PREMIUM

Greaves

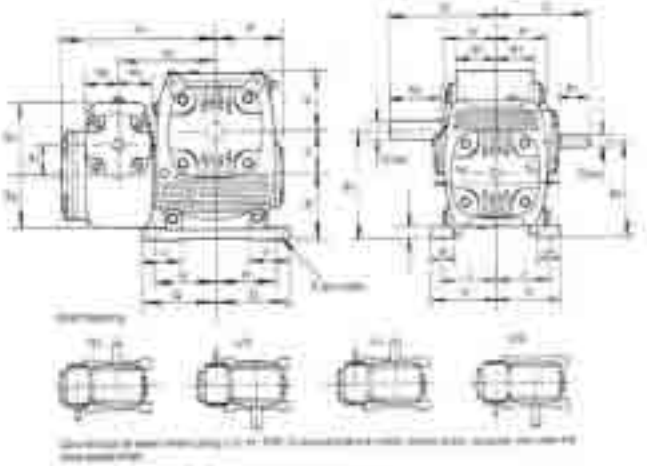
Double Reduction Speed Reducers

Greaves Double Reduction Speed Reducers are two stage worm reduction units. A specially designed primary worm reduction unit is integrally mounted on a standard single reduction Greaves worm reducer which forms the second stage. The composite units provide the most compact and rigid arrangement for large reduction of speed necessary for slow moving machinery. A wide range of ratios upto 4900:1 is available.

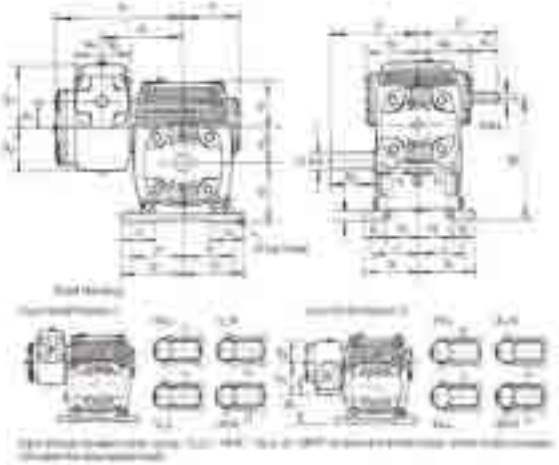
The wormshafts are made of high quality case hardening steel, accurately generated, ground and superfinished. The wormwheels comprise of phosphor bronze centrifugally cast rims of substantial sections welded to rigid centres. Considerable flexibility of shaft layout is permissible with all types of Double Reduction units. The dimension drawing for each series shows the different shaft handing arrangements and the appropriate reference should always be quoted when ordering.

GREAVES Double Reduction Adaptable Speed Reducers

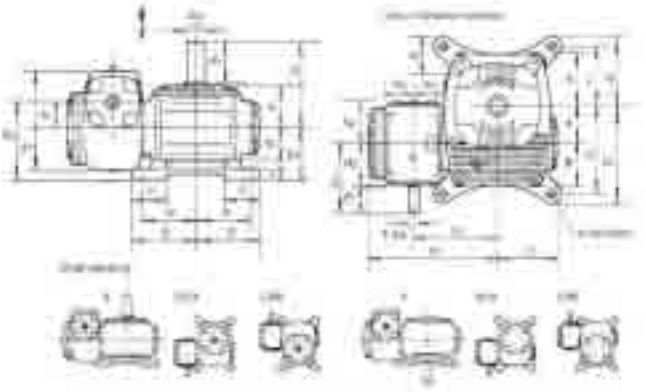
TYPE AUD



TYPE AOD



TYPE AVD



PREMIUM

Principal Dimensions (mm)

AUD

Size	A	[illegible]	[illegible]	B	[illegible]	[illegible]	C	D	E	[illegible]	F	G	H	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W
[illegible]	41.3	28.6	93.1	60.3	101.6	88.9	90	96	29	48	11.113 11.100	19.030 19.037	38.7	49.2	13.5	11	49	37	38	33	38	148	[illegible]	43	60	70	31	38	22
200	50.8	28.6	106.4	69.9	120.7	98.4	90	117	29	37	11.113 11.100	25.400 25.387	76.2	57.2	10.5	16	59	43	39	35	44	162	91	72	74	76	31	49	31
[illegible]	65.1	41.3	133.4	84.1	144.5	123.8	110	140	41	73	13.875 13.865	28.575 28.562	87.3	68.3	11.9	17	66	51	58	46	45	208	103	86	87	92	47	14	37
[illegible]	73.0	41.3	150.8	95.3	166.5	158.8	110	168	41	83	13.875 13.865	31.750 31.750	106.4	83.6	13.3	19	81	64	68	44	119	227	114	100	100	95	47	63	33
[illegible]	82.7	41.3	168.3	109.5	193.1	188.9	110	200	41	98	13.875 13.865	38.100 38.085	119.1	98.8	13.1	21	98	76	68	80	133	343	128	116	138	102	47	67	38

AOD

Size	[illegible]	[illegible]	[illegible]	B	[illegible]	[illegible]	C	D	E	[illegible]	F	G	H	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W
[illegible]	41.3	28.6	93.1	60.3	79.4	139.5	90	96	29	48	11.113 11.100	19.033 19.037	38.7	49.2	10.3	11.1	49	37	38	33	38	148	73	43	74	70	31	38	22
200	50.8	28.6	106.4	83.6	104.8	167.9	90	117	29	37	11.113 11.100	25.400 25.387	76.2	57.2	10.3	14.3	59	43	39	35	44	162	91	72	82	76	31	49	29
[illegible]	65.1	41.3	133.4	100.00	119.1	231.8	110	140	41	70	13.875 13.865	28.575 28.562	87.3	68.3	11.9	17.5	66	51	60	46	98	208	103	84	71	92	47	63	22
[illegible]	73.0	41.3	152.4	120.7	132.4	233.0	110	148	41	83	13.875 13.865	31.750 31.750	106.4	83.6	12.2	19.1	81	64	68	44	119	227	124	100	81	92	47	66	22
[illegible]	82.7	41.3	168.3	136.9	179.4	261.9	110	200	41	98	13.875 13.865	38.100 38.085	119.1	98.4	13.1	20.6	98	76	68	80	133	340	128	116	94	102	47	67	28

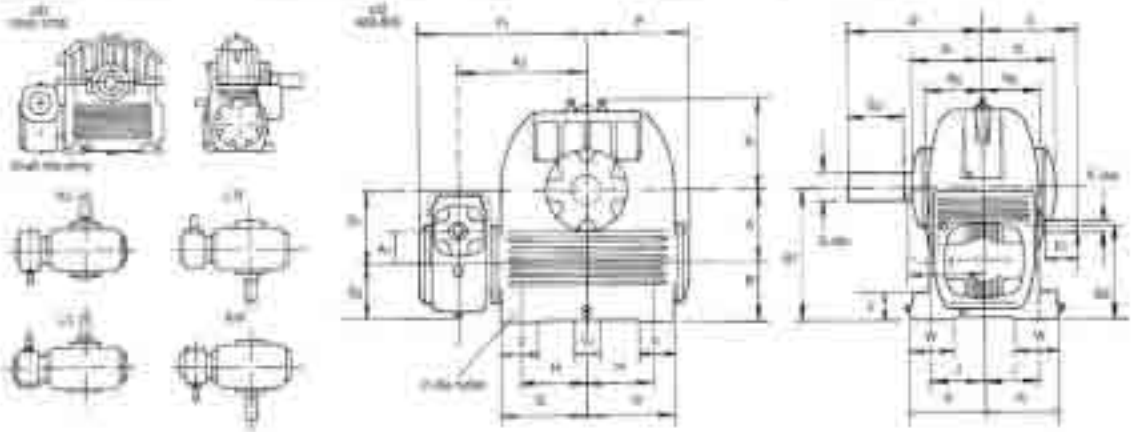
AVD

Size	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F	G	H	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W
[illegible]	41.3	28.6	93.1	34.9	55.2	93.1	90	98	29	48	11.113 11.100	19.030 19.037	38.7	[illegible]	100.8	33.3	16	49	37	38	33	48	148	71	76	113	60	70	31	48	44
200	50.8	28.6	106.4	41.3	49.9	98.4	90	117	29	37	11.113 11.100	25.400 25.387	76.2	82.6	120.7	10.8	16	59	43	39	33	44	162	89	85	132	70	70	31	33	33
[illegible]	65.1	41.3	133.4	71.4	83.3	125.8	110	140	41	70	13.875 13.865	28.575 28.562	87.3	93.3	138.7	11.9	19	66	51	66	46	99	208	122	111	155	87	92	47	37	39
[illegible]	73.0	41.3	151.4	81.0	89.4	134.7	110	168	41	83	13.875 13.865	31.750 31.750	106.4	114.3	161.4	12.3	21	81	64	68	46	119	227	134	133	178	106	95	47	53	65
[illegible]	82.7	41.3	168.3	93.7	114.3	133.4	110	200	41	98	13.875 13.865	38.100 38.085	119.1	128.6	188.9	13.1	22	98	76	68	46	133	265	128	149	208	119	95	47	73	73

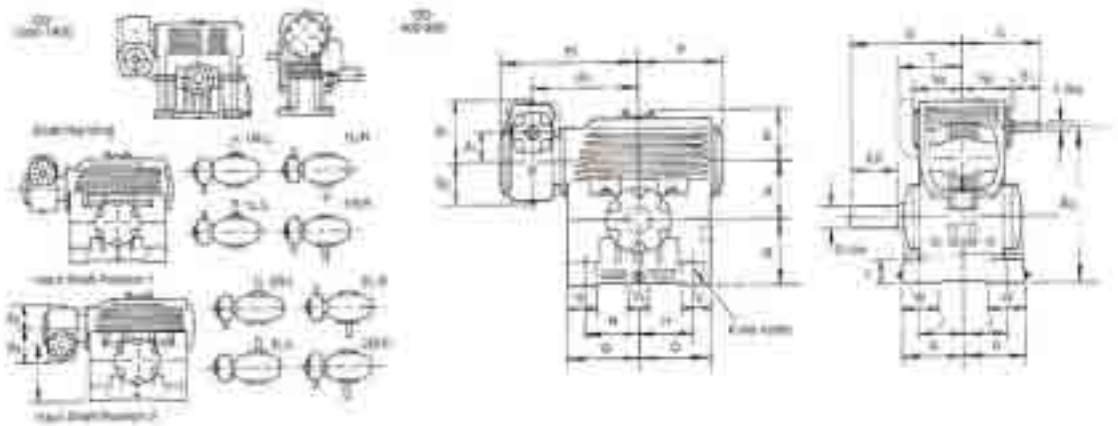
PREMIUM

GREAVES Double Reduction solid foot Speed Reducers

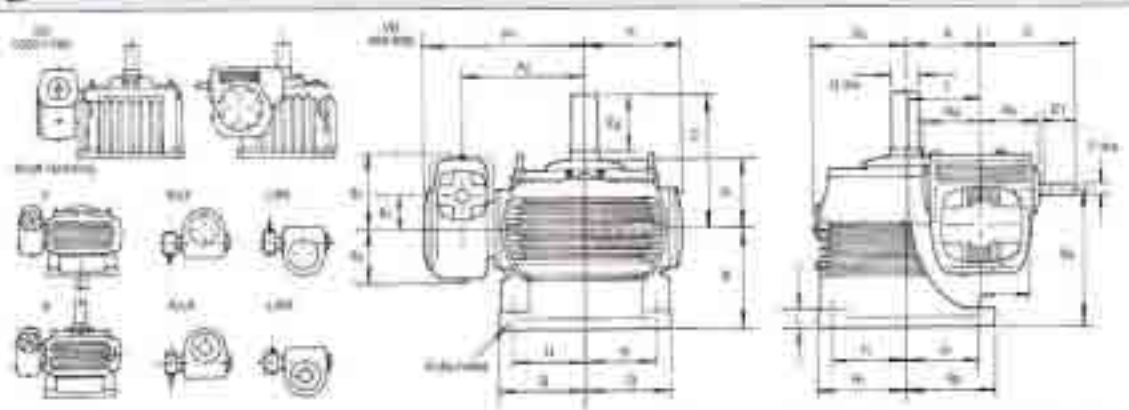
UD



OD



VD



PREMIUM

Principal Dimensions (mm)

UD

Size	A	A1	A2	B	B1	B2	C	D	D1	D2	F	G	H	J	K	L	M	M2	P	P1	Q	R	S	S1	S2	T	V	V1	W
400	101.6	20.6	214.3	108.6	229.6	99.6	131	216	48	89	15.87	44.45	120.7	101.6	29.0	44	121	84	159	276	140	127	137	116	79	–	64	–	70
500	127.0	60.5	247.1	114.3	314.7	174.6	160	248	57	102	19.05	50.80	133.4	111.1	25.4	34	133	100	186	239	164	137	149	123	90	–	70	–	82
600	133.4	73.0	265.1	127.0	279.4	203.2	191	273	70	114	22.2	57.15	133.4	120.7	23.8	44	146	119	200	344	159	149	184	136	111	–	16	–	89
700	177.8	85.7	304.8	149.1	333.9	221.8	219	298	83	127	25.4	63.50	133.4	155.6	23.8	15	171	135	229	400	208	152	215	164	126	–	89	–	98
800	203.2	101.6	339.6	146.1	349.0	247.7	239	311	67	140	31.75	69.85	171.5	133.4	27.0	16	139	162	251	441	220	171	253	203	127	222	152		103
1000	254.0	127.0	419.1	111.6	425.5	298.2	266	375	73	152	38.1	82.55	215.9	165.1	31.8	51	194	178	311	349	355	330	293	241	165	234	137	64	200
1200	304.8	152.4	479.4	180.0	485.3	342.9	279	413	76	171	38.1	95.25	260.4	184.2	34.9	57	216	191	368	625	355	333	343	284	186	270	133	76	222
1400	355.6	177.8	552.3	213.9	571.5	393.7	318	483	86	191	44.4	114.30	298.5	215.9	41.3	64	324	223	425	700	413	360	394	314	222	300	178	89	260
1700	431.8	203.2	665.6	254.0	685.8	437.7	343	546	89	203	44.4	139.70	381.0	234.0	41.3	76	305	250	514	800	502	298	489	349	234	337	191	127	286

OD

Size	A	A1	A2	B	B1	B2	C	D	D1	D2	F	G	H	J	K	L	M	M2	P	P1	Q	R	S	S1	S2	S3	S4	T	V	V1	W
400	101.6	20.6	214.3	150.7	171.5	273.1	131	216	48	89	15.87	44.45	108.0	101.6	38.0	44	131	84	159	276	140	127	158	116	79	116	79	–	64	–	70
500	127.0	60.3	247.7	146.1	273.7	333.9	160	248	57	102	19.05	50.80	133.4	111.1	30.6	34	133	100	186	279	164	137	117	123	95	133	90	–	70	–	83
600	133.4	73.0	265.1	171.5	350.8	396.9	191	273	70	114	22.2	57.15	133.4	120.7	23.8	44	146	119	200	345	179	149	154	136	140	136	112	–	70	–	89
700	177.8	85.7	304.8	196.9	289.9	460.4	219	298	83	127	25.4	63.50	152.4	123.8	34.9	76	151	135	229	400	208	165	149	184	124	184	174		89		98
800	203.2	101.6	339.6	279.4	355.6	527.1	239	311	67	140	31.75	69.85	171.5	133.4	27.0	16	139	162	251	441	220	171	165	203	127	209	127	222	102	–	103
1000	254.0	127.0	419.1	273.1	400.1	634.1	266	373	73	152	38.1	82.55	215.9	165.1	31.8	51	194	178	311	349	266	330	191	281	165	241	171	234	137	64	200
1200	304.8	152.4	479.4	330.2	482.6	787.4	279	413	76	171	38.1	95.25	260.4	184.2	34.9	57	216	191	368	625	355	333	333	394	156	284	186	270	133	76	222
1400	355.6	177.8	552.3	381.0	558.8	914.4	318	483	86	191	44.4	114.30	298.5	215.9	41.3	64	254	223	425	700	413	360	324	314	300	314	222	300	178	89	260

VD

Size	A	A1	A2	B	B2	C	D	D1	D2	F	G	H	J	J1	K	L	M	M2	P	P1	Q	R1	R2	S	S1	S2	S3	T
400	101.6	50.8	214.3	171.5	222.3	131	216	48	89	15.87	44.45	116.5	116.7	116.5	29.6	32	121	84	159	275	140	140	140	89.4	116	79	132	–
500	127.0	60.3	247.7	190.5	330.2	159	248	57	102	19.05	50.8	139.7	139.7	139.7	30.0	32	133	100	186	279	165	165	165	111	132	90	119	–
600	133.4	73.0	265.1	209.6	282.6	191	273	70	114	22.2	57.15	152.4	152.4	152.4	23.8	38	146	119	200	344	184	184	184	130	155.6	118	197	–
700	177.8	85.7	304.8	228.6	314.2	219	298	83	127	13.8	44.50	177.8	177.8	177.8	23.8	38	151	155	229	400	215	215	215	190	188	139	222	–
800	203.2	101.6	339.6	241.3	349.9	239	311	67	140	31.75	69.85	203.2	203.2	203.2	27.0	44	139	162	251	449	239	239	239	158.8	203	187	234	220
1000	254.0	127.0	419.1	279.4	406.4	266	373	73	152	38.1	82.55	260.4	260.4	330.0	31.8	51	194	178	311	349	311	289	273	175	241	168	299	234
1200	304.8	152.4	479.4	304.8	457.2	279	413	76	171	38.1	95.25	317.5	317.5	266.7	34.9	57	216	191	368	625	369	336	333	190.5	284	186	336	270
1400	355.6	177.8	552.3	330.2	508.0	318	483	86	191	44.4	114.30	353.6	353.6	304.8	41.3	64	324	223	425	700	425	415	362	316	314	222	413	355
1700	431.8	203.2	665.6	406.4	469.9	343	546	89	203	44.4	139.70	431.8	431.8	431.8	41.3	76	305	250	514	800	502	309	502	234	349	254	300	337

GREAVES Double Reduction Adaptable Speed Reducers

LUBRICATION

The primary and secondary units of double reduction Greaves ADAPTABLE units must be filled separately with recommended oil. Plugs have been provided on all sides of the unit. The plugs at extreme top serve as oil filler and breather, the bottom plugs are for drain and the plug in between is to be used for oil level checking. Over-filling should be avoided, this might result in oil leakage and over-heating.

RECOMMENDED LUBRICANT

ISO VG320

Brand	Grade
Bharat Petroleum	Cabol 320 or Amocam 320
Castrol	Alpha ZN 320
Gulf	Harmony 320
Hindustan Petroleum	Enklo 320
Indian Oil	Servomesh SP320 or Servosystem 320
Veedol	Avalon 320

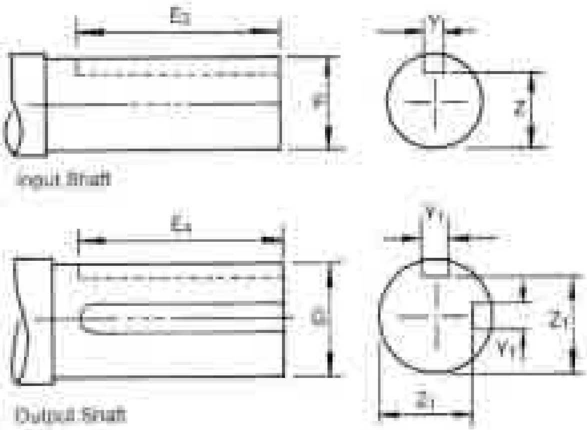
Approximate Shipping Specification and Oil Capacities

Size	162	200	237	287	337
Net Weight (kg)	10	14.5	24.5	37	51
Gross Weight (kg)	15	20	32	48	66
Volume packed (Cu.m.)	0.034	0.040	0.057	0.079	.125
Oil required Primary Unit at 1st filling (litres)	0.14	0.14	0.28	0.28	0.28
Final Unit	0.28	0.28	0.57	0.85	1.42

A supply of oil is not included in any unit.

As improvements in design are continually being made, this specification is not to be regarded as binding in detail and dimensions are subject to alteration without notice.

Standard Shaft Dimensions (mm)



	Input Shaft					Output Shaft			
	Size	F	E3	Y	Z	G	E4	Y1	Z1
UD OD VD	400	15.977 15.964	44	4.76 4.75	17.76 17.50	44.455 44.470	87	11.12 11.10	39.72 39.37
	500	19.050 19.037	54	4.78 4.77	16.33 16.18	50.800 50.750	95	12.70 12.67	45.87 45.80
	600	22.225 22.212	67	6.35 6.32	19.60 19.47	57.150 57.125	114	15.88 15.85	50.55 50.39
	700	25.400 25.387	75	6.35 6.32	21.75 21.44	63.500 63.475	114	15.88 15.85	56.91 56.74
	800	31.750 31.735	94	7.95 7.95	26.74 27.08	69.850 69.825	127	19.05 19.03	63.22 63.12
	1000	38.100 38.084	75	9.55 9.52	34.29 34.14	82.550 82.525	143	22.23 22.20	73.13 73.00
	1200	38.100 38.085	77	9.53 9.50	34.29 34.14	95.250 95.225	163	25.40 25.37	84.35 84.15
	1400	44.450 44.435	83	11.13 11.10	39.72 39.57	114.300 114.275	210	31.75 31.72	101.47 100.94
	1700	44.450 44.435	83	11.13 11.10	39.72 39.57	139.700 139.675	222	38.10 38.07	124.49 124.33

Direction of Rotation

UD - shaft handing "R/L"

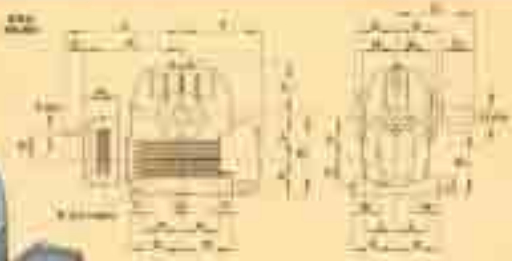
OD - shaft handing "1 R/L"

VD - shaft handing "R/LX"

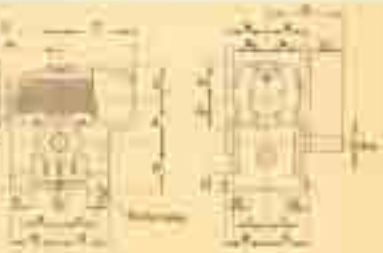
Shipping Specifications and Oil Capacity (approx.)

SIZE OF UNIT	NET WEIGHT (KG)			GROSS WEIGHT (KG)			VOLUME PACKED (CU.M)			OIL CAPACITY (LTRS)			
										PRIMARY UNIT	SECONDARY UNIT		
	UD	OD	VD	UD	OD	VD	UD	OD	VD		UD	OD	VD
400	73	67	76	88	108	93	.14	.14	.17	0.6	3.8	2.2	4.0
500	114	123	129	145	157	162	.20	.20	.24	0.6	4.9	3.8	5.7
600	166	155	177	208	192	222	.30	.28	.35	1.1	5.7	4.0	6.5
700	218	228	235	273	280	318	.38	.40	.45	1.7	9.1	6.7	10.2
800	288	280	303	334	306	387	.41	.48	.54	2.8	11.4	9.1	15.5
1000	419	420	540	500	471	655	.79	.79	.88	4.0	17.5	8.6	22.7
1200	634	682	795	773	856	982	1.02	1.16	1.13	5.7	22.5	7.9	27.4
1400	945	1044	1096	1172	1318	1412	1.47	1.39	1.67	9.1	27.5	18.2	48.5
1700	1420	-	1800	1875	-	2150	2.02	-	2.60	11.8	33.3	-	90.0

Type BS double reduction



BSU



BSO

Type BS double reduction

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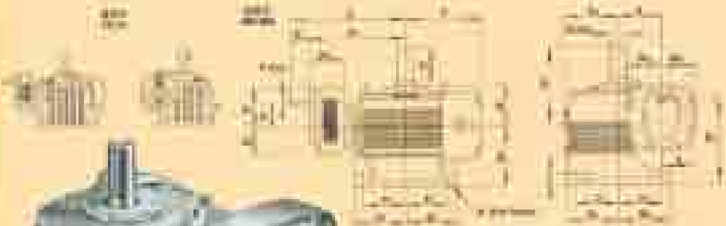

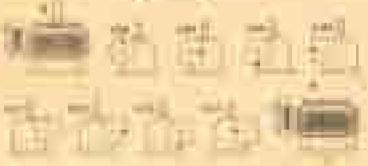

BSV

[illegible]

[illegible]

[illegible]