) THE SPREADER IS NOW ENGAGED WITH THE CONTAINER, AND THE LIFTING OPERATION MAY PROCEED.

TO DISCONNECT THE SPREADER FROM THE CONTAINER, PLEASE ENSURE THAT THE CONTAINER IS PLACED FIRMLY IN PLACE, BEFORE OPENING THE TWISTLOCKS BY PULLING THE OPERATING ROPE.

ALL 4 TWISTLOCKS ARE MECHANICALLY LINKED TOGETHER WITH LEVER PART 30, AND TURN SIMULTANIOUSLY EVERY TIME THE ROPES ARE BEING OPERATED. THE TWISTLOCKS ARE SECURED IN THEIR POSITIONS BY THE COMPRESSION SPRING PART 09, FIRMLY LOCKING THE MECHANICAL LINKAGE SYSTEM.

THE TWISTLOCKS CAN ALSO BE OPERATED FROM THE TOP OF THE SPREADER FRAME, BY OPERATING THE HANDLE.

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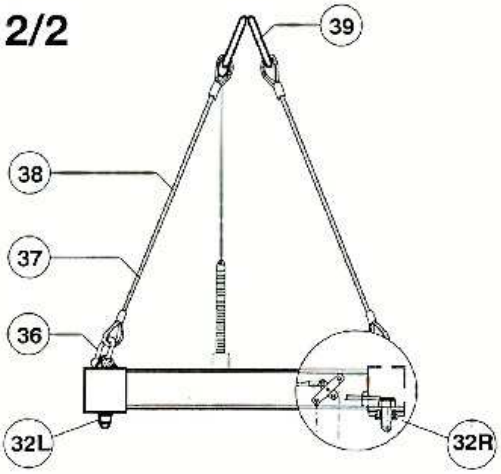
PARTS LIST 2/2

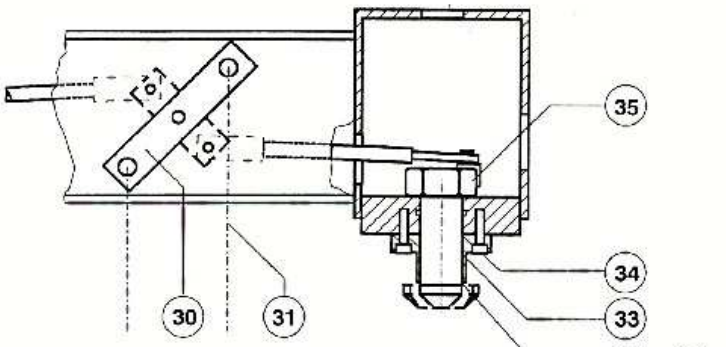


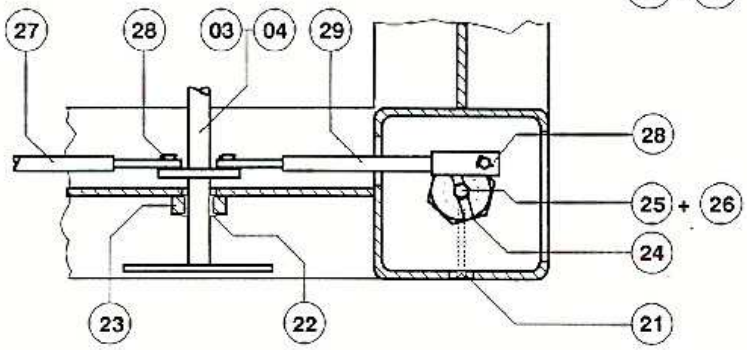
PLEASE NOTE!

WHEN ORDERING TWISTLOCKS.

TWISTLOCKS ARE SUPPLIED TOGETHER WITH TWISTLOCK NUT AND MUST BE FITTED TOGETHER, WHEN REPLACING DAMAGED TWISTLOCKS, EVEN IF 'OLD' TWISTLOCK NUT IS NOT DAMAGED.

MATCHING TWISTLOCK AND TWISTLOCK NUT ARE MARKED WITH IDENTICAL NUMBERS.





	PART No.	DESCRIPTION
	03	MAIN ROD, 20ft
	04	MAIN ROD, 40ft
	21	LUBRICATION NIPPLE
	22	POLYAMID-SLEEVE
	23	BEARING
(A)	24	FITTING KEY
(A)	25	HEX. SCREW
(A)	26	SPRING PIN
(A)	27	CONTROL ROD, LONG
(A)	28	COTTER PIN
(A)	29	CONTROL ROD, SHORT

	PART No.	DESCRIPTION
(A)	30	CONTROL LEVER
	31	OPERATING ROPE
	32	TWISTLOCK INCL 24+25+35
	33.1	TWISTLOCK GUIDE, OLD TYPE
	33.2	TWISTLOCK GUIDE, NEW TYPE
(A)	34	SCREW
(A)	35	TWISTLOCK NUT
	36	SHACKLE
	37	LIFTING WIRES, 20ft (STD 3.400 mm)
	38	LIFTING WIRES, 40ft (STD 7.350 mm)
	39	LIFTING RING

(A) STAINLESS STEEL

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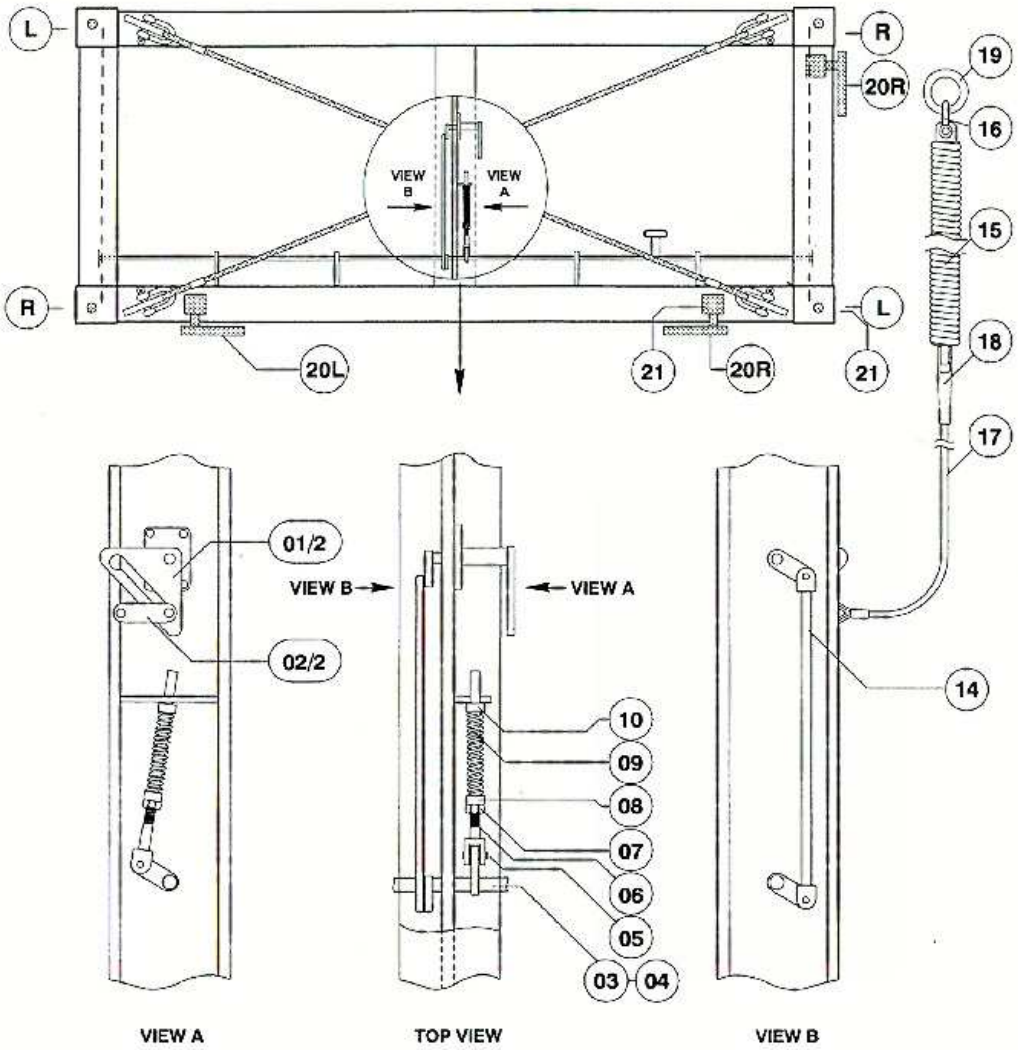
Stahl- und Maschinenbau GmbH

NEW TYPE

SEMI-AUTOMATIC OPERATION

SPARE PARTS LIST



	PART No.	DESCRIPTION
	01/2	TRIANGLE LEVER
	02/2	SWITCH LEVER
	03	MAIN ROD, 20 ft
	04	MAIN ROD, 40 ft
(A)	05	BOLT
(A)	06	BOLT FOR SPRING
(A)	07	HEX. NUT
(A)	08	SPRING GUIDE
(A)	09	COMPRESSION SPRING, SHORT
(A)	10	SPRING GUIDE

	PART No.	DESCRIPTION
	14	GUIDE ROD
(A)	15	TENSION SPRING, SHORT
(A)	16	SHACKLE
(A)	17	WIRE ROPE
*	18	WIRE ROPE LOCK
(A)	19	CONNECTING LINK
	20	GUIDE (LEFT OR RIGHT)
	21	LUBRICATION NIPPLE, 7 PCS.

(A) STAINLESS STEEL

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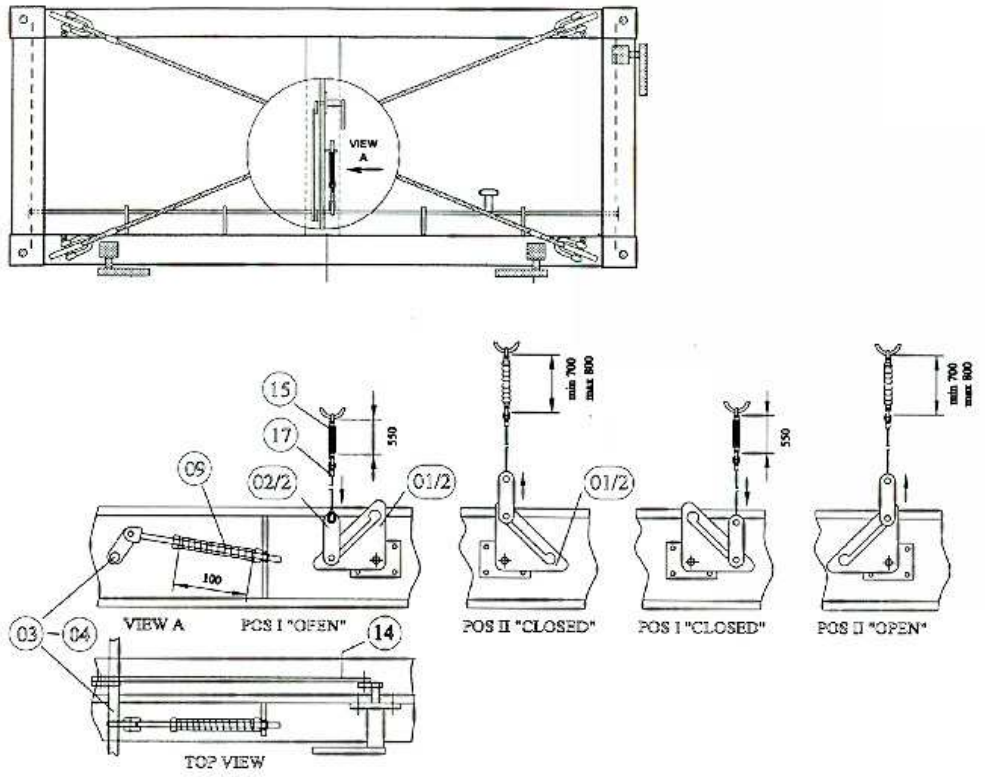
Stahl- und Maschinenbau GmbH

AUTOMATIC OPERATION



SEQUENCE OF AUTOMATIC OPERATION

TURNING OF THE TWISTLOCKS ARE CARRIED OUT WITH THE AID OF SWITCH LEVER PART 02/2, WHICH THROUGH TRIANGLE LEVER PART 01/2, IS CONTROLLED BY TENSION SPRING PART 15. (THE AOUTOMATION)

IN POS. 1 (OPEN) THE SWITCH LEVER PART 02/2 IS WITHOUT LOAD, AND THE AUTOMATION SPRING PART 15 AND WIRE ROPE PART 17, ARE SLACK.
THE TWISTLOCKS ARE EITHER IN THEIR "OPEN" OR "CLOSED" POSITION.

A) WHEN LIFTING THE SPREADERS, TENSION SPRING PART 15 IS ACTUATED, SWITCH LEVER PART 02/2 TURNING TRIANGLE LEVER PART 01/2 FROM POS. I (OPEN) INTO POS. II (CLOSED), CRANKING GUIDE ROD PART 14 THROUGH THE GEAR BOX, TURNING MAIN ROD PART 03/04 BY 90 DEGREES.
THE TWISTLOCKS ARE NOW TURNED FROM POS. "OPEN" INTO POS. "CLOSED", BY THIS ACTION.

B) WHEN LOWERING THE SPREADER, TENSION SPRING PART 15 BECOMES SLACK, AND SWITCH LEVER PART 02/2 IS PUSHING INTO POS. 1 (CLOSED), WITHOUT TURNING THE TWISTLOCKS.

C) WHEN LIFTING THE SPREADER AGAIN, TRIANGLE LEVER PART 01/2 IS TURNED INTO POS. 2 (OPEN).
THE TWISTLOCKS ARE NOW TURNED FROM POS. "CLOSED" INTO POS. "OPEN", BY THIS ACTION.

THE PURPOSE OF TENSION SPRING PART 15 IS TO CHANGE POSITION OF THE TRIANGLE LEVER PART 01/2 WITH THE SWITCH LEVER PART 02/2 FROM POS. I INTO POS. II, BEFORE THE LIFTING WIRES PART 37/38 ARE ACTUATED. WHEN THIS IS ACHIEVED, THE TENSION SPRING HAS CORRECT SETTING.

IF MAY BE NECESSARY TO ADJUST WIRE ROPE PART 17, TO ENSURE CONTINUED PERFORMANCE OF THE TENSION SPRING PART 15.

THE COMPRESSION SPRING PART 09 WILL ENSURE THAT THE MAIN ROD PART 03/04 IS SECURED IN POSITION, HENCE SECURING THE TWISTLOCKS IN THEIR SELECTED POSITIONS.

IN THE UNLIKELY EVENT THAT THE AUTOMATIC OPERATION SHOULD FAIL, THE TWISTLOCKS CA BE OPERATED MANUALLY BY THE HANDLE OR FROM THE END, BY THE ROPES CONNECTED TO CONTROL LEVER PART 30.